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GENDER RESPONSIVE MEASURES FOR IMPLEMENTING THE NATIONALLY DETERMINED CONTRIBUTIONS (NDCS) IN UGANDA

Ministry of Water and Environment (MWE)
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A list of all the participants is provided in the appendix.

Foreword

Executive Summary

a. Introduction

Nationally Determined Contributions (NDCs) are intended to help reduce vulnerability to climate change in NDC priority sectors as well as contribute to Greenhouse Gas (GHG) emissions reductions in forestry, wetlands, energy, transport and agriculture sectors. To this effect, Uganda is committed to a 22% GHG emissions reduction by 2030 as per the Parish Agreement.

The Ministry of Water and Environment (MWE) is taking lead in the implementation of the NDC Support Program on behalf of the Government of Uganda, with technical support from the UNDP, Governments of Germany and Spain, and the European Union as a contribution to the NDC Partnership. The Ministry and the NDC Support Programme commissioned a study to conduct analysis of the gender responsiveness of measures / strategies for NDC implementation in the selected sectors. The findings of the gender analysis and the resultant climate action plan are intended to inform implementation of the project to completion in a gender responsive manner. The specific objectives of the study include the following:

a) To establish the level of gender responsiveness of the policies, legal frameworks, programs and institutional arrangements related to coordination of all the climate change actions, and the systems in place for gender mainstreaming.
b) To assess the gaps and bottlenecks in mainstreaming gender in the policies, plans and programs related to NDC implementation
c) To establish the financing and other capacity levels (human, time, information and physical resources) for gender responsive NDC implementation
d) To assess gender responsive measures in the implementation and plans, identify gender gaps and propose measures to mainstream gender in the key NDC sectors.
e) To make recommendations for implementation of gender responsive measures of the NDCs from the selected sectors

The report is presented in five sections starting with the introduction section which highlights the objectives of the gender analysis research, the methodology, scope the specific tasks, the research instruments, data management, analysis and conduct of the study, and the limitations to the study.

b. The country context and policy environment

The second section presents the country context concerning the gender situation in Uganda and the policy, legal and institutional framework for gender, climate change and the sectors of interest for this study, namely agriculture, energy and the waste sector.

The policies have been reviewed to assess the extent of gender mainstreaming as required by the Uganda Gender Policy (UGP) 2007, and found that all the policies from the one guiding climate change, namely the National Climate Change Policy (NCCP), the National Agriculture Policy, the National Environment Policy 1994 (and Draft 2014), and the National Energy Policy do mention gender either in the objectives or in the guiding principles. However, the link between gender and climate change is yet to be understood and added to the various sectoral policies to guide the implementation of the NDC from a gender responsive manner. Likewise, the Uganda Gender Policy has to incorporate climate change in its policy to guide the sectors on how the two cross-cutting issues can be linked. Further, all the sectoral policies should get their policies aligned to the Uganda Gender Policy and the National Climate Change Policy.

The reviewed legal framework includes the Constitution of the Republic of Uganda 1995, the Local Government Act 1997 Cap 423, the Equal Opportunities Act 2007, the Land Act 1998, the National Environment Act, Cap 153, the National Development Plan 2016-2030, the Uganda Green Growth Development Strategy 2017/18-2029/30 and the NDC implementation Plan 2018 all of which give a legal foundation for gender equality and the empowerment of women.

The institutional arrangements have been examined and proposals for coordination given. The arrangements recognize that the Directorate of Environmental Affairs in the Ministry of Water and Environment and the Climate Change Department are key to gender and NDC implementation. In order to establish an enabling environment for implementation of the Gender Climate Action Plan, there will be need to harmonize and align the national and sector plans of all the MDALGs, with development priorities including gender as a cross cutting issue. Likewise, gender responsive guidelines for implementation, Measuring, Reporting and Verifications (MRVs) for NDC should be prepared as templates and harmonized for all the sectors. This will ease the national report consolidation task of the NCCC.

Finally, formulation of the Climate Change Act should be gender responsive, and participatory to ensure that all climate change vulnerabilities and risks attributed to women, men, girls and boys; PWDs; IPLC among others are identified and discussed from their respective stand point for inclusion in the Act.

Since climate change and gender issues are cross cutting in all government programmes and plans, there is the need to establish a high-level ministerial committee on NDC policy implementation under the leadership of the Office of Prime Minister. This committee shall be comprised of the following institutions namely; MoFPED, MoGLSD, MoWE, MoLG, and NPA.

c. Key Findings

Key findings from the study are presented for the three sectors at national, district and private sector.

i) Agricultural Sector

The agricultural sector is a single most important sector to the Ugandan economy contributing one-fifth of all National income employment for more than two-thirds of people living in rural areas. It employs 66% of the working population of which women constitute 80%. (UBOS 2015)

Despite this, only 20% of women have ownership of productive agricultural land.

The sector is largely private sector led, with Government left with expenditure in research, seed breeding and certification, extension services, disease control and policy regulation.

The sector is composed of crop, animal production, forestry and fisheries and the associated trade and process industries. The sector has prioritized 12 commodities along the value chain, namely cotton, coffee, tea, maize, rice, cassava, beans, fish, beef, milk, citrus and bananas. (NDP II) The crops selected due to their high potential for food security include maize, beans, cassava and bananas; while others were selected for their high contribution to export earnings include cotton, coffee, tea, fish, maize among others. Fisheries sub sector was not included in the study because it was minor in the two districts visited.

The gender analysis study from Mbale district revealed that a number of the above prioritized commodities were controlled and sold by the men. The crops selected for food security may not serve the purpose according to the survey results, which indicate that 61.8% (n=21) men, sell maize and while 32.4% (n=11) of the men sell beans. The men leave small amounts of the harvest with women for food security. The traditional cash crop coffee 58.8% (n=20) is also a preserve of the men according to the study. The unpredictable seasons experienced in the form of shortened duration of rains, lengthy dry spells and intensity of these seasons have greatly impacted on the yields generated. Subsequently, with the men having stronger power and control over agricultural resources, they tend to sell the largest proportion of the harvest leaving the women, youth and children, small amounts, which could create food insecurity. Therefore, gender responsive measures to implement the NDC should identify the changes in crop use, respond to variance in climatic seasons and ownership of productive resources to ensure that food security is not compromised.

The variation in seasons has greatly affected planting periods and impacted on agricultural productivity, compelling community members particularly women, youth, and elderly to place considerable pressure on other ecosystem and remaining water catchment resources such as forests, wetlands, swamps and fisheries as a source of livelihood

The level of private sector engagement in agriculture was investigated using the case of Karamoja Private Sector Development Centre (KPSDC), which affirmed that members of the Village Savings and Loan Associations (VSLAs) grow more rain-fed crops such as sorghum, maize, legumes and sunflower for food and sale during the wet season which comes for a short period of approximately two months. During the dry season, when the weather is not favourable for crop farming, the members engage in other micro businesses to diversify their livelihoods.

According to FAO, 12% of total population in Uganda is chronically food insecurity and the affected regions are Karamoja, Acholi and Teso region. This has been attributed to poor rainfall performance during the first rainy season in 2015 characterised by long dry spells. (IPCC, 2015) In order to adjust or cope with the changes in the declining crop yields due to climate change there has been a shift in use of traditional food crops as cash crops which is an alternative to household income.

"Key informant interviews also revealed that ***"Moroto has rangeland management and watershed restoration and maintenance through tree planting, intended to protect the water sources"***. ***"They grow fruit trees and vegetables in the gardens around their homes. The men engage in planting timber trees/wood lot under this initiative."*** The Livelihood Improvement through establishment of Drip Irrigation for cultivation of vegetables in Nakiloro Parish Settlement along River Komatheniko of Nakiloro is a gender responsive measure which has enhanced resilience to drought. This practice has improved food security and household income.

In Moroto, the gender role of taking crop produce to the market for sale is assigned to the woman at 76.6% while 6.6% (n=1) reflect that the man and woman went together to sell, and 6.6% (n=2) were boys who sold 6.6% (n=2) were men who took cassava and sorghum to the market, and lastly 3.3% (n=2) were girls who sold maize. These gender expectations of roles in Moroto are likely to create an enabling environment for the NDC implementation since the decision to market lies with the women. However, the men negotiated that whenever a woman sells something, such as firewood, she must reserve some money for the husband 's needs. Please refer to the table 9 in the annex

The interface of gender roles to climate change was investigated in agriculture and found that because women engage more in crop production than the men, they contribute to GHG emissions from the soils, while, the men who were in charge of livestock and responsible for herding cattle also contribute GHG emissions when the cow dung is left bare on the grazing fields.

Men were found to possess the overall power for household decision making, while the women would take decisions concerning the food budget and agricultural produce from their own gardens, child care and sanitation.

The different impacts of climate change to men and women revealed temporary migrations for men in search of water and grass for livestock; women fetching water at night because of heavy workload; women increasingly taking on men's roles; some men fetching water and looking for food for their families; increased stress leading to increased gender based violence and family cohesion found to be on the increase in some households.

ii) **Energy Sector**

The Uganda Demographic Health Survey (2016) indicates that 57.5: 18 proportion of men: women population access electricity, while the proportion of population with primary reliance on

clean fuels and technology is 2.1 men to 0.2 women, measured as a percentage of the population using clean fuel for cooking. This state indicates a glaring gender gap in the energy sector, as evidence of the unequal access to energy resources and yet more than half of Uganda's population is composed of women. Given the women's gender roles which include cooking, there is a likelihood of greenhouse gas emissions arising from use of unclean fuels for cooking.

In Moroto concerning energy for cooking the key informants and the focus group discussions revealed that the majority (*N*=25) of the households used the traditional three stone stoves for cooking with firewood, while (*N*=16) used the traditional three stone stove with charcoal, and only (N=1) used the ICS with firewood, while (N=5)used ICS with charcoal. Only a few households were using the improved cook stoves built and stationed in their kitchens; firewood was still the energy used for lighting in the *manyatas/huts* for lack of an alternative. Both men and women engage in tree cutting to get poles, firewood and charcoal production, a practice which reduces the carbon sinks, and therefore likely to delay the emission reduction target for Uganda

Firewood came out prominently in Mbale, as being used by the women (N=20), because they are in charge of cooking, as well as collecting firewood and charcoal. This further reflects the predominant use of biomass energy, which involves tree cutting, and contribute to reducing the carbon sinks in the long term. The other renewable energy source such as biogas, solar are not as exploited as the biomass from the findings.

Electricity, gas and solar were used in urban and peri-urban areas

Solar energy was mostly used in the mountainous areas of Mbale such as Wanale, but standards are not being adhered to so it is affecting utilization of solar energy.
Higher connectivity to the national UMEME grid in Mbale than Moroto with cases of illegal connectivity on the rise, with the attendant risks.

The study found that the Karamoja Private Sector Development Centre (KPSDC), was planning to domesticate tree planting with a target of 100 indigenous trees such as *Balanites aegyptica* per household. These are known to be good for firewood among other uses.

The key informant from the Centre estimated that trees have been totally cut for charcoal burning and other uses from a distance of 30Km around Moroto Municipality. This implies that the grounds have been left bare, and the carbon sinks have been destroyed, resulting in unchecked GHG emissions. The Centre trains VSLA members on micro businesses such as retail shops, animal drugs, selling clothes as adaptation measures and making multi-purpose charcoal and firewood energy saving stoves, which use one piece of wood as a mitigation measure. Members in Rupa Sub County, Moroto were reported to use these stoves.

The Eastern Private Sector Development Centre (EPSEDEC) in Mbale operates in ten districts within the Eastern Region. In the energy sector, the private sector partners with African Clean

Energy in Mbale City Centre to provide solar energy and energy saving cooking stoves to individuals on demand driven basis

iii) Waste Sector

The Municipal Solid Waste Composting (MSWC) for CDM was initiated in Uganda in 2005 as a project under the National Environment Management Authority (NEMA) with financial and technical support from the World Bank under the "Environment Management and Capacity Building Project-II" The implementation of the Project was led by NEMA in collaboration with selected Municipal Councils. The CDM project promotes solid waste management efficiency and allows for emissions reduction as well managing solid waste through aerobic decomposition as a means of reducing GHG emission.

The national state of the environment report for Uganda (2014) indicates that the Clean Development Mechanism (CDM) project is one major opportunity emerging from solid waste management in Uganda to develop landfill gas extractions and flaring on existing landfills.

In Moroto District the Latrine coverage was reported very Low at 10%, leaving 90% of the households without pit latrines. "*Even if the women have traditionally constructed the huts, digging pit latrines has never been part of their gender role. there is a traditional belief that if a woman uses the pit, she could become barren; while it is still feared that a pregnant mother could lose her child by falling in the pit.* (Rupa Chief)

All the participants in the focus group discussions confirmed this limitation in latrine coverage. They explained that the poles they use to construct get eaten away by termites, and it becomes risky for them to use the latrines; On garbage collection there were no official collecting points. All the communities were supposed to manage their own household and human waste.

Waste management in Mbale municipality involves solid waste disposal in a landfill, with the use of contracted private sector service providers with a charge. The garbage collection centre is located in the Industrial Division in Namatala ward of Doko. Garbage is sorted at this centre into organic and inorganic materials and recycled into liquid and solid manure for sale at affordable prices. Garbage sorting is mostly handled by women and the youth with minimal protective gear, which is a risk to their lives. Commercial waste in liquid form, from the liquor/waragi brewing village of Musoto in Bukasakya Sub County was found to be a health hazard to the environment, because the waste water is drained in Nahidiso stream

The Small and Medium Enterprise (SME) department of the Uganda Manufacturers' Association (UMA) is represented on the Private Sector Pollution Control Task Force, a partnership focusing on harmonizing the environment, water management and conservation.

Activities involve training and capacity building to member industries on how to handle resource efficiency, health safety, health products and manage waste. There is an on-going study with support from GIZ, focusing on "*Water security action and investment plan"* to identify priority

projects which can respond to water security, floods, water scarcity threats and wetlands in order to find a solution to the water security threats; targeting urban physical planning to avert floods, and examining drainage design issues in road construction; whether the design responds to smooth waste movement through the drainage channels, without obstruction; and how plastics including bottles and other solid waste can be managed. On the whole, gender and climate change are not yet harmonized in the Association but they are recognized and responded to as stand-alone issues.

iv) **Capacity Building Needs:**
these have been identified in gender and climate change at all levels, for the coordinating team and implementing Ministries, Departments, Agencies and Local Government (MDALGs) to understand the linkages between gender and climate change and the sectoral linkages. The need for sustainability in capacity building has been in built, through training of a team of ToTs and target groups for the training have been suggested.

v) **Proposed Finance Mechanism**
As recommended in the Article 9 of the Paris Agreement, the report proposes support from the developed country parties for NDC support and partnerships. Another proposal is the Uganda National Budget through the sectoral votes and compliance to the regulation which addresses gender budgeting. The study found NUSAF III in Mbale as an existing fund relevant to gender responsive implementation of NDC, which should be enhanced. The study also found the Regional Pastoral Livelihood Resilience Project under NUSAF III in Moroto District already undertaking mitigation measures such as tree planting, protection of water sources and regeneration of rangelands. Such efforts should be enhanced with gender mainstreaming.
Other on-going efforts that can be targeted for gender responsive NDC implementation include the Community Demand Driven fund (CDD), UWEP and the Youth Livelihood Programmes of the MGLSD.

Finally, a summary of the gender gaps identified from the district field studies, and literature is presented in the gender gap analysis tables 5 - 6 based on the three sectors of agriculture, energy and waste which are the focus for this study

Recommendations for gender responsive measures for NDC implementation are outlined in section 4 and summarized in tables 7 & 8 of the report, in line with the priority adaptation and mitigation measures for NDC, and informed by the identified gender gaps. A summary of the recommended gender responsive measures for NDC implementation for the three sectors, is given below

The Agricultural Sector
Priority Measure: Expanding extension services Train the male extension workers to be gender responsive.

Deliberate action to recruit and train female agricultural extension workers; Build capacity for local community systems and knowledge. Promote gender responsive producer cooperatives; Promote group formation for men, women, female and male youths to be used as entry points for extension services Develop gender responsive extension service manual for crop, livestock, and fisheries
Priority Measure: Expanding climate information and early warning systems Disseminate targeted information on climate change and gender in agriculture, Map the commonly used channels of communication in target areas; Mind the timing of information dissemination when men go back home with radios
Priority Measure: Expanding Climate Smart Agriculture and techniques for cropping Create inclusive awareness on the equitable use of resources for climate change adaptation and mitigation in climate smart Agric; Establish demonstration gardens in accessible locations
Priority Measure: Expanding small scale water infrastructure Need for alternative sources of water e.g. damming the water from the rivers during the rainy season for easy accessibility for women; Household level rain water harvesting and storage to ease women's workload Protect and manage the water catchment areas Strengthen adopt of soil and water conservation for women and male farmers
Priority Measure: Expanding value addition, post-harvest handling, storage & access to markets, including micro-finances Ensure equal participation of women and men, the female and male youth in value addition skills; promote groups formation and strengthening of existing groups for women, men and the youth; Research into better terms that micro-finances can offer in order to release the women's time of weekly repayments.
Priority Measure: Expanding rangeland management Inclusive sensitization to land owners about the importance of public and community goods and services
Priority Measure: Expanding diversification of crops and livestock Create inclusive awareness on the equitable use of resources for climate change adaptation and mitigation in climate smart Agric; Establish demonstration gardens in accessible locations
Priority Measure: Expanding research on climate resilient crops and animal breeds There is need to breed indigenous animals that can tolerate stress in terms of feeding and water resources for distribution to IPLC including women. Need to breed average sized animals that feed less, easier to handle by women and emit less GHGs. Need to encourage planting of indigenous crops (cassava and yams) mainly for domestic household consumption for food security Research should build for local indigenous crops that were initially for food production to also shoot for sale; Technology identification, development and transfer
Energy Sector
Priority Measure: Increasing efficiency in the use of biomass in the traditional energy sector

Make available affordable, user friendly and gender sensitive improved biomass technologies Promote more gender focused research in the area of efficient utilization of energy resources Capacity building for focal persons/gender champions in gender and utilization of improved biomass Develop and disseminate standards for biomass technologies Certification of biomass energy products Develop gender sensitive indicators to generate the data required for decision making Increase participatory and inclusive awareness about efficiency use of the stoves (promote house-house awareness) Engage with schools, NGOs/CSOs/private sector to support both men, women and youth to increase efficient use of biomass
Priority Measure: Sustainable energy solutions in public buildings Ensure equitable recruitment of women and men to cook in Schools / hospitals (public building); Create inclusive awareness on gender and climate change in relation to sustainable energy solutions
Priority Measure: Promotion and wider uptake of energy efficient cooking stoves or induction cookers Impart skills in making affordable efficient cooking stoves to women, boys, girls and men in rural and peri urban areas, using available local materials Build capacity to groups of female and male youth, women and PWDs in making Improved Cook Stoves (ICS) as a business; Institute a mechanism to monitor the carbon credit benefits to women Improved Cook Stoves end users to ensure fairness in the credits earned.
Priority Measure: Promotion and wider solar uptake of solar energy systems Sensitizations to men and women, boys and girls on solar energy systems,
Priority Measure: Promoting renewable energy and other energy sources Promote and support women to engage in energy service provision as a business; Promote formalization of off-grid companies Decentralization of energy services to the rural poor Provide more energy financing for men, women and youth to access these energy products The energy fund should target IPLCs to increase access and financing of energy products Capacity building for men, women and youth in operations and maintenance of solar equipment Provide subsidies for the men, women and youth groups to afford the services especially at post harvesting and production e.g Village Savings and Loan Association (VSLAs) offer opportunities for access to energy sources
Priority Measure: Ensuring the best use of hydropower by careful management of the water resources Increase inclusive and affordable connectivity to hydro power in rural areas Identify affordable alternative energy sources such wind energy Promote affordable alternative sources of energy Promote planting indigenous trees by men, women, and children including school children, female and male youth groups
Priority Measure: Climate proofing investments in electric power sector i) Create inclusive awareness of IPLCs in proper connectivity to HPP ii) Increase compliance monitoring, enforcement of the HPP usage and standards
Priority Measure: Coordination, Technical support and capacity building to mainstreaming

gender responsive measures in implementation Training and technical support to build capacity of national, district and sub county local stakeholders in gender and climate change integration for interventions in agriculture, energy and waste at national and local levels. Coordination of gender responsive measures for NDC implementation Engage in gender focused research across the sectors of agriculture, energy and waste
Waste Sector
Priority Measure: Integrated waste water treatment Strengthen and increase compliance monitoring and enforcement of the facilities from a gender perspective Increase inclusive awareness on waste water management Establish an integrated community waste water treatment systems
Priority Measure: Solid Waste Management Increase inclusive awareness on solid waste management, and waste entrepreneurship for women and youth Promote the conversion of solid waste/recycling into other useable materials such as tiles, bottles for building, decorations, briquettes, etc for the benefit of women and youth Promote the culture of sorting solid waste at household level and involve women as managers of household waste. Strengthen enforcement on the ban of polyethene bags Increase compliance monitoring and assistance of the CDM sites Identify and tap into new carbon finance opportunities to develop innovative projects
Priority Measure: Promotion of high yielding upland rice Encourage gender sensitive modern technology on rice cultivation Community participatory and inclusive sensitization on dangers child labour Support appropriate use of sustainable consumption and production technologies which respond to the needs and priorities of men, women and all youth. Strengthen the value chain (collection, production, storage and marketing) from a gender perspective Equip women, men and children with the right farming methods to preserve the soils and sustain resilience Target women and children for crop extension services Empowering women and youths to take up leadership roles in the value chain production of rice Support appropriate use of sustainable consumption and production technologies that are gender responsive to men, women and youth

Other broader recommendations to strengthen the gender responsive measures are given as follows

- Engaging in gender responsive community-based mobilization approaches
- Dissemination of gender and climate change information to create awareness
- Enhancing synergies between the public and private sector
- Promotion of gender responsive agricultural enterprise cooperatives
- Gender responsive value addition for waste management
- Initiating localized Ordinances and policies for management of household and commercial waste

- Capacity building for stakeholders at national and local levels to promote gender responsive approaches to NDC implementation
- Review climate related policies
- Promotion of Programmes to empower women
- Continuous effort to generate gender / sex disaggregated data.

Lastly conclusions are drawn underscoring the commitment of the concerned sectors and government to ensure implementation of the NDC from a gender perspective in order to achieve the expected results.

Acronyms

AF – Adaptation Fund
ASSP – Agriculture Sector Strategic Plan
ATI - Agricultural Training Institutes
CFM - Collaborative Forest Management
CCD - Climate Change Department
CDM – Clean Development Mechanism

CIF – Climate Investment Funds
COP - Conference of the Parties
CSO – Civil Society Association
CSA - Climate Smart Agriculture
ENR - Environment and Natural Resources
FAO – Food and Agriculture Organization
GCF - Green Climate Fund
GHG - Green House Gases
GoU - Government of Uganda
GPC - Global Protocol for Community

HSSP - Health Sector Strategic and Investment Plan
HLMCoN - High-level Ministerial Committee on NDC Implementation
ICT - Information and communication technology
IPLCs - Indigenous Peoples and Local Communities
INDC - Intended Nationally Determined Contributions
IUCN - International Union for Conservation of Nature
KCCA - Kampala Capital City Authority
LGs – Local Governments
M&E - Monitoring and Evaluation
MAAIF - Ministry of Agriculture, Animal Industry and Fisheries
MDA - Ministries, Departments and Agencies
MDALGs- Ministries, Departments, Agencies and Local Governments
MEMD - Ministry of Energy and Mineral Development
MoES- Ministry of Education and Sports
MoFPED - Ministry of Finance, Planning and Economic Development
MoGLSD - Ministry of Gender, Labour and Social Development
MoLG - Ministry of Local Government
MoWT - Ministry of Works and Transport
MRV - Measurement, Reporting and Verification
MUBS – Makerere University Business School
MW - Mega Watts
MWE - Ministry of Water and Environment
NEMA – National Environment Management Authority
NCCAC - National Climate Change Advisory Committee
NCCC - National Climate Change Commission
NCCP - National Climate Change Policy
NDC - Nationally Determined Contributions
NDCIP - Nationally Determined Contributions Implementation Plan
NDCPACPF - NDC Policy Advisory Committee on Planning and Financing
NDCSCC - NDC Sectoral Coordination Committee
NDP II - Second National Development Plan
NEMA _ National Environmental Management Authority
NPA - National Planning Authority
OECD – Organization for Economic Co-operation and Development
OPM - Office of the Prime Minister
PA - Paris Agreement
PPP – Public Private Partnership
REDD+ - Reducing Emissions from Deforestation and Forest Degradation and the role of conservation, sustainable management of forests and enhancement of forest carbon stocks
SDG - Sustainable Development Goals

SIWG - Sectoral Implementing Working Groups
SLM - Sustainable Land Management
SMEs- Small and Medium Enterprises
UBOS - Uganda Bureau of Statistics
UGGDS- Uganda's Green Growth Development Strategy
UMA – Uganda Manufacturers Association
UNDP - United Nations Development Program
UNFCCC - United Nations Framework Convention on Climate Change
UNMA – Uganda National Meteorology Authority
UNREA- Uganda National Renewable Energy Association
UWEAL- Uganda Women Entrepreneur Association Ltd

1 Introduction

1.1 Background

The international community agreed on the 2030 Agenda for sustainable development to build an equitable, hunger-free and sustainable world, agreed on how to support the 2030 Agenda and invest in sustainable development. The Paris Agreement on Climate Change that came into force in November 2016 provides the framework for a comprehensive global response to climate change (Global Gender & Climate Alliance, 2018). The foundation of the Paris Agreement emphasized the importance of the Intended Nationally Determined Contributions (INDCs) submitted by the UNFCCC Parties which provided a basis for negotiation for the Paris Agreement. The INDCs therefore became the Nationally Determined Contributions (NDCs) upon submitting the instrument of ratification for the Paris Agreement.

As the international community shifts its focus to the implementation of the Paris Agreement, all Climate Action will be based on the Countries' NDCs and the relevant national policy frameworks (FAO, 2018).

The Ministry of Water and Environment (MWE) is taking lead in the implementation of the NDC Support Program on behalf of the Government of Uganda, with technical support from the UNDP, Governments of Germany and Spain, and the European Union as a contribution to the NDC Partnership.

Nationally Determined Contributions (NDCs) are intended to help reduce vulnerability to climate change in NDC priority sectors as well as contribute to Greenhouse Gas (GHG) emissions reductions in forestry, wetlands, energy, transport and agriculture sectors. To this effect, Uganda is committed to a 22% GHG emissions reduction by 2030.

The NDC Support Program works to strengthen and harmonize policies, institutional frameworks, establish a national Measurement, Reporting and Verification (MRV) system to mainstream national mitigation policies and targets in the context of NDC implementation. The Support Program also aims to enhance the institutional, technical and financial feasibility of Uganda's Green Growth Development Strategy (UGGDS) and nationally appropriate mitigation actions aligned with the NDCs, along with innovative financial de-risking practices.

The NDC Support Program emphasizes gender mainstreaming in all the planned activities to ensure that men, women, girls and boys and the elderly benefit from the NDC plans and investments.

"Gender refers to the socially acquired notions of masculinity and femininity by which women and men are identified" (Momsen, 2002, p2, in Dankelman, I. 2010). It is a social stratifier, similar to other social stratifiers such as race, class, ethnicity, religion, place and age. The way in which society determines the different roles, responsibilities, opportunities and benefits to males and females varying from place to place and over time, creates gender differences which are not biologically determined like sex, but are part of the cultures, values and practices of a given

society. Therefore, the process of assessing the implications of the NDCs for women and men; girls and boys at all levels will make their concerns and experiences an integral dimension of the implementation, measuring, reporting and verification (MRV) in all the selected priority NDC sectors, so that they all benefit equally and inequality is not perpetuated.

1.2 Objective of the Assignment

The purpose of the assignment was to conduct analysis of the gender responsiveness of measures / strategies for NDC implementation in the selected sectors. The findings of the gender analysis and the resultant climate action plan will inform implementation of the project to completion in a gender responsive manner. The specific objectives include the following:

a) To establish the level of gender responsiveness of the policies, legal frameworks, programs and institutional arrangements related to coordination of all the climate change actions, and the systems in place for gender mainstreaming.
b) To assess the gaps and bottlenecks in mainstreaming gender in the policies, plans and programs related to NDC implementation
c) To establish the financing and other capacity levels (human, time, information and physical resources) for gender responsive NDC implementation
d) To assess gender responsive measures in the implementation and plans, identify gender gaps and propose measures to mainstream gender in the key NDC sectors.
e) To make recommendations for implementation of gender responsive measures of the NDCs from the selected sectors

1.3 Methodology

The methodology was as follows:

a) A comprehensive desk review of documents such as policies, legal frameworks, including the climate change policy and costed implementation strategy, Uganda Green Growth Development Strategy, draft climate change bill program documents including the NDC partnership plan, NDC implementation plan, climate finance strategy and institutional arrangements related to coordination of all the climate change actions to establish their gender responsiveness and the systems in place for gender mainstreaming, assess the gaps and bottlenecks in mainstreaming gender, establish the financing and capacity for gender responsive NDC.
b) Conducted multi-stakeholder engagements and consultations at national and district level in Moroto and Mbale. The two districts were selected because of their vulnerability to extreme weather conditions and impacts. A list of stakeholders to engage is included in the annex.
c) An evidence - based assessment of the gender-related activities and processes when responding to climate change (gender roles and responsibilities, time use and other resource use including budgeting, management and control, gender responsiveness of the priority sector policies, benefits sharing, decision making and power relations, gender disaggregated data identification of capacity gaps); targeted respondents included the

national level staff from the NDC priority sectors, Moroto and Mbale District Local Government technical staff and political representatives, from similar sectors; Sub County staff from 2 Sub Counties per district and one Municipality. To take care of the urban, rural, peri-urban, highland and lowland areas in the selection.

d) Conducted Key Informant Interviews at national and district level.
e) Conducted Focus Group Discussions with separate groups for women, men, girls and boys ensuring that People living with disabilities and the Older Persons were included; at district level (Mbale and Moroto districts were selected due to their vulnerability to extreme weather conditions in the country, such as landslides and floods during the rainy season, excessive heat during prolonged hot seasons, droughts which affect livelihoods. During the focus group discussions, gender analysis tools were also be used including but not limited to Gender Analysis Matrix, the triple role framework, activity profiles, access and control framework, etc. Results from focused group discussions (FGD) are annexed to the report
f) Assessment of institutional capacity gaps and propose strategies to strengthen capacity to mainstream gender in NDC implementation of the priority gaps
g) Development of gender action plan for NDC implementation derived from the gender gaps established from policies, programs and capacity needs assessment

1.3.1 Scope

The assignment was undertaken at both national and district level. At the national level, the following sectors were engaged:

i. Energy
ii. Agriculture and waste
iii. Water and environment
iv. Finance and economic development
v. Gender, Labor and Social Development
vi. National Planning Authority
vii. Private Sector Companies (the Uganda Manufacturers' Association (UMA) and Uganda National Renewable Energy Association (UNREEA)
viii. Private Sector Foundation
ix. Uganda National Meteorology Authority (UNMA)
x. National Environment Management Authority (NEMA)

At the district level, the assignment was carried out in Moroto and Mbale districts. As noted in the earlier sections, Moroto and Mbale districts provided the necessary lived experiences in extreme weather conditions given the districts' vulnerability to climate change and variability. Moroto district represented the cattle corridor regions, while Mbale district represented the highland regions and crop farmers.

1.3.1 Specific Tasks

The specific tasks of the assignment were as outlined below:

a) Undertake a situation analysis of the gender issues in the priority sectors and agencies
b) Assess the policy and legal frameworks of the sectors and agencies to determine the extent to which gender is mainstreamed for NDC implementation.
c) Establish the extent to which national policies, plans or commitments on gender equality and women's empowerment are implemented in relation to climate change impacts in the scope area.
d) Assess the integration of gender into national climate change policy, Environment Bill, National Climate Change Communication Strategy, NDC implementation plan and other planning instruments relevant to NDC implementation.
e) Assess institutional arrangements especially coordination mechanisms for climate change and gender and examine if there are systems in place to integrate these into NDC implementation frameworks. Recommend how to strengthen the institutional arrangements for gender responsive coordination mechanisms.
f) Conduct capacity (financial, human and other) needs assessment and propose the focus of capacity building programs for gender-responsive NDC implementation
g) Identify gender gaps in the implementation plan of NDC in the **3 sectors and agencies** specified in the scope of assignment and propose strategies to address the gaps

h) Document the common gender stereotypes related to gender and climate change including differences relating to rights, resources distribution/allocation, participation, and gender-related values and customs, particularly highlighting how they affect climate change adaptation and mitigation and provide recommendations for overcoming these beliefs that this project can help address.

i) Highlight the key roles definitions for different stakeholders in the sectors and agencies mentioned in the assignment scope.

ii) Identify the challenges and opportunities for women, girls and grass root women's organizations to participate in decision making, planning and coordination of NDC implementation processes and propose strategies to enhance women's, girls and women organizations participation at all levels.

iii) Document the gender relations regarding decision making on access to and control over resources, benefit sharing at different stages of the NDC implementation, benefit sharing from opportunities to access program/project services and the barriers

iv) Identify and recommend appropriate gender responsive indicators, targets and activities as well as appropriate gender budgeting framework in the implementation of the NDCs.
v) Recommend appropriate reporting mechanisms and tracking gender related results packaged in a manner that shows NDC implementation.
vi) Prepare a comprehensive Gender Analysis report including a Gender Action Plan for the project detailing concrete actions or recommendations for the project to consider delivering
vii) Gender responsive NDC implementation in Uganda.

1.3.2 Research Instruments

In line with the objectives and the specific tasks of the assignment above, the following instruments/tools were developed and used to collect data needed to analyse the gender responsiveness of the measures for NDC implementation. These are presented in the matrix below:

Table 1 The Methodological tools, their scope and stakeholders to engage

Methodological tools (A)	Stakeholders to engage (B)	Description (C)
1. Document review extraction forms	National and district level coordination, and Private Sector	To be used to record data on variables of interest from the document reviews of the selected sectors at national and district level (e.g. the sector policies, legal frameworks, measures for NDC implementation from the respective priority sectors, NDC documents for all the priority sectors, Private Sector policy documents, SDGs 5 & 13 for Gender equality and Climate Action, etc.)
2. In-depth Key Informant Interview guide	National and district level coordination; responsible officers in priority sectors and Private Sector	Get key information on policy, legal frameworks, & institutions concerning gender responsiveness of measures for NDP implementation; gender gap identification, capacity needs assessment (technical and financial capacity needs)
3. Multi-Stakeholder Consultative Workshop	National and district level coordination, representatives from priority sectors and Private Sector	To highlight the key roles definitions for different stakeholders in the sectors and agencies mentioned in the assignment scope. Undertake a situation analysis of the gender issues in the priority sectors and agencies; capacity needs assessment for gender and climate change mainstreaming
4. Focus group discussions and gender analysis tools (GAM, Triple Role Framework, decision making tools) at least 4 FGDs per district x 2= 8FGDs	Selected women, men, girls and boys in Moroto and Mbale	To capture the situation analysis of gender relations in the communities and households (expectations of roles, entitlements, decision making, access and control over resources, social norms and stereotypes related to gender and climate change, challenges and opportunities for women, girls, boys, collect gender disaggregated data to be used in the social economic indicators to measure

		progress in gender equality etc
5. Questionnaires per district = 30 x 2 = 60) (National level indepth Key Informant Interviews,	Selected women, men, girls and boys in Moroto and Mbale districts (sampling frame to be obtained from the district environment office, and the Community Development office) National level stakeholders	To capture the situation analysis of gender relations in the communities and households (expectations of roles, entitlements, decision making, access and control over resources, and gender disaggregated data needed for evaluation etc
6. Observation tool and photos	District level	Observe gender and social cultural relations in communities

1.4 Data Management, Analysis and Research Conduct

A content analysis of the data collected from desk review of documents was undertaken, and all documents reviewed were appropriately cited in the text and references. All the narrative data from the Key informant (KI) interviews, observations and focus group discussions were typed in MS word, organized and summarized to obtain the emerging themes which informed the gender analysis. Quantitative data from the survey assessment questionnaire was entered in an excel template for processing in order to obtain descriptive analysis.

The gender analysis study was conducted in line with the principles of ethical research conduct. All data collected was organized and stored securely. Participants' identities were not disclosed and their consent was obtained after the purpose and objective of the gender analysis was clearly explained to them.

1.5 Limitations to the Study

The field work at national and district level went on smoothly, though the timing found the district officials engaged in the annual district planning and budgeting processes, which made securing appointments for interviews difficult. Most interviews were therefore conducted after the office hours. Because of the busy schedule of the officials, some questionnaires were shared on line, and a small percentage was received back. The second week of the field coincided with the Easter holiday festivities, so the team had to be conscious of the participants' time.

1.6 Arrangement of the Report

The report is organized into five sections beginning with the introduction, which gives the background information and justification for gender mainstreaming in the implementation of the Nationally Determined Contributions in the context of the Paris Agreement and the NDC Support Program, the purpose and objectives of the analysis for gender responsive measures to implement the NDCs, the methodology, the terms of reference and the limitations to the study.

The second section presents the country context for Uganda for gender and climate change action; a review of the legal, policy and institutional frameworks on gender and climate change in line with the sectors of agriculture, energy and waste which were prioritized for this study is presented along with the identified policy and coordination gaps.

Section three presents a gender analysis and climate vulnerability for the sectors of agriculture, energy and waste; with illustrations from the private sector at national and district level as well as Moroto and Mbale district level in-depth and evidence – based analysis of women's and men's roles and responsibilities, their access to and control of resources, their rights, benefits and decision making in the agriculture, energy and waste sectors, and how these change due to the changes in climate and the strategies they utilize to cope with the changes in climate change.

Section four presents the identified gender responsive measures to implement the NDCs and the proposed Gender Action Plan.

Finally, section five highlights suggestions for gender and climate action financing, conclusions and recommendations.

2 Country Context

2.1 Introduction

Government of the Republic of Uganda through Articles 32 and Article 33 of Constitution 1995 acknowledges the importance of inclusion and extending equal opportunities for men, women, boys and girls, as a human right and a means for sustainable development. For this reason, government has ratified and customized the international legal and policy frameworks for gender and climate change. This is evidenced from the gender responsive legal and policy environment aimed at reducing gender inequalities and vulnerabilities across different social, political and economic spheres in Uganda. Some of the instruments at the international level include the Convention on the Elimination of All forms of Discrimination against Women (CEDAW), the Beijing Platform of Action (BPfA), the Global Agenda 2030 Sustainable Development Goals (SDGs) and the Paris Agreement.

At national level, the Uganda National Gender Policy 2007, provides policy direction in achieving gender equality and women's empowerment through mainstreaming gender in sectoral investment plans, programmes and projects. The Ministry of Gender, labor and Social Development as a lead Ministry has fast tracked the implementation of this policy through various programmes and projects on social protection such as the Uganda Women Entrepreneurship Programme (UWEP), the Youth Livelihoods Programme (YLP) and Social Assistance Grant for Empowerment (SAGE), among others. (MGLSD, 2018). While these policies and programmes have expanded opportunities to attain gender equity and equality, gender biases still remain in the achievement of sustainable and equitable Climate Change adaptation and mitigation measures.

Globally the gender gaps in relation to climate change are associated with poverty, access to and availability of clean water, food, literacy, and land, among others. These gender gaps are reflected in crop failure, fuel shortage, water scarcity, natural disasters and diseases. (UN Women 2015)

In the context of Uganda, women have experienced increased agricultural work and household food production; they constitute 84% of agricultural labor force, but own only 27% of registered land (NPA, 2013).

According to UBOS (2017) statistics, Women spent 30 hours a week on unpaid domestic and care work, more than twice the amount of time spent by men (12 hours a week). Unpaid care work includes domestic work (cooking, cleaning, washing clothes, and water and fuel collection) and care for household members (including children, older persons, persons with disabilities, and able-bodied adults). The bulk of this work is done by women, and its burden is worse for poor women who do not have access to time/labor-saving technologies. Collecting firewood, fetching water and caring for the sick is a routine activity. The increased workload due to collection of fire wood in addition to the other productive roles; women have to move long distances in search

of water and sharing of water sources with animals, increased disease epidemic due to natural disasters that had increased pressure on the women's caring role among others. This condition is presented in the table below:

Table 2:Workload among household members

Category	Collecting Firewood %	Fetching Water %	Caring for the Sick %
Women	44	37	78
Girls	26	26	02
Boys	18	22	01
Men	12	15	09
No one			10

Source: Extracted from UBOS report 2017

Further, Uganda being a patriarchal society experiences gender inequality perpetuated by many drivers namely; economic, political, environmental, religious, social and cultural practices. Examples of these inequalities are the glaring differences in asset ownership, employment opportunities for women and men, and the high prevalence of Gender - Based Violence (GBV) among women.

These gender inequalities are mirrored in the three priority sectors of the NDC phrase 1 namely Energy, Agriculture, Waste.

2.2 Energy Sector

Uganda's current energy balance comprises biomass, 88.9% (firewood 78.6 %, charcoal 5.6 % and agricultural residues 4.7%), petroleum products 9.7%, and electricity at only 1.4 percent of the total national energy balance (MEMD 2015). This puts Biomass as the country's largest contributor to energy balance. Most of the fuel wood is used for cooking, utilizing the highly inefficient three stone cook stoves in the rural areas where most of the population lives. Women are producers and consumers of energy in both urban and rural areas. They have been ascribed with the responsibility of producing energy mainly through collecting biomass-based fuels and for consuming energy in their household activities, microenterprises and agriculture. The high dependence on biomass for household energy has been noted to contribute to environmental degradation and climate change, which increases air pollution, deforestation, land degradation and desertification.).

The off-grid clean energy solutions and hydro power transmissions offer the potential to bring reliable energy to the most in need and deprived, with limited adverse impact on the environment (African Development Bank Group, 2012). However, this clean energy has various limitations associated with accessibility, availability and affordable particularly by the vulnerable men, women, youth and PWDs who are often affected by climate change impacts.

2.3 Agriculture

Over the years, the agricultural sector has been known to be the main source of livelihood in Uganda, accounting for about 22% of the national GDP. It occupies 43.6% of the largest proportion of the land cover. It is the second value share contributor of Uganda's economy at 24,322billion Uganda shillings. (Statistical abstract UBOS 2019). The 2016/17 Uganda National Household Survey revealed that the highest percentage of the working population (65%) was engaged in Agriculture, forestry and fishing industry with the proportion being higher for females (71%) than males (59%). However, 31% of youth population was engaged in purely subsistence agriculture production.

The sector is highly vulnerable to exogenous factors, including low prices and climate change. These factors present gender gaps manifested through limited access to safe water, unequal division of labour, inequitable decision-making, low ownership of and benefit from productive resources and services by female farmers has increased their vulnerabilities and risk levels to respond to climate change impacts. It is estimated that women own only about 4%of rural land. (Acosta *et al.*, 2015).

It is evident that impacts of climate change and deteriorating natural capital are being driven by falling water conservation resources from forests and wetland coverage as a percentage of the total land area. For instance, forests and wetlands continue to disappear at alarming rate, mainly because of their direct consumption use value. Forest cover declined from 4.9 million ha in 1990 to 1.83 million ha in 2015, a reduction of 3.05 million ha in just 25 years. Wetland resources, particularly in the urban and peri-urban areas have declined considerably from 15.6%of land cover in 1994 to about 8%of land cover by 2010 (UNDP and NEMA 2017). The impacts of climate change have also plagued Uganda in the form of intense and more frequent prolonged droughts, torrential and poorly distributed rainfall and a rise in temperatures. (Uganda Green growth Development Strategy 2017). This has compelled women, children and youth to move long distances, sometimes in the night, in search of fertile grounds to grow food crops, safe water sources and pastures to graze their nights. As a result of deforestation in Uganda, the average distance typically walked by women and children in collecting firewood increased between 1992 and 2000 from 0.06 km to 0.9 km (UN DESA, 2010)

2.4 Waste Sector

The National state of the environment report 2016/2017, confirms that the status of waste in Uganda is characterized with increasing levels of pollution and the country is faced with new and emerging environmental challenges from e-waste, unsound use of chemicals, oil and gas development and the impacts of climate change. The National Water and Sewerage Corporation (NWSC) is responsible for the treatment and management of waste water and it has 13 wastewater treatment plants established across the country. On average the effluent plants receive about 3,700 cubic meters of wastewater per day with an outflow of about 1,370 cubic meters per day (NEMA, 2016).

Particularly on solid waste management, out of the 13 municipalities in Uganda, only 8 have solid waste treatment plants with a capacity of approximately 70 tonnes per plant, totalling 560 tonnes per day. (NEMA 2016/2017),

Solid waste collection is relegated to the respective local government authorities, through the decentralized system of government in partnership with private sector. Majority of the solid waste 74% collected in Kampala city is organic consisting of vegetable matter, other waste include glass 1%, metal 3%, plastics 2%, saw dust 2%, street debris 5%, paper 5% and tree cuttings 8%. (NEMA 2016/2017). However, management of waste continues to present immerse challenges to the local governments which range from limited waste collection skips, poor attitude of populations to utilize waste collection services, disposal of waste into drainage channels and agricultural plantation. These challenges have greatly impacted on water conservation system and agricultural sector, whose main beneficiaries are the women, youth, elderly and Persons With Disability (PWD).

Emissions from the waste sector occur as a result of human activities and the natural biological breakdown of organic material and commonly comprise Methane (CH4), Nitrous oxide (NO2) and Carbon dioxide (CO2).

By 2017, only 43 per cent of the faecal waste generated daily in Kampala is currently emptied from the pit latrines and safely managed (MWE, 2017).

It is further, reported that Kiteezi landfill in Wakiso has been filled and KCCA plans to open up an alternative landfill site at Ddundu in Mukono district under a PPP arrangement in 2019 (KCCA, Undated). The lack of reliable funding to conduct health care waste collection, transportation and appropriate treatment and final disposal in order to solve the prevailing solid waste management challenge, is the implementation of the Kampala Integrated Solid Waste Management (ISWM) plan, a Public Private Partnership (PPP) project that emphasizes commercialization of solid waste management through the private sector. The ISWM project is being implemented in two phases. Phase 1 which will streamline collection and transportation of municipal solid waste and Phase 2 which will ensure treatment and final disposal of the municipal solid waste. Within Kampala, PPPs are operational with six of the seven zones being managed by private waste collectors.

Through the PPP, the Ministry of Health engaged Services of Green Label Limited to collect medical waste from hospitals, Health Center 111 and Health Center IV. Despite this initiative there are still glaring challenges in medical waste management ranging from poor waste segregation practices, unreliable and untimely funding, inappropriate infrastructure at lower levels, inappropriate treatment facilities, to unsafe and unhealthy final disposal facilities. This waste is highly hazardous to both human life and environment thus requires strengthening capacities in waste management so as not to adversely impact on climate and human population.

Additionally, the Bill and Melinda Gates Foundation through a private sector led service delivery model, is working with Kampala Capital City Authority (KCCA) to improve faecal sludge

management within the urban poor areas of the city through the Kampala Faecal Sludge Management (KFSM) Project. The model utilizes the mobile sludge transfer tanks as cesspool emptiers that are being piloted in 5 parishes of Kampala namely; Bwaise II, Kanyanya, Kibuye I, Mutungo and Nateete.

Privatization of garbage collection, where a household in the urban is required to pay Ug,Sh 30,000 per month is not affordable to urban poor women and men. As a result, the women who are the managers of household waste resort to poor waste management methods, such as illegal dumping or burning of dangerous and hazardous waste including plastics and highly flammable containers, leading to air pollution and predisposition of the household to diseases. It is also a common practice for the women to leave the waste to decompose, which results into other emissions and release of big volumes of the greenhouse gases into the atmosphere, which contributes to global warming. Gender disaggregated data on waste disposal is not readily available. This is an identified capacity gap which is included in the gender action plan for NDC implementation in the last section of this report.

2.5 The Policy Environment

2.5.1 Uganda National Climate Change Policy (NCCP) (2015)

The goal of the NCCP is to ensure a harmonized and coordinated approach towards a climate-resilient and low-carbon development path for sustainable development in Uganda. The overarching objective of the policy is to ensure that all stakeholders address climate change impacts and their causes through appropriate measures while promoting sustainable development and a green economy. To achieve this overarching objective, the policy builds on the following specific objectives:

1. To identify and promote common policy priorities to address climate change in Uganda.
2. To identify and promote adaptation policy responses for Uganda.
3. To identify and promote mitigation policy responses for Uganda.
4. To identify and promote monitoring, detection, attribution and prediction policy responses for Uganda.
5. To support the integration of climate change issues into planning, decision making and investments in all sectors and trans-sectoral themes through appropriate institutional arrangements and legal framework.
6. To facilitate the mobilization of financial resources to address climate change in Uganda.

The NCCP prioritizes concerns of adaptation, mitigation, research and observation. In the common policy priorities, common priority No.5 of the NCCP provides for mainstreaming gender issues in climate change adaptation and mitigation approaches in order to reduce the

vulnerability of women and children to the impacts of climate change and to recognize the crucial role they play in climate change adaptation and mitigation.

The NCCP further provides guidelines for climate change adaptation strategies for agriculture and livestock, land use and land use change (LULUC) to manage GHG sources and sinks. In the energy sector the NCCP provides for the vulnerable groups to get special attention to enhance their resilience to climate change; and for energy utilization to promote conservation and efficient utilization of energy to reduce GHG emissions at consumer levels, including industries, households, commercial and institutional buildings. On waste management the NCCP provides guidelines to promote sustainable use of solid and liquid wastes for energy generation and other uses, such as fertilizers, after sorting. However, the policy does not provide a similar guide to the Gender, Labour and Social Development sector, yet the sector has a crucial role to play in implementing NDC from a gender perspective.

The Ministry of Local Government is assigned other key coordination roles, including giving guidance to districts to implement the policy priorities and to include a climate change budget in their development plan and budget. However, climate change coordination at the district level is not specifically spelt out. The NCCP does not commit on how climate change and gender should be coordinated. coordinated. there should be a structure a climate change officer at Local Government to coordinate and promote climate change across sectors. Ensure harmonization of duties for wetland officer, natural resource officer, environment officer, forest officer, meteorological officer and, gender officer to include duties ascribed to climate change and gender.

2.5.2 The Uganda Gender Policy (2007)

The Uganda Gender Policy (UGP) provides a clear framework for identification, implementation and coordination of interventions designed to achieve gender equality and women's empowerment in Uganda. The policy requires sector ministries to mainstream gender into sector-specific strategies and activities, build capacity, monitor and evaluate and commit resources for implementing the policy priority actions, among others.

The role of the Ministry of Gender, Labour and Social Development (MGLSD) under this policy is to coordinate the Gender Mainstreaming function at the different levels, provide technical support to sectors, local governments, civil society and private sector entities, set standards, develop guidelines and monitor their progress in implementation. Further, the MGLSD provides support to focal points, such as sector gender working groups and local governments for improving their effectiveness and coordinate the monitoring and evaluation of the policy and the integration of gender responsive measures in the country.

The inclusion of climate change in the Uganda Gender Policy (UGP) is implied in the sectoral roles and responsibilities, though not specifically spelt out. The UGP aligned to climate change in all the priority action areas. The on-going review of the UGP should include climate change in all the four priority areas of the policy, namely gender and livelihoods, gender and rights, gender

and governance and gender and macro-economic management because climate change is relevant to all of them.

2.5.3 Agricultural Extension Services Policy (2013)

Expanding extension services is one of the priority adaptations actions in the NDCs. Therefore, it is crucial that the Agricultural Extension Services Policy is in position to support the gender responsive measures that will be put in place to expand extension services. This policy provides for gender mainstreaming in the provision of extension services, and provides for the identification of gender-based constraints, needs and opportunities to be addressed in order to effectively realize the full potential of both women and men. The policy further provides that the principles of gender equity and equality will guide the selection and targeting of the beneficiaries as highlighted below.

Agric extension services staff have taken the lead in climate change mitigation and adaptation

1. Integrating climate change and environmental management into extension services through incorporating appropriate content for adaptation and mitigation.

2. Targeting HIV/AIDs affected persons and households to ensure they benefit from agricultural extension and other services.

3. Mainstreaming and targeting gender, women, youth and vulnerable groups to enhance their benefits from and contribution to the agricultural sector and the general economy.

2.5.4 The National Environment Management Policy (1994)

One of the key principles of the National Environmental Management Policy states that "Effective involvement of women and youth in natural resource policy formulation, planning, decision making, management and program implementation is essential and should be encouraged". The policy caters for mainstreaming of gender concerns in environmental policy planning, decision making and implementation at all levels to ensure sustainable social economic development.

2.5.5 The National Agriculture Policy (NAP) 2013

Uganda's National Agriculture Policy (NAP) was been formulated in line with the Constitution of the Republic of Uganda. Objective XI (ii) of the Constitution provides that the state shall "stimulate agricultural, industrial, technological and scientific development by adopting appropriate policies and enactment of enabling legislation."

Objective XXII (a) provides that the state shall "take appropriate steps to encourage people to grow and store adequate food." The National Agriculture Policy is aimed at translating these high-level national obligations into policies and strategies to enable their achievement.

The policy shall guide all agriculture and agriculture related sub-sector plans, policy frameworks and strategies existing and those to be formulated in future. In addition to its constitutional

obligations, the Government has a national vision aimed at achieving Prosperity For All (PFA). Agricultural development is a central strategy for achieving this Prosperity for All vision.

The policy is derived from the need to achieve the national development objectives of increasing household incomes, food and nutrition security and employment as stipulated by the National Development Plan (NDP) in which agriculture is identified as one of the primary drivers of growth in the economy. In this respect, the policy recognizes gender because food and nutrition security are gender issues.

2.5.6 National Energy Policy (2002)

The National Energy Policy provides the overall policy framework for the Energy Sector, and recognizes the importance of gender. The Policy sets out Government's vision, strategic goals, principles, objectives and targets for promoting and implementing renewable energy investments in Uganda. The Policy Framework provides a basis for the formulation of planning, implementation and monitoring of renewable energy programmes, as well as projects that respond to the needs and priorities of the population at various levels of the economy. The creation of renewable energy is central to the implementation of the National Energy Policy 2002 and the attainment of the sector goals and objectives. Another relevant policy is the renewable energy policy.

In accordance with the Uganda Gender Policy, the energy sector developed the first gender strategy for the period 2003 – 2008, which was reviewed for the period 2010 – 2015. In collaboration with the UBOS, the energy sector endeavoured to work on gender disaggregated data (GDD) in the sector in 2012. This data requires updating.

2.6 Legislative Framework

2.6.1 The Constitution of the Republic of Uganda, 1995

The 1995 Uganda Constitution provides the overarching legal and regulatory framework for gender and equity planning and budgeting and for sustainable development and public awareness for effective management of natural resources. Art 32 (1) of the 1995 Constitution of the Republic of Uganda provides that the State shall take affirmative action in favour of groups marginalized on the basis of gender, age, disability or any other reason created by history, tradition or custom, for the purpose of redressing imbalances which exist against them. Article 39, the Constitution guarantees the right of every Ugandan to a clean and healthy environment.

2.6.2 The Local Government Act, 1997, Cap 423

The Local Government Act specifies functions and services for central government, district councils, urban councils and those to be devolved by the district council to lower local government councils. Among the Objectives of the Act as stipulated in Section 2 (c) is the need to establish a democratic, political and gender-sensitive administrative setup in local governments. This is demonstrated through Section 10 of the Act seeks to address issues of gender equity by increased women representation in mandatory quota system of one third of

district councils, giving a total of two thirds representation of female youth and female PWDs in local councils at all levels.

Participation of vulnerable persons such as women, female youth and female PWDs in political and high decision-making activities provides an opportunity for them advocate and lobby for inclusion of issues pertaining to management of Environment and natural resources at grassroots, local governments and national levels. It also enables them to get timely information on existing economic empowerment programmes, better farming technologies, and thus access to available resources. Gender mainstreaming is part of the minimum standards and performance measures under the annual national local government assessment. Funding to local governments is tagged to a set of criteria, including gender. During the district technical planning meetings, all departments inclusive of natural resources district community development, which includes the office for gender, the youth, probation, People Living with Disabilities, labour and Older Persons are able to amicably discuss issues pertaining to climate change and their integrating into existing community programmes targeting persons at the grass root levels. This structure is an opportunity for supporting the implementation of gender responsive measures in the implementation of the NDCs in the districts. It is anticipated that through implementation of the NCCP, the focal point persons in-charge of coordinating and promoting change matters at all levels of the district shall be represented in the technical district committees and subsequently collaborate with District departments in addressing these issues.

2.6.3 Equal Opportunities Commission Act, 2007

This Act establishes the Equal Opportunities Commission giving effect to the State's constitutional mandate to eliminate discrimination and inequalities against any individual or group of persons on the ground of sex, age, race, colour, ethnic origin, tribe, birth, creed or religion, health status, social or economic standing, political opinion or disability, and take affirmative action in favour of groups marginalized on the basis of gender, age, disability or any other reason created by history, tradition or custom for the purpose of redressing imbalances which exist against them; and to provide for other related matters.

This implies that in all programmes and plans being implemented within the communities at all levels such as programmes addressing climate change and environment protection, social inclusion, financial or political or technological enhancement among others shall adhere to the principles spelt out in the mandate. As a means of verification, the Public Finance and Management Act, 2015 (PFMA) mandates the Equal Opportunities Commission (EOC) to issue a Gender and Equity Certificate to all Ministries, Agencies and Local Government (MALGs). The Commission also developed tools and training materials to implement compliance with gender and equity certificate. Among the tools include; the Management and implementation schedule, assessment tools and monitoring tools.

There has been a steady increase in the trend of vote compliance for Ministry of Water and Environment was at 59%, 51% and 74% for FY 2016/2017, FY 2017/2018 and FY 2018/2019

respectively. While the Ministry of Agriculture, Animal Industry and Fisheries had a trend of vote compliance of 49%, 70% and 79.3% for FY 2016/2017, FY 2017/2018 and FY 2018/2019 respectively. This increased change in the trend of vote compliance was attributed to the increased capacity building, change in attitude and development of guiding tools on gender and equity budgeting. However, the Ministry of Energy and Mineral Development had a trend of vote compliance of 52%, 55% and 51% for FY 2016/2017, FY 2017/2018 and FY 2018/2019 respectively. (EOC, 2018)

From the assessment of the trend of vote compliance, interventions targeting vulnerable groups that are mostly affected by the drivers of climate change particularly in Ministry of Energy and Mineral Development need to be strengthened if NCD are to be achieved equitably and sustainably.

2.6.4 The Land Act, 1998

This Act provides for the tenure, ownership and management of land; amends and consolidates the law relating to tenure, ownership and management of land; and to provide for other related or incidental matters. Section 5 (1)(g) among the Functions of committee on application for certificate of customary ownership is to safeguard the interests and rights in the land which is the subject of the application of women, absent persons, minors and persons with or under a disability;

Section (15) (1) on Communal land associations that may be formed by any group of persons in accordance with this Act for any purpose connected with communal ownership and management of land, whether under customary law or otherwise.

Further Section (23) (3) on Establishment of areas of common land use in communally owned land mentions the common land use as grazing and watering livestock, hunting, gathering of wood fuel and building materials; gathering of honey and other forest resources for food and medicinal purposes; such other purposes as may be traditional among the community using the land communally.

The Act further bids the extent to which the communal land could be used for common land use with the focus of protecting the land for advance degradation attributed to such activities. It also makes cross reference to other laws that seek to protect the environment and thus present advance climate change impacts. However, the Act does not provide affirmative action in access and ownership of land particularly women, youth and PWDs thus placing them in a fragile state in utilization of available land. This subsequently compels them to continuously utilize the same small sections of available land resulting in exhaustion soil nutrients thus poor yields and subsequently food shortage

2.6.5 The National Environment Act, 2019

This Act provides for sustainable management of the environment. It further establishes the National Environment Management Authority that is mandated to coordinating, monitoring and

supervisory body for that purpose. It's principles are enshrined on environmental protection, and preservation for all Ugandan citizens.

Other legal instruments that are relevant to climate change are the Domestic Violence Act**,** draft National Climate Change Bill, The Uganda Wildlife Act, Cap 200, 2000, The Uganda National Roads Authority Act, 2006, Physical Planning Act 2010, The Water Act Cap, 152, 1997, The National Forestry and Tree Planting Act, 2003, The National Environment (Wetlands, River banks and Lakeshores Management) Regulations, 2000, The National Environment (Waste Management) Regulations, 1999, and National Environment (Standards for Discharge of Effluent into Water or on Land) Regulations, 1999

2.7 Regulatory Instruments

2.7.1 The National Development Plan 2016 -2030

The National Development Plan (NDP II) is the overall national planning framework. The theme of the NDP II recognizes inclusiveness in its statement *"Strengthening Uganda's Competitiveness for sustainable Wealth Creation, Employment and Inclusive growth".* The NDP II further emphasizes inclusiveness in the growth process, labour and social development, decentralized service delivery, inequality and dependency. The framework identifies the importance of gender mainstreaming in all interventions including policy formulation and planning and guides public actions to eradicate poverty. The framework recognizes that mainstreaming climate change adaptation and mitigation; and achieving gender equality and empowering all women and girls as some of the international, regional, and national development obligations.

The policy acknowledges gender issues; negative attitudes; mind sets; cultural practices and perception among several biding constraints to development that need to be addressed to be able to achieve sustainable and equitable development. The Social Development Sector contributes to achievement of the NDP priority through is mobilizing and empowering communities to harness their potential, while protecting the rights of vulnerable population groups.

Particularly for the agriculture sector, focus is on implementing the single spine extension system; technology adaptation at the farm level; increasing access to and effective use of critical farm inputs; promoting sustainable land use and soil management; increasing access to agricultural finance with specific options for women farmers; and strengthening agricultural institutions for effective coordination and service delivery. These will contribute to addressing the climate change impacts associated with land degradation, limited financial capacity accorded to female farmers and access to better and adaptive farming technologies among others.

In order to address the unavailability and inaccessibility of cleaner energy to all vulnerable groups such as women, youth and PWD, it is anticipated that energy infrastructure will be

boosted to increase abundant renewable energy sources including hydropower and geothermal; expansion
of the national electricity power grid network; and promoting energy efficiency and use of alternative sources of energy.

2.7.2 Uganda Green Growth Development Strategy (UGGDS 2017/18 –2029/30)

The Uganda Green Growth Development Strategy links issues of inclusiveness with climate change issues in its objectives, focus and outcomes. The strategy is intended to ensure that the goals of the Uganda Vision 2040 and the NDPII 2015/16-2019/20 are attained sustainably. In Uganda's context, green growth is defined as an inclusive low emissions economic growth process that emphasizes effective and efficient use of the country's natural, human, and physical capital while ensuring that natural assets continue to provide for present and future generations.

Empirical macroeconomic sector evidence through modeling indicates that implementation of the green growth interventions can enhance national GDP by 10 percent in addition to 4 million green jobs and reduce greenhouse gas emissions by 28 percent relative to the usual growth pathways.

Therefore, the UGGDS gives guidance on priorities, strategies and governance frameworks for implementing the green growth principles within the existing development frameworks towards the sustainable development of the country.

The specific objectives of the UGGDS are as follows:

i. Accelerate economic growth and raise per capita income through targeted investments in priority sectors with the highest green growth multiplier effects;
ii. Achieve inclusive economic growth along with poverty reduction, improved human welfare and employment creation;
iii. Ensure that the social and economic transition is achieved through a low carbon development pathway that safeguards the integrity of the environment and natural resources.

The implementation of the UGGDS is expected to generate eight development outcomes by 2030 namely: Income and livelihoods enhancement; Decent green jobs; Climate change mitigation and adaptation; Environment and natural resources management; Food and nutrition security; Resource use efficiency; Social inclusiveness; and Economic transformation at national and sub-national level.

The strategy presents social inclusiveness in a neutral way. Gender equality should be spelt out specifically as a development outcome because of the important role gender plays in development. A focus on gender equality will guide the redistribution of resources to ensure that even the women who traditionally own less assets such as land, are able to access productive resources through deliberate measures.

The key initiatives in the energy sector include launching of a solar plant in Soroti contributing 10 MW to the national grid with the potential to triple this production to 30 MW

of clean, low-carbon, sustainable electricity for 40,000 homes, schools and businesses. (ERA 2016b). It is anticipated that the energy generation from sugarcane factories will increase the capacity generated to 1,000MW.

In the FY 2018/2019 the energy sector was allocated 3.0807 billion to promote Renewable Energy and Energy Efficiency targeting mainly youth in small businesses and rural women for home consumptions. Utilization of this funds was focused on increasing rural electrification, construct 400 lines of low voltage (11kv), construct 300lines km of MV and install 500 solar systems. In the water sector, 42.094 billion was allocated to boost rural water supply and sanitation project and solar powered mini-piped water schemes in rural areas. And in agricultural sector, in order to strength agricultural extension which benefits rural farmers, youth and hard to reach locations, 682million was allocated to form 1000 farmer groups, ration 500 extension officers to farmers and accredit 20 agricultural extension service providers. (EOC, 2019), Assessment report on compliance of Ministerial Policy Statements with Gender, and Equity Requirements Financial Year 2018/2019)

Other initiatives in other sectors include construction of urban green cities with efficient mechanism of reducing on the carbon cover; recycling of biodegradable waste as a source of renewable energy, distribution of free tree seedlings to communities and the production of organic agriculture through the Inclusive green growth programme, among others.

2.7.3 Institutional Arrangements for Gender and the NDC

At the National level, the Directorate of Environmental Affairs in the Ministry of Water and Environment is responsible for formulation of environmental policy, regulation, coordination, inspection, supervision and monitoring of the environment and natural resources as well as restoration of degraded ecosystems and mitigation and adapting to climate change. The Climate Change Department is mandated to oversee effective implementation of the National Climate Change Policy 2015 which provides direction to all MDALGs to mainstream aspects of climate change into their programmes and plans.

The Climate Change Department (CCD) of the MWE is the National Focal Point for the United Nations Framework Convention on Climate change (UNFCCC) and coordinates climate change activities in Uganda. It also works with climate change units and task forces in different Ministries, Departments and Agencies (MDAs) to guide and ensure that climate change is mainstreamed in different sectors. The CCD also collaborates with the NPA to ensure that climate change is integrated in the National Development Plan (NDP) and Sectoral Development Plans. Furthermore, it links with the Ministry of Local Government (MoLG) and NPA to ensure integration of climate change in District Development Plans (DDPs). However, the sectoral specific climate change focal point persons have limited capacity in climate change matters and gender to ensure effective integrate and respond to climate change impacts during development and implementation of their Sectoral Development Plans

At local government level, climate change issues are being handled by the Natural Resource Department with no specific designation of an officer in-charge. Climate Change matters are then integrated and discussed by the District Environment/ Disaster Management Committees up

to the lower levels. The non-designation of an officer specifically handling climate change matters. This hampers coordination, and integration of climate change in institutional budgets and programmes. There exists at the district level a Disaster Management Committee, which is in charge of information on early warning; the Committee holds quarterly meetings. Gender and climate change are not yet linked in the services of the Disaster Management Committee according to the District Community Development Officer. It was however noted that the Committee needed to be strengthened, to build its capacity in gender responsive messages to communities, and to be equipped for monitoring and disseminating weather information from the Meteorology offices.

Additionally, the Ministry of Gender, Labour and Social Development is in-charge of overseeing social inclusion and gender mainstreaming in all MALGs' programmes and plans. The Uganda Gender Policy, 2007 establishes Gender Focal Point Persons in MDALGs to oversee its implementation.

The National Focal Point for the United Nations Framework Convention on Climate change (UNFCCC) should work closely with the Gender Focal Points to ensure that gender responsive NDC measures for equitable benefits are implemented and closely monitored. In order to establish an enabling environment for implementation of the Gender Climate Action Plan, there will be need to harmonize and align the national and sector plans of all the MDALGs, with development priorities including gender as a cross cutting issue. Likewise, gender responsive guidelines for implementation, Measuring, Reporting and Verifications for NDC should also be prepared as templates and harmonized for all the sectors. This will ease the national report consolidation task of the NCCC.

Finally, formulation of the Climate Change Act should be gender responsive, and participatory to ensure that all climate change vulnerabilities and risks attributed to respective gender and stakeholders are identified and discussed from a stand point of view for inclusion in the Act.

However, climate change and gender issues are cross cutting in all government programmes and plans, thus the need to establish a high-level ministerial committee on NDC policy implementation under the leadership of the Office of Prime Minister. This committee shall be comprised of the following institutions namely; MoFPED, MoGLSD,MoWE, MoLG, NPA, and MoLG.

2.7.4 Costed climate change Policy implementation strategy

The Climate Change Policy places the responsibility for financing of additional strategic climate change interventions that are gender responsive on all MDALGs through their respective sectoral work plans. The costed Strategy also examines the financial instruments best suited to support priority strategic measures and actions, to provide guidance for policy implementation by all stakeholders and partners. The source of financing for these policy priorities will include national and sectoral investment plans and budgets, private sector investment, multilateral and bilateral

donor support and market- based mechanisms, including payment for environmental services schemes and taxes.

The Ministry of Finance, Planning and Economic Development (MoFPED) instituted a gender focal point dedicated to gender and equity budgeting. In fulfilment of the requirement of the Public Finance Management Act, 2015, the MOFPED issues a certificate of compliance to the MALGS that have complied as per the recommendations of the Equal Opportunities Commission. In 2016, the Ministry issued a budget call circular (BCC) requiring the mandatory mainstreaming of gender and climate change into all sectoral budget framework papers and district local government plans starting with the 2017/18 fiscal year. This BCC is considered the most important policy instrument pushing ministries and local governments to mainstream gender and climate change into work-plans and activities. This is therefore an opportunity for the climate change Gender Action Plan to inform the plans and budgets of the sectors and agencies, with the highlighted responsibilities of implementing gender responsive measures for Uganda's Nationally Determined Contribution (NDC) as expected in the Paris Agreement (INDC, 2015).

2.7.5 NDC implementation Plan, 2018

Nationally Determined Contributions (NDC) are central commitments by parties to the UNFCCC aimed at mitigating and adapting climate change goals. By ratifying the 2015 Paris Agreement of the UNFCCC, Uganda is required to implement NDC priorities in climate change and sustainable development. Therefore, the Government of Uganda has endeavoured to establish an enabling policy and legislative framework for gender responsive climate measures. These are integrated into sectoral and cross-sectoral programmes and projects as laid out in the Sectoral Investment Plans for the agriculture, energy and waste sectors.

The NDC implementation plan 2018, recognizes the relevance of gender equality and empowerment of all women and girls as spelt out in the NDP II and addresses SDG Goal 5, with the following targets:

- Ending all forms of discrimination against all women and girls everywhere;
- Ensuring women's full and effective participation and equal opportunities for leadership at all levels of decision-making in political, economic, and public life;
- Enhancing the use of enabling technologies, in particular ICT, to promote women's empowerment;
- Undertaking reforms to give women equal rights to economic resources, as well as access to ownership and control over land and other forms of property, financial services, inheritance, and natural resources in accordance with national laws.

The plan underscores the realization of gender equality and women empowerment as a precondition for accelerated socioeconomic transformation, which targets NDC Implementation must endeavor to achieve as part of mainstreaming gender in implementation of climate change actions. A budget to ensure that resources get committed for the gender responsive measures of the NDP is included. Therefore the NDC implementation plan clearly embraces gender mainstreaming.

3 Key Findings

3.1 Introduction

This section presents findings from the three sectors in this study, namely the agriculture, energy and waste sector. For each sector, findings from the National, District and private sector are presented.

3.2 Agricultural Sector

3.2.1 National Level

The agricultural sector is a single most important sector to the Ugandan economy contributing to one-fifth of all National income employment for more than two-thirds of people living in rural areas. It employs 66% of the working population of which women constitute 80%. ((UBOS 2015)
. Despite this, only 20% of women have ownership of productive agricultural land.

The sector is largely private sector led, with Government left with expenditure in research, seed breeding and certification, extension services, disease control and policy regulation. According to the 2014 Population and Housing Census, households reporting subsistence agriculture as their main source of livelihood have increased from 68% to 69% and of the 5.2 million farming HH in the country, only 2.3% were in commercial farming.

The sector is composed of crop, animal production, forestry and fisheries and the associated trade and process industries. The sector has prioritized 12 commodities along the value chain, namely cotton, coffee, tea, maize, rice, cassava, beans, fish, beef, milk, citrus and bananas. (NDP II) The crops selected due to their high potential for food security include maize, beans, cassava and bananas; while others were selected for their high contribution to export earnings include cotton, coffee, tea, fish, maize among others.

As shown in the figure 1 below, a number of the prioritized commodities are controlled and sold by the men in Mbale according to the gender analysis study. For instance, the crops selected for food security such as maize, 61.8% (n=21) of the men were found to sell maize, while 32.4% (n=11) sell beans, leaving small proportions of the harvest with women for food. As for the traditional cash crop coffee, 96.7% (n=29) of the men were in charge of selling coffee, which is a preserve of the men as indicated on the figure below.

The sporadic change in rainy seasons experienced in the form of shorten duration of rains, lengthy dry spells and intensity of these seasons have greatly impacted on yields generated. Subsequently, with the men having stronger power and control over agricultural resources, often sell the largest percentage of the harvest leaving the women, youth, children, elderly and PWD at the mercy of struggling for the small remains, thus facing the challenge of food insecurity. Therefore, gender responsive measures to implement the NDC should identify the changes in

crop use, response to variance in climatic seasons and ownership of resources to ensure that food security is not compromised.

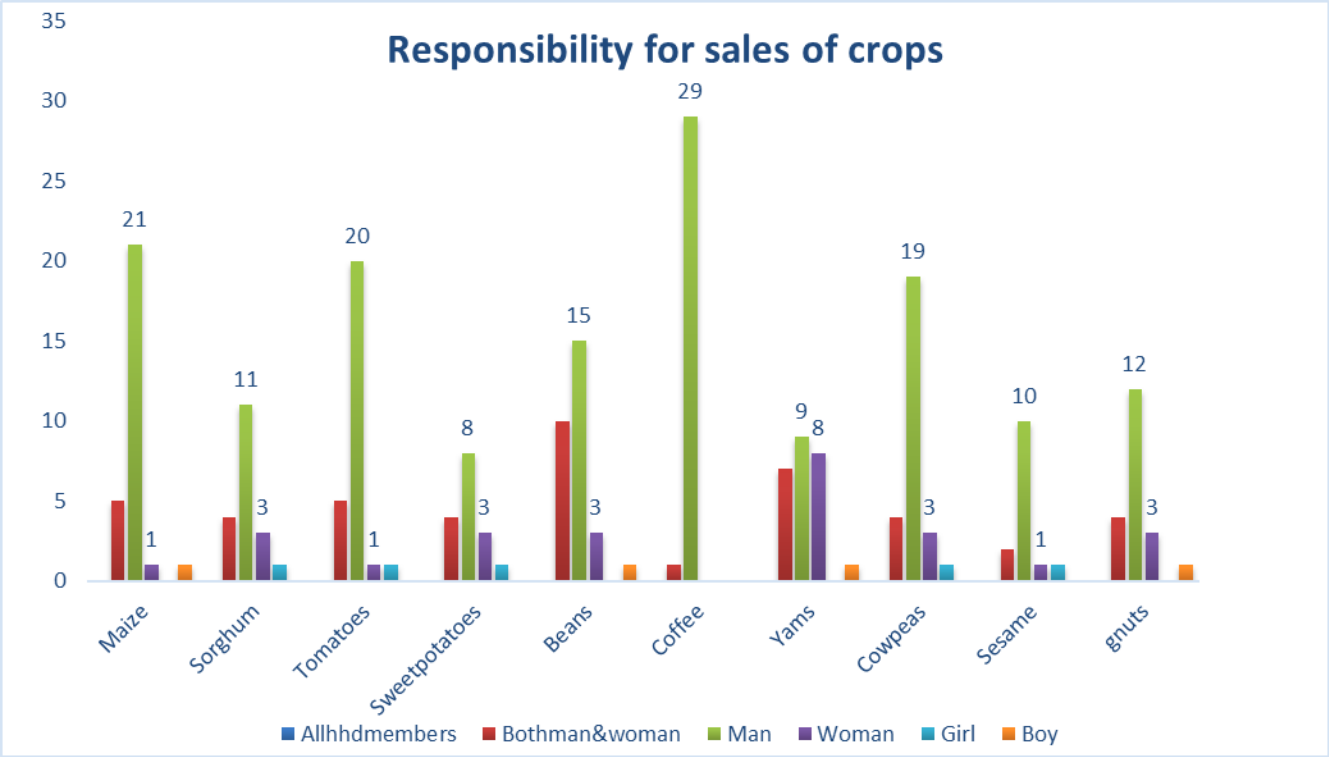

Figure 1: Sale of Crops by Gender in Mbale District **(Source: study data)**

According to the Agricultural Sector Investment Plan (2015-2020), climate change and gender have been identified among five cross cutting issues in the population that impact on its performance. The sector reported to be committed to ensure that the cross-cutting issues get adequately mainstreamed in all activities implemented in the sector. A budget line of UGX11 billion was assigned for these interventions (Agricultural Sector Investment Plan,). This is an opportunity for the gender action plan for NDC implementation which should be taken advantage of and ensure its integration in the ASIP for implementation.

The variation in seasons has greatly affected planting periods and impacted on agricultural productivity, compelling community members particularly women, youth, and elderly to place considerable pressure on other ecosystem and remaining water catchment resources such as forests, wetlands, swamps and fisheries as a source of livelihood

Further, the agricultural sector is projected to contribute to wealth creation and employment along the agricultural development value chain, which requires more effort to address issues of ineffective extension services; low absorption of modern technology; high cost, increased adulteration and limited availability of key agricultural inputs; pre- and post-harvest crop losses; heavy livestock losses to diseases and pests; low and declining soil fertility; inadequate physical and marketing infrastructure; land tenure and access to farmland; insufficient water storage infrastructure; standards, food safety and quality assurance; as well as inadequate meteorological services among others. The sector's projected contributions therefore have a strong focus on climate change adaptation issues which once combined with the sector's existing gender strategy will result in gender responsive implementation of the NDC.(Agricultural Sector Investment Plan)

3.2.2 Private Sector

The Uganda Manufacturers Association (UMA) exists to promote and protect the interests of industrialists and manufacturers in Uganda. As such, UMA interacts with agriculture at a value addition stage, not at the primary production level. The UMA key informant advised that ***"agriculture thrives where there are enterprise cooperatives, organized groups such as for women and youth."*** A cooperative is an autonomous association of persons united voluntarily to meet their common economic, social and cultural needs and aspirations through a jointly owned and democratically controlled enterprise. The International Labour Organization (ILO) views cooperatives as important in improving the living and working conditions of women and men globally as well as making essential infrastructure and services available even in areas neglected by the state and investor-driven enterprises (ILO, 2015).

The level of private sector engagement in agriculture was investigated using the case of Karamoja Private Sector Development Centre (KPSDC), which affirmed that members of the Village Savings and Loan Associations (VSLAs) grow more rain-fed crops such as sorghum, maize, legumes and sunflower for food and sale during the wet season which comes for a short period of approximately two months. During the dry season, when the weather is not favourable for crop farming, the members engage in other micro businesses to diversify their livelihoods.

3.2.3 District Level

3.2.3.1 Moroto

The district level findings from key informants, focus group discussions, observations and the survey are presented for both Moroto and Mbale Districts in this section.

Literature review in Moroto revealed that the service delivery area of agriculture Research and development had less than 30% of subsistence farmers who are usually women, who are able to access and use improved seeds(Rupa Sub County Development Plan)This has serious implications for food security given the unreliable rainfall patterns in Moroto District, as confirmed during the focus group discussions. The District Development Plan (DDP) for Moroto

district further confirms that less than 10% of the male livestock keepers and female crop farmers practiced any form of livestock or crop protection against the environmental and climate changes, and that there was hardly use of fertilizer or any form of soil and water conservation on farm fields, this has led to low food productivity which has increased women's burden of food provisioning. This situation is indicated on Table:9 in the annex.

Food security is a gender issue and its role has traditionally been assigned to women. However, because of the unpredictable rains, low and declining soil fertility, food crop yields have been declining in last ten years, when there were drought, heavy rains, flooding and how it has impacted on food security, as was reported in the districts of Moroto (long dry season) and Mbale (floods, landslides) during the field visits. According to FAO, 12% of total population in Uganda is chronically food insecurity and the affected regions are Karamoja, Acholi and Teso region. This has been attributed to poor rainfall performance during the first rainy season in 2015 characterised by long dry spells. (IPCC, 2015) In order to adjust or cope with the changes in the declining crop yields due to climate change there has been a shift in use of traditional food crops as cash crops which is an alternative to household income.

A female participant in the focus group discussions narrated that

"……*we get permission from our husbands to sell food crops due to increased market demand for food and the need for income to spend on other households' needs such as school fees, salt and sugar among others."*

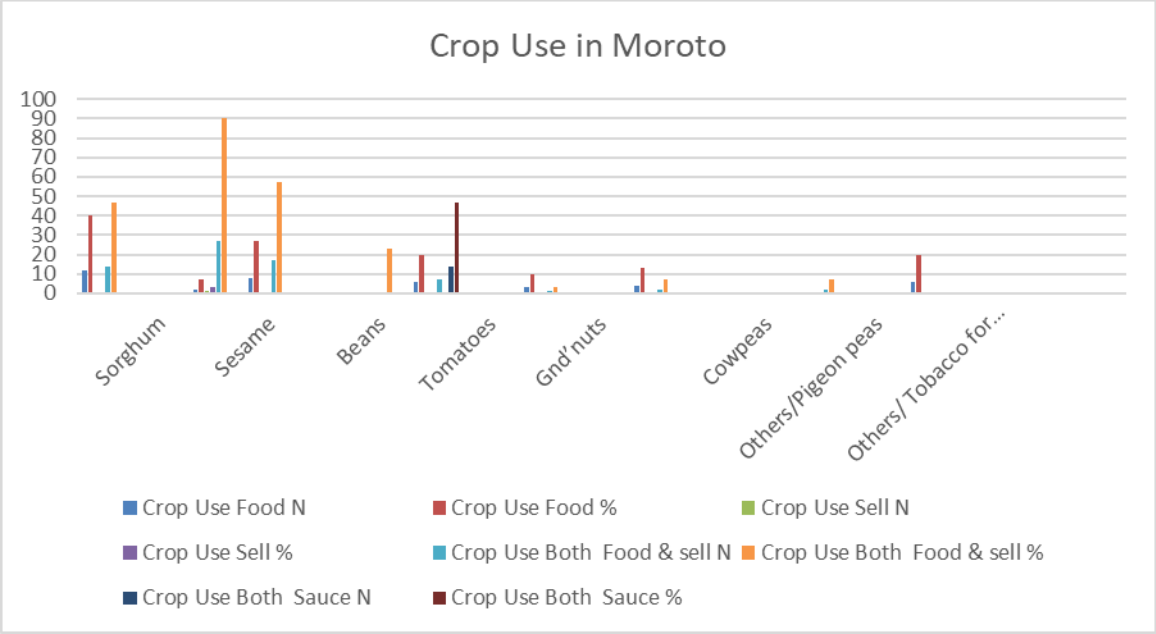

Figure 2: Crop Use in Moroto (source: study data)

Likewise, the conditions were likely to increase the vulnerability of the Indigenous Peoples and Local Communities (IPLCs) due to the negative impacts of climate change.

On the extension delivery system, Moroto district, has four sub-counties with extension workers for agriculture and veterinary according to DDP records, the low wage bill was blamed for limiting recruitment to fill the existing gaps in the extension services sector. Further, the low levels of education for the females in relation to the males, makes it difficult to recruit female extension workers, the communities prefer female extension workers to male extension workers.

Concerning gender and environmental issues, all the men who own livestock are traditionally involved in looking after cattle and goats, while the women engage in domestic chores of caring and responsible for the food in the households. Therefore, there is need to target the women with drought resistant and tested seed technologies among other technologies to increase their resilience to the climate change stressors.

Since the men are in charge of the livestock as shown on Fig3. below, they should be mobilized and sensitized along with the women and children on the use of integrated livestock and group production, use of manure for backyard kitchen gardens, improved soil fertility and crop yields, and this will reduce the GHG emissions from the cow dung. In addition, this will improve environmental protection and conservation which was reported to be weak; and reverse the effects of over cultivation of croplands which have resulted in soil erosion and declining crop yields over the last five years, as well as drought.

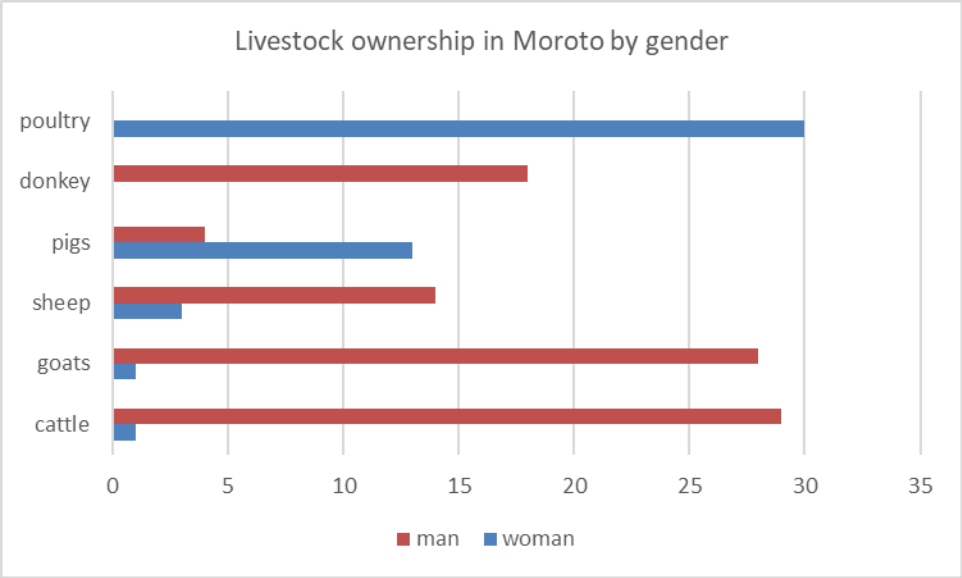

Figure 3: Livestock ownership by gender in Moroto (Source: Field data 2019)

According to Rupa Sub-county Chief, Kobebe Village in Rupa Sub County has a dam which was constructed in November 2018 as a multi-purpose water reservoir that offers an opportunity for irrigation for the surrounding communities to improve the food security and lessen the women's burden of looking for food and water.

Concerning participation in agricultural programmes the District Community Development Officer (DCDO) Moroto affirmed that women respond more to the programmes for example Community Development Driven programme (CCD), Northern Uganda Social Action Fund (NUSAF3) when mobilized than men. Gender disaggregated data to support this was not readily available, but she shared this out of experience. The reason for non-participation of men could be related to their expectations in terms of facilitation. Another reason could be related to their gender roles, because when the CDD meetings take place, it is about project work. Yet, the belief in this region is that it is the woman who works.

This practice in participation of females in the programmes is important for the implementation of the NDC in this region. The men on the other hand turn up in big numbers in case of paid work, the DCDO Moroto explained that for programmes such as NUSAF 3, which have a component for payment, the men target the money. However, the NUSAF 3 facilitators always specify the proportions for women and men that should participate in the activities. She affirmed that the programme was gender responsive, but still demands that the implementers should poses skills in gender mainstreaming. Therefore, continuous gender sensitizations to the implementors of programmes was recommended, and this should apply to the NDC implementation to ensure gender responsiveness.

Recommendations include the use of cell phones for reporting on climate change disasters and early warning for the communities; radio talk shows to begin from 4pm to 8am because men go with the radios. The team learnt that UNICEF gave solar radios to the Functional Adult Literacy (FAL) instructors, but the men move with them wherever they Communication, information sharing and public awareness

It is also important to know the commonly used radio stations in the areas; for Moroto they use UBC radio, NENA Radio, Ateker Radio, Radio Maria and All Karamoja Radio. The women participants in a focus group discussion narrated that they listen to the radio when the husband comes back, because the men move with the radios.

"Key informant interviews also revealed that **"*Moroto has rangeland management and watershed restoration and maintenance through tree planting, intended to protect the water sources"*** Under this initiative the most active participants are women because they are in charge of crop farming for food provision to their households. **"*They grow fruit trees and vegetables in the gardens around their homes. The men engage in planting timber trees/wood lot under this initiative."*** The Livelihood Improvement through establishment of Drip Irrigation for cultivation of vegetables in Nakiloro Parish Settlement along River Komatheniko of Nakiloro is a gender responsive measure which has enhanced resilience to drought. This practice has improved food security and household income.

In Moroto, the gender role of taking crop produce to the market for sale is assigned to the woman at 76.6% while 6.6% (n=1) reflect that the man and woman went together to sell, and 6.6% (n=2) were boys who sold 6.6% (n=2) were men who took cassava and sorghum to the market, and

lastly 3.3% (n=2) were girls who sold maize. These gender expectations of roles in Moroto are likely to create an enabling environment for the NDC implementation since the decision to market lies with the women. However, the men negotiated that whenever a woman sells something, such as firewood, she must reserve some money for the husband 's needs. Please refer to the table 9 in the annex

3.2.3.2 Mbale District

In Bukasakya Sub County, a peri-urban area, women's reproductive and productive roles include farming activities, cleaning, cooking, fetching water and family care, among others are done to meet practical gender needs**.** As shown in figure 4 below, domestic chores and taking care of children are primarily the woman's responsibility. The domestic chores involve use of firewood or charcoal for cooking which emit GHG, it also implies cutting trees which serve as carbon sinks. In the process of doing her domestic chores, the woman handles solid waste among others, if waste is not properly disposed of, the woman will cause more gas emissions to the atmosphere which adds to global warming.

The shared roles for woman and man are farming crops, rearing livestock and attending village meetings. Farming and rearing livestock are activities which also give out gas emissions from the soil and the cow dung. On the other hand, the main responsibilities for the man are shown as marketing produce, owning land and household assets, and owning livestock as shown in Table 1. The household chores are time consuming and limit the woman's mobility. As a result of restricted mobility, the women have limited exposure and access to information.

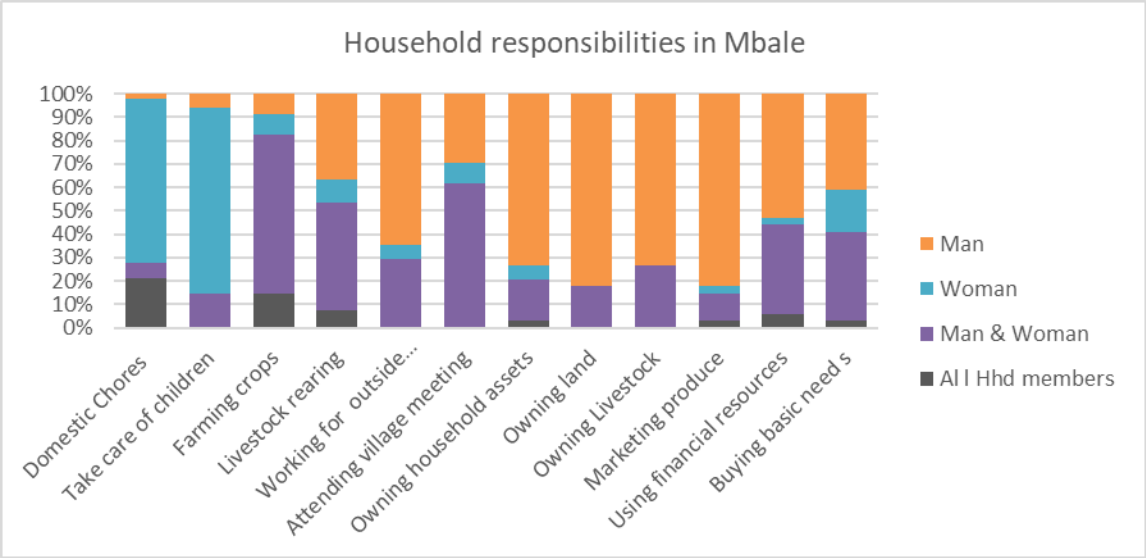

Figure 4: Household Responsibilities by Gender in Mbale (source: study data)

As indicated in Fig 4 above the study revealed that the majority of the men are in-charge of taking the produce to the market. Taking the example of coffee in the figure above coffee is a

male dominated crop and this is evidenced by the majority 96.6% (n=29) of the respondents confirming. The survey further reveals that almost all the food crops including sweet potatoes, maize, sorghum, tomatoes, beans, yams, cowpeas, sesame and groundnuts have become commercial crops, and mainly sold by men. only small amounts of these food crops mentioned above are left for women, girls and boys to sell.

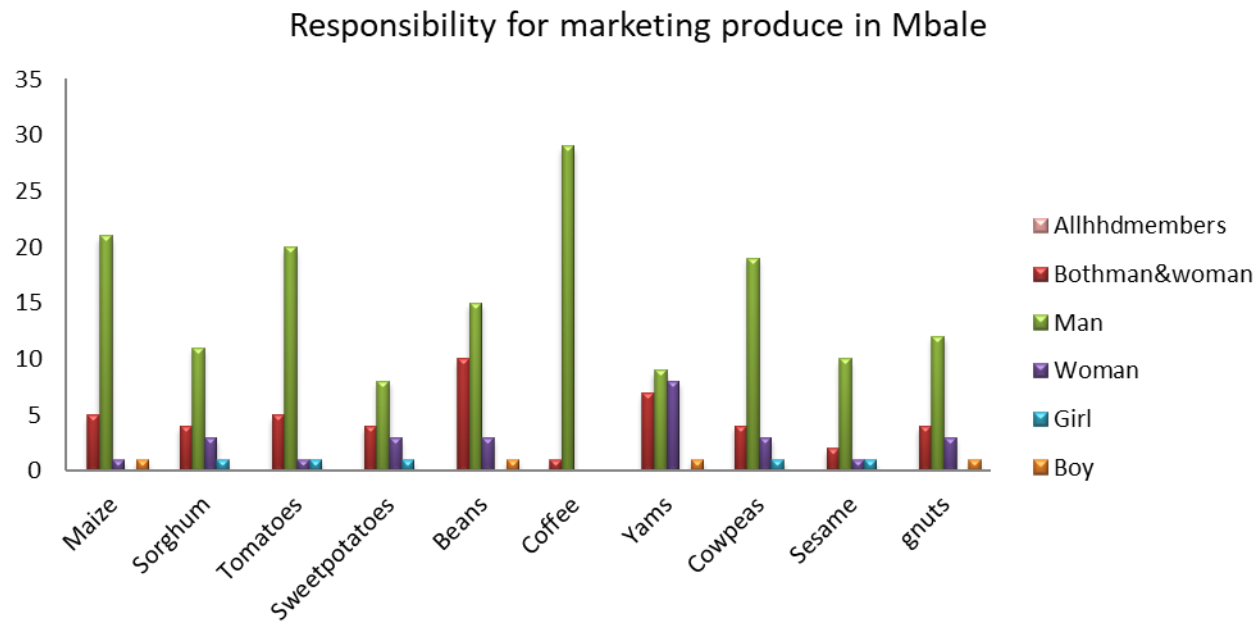

Figure 5: Responsibility for Marketing Crop Produce in Mbale (source: study data)

The commercialization of traditional food crops by men has increased the risk of food insecurity. Therefore, there is need to take note of this change while implementing the NDCs, and to find ways of joint empowerment of family structure in decision making to reduce on this glaring gender gap.

3.2.4 Community Roles for Men and Women in Mbale

Men's role in the strategic management of the family is translated at community level by engagement in community leadership structures, such as participation in community meetings/baraza. Men play an advisory role to other men and through participation in leadership positions at community level. They disseminate information /spreading news, gather and spread news promptly. Due to their mobility, the men undertake monitoring roles: ensuring that children in the area are in school, and implementation of government programmes takes place as intended and presenting himself as a respectable man (a strategy they use to win leadership positions). This is equivalent to commanding respect, role modelling, and building a positive public image. The men participate in sports i.e monitoring, watching sports, funding sports and taking part in sports; contributing towards the community welfare such as community infrastructure and

amenities locally referred to as "*bulungi bwansi,"*and engaging in overall supervision of their homes and community safety and peace.

Women's community roles are closely related to their reproductive and productive roles; mostly geared towards meeting practical gender needs, namely the daily needs.
Participation in economic empowerment programmes such as group savings, as in Uganda Women Entrepreneur Programme (UWEP), Operation Wealth Creation (OWC), Community Demand Driven (CDD) Programme and Youth Livelihood Programme (YLP) government programmes. They participate in knowledge and skills acquisition programs such as the Functional Adult Literacy group learning.

Community mobilization especially by women leaders for government programs such as VHT work involving vaccination, deworming, referrals, home visits for health and hygiene, as well as Family Planning. The women leaders also monitor the implementation of government programmes and undertake counselling and mentoring for fellow women on Prevention of Mother To Child Transmissions (PMTCT), breastfeeding, antenatal care and nutrition.
Linkage to climate change actions. The women leaders will be an asset in mobilizing fellow women for climate change adaptation and mitigation programmes.
The women's community roles and their engagement in economic empowering programmes will benefit the gender responsive NDC implementation as entry points for enhanced adaptation and mitigation actions.

There is a marked difference between men's and women's roles in the community, with women taking on caring roles while men take leadership positions. Women in leadership positions with men tend to be relegated to the deputizing role, which still has an element of care taking when the main chairperson is absent.
Men's roles in the community reflect/manifest a replication of their roles at household level as well as their leadership role at the household which come out at community level.

3.2.5 Household Decision Making

Decision making is gendered at household level, with men being the major decision makers. It is clear that each gender category makes decisions related to their gender roles in the household. Men make decisions on children's education, marriage plans of adult children, visitors in the home, cooperation in the home, relating with the neighbours, allocating responsibilities to household members, guiding household members on faith issues, general cleanliness of the home and instilling discipline into household members. (focus Group Discussion)

Women have decision making powers over the food budget, agricultural produce from their gardens, child care, sanitation and development projects to promote the socio-economic welfare of the family.

In Bukasakye Sub County, decision making was found gendered at household level, with men being the major decision makers. It is clear that each gender category makes decisions related to their gender roles in the household. Men make decisions on children's education, marriage plans of adult children, visitors in the home, cooperation in the home, relating with the neighbours, allocating responsibilities to household members, guiding household members on faith issues, general cleanliness of the home and instilling discipline into household members.

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3.3 Implication of the gender roles to the implementation of the NDC

Understanding the interface of the gender roles at household and community levels is important because these are vital channels for the gender responsive measures in implementing the NDCs. The household and community represent the end users and beneficiaries of the priority adaptation and or mitigation measures which are reflected in the NDCs for Uganda. Therefore, understanding the different roles of men and women, boys and girls, will guide NDC implementation to take into consideration their different needs and priorities. For instance, because women are responsible for fuelwood in the household, every time they cut the trees to get fuelwood, they are reducing the carbon sinks; while cooking with firewood and the unclean three stone stove, emits more Greenhouse gases (GHG). Further, from the domestic work women do, they handle or manage solid and waste water. If the waste is left to rot, it will emit gases such as methane to the atmosphere. The state of the National Environment report (2017) confirms these facts.

A gender responsive intervention or measure would target to sensitize the women and men, who are responsible for contributing to the gaseous emissions through human activities. Similarly, the men who are responsible for herding cattle also contribute GHG emissions when the cow dung is left bare on the grazing fields.

3.3.1 Differential Impacts of Climate Change to Men and Women

According to the Global Gender and Climate Alliance (2016), women and men may experience different climate change vulnerabilities, risk levels and impacts. The study also revealed the following different impacts of climate change to men and women in Moroto and Mbale districts.

Table 3: Different impacts of climate change

Impacts to Women	Impacts to Men
Women cater for families, while men have run away from families, temporary migrations in search of water and grass for livestock	During the dry season, men's responsibilities tend to be taken over by women, girls and boys.
Dry season has made women to fetch water at night and get over loaded with work; they do work	Climate change has resulted in gender-based violence amongst the household leaders/parents

which used to be for men, such as livestock rearing and farming	because of low incomes, lack of food, lack of water and inadequate grass for livestock.
Women have been fully engaged in the kitchen gardens, to provide income and necessities in the family	Men also fetch water and look for food
The shortages in food availability due to prolonged droughts has made women to work even harder than before.	It has changed because Integrated land management has led to increased gender-based violence, in the process of promoting gender equality
Women IPLCs can no longer get all the traditional medicines /traditional plants as we used to do e.g. local herbs	Men dominate in decision making especially on the productive assets while women have limited participation in decision making, they mainly take decisions on their reproductive roles
Women used not to own land or rearing cattle or livestock but due to climate change these days they do all work done by men	
Women have started getting involved in decision making and active participation in meetings	
Women are suppressed in decision making	
Gender roles remain the same although during dry season most activities are by women and children perform most duties during the dry season and holidays while men spend time **doing decision making**	
Despite the increased workload and time constraints, women have managed to acquire some assets and feel more empowered to participate in decision making.	
Women are responsible for food security, water and fuel availability in homes.	
Impacts to Both Men and Women	
Due to scarce resources, the change in climate calls upon both man and woman to get involved in variety of roles	
It has changed in a way that this time both man and woman decide together what they should do unlike in the past	
In the dry season, all the household members are not active in agriculture, apart from those who engage in horticulture along the river banks.	
During the wet season on the other hand, all the household members, the women and men	

including children get involved in crop farming
When the climate changes, men and women leave their responsibilities in search for food and income
Families are constrained in poverty due to the men monopolizing decision making like sell of land, leaving the mothers suffering with children to feed them.
Decisions being made participatorily. Men and women sit together and plan these days
Decision of buying food is taken by both of us, we used to eat food from our garden but now we buy
Both have realized the importance of climate change and they should control it

Women's and men's different roles and responsibilities, such as water and fuelwood collection and agricultural practices, and inequitable power/gender relations affect their different vulnerabilities and risk levels (GGCA, 2016; Hillenbrand et al., 2015). As presented in table 3 above, the women reported to fetch water in the night because of the increased workload, they have to work harder than before to get food for the family. Moving at night to fetch water exposes them to risks and the increased workload is a healthy issue to their lives.

3.4 Energy

3.4.1 National Level

In Uganda, the Energy sub-sector is charged with increasing electricity generation and transmission, development and access to sustainable energy services and promotion of efficient utilization of energy. Electricity contributes 1.4 percent to the national energy balance while oil products, which are mainly used for vehicles and thermal power plants, account for the remaining 9.7 percent (UBOS 2016).

The key focus areas of the sector include: increasing power generation capacity to drive economic development; expanding the electricity transmission grid network; increasing Energy Efficiency; promoting the use of alternative sources of energy; and strengthening the policy, legal and institutional framework.

The planned interventions in the NDC to improve energy efficiency include introduction of prepaid meters and increased monitoring to reduce commercial power losses, such as to minimize illegal hydro power installations and develop and enforce standards for promoting energy efficiency.

In promoting the use of alternative sources of energy, focusing on promotion and facilitation of the use of renewable energy technologies like bio-fuels, wind, solar, improved cook stoves and Liquefied Petroleum Gas (LPG) at household and institutional levels**.** The implementation of

such programmes should take into account the limitations women face in accessing clean energy resources in relation to men.

The Uganda Demographic Health Survey (2016) indicates that 57.5: 18 proportion of men : women population access electricity, while the proportion of population with primary reliance on clean fuels and technology is 2.1 men to 0.2 women, measured as a percentage of the population using clean fuel for cooking. This state indicates a glaring gender gap in the energy sector, as evidence of the unequal access to energy resources and yet more than half of Uganda's population is composed of women. Given the women's gender roles which include cooking, there is a likelihood of greenhouse gas emissions arising from use of unclean fuels for cooking.

Some identified issues in the energy sector include the following: Predominant use of biomass energy (firewood, charcoal), increasing energy demand, electricity supply affected by reduced water levels in dams and reservoirs, limited protection of Water catchments, limited use of alternative renewable energy sources (solar, biomass, mini-hydro, geothermal and wind) and limited use of energy efficient cook stoves and Liquefied Petroleum Gas (LPG)

The Uganda National Renewable Energy Association key informant revealed that the Renewable Energy Policy was under review, under the Energy Efficiency Bill and gender issues were included in the reviewed policy. The renewable energy sector was in the process of getting formalized; and noted however that the private energy related companies were male dominated, while the women concentrate in the biomass energy, such as briquettes making which do not represent energy efficiency sectors as in the case of solar and hydro power, thermal among others. The Uganda National Renewable Energy Association plays an advocacy role for policy and quality standards in the briquettes and improved cook stoves and consumer protection through capacity building and market development.

3.4.2 District Level

In Moroto district, women were seen moving to town from different directions, carrying charcoal on their heads for sale in town. The focus group discussions in Rupa and Mogoth parish confirmed this trend in the mobility of women. They narrated that the women travel distances of over 25 Km to find the trees and burn charcoal, a process which sometimes takes them two to three days. After selling the charcoal, they purchase food for the home, usually maize flour or residue which remains after making the local brews. The residue is mixed with some tree leaves and taken as food especially during the dry season.

Concerning energy for cooking the key informants and the focus group discussions revealed that the majority (*N*=25) of the households used the traditional three stone stoves for cooking with firewood, while (*N*=16) used the traditional three stone stove with charcoal, and only (N=1) used the ICS with firewood, while (N=5)used ICS with charcoal. Only a few households were using the improved cook stoves built and stationed in their kitchens, as shown on the table 3 below

Table 4:**Energy and Stove Use in Moroto**

	Improved Cook Stove (ICS)	traditional 3 Stone Stove
	N	*N*
Firewood	1	25
charcoal	5	16

Source: Field data

The use of briquettes had not yet been explored. Therefore, this is an unfavourable situation to the clean energy mechanism, with health implications to the women and the girl children who are responsible for cooking in the households.

The study further revealed that firewood was still the energy used for lighting in the *manyatas*. Combined to the firewood use in cooking, this calls for an urgent need to introduce clean energy mechanisms for cooking and lighting. Given the availability of the cow dung, initiatives should be promoted to bulk cow dung at agreed specific centres to enable the construction of biogas digesters at household.

The study further learnt that the trees have been cut for charcoal and the hills and rocks in left bare. It is only in Tapac where the trees have not been cut so much because the area is hard to reach. However, both men and women engage in tree cutting to get poles, firewood and charcoal production, a practice which reduces the carbon sinks, and therefore likely to delay the emission reduction target for Uganda.

The women construct the houses/huts and this is an activity which is done during the dry season when the women cut grass and poles from the mountains. While the men construct granaries for food storage. Other activities undertaken which relate with the environment include bush burning used for clearing the land, to enable growth of grass and to kill the ticks which attack their livestock, while the hunters burn to get the wild animals. All these activities are unfavorable to the environment because they expose the soil, remove the green cover and reduce the carbon sequestration process. The existing laws and ordinances which ban bush burning should be strengthened and enforced.

Concerning energy use in Mbale, the study revealed that firewood was mainly used by women

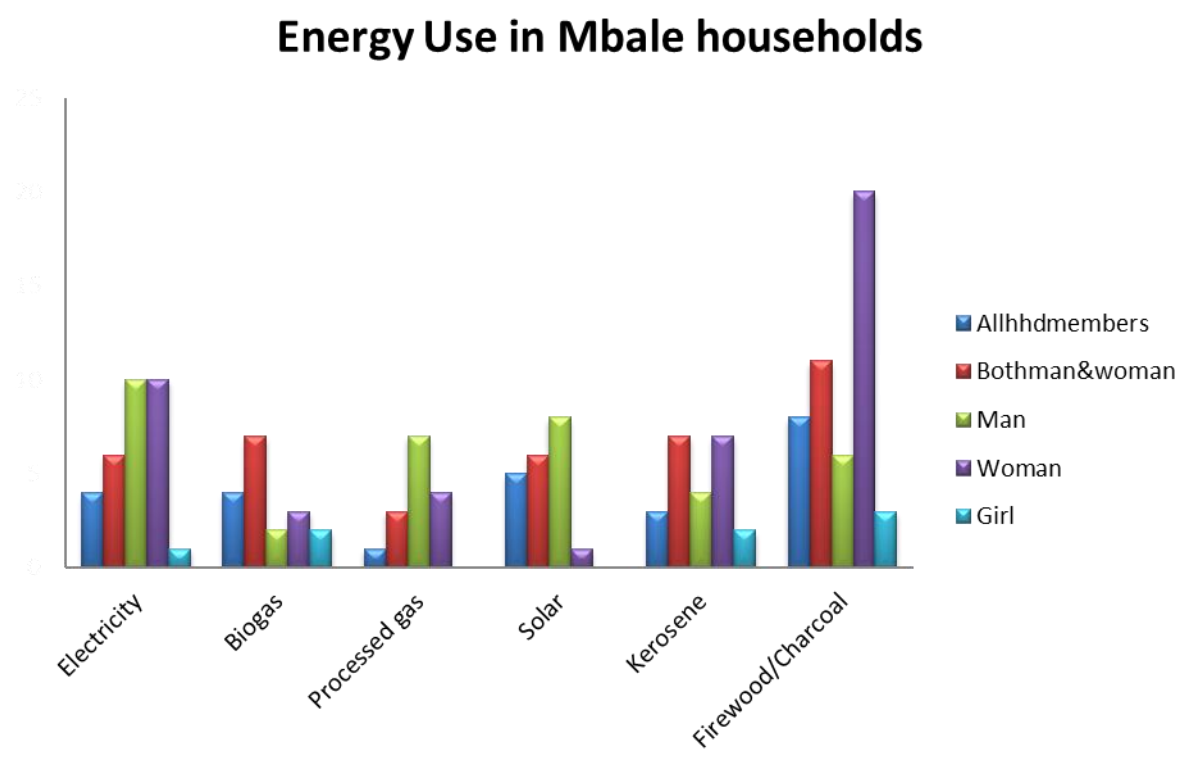

Figure 6: Energy Use by Gender in Mbale (Source: Field data)

As shown in the fig.6 above, firewood came out prominently in Mbale, as being used by the women (N=20), because they are in charge of cooking, as well as collecting firewood and charcoal. This further reflects the predominant use of biomass energy, which involves tree cutting, and contribute to reducing the carbon sinks in the long term. The other renewable energy source such as biogas, solar are not as exploited as the biomass from the findings.

As shown in the figure above, electricity, gas and solar were used in urban and peri-urban areas by both men and women. The use of biogas had been explored in Mbale, while some households in Mbale used kerosene,

Solar energy was mostly used in the mountainous areas of Mbale such as Wanale, but standards are not being adhered to so it is affecting utilization of solar energy.
Limited access to information that eventually affects accessibility
Higher connectivity to the national UMEME grid in Mbale than Moroto. However, cases of illegal connectivity were on the rise, with the attendant risks.

3.4.3 Private Sector

The Case of Karamoja Private Sector Development Centre

An interview with Chief Executive Officer for Karamoja Private Sector Development Centre (KPSDC), revealed that "*KPSDC has been in existence for over 20 years, operating in Karamoja region, covering all the 7 districts originally, but now increased to 8 districts as follows: Abim, Amudat, Kaabong, Kotido, Moroto, Nabilatuk (new), Nakapiripirit and Napak). Noted that Nabilatuk is a recent district curved out of Nakapiripirit early 2019"*. The KPSD has 1500 Village Savings and Loans Associations (VSLAs) throughout the region, with over 30,000 members, 70% of which are women. the groups are an entry point for KPSDC**.** The climate change adaptation programme is funded by IFAD and has developed climate change training tools. The groups can be an opportunity to increase access to energy sources e.g solar panels, biogas

The Karamoja Private Sector Development Centre implements the climate change adaptation programme using the VSLA programme as an entry point. It has a training programme with a tested training manual in place to guide the content and delivery of the training on climate change and adaptation. Gender is not a specific topic within the training manual, but it is implied within the explanations of how the women and men's gender roles affect and contribute to climate change. In his words the CEO elaborated "*the issue of climate change…….contributors are women, even the men who cut the trees to burn charcoal, which the women use"*

He decried the rate at which trees were being cut: "*we cut a lot of trees for construction, can we plant live poles, which can grow and be used? indigenous trees such as K-apple, long milk bush/Euphorbia trichilli, and Acacia senegalensis, which are normally used for fencing, and production of gum arabic, it sprouts when cut, for instance if the cutting happens in the March – April rains, the tree will come to life again"*

The Centre is planning to domesticate tree planting with a target of 100 trees per household. Indigenous trees such as *Balanites aegyptica* known to be good for firewood, food for goats and humans in the Karamoja region, and the leaves of the tree are highly nutritious, the leaves are picked, prepared, cooked and added to *oddi (sesame-peanut paste)* "*we survive on this during the drought"*; and to plant fruit trees in addition.

From his assessment, he estimates that trees have been totally cut for charcoal burning and other uses from a distance of 30Km around Moroto Municipality. This implies that the grounds have been left bare, and the carbon sinks have been destroyed, resulting in unchecked GHG emissions.

The members of the VSLAs are individuals from families in the *Manyatas*. One *Manyata* settlement can comprise of between 10 to 50 families of 7 household members each; and in such a *Manyata* settlement, the Centre can mobilize 2 VSLAs or groups; where each VSLA is comprised of between 25 to 30 members, 75% of which must be women.
The Centre has a comprehensive data bank with detailed records of all VSLAs, their locations, membership, their weekly meeting time and venue/place.

The VSLA members are trained on micro businesses such as retail shops, animal drugs, selling clothes, making multi-purpose charcoal and firewood energy saving stoves, which use one piece of wood. Members in Rupa Sub County, Moroto use these stoves. The micro businesses are intended to diversify their sources of income, which is an adaptation measure.

"*Most families use firewood for lighting in the Manyata settlements because there have no alternatives. Briquettes are not known in Moroto, this can be good technology for schools because the equipment for making them is expensive and unaffordable to most VSLAs or individuals. However, making grass briquettes can be adopted if supported and procured*." the key informant concluded.

On agriculture, members of the VSLAs grow rain-fed crops such as sorghum, maize, legumes and sunflower for food and sale.
Concerning waste management, he confirmed that latrine coverage is low in Karamoja region putting it below 10%.

The area suffers from floods during the rainy season and prolonged droughts during the dry season, as well as the unpredictability of the onset of rains and planting season.
When it rains, the rivers from Mountain Moroto are very violent, they sweep and carry stones downstream and it becomes difficult for the local communities to engage in harvesting or damming the water because this would require specialized equipment. The rivers particularly R. Omanimani from Mt. Moroto, which flows into Lake Kyoga become fierce.

3.4.4 The Private Sector in Mbale

The private sector in Mbale is being promoted by an organization known as the Eastern Private Sector Development Centre (EPSEDEC) Mbale. It operates in ten districts within the Eastern Region. In the agricultural sector, EPSEDEC provides capacity building in business development solutions to over 500 grassroot organizations covering ten districts in the eastern region. In Mbale district, the private sector supports over ten grassroot organizations and Small and Medium Enterprises (SMEs) with business skills such as cost-benefit analysis among others. These SMEs and grassroot organizations deal in oilseeds such as sunflower, sesame, soya beans and grains such as maize, rice, beans and coffee. Concerning gender and climate change, the private sector promotes climate smart agriculture (CSA) and labour-saving technologies. The grassroots organizations comprise both men and women and the young people.

In the energy sector, the private sector partners with African Clean Energy in Mbale City Centre to provide solar energy and energy saving cooking stoves to individuals. The groups that need support in biogas digestor installation are also reached-out on a demand-driven basis.

The key informant noted that they have not done much in the area of waste management until recently, this year when they partnered with some Civil Society Organizations to form a task force known as "Keep Mbale Clean, with the intention of reducing waste disposal in the city. Such initiatives are indicators of commitment on part of the private sector to mobilize

communities for proper waste management and the attendant benefits of reducing GHG emissions.

3.5 Waste

3.5.1 National

The Municipal Solid Waste Composting (MSWC) for CDM was initiated in Uganda in 2005 as a project under the National Environment Management Authority (NEMA) with financial and technical support from the World Bank under the "Environment Management and Capacity Building Project-II". The implementation of the Project was led by NEMA in collaboration with selected Municipal Councils. The project represents an opportunity for Uganda to adopt basic but proven landfill technology and it provides a range of environmental and economic benefits. In addition, CDM promotes solid waste management efficiency and allows for emissions reduction as well managing solid waste through aerobic decomposition as a means of reducing GHG emission.

The national state of the environment report for Uganda (2014) indicates that the Clean Development Mechanism (CDM) project is one major opportunity emerging from solid waste management in Uganda to develop landfill gas extractions and flaring on existing landfills.

3.5.2 District Level

In Moroto District the Latrine coverage was very Low at 10%, leaving 90% of the households without pit latrines. The sub counties of North and South Division were reported to have the highest numbers of households without pit latrines. This situation can be explained by the type of the soils which make digging and slabbing the pit latrines difficult. Another reason could be lack of awareness about the importance of pit latrines. The challenge therefore is how to promote latrine coverage and improve the negative attitudes towards sanitation, homestead improvement, hygiene and sanitation improvements in the rural and urban setting (DDP Moroto, 2016/2021.

When the issue of pit latrines was further probed, it was revealed that traditionally, having been a nomadic community, there was no need of making latrines, communities were mobile. Rupa S/C Chief had this to say "*Even if the women have traditionally constructed the huts, digging pit latrines has never been part of their gender role. there is a traditional belief that if a woman uses the pit, she could become barren; while it is still feared that a pregnant mother could lose her child by falling in the pit. (Rupa Chief)* Now that the communities have more sedentary settlements, there are plans to work with the Village Health Teams to explain to the women and the elders the importance of pit latrines. On the other hand, if the type of the soil does not favour pit slabs as some members claimed, then arrangements will be made to get soil tests undertaken in order to find a solution.

During the focus group discussions, all the participants confirmed this limitation in latrine coverage. They explained that the poles they use to construct get eaten away by termites, and it becomes risky for them to use the latrines. The South Division in Moroto was found constructing latrines of the ecosan system, where materials had been given to the division to put up public

toilets in the Municipality. The sawdust used in the ecosan toilets/latrines would be used as manure. When this design is adopted, the environment health will improve and gas emissions, from open defecation will be mitigated.

On garbage collection there were no official collecting points. All the communities were supposed to manage their own household and human waste.

3.5.2.1 Waste sector in Mbale

The study found out that household waste management in Mbale was the responsibility of the individual households, like in other parts of the country. However, the Municipal Council contracted a private company to collect the garbage from the households and market areas at a cost. Therefore, those households that can afford to pay for the service are able to get their solid waste properly disposed.

Commercial waste at a distillery in Musoto, Bukasakya Sub County Mbale District (field photo)

As shown in the photographs above, commercial waste in liquid form, from the liquor/waragi brewing village of Musoto in Bukasakya Sub County was found to be a health hazard to the environment, because the waste water is drained in Nahidiso stream, which connects to River Namatala up to Manafwa river and eventually pours into Mpologoma River. The practice adds hazardous gaseous materials to the rivers and surrounding wetlands, hence likely to increase GHG emissions.

Observations revealed that the local liquor distillers in Musoto had stored plenty of firewood for use during the process of distilling the liquor, which is popularly known as *waragi.* Some of the firewood piles are shown in the photographs below. The area has approximately 50 distillery

points, all of which use firewood to heat the chemicals in the drums on daily basis. This results in increased carbon emissions which contribute to global warming.

Observations also found that there were more women than men in the distilleries who were engaged in making the fire and to guard the liquor. Some female youth who would have been in school, were also seen helping out with the fire. The young men were in charge of fetching water in jerrican containers from a nearby bore hole to the various distillery points.

Waste management in Mbale municipality involves solid waste disposal in a landfill, with the use of contracted private sector service providers. The garbage collection centre is located in the Industrial Division in Namatala ward of Doko. Garbage is sorted at this centre into organic and inorganic materials and recycled into two forms of fertilizers, the liquid and the solid manure for sale at affordable prices. Garbage sorting is mostly handled by women and the youth with minimal protective gear, which is a risk to their lives.

The challenges include the big volumes of waste which fill up the landfill in a short time, then the women in their groups are also engaged in removing waste from the municipality channels.

Photos showing stored biomass for use in the Musoto local liquor distilleries

3.5.3 Private Sector

3.5.3.1 Gender and Climate Change Practices: The Case of UMA

The major mission of the Uganda Manufacturers' Association is to promote and protect the interests of industrialists and manufacturers in Uganda. The Association aims to bring together Ugandan industrialists and manufacturers in order to guide the industrial actors in the country towards global competitiveness, on a sustainable basis. The association is a collective lobby and mouthpiece for its members and advises the government of Uganda in the formulation of national and regional industrial policies.

The multiplier effect of gender mainstreaming efforts in the country through the Ministry of Gender, Labour and Social Development (MGLSD) among other players, has taken root in the governance and management of the Uganda Manufacturers' Association. At the governance level, gender inclusion and promotion of women leadership and empowerment for UMA is evidenced by the current chairperson of UMA who is a woman industrialist. Women Committee members are included on all the ten sub committees of UMA and a specific Women Sub Committee is in place to take care of the women's specific needs. The Association has a department for the small-scale industries, to ensure inclusion.

The secretariat has no gender focal point position, but awareness for gender equality has been created, through networking with UMA membership such as associations of women entrepreneurs, notably Uganda Women Entrepreneur Association Ltd (UWEAL) and MUBS who organize sensitizations in gender for the membership and general public.
Capacity building in gender has been undertaken, through training for industrial and manufacturing member companies, but the training has not been linking gender and climate change; focus was on gender sensitization. There is therefore a gap in the capacity for gender and climate change and linkages to industrial waste and emissions from the industries of Association members.

The Small and Medium Enterprise (SME) department of the Uganda Manufacturers' Association (UMA) is represented on the **Private Sector Pollution Control Task Force**, a partnership focusing on harmonizing the environment, water management and conservation.
Activities involve training and capacity building to member industries on how to handle resource efficiency, health safety, health products and manage waste. There is an on-going study with support from GIZ, focusing on "**Water security action and investment plan**" to identify priority projects which can respond to water security, floods, water scarcity threats and wetlands in order to find a solution to the water security threats; targeting urban physical planning to avert floods, and examining drainage design issues in road construction; whether the design responds to smooth waste movement through the drainage channels, without obstruction; and how plastics including bottles and other solid waste can be managed. On the whole, gender and climate change are not yet harmonized in the Association. However, they are recognized and responded to as stand-alone issues.

3.6 Capacity Building Needs

The study has identified capacity needs in gender and climate change at all levels of implementing gender responsive measures for NDC. Capacity building is crucial for the entire coordination team at national and district level and the implementing Ministries, Departments Agencies and Local Government (MDALGs). There is need for coordinators and implementors to understand the link between gender and climate change. The staff in the Climate Change Department of the Ministry of Water and Environment for instance require the knowledge and skills in gender to be able to make meaningful linkages of gender and climate change. Likewise,

staff in the Ministry of Gender, Labour and Social Development should be equipped with sufficient knowledge in climate change science to ease their understanding of the linkages. The same applies to the local governments. These capacities are needed for the teams to be able to make linkages of gender and climate change to the other sectors. This will also ease the process of gender and climate change planning and budgeting. Another level of capacity building in gender and climate change should involve the sectors and agencies. Local governments where the bulk of gender responsive NDC implementation will practically take place, should target the Natural Resource Office, the Production Department, community development, health, energy, waste, education and works at both district and sub county levels.

The content for the training should focus on the policy environment, legal and institutional frameworks; gender, climate change with linkages to the sectors. Since all the sectors in Uganda have a gender focal point, these should be equipped with Trainers of Trainers (ToTs) skills in gender and climate change for NDC implementation capacity building programme. Another team of TOTs should be established at the local government level.

The overall objective of the capacity building is to enhance knowledge and the skills needed in implementing the gender responsive NDC measures in order to contribute to the achievement of the national targets for reducing GHG emissions and heat. Specifically, the capacity building is intended to achieve the following objectives:

i) To orient the coordination teams at national and district levels with the policy, legal and institutional framework; clarify their respective roles, responsibilities and reporting mechanisms
ii) To equip the coordination and implementation teams with in-depth knowledge on gender and climate change and their linkages.
iii) To develop practicum programmes for the implementing teams at all levels to acquire skills in making linkages between gender, climate change with reference to sectors (agriculture, energy, waste, health, education, works, ICT, etc),
iv) To give knowledge and skills in gender analysis and gender budgeting for climate change adaptation and mitigation measures with reference to sectors.
v) To enhance knowledge and skills in monitoring, reporting and verification (MRV) with gender sensitive indicators for the generation of sex-disaggregated data.
vi) To train staff at the gender focal points in Ministries, Departments, Agencies and Local Governments (MDALs) as Trainers of Trainers (TOTs) for the sustainability of the gender and climate change in NDC capacity building programme.
vii) To Conduct community gender focused sensitizations, debates, open barazas and dialogues on climate change (targeting the Private Sector, Uganda Manufacturers Association, etc at national and district level).
viii) To develop training and advocacy materials for the gender and climate change in NDC capacity building programme.

The target Group for the capacity building programme include the following:

i) All those offices mentioned in the coordinating structure at national and district level
ii) The gender focal points in all the sectors
iii) The climate change focal points in all the sectors
iv) The district technical teams in Natural Resources, Production, Community Development, Health and Works
v) Disaster Management Committees
vi) Government agencies such as Uganda National Meteorology Authority, National Environment Management Authority, NARO and other agencies in the energy, agriculture and waste sector
vii) The private sector at national and district level

The resources for the above capacity building programme have been integrated in the budget for the Gender Action Plan presented in the next section in Table 8 totalling US$10,300,000=. This figure is intended to cover other capacity needs such as equipment and human resource contracting, recruitment, and to cater for the coordination of the capacity building programme.

3.7 Proposed Finance Mechanisms

Article 9 of the Paris Agreement stipulates that developed country Parties shall provide financial resources to assist developing country Parties with respect to both mitigation and adaptation in continuation of their existing obligations under the Convention. Other Parties are encouraged to provide or continue to provide such support voluntarily.

Furthermore, as part of a global effort, developed country Parties are mandated to take the lead in mobilizing climate finance from a wide variety of sources, instruments and channels, noting the significant role of public funds, through a variety of actions, including supporting country-driven strategies, and taking into account the needs and priorities of developing country Parties. Such mobilization of climate finance should represent a progression beyond previous efforts.

In addition, Article 9 states that the provision of scaled-up financial resources should aim to achieve a balance between adaptation and mitigation, taking into account country-driven strategies, and the priorities and needs of developing country Parties, especially those that are particularly vulnerable to the adverse effects of climate change and have significant capacity constraints, such as the least developed countries.

Another way to finance the gender action plan (GAP) for NDC implementation would be the Uganda National Budget through the sectoral votes. When allocating resources, the Uganda budget regulations which address gender issues should be applied for implementation of gender responsive NDCs. In this respect, the GAP for NDC implementation will be part of climate

budget tagging process which monitors and track climate related expenditures in the national budget system.

In the districts of Mbale and Moroto, The Northern Uganda Social Action Fund (NUSAF III) was found relevant to gender responsive climate actions, channelling activities through Community interest groups, which engage in conserving the water – shed, planting trees and road construction to improve household income. The Chief Finance Officer Mbale during a key informant interview explained how the Community interest group approach had succeeded in uplifting the women's livelihoods as well as empowering them to take on leadership positions. In Mbale the numbers of women participating in NUSAF III outnumber the men. A sub project of the NUSAF 3, known as Integrated Household Improvement, which gives diary animals to the groups of 15 people, have women leaders for the sub-project. The groups have an intensive saving scheme, where each member saves 30% of their earnings from NUSAF 3 activities; and with support from the District Commercial Officer, the groups are trained and supported to form SACCOs and manage them.

Working in groups, the women in Mbale are employed as casual laborers in drainage channels to remove grass; and a fraction of the fund is used to serve women's interests by providing a tent/shelter for a make shift day care centre for children. This is also an effective way of waste management, where the solid waste collected from the drainage channels can be transformed into manure for use in climate smart agriculture. Soil conservation is also undertaken, by digging contours in the water shade, planting trees such as eucalyptus, banana trees and Misizi *(Maesopsis*) around the contours.

In Moroto, the District Production and Marketing Officer (PDMO) and the District Community Development Officer confirmed that the Regional Pastoral Livelihood Resilience Project under NUSAF 3 had embarked on rangeland management and water-shed restoration maintenance, undertaking mitigation measures such as tree planting, protection of water sources, regeneration of rangelands since 2017. They also confirmed that the NUSAF 3 programme was engendered in that most participants were women engaged in growing vegetables, fruit tree planting around their homes, while men planted trees for timber. Such on-going projects are opportunities to finance the gender responsive measures in NDC implementation.

Other on-going programmes in both Moroto and Mbale include the Uganda Women Entrepreneur Programme (UWEP), Community Demand Driven (CDD) programme and the Economic Empowerment Programme are also resources to fund both the gender responsive adaptation and mitigation measures for NDC implementation.

3.8 Identified Gender Gaps

In addition to the gender gaps identified from Moroto and Mbale districts during the study, available literature in the sectors of interest confirmed the field findings and evidence. For

instance, the Economic Policy Research Centre (EPRC) study (2016) disclosed that contemporary extension programs such as NAADS have reached only a limited number of farming communities (22%) and tended to benefit only better off farmers. Another study by EPRC found that women, youth and Persons with Disabilities had lower access to extension services compared to men. Given that women farmers provide over 70% of the agricultural labour force, their limited access to extension services means lower adoption of improved technologies (estimated at 17 less compared to men) and consequently a smaller contribution to productivity and output. Similarly, youth (10-30 years of age) comprising 57% of Uganda's population, the majority of whom are residing in rural areas where agriculture in the main economic activity, are lagging behind in accessing extension services.

Agricultural extension is essential for communicating useful information, imparting skills and promoting technologies to the rural population and ensuring their application for increased productivity and enhanced quality of rural life. However, the funding for agricultural extension decreased from 39% of the sector budget in FY 2010/2011 to 13% in FY 2014/2015. The study further reported that the extension service does not have sufficient human resources to deliver the level of services necessary to create productivity gains. As of March 2016, only 35% of the established/approved technical positions in local governments were filled. Public extension workers also do not have sufficient skills, are generally demotivated and lack performance assessment system for rewards and sanctions, the EPRC study (2016) reported.

The major challenges facing agriculture in Uganda today include low production and productivity; high post-harvest losses and low value addition. Empirical studies by the National Agricultural Research Organization (NARO) have shown that farm yields are only 28% of yields at experimental stations. Regarding post-harvest losses, several studies estimate it to be between 20 and 30 %. These challenges are largely attributed to the absence of effective and efficient agricultural extension service to the women who handle most of the agricultural tasks.

The International Institute of Tropical Agriculture (IITA) under the Policy Action for Sustainable Intensification of Cropping Systems (PASIC) project, recently established that agricultural extension has the potential of increasing efficient use of inputs by more than 66%. Agricultural extension therefore provides the path way for dissemination of knowledge, technologies, agricultural information and linking women and men farmers to the other actors in the economy.

The Gender Statistics Profile for the Energy Sector, based on a desk review and in-depth analysis of the Uganda National Household Survey (UNHS) 2009/10 and related administrative data from the Ministry of Energy and Mineral Development (MEMD) produced the following gender gaps for the energy sector in 2012.

Concerning lighting fuel (energy source used for lighting) in households "*Tadooba*" (candle powered with kerosene fuel) was the most commonly used source of lighting for both male and female headed households standing at 66 percent. Findings did not indicate any significant difference among male and female headed households in the use of both the "*Tadooba*" and the Lantern. However, more male than female headed households used electricity, while more female than male headed households used firewood.

As for cooking fuel (energy source used for cooking) in households, 74 percent of female headed households used firewood and 23 percent used charcoal for cooking, while 73 percent of male headed households used firewood and 21 percent used charcoal for cooking. Although solid fuels were the most commonly used source of cooking fuel for both male and female headed households, more female than male headed households used firewood and charcoal. On the other hand, slightly more male than female headed households used paraffin, electricity and gas.

Concerning the type of cooking technology, the study revealed that at 69 percent, the traditional 3 stone open fire was the most commonly used among both male and female headed households. However, at 19 percent, more female than male headed households used the traditional stove (*Sigiri).* More female than male headed households used the improved charcoal stove at seven and four percent respectively, while more male than female headed households used the improved firewood stove, at four and three percent, respectively. There were slight differences between the male and female headed households in the use of the gas stove / cooker and electric plate / cooker.

On time spent collecting firewood the study found that on average, female headed households spent four hours per week collecting firewood, while male headed households spent only three hours. Female headed households, on average spent one hour more collecting firewood than their male counterparts (UBOS, 2012) Uganda Bureau of Statistics (2012) Energy Sector Gender Statistics Profile

As for the waste sector, literature to extract gender disaggregated data was not readily available. A recommendation to address this challenge has been given.

4 Recommendations for Gender Responsive Measures for NDC Implementation

The gender responsive measures for NDC implementation are outlined in this section and summarized in tables 7 & 8 below, after presentation of the gender gap analysis (tables 5 - 6) based on the three sectors of agriculture, energy and waste which are the focus for this study.

Outlined below are the identified gender responsive measures for NDC implementation in the respective sectors. These are in line with the priority adaptation and or mitigation measures for NDC, and have been guided by the identified gender gaps as discussed in this report.

4.1 The Agricultural Sector

4.1.1 Priority Measure: Expanding extension services

i) Train the male extension workers to be gender responsive.
ii) Deliberate action to recruit and train female agricultural extension workers;
iii) Build capacity for local community systems and knowledge.
iv)Promote gender responsive producer cooperatives;
v) Promote group formation for men, women, female and male youths to be used as entry points for extension services
vi)Develop gender responsive extension service manual for crop, livestock, and fisheries
vii) Integrate the Disaster management and response messages into the extension services to be able to reach the communities in time.

4.1.2 Priority Measure: Expanding climate information and early warning systems

i) Disseminate targeted information on climate change and gender in agriculture,
ii) Map the commonly used channels of communication in target areas;
iii) Mind the timing of information dissemination when men go back home with radios

4.1.3 Priority Measure: Expanding Climate Smart Agriculture and techniques for cropping

i) Create inclusive awareness on the equitable use of resources for climate change adaptation and mitigation in climate smart Agric;
ii) Establish demonstration gardens in accessible locations
iii) Therefore, the women and men farmers should be involved in the identification, development and transfer of gender responsive technologies during testing and farm demonstrations.

4.1.4 Priority Measure: Expanding diversification of crops and livestock

i) Create inclusive awareness on the equitable use of resources for climate change adaptation and mitigation in climate smart Agric;
ii) Establish demonstration gardens in accessible locations

4.1.5 Priority Measure: Expanding value addition, post-harvest handling, storage & access to markets, including micro-finances

i) Ensure equal participation of women and men, the female and male youth in value addition skills;
ii) promote groups formation and strengthening of existing groups for women, men and the youth;
iii) Research into better terms that micro-finances can offer in order to release the women's time of weekly repayments.

4.1.6 Priority Measure: Expanding rangeland management

i) Inclusive sensitization to land owners about the importance of public and community goods and services

4.1.7 Priority Measure: Expanding small scale water infrastructure

i) Need for alternative sources of water e.g. damming the water from the rivers during the rainy season for easy accessibility for women;
ii) Household level rain water harvesting and storage to ease women's workload
iii) Protect and manage the water catchment areas
iv) Strengthen adopt of soil and water conservation for women and male farmers

4.1.8 Priority Measure: Expanding research on climate resilient crops and animal breeds

i) There is need to breed indigenous animals that can tolerate stress in terms of feeding and water resources for distribution to IPLC including women.
ii) Need to breed for average sized animals that feed less and emit less GHGs.
iii) Need to encourage planting of indigenous crops (cassava and yams) mainly for domestic household consumption for food security
iv) Research should build for local indigenous crops that were initially for food production to also shoot for sale;
v) Technology identification, development and transfer

4.2 Energy Sector

4.2.1 Priority Measure: Increasing efficiency in the use of biomass in the traditional energy sector

i) Make available affordable, user friendly and gender sensitive improved biomass technologies
ii) Promote more gender focused research in the area of efficient utilization of energy resources
iii) Capacity building for focal persons/gender champions in gender and utilization of improved biomass
iv) Develop and disseminate standards for biomass technologies
v) Certification of biomass energy products
vi) Develop gender sensitive indicators to generate the data required for decision making
Increase participatory and inclusive awareness about efficiency use of the stoves (promote house-house awareness)
vii) Engage with schools, NGOs/CSOs/private sector to support both men, women and youth to increase efficient use of biomass

4.2.2 Priority Measure: Sustainable energy solutions in public buildings

i) Ensure equitable recruitment of women and men to cook in Schools / hospitals (public building);
ii) Create inclusive awareness on gender and climate change in relation to sustainable energy solutions

4.2.3 Priority Measure: Promotion and wider uptake of energy efficient cooking stoves or induction cookers

i) Impart skills in making affordable efficient cooking stoves to women, boys, girls and men in rural and peri urban areas, using available local materials

ii)Build capacity to groups of female and male youth, women and PWDs in making Improved Cook Stoves (ICS) as a business;

iii) Institute a mechanism to monitor the carbon credit benefits to women Improved Cook Stoves end users to ensure fairness in the credits earned.

4.2.4 Priority Measure: Promotion and wider solar uptake of solar energy systems

Sensitizations to men and women, boys and girls on solar energy systems,

4.2.5 Priority Measure: Promoting renewable energy and other energy sources

i) Promote and support women to engage in energy service provision as a business;

ii) Promote formalization of off-grid companies

iii) Decentralization of energy services to the rural poor

iv) Provide more energy financing for men, women and youth to access these energy products

v) The energy fund should target IPLCs to increase access and financing of energy products

vi) Capacity building for men, women and youth in operations and maintenance of solar equipment

vii) Provide subsidies for the men, women and youth groups to afford the services especially at post harvesting and production e.g Village Savings and Loan Association (VSLAs) offer opportunities for access to energy sources

4.2.6 Priority Measure: Ensuring the best use of hydropower by careful management of the water resources

i) Increase inclusive and affordable connectivity to hydro power in rural areas

ii) Identify affordable alternative energy sources such wind energy

iii) Promote affordable alternative sources of energy

iv) Promote planting indigenous trees by men, women, and children including school children, female and male youth groups

4.2.7 Priority Measure: Climate proofing investments in electric power sector

i) Create inclusive awareness of IPLCs in proper connectivity to HPP

ii) Increase compliance monitoring, enforcement of the HPP usage and standards

4.2.8 Priority Measure: Coordination, Technical support and capacity building to mainstreaming gender responsive measures in implementation

i Training and technical support to build capacity of national, district and sub county local stakeholders in gender and climate change integration for interventions in agriculture, energy and waste at national and local levels.

ii Coordination of gender responsive measures for NDC implementation

iii Engage in gender focused research across the sectors of agriculture, energy and waste

4.3 Waste Sector

4.3.1 Priority Measure: Integrated waste water treatment

i) Strengthen and increase compliance monitoring and enforcement of the facilities from a gender perspective
ii) Increase inclusive awareness on waste water management
iii) Establish an integrated community waste water treatment systems

4.3.2 Priority Measure: Solid Waste Management

i) Increase inclusive awareness on solid waste management, and waste entrepreneurship for women and youth
ii) Promote the conversion of solid waste/recycling into other useable materials such as tiles, bottles for building, decorations, briquettes, etc for the benefit of women and youth
iii) Promote the culture of sorting solid waste at household level and involve women as managers of household waste.
iv) Strengthen enforcement on the ban of polyethene bags
v) Increase compliance monitoring and assistance of the CDM sites
vi) Identify and tap into new carbon finance opportunities to develop innovative projects

4.3.3 Priority Measure: Promotion of high yielding upland rice

i) Encourage gender sensitive modern technology on rice cultivation
ii) Community participatory and inclusive sensitization on dangers child labour
iii) Support appropriate use of sustainable consumption and production technologies which respond to the needs and priorities of men, women and all youth.
iv) Strengthen the value chain (collection, production, storage and marketing) from a gender perspective
v) Equip women, men and children with the right farming methods to preserve the soils and sustain resilience
vi) Target women and children for crop extension services
vii) Empowering women and youths to take up leadership roles in the value chain production of rice
viii) Support appropriate use of sustainable consumption and production technologies that are gender responsive to men, women and youth

Table 5 GENDER GAP ANALYSIS OF THREE PRIORITY NDC SECTORS

Priority Sectors	Priority Adaptation Actions / Strategies	Current Status	Gender Gap	Intervention
1. Agriculture	Expanding extension services	The extension services are available for crop, animals/livestock and fisheries	Access to extension services. More male service providers for the extension services compared to women Variable Participation of women and men in community meeting	Need to train the male and female extension workers to be gender sensitive. Affirmative action to recruit and train female agricultural extension workers; Build capacity for local community systems and knowledge for inclusive participation and linkages to other sectors Promote gender responsive producer cooperatives; Promote group formation for men, women, female and male youths to be used as entry points for extension services
	Expanding climate information and early warning systems	Limited information on climate change and gender, and early warning information on weather changes	Women tend to have less access to information due to their restricted movements, limited radio and smart phone ownership and higher illiteracy levels than men	Targeted information on climate change and gender in agriculture, map the commonly used channels of communication in target areas; timing of information dissemination when men go back home with radios
	Expanding Climate Smart Agriculture and techniques for cropping	On-going research and demonstrations initiatives by NARO and KCCA, and private sector, CSOs	Power relations in the use of resources; women with less decision-making powers than men	Create inclusive awareness on the equitable use of resources for climate change adaptation and mitigation in climate smart Agric; establish demonstration gardens
	Expanding diversification of crops and livestock	On going research for drought and disease resistant crop varieties	Power relations in the use of resources; women with less decision-making powers than men	Create awareness on the equitable use of resources for climate change adaptation and mitigation in climate smart Agric; establish demonstration gardens; Promote gender responsive climate smart agriculture
	Expanding value	Women continue to process the	At the household level, women are	Ensure equal participation of women and

Priority Sectors	Priority Adaptation Actions / Strategies	Current Status	Gender Gap	Intervention
	addition, post-harvest handling, storage & access to markets, including micro-finances	food for food consumption, Poor and unguided post-harvest handling, limited storage facilities, limited access to markets; SACCOs and Village Savings and Loan Associations are common in both rural and peri urban areas	the food processors, and manage harvests; while men own the mills; women have limited access to markets due to mobility constraints; micro-finances which require weekly repayments tend to increase the women's workload	men, the female and male youth in value addition skills; promote groups formation and strengthening of existing groups for women, men and the youth; Research into better terms that micro-finances can offer in order to release the women's time.
	Expanding rangeland management	Communal rangelands where they exist are managed locally through community systems; At times mismanagement results in conflicts	Men make decisions on rangelands management, but women collect natural resources including fodder for the animals kept at home, over grazing exposes the soils to give out emissions; longer distances to women to get fodder etc	More gender focused research in the management and use of rangelands in the different seasons, climate change impacts, and to generate gender disaggregated data (GDD);
	Expanding small scale water infrastructure	Most of the dams/boreholes dry up during the dry seasons Inadequate alternative sources of water Low water table	Drying of dams/boreholes limiting access to water for production. Ownership and decision concerning the land where the borehole is constructed require approval from the male head who owns the land.	Sensitization to land owners (male or female) about the importance of public and community goods and services Need for alternative sources of water e.g. damming the water from the rivers during the rainy season for easy accessibility for women; Household level rain water harvesting and storage; Protect and manage the water catchment areas Strengthen adopt of soil and water conservation for women and male farmers
	Expanding research on climate resilient crops and animal breeds	The animal breeds being encouraged are mainly for exotic and bigger sized animals. The research being done is not	Research focusing on bigger sized animals implies a bigger workload especially the women in looking for pasture for these animals. Bigger	There is need to breed for indigenous animals that can tolerate stress in terms of feeding and water resources. Need to breed for average sized animals

Priority Sectors	Priority Adaptation Actions / Strategies	Current Status	Gender Gap	Intervention
		reaching the male and female farmers. Research is being done on indigenous crops but women are not involved Get current status from (MAAIF- NARO)	sized animals also require pasture equivalent to its weight and have a high digestive requirement and emit more GHG. This implies that such exotic or bigger sized animals will not be able to tolerate stress in relation to feeding and water requirements.	that feed less and emit less GHGs. Need to encourage planting of indigenous crops (cassava and yams) mainly for domestic household consumption. Research should build for local indigenous crops that were initially for food production to also shoot for sale; Technology identification, development and transfer
2. Energy	Increasing the efficiency in the use of biomass in the traditional energy sector	Low uptake of improved biomass technologies Cost of purchase is still high	Limited access to energy saving stoves by women due to high cost of purchasing the stoves Limited data on improved biomass technologies' uptake	Availability of the affordable improved biomass technologies Promote more research in the area of efficient utilization of energy resources
		Few NGOs/CSOs that has engaged with the Indigenous Peoples and Local Communities (IPLCs) Inadequate awareness of the standards Low standardization of energy products	The Biomass sector is male dominated and commercialized that affects the uptake by the households Technical capacity and standardization of products for marketing	Capacity building for focal persons/gender champions Develop and disseminate standards for biomass technologies Certification of biomass energy products
		Negative attitude towards biomass technologies	Negative attitude towards uptake expressed mostly by women	Develop gender sensitive indicators to generate the data required for decision making Increase inclusive awareness about efficiency use of the stoves (promote house-house awareness)

Priority Sectors	Priority Adaptation Actions / Strategies	Current Status	Gender Gap	Intervention
				Engage with schools, NGOs/CSOs/private sector to support both men, women and youth to increase use of biomass
	Promoting renewable energy and other energy sources	There is low access and utilization of solar kits at the homestead level.	Very few energy service companies supporting women entrepreneurship have set up distribution centers in rural areas	Decentralized energy services to the rural areas particularly targeting private sector for equitable access to solar kits
		Productive use is non existent	Limited financing towards women to access energy sources	Need for one-stop center to clear the products for the market; encourage VSLAs to invest in energy sources
		There is high cost of purchase	Inadequate access/low incomes of the energy products	Provide subsidies for the men, women and youth groups to afford the services especially at post harvesting and production e.g VSLA offers opportunities for access to energy sources
		There is high cost of maintenance	High maintenance cost of the solar equipment for both men, women and youth	Provide more energy financing for men, women and youth to access these energy products
		Limited access to information	Limited skills in servicing the solar equipment	The energy fund should target IPLCs to increase access and financing of energy products Capacity building for men, women and youth in operations and maintenance
	Ensuring the best use of hydropower by careful management of the water resources	There is hydro power being generated, utilized with other HPPs being constructed	Limited connectivity for both men, women and youth	Increase connectivity in rural areas to improve equitable access to hydro power Apply affordable connection rates for IPLCs

Priority Sectors	Priority Adaptation Actions / Strategies	Current Status	Gender Gap	Intervention
		22% connectivity Connectivity is highly urbanized	Illegal connection to the grid impact negatively to men, women and youth due to electric shocks	Identify alternative affordable energy sources such as wind energy Provide affordable connection to the national grid for women and men to access; Enhance climate proofing to mitigate electric shocks
			High level of encroachment and degradation of the catchment due to agriculture, settlement, demand for wood/biomass	Promote affordable alternative sources Strengthen PPP in hydro power generation with conservation aspect through an incentive scheme
	Climate proofing investments in electric power sector	There is climate proofing in electric e.g use of concrete electric poles, use of rubber proof electric cables. there are illegal connections being done by IPLCs	The illegal connects are undertaken by men which possess a high risk to electrocution and other health risks.	Awareness of IPLCs in proper connectivity to HPP Reduce the cost for connection and usage of electric power targeting the IPLCs; apply affirmative action where possible.
		substandard products affect climate proofing investments	Counter fate products on the market affect the uptake by men and women	Increase compliance monitoring, enforcement of the HPP usage and standards, use gender sensitive indicators to collect gender disaggregated data.
3. Case Studies Private sector	Formalization of off-grid sub sector: Solar, Biomass Companies	The private sector is informally engaged in climate change mitigation and adaptation. Off-grid sector has been operating without regulations;	Women have limited access to the solar market, while the male household heads take the decisions on adoption of the off -grid facilities; Carbon Credit benefits to end users of Improved Cook Stoves (ICS), who are usually women, earned only through subsidized price of the ICS. Ownership of facilities in the off-grid sub sector is mainly by the men.	Need for companies to establish a communal renewable energy system (biogas system) which saves on the requirements for water, provide cleaner cooking energy source, reducing stress to the environment, improve their health and social interaction, control to resources, and equitable access. Promote formalization of off-grid companies and inclusion of women in off-grid business

Priority Sectors	Priority Adaptation Actions / Strategies	Current Status	Gender Gap	Intervention
			Purchase of the off-grid power facilities is mainly made by the men who control its utilization	Build capacity to groups of female and male youth, women and PWDs in making Improved Cook Stoves (ICS) as a business; Institute a mechanism to monitor the carbon credit benefits to women ICS end users to ensure fairness in the credits earned.
4. Waste	Integrated waste water treatment	There is no compliance assistance provided to the facilities during routine monitoring and enforcement of the laws, standards and regulations	Non-compliance to waste management standards and regulations (building and drainage standards under the public health)	Strengthen and increase compliance monitoring and enforcement of the facilities using gender sensitive indicators
		There is high use of stream water from rivers/small lakes to clean/wash agri-products that contain hazardous chemicals	Poor enforcement to the laws/standards and regulation	Increase inclusive awareness on waste management
		Open discharge of local brew/*waragi* residues into the water channels	Low capacity of the current infrastructure to handle the population growth and production	Establish an integrated and accessible community waste water treatment systems
	Solid waste management	There is moderate management of solid waste from the sewage	There is poor attitude towards solid waste management	Increase inclusive awareness on waste management, and waste entrepreneurship for women and youth
		There is poor management of solid waste	Waste disposal is mostly left to the women and children to manage. This affects the long-term health status of their health	Promote the conversion of waste/recycling into other useable materials such as tiles, bottles for building etc.
		few recycling plants for polyethene bags and focusing in plastic.	Waste collection and management of recyclable waste material is mostly done by youth and children, without safety gear. This exposes them to diseases that can affect their health.	Strengthen enforcement on the ban of polyethene bags

Priority Sectors	Priority Adaptation Actions / Strategies	Current Status	Gender Gap	Intervention
		Recycling plants are centralized in Kampala	Under the Clean Development Mechanism (CDM) more women and youth are involved in the waste separation without sufficient safety wear The recycling plants are dominated by male owners	Increase compliance monitoring and assistance of the CDM sites using the gender lenses Identify and tap into new carbon finance opportunities to develop innovative and inclusive projects Encourage investors to establish recycling plants in other districts to improve accessibility Develop other gender responsive and innovative financing models to support waste management, recycling etc.
	Promotion of high yielding upland rice	Predominately rice is cultivated in the wetlands. In Gulu and Lira upland rice cultivation is on the rise.	The often unpaid labour for rice cultivation is provided by women and children; increasing women's workload and robbing children quality time for school.	Strengthening and climate proofing of the agriculture value chain to be gender responsive (collection, production, storage and marketing)
		Rice cultivation is intensive and is mostly done by women and children	Children deprived of education because they have to provide labour for rice cultivation; Hired labour is unaffordable for women	Encourage modern gender friendly technology on rice cultivation Undertake inclusive community sensitization on dangers child labour
		The marketing is done by men	Women have limited access to the produce and the income from the produce	Support appropriate use of sustainable consumption and production technologies that are gender responsive to the needs of women, men and children
		The processing mills are diesel powered which emit harmful gases	Post harvesting management is poor and adds workload to women	As above
		Post harvesting management is poor		

Table 6 **District Case Studies**

District	Sector	Current status	Gender gap	Recommendations
1. Mbale	Energy	20 out of the 27 sub counties are connected to the national grid.		
		i. Very low solar uptake ii. Source of energy for lighting indicates that 24% use HPP, 4% use candles, and 66% use paraffin iii. Source of cooking indicates that, 59% use firewood, 32% use charcoal and 3% for HPP, while gas and paraffin are 1%. (source UBOS, 2014) iv. There are government/development partners (NUSAF, FIEFOC, UNDP, Mt.Elgon Tree-MTE, ECOTRUST) interventions to promote tree planting.	Limited knowledge about financing of the solar packages	i. Training/skills in identifying types of soils to use for construction ii. Increase awareness about efficiency use of the stoves (promote house-house awareness) iii. Engage with schools, NGOs/CSOs/private sector to support both men, women and youth to increase use of biomass iv. Promote more research in the area of efficient utilization of energy resources v. Provide more energy financing for men, women and youth to access these energy products vi. The energy fund should target IPLCs to increase access and financing of energy products

District	Sector	Current status	Gender gap	Recommendations
2.	Waste	i. 95% Toilet coverage ii. 35 skips of rubbish iii. Four contractors conducting door to door rubbish collection and one of them is a woman iv. No recycling facility in Mbale v. There is a well-structured system for waste collection and management	i. There are more vulnerable men and women with limited protective gears for waste collection and management ii. There is no sorting at the garbage sites hence exposing the vulnerable men, women and children that collect the waste iii. There more children involved in collecting garbage as a source of income which exposes them to health risks/diseases. There are few women masons supporting construction of biogas facilities .	i. Identifying renewable energy sources that have high waste generation such having integrated waste management in rural communities ii. Have targeted training/capacity building for women to raise awareness about promotion of renewable energy usage and income generating activities iii. Capacity building for men, women and youth in operations and maintenance Increase compliance monitoring, enforcement of the HPP, energy, technologies on usage and standards

District	Sector	Current status	Gender gap	Recommendations
3.	Agriculture	i. 86% agricultural land ii. 3.2% commercial farming iii. Predominant crops are Arabica coffee, banana, cassava, maize, beans, rice and rishi potatoes Land is predominately owned by the men but access and utilization by women is being affected by the high population growth in the region.	Land is predominately owned by men Men focus more on coffee, banana, rice and Irish potatoes for commercial benefits Women focus on food security crops such as maize, beans, cassava and vegetables. Men handle the marketing 90% of unpaid labour is provided by women, children and youth	Develop gender responsive bye-laws and ordinances Develop gender sensitive indicators to generate the data required for decision making Empower women, children and youth about rights and skills in livelihood and wealth creation Promote formation of enterprise cooperatives from a gender perspective
Karamoja Miner's Association	Diversification of livelihoods	Late on-set of the rains, Prolonged droughts Farm and rangelands with bare soils, reduced feeding to one meal a day, families have migrated to the mining region in Rupa Sub County; Tapac subcounty…34 groups with majorly men. Rupa subcounty 34 groups. The groups have been trained in mining. Issues of limited use of Personal protective/safety gear. There are issues of child labour. Barter trade practices, exchange of alcohol/waragi for buying the stones from the women; and the local women artisans end up	Women working in the mines come along with their gender roles e.g taking care of their children who are subjected to the hot temperatures (due to climatic changes) and dust; health implications to the children and the attendant increased workload to the women and time caring for the sick children.	Establish shelter (for breast feeding mothers and children) in the mines. Provision of safe water at the mines as an adaptation to CC. Provision of separate toilets/latrines at the mines for men and women. Planned reforestation to involve men and women and the youth. Undertake land restoration in the mines The richness in the plant species of Moroto should be exploited to benefit the local people. Undertake training needs assessment for

District	Sector	Current status	Gender gap	Recommendations	
		drunk and usually abused. Both men and women are engaged in breaking of the stones. The acquisition of the quarrying areas is usually on a family basis...implying that foreign individuals are usually enslaved in the process. Deforestation to create quarrying grounds reduces the carbon sinks. Land restoration is not being done thus reducing on the area for production. Notable endowment of plant species in Moroto; Limited information, exposure and literacy levels for the IPLCs in Moroto		the IPLCs of Moroto.	

Table 7 **NDC Gender Action Plan for Case Districts**

Sector	Gender gap	Proposed Actions/ Recommendations	Responsible Party/ Organization	Estimated Budget
Energy	Limited access to clean energy for cooking and lighting Limited knowledge among women about financing of the solar packages	- Increase inclusive awareness about efficiency use of the stoves (promote house-house awareness) - Engage with schools, NGOs/CSOs/private sector to support both men, women and youth to increase use of biomass - Promote more research in the area of efficient utilization of energy resources - Provide more energy financing for men, women and youth to access these energy products The energy fund should target IPLCs to increase access and financing of energy products	Ministry of Energy and Minerals, Local Government. Agencies in the energy sector	3,000,000
Waste	- There vulnerable men and women with limited protective gears for waste collection and management - There is no sorting at the garbage sites hence exposing the vulnerable	- Identifying renewable energy sources that have high waste generation such having integrated waste management in rural communities - Have targeted	Ministry of Energy and Minerals, Local Government. Agencies in the energy sector, private sector, CSO Makerere and	7,000,000

Sector	Gender gap	Proposed Actions/ Recommendations	Responsible Party/ Organization	Estimated Budget
	men, women and children that collect the waste - There are children involved in collecting garbage as a source of income which exposes them to health risks/diseases. There are fewer women masons than men supporting construction of biogas facilities; not traditionally an area for women, apart from the women in Karamoja whose roles involve construction.	training/capacity building for women to raise awareness about promotion of renewable energy usage and income generating activities - Capacity building for men, women and youth in operations and maintenance Increase compliance monitoring, enforcement of the HPP, energy, technologies on usage and standards	Busitema University	
Agriculture	i. Land is predominately owned by men ii. Men focus more on coffee, banana, rice and non-sweet potatoes for commercial benefits iii. Women will focus on food security crops such as maize, beans, cassava and vegetables. iv. Men handle the marketing	- Develop gender responsive bye-laws and ordinances - Develop indicators to generate the data required for decision making - Empower women, children and youth about rights and skills in livelihood and wealth creation - Promote inclusive cooperatives (from a gender perspective)	MAAIF, Agencies in Agric Sector, Ministry of Lands, Ministry of Local Government and Local Government, MGLSD, Cooperatives and private sector	

Sector	Gender gap	Proposed Actions/ Recommendations	Responsible Party/ Organization	Estimated Budget
	v. 90% of the labour is provided by women, children and youth			

Table 8 **GENDER ACTION PLAN FOR NDC IMPLEMENTATION IN THREE SECTORS**

Priority Sectors	Priority Adaptation Actions	Identified Gender Gap	Intervention	Responsible Party/Organization	Estimated Budget (USD)
1. Agriculture	Expanding extension services	Access to extension services. More male service providers for the extension services compared to women; but society prefers women reaching to women …implying that the women will receive less of the extension services yet the agricultural sector is dominated by women. This will limit their ability to access appropriate adaptation technologies to improve their resilience;	Train the male extension workers to be gender responsive. Deliberate action to recruit and train female agricultural extension workers; Build capacity for local community systems and knowledge. Promote gender responsive producer cooperatives; Promote group formation for men, women, female and male youths to be used as entry points for extension services Develop gender responsive extension service manual for crop, livestock, and fisheries	Local Governments (LG), NARO, MGLSD, Busitema & Makerere University MAIIF, Development Partners, CSOs MGLSD, LGs, Development Partners MAIIF, LGs, Dairy Development Authority, Coffee Dev Authority, CSOs MGLSD, NARO, Development Partners	$493,540,000
	Expanding climate information and early warning systems	Women tend to have less access to information due to their restricted movements, limited radio and smart phone ownership and higher illiteracy levels than men	Targeted information on climate change and gender in agriculture, map the commonly used channels of communication in target areas; timing of information dissemination when men go back home with radios	MGLSD, Ministry of Information/ICT, LGs, UNMA, CSOs, private sector	$545,460,000
	Expanding Climate Smart Agriculture and techniques for	Power relations in the use of resources; women with less decision-making powers than men	Create awareness on the equitable use of resources for climate change adaptation and mitigation in climate smart Agric; establish	MAAIF, MGLSD, NARO, ZARDI; LGs	$97,849,392

Priority Sectors	Priority Adaptation Actions	Identified Gender Gap	Intervention	Responsible Party/Organization	Estimated Budget (USD)
	cropping		demonstration gardens		
	Expanding diversification of crops and livestock	Power relations in the use of resources; women with less decision-making powers than men	Create awareness on the equitable use of resources for climate change adaptation and mitigation in climate smart Agric; establish demonstration gardens	MAAIF, MGLSD, NARO, ZARDI; LGs	$35,437,668
	Expanding value addition, post-harvest handling, storage & access to markets, including micro-finances	At the household level, women are the food processors, and manage harvests; while men own the mills; women have limited access to markets due to mobility constraints; micro-finances which require weekly repayments tend to increase the women's workload	Ensure equal participation of women and men, the female and male youth in value addition skills; promote groups formation and strengthening of existing groups for women, men and the youth; Research into better terms that micro-finances can offer in order to release the women's time.	MAAIF, MGLSD, NARO, ZARDI; LGs; Financial Institutions, Private Sector, CSOs	30,000,000
	Expanding rangeland management	Men make decisions on rangelands management, but women collect natural resources including fodder for the animals kept at home, over grazing exposes the soils to give out emissions; longer distances for women to get fodder etc	More gender focused research in the management and use of rangelands in the different seasons, climate change impacts, and to generate gender disaggregated data (GDD);	MAAIF, Universities such as Busitema and Makerere, NARO, MGLSD,	37,363,622
	Expanding small scale water infrastructure	Ownership and decision for land acquisition for borehole construction require approval from the male land owners. Drying of dams/boreholes limiting access to water for	Sensitization of land owners on the importance of public services such as boreholes. Need for alternative sources of water e.g. damming the water from the rivers during the rainy season; Capacity building in household	MWE, Ministry of Lands Development Partners, CSOs LGs	40,000,000

Priority Sectors	Priority Adaptation Actions	Identified Gender Gap	Intervention	Responsible Party/Organization	Estimated Budget (USD)
		production, increasing workload to women and children.	level water harvesting;		
	Expanding research on climate resilient crops and animal breeds Livestock breeding research and manure management practices	Research focusing on bigger sized animals implies a increased workload for women looking for pasture for these animals. Bigger sized animals also require pasture equivalent to its weight and have a high digestive requirement and emit more GHG. This implies that such exotic or bigger sized animals will not be able to tolerate stress in relation to feeding and water requirements. Less women than men likely to participate in livestock breeding research	Need to breed smaller indigenous animals that can tolerate stress in terms of feeding and water resources. Need to breed average sized animals that feed less and emit less GHGs. Need to encourage planting of indigenous crops (cassava and yams) mainly for domestic household consumption. Research should build for local indigenous crops that were initially for food production to also shoot for sale; Gender responsive technology identification, development and transfer	MAAIF, NARO, SARI / ZARDI MGLSD, Development Partners, CSOs	$10,565,090
2. Energy	Increasing the efficiency use of biomass in the traditional energy sector	High cost of purchasing the stoves affects the uptake by women and youths	Make affordable, user friendly and gender sensitive energy saving stoves for women and youths	Ministry of Energy, Development Partners, Private Sector, CSOs	110,000,000
		Inadequate awareness of the types of soil to use for construction of ICSs for rural women and men	Training/skills in identifying types of soils to use for construction Capacity building for focal persons/gender champions	Ministry of Energy, MGLSD, CREEK Makerere University, Carbon Bureau /CSO Development Partners	

Priority Sectors	Priority Adaptation Actions	Identified Gender Gap	Intervention	Responsible Party/Organization	Estimated Budget (USD)
		Technical capacity and standardization of products for marketing is less for women, female and male youth	Develop gender responsive indicators to generate the data required for decision making	Ministry of Energy, Carbon Bureau / CREEK, LGs, Development Partners	
		Inadequate awareness of the standards	Engage with schools, NGOs/CSOs/private sector to support both men, women and youth to increase efficiency use of biomass	Ministry of Education and LGs, Ministry of Energy, Development Partners, Private Sector, CSOs	
		Limited data, specifically gender disaggregated data	Increase participatory and inclusive awareness about efficiency use of the stoves (promote house-house awareness)	Ministry of Energy, UBOS, Research Institutions, Carbon Bureau, MGLSD, Private Sector, Dev Partners, CSOs	
			Promote gender focused research in the area of efficient utilization of energy resources	Ministry of Energy, UBOS, Research Institutions, Carbon Bureau, MGLSD, Private Sector, LGs	
	Sustainable energy solutions in public buildings-hospitals and schools	Reduced workload and clean environment for the women and men who cook in hospitals and schools; More men than women take on cooking jobs in public institutions because these are paid jobs	Ensure equitable recruitment of women and men to cook in Schools / hospitals (public building); Create inclusive awareness on gender and climate change in relation to sustainable energy solutions	Ministry of Health; Ministry of Education, LGs, Makerere University. MGLSD	5,000,000
	Promotion and wider uptake of energy efficient cooking stoves or induction	Inequitable access to energy efficient cooking stoves or induction cookers; unaffordable to women who need them because of their	Impart skills in making affordable efficient cooking stoves to women, boys, girls and men in rural and peri urban areas, using available local materials	LGs, Private Sector, CSOs MGLSD, Ministry of Energy	$114,510,000

Priority Sectors	Priority Adaptation Actions	Identified Gender Gap	Intervention	Responsible Party/Organization	Estimated Budget (USD)
	cookers	gender role of cooking			
	Promotion and wider solar uptake of solar energy systems	Inequitable access to solar energy systems; unaffordable to most women	Sensitizations to men and women, boys and girls on solar energy systems, gender and climate change	LGs, Private Sector, CSOs MGLSD, Ministry of Energy	
	Promoting renewable energy and other energy sources	Very few energy service companies supporting women entrepreneurship in the energy sector	Promote and support women to engage in energy service as a business; Decentralization of energy services to the rural poor	Ministry of Energy, Private Sector, LGs, CSOs, Dev Partners	$8,665,541
		Limited financing towards women to access energy sources	Need for one-stop center to clear the products for the market	Financial Institutions, MFPED, Private Sector/CSOs, Dev Partners	
		Inadequate access/low incomes of the energy products	Provide subsidies for the men, women and youth groups to afford the services especially at post harvesting and production	MFPED, Financial Institutions, Private Sector CSOs, Dev Partners	
		High maintenance cost of the solar equipment for both men, women and youth	Provide more energy financing for men, women and youth to access these energy products	MFPED, Financial Institutions, Dev Partners, Ministry of Energy	
		Limited skills in servicing the solar equipment	The energy fund should target IPLCs to increase access and financing of energy products Capacity building for men, women and youth in operations and maintenance of solar equipment	Ministry of Energy, Private Sector, CSOs e.g Solar Now, ECOTRUST, MGLSD	
	Ensuring the best use of hydropower by careful management of	Limited connectivity for both men, women and youth	Increase connectivity in rural areas	Ministry of Energy, UEDCL, Uganda Electricity Regulatory Authority (ERA)	4,000,000

Priority Sectors	Priority Adaptation Actions	Identified Gender Gap	Intervention	Responsible Party/Organization	Estimated Budget (USD)
	the water resources				
		Illegal connections to the grid impact negatively to men, women and youth due to electric shocks	Identify alternative energy sources such wind energy	Ministry of Energy, Private Sector, Dev Partners	
		High level of encroachment and degradation of the catchment due to agriculture, settlement, demand for wood/biomass	Promote affordable alternative sources Promote planting indigenous trees by men, women, and children including school children, female and male youth groups	LGs, Natural Resources and Forestry, CSOs, Private Sector, Dev Partners, Min of Education	
	Climate proofing investments in electric power sector	The illegal electricity connections are undertaken by men and this affects women who may not afford. It affects the adaptation of HPP for men, women and youth	Create awareness of IPLCs in proper connectivity to HPP Increase compliance monitoring, enforcement of the HPP usage and standards	Ministry of Energy, ERA, UEDCL, Private Sector, Dev Partners Ministry of Energy, ERA	
	Technical support and capacity building to mainstreaming gender responsive measures in implementation	Tendency to leave out gender at implementation level, (gender mainstreaming remains on paper) making it difficult to collect gender disaggregated data; and coordination at national and local level	Training and technical support to build capacity of national and local stakeholders in gender and climate change integration for interventions in agriculture, energy and waste at national and local levels.	MGLSD, MWE- CCD, Local Governments, School of Women and Gender Studies Makerere University Kampala, MAAIF, Ministry of Energy, NEMA, UNMA	$10,300,000
3. Case Studies Private sector	Formalization of off-grid sub sector: Solar, Biomass Companies	Women have limited access to the solar market and off-grid clean energy facilities. Decisions on adoption of off -grid facilities taken by male	Need for companies to establish a communal renewable energy system (biogas system) which saves on the requirements for water, provide cleaner cooking	Ministry of Energy, LG, UNREEA, Private Sector, CSOs Carbon Bureau	40,000,000

Priority Sectors	Priority Adaptation Actions	Identified Gender Gap	Intervention	Responsible Party/Organization	Estimated Budget (USD)
		heads of households who own the assets Carbon Credit benefits to end users of Improved Cook Stoves (ICS), who are usually women, earned only through subsidized price of the ICS.	energy source, reducing stress to the environment, improve on their health and as well increase on their social interaction and control to resources. Promote formalization of off-grid companies/ enact gender responsive laws and policies Build capacity to groups of female and male youth, women and PWDs in making Improved Cook Stoves (ICS) as a business; Institute a mechanism to monitor the carbon credit benefits to women ICS end users to ensure fairness in the credits earned.	Ministry of Energy, UNREEA MGLSD, Private Sector, CSOs, Dev Partners, UNREEA, LGs	

Sector	Priority Adaptation Actions	Identified Gaps	Proposed Actions / Recommendations	Responsible Party / Organization	Estimated Cost
4. Waste	Integrated waste water treatment	Non-compliance to waste management standards and regulations (building and	Strengthen and increase compliance monitoring and enforcement of the facilities	MWE, NEMA, Private Sector/UMA,	40,000,000

Sector	Priority Adaptation Actions	Identified Gaps	Proposed Actions / Recommendations	Responsible Party / Organization	Estimated Cost
		drainage standards under the public health)			
		Poor enforcement to the laws/standards and regulation	Increase awareness on waste management	MWE, NEMA, UMA, Private Sector, Dev Partners	
		Low capacity of the current infrastructure to handle the population growth and production	Establish an integrated community waste water treatment systems	MWE, LGs, Dev Partners	
	Solid waste management	There is poor attitude towards solid waste management	Increase awareness on waste management, and waste entrepreneurship for women and youth	NEMA, UMA, LGs, MGLSD, Respective Line MDAs,	30,000,000
		Waste disposal is mostly left to the women and children. This affects the long-term health status of the children and women	Promote the conversion of waste/recycling (by women, PWDs and youth groups) into other useable materials such are tiles, bottles for building, papers for crafts/beads etc.	LGs, MGLSD, CSOs & Private Sector	
		Waste collection of recyclable material is mostly done by youth and children. This will affect their health, hence exposing them to diseases because of lack of safety wear for collection and management of the waste	Strengthen enforcement of the ban on plastics Create awareness on the dangers involved in waste separation (to women, youth and children)	NEMA, Private Sector and UMA MGLSD – OSH, NEMA	
		Under the Clean Development Mechanism (CDM) more women and youth are involved in the waste separation	Increase compliance monitoring and assistance of the CDM sites	MWE- CCD, NEMA, Dev Partners, LGs MGLSD	

Sector	Priority Adaptation Actions	Identified Gaps	Proposed Actions / Recommendations	Responsible Party / Organization	Estimated Cost
			Develop other gender responsive and innovative financing models for example support waste management, recycling etc.	MFPED, CCD, Dev Partners, MGLSD, Financial Institutions, LGs	
	Promotion of high yielding upland rice	Women and children provide unpaid labour for cultivation, but with limited agronomical skills which may affect the soils, productivity and resilience to climate stresses	Strengthening the value chain (collection, production, storage and marketing) while Equipping women, men and children with the right farming methods to preserve the soils and sustain resilience Target women and children for crop extension services	MAIIF, NARO, ZARDIs, MGLSD, LGs, Dev Partners, Private Sector	20,000,000
		The Girl child's chances to education reduced because of providing labour for rice production	Empowering women and youths to take up leadership roles in the value chain production of rice	MAIIF, MGLSD, LGs, NARO, CSOs, Dev Partners	
		Women have limited access to the produce and the income from the produce	Support appropriate use of sustainable consumption and production technologies that are gender responsive to men, women and youth	MGLSD, LGs, CSOs, Dev Partners	
		Post harvesting management is poor			

5 Recommendations and Conclusions

5.1 Recommendations

The following are the recommendations for gender responsive measures for NDC implementation.

5.1.1 Gender Responsive Community- based Mobilization approaches

To map and replicate the existing community-based approaches in mobilizing and involving indigenous peoples and local communities in gender responsive implementation of climate actions. In line with the MGLSD guidelines for community participatory approaches, ensure that communities are empowered and that both men and women participate meaningfully in planning, testing and rolling out adaptation and mitigation activities in both rural and urban areas

Such good practices can be drawn from the Karamoja Private Sector Development Centre which utilizes the VSLAs as entry points for creating awareness and engaging climate change adaptation and mitigation activities. This can be useful in planting affordable nursery trees of indigenous species at community level.

5.1.2 Gender and Climate information dissemination to create awareness

There is need for evidence on climate change from the Meteorology office, to communities, for them to appreciate the dangers of climate change, how it relates to gender and how they can get involved to change the situation. This will help the indigenous peoples and local communities to internalize climate change in relation to their different gender roles in their localities. This will change the communities' perceptions that climate change becomes an issue when there is no rain, when there is a prolonged drought, and or floods.

5.1.3 Enhancing synergies between the public and private sector

Given an enabling policy environment for the public and private to work together as partners, complementing each other as mandated in the Uganda public- private partnership policy, there is need to consciously enhance consultations and synergies between the public and private sector on sensitive industrial policies, which relate to gender and climate change including environmental protection, and minimum standards of waste disposal.

5.1.4 Promotion of gender responsive agricultural enterprise cooperatives

Agriculture thrives where there are enterprise cooperatives, organized groups such as for women and youth. There is therefore need to strengthen the local systems such as the council of elders in Karamoja region and other regions where they have such local systems of organizing production and communities with emphasis on producer cooperatives.

5.1.5 Gender Responsive value addition to waste

As learnt from the Uganda Manufacturers' Association, there is need for innovations which can put waste to good use through value addition. This would involve the development of incubation centres to develop the businesses from waste materials, for women and youth; for example,

businesses adding value to waste papers to make beads and toilet papers; or converting empty glass bottles into decoration materials.

Transforming waste into alternative energy sources, such as making briquettes from waste materials such as kitchen waste, grass, leading to less use of charcoal and firewood, and hence preserving the forests/plant species with the precious genetic materials and maintaining the GHG sequestration. Promoting cow dung bulking and construction of biogas digestors should be embarked on in Moroto district and other pastoral areas.

Lessons and best practices from waste management should be replicated across the different regions in the Country.

5.1.6 District Ordinances/Policies for management of household and commercial waste

Local governments should initiative ordinances and policies to regulate the management of household waste. These should focus on promoting sorting of household waste through sensitizations and trainings, right from village levels /LCI level with linkages to households within the particular village, using agreed existing village structures. There is need to replicate the most appropriate and inclusive village system in establishing this. An example can be drawn from the Village Health Team System, or from the VSLA systems used to mobilize indigenous peoples and local communities.
Industries should also be encouraged to put collection centers for their dispensers.

5.1.7 Capacity building for stakeholders at national and local levels to promote gender responsive approaches to NDC implementation.

Continuous sensitizations in gender and climate change should be undertaken at all levels, national, districts and community levels, to create awareness on gender and climate change; to help indigenous peoples and local communities understand their contributions to climate change, and how gender roles can be used to reverse the negative effects of climate change. In this respect, user friendly methods of mass communication such as Information Education Communication (IEC) materials, and channels should be developed for this purpose.

Appropriate orientation should be given to the coordinating teams at national and district levels. Training of gender and climate change focal points from the different sectors with the aim of creating a training of trainers' team for sustainability should be conducted. Training materials in gender and climate change should be developed for all levels to ensure harmonized content and instruction.

Attend to capacity gaps in the human and other resources both at national and district level to ensure smooth implementation of the gender responsive measures in NDC. For instance, the district head of Natural Resource Department, through the Chief Administrative Officer should clearly designate duties and responsibilities ascribed to climate change to the District Forestry Officer.

The capacity gaps in Moroto include the need for continuous sensitization and dialogues to help the communities change their attitudes towards gender, need for exchange visits within communities and follow ups in search of the best practices and to use role models from the communities to change the community's stereotypes towards gender. The attitudes concerning gender roles where women work long hours, walk long distances to collect firewood, the attitude that women have to carry the produce to the market place for the men to sell; that women simply own the garden land, not land for cattle rearing; that decision making is a preserve of the men; among others. Similar sensitizations should be extended to the indigenous peoples and communities in the hills of Wanale Sub County in Mbale district and beyond.

5.1.8 Review Climate Related Policies

Ensure that the identified gaps in policies are addressed to maintain harmony in the coordination and implementation of NDC from a gender perspective.

5.1.9 Programmes to empower women

NDC implementation should cater for both the practical daily needs as well as those measures intended to transform the power structures in order to empower women in the acquisition of productive resources such as land, and appropriate technologies. there is need to enhance and build on the on-going efforts in mainstreaming gender and climate change in all the sectors.

5.1.10 Continuous efforts to generate gender/sex disaggregated data

Efforts by the Uganda Bureau of Statistics should be enhanced to generate gender disaggregated data in climate change and gender and in relation to other sectors such agriculture, energy and waste.

5.2 Conclusions

The study reveals an enabling policy environment and legal framework for gender as stipulated in The Constitution of the Republic of Uganda (1995), the Uganda Gender Policy (2007), and the Climate Change Policy, from the national development framework, the NDPII, the specific sectoral efforts to mainstream gender in sectoral investment plans in Agriculture, Energy and Local Governments as well as the global policy environment for gender and climate change. The different policy initiatives, ratifications to global obligations by government, are clear indicators of the country's commitment towards a gender responsive NDC implementation.

The study further reveals that the existing institutional arrangements for coordination of climate change and gender need to be strengthened in order to harmonize the gender and climate change efforts in the country, at all levels.

Gender gaps have been identified in the sectors of agriculture, energy and waste, but statistics on gender in relation to climate change and the waste sector is still scarce. A recommendation to this effect has been made.

Gender and climate change are both cross cutting issues with linkages that must be understood to the coordinating and implementing teams, as well as the sectors. A capacity building plan and budget has therefore been included in the report, and gender responsive measures that will contribute to equitable implementation of NDCs have been well thought out, in line with the agreed NDCs for Uganda. All these preparations will require determination and commitment from the coordinating organs and the implementers as well as enhanced political will.

Table 9 *Crop Use and Roles for Moroto District*

Crop Farming in Moroto District	**Crop Use**								**Responsibility for Crop**										**Marketing Role**									
	Food		Sell		Both Food & sell		Sauce		Woman		Man		Both woman & Man		Boy		Girl		woman		Man		Both Woman & Man		Boy		Girl	
Crop	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Maize	12	40	0	0	14	47	0	0	18	60	5	17	4	13.3	2	7	2	7	14	47	0	0	1	3.3	1	3.3	1	3.3
Sorghum	2	7	1	3.3	27	90	0	0	18	60	3	10	10	33.3	5	17	3	10	24	80	1	3.3	2	7	1	3.3	2	7
Sesame	8	27	0	0	17	57	0	0	20	67	1	3.3	4	13.3	1	3.3	0	0	18	60	0	0	0	0	1	3.3	1	3.3
Beans	6	20	0	0	7	23.3	14	47	23	77	2	7	2	7	0	0	1	3.3	8	27	0	0	0	0	0	0	1	3.3
Tomatoes	3	10	0	0	1	3.3	0	0	5	17	0	0	0	0	1	3.3	1	3.3	1	3.3	0	0	0	0	0	0	1	3.3
Gnd'nuts	4	13.3	0	0	2	7	0	0	11	37	1	3.3	0	0	0	0	1	3.3	2	7	0	0	0	0	0	0	1	3.3
Cowpeas	0	0	0	0	2	7	0	0	1	3.3	2	7	0	0	0	0	0	0	2	7	0	0	0	0	0	0	0	0

Others/Pigeon peas	6	20	0	0	0	0	0	0	7	23.3	0	0	0	0	0	0	0	0	0	0	1	3.3	0	0	0	0	0	0
Others/ Tobacco for Sniffing									0	0	0	0	1	3.3	1	3.3	1	3.3			1	3.3	0	0	0	0	0	0

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6 Annex A: Definition of Terms

Adaptation: Adjustment in natural or human systems in response to actual or expected climatic stimuli or their effects, which moderates harm or exploits beneficial opportunities

Carbon sink: A feature where carbon dioxide is removed from the atmosphere; The major natural carbon sinks are forests and oceans, which have processes that absorb CO2

Climate change: Any significant change in measures of climate, such as temperature, precipitation or wind, lasting for an extended period (decades or longer); This report refers to climate change induced by human activities that change the atmosphere's composition (e.g., burning fossil fuels) or the land's surface (e.g., deforestation, reforestation, urbanisation, desertification, etc.)

Greenhouse Gases: Any gas that absorbs infrared radiation in the atmosphere, including (but not limited to) water vapour, carbon dioxide (CO2), methane (CH4), nitrous oxide (N2O), chlorofluorocarbons (CFCs), hydrofluorocarbons (HFCs), hydrochlorofluorocarbons (HCFCs), ozone (O3), perfluorocarbons (PFCs) and sulphur hexafluoride (SF6)

Gender: Refers to the differences between women and men, boys and girls within the same household and within and between cultures that are socially and culturally constructed and change over time. These differences are reflected in the roles, responsibilities, access to resources, constraints, opportunities, needs, perceptions, views, etc., conceptualized by both women and men and their interdependence relationships (Compendium of concepts and definitions on gender statistics, December 2013: www.ubos.org).

Gender Indicator / Gender sensitive indicators: This measures gender related changes in society over time. The term gender sensitive indicators incorporates sex disaggregated indicators which provide separate measures for men and women on a specific indicator such as literacy or where the indicator is specific to women or men for example women experiencing physical abuse (Gender and Indicators Overview Report July 2007: www.undp.org).

Gender Analysis: The systematic gathering and examination of information on gender differences and social relations in order to identify, understand and redress inequities based on gender. It is the process of identifying and classifying roles of women and men in a given economic activity, their relations, access to and control over resources and benefits. (Compendium of concepts and definitions on gender statistics, December 2013: www.ubos.org)

Gender Equality: Gender equality is the equal valuing by society of the similarities and the differences of men and women, boys and girls, and the roles they play from an economic, social,

cultural and political development perspective. (Compendium of concepts and definitions on gender statistics, December 2013: www.ubos.org)

Gender Equity: Means "fairness of treatment for women and men, according to their respective needs, including the equal treatment or treatment considered equivalent in terms of rights, benefits, obligations and opportunities" (www.unicef.org/gender/training/content/resources/Glossary.pdf).

Gender statistics: This is an area that cuts across traditional fields of statistics to identify, produce and disseminate statistics that reflect the realities of the lives of women and men, and policy issues relating to gender (www.unece.org/stats/gender).

Gender Mainstreaming: A strategy for making women's as well as men's concerns and experiences an integral dimension of the design, implementation, monitoring and evaluation of the policies and programmes in all political, economic and societal spheres so that women and men benefit equally, and inequality is not perpetuated (www.unicef.org/gender/training/content/resources/Glossary.pdf)

Gender budgeting focuses on the analysis of public expenditure and revenue from a gender perspective, identifying the implications for women compared to men. The ultimate goal is to reprioritize both expenditures and revenue raising methods in order to promote equality

Gender responsive refers to policies and approaches that entail identifying needed interventions to address gender gaps in sector and government policies, plans and budgets; considering gender norms, roles and relations for women and men and how they affect access to and control over resources; and considering women's and men's specific needs, although these nuances are not always clear cut. Changes are planned or made that respond to the inequities in the lives of men or women within a given social setting and aim to remedy these inequities.

Gender sensitive refers to policies and approaches that take into account gender perspectives and assess gender impacts and incorporate them into strategies; policies and approaches consider gender norms, roles and relations but does not address inequality generated by unequal norms, roles or relations. While it indicates gender awareness, no remedial action is developed.

Gender statistics are defined as statistics that adequately reflect differences and inequalities in the situation of women and men in all areas of life. Gender statistics are defined by the sum of the following characteristics: (a) data are collected and presented disaggregated by sex as a primary and overall classification; (b) data reflect gender issues; (c) data are based on concepts and definitions that adequately reflect the diversity of women and men and capture all aspects of their lives; and (d) data collection methods take into account stereotypes and social and cultural factors that may induce gender biases.

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