Readiness study for advancing and scaling-up Sexual Reproductive Health Rights/Family Planning for Climate adaptation and resilience in Uganda

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By: Regenerate Africa.

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[1] See Box 3 for further information about Regenerate Africa.

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List of Acronyms and abbreviations

CPR	Contraceptive Prevalence Rate
CSO	Civil Society Organizations
DHMT	District Health Management Team
FGDs	Focus Group Discussions
FP	Family Planning
GBV	Gender Based Violence
GHGs	Green House Gases
INGOs	International Non-Government Organizations
KII	Key informant interviews
MAAIF	Ministry of Agriculture Animal Industry and Fisheries
MEMD	Ministry of Energy and Mineral Development
MGLSD	Ministry of Gender, Labour and Social Development
MoFPED	Ministry of Finance, Planning and Economic Development
MoH	Ministry of Health
MWE	Ministry of Water and Environment
NAP	National Adaptation Plan
NAPA	National Adaptation Program of Action
NPC	National Population Council
NDP III	National Development Plan III
PRB	Population Reference Bureau
SRHR	Sexual Reproductive Health Rights
SDGs	Sustainable Development Goals
UBOS	Uganda Bureau of Statistics
UDHS	Uganda Demographic and Health Survey
UN	United Nations
UNEP	United Nations Environment Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNFCCC	United Nations Framework Convention on Climate Change
USAID	United States Agency for International Development
VHT	Village Health Teams
WHO	World Health Organization

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Executive summary

This is a study report of the readiness study on, *´´advancing and scaling-up Sexual Reproductive Health Rights/Family Planning for Climate resilience in Uganda. ´´* Overall, the study aimed at the generation of recommendations and actions for influencing policy and practice for institutionalization and scale up of SRHR/FP into climate actions in Uganda at various scales i.e., national, sub national, local and community. Furthermore, the study had the following objectives:

a) *To establish the status of institutionalization of SRHR/FP in climate action at the national, local and community levels;*
b) *To document local cases/examples depicting the linkage between climate change and SRHR/FP;*
c) *To identify the underlying policy and institutional structure gaps, which limit effective institutionalization and scale up of SRHR/FP in climate action;*
a) *To generate recommendations and actions for influencing policy and practice for institutionalization and scale up of SRHR/FP into climate actions in Uganda at various scales i.e., community, local and national.*

The study was conducted through application of mixed methods, including the following: Literature review and gap analyses; engagements with key stakeholders through key informant interviews, focus group discussions, observations, consultation and validation workshops.

The data collected through the literature review was synthesized through content and thematic analyses for appreciation of the linkage between SRHR/FP and climate change. Furthermore, the associated policy and legal framework provisions and existing underlying opportunities and barriers for mainstreaming and scaling up family planning into climate action at the local and national levels. Equally, the data collected through the key informant interviews and FGDs was synthesized through content and thematic analyses based on the themes for the compilation of the study report for advancing and scaling up SRHR/FP for climate change adaptation and resilience in Uganda. The data analyzed from the key informants and the FGDs was used for triangulation of the data gathered through the literature review to draw the final overall conclusions and recommendations from the study for implementation towards institutionalization and scale up of SRHR/FP into climate actions in Uganda at various scales i.e., community, local and national.

Of note is that the study revealed key emerging issues and associated recommendations as described in **Table 1**.

Table 1: Key emerging issues and associated recommendations for advancing and scaling-up Sexual Reproductive Health Rights/Family Planning for climate resilience in Uganda.

Key emerging issues	Responsive policy/Practice recommendations	Who is responsible? Some of the key actors
a) Limited knowledge about and associated appreciation the linkage between family planning/sexual reproductive health (FP/SRH) and climate action among the key stakeholders and actors at the community, local and national levels.	Pursue structured engagements with key actors and stakeholders to advance appreciation of the linkage between family planning and climate.	Ministry of Health; National Population Council; Ministry of Gender, Labour and Social Development (MGLSD); Ministry of Water and Environment (MoWE); Local Governments; Civil Society Organizations (CSOs) & Networks; International Non-Government Organizations (INGOs), UN Agencies and Development Partners.

b) Lack of the Uganda National Adaptation Plan for the Health sector for advancing structured response to climate change impacts on health.	Development of the Uganda National Adaptation Plan for the Health sector	Ministry of Health (MoH); National Population Council; MoWE, CSOs & Networks; International Non-Government Organizations (INGOs), UN Agencies and Development Partners.
c) The process for development of the National Adaptation Plan (NAP) is underway and is spearheaded by the Climate Change Department, Ministry of Water and Environment.	Advance integration of health sector adaptation strategies & actions (including: FP and SRH) in the NAP.	MoH; National Population Council; MoWE, CSOs & Networks; Academic & Research Institutions; International Non-Government Organizations (INGOs), UN Agencies and Development Partners.
d) The process for development of the National Gender Action Plan is underway and is spearheaded by the MoWE through Technical Assistance from the United Nations Food and Agriculture Organization Uganda (FAO Uganda).	MoWE in collaboration with the FAO Uganda should fast-track process for development of the National Gender Action for Uganda.	MoWE, Ministry of Gender, Labour and Social Development (MGLSD); CSOs & Networks; Academic & Research Institutions; International Non-Government Organizations (INGOs), UN Agencies and Development Partners.
e) Inadequate capacity for mainstreaming family planning in climate action adaptation at scales i.e., community, local and national level.	Enhance capacity for mainstreaming family planning in climate action adaptation at scales i.e., community, local and national level.	MoH; National Population Council; MoWE, CSOs & Networks; International Non-Government Organizations (INGOs), UN Agencies and Development Partners.
f) Weak coordination among actors and stakeholders that respond and address issues relation to the interconnection between population dynamics, development, agriculture, environment, natural resources management and climate action across the NDP III programmes being implemented at the national and local levels.	Streamline and strengthen coordination among key actors and stakeholders that respond and address issues relation to the interconnection between population dynamics, development, agriculture, environment, natural resources management and climate action across the NDP III programmes being implemented at the national and local levels.	Ministry of Health; Ministry of Gender, Labour and Social Development (MGLSD); Ministry of Water and Environment (MoWE); Ministry of Finance, Planning and Economic Development (MoFPED); National Population Council; National Planning Authority; Local Governments; Civil Society Organizations (CSOs) & Networks; International Non-Government Organizations (INGOs), UN Agencies and Development Partners.
g) Silos approach in design and delivery of services by the Government and other development actors	Develop and implement responsive programmes for delivery of services that integrate strategies for addressing issues related to FP/SRH and climate action, while actively involving the key actors based on their mandates, roles and responsibilities.	Ministry of Health; Ministry of Gender, Labour and Social Development (MGLSD); Ministry of Water and Environment (MoWE); Ministry of Finance, Planning and Economic Development (MoFPED); National Population Council; National Planning Authority; Local Governments; Civil Society Organizations (CSOs) & Networks; International Non-

		Government Organizations (INGOs), UN Agencies and Development Partners.
h) Limited scale up and out of best practices demonstrating the connection between FP/SRH and Climate action at different levels.	Advance more targeted and contextualized training and facilitation to support the scale up and out of these best practices at different scales	Ministry of Health; National Population Council; Ministry of Gender, Labour and Social Development; Ministry of Water and Environment; Local Governments; CSOs & Networks; Academic & Research Institutions; International Non-Government Organizations (INGOs); UN Agencies; Development Partners and Private Sector.
i) Inadequate financing to support implementation of responsive actions addressing the challenges emerging from Gender, Health (FP/SRH) and Climate change action.	Increase fund allocation and access to financial resources to facilitate implementation of the responsive actions to address integrated climate action approach, thus addressing issues related to the interconnection between family planning, gender and climate action.	Ministry of Finance, Planning and Economic Development; Ministry of Water and Environment; Ministry of Health; Ministry of Gender, Labour and Social Development; Ministry of Agriculture, Animal Industries and Fisheries (MAAIF); Local Governments; CSOs & Networks; Uganda Designated & Accredited Entities; International Non-Government Organizations (INGOs); UN Agencies; Development Partners and Private Sector.
j) Existence of religious and cultural beliefs which are indifferent of FP/SRH planning services.	Pursue structured engagements with religious and cultural leaders for a positive mindset change on beliefs that are indifferent of family population dynamic, environment, natural resources management and climate action.	National Population Council; MoWE; Ministry of Health; Local Governments; CSOs & Networks; UN Agencies and Development Partners.
k) Destruction of infrastructures by the prevailing and projected climate change impacts, especially the heavy rains and flooding.	Design and construct climate smart infrastructure i.e., roads and health centres which are adapted to the current and projected climate climatic conditions to advance climate change resilience for the health infrastructure, environment and the community.	Ministry of Lands, Housing and Urban Development; Ministry of Health; Ministry of Local Government; Ministry of Water and Environment; Ministry of Energy and Mineral Development (MEMD); Local Governments; CSOs & Networks; Uganda Designated & Accredited Entities; International Non-Government Organizations (INGOs); Development Partners; UN Agencies and Private Sector.

I) Considering FP/SRH as an adaption strategy to respond to climate change impacts	Integration of FP/SRH as part of program design and implementation at different scales i.e., Community, Local, National and Regional	Ministry of Health; Ministry of Local Government; Ministry of Water and Environment; Ministry of Finance, Planning and Economic Development; Ministry of Agriculture, Animal Industries and Fisheries.
J) Inadequate support to community based institutional and structures (e.g., Village Health Teams) for advancing effective delivery of health services at the community level	Provide responsive support and facilitation for community based institutional and structures (e.g., Village Health Teams) to conduct effective service delivery to compliment the Government structures.	Ministry of Health; Ministry of Local Government; Ministry of Water and Environment; Ministry of Finance, Planning and Economic Development; CSOs & Networks; UN Agencies; Private sector; and Development Partners.

1.0 Background

There is strong evidence depicting the intrinsic link between Gender, SRHR and climate change issues. Reports by National Adaptation Plan (NAP) Global Network and Women Deliver (2020) and United Nations Framework Convention on Climate Change (UNFCCC), 2019; and Hashim, J., and Z. Hashim, (2016). Climate Change risks increasing social, including gender inequalities. Thus, as global temperatures rise, extreme weather events like floods, droughts, and heatwaves particularly threaten the health and rights of women and girls. Women Deliver (2021) reported that gender, sexuality, age, wealth, indigeneity, and race are all determining factors in the vulnerability to climate change.

According to the WHO, (2021), climate change is expected to cause approximately 250,000 additional deaths per year, from malnutrition, malaria, diarrhoea and heat stress, between 2030 and 2050. The same report underscores that direct damage costs to health (i.e., excluding costs in health-determining sectors such as agriculture and water and sanitation), is estimated to be between USD 2-4 billion/year by 2030.

In Uganda, climate change is visible and is impacting all sectors including the health sector. Studies by WHO, (2015) and Kaddu et al. (2020), indicate that climate change is aggravating the occurrences of water-related diseases, such as dysentery, cholera, hepatitis E and malaria, including other diseases like respiratory infections and malnutrition-related illnesses. According to the World Bank, (2020), the mortality rate attributed to exposure to unsafe water, sanitation and hygiene service per 100,000 population for Uganda by 2019 is estimated at 28.1% and associated death at 12435 for both males and females. This has negative impacts on health and productivity of the population and overall economic growth and development.

Box 1. Key selected definitions

Climate is the prevailing or average weather conditions of a place as determined by the temperature and metrological change over a period of time. Various factors determine climate and the most important are rainfall and temperature (NAPA, 2007).

Climate change refers to any change in climate over time, whether due to natural causes or as a result of human activity (IPCC, 2001).

Climate change adaptation - refers to adjustments in practices, processes, or structures to take into account changing climate conditions, to moderate potential damages, or to benefit from opportunities associated with climate change (NAPA, 2007).

Climate change mitigation - refers to an intervention to reduce greenhouse gas (GHS) emissions or enhance GHG sinks (NAPA, 2007).

Family Planning (FP) is the ability of individuals and couples to anticipate and attain their desired number of children and the spacing and timing of their births. It is achieved through theuse of contraceptive methods and the treatment of involuntary infertility (WHO, 2008). The importance of Family planning has many benefits to individuals, as well as to families, communities, and societies.

In addition to climate change impacts, women, adolescents, and young people in Uganda are among the most vulnerable to discrimination and exclusion because of deeply entrenched socio-cultural and religious beliefs (Population Institute, 2023). This has negatively influenced their access to sexual and reproductive health services. For instance, unmet need for family planning has declined, but remains high at 32%, with adolescents 15-19 years at 30%. Modern contraceptive prevalence rate is 35%, and 9.4% among married young women 15-24 years with wide geographical disparities (UDHS, 2016). The adolescent pregnancy rate stagnated at 25% among girls 15-19, with 12% of adolescent girls being married thereby contributing to 23% of school dropouts (UDHS, 2016). Maternal mortality ratio has decreased slowly to 336 per 100,000 live births in 2016, with 28% of maternal deaths occurring among young women, 15-24 years, despite improvements in skilled birth attendance and health facility deliveries (UDHS, 2016). The above situation has been compounded by the already existing climate-related occurrences in some parts of the country.

Furthermore, climate change issues have negative impacts on maternal health and create condition that result in increases in gender-based violence (GBV) including harmful practices such as child marriage. Climate-related disasters or occurrences such as floods, mudslides and landslides may strain the capacity of health systems and hinder or disrupts access to SRHR/FP services, thus rendering these services inaccessible. Hence, expecting women often deliver unsupervised and without the much-needed medical support. In addition, women's and girl's ability to manage, their menstruation with dignity is impaired when there is a lack of clean water and menstrual products. Climate change impacts exacerbate the already existing challenges, vulnerabilities and disabilities for marginalized and vulnerable groups of people (WHO, 2021).

The GoU responded by developing an overarching policy framework with commitment to advance adaptation and mitigation of climate change impacts in the health sector, which makes frequent reference to the value of, and need for cross-sectoral collaboration between SRHR/FP, environment and climate resilience. These are enshrined in the Nationally Determined Contributions, the National Climate Change Policy 2015; National Adaptation Programme of Action 2007, The 3rd National Development Plan 2020/21 – 2024/25; and the Ministry of Health Strategic Plan 2020/21-2024/25 among others, which create an enabling environment for SRHR/FP integration and institutionalization into the national climate policies, plans, strategies and action. In addition, Government has recommitted to the NDP III and Family Planning 2020 pledge to continue promoting universal access to all methods of family planning and to reduce the unmet need for family planning to 10% and increase contraceptive prevalence rate (CPR) to 50% by 2025 (NPA, 2020). Despite increased Government funding for reproductive health commodities from USD 2.1 million to 4.3 million dollars for FY2019/2020, a gap of USD 9.8 million dollars is required to ensure equitable and universal access to family planning.

Much as there is still progress made in this respect, there are underlying policy and institutional structure barriers that limit effective integration, scale-up and institutionalization of SRHR into Uganda´s Climate change agenda and actions at community, local and national scales. For example, SRHR/FP has been largely left out of climate change adaptation strategies, proposals and projects despite the growing evidence base that links women's met needs for family planning with reduced human vulnerability to climate change and enhanced resilience. Some of the key barriers in this respect include:

a) *There is also still low exposure of the FP/SRHR practitioners, advocates, policy makers, actors and stakeholders at country level to understand the intrinsic linkage between climate change and SRHR, climate processes, protocols, and key decision makers within the climate adaptation and resilience community.*
b) *Inadequate technical capacity, knowledge and skills to actively participate in national adaptation and climate action engagement processes for integration, institutionalization and scaling up of SRHR/FP into responsive climate actions at the national, local and community levels;*
c) *Inadequate capacities of SRHR/FP practitioners, advocates, policy makers, actors and stakeholders at country level to support sustainable scale up of high impact practices in SRHR/FP within the climate adaptation and resilience agenda;*
d) *There are gaps in the policy and institutional framework to address SRHR and climate change issues, e.g., lack of the National Adaptation Plan for the Health sector;*
e) *Inadequate documentation and exchange of knowledge and experiences based on practical actions to address climate change impacts and SRHR in Uganda and East African Community.*

Therefore, the Readiness study for *´´advancing and scaling up SRHR/FP for climate change resilience in Uganda´´* is one of the interventions which established the status of institutionalization of SRHR/FP in

climate action at the national and local levels. It will also underpin the underlying policy and institutional structure gaps and barriers that limit effective institutionalization and scale up of SRHR/FP in climate action. Overall, the study aimed at the generation of recommendations and actions for influencing policy and practice for institutionalization and scale up of SRHR/FP into climate actions in Uganda at various scales i.e., national, sub national, local and community.

Objectives of the readiness study

a) To establish the status of institutionalization of SRHR/FP in climate action at the national, local and community levels;
b) To document local cases/examples depicting the linkage between climate change and SRHR/FP;
c) To identify the underlying policy and institutional structure gaps, which limit effective institutionalization and scale up of SRHR/FP in climate action;
d) To generate recommendations and actions for influencing policy and practice for institutionalization and scale up of SRHR/FP into climate actions in Uganda at various scales i.e., community, local and national.

Research questions

The readiness study aimed at answering the following research questions, derived from the objectives of the study:
i) Is there a linkage between climate change and SRHR/FP?

ii) If yes, what are some cases or examples demonstrating this linkage?

iii) What are the underlying structural (i.e., policy, legal and institutional) gaps limiting effective institutionalization and scale up of SRHR/FP in climate action?

iv) What are the emerging issues, associated recommendations and actions for advancing the institutionalization and scale up of SRHR/FP into climate actions in Uganda at various scales?

2.0 Methodology

Qualitative methods were used in the study through application of mixed methods, tools and approaches to generate the information and data for the study. In this respect, the following steps were conducted during the study:
a) Development of the tools for data collection. The tools developed included: Literature review and gap analyses guide; Key informant check list; Focus Group Discussions (FGDs) check list. The tools were aligned to the study objectives and research questions to ensure that the required information was generated during administration of each the tools. Thus, they were tailored to the targeted source and or stakeholders who provided the required information. The literature and gap analyses tool, the key informant check list, and the focus group discussion guide were administered during the literature review & gap analyses, engagement with the key informants and community representatives that participated in the FGDs.

Figure 1: *The Buikwe District Deputy Chief Administrative Officer (*Ms. Nankindu Betty*), other key technical and political staff of the district in a group photo with Regenerate Africa staff at the Inception meeting for the readiness study, conducted at Stone Castle Hotel in Lugazi.* ***Photo credit:*** *Regenerate Africa.*

b) Literature review and gap analyses were conducted focusing on relevant policies, institutional and legal framework on climate action and SRHR/FP at the global and national levels. This helped in appreciation and understanding of the current policy and legal framework in respect to the underlying opportunities and barriers for mainstreaming and scaling up family planning into climate action at the local and national levels. Thus, some of the key policies reviewed included: *the Nationally Determined Contributions, 2022 (MWE, 2022); the National Climate Change Policy, 2015 (MWE, 2015)*; *National Development Plan III,* 2020/21-2024/25 (NPA, 2020); *and the National Population Policy, 2020 (MoFPED, 2020).*

c) Data collection through structured engagements with key stakeholders and actors actively involved in climate action and SRHR/FP interventions.

Conducting inception meetings with key stakeholders

The study inception activities involved both relevant technical and political leaders from key Ministries, Authorities and Departments (MDAs) (in the health, Water and Environment sectors) and Buikwe District and Ssi Bukunja Sub County. This involved courtesy to the respective officials in the MDAs and reconnaissance visit that engaged the Buikwe District Chief Administrative Officer and the Ssi-Bunkunja sub county Chief. During both interactions, information about the planned study was shared and most especially on how these key stakeholders would be involved in the study as key informants.

Figure 2: A group photo of Ssi-Bukunja sub county political and technical leaders and the staff of Regenerate Africa, at the end of the inception meeting for the readiness study, conducted at the sub county council hall. **Photo credit:** Regenerate Africa.

Furthermore, targeted study inception workshops were conducted on 1st February 2023 and 31st January 2023 for the technical and political leaders of Buikwe district and Ssi Bukunja Sub County, respectively.

Ssi Bukunja sub county (located in Buikwe district in Central Uganda) was selected as the study area (see **Figure 3**) to bring out the local context, particularly in respect to documentation of impacts of climate change and associated cases/examples demonstrating the linkage between climate change and SRHR/FP. This is based on due consideration of the vulnerability of this area in terms of the climate variability and change impacts, high fertility and population growth rate. Thus, some of the reported climate change and variability impacts are: *raising water levels along the lake banks resulting in flooding is some areas thereby cutting off roads and limiting access to services; prolonged droughts in some areas resulting in low productivity and household food insecurity.*

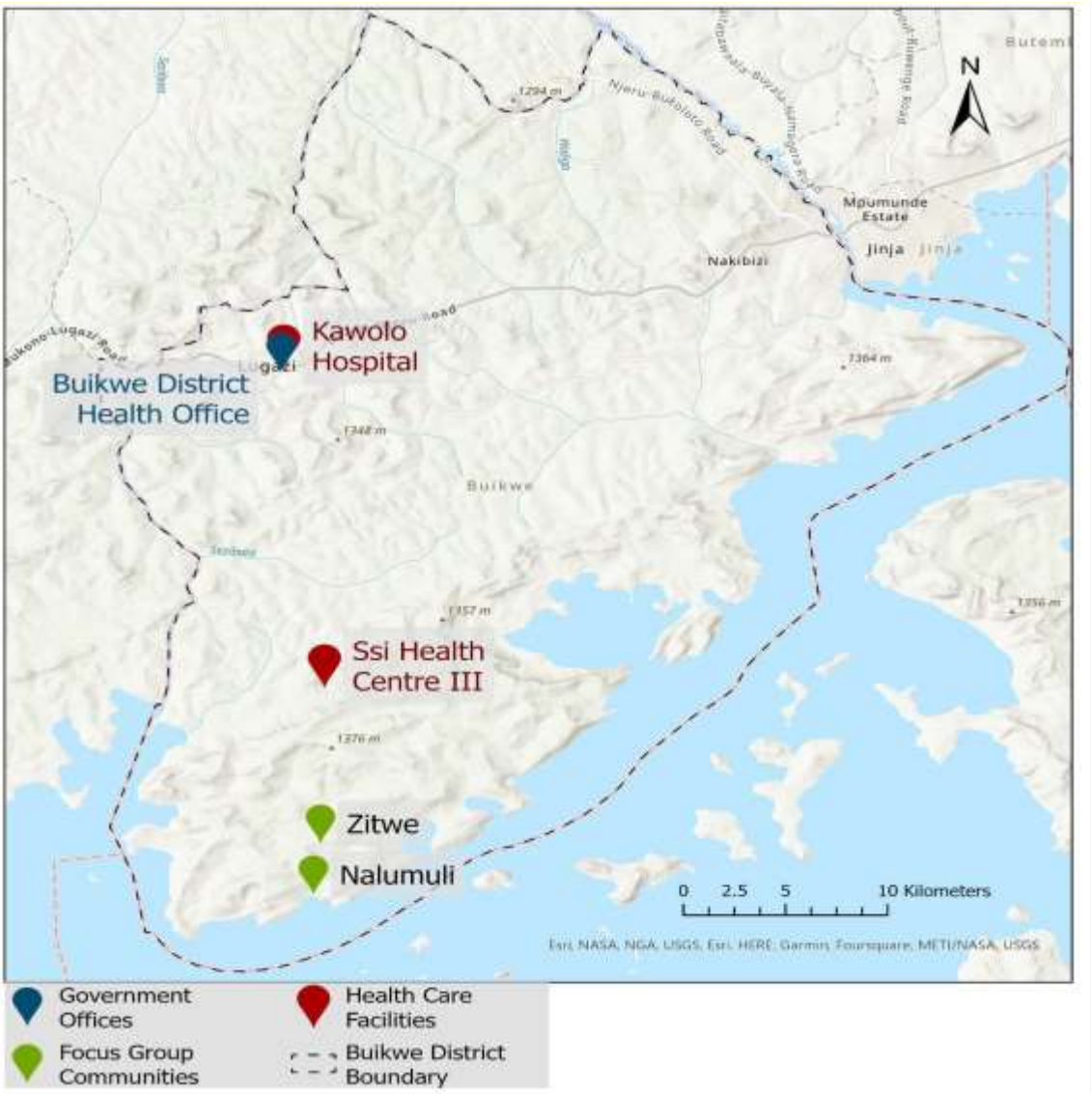

Figure 3: Areas in Ssi Bukunja subcounty in Buikwe district, where the key informant interviews, focus group discussions and observations were made during the study at the local level.

The reported fertility and population growth rate for Buikwe district is 2.6 compared to the national rates at 3.3 (Buikwe District Local Government, 2023). Besides, rapid population growth results in increasing pressure on the environment and natural resources for provisioning of environment products and services. This equally results in environment and natural resources degradation due to unsustainable management practices during exploitation and utilizations of these resources including: Soils, Water, Fisheries, Forests, Wetlands. This is also associated with pollution of the lakes and rivers due to siltation from soil erosion and indiscrimination disposal of wastes.

The inception workshops were attended by 30 (14 males & 16 females) and 43 (35 males & 8 females) political and technical leaders of Buikwe District Local Government and Ssi-Bukunja District Local Government, respectively. These engagements provided a great opportunity for introducing the readiness study for advancing and scaling up Sexual Reproductive Health Rights/Family Planning (SRHR/FP) for climate change adaptation and resilience in Uganda.

Conducting key informant interviews

During the study, key stakeholders and actors we engaged as key informants to gather their views and perceptions in respect to the readiness for advancing and scaling up SRHR/FP for climate change adaptation and resilience in Uganda. This interaction was guided by the key informants check list, which had questions to enabled structured responses by the key informants. The key informants were selected purposively with due consideration that they are actively involved and have expertize in the sexual and reproductive health, population and gender dynamics of their communities or in climate change resilience and adaptation at policy and practice level. Thus, as key duty bearers they are responsible for issues of SRHR and climate change in Uganda.

Figure 4: Interaction with Mr. Bob Natif, Assistant. Commissioner Climate, Ministry of Water and Environment – during a key informant interview held at Imperial Resort Beach Hotel, Entebbe. **Photo credit:** Regenerate Africa.

Overall, 44 key informants (i.e., 26 men and 18 females) participated in the study and they included representatives from: *Ministry of Health; Ministry of Water and Environment;* Ministry of Finance*, Planning and* Economic Development*; National Population Council; Ministry of Gender and Social Development); Civil Society Organizations; Members of National PHE Network; Local Government; community leaders, community health workers, local government representatives, community-based organizations and women's groups,* Village Health Teams, Beach Management Units.

Figure 5: Women in Ssi-Bukunja Sub County engaged during a focus group discussion to collect their views/perceptions in respect to the readiness study. **Photo credit:** Regenerate Africa.

Conducting FGDs with selected community in Buikwe district

FGDs were conducted to collect community perception and opinions in respect to the linkage between SRHR/FP and climate action. The interaction during the FGDs was guided by a FGDs interview guide, which had questions to enable structured responses from the community representatives. The community representatives that participated in the FGDs belonged to various categories i.e., farmers, fisher folk, women groups, youth groups in Ssi-Bukunja sub county, Buikwe District. Of note is that the FGDs involved participation of the various gender categories, including: men; women; youth – boys and girls; and people with special needs.

Figure 6: Above is an example of two concurrent FGDs in Nalumuli, where the women are with a

research team on the left, and the men are with a research team on the right. **Photo credit:** Regenerate Africa.

The FGDs were administered by a team that

comprised of Regenerate Africa staff and the Masters of Development Practice students from the University of Minnesota. In total 6 focus group discussions (each involving at least 50 participants, thus a total of 321 community representatives, i.e., 109 women and 122 men; 49 boys and 41 girls, were conducted.

Furthermore, observations (based on Kawulich**,** 2015) were done during the FGDs interactions at the community level in Ssi-Bukunja sub county, Buikwe District. Thus, photos depicting the interactions with community members and associated engagements were captured, after getting consent from the community members. These photos helped in appreciating and or reconfirming the opinions of the respondents generated through the key informant interviews and FGDs.

Research ethics considerations
The following ethical considerations were pursued during the study:
i) Informed consent was obtained from all the respondents who will be involved in the study. Thus, effort was made to ensure that the respondents clearly understand the objectives of the study and the expected outputs. Furthermore, equally their acceptance to participate as respondents in the mid-term review was obtained.

ii) The respondent's identity and personal information was kept in confident and private. Thus, their names and any other identifying information were not to be disclosed in any publications and or presentations. Furthermore, there will be no unauthorized access to the data and information collected during the review.

iii) Citation and personal communication were done for all published information and expert opinions (unpublished) information, used in the study, respectively.

Limitations of the study
There are various stakeholders and actors actively involved in the implementation of interventions to deliver health/family planning services and or contribute to strengthening community climate change adaptation and conservation and sustainable management of the environment and natural resources. However, it was not possible to involve all stakeholders in the study considering that this requires a lot of resources in terms of time and funds. In this context therefore, the key stakeholders and actors that participated in the study as key informants were selected carefully through purposive sampling.

d) Data analyses and synthesis to generate the results, interpretation, draw conclusions and recommendations for policy and practice change.

The data collected through the literature review was synthesized through content and thematic analyses for appreciation of the linkage between SRHR/FP and climate change. Furthermore, the associated policy and legal framework provisions and existing underlying opportunities and barriers for mainstreaming and scaling up family planning into climate action at the local and national levels.

Equally, the data collected through the key informant interviews and FGDs was synthesized through content and thematic analyses based on the themes for the compilation of the study report for advancing and scaling up SRHR/FP for climate change adaptation and resilience in Uganda.

The data as analyzed from the key informants and the FGDs was used for triangulation of the data gathered through the literature review to draw the final overall conclusions and recommendations from the study for implementation towards institutionalization and scale up of SRHR/FP into climate actions in Uganda at various scales i.e., community, local and national.

e) Validation workshop
This involved key stakeholders with the objective of validating the draft study report providing inputs and comments. This workshop involved participation of carefully selected key stakeholder representatives who participated in the key informant interviews. The workshop was attended by …participants. The further comments and inputs by the participants during the validation workshop were integrated to generate the final study report.

3.0 Literature and synthesis

3.1 Key policies, legal and institutional framework for SRHR/FP and climate action at the international and national levels

i) International
A) United Nations Framework Convention to combat climate change (UNFCCC)
UNFCCC provides an international framework for mitigating causes of climate change and its effects at both international and national levels. It commits countries to integrate climate change issues into their national planning process, sub regional or regional programs. Its objective is to stabilize concentrations of Green House Gases (GHGs) in the atmosphere at a manageable level; permitting development to proceed in a sustainable manner and natural ecosystems to recover from shocks of climate change (UN, 1972).

The Government of Uganda signed and ratified both the convention and its Kyoto protocol on 13th June 1992 and 8th September 1993, respectively. This implies that Uganda has committed to the adoption and implementation of policies and measures designed to mitigate climate change and adapt to its impacts (MWE, 2016). These commitments are contextualized in the national policies, laws and development plans across sectors for their implementation at different scales i.e., national, local and community. There are socially and culturally constructed gender barriers which worsen in the face of climate change impacts making women and girls more vulnerable.

These are largely attributable to gender-differentiated power relations, roles and responsibilities of men and women at the household and community levels (Cardona et al., 2012). The UNFCCC Gender Action Plan (GAP) provides an operational framework for mainstreaming gender into climate action (both adaptation and mitigation) at all levels. Thus, overall, the GAP provides an important and useful framework for advancing gender equality and the empowerment of women within the UNFCCC process and in national climate policies, plans, strategies and action (UNFCCC, 2022). It's within this framework that the concerns and issues of women and girls, including SRHR should be addressed as part of the targeted climate responsive adaption actions.

B) Sustainable Development Goals 3, 5 and 13
The Sustainable Development Goals (SDGs) (see **Box 2**) are commitments made by 190 world leaders (including Uganda) to help in addressing extreme poverty, fight inequality and injustice, and fix climate change. They replaced the 8 millennium development goals after 15 years of their implementation (UN, 2015). The SDGs are 17 with clear targets and indicators for achievement by 2030.

Each country operationalizes the 17 SDGs through their national policies, laws, plans and programs at different scales. In Uganda this is being done through development of the following key policies, legislation, planning and institutional frameworks, some of which as described in the subsequent sections: *National Vision – Vision 2040; National sector policies and legislative frameworks; National*

Development planning frameworks; Sector Development/Investment Plans for Ministries, Departments and Authorities; District Development plan; Country strategies for various Development Partners.

Box 2: The 17 SDGs for United Nations
Goal 1 – *No poverty*
Goal 2 – *Zero hunger*
Goal 3 – *Good health and well-being*
Goal 4 – *Quality Education*
Goal 5 – *Achieve gender equality and empower all women & girls*
Goal 6 *– Clean water and sanitation*
Goal 7 *– Affordable and clean energy*
Goal 8 *– Descent work and economic growth*
Goal 9 *– Industry, Innovation and infrastructure*
Goal 10 *– Reduced inequalities*
Goal 11 *– Sustainable cities and communities*
Goal 12 *– Responsible consumption and production*
Goal 13 *– Climate action*
Goal 14 *– Life below water*
Goal 15 *– Life on land*
Goal 16 *– Peace, Justice and strong institutions*

Were as all the 17 goals are linked to the SRHR/FP and climate change, the key SDGs with the direct linkage in this respect include: SDG 3 i.e., good health and wellbeing; SDG 5 i.e., Gender equality and empowerment of all women and girls; and SDG 13 on Climate action.

ii) National

a) National Adaptation Programmes of Actions (NAPA), (2007)

NAPAs provide a quick channel of communicating urgent and immediate adaptation needs of Least Developed Countries (LDCs) to the Conference of the Parties (COP) of United Nations Framework to Combat Climate Change. While the NAPAs are for LDCs, they provide an opportunity of learning by doing for the climate change process, which may be used by other developing countries.

The Uganda NAPA (2007) analysed the national circumstances in 2007 in terms of climate change impacts and related vulnerability in key sectors (such as: *Forestry, Water, Agriculture, Wildlife, Health*) and suggested responsive coping and priority intervention areas for advancing national adaptation to climate change impacts. The Uganda NAPA, 2007 identified 9 priority projects for investment and implementation towards national adaptation to climate change. The projects included the following: *Community tree growing; Land degradation management; Strengthening metrological services; Community water and sanitation; Water for production; Drought adaptation; Vectors, Pests and Diseases control; Indigenous knowledge and Natural resources management; and Climate Change and development.*

b) Updated Nationally Determined Contributions for Uganda (MWE, 2022)

The updated NDC (MWE, 2022) considers the health sector among the priority sectors to advance climate change adaptation. Furthermore, one of the strategic pillars underscored in the Long-Term Strategy for climate change and the updated NDC is the development of a resilient and fit for future health systems. Besides the updated Uganda NDC (MWE, 2022) underscores the following as the key adaptation actions for the health sector in Uganda:

a) *Integrate climate considerations into national health plans and strategies;*
b) *Improve early warning, surveillance and response system for climate sensitive health hazards;*
c) *Strengthen climate resilience of health infrastructure and system;*
d) *Implement integrated health related climate interventions considering policies on water and sanitation, education, social protection and reproductive health care.*

c) Uganda National Climate Change Policy, (2015) (MWE, 2015)

The goal of the National Climate Change Policy, (2015) is, *'to ensure a harmonised and coordinated approach towards a climate resilient and low-carbon development path for sustainable development in Uganda.'*

The policy´s priority under the health sector is, *'to strengthen adaptive mechanisms and enhance early-warning systems and adequate preparedness for climate change–related diseases.'*

The key strategies for delivering this priority are:

i. *Conduct vulnerability assessments of health sector to climate change impacts.*
ii. *Put in place contingency plans to develop climate change–resilient health systems.*
iii. *Assess the impacts of climate change on human health and wellbeing.*
iv. *Improve the capture, management, storage and dissemination of health information.*
v. *Heighten the surveillance of disease outbreaks and provide subsequent rapid responses to control epidemics.*
vi. *Strengthen public health systems by building hospitals and supplying them with medicine, equipment and well-trained personnel.*
vii. *Make provisions for a safe water chain and sanitation facilities to limit outbreaks of waterborne diseases, and implement strong public awareness programmes to promote better hygiene.*
viii. *Increase the health workforce's awareness of the relationship between climate change and human health.*
ix. *Develop further support action plans against HIV/AIDS to enhance the climate change resilience of HIV/AIDS affected persons and communities.*

d) National Gender policy

The goal of the National Gender policy (2007) (MGLSD, 2007) is to achieve gender equality and women´s empowerment as an integral part of Uganda´s socio-economic development. The policy targets at achievement of the following objectives:

i. *To reduce gender inequalities so that all women and men, girls and boys, are able to move out of poverty and to achieve improved and sustainable livelihoods;*
ii. *To increase knowledge and understanding of human rights among women and men so that they can identify violations, demand, access, seek redress and enjoy their rights;*
iii. *To strengthen women's presence and capacities in decision making for their meaningful participation in administrative and political processes;*
iv. *To address gender inequalities and ensure inclusion of gender analysis in macro-economic policy formulation, implementation, monitoring and evaluation.*

e) National Health Policy

According to MoH, (2010), the goal of the National health policy is, ´´to attain a good standard of health for all people in Uganda in order to promote healthy and productive lives. ´´ The policy focuses at addressing the following priorities:

i) Strengthening health systems in line with decentralization through training, mentoring, technical assistance and financial support;

ii) Re-conceptualizing and organizing supervision and monitoring of health systems at all levels in both public and private health sectors and improving the collection and utilization of data for evidence-based decision making at all levels;

iii) Establishing a functional integration within the public and between the public and private sectors in healthcare delivery, training and research;

iv) Addressing the human resource crisis and re-defining the institutional framework for training health workers, including the mandate of all actors;

v) Leadership and coordination mechanisms, with the aim of improving the quantity and quality of health workers production shall also be a priority.

f) National Population policy

According to MoFPED (2020), the overall goal of the policy is, *´´to attain a high quality of life for the people of Uganda by managing the population growth rate for social transformation. ´´* The policy aims at achievement of the following objectives: *a) To transform Uganda's youthful population into a competitive advantage for development (harness the Demographic Dividend); b) To accelerate both fertility and mortality decline for a more favourable population age structure and a lower dependency burden; c) To strengthen an integrated approach to population development and environment; and d) To leverage organized migration as a force in national development and wellbeing.*

Among the strategies for achievement of these objectives is the acceleration of both fertility and mortality decline for a more favourable population age structure and a lower dependency burden. The policy stipulates increasing demand for family planning and increase & expand access to family planning among the actions for implementing this strategy.

3.2 Key programs and plans targeting to promote SRHR and climate action in Uganda

a) The Uganda Vision 2040 (NPA 2007)

The Uganda Vision 2040 is, '*A Transformed Ugandan Society from a Peasant to a Modern and Prosperous Country within 30 years.'* It seeks to improve the quality of the population with the focus on creating a more sustainable age structure by reducing the high fertility rate through increased access to quality reproductive health services. Furthermore, the Government will focus on building an efficient health services delivery system.

For addressing climate change and variability impacts, the Vision 2040 stipulates the following as some of the committed by Government for implementation: Development of appropriate climate change adaptation and mitigation strategies in all sectors/programmes;

b) The National Development Plan (NDP) III, 2020/21-2024/25 (NPA 2020)

The goal for the NDP III is, *'Increased Household Incomes and Improved Quality of Life of Ugandans,'* with the overall theme of, '*Sustainable Industrialization for inclusive growth, employment and sustainable wealth creation.*

The Human Development Programme of the NDP III underpins, *´´Reduction of unmet need of family planning from 28 to 10 percent and increase Contraceptive Prevalence Rate from 35 to 50 percent, ´´* among the key results to be achieved by the financial year 2024/25. Furthermore, one of the objectives of the programme is to, *´´to improve population health, safety and management. ´´*The programme has a detailed Programme Implementation Action Plan (PIAP) with clear targets and interventions for achievement of this targeted results.

The NDP III addresses the issue of climate change and environment degradation under the Natural Resources, Environment, Climate Change, Land and Water Management (NRECCLWM) Programme. The goal of the programme is, *'to reduce environmental degradation and the adverse effects of climate change as well as improve utilization of natural resources for sustainable economic growth and livelihood security.'* The programme has a detailed PIAP with clear targets and interventions for enhancing community resilience against the climate change impacts through adaptation and mitigation.

c) The Uganda Green Growth Development Strategy (UGGDS), 2017/18 (NPA, 2017)

This was developed by the Government of Uganda through the National Planning Authority. It presents the stepwise approach for implementation of the principles of green growth as enshrined in the Sustainable Development Goals that are domesticated for implementation through the Uganda Vision 2040 and the National Development Plan II. The implementation of the strategy is commenced in the financial year 2017/18 and is on until 2030/2031.

The overall objective of the strategy is, *'to provide 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.'* In particular it seeks to achieve the following specific objectives:

a) *Accelerate economic growth and raise per capita income through targeted investments in priority sectors with the highest green growth multiplier effects;*
b) *Achieve inclusive economic growth along with poverty reduction, improved human welfare and employment creation;*
c) *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.*

d) Ministry of Health strategic plan
According to MoH, (2020), the Ministry of Health strategic plan goal is to, "*Strengthen the Health System and its support mechanisms with a focus on Primary Health Care to achieve Universal Health Coverage by 2030."* Increase access to Sexual and Reproductive health Services with special focus on Family Planning and age-appropriate information, is one of the interventions in the plan under objective 3 of the strategic plan i.e., *´´Increase access to nationally coordinated services for communicable and non-communicable disease / conditions prevention and control.´´*

e) Local Government development plans – these are developed by districts every 5 years (2020/2021–2024/2025) to address the development priorities for the districts as linked to the National Development Plan and associated sector development plans as linked to delivery of targets in respect to SRHR/FP and climate action. Thus, these plans are aligned to deliver on the development aspirations and goals in the National Development plans.

f) Initiatives by various international non-government organizations (INGOs) and non-government organizations (NGOs) – these develop and implement independent programs and projects, which add value to the Government development initiatives, targeted at improved community livelihood & empowerment; promoting access to SRHR/FP; sustainable development, environment & natural resources management, renewable energy access and conservation – among others.

3.3 Uganda´s demographics
Uganda is a country of about 48 million people in East Central Africa (Myers et al., 2021). The Buikwe District, that this report features, has a population of about 430,000 people (*Buikwe District*, n.d.). Uganda has a large percentage of young people; the age demographic is similar to a pyramid in that there are many more young people than oldpeople, as illustrated in **Figure 7**.

Almost half of the population is under 15 years of age. In the Buikwe District, 59% of the population is below 20 years of age and 86% is below 40 years (Buikwe District Local Government, 2015), showing a disproportionately high youth population. This is due to the decreasing child mortality rate and high fertility rate (Myers et al., 2021). Uganda also has a high population growth rate of 3.22%, ranked eighth highest in the world (O'Neill, 2023), and the country's population is expected to double in the next 40 years. This means that the population density— the number of people per land unit—will also continue to rise (Myers et al., 2021). In combination with the population increase, there is an increase of

people moving to urban areas, which contributes to a higher population density since there is less space for people to live and work. This equates to less resources available. Currently, about a quarter of Ugandans live in urban areas, but as people continue to leave rural areas, this percentage will increase (Myers et al., 2021). The issue of population density will continue to worsen as climate change ruins the livelihoods of those living in rural areas.

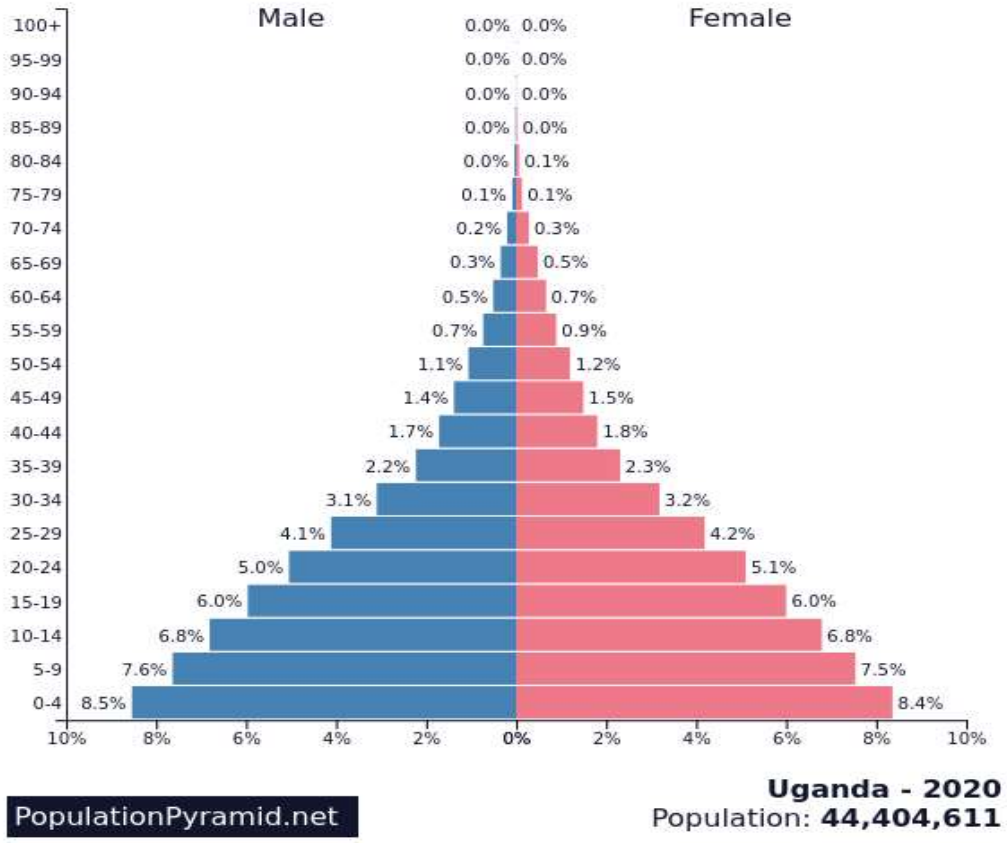

Figure 7: Age distribution for Uganda. Population pyramid, 2020. **Source:** Population pyramid.net, (2020)

3.4 Climate Change in Uganda

Uganda is described as a low GHG emission country, ranking 176 of 188 countries in per capita emissions (World Data and Statistics (2011) (World Bank, 2011) and contributes 0.07% to global greenhouse gases (GHG) emissions (World Resources Institute, 2017). However, like other Least Developing Countries (LDCs), Uganda is one of the countries that are greatly vulnerable to the impacts of climate change on livelihood and economic development. Uganda is ranked as 13th most vulnerable to climate change country in the ND-GAIN index (2021).

Uganda is highly vulnerable to climate change impacts largely because of its dependence on climate sensitive sectors including agriculture, fisheries and forestry (Laura and Felix, 2023). These primary sectors also entailing water and energy provide natural resources which are highly vulnerable to impacts of climate change (CARE, 2020). Agriculture, biodiversity, health, infrastructure and water are especially vulnerable (GIZ, 2021). Historically, the country was mostly dominated by a tropical climate with a single rainy season in the north and two rainy seasons in the south. The effects of climate change are affecting the seasons with the country experiencing shorter or longer rains and harsher droughts – especially in the eastern and north-eastern regions (IOM, 2021). The mean annual

temperatures have risen by 1.3 °C since 1960, annual and seasonal rainfall has decreased significantly and rainfall has also become more unpredictable and unevenly distributed over the years.

According to the Ministry of Water and Environment (MWE) (2015 and 2022), some of the reported climate change impacts such as the rising temperatures and shifting rainfall patterns (floods, unreliable rainfall, prolonged droughts) in various parts of the country have directly affected *Agriculture (crop, livestock) productivity resulting in food insecurity and hunger; Health of the population, livestock and crops – through proliferation of pests and diseases, invasive species – e.g. Lantana camara, Broussontia papyrifera, Mimosa pigra* and *Senna spp; increasing incidences of malaria in places such as Kabale where it wasn't prevalent before; receding ice caps on mountain Rwenzori; landslides and mudslides, e.g. in Bududda, Eastern Uganda; destruction of infrastructure (roads, bridges) and livelihoods; economic development; land and soil degradation and soil fertility depletion – resulting in poor yields.* There is also reported increased incidence of conflicts and violence at household and community levels due to limited access to resources (*water, firewood, grazing land*), partly because of climate variability and change, especially in the refugees' settlements (e.g., Nakivale) and host community (e.g., Isingiro district) (UNHCR and UNHABITAT, 2020).

Notably, the extreme weather and droughts lead to a reduction in crop yields and loss of livestock, which increases malnutrition and food insecurity. Decrease in water resources threatens biodiversity, hydropower production, and water supply (USAID, 2013). That water scarcity will also affect the ecosystem services that the Ugandan people rely on, like providing drinking water and can lead to conflict due to a lack of resources, economic and governmental instability, and the decreasing health of a population (Jeremiah, 2023). Furthermore, in the situation of flooding, homes, hospitals, roads, and gardens have been destroyed. When hospitals and roads are destroyed, it prevents people from receiving the care they need. At extreme, floods result into loss of lives and property. For example, more than 30 people died in a flood in Mbale in the Eastern region of Uganda in August 2022, which also put 400,000 people without access to clean water while destroying a significant number of crops (Kakumba, 2022).

Thus, overall, the many impacts of climate change on rural areas are making life more challenging. With the continual threat of flooding harming their homes and food sources, people are choosing to move to the cities to have more food availability and a saferplace to live. (OCHA, 2021). The effects of climate change will be felt across a multitude of sectors and industries throughout Uganda.

According to MWE (2022), the assessment of economic impacts of climate change in Uganda indicated that adaptation inaction could result in annual costs rising in the range of USD 3.2–5.9 billion within a decade. As a signatory to the United Nations Framework Convention on Climate Change (UNFCCC), Uganda has developed the policy and institutional framework over the last 30 years as response towards addressing climate change impacts for advancement of climate change resilience at different scales, i.e., community, local and national. These policies and regulations also shape the climate finance framework in Uganda although a specific climate finance policy is just being developed by MoFPED.

The Government is also taking steps to ensure that transformation is cognizant of green growth targets stipulated by all the sustainable development goals (SDG's), the 2015 Paris Agreement on Climate Change and the 2063 Agenda of the African Union. This implies that the envisaged economic growth must not only be socially inclusive but also uphold the integrity of the environment and the natural resources. Uganda has therefore reconsidered its growth model to deliver inclusive economic and social outcomes while protecting natural capital addressing climate change, creating jobs and accelerating economic growth (NPA, 2018).

The existing policy and institutional framework on environment and climate action has facilitated investment in climate action (both adaptation and mitigation) by the Government and Development Partners (including The Netherlands through the DFCD) structured as development projects and projects, which are being implemented in various parts of the country. According to UNEP (2020), the annual adaptation costs in Developing Countries alone are estimated at USD 70 billion. This figure is expected to reach USD 140-300 billion in 2030 and USD 280-500 billion in 2050. The economic Impacts of Climate Change in Uganda is valued at 2-4% of GDP between 2010 and 2050 (CDKN, 2015). The financing needed to respond to climate change adaptation by 2030 is approximately USD 3.9 billion.

The annual cost of climate change adaption actions in the National Climate Change Policy for Uganda (MWE, 2015) was estimated at USD 195 Million by 2030, however the current cost of implementation of the Uganda´s updated NDC, 2022 (MWE, 2022) is approximately $28.1 billion. The Government is expected to meet 15% (i.e., 4.1 billion USD) to support the implementation of the non-conditional measures and actions in the updated NDC, 2022 (MWE, 2022). The remaining 85% would be mobilized through international support.

3.5 Sexual and Reproductive Health and Rights/Family Planning

Addressing SRHR/FP is important for improving the health and well-being of individuals and societies, reducing poverty, and promoting gender equality. Despite progress in recent decades, the world still faces significant challenges in ensuring access to SRHR/FP information and services. According to the World Health Organization, an estimated 214 million women in developing countries have an unmet need for modern contraception (WHO, 2021). The report further noted that this leads to unintended pregnancies and poor maternal and child healthoutcomes. Thus, sexually transmitted infections (STIs) remain a significant public health concern, with an estimated 376 million new cases each year.

In Uganda, access to SRHR/FP information and services remains a challenge. According to the Uganda Demographic and Health Survey of 2016, only 35% of women of reproductive age use modern contraceptives, while 19% have an unmet need for FP (UDHS, 2016). This is lower than the global average of 58%. The maternal mortality ratio in Uganda is also high, at 336 deaths per 100,000 live births. The prevalence of Sexually Transmitted Infections, including HIV/AIDS, remains a concern, with an estimated 1.3 million people living with HIV in Uganda (UDHS, 2016). As a result of these challenges, several policies have been developedand implemented to address SRHR/FP issues. These policies are aimed at improving access to reproductive health services and FP, reducing maternal mortality rates, and promoting gender equality.

One of the most impactful policies in Uganda is the National Policy Guidelines and Service Standards for SRHR/FP. This policy was launched in 2006 and provides guidelines for the delivery of comprehensive SRHR/FP services in Uganda (PRB, 2018). The policy focuses on improving access to quality SRHR/FP services, including FP, maternal health services, HIV prevention, and management of STIs. Another critical policy in Uganda is the National Adolescent Health Policy, which was launched in 2004 (UNESCO, 2011). This policy recognizes the unique SRHR/FP needs of adolescents and aims to improve their access to comprehensive health services. The policy also seeks to address the high rates of teenage pregnancy and reduce the incidence of STIs among young people. Despite the presence of these policies, there are still significant gaps in access to SRHR/FP services in Uganda.

3.6 Link Between Climate Change and SRHR/FP

There is extensive, separate research on the topics of climate change and SRHR/FP. While these two issues may seem distinct, the link between SRHR/FP and climate change is multifaceted and complex. According to Women Deliver, (2021), Climate change has a significant impact on SRHR/FP outcomes and vice versa. Thus, women and girls, in particular, are disproportionately affected by climate change, as they are more likely to face food and water shortages and are at increased risk of Gender-Based Violence (GBV) and displacement. These factors can lead to a range of SRHR challenges, such as increased maternal and child mortality rates, STI and HIV transmission, and reduced access to FP services (Women Deliver, 2021). Addressing SRHR/FP can play a crucial role in mitigating the effects of climate change.

For example, increased access to FP services canhelp to reduce population growth rates, which in turn can reduce the demand for resources and minimize the carbon footprint[1]. The world's population is currently 8 billion and is expected to reach nearly 9.7 billion by 2050 (United Nations, n.d.). The growth in population puts pressure on natural resources, including land, water, and energy, and contributes to greenhouse gas emissions. Unplanned pregnancies can lead to rapid population growth, which can exacerbate these pressures. By contrast, access to SRHR/FP services can help individuals and couples to plan their families and reduce the number of unintended pregnancies. According to Women Deliver, (2021), this in turn, can slow population growth and reduce the environmental impacts.

Climate change affects SRHR/FP through many different sectors, and therefore, it is important toplan for those challenges as the climate continues to change. Gender is recognized as an issue within climate change. Climate change drives conflict, which makes women and girls more vulnerable to sexual violence (UN Women, 2022). Women are more likely to be working with natural resources, such as crop cultivation, so climate change effects on agriculture will adversely affect women (UN Women, 2022). Finally, women are less likely to survive natural disasters than men, and natural disasters are becoming more frequent and stronger with climate change (UN Women, 2022). Women have less access to resources, information, and decision-making due to gender inequalities - making them more vulnerable during disasters (UN Women, 2022). Climate change amplifies existing gender-related inequalities.

Uganda does recognize the disproportionate effect climate change has on women. In Uganda's most recent Nationally Determined Contributions (NDC) from September 2022, it states, "developing gender responsive NDC with measurable targets is essential to improving performance in climate action" (MWE, 2022). A gender analysis was conducted for the updated NDC where it was determined that women and girls were at greater risk to the effects ofclimate change (MWE, 2022). There were several actions that were recommended to "ensure gender-responsive NDC implementation," most of which included involving women indecision-making (MWE, 2022).

4.0 Key results

4.1 Perceptions of the community representatives engaged during the study through Focus Group Discussions

A) SRHR/FP and health services delivery and climate change impacts in Uganda

Perceived impacts of climate change

FGD participants both men and women in Nalumuli village, noted a few scenarios in 1987 where they experienced a severe drought and famine, and 2018-2020 when they had intermittent occurrences of flooding along the lake shores. Participants in Gaba landing site also reported having experienced

heavy rains with strong winds in 2021 which destroyed houses, vegetation, and a school, caused flooding, and disrupted fishing activities. All focus group communities discussed how drought caused plants to dry up, as well as the exhaustion of the soil, and an increase in pests and crop diseases which led to widespread poverty and food insecurity among fellow residents.

According to several of the FGD participants in Nalumuli village, the fishing community: heavy winds were capsizing boats and making it harder to catch fish. This made the profession more difficult as there were more days with heavy winds or storms that made it harder to catch fish. Boys and Men from Musomoko village reported that climate change had affected the planting seasons as they were not receiving as much rain anymore. The dry spells also became longer which led to low yields in agriculture, a venture which the majority of their families were depending on for survival and income. They also noted that this further culminated into poverty that continues to affect the way of living in their communities. They also reported that whenever they would receive rain, it would be in quantities higher than expected which would then result in floods. They reported having experienced floods two weeks from the time of the interview which destroyed most of their household items.

Linkage between climate change and SRHR
Men, Boys, and girls from Nalumuli Musomoko, and Lukubo villages respectively, reported that climate change events like floods often made roads impassable, hindering them from accessing health facilities which are already distant from the general population (they had reported the nearest facility being 15 and 10 kilometers away respectively). This also led to prolonged delay in referral of patients for example expecting mothers and children hence increasing their burden of disease and risk of maternal and infant mortality. The destruction of health facilities by flooding and severe storms often leading to loss of infrastructure and medical supplies was also reported by boys from Koba parish and repeated by Men from Musomoko village.

Boys from Musomoko village also reported that climate change events often led to the destruction of their income sources, rendering them prone to poverty. They specifically noted that girls were more at risk because they would be given away in marriage at very early ages. Boys and girls from Musomoko and Lukubo villages respectively, reported that women often prioritized accessing food and ensuring survival for themselves and their households during climate change events over accessing SRHR services due to the heightened poverty levels. This was further exacerbated by the hurdles they had to go through to access these services amidst crises which made their health-seeking behavior even worse.

Both boys and girls (from Musomoko village, Kiwunyi and Gaba villages) reported an increase in GBV due to poverty that was experienced by extreme weather events. Men were financially strained and would release their frustrations on their spouses either verbally, physically, or sexually. This was confirmed by *men in Nalumuli village* as they echoed these sentiments, expressing frustration over lower fish catches—a direct result of climate change—which causes financial hardships, leading to “a recipe for violence.” When men cannot be the breadwinners, they are expected to be due to climate change’s stress on income-generating activities, they become stressed, which results in them being perpetrators of Gender Based Violence. *Girls from Lukubo village* further noted that the increase in GBV resulted in low or no uptake of SRHR services as some men were against the latter.

They noted an increase in the severity of chronic illnesses like HIV due to the increased occurrence of food insecurity that was resulting in malnutrition. Malnutrition is specifically detrimental to such illnesses as the body requires enough nutrients to react to the drugs and fight off other opportunistic infections. *Boys and youth from the communities of Koba, Musomoko and Nalumuli* reported that women and girls were significantly affected by climate change. This is because extreme weather events would lead to

shocks and a lot of stress that would affect their menstrual periods. They also noted that inadequate access to water affected their menstrual hygiene and that poverty induced by climate change limited their access to menstrual hygiene products like sanitary towels. They also experience a coherent rise in unwanted pregnancies amidst climate change events due to the absence or limited access to SRHR services like family planning. The boys also highlighted young girls being prone to early marriages due to the financial strain in households. *Similarly, to the women,* disruption of education for school pupils and students was also identified as result of excessive rainfall, flooding and destruction of road infrastructure (bridges and culverts) thereby increasing the distance to access schools. This reportedly increased the number of school dropouts which consequently exposed young girls to early marriages and relationships.

Reduced harvest, food shortages, and hunger in households due to extreme weather or volatile weather conditions manifested as droughts, floods, severe storms and hail storms often resulted in poor nutrition among children and expecting mothers. This would further make them prone to other illnesses owing to their already reduced immunity. Another impact identified was the outbreak of waterborne and epidemic diseases like cholera, malaria and intestinal worms due to excessive flooding and poor sanitation caused by collapsed pit latrines, flooding of sanitary pits and garbage pits around households and communities. These have severe impacts on children and pregnant women as reported by *men (in Musomoko village), boys* (in *Koba, Musomoko and Nalumuli communities) and girls (from Gaba village)*.

Climate change events often led to destruction of woodlots in some areas as reported by *boys and youth* from Koba and Lugoba parishes. They reported that droughts and heatwaves reduced the water quantities and/or led to drying up of wells and streams. This led to an increase in the distance and time spent looking for water and firewood for household use which was tedious for the boys but mostly dangerous for young girls who were more likely to be exposed to perpetrators. Climate change events led to an increase in unintended pregnancies due to low productivity. *Men* in Musomoko village reported that men, who were typically reliant on agriculture, kept home during the prolonged dry seasons which resulted in many conceptions. They reported that this was further exacerbated because women were already hindered from accessing family planning services by various factors (both climate and non-climate related). This also coincided with the responses from the interviews conducted among the *women in the same village*.

Men in Zitwe and Musomoko communities reported experiencing emotional and financial hardships caused by climate change and often perceived themselves as the primary recipients of its impacts. Men in Zitwe, who said men are mostly affected by climate change, said that limited resources ``require the man to provide everything" when crops dry up. Because of this, the Zitwe men said violence rises when they are unable to provide meals for the family due to frustrations over not meeting traditional masculine duties. In addition, they said that the drought season is particularly stressful for men, which makes it "difficult to discuss family issues" due to competing priorities.

It was also reported by *boys from Lugoba parish* that climate change had led to a rise in the water levels of Lake Victoria which caused flooding of the shores, displacing a multitude of people. *Girls from the same parish* further iterated that the displacement created interference with access to SRHR/FP and general health services as individuals had to look elsewhere for services and would end up missing out on accessing the services altogether.

Women and girls from Musomoko and Gaba villages reported the impact of climate change on pregnancy. Access and utilization challenges further increased cases of unintended pregnancies, teenage pregnancies, and child marriages. Women from one of the FGD conducted Nalumuli village,

alluded to poverty increasing the rates of pregnancies in girls and young women as they are "easily deceived" by men in order to sustain themselves. They reported an increase in maternal and neonatal deaths as women tend to deliver without medical supervision at home, along the roadsides, and in their gardens. An increase in miscarriages was attributed to the increasing prevalence of malaria cases especially during the prolonged dry seasons and heat waves. The latter also led to dizziness among pregnant women and missing of antenatal care appointments due to limited movement, especially in areas that were distant from the health facilities. These extreme weather events also led to women giving birth in their homes without skilled medical attendance which posed dire consequences to them and their newborn children. Poor nutrition among pregnant women and poverty-induced stress were identified as significant contributors to preeclampsia, low birth weight, and premature births, with famine being a major cause.

All respondents, both men and women, considered having children that families can take care of as a crucial matter that could aid them in providing proper education for their children, hence reducing school dropouts, and preventing environmental encroachment for short-term financial gain. Providing access to sexual and reproductive health rights (SRHR) services has been observed to reduce the instances of teenage pregnancies and enhance the ability of girls and young people to cope with the impact of climate change, such as poverty.

Additionally, postponing childbirth offers young individuals a chance to engage in income-generating pursuits that can assist their families during challenging climate circumstances. It was also ascribed to increasing women's participation in sustainable economic activities that would help to sustain them and their households during climate change-related challenges. Family planning, by spacing out the birth of children, was identified as a solution that could help increase the chances of survival for both mothers and their offspring, especially during periods of climate change. With proper nutrition and access to healthcare, mothers could better care for their children, which would reduce the risk of infant and childhood mortality and morbidity and also improve the resilience and survival of children during climate change events.

Barriers limiting access to SRHR/FP services

According to the FGD participants in Buikwe District, there are four types of barriers that hinder access to SRHR/FP services. These include physical, social, method-related, and economic barriers. Unfortunately, the challenges of accessing healthcare services will only intensify as climate change continues to have an impact. During focus group discussions, women and girls expressed concerns about accessing healthcare during extreme weather conditions such as heavy rain, excessive heat, or storms. This issue is further compounded when healthcare services are located far from their community with low numbers of healthcare professionals, making it even more difficult to access. Additionally, there are social and economic obstacles that discourage community members from seeking sexual and reproductive health and family planning services.

Physical Barriers

Physical barriers to accessing healthcare facilities were identified as a key issue in FGDs, with both Zitwe and Nalumuli women, girls, and boys stating that the nearest health facility is at least three to six kilometers from their homes. Some reported over twice this distance such as the boys from Nalumuli and Musomoko who stated that the nearest health facility was 10 and 15 kilometers away respectively. When walking is the only means of transportation, the distance between communities and healthcare facilities becomes particularly challenging. The long distances were even made worse by extreme weather conditions like health rains - as reported by girls from Gaba village. During focus group discussions (FGDs), women shared that accessing medical services requires spending an entire day;

they have to walk to the closest health center, wait for a provider to become available, receive treatment, and then walk back home amodst all the existing challenges.

Many women reported that they often have to walk home from healthcare appointments in the dark, which is hazardous and poses a safety risk. Another mode of transportation available is by motorcycles, also known as "boda bodas", to reach healthcare facilities. According to the accounts of many women involved in the FGDs, most boda boda drivers are men, and they have either heard stories or experienced sexual violence, harassment, or physical violence as female passengers from boda boda drivers. As a result, traveling either by foot or boda boda can put women in unsafe situations, which reinforces physical obstacles to access. During the research, it was discovered that poor road conditions were a major obstacle for men who need access to SRHR/FP services. This is because they are typically the ones who drive boda bodas and cars. Although Uganda has made progress in improving its city highways, many rural roads, especially in Buikwe District, have been neglected. When researchers visited the focus group communities, they found that the roads had been washed out due to heavy rainfall during the rainy season.

Social Barriers

In addition to limited access to healthcare facilities, several members of the community experienced social obstacles that hindered them from accessing SRHR/FP services. Apart from physical accessibility, women and girls reported spousal refusal as a significant challenge. They found it difficult to initiate conversations about FP with their husbands, and seeking out SRHR/FP services was often viewed as an act of rebellion. According to women in Nalumuli village, forcefully taking family planning methods without their husband's consent, taking them secretly, or even bringing up the topic was considered a betrayal and sometimes resulted in gender-based violence. It was also reported that a lot of women and young girls tend to rely more on traditional herbalists instead of qualified service providers, which can result in the use of fake medicines and birth control methods that are not reliable.
Women reported their sexual partners' (often husbands) dismissive and sometimes aggressive reactions to SRHR/FP conversations. Some women reported asking to use contraceptives like condoms before sex and experiencing GBV as a result. Many women shared that they typically access SRHR/FP services when their husbands are at work to avoid conflict and potential GBV. Women and girls in both communities strictly use arm implants and birth control shots because there is little or no evidence of their presence within the home—like birth control pill boxes—or during sex—like IUD strings. Women in Nalumuli village stated that they don't use birth control pills because you need to take them discreetly around men, and they would rather use options they can hide more easily.

Many women start their SRHR/FP journeys alone, without discussing it with their friends and community members. Both women and girls in Nalumuli village and Zitwe agreed not to have conversations about SRHR/FP within the greater community. However, some women in Zitwe said they speak with their female friends about which contraceptive options work best for them. By feeling like the sole advocate for SRHR/FP in households, women carry a heavy burden; this can lead to animosity within marriages. A woman in Nalumuli village said "men don't want women to access [SRHR/FP] services, but don't take responsibility for pregnancies"; a dichotomy that created frustration in local women, as they felt that SRHR conversations were a non-starter, but desired to express their rights.

Men in both communities of Nalumuli and Musomoko reported experiencing a similar divide between themselves and their partners, although they express it in different ways. They often feel left out of discussions and appointments regarding SRHR/FP, and become frustrated when decisions about family planning are made without their input. Men are aware that their wives sneak off to SRHR/FP appointments while they are away, and this leads to distrust between spouses. Boys and youth in Nalumuli village pointed to women's rejection of contraceptives, claiming that women don't like and/or

understand condoms. Boys and youth in Nalumuli village were also the only group to mention 'self-respect and respect for each other' as a method to address barriers to SRHR/FP access, citing the need to agree on a contraceptive method before engaging in sex with a partner.

Men in Nalumuli village specified that "there isn't time to discuss," pointing to external stressors like fishing, jobs, and farming. In Nalumuli village, boys and youth stated that they discussed SRHR/FP, while in Zitwe, they did not due to a scarcity of appropriate spaces for youth to converse. This suggests that SRHR/FP is geared more towards older adults than younger populations. In Zitwe, men have admitted to engaging in GBV on occasion, but only when they feel financially vulnerable. They have also expressed difficulties in discussing sexual and reproductive health and family planning due to the differing problems faced by men and women in intermarriage situations.

Men suggested going beyond basic education and accompanying their partners to SRHR/FP appointments, which aligned with the recommendations made by women. In the village of Nalumuli, girls identified "lack of communication between couples' " as a major obstacle to accessing SRHR/FP. Meanwhile, men in Zitwe listed "increasing trust between partners" as a key solution to overcoming SRHR/FP barriers. This highlights the importance of trust and communication in achieving successful family planning.

During every focus group discussion in both communities, a major discovery was made that both males and females experienced a sense of isolation from each other. This hindered productive discussions about SRHR/FP and even prevented any conversations from taking place.
Individuals of all genders in both communities came to a consensus that the best way to address the issues between spouses was to actively involve and educate men in SRHR/FP.

Method-related barriers

Lack of fully informed Options
Women and girls cited lack of information from providers creates a rift of distrust between them and their healthcare providers, which prevents them from seeking further care. One woman in Zitwe said she showed up for her appointment and told the doctor she wanted a birth control shot. The doctor gave her the shot without saying anything and then walked away. This woman was told by her friends that the shot is the best FP option, which may be true for them, but different forms of birth control work better for different bodies. This woman was deprived of having a conversation with her doctor about FP options and was instead given a one-size-fits-all form of treatment that may not be the best option for her. Many other women in FGDs agreed that their doctor did not explain all the available FP options.

Boys from Nalumuli village and girls from Kiwunyi and Lukubo villages also reported not accessing family planning methods due to a lack of access to information about the methods. Similar to women in Lugoba parish, men from the same parish noted that there was little or no information aout the available methods and continuous stock outs of the contraceptive methods at the health facilities.

Side effects of FP Methods
During focus group discussions, women and girls expressed doubt about the effectiveness of certain birth control methods due to the potential side effects. They mentioned experiencing or hearing about heavy bleeding, body aches, dizziness, loss of sexual interest, fibroids, weight changes, ulcers, and genital dryness. For some, these side effects outweigh the benefits of family planning services and discourage them from seeking help. Others found the side effects to be inconvenient but not a complete deterrent from seeking services.

Myths and misconceptions

Several women and girls discussed the obstacles that exist in their communities due to myths and misunderstandings. Some of these myths have some truth to them but are blown out of proportion. One common myth is that using Intra Uterine Devices can cause them to move to a woman's intestines, posing a significant risk. However, according to Miller (2021), this only occurs in four out of every 1,000 IUD insertions and therefore a very rare occurrence. Thus, the perception of this risk has been overestimated in these communities, where it would actually be incredibly rare for an IUD to end up in a patient's intestines. There is a myth that suggests birth control can lead to an increase in tumors, but this is based on exaggerated reports from focus groups. In contrast, some myths have no factual basis, such as reports from men in fishing communities with high HIV rates claiming that using condoms leads to lower fish catch the next day. Myths and misconceptions can become more widespread when people lack proper education, causing confusion between what is true and what is not.

Boys from Lugoba parish reported their peers being deterred from using condoms as they believed that the lubricants in the condoms cause cancer. They also reported that some men didn't use condoms for fear of them bursting during sexual intercourse as a result of the information that was circulating in the communities about the government distributing under sized condoms.

Economic barriers

During the FGDs conducted among youth, men and women in Nalumuli and Musomoko villages, poverty/limited finances was identified as a major obstacle to accessing sexual and reproductive health and family planning (SRHR/FP) services by all. It has come to light that a significant number of women are facing challenges in accessing family planning methods due to the high cost of SRHR services and transportation expenses. A participant in a group discussion revealed that injections were being provided at a cost of 10,000UGX, a price that was far beyond their means. The transportation costs only added to their woes, making it even more challenging for them to obtain essential services. As a result, many women are unable to receive the care they require.

The boys from Nalumuli village also highlighted the presence of other competing needs like food and shelter which took up most of their hard-earned money, leaving them with less to transport themselves to the health facilities for family planning methods. They noted that at their age, no one would think about buying or spending money accessing family planning when they lack food and a place to lay their heads.

According to the Non-Motorised Transport Policy by the Ministry of Works and Transport, walking and cycling are the most popular means of transport in Uganda but also the most unsafe. Although walking is free, it can be time-consuming and exhausting. On the other hand, "boda bodas' ´ are fast but expensive as iterated by women in Nalumuli village. According to a young woman in Nalumuli, a round-trip ride on a "boda boda" to a health center costs around 20,000 UGX or $5.36 USD. Other participants at the FDG also confirmed this, stating that fees ranged from 10,000 UGX to 20,000 UGX. For those living below the poverty line, transportation costs can exceed their daily wages. This highlights the challenge of prioritizing "non-essential" services like SRHR/FP over basic necessities like food, water, and housing.

Perceived recommendations by the community for addressing these barriers

Boys

The boys and youth recommended several measures to reduce barriers to sexual and reproductive health. One important step identified was to ensure commodity security for SRHR/family planning (FP) products, in order to avoid stockouts in health facilities. Additionally, establishing a private wing at Ssi

Bukunja H.C. III to provide friendly SRHR/FP services to youth can greatly improve access and comfortability.

Another effective approach is to organize medical camps or outreach services to provide SRHR/FP services directly to youth, particularly those in rural or underserved areas.
Education and awareness were also crucial components of promoting SRHR. They emphasized that training youth peers on the linkage of SRHR/FP, climate, and environmental conservation issues can help to educate, sensitize, and create awareness among fellow youth in the community. This can lead to increased knowledge and understanding of the importance of SRHR hence leading to increased utilization of SRHR services. It would also increase their knowledge about the interconnectedness of various environmental and health issues.

They also noted that it was also important to ensure that imported condoms were properly inspected and verified by the National Drug Authority (NDA) before being distributed in the country. This would help to ensure that the condoms are of high quality and safe for use and relay people's fears against using them.

Men
To increase the effectiveness and ensure better health outcomes, men noted that it was important to build trust between partners and is essential to foster an atmosphere of mutual respect and collaboration. As a result, safe spaces would be created in households to discuss topics like family planning without partners resorting to violence.
Secondly, they recommended it as crucial to promote greater participation by men in healthcare decision-making and treatment. Finally, they stated that providing more comprehensive training to healthcare professionals would help to improve the quality of care provided. This could lead to an increase in the number of people accessing SRHR services once health workers are well equipped with information and can be trusted.

Girls
Access to comprehensive Sexual and Reproductive Health and Family Planning (SRHR/FP) services is crucial for the overall well-being of individuals and communities. However, there are several challenges that need to be addressed according to the girls. Their recommendations were as follows:

a) Increased sensitization and community outreaches are essential to raise awareness among the population on the importance of SRHR/FP. There is also a need for timely, adequate and proper education on SRHR/FP to help people make informed decisions about their reproductive health.

b) Negative religious and cultural beliefs can hinder the uptake of SRHR/FP services. Therefore, it is important to have increased sensitization programmes that specifically address these issues.

c) Additionally, there is a need for more education on the potential side effects of SRHR/FP methods to help individuals make informed choices.

d) Recruiting and training more health workers is crucial to ensure that SRHR/FP services are accessible to everyone. Increasing the number of health centres in communities can also help to improve access to these services.

e) Male involvement in SRHR/FP matters is crucial to ensure that both men and women are actively involved in decision-making about their reproductive health. Women and girl's empowerment is also

essential to ensure that they have the information and resources needed to make informed decisions about their reproductive health.

Women
Women thought that it was important to bring these services closer to the people who need them, whether that means establishing clinics and health centers in underserved areas or utilizing mobile units to reach remote populations. Another key strategy is to raise awareness and knowledge about SRHR/FP through sensitization campaigns, education programs, and community outreach.

In addition to these initiatives, they noted that it was important to address the root causes of SRHR/FP challenges, including poverty and gender inequality. Providing alternative sources of income, such as microfinance programs or vocational training, can help individuals and families break the cycle of poverty and improve their overall well-being.

Finally, encouraging more male engagement and involvement in SRHR/FP efforts can have a significant impact on outcomes. This can be achieved through sensitization campaigns that target men and boys, as well as by involving male leaders and influencers in advocacy and outreach efforts.

4.2 Perceptions of key informants that participated in the study

A) SRHR/FP and health services delivery and climate change impacts in Uganda

Perceived climate change impacts
The key informants interacted with (both at the national and local level in Buikwe district) (see **annex 1**) noted that climate change impacts in Uganda are more frequent and widely felt. Thus, they observe that there is increased frequency and severity of extreme weather events (such as prolonged droughts, severe hot and dry weather, flooding, unreliable rainfall, mudslides, landslides, heat waves, wildfires, bushfires, fluctuating water levels, physical changes in natural resources (i.e., the reducing snow cap of Mt. Rwenzori), and poverty) which have greatly impacted on community livelihoods and economic development.

The climate change impacts have been experienced in a variety of ways including: increased food insecurity, decreased land quality hence low agricultural output and productivity, displacement of people, changing disease patterns (increased prevalence of zoonoses), emigration, fuel insecurity (scarcity of firewood especially in rural areas), increased school dropouts, reduced lifespan, water insecurity, destruction of infrastructure (roads, bridges, schools, health facilities), animal infestations, changes in women's menstrual cycles due to high temperatures, teenage pregnancies, child marriages, gender-based violence, discomfort and miscarriages among pregnant women, maternal deaths and infant mortality, malnutrition, high crime rate due disrupted livelihoods, interactions in trade and business, emergence and re-emergence of pests and diseases, and low fish yields. The key informants considered the escalating environmental degradation, especially deforestation and wetlands degradation as one of the major causes of climate change.

For instance, according to one of the key informants at national level, the changes in seasons led to confusion among farmers on when to plant crops, which in turn led to low crop yields, which community members reiterated. Several key informants also brought up the difficulty in gathering resources after flooding because facilities and roads are washed away. The key informants at district level also shared that water levels "swallow the village" and that coastal communities are being displaced. In addition, flooding contributed to an increase in drownings due to rising water levels, especially in places where

drownings did not usually occur, like ditches and homes, according to key informants at the national level.

Climate Change impacts on disease patterns

The key informants perceived the following as the climate change impacts on diseases patterns:

a) Mental health challenges have become increasingly prevalent in these communities, as individuals struggle to come to terms with the loss and damage caused by climate change. This was coupled with increased drug and substance abuse, a coping mechanism that further exacerbates mental health issues.
b) As a result of the impact of climate change, key informants reported a noticeable shift in the patterns of diseases, particularly those transmitted through the fecal-oral route, such as cholera, dysentery, and typhoid. The incidence of these diseases was reported to increase significantly due to the occurrence of floods, leading to uncontrolled run-offs and contamination of water sources. In addition, periods of water scarcity and famine further exacerbated the situation by the enhancement of poor sanitation and hygiene practices. This means that people are more likely to contract these diseases due to inadequate access to clean water and proper sanitation facilities.
c) Climate change events were typically reported to lead to a rise in the incidence and prevalence of diseases. The impact was particularly severe in situations where crucial infrastructure such as health facilities was damaged or destroyed. Additionally, when access to healthcare was hindered by impassable roads, people were unable to receive the medical attention they required. The same applies to health workers who were supposedly deterred from providing care due to the same reasons. Disaster victims face a difficult decision when seeking healthcare as it becomes an opportunity cost. They have to weigh the decision of seeking medical attention against the need for basic resources like food and water, which are essential for survival.
d) During periods of droughts and extreme heat waves, there was a noticeable rise in the frequency of respiratory infections. This increase was particularly evident during dry spells, which exacerbated the situation. People were more susceptible to respiratory illnesses during these periods due to the dry air and reduced moisture levels in the environment. These conditions made it easier for airborne viruses and bacteria to spread, leading to an overall rise in respiratory infections.
e) As our planet faces the harsh realities of climate change, one of the most pressing issues reported was widespread malnutrition, particularly among children. This dire situation is a result of food insecurity stemming from the destruction of crops and livestock, or reduced soil fertility leading to low yields. The impact of malnutrition is especially devastating for children, whose already weakened immune systems become further compromised, leaving them vulnerable to infections that can result in tragic infant and childhood mortality.
f) Populations residing in flood-prone areas were reported to be at a higher risk of contracting malaria due to the creation of multiple breeding environments that facilitate the multiplication of mosquitoes. Furthermore, during periods of drought, there was a surge in malaria cases as the number of mosquito bites per individual increased, leading to a higher transmission rate of the disease. However, the former was more commonly reported than the latter.
g) Emergency of new diseases and pests in areas where they have not been before occurrence of climate variability and change. For example, highland areas that used to be cold before and never had mosquitos now have a number of them. This is all attributed to climate change. The consequences of having a high prevalence of these mosquitoes, especially the impact on children and pregnant women is widely reported.
h) Participants reported that poverty had become a major issue that has led to an increase in the burden of HIV and other sexually transmitted infections (STIs) in areas that were affected by climate change. That the destruction of income sources left people with few options, leading to a rise in transactional sex, such as "sex for fish" or "sex for food." This contributed to a rise in the

transmission rates of HIV and other STIs in these areas. Additionally, limited access to protective SRHR services, such as condoms and pre- and post-exposure prophylactic treatment, made the situation even more difficult for those who want to protect themselves against HIV.

Link between SRHR and Climate change, and how Climate change impacts the delivery of FP services
All the key informants (both at the national and local levels in Buikwe district) underscored and appreciated the linkage between SRH/FP and climate change impacts. They noted that climate change is a critical issue that affects everyone and in particular significant impact on sexual and reproductive health and rights (SRHR) around the world. Rising temperatures, extreme weather events, changing rainfall patterns, and all the previously mentioned impacts of climate change have greatly impacted the access, affordability, and utilization of SRHR services. As recounted by key informants, climate change effects have barred people from accessing and utilizing SRHR services. The provided some examples of the impacts of climate change on SRH/FP, including the following:

a) Flooding has specifically led to the displacement of people to areas like concentration camps where they have low or no access to SRHR health services. This happens when floods destroy the infrastructure (e.g., road networks, health centers). Floods often result in stagnant water, which promotes the proliferation of mosquitoes that cause malaria infestation in the community. Pregnant women are at greater risk of malaria infestation, usually resulting in miscarriages. Malaria also contributes to increased infant and child mortality rates.
b) The government's emphasis and focus on dealing with the climate change effects with no integration and consideration of SRHR has affected service provision; poverty arising from obliteration people's sources of income has limited affordability hence utilization of SRHR services;
c) In fishing communities, people have been reported to share and/or wash condoms after use, and missing appointments to get contraceptives due to limited accessibility;
d) The impact of climate change on healthcare workers cannot be overemphasized, particularly in the provision of sexual and reproductive health and rights (SRHR) services. The poor state of roads in some regions renders it impossible for health workers to access the areas where services are required;
e) The damage to health infrastructure makes it inevitable to use temporary structures and travel long distances, compromising the quality of services they deliver. Climate change-related disasters lead to a surge in patients, causing burnout of health workers. Additionally, the increased burden of diseases can result in a depletion of medical supplies;
f) Food and water scarcity has also contributed to low birth weight, undernutrition, stunted growth, and other health problems among children affecting their overall development;
g) The impacts of climate change on pregnant women have been significant. Moreover, financial limitations can hinder access to family planning and sexual and reproductive health services, leading to a rise in unintended pregnancies. This can have long-lasting effects on women's health and well-being, as well as on the overall population growth. According to the key informants, climate change-induced factors such as drought and famine have led to greater food insecurity, resulting in poor nutrition for expectant mothers. This has a detrimental effect on both mother and fetus, as malnutrition can lead to low birth weight, which in turn increases the risk of neonatal and child mortality. Other effects of climate change on pregnant women include an increase in fistula cases due to heightened rates of teenage pregnancies, spontaneous abortions due to heat waves and gender-based violence (often arising from financial strain in households).
h) Climate change has also been linked to heightened stress levels, which can lead to preeclampsia. Additionally, limited access to antenatal care services, inadequate funds for postnatal and neonatal care, and a rise in climate change-related infectious diseases like

malaria have been observed among pregnant women. These diseases can cause intrauterine fetal deaths, among other effects.

i) In extreme cases, women have been forced to deliver under poor conditions, such as on roadsides, in gardens, and at home due to impassable roads, infrastructure breakdown, and limited financial resources. This has resulted in an increase in maternal, neonatal, and infant mortality and morbidity rates.

Key barriers to integration of FP in climate action

The key informants (both at the national and local levels) perceived the following as the key barriers to integration of SRHR/FP into climate action:

a) Lack of adequate resources. Specifically, there is a shortage of financial capital and human resources that are crucial for meeting citizens' health needs and implementing clean energy solutions. This has created a significant obstacle that needs to be addressed in order to effectively integrate SRHR/FP into climate action and ensure that the health needs of citizens are met while also addressing climate change. Besides, the inadequate resources available face several demands from service delivery (such as: responses for addressing hunger, repairing roads, relocating people, enabling access to clean water, access to SRHR/FP services. But the latter is usually low on the priority list/agenda.

b) Absence of a specialized secretariat to oversee and coordinate its implementation. Without a dedicated team to oversee this complex and nuanced approach, it can be difficult to ensure that all relevant aspects are taken into account and that initiatives are implemented effectively. As a result, there is a risk that certain groups (e.g., women, girls, youth, People with Disabilities) may be left out or marginalized, potentially perpetuating existing inequalities and hindering progress towards greater inclusivity. To address this issue, it is important to establish a dedicated secretariat that is equipped with the necessary expertise and resources to effectively promote and implement intersectional programming.

c) Implementing programmes and projects in a siloed manner, largely based on institutional mandates, is a key challenge when dealing with multi-sectoral initiatives, which contribute to common interest and goals. When different departments or teams work in isolation, it becomes difficult to ensure coordinated efforts towards achieving the broader objectives of the project. This can lead to issues such as duplication of efforts, lack of clarity on roles and responsibilities, and overall inefficiency. As a result, it is essential to adopt an integrated approach that involves collaboration and communication across different departments to ensure effective implementation of multi-sectoral projects.

d) Limited knowledge and appreciation of the linkage between gender, SRHR/FP and climate action, including the knowledge and skills for integration of gender, SRHR/FP into climate actions at the national and local levels.

e) Insufficient data to substantiate the impacts of climate on gender, SRHR, and mental health for informed and accurate decisions regarding the integration of sexual and reproductive health and rights (SRHR) into climate action.

f) Existence of deeply ingrained negative perceptions in the community rooted in religious and cultural beliefs on aspects of SRHR/FP. For instance, the use of family planning is sometimes regarded as a foreign concept that is associated with Western ideologies, particularly the notion of controlling the African population. As a result, it can be challenging to promote family planning in such settings.

g) In some cases, short-term donor-funded projects fail to make a lasting impact, particularly when they come to an abrupt end before the community can fully benefit from them as reported by the key informants from civil society. Additionally, they reported that rural communities lacked awareness and knowledge about the ongoing effects of climate change, which hindered their ability to take proactive measures to mitigate its impact. This can lead to a cycle of

vulnerability and underdevelopment, making it difficult for these communities to thrive and adapt to changing environmental conditions.

h) The prevalence of poverty is a significant limiting factor to the adaptive capacities of individuals and communities. This is particularly true in the context of SRHR/FP and climate change, where access to resources and information is crucial. Despite efforts to disseminate this information across the country, there are still significant gaps in knowledge and understanding as stated by key informants at national level. Additionally, external financing often comes with restrictive conditions that make it difficult to implement cross-sectional programming that addresses multiple issues simultaneously.
i) Buikwe's district leadership has encountered a significant obstacle in the form of low staff motivation, which is primarily caused by inadequate pay and delayed payments. These issues can have a detrimental impact on the quality of work as well as the general morale of the employees especially in instances where staff from different departments have to continuously cooperate to ensure the intersectionality of SRHR/FP and climate change.
j) High poverty levels in the community, makes it difficult in the implementation of the climate change adaptation actions.

Gender and Climate Change

When asked who was most affected by climate change, participants at both national and local level emphasized that women and girls were often disproportionately affected by the effects of climate change, as they are more likely to live in poverty and have limited access to healthcare and education. This places them at greater risk of unintended pregnancy, unsafe abortions, and maternal mortality as iterated by the key informants. However, other affected groups like children, youth, and the disabled were listed with men being the least mentioned group. The key informants at the local level in Buikwe district emphasized that women and girls are most affected by climate change impacts, considering that they are the custodians of the environment as they interact with the environment on a daily basis. That, besides this, is even worse for women who are the sole breadwinners in the household. There are situations of change in gender roles in the community, for which women are expected to look for resources such as food, water, firewood. These are not easily provided in the face of climate change impacts.

The key informants (both at the national and local levels) also considered that girls were vulnerable to child marriages especially in climate-induced poverty-stricken environments as they would be viewed as a source of income, i.e., bride price, by their parents. This would also be instigated by a need to sustain their livelihoods and their dropping out of school due to school fees scarcity. The girls were therefore consequently exposed to gender-based violence and teenage pregnancies and their related risks such as fistula and maternal death.

They considered water scarcity to significantly affect girls' menstrual hygiene to the point of reporting absent from school during their menstruation periods. They emphasized that in Uganda, women are heavily involved in agricultural production. This places them at greater risk for the harmful impacts of climate change, including the potential loss of their livelihoods during extreme weather events such as droughts as noted by key informants at local level.

Besides, they also reported women also spend more time looking for resources such as food, firewood, water to sustain their households which deters them from participating in other productive activities. Women are also deterred from engaging in productive activities during climate change events, especially when pregnant. Thus, they noted that women who have given birth are not strong enough to do hard labor as these strains them further physically. They noted the changing trends of a change in gender roles, that both in the rural and urban areas, women becoming the breadwinners in their

households. This makes such women overburdened to deliver on these roles in the face of climate change impacts.

The key informants at the local level in Buikwe district noted that girls and women who experienced higher levels of poverty were more vulnerable to engaging in transactional sex, which correlates with increased risk of sexually transmitted diseases. In many communities, women face economic constraints that limit their ability to participate in various activities and decision-making processes. The key informants from the civil society organizations category observed that these constraints are often compounded by pre-existing gender roles that dictate the roles and responsibilities of women in the community. As a result, women are often left with limited opportunities to express their opinions or have a say in the decision-making processes that affect their lives. This further perpetuates gender inequalities and undermines the potential contributions that women can make to their communities.

Gender-Based Violence and Climate change

The participants at both national and local levels identified some key interlinkages between gender-based violence and climate change. Since Uganda highly depends on climate-sensitive sectors like agriculture, fisheries, and forestry, adverse climate change events greatly affect people's economies leading to poverty and unemployment. These have been attributed to the increased cases of gender-based violence and the limited affordability of SRHR services and basic health care.

In areas where poverty is worsened by climate change, key informants at national and local levels noted that girls are often forced into child marriages by their parents in exchange for a bride price. Some choose to get married to support their families and themselves in the face of financial hardship, while others do so because they have dropped out of school. Unfortunately, due to imbalanced power dynamics within households, these young girls are at risk of experiencing gender-based violence, as was reported in a discussion focused on girls. This is particularly true as they often marry older men.

In the midst of lack following adverse climate change events like famine and drought, girls and women move longer distances from home to look for resources like water, food, and firewood in fulfillment of their gender roles. Some Key informants at national level identified this as a recipe for gender-based violence as they are exposed to unsafe environments and usually become victims of rape and defilement.

According to key informants at national level, women's reproductive choices can be significantly affected in the wake of severe weather conditions. In such circumstances, women often prioritize their safety and well-being over procreation, leading them to use contraceptives without their partner's knowledge. This can cause marital disruptions and can even lead to gender-based violence.

They observed that women in the agricultural sector are more likely to experience GBV in the midst of climate change events. This is because they depend on natural rains and lack resources to engage in best agronomic practices irrigation that can increase their crop yields. Control and decision making over the harvest is also a big problem as many times, men have a tendency to sell what women labored to plant since the land belongs to them, as reported by a key informant at national level. Thus, often women are forced by their spouses to sell their low harvest which would sustain the family for quick monetary gains that are controlled by men. Failure to do this more often than not instigates cases of gender-based violence.

All key informants (both at the national and local level) were in consensus that access to Sexual and Reproductive Health and Rights (SRHR) and Family Planning (FP) services played a critical role in empowering women to adapt to the challenges posed by climate change. In particular, they noted that these services can help families plan for and care for their children, especially in under-resourced areas

where education and resources are limited. By reducing the need for school dropouts, SRHR/FP can help prevent the negative consequences that often follow, such as poverty and limited opportunities. Additionally, they advised promoting child spacing through access to SRHR/FP can improve the health and well-being of both mothers and children, as well as increase the demographic dividend. When women have access to these services, they have more time to engage in productive work outside of pregnancy, childbirth, and child-rearing, which can lead to greater economic opportunities and better outcomes for families and communities. Also, having planned families would enable families to have the number of children they can easily take care of, especially in the face of climate change where most of the resources are destroyed/depleted.

Response for addressing the climate change impacts on SRHR/FP and health services delivery
According to key informants at national level, Uganda is a leader on the African continent in terms of its number of climate commitments. It developed and endorsed its NDC Partnership Plan in 2018. Uganda also launched its National Climate Change Policy in 2015 and has committed to reducing its net greenhouse gas emissions by 24.7% by 2030 in its most recent NDC (Uganda, 2023). On a local level, Ugandan Districts have also taken action in terms of tree planting, biodiversity conservation, and encouraging sustainable farming practices. Key informants at local level also appreciated that leaders at the district and sub-county levels have placed a lot of emphasis on child education as a subsidy to the prevention of teenage pregnancies and increasing the quality of the population.

The key informants at national level highlighted the government's promotion of solar-powered irrigation and the construction of big dams to provide water support for climate resilience and adaptation. They noted that access to clean and safe water was crucial during adverse climate events such as drought or famine as it would improve agricultural activities and lessen the risk of malnutrition, which in turn affects maternal and child health while also impacting menstrual hygiene and management. This increases the survival, quality of life, and education prospects of the girl child.

According to key informants at national level and civil society, the government is implementing the Parish Development Model, which aims to enhance the welfare and income levels of Ugandan households. They view it as a poverty-reducing plan that can help communities build resilience against climate change and provide them with the necessary funds to access healthcare services. The Government of Uganda is collaborating with state and non-state actors, particularly Civil Society, to implement several initiatives. One of the key informants at national level stated that it was not sufficient to create policies and strategies but it was crucial to operationalize them. He however noted that Civil Society was doing a ton of work and taking a big portion of responsibility for implementing most of the policies.

The key informants (i.e., both the national and local levels) applauded the Uganda Government for considering climate change and population dynamics as key policy and development issues. Thus, they acknowledged that rapid population growth is a stress on the environment. However, they denoted the difficulty the Government of Uganda faces in creating and implementing large-scale, holistic legislation that ties the two together. Rather, the government has taken a fragmented and decentralized approach. Although few Ugandan government agencies explicitly endorse SRHR, many share a similar focus on population and FP. There are several initiatives focused on population and climate within different ministries, but there is limited collaboration among agencies from different departments.

However, the key informants at national level reported that there was one government agency that stood out for its multi-sectoral approach: The National Population Council (NPC). They reported that the NPC's *Population, Health, and Environment (PHE) program* aims to educate and engage communities in family planning efforts, and their most successful intervention is the Model Household program.

Model Households "are designed to promote positive health, conservation and population practices and behaviors" (National Population Council, n.d.) and work by rewarding model citizens for best practices, thereby creating an example for community members to follow. Model Households represent the most local level of system change with a bottom-up approach; this is beneficial for small-scale projects, but less effective for national efforts.

The key informants at national level noted that the government had designed other multi-stakeholder approaches through its policies and plans that enable integration of gender, health, climate, and natural resources. For example, the *Climate Change Act* of 2021 that Ministries, Departments, and Agencies take on a gender-responsive approach. The government has been operating its *One Health strategy* (2018-2022) which mainly looked at integrating all sectors and efforts to promote the health of people, animals, and the environment. Furthermore, the *National Action Plan for Health Security* (2019-2023) provides a comprehensive multi-sectoral approach in which human and animal health is integrated, taking into account the environment; and the National Development Plan (NDP) III.

Besides, they also noted that the Government of Uganda through the NDP III promotes the programme-based budgeting and planning that facilitates integration of water, land, forestry, agriculture, and health. This ensures that all programmes are accounted for and properly addressed. Thus, through this framework they are creating targeted awareness about population dynamics, sustainable environment management and climate action through collaboration among the Ministry of Health, Ministry of Water & Environment and other duty bearers at the national and local levels. This will in turn increase people's resilience and adaptation to climate change events on top of other measures like reforestation, agroforestry, and afforestation.

The key informants in the category of Civil Society Organizations, operating at both at the local and national levels reported that they are raising awareness about climate change and its impacts on health, and focusing on empowering local communities with knowledge on adapting to climate change and supporting communities to access health services (including: SRHR/FP) through awareness and training. For instance, they underscored that through these engagements with the community, the key message is for families to bear children whom they can take care of with due consideration of the resources they have. Family Planning is key to achieving this.

They noted that CSOs usually act as liaisons between the people and the government, providing policymakers with information on how climate change and SRHR/FP have impacted communities. They also reported that CSOs provide services to communities with decreased access to medical care. Distance to the nearest hospital or health center is a major barrier to accessing SRHR/FP services. They noted that various CSOs ease these barriers by training and dispatching health workers to rural and remote areas. They enlist Village Health Teams (VHTs) to provide services, supplies, and education to rural communities, and design programs that address teenage pregnancies and STIs. In addition, they extend services like telemedicine to increase Ugandans' access to doctors, laboratories, and pharmacies from the comfort of their homes. While it is the responsibility of the Ugandan Government to ensure that all people have access to health services and knowledge, CSOs are filling the gap in access for the time being.

Emerging issues

The following emerging issues (i.e., challenges and opportunities) are synthesized from the literature, gap analyses and feedback from the key informant interviews:

Challenges

a) Limited knowledge about and associated appreciation the linkage between climate change and

family planning among the key stakeholders and actors at the community, local and national levels.

b) Inadequate capacity for mainstreaming family planning in climate action adaptation at scales i.e., community, local and national level.

c) Inadequate support to community based institutional and structures, e.g., Village Health Teams (VHTs) for advancing effective delivery of health services at the community level. Notably, VHTs are composed entirely of volunteers nominated by fellow community members based on their expertise of health and development, leadership and communication skills, and dependability (Health Education and Promotion Division, 2010). Based on the findings in Buikwe, there is weak monitoring for this initiative and there is also no structured oversight and support from MoH for the initiative. For instance, the total number of VHTs in Buikwe is not very clear.

VHTs are also limited in their scope of authority; they cannot distribute medications and often refer community members seeking health advice to clinics rather than providing health services directly. VHTs primarily disseminate educational materials, which makes them less essential to communities that lack access to basic health services.

d) Weak coordination among actors and stakeholders that respond and address issues relation to the interconnection between population dynamics, development, agriculture, environment, natural resources management and climate action across the NDP III programmes being implemented at the national and local levels.

e) The use of the silos approach in design and delivery of services by the Government and other development actors

f) Limited scale up and out of best practices demonstrating the connection between family planning and Climate action

g) Inadequate financing to support implementation of responsive actions addressing the challenges emerging from Gender, Health (family planning) and Climate change action.

h) Existence of religious and cultural beliefs which are indifferent of family planning services. These negatively impact on decision making regarding use of family planning methods.

i) Destruction of infrastructures by the prevailing and projected climate change impacts, especially the heavy rains and flooding.

Of note is that an increase of storms and precipitation caused by climate change is also affecting the ability of women to gain access to healthcare services. To account for this, healthcare centers need to be built to adapt to climate change in order to stay available to women throughout and after storms. There are many ways in which healthcare centers and other important infrastructure can adapt to climate change in Uganda. First, the siting and building codes for current and future healthcare centers need to be analyzed for current and future climate risks (Shumake-Guillemot et al., 2015). The vulnerabilities/risks of those centers need to be understood in order to prepare for extreme events. That this preparation includes having essential services such as water and sanitation in order for those centers to operate through extreme events.

Next, green infrastructure, such as green roofs and gardens, must be utilized to manage stormwater runoff. With an increase in precipitation and flooding, the more absorbent surfaces like sidewalks and

roads are, the less severe the flooding will be. Green infrastructure mimics nature and there are other mental and physical health benefits to adding more greenery to buildings. For example, being around trees improves people's mental and social well-being through the reduction of stress and anxiety (Suttie, 2019). Rain harvesting, like the use of rain barrels, can be utilized through green infrastructure and can help reduce vulnerability to drought (*Rainwater Harvesting System*, n.d.). Current healthcare centers need to utilize not only green infrastructure but also be retrofitted to be made more resilient to storms. Retrofitting could include adding storm shutters and flood barriers and reinforcing roofs and walls (Owen-Burge, 2021). To account for the increase in strong winds, healthcare facilities need to have a strong connection between the roofs and foundations (UNEP, 2021).

Opportunities

a) Lack of the Uganda National Adaptation Plan for the Health sector for advancing structured response to climate change impacts on health.

b) The process for development of the National Adaptation Plan (NAP) is underway and is spearheaded by the Climate Change Department, MoWE.

c) The process for development of the National Gender Action is underway and is spearheaded by the MoWE through Technical Assistance from the United Nations Food and Agriculture Organization.

d) Considering FP and SRH as an adaption strategy to respond to climate change impacts-

4.3 Discussion of results

Uganda´s policy and legal framework provides guidance with commitments and strategies for addressing SRHR and climate action. Thus, there are also underlying overarching programmes and plans within which the interventions in this respect can be anchored. Despite this, several initiatives responding to address respective issues are often implemented independently in a silo approach, considering the respective interventions in each case are aligned to a specific NDP III programme. Thus, response for SRHR and climate action are under the Human Development Programme and the NRECCLWM Programme of the National Development Plan III, respectively.

Thus, there is limited inter programme coordination through multi-stakeholder engagements for joint planning, implementation and monitoring & reporting of implementation of respective interventions under SRHR and climate action at different scales. This helps in building synergies and pooling resources during implementation to deliver on shared goals and objectives. For instance, there initiatives in other countries where interventions that integrate climate and SRHR have been developed and implemented. According to the report by the Wilson Centre (2022), the FUNDAECO's Guatemalan Conservation Coast presents an example of such a project. Thus, it's a carbon credits project creates an explicit linkage between climate action and SRHR. Thus, the carbon credits bought for the project are used for funding sexual and reproductive health clinics for women in rural areas (in Guatemala), and providing scholarships for young girls in rural villages of Guatemala, so that they can finish their secondary and high school education. In this arrangement, the carbon credit as a climate change intervention – becomes a practical tool for supporting women´s empowerment. Similar initiatives can be developed and contextualized in the case of Uganda.

Besides, at a household and community level this linkage between SRHR and climate action can be appreciated through application of the Population, Health and Environment (PHE) model. This provides an operational framework for addressing issues of population dynamics (including access to family planning services), health and environment based on their interconnection and through a multi-stakeholder approach involving all actors across the themes of population, health and environment to

collaborate and implement joint interventions to deliver shared goals. Overall, this approach aims at improvement of voluntary family planning and reproductive health care, conservation and sustainable natural resources management in communities living in ecologically rich areas (USAID, 2020).

The perception of the key informants (both at the national and the local levels) and the local community (in Buikwe district) in terms of the climate change impacts; linkage between SRHR/FP & climate action are in line with published literature on the same (i.e., MWE, 2015; National Adaptation Plan (NAP) Global Network and Women Deliver, 2020 and United Nations Framework Convention on Climate Change (UNFCCC), 2019; and Hashim, J., and Z. Hashim, 2016). They also cited some examples demonstrating these linkages, such as: *a) climate change impacts on reproductive health of the females; b) climate change limits access to SRHR/FP services; c) climate change impacts promote GBV, which also affects decisions/actions on SRHR/FP for women and girls.*

The community perceptions of the various gender categories (i.e., men, women, boys and girls) are similar regarding the climate change impacts on their livelihoods and the associated linkage between climate change and SRHR/FP.

Overall, the study reveals that Uganda is on the right course, but on a learning curve in respect to the readiness for institutionalization and scale up of SRHR/FP in climate action. The existing policy and legal framework present provisions that facilitate this. However, most of the actors and stakeholders are engaging and implementing response actions based on a silos approach. There are few initiatives, especially by civil society which are demystifying this silos approach/concept by promoting a multi-stakeholder and thematic approach through application of the PHE model. Some of the civil society organizations, which have piloted the PHE model in Uganda, through collaboration with the National Population Council, include: Pathfinder – Uganda; Conservation through Public Health and Regenerate Africa. Were as these initiatives being impactful where they were piloted, especially in the Lake Victoria basin in Uganda, this is at small scale and hence fourth require scaling up and out.

Besides, various structural barriers/gaps and challenges that limit effective institutionalization and scale up of SRHR/FP in climate action as described in **section 4.1**, were identified during the study. These barriers and the associated emerging issues (i.e., challenges & opportunities) as described in **section 4.2**, require targeted policy recommendations and actions for addressing them to promote and facilitate institutionalization and scale up of SRHR/FP in climate action. The recommendations and actions in this respect are presented in **Table 2**.

5.0 Conclusions & Recommendations

5.1 Conclusions

There is a clear link between SRHR/FP and climate change, especially as it pertains to Uganda and the Buikwe District as a case. The respondents engaged during the KIIs and FGDs provided evidence with examples which demonstrate the climate change impacts on people's health and well-being, particularly in the Buikwe District. Their responses and feedback in this respect is line with already published literature demonstrating this linkage from other countries globally.

This study is an example to be built upon in the future; it displays one example of how SRHR and climate change are interlinked within one time and location. There are numerous examples around the world that also need to be studied with a local lens. Climate change cannot be mitigated in a vacuum; a multi-sectoral approach analyzing health, equity, and local impacts offers a more robust view of potential effects. Policymakers should prioritize interdisciplinarity as they create future policy and system changes regarding SRHR/FP, population dynamics and climate change (Population Institute,

2023).

The study results revealed several barriers and emerging issues, which limit effective institutionalization and scale up of SRHR/FP in climate action. These require responsive actions at the policy and practices level described in **Table 2**, which need multi-stakeholder participation and coordination during implementation of various Government and Non-Government Programmes/projects at the community, local and national levels.

5.2 Recommendations

The suggested recommendations and actions are derived from the key emerging issues and barriers which limit effective institutionalization and scale up of SRHR/FP in climate action. They are presented in **Table 2**.

Table 2: Recommendations and actions for addressing the emerging issues, targeting to advance the institutionalization and scaling up of SRHR/FP for climate change resilience in Uganda.

Key emerging issues	Responsive policy/Practice recommendations	Key actions	Who is responsible? Some of the key actors
a) Limited knowledge about and associated appreciation the linkage between family planning/sexual reproductive health (FP/SRH) and climate action among the key stakeholders and actors at the community, local and national levels.	Pursue structured engagements with key actors and stakeholders to advance appreciation of the linkage between family planning and climate.	Creating more targeted stakeholder awareness about the linkage between FP/SRH and climate action.	Ministry of Health; National Population Council; Ministry of Gender, Labour and Social Development (MGLSD); Ministry of Water and Environment (MoWE); Local Governments; Civil Society Organizations (CSOs) & Networks; International Non-Government Organizations (INGOs), UN Agencies and Development Partners.
b) Lack of the Uganda National Adaptation Plan for the Health sector for advancing structured response to climate change impacts on health.	Development of the Uganda National Adaptation Plan for the Health sector	Create an enabling framework for integration of FP/SRH into health response agenda towards climate action.	Ministry of Health (MoH); National Population Council; MoWE, CSOs & Networks; International Non-Government Organizations (INGOs), UN Agencies and Development Partners.
c) The process for development of the National Adaptation Plan (NAP) is underway and is spearheaded by the Climate Change Department, Ministry of Water and Environment.	Advance integration of health sector adaptation strategies & actions (including: FP and SRH) in the NAP.	Conducting issue-based research to inform the key strategies in the NAP.	MoH; National Population Council; MoWE, CSOs & Networks; Academic & Research Institutions; International Non-Government Organizations (INGOs), UN Agencies and Development Partners.
d) The process for development of the National Gender Action is underway and is spearheaded by the MoWE through Technical Assistance from the United Nations	MoWE in collaboration with the FAO Uganda should fast-track process for development of the National Gender Action for Uganda.	Facilitate/conduct key stakeholders' consultations to gather input into the draft National Gender Action Plan for Uganda.	MoWE, Ministry of Gender, Labour and Social Development (MGLSD); CSOs & Networks; Academic & Research Institutions; International Non-Government Organizations (INGOs), UN

Food and Agriculture Organization Uganda (FAO Uganda).			Agencies and Development Partners.
e) Inadequate capacity for mainstreaming family planning in climate action adaptation at scales i.e., community, local and national level.	Enhance capacity for mainstreaming family planning in climate action adaptation at scales i.e., community, local and national level.	i) Conduct a targeted capacity needs assessment for mainstreaming of family planning in climate action adaptation at scales i.e., community, local and national level. ii) Develop and implement a responsive and targeted capacity building for family planning in climate action adaptation at scales i.e., community, local and national level.	MoH; National Population Council; MoWE, CSOs & Networks; International Non-Government Organizations (INGOs), UN Agencies and Development Partners.
f) Weak coordination among actors and stakeholders that respond and address issues relation to the interconnection between population dynamics, development, agriculture, environment, natural resources management and climate action across the NDP III programmes being implemented at the national and local levels.	Streamline and strengthen coordination among key actors and stakeholders that respond and address issues relation to the interconnection between population dynamics, development, agriculture, environment, natural resources management and climate action across the NDP III programmes being implemented at the national and local levels.	i) Establish forums at the National and Local levels for information exchange and dialogue among key actors and stakeholders involved in responding to issues related to population dynamics, development, agriculture, environment, natural resources management and climate action. ii) Use the appropriate NDP III programme working groups and annual performance reviews as platforms for raising issues related to population dynamics, development, agriculture,	Ministry of Health; Ministry of Gender, Labour and Social Development (MGLSD); Ministry of Water and Environment (MoWE); Ministry of Finance, Planning and Economic Development (MoFPED); National Population Council; National Planning Authority; Local Governments; Civil Society Organizations (CSOs) & Networks; International Non-Government Organizations (INGOs), UN Agencies and Development Partners.

		environment, natural resources management and climate action, and generating implementation of coordinated responsive actions.	
g) Silos approach in design and delivery of services by the Government and other development actors	Develop and implement responsive programmes for delivery of services that integrate strategies for addressing issues related to FP/SRH and climate action, while actively involving the key actors based on their mandates, roles and responsibilities.	i) Create targeted awareness among duty bearers for mindset change and appreciation for joint responsive programme development and implementation involving key actors that are responsible for addressing issues related to the interconnection between population dynamics, development, agriculture, environment, natural resources management and climate action.	Ministry of Health; Ministry of Gender, Labour and Social Development (MGLSD); Ministry of Water and Environment (MoWE); Ministry of Finance, Planning and Economic Development (MoFPED); National Population Council; National Planning Authority; Local Governments; Civil Society Organizations (CSOs) & Networks; International Non-Government Organizations (INGOs), UN Agencies and Development Partners.
h) Limited scale up and out of best practices demonstrating the connection between FP/SRH and Climate action at different levels.	Advance more targeted and contextualized training and facilitation to support the scale up and out of these best practices at different scales	Mapping and documentation of the best practices in respect to the interconnection between family planning, gender, health and climate action	Ministry of Health; National Population Council; Ministry of Gender, Labour and Social Development; Ministry of Water and Environment; Local Governments; CSOs & Networks; Academic & Research Institutions; International Non-Government Organizations (INGOs); UN Agencies; Development Partners and Private Sector.
i) Inadequate financing to support implementation of responsive actions addressing the challenges emerging from Gender, Health (FP/SRH) and Climate change	Increase fund allocation and access to financial resources to facilitate implementation of the responsive actions to address integrated climate action approach, thus addressing issues	Joint responsive programmes design and implementation by tapping into the available climate finances e.g., Adaptation Fund, Green Climate Fund and other	Ministry of Finance, Planning and Economic Development; Ministry of Water and Environment; Ministry of Health; Ministry of Gender, Labour and Social Development; Ministry of

action.	related to the interconnection between family planning, gender and climate action.	bilateral Development Partners	Agriculture, Animal Industries and Fisheries (MAAIF); Local Governments; CSOs & Networks; Uganda Designated & Accredited Entities; International Non-Government Organizations (INGOs); UN Agencies; Development Partners and Private Sector.
j) Existence of religious and cultural beliefs which are indifferent of FP/SRH planning services.	Pursue structured engagements with religious and cultural leaders for a positive mindset change on beliefs that are indifferent of family population dynamic, environment, natural resources management and climate action.	i) Conduct targeted issue-based awareness on issues related to population dynamic, environment, natural resources management and climate action, targeting religious and cultural leaders. ii) Pursue structured engagements with the males at household and community levels for a positive mindset change for informed decisions in the nexus of population dynamic, environment, natural resources management and climate action.	National Population Council; MoWE; Ministry of Health; Local Governments; CSOs & Networks; UN Agencies and Development Partners.
k) Destruction of infrastructures by the prevailing and projected climate change impacts, especially the heavy rains and flooding.	Design and construct climate smart infrastructure i.e., roads and health centres which are adapted to the current and projected climate climatic conditions to advance climate change resilience for the health infrastructure, environment and the community.	i) Analyse/develop/update building codes for current and future healthcare centers need to be analyzed for current and future climate risks ii) Site and construct health centres-based building codes aligned to the current and future climate risks.	Ministry of Lands, Housing and Urban Development; Ministry of Health; Ministry of Local Government; Ministry of Water and Environment; Ministry of Energy and Mineral Development (MEMD); National Environment Management Authority; Local Governments; CSOs & Networks; Uganda Designated & Accredited Entities; International Non-Government

		iii) Integrate water harvesting equipment and facilities in the health centre infrastructure. iv) Integrate clean energy technologies for cooking and lighting within and outside the health centres. v) Enhance waste management and handling practices and technologies at the health centres and immediate community through application of the 3 Rs i.e., Reduce, recycle & reuse, while ensuring proper management and disposal of hazardous waste.	Organizations (INGOs); Development Partners; UN Agencies and Private Sector.
I) Considering FP/SRH as an adaption strategy to respond to climate change impacts	Integration of FP/SRH as part of program design and implementation at different scales i.e., Community, Local, National and Regional	Equip the coordination teams for FP/SRH to integrate climate adaption strategies in their implementation guidelines.	Ministry of Health; Ministry of Local Government; Ministry of Water and Environment; Ministry of Finance, Planning and Economic Development; Ministry of Agriculture, Animal Industries and Fisheries.
J) Inadequate support to community based institutional and structures (e.g., Village Health Teams) for advancing effective delivery of health services at the community level	Provide responsive support and facilitation for community based institutional and structures (e.g., Village Health Teams) to conduct effective service delivery to compliment the Government structures.	Conducting needs (i.e., technical, institutional & technological) assessment to inform capacity/support programmes for implementation	Ministry of Health; Ministry of Local Government; Ministry of Water and Environment; Ministry of Finance, Planning and Economic Development; CSOs & Networks; UN Agencies; Private sector; and Development Partners.

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7.0 Annexes

Annex 1: List of key informants that participated in the study.

Key informant	Organization	Responsibility/Role
1) Dr. Olive Kobusingye	Makerere MedicalSchool	Surgeon, Researcher
2) Mr. Ramond Ruyoka	Youth Advocacy and Development Network	Executive Director
3) Dr. Robert Mutumba	Ministry of Health: Reproductive and Infant Health Division	Principal Health Officer
4) Dr. Betty Kyaddondo	National PopulationCouncil	Director
5) Mr. Olemo James Peter	National PopulationCouncil	Principle
6) Mr. Kwebiha Joshua	National PopulationCouncil	National Population officer
7) Dr. Richard Bbosa	Buikwe District HealthManagement Team	District Health Officer
8) Dr. Bernadette Nabuuma	Buikwe District HealthManagement Team	Deputy DistrictHealth Office
9) Mr. Daniel Mbuya	Buikwe District HealthManagement Team	EnvironmentalHealth Officer
10) Ms. Grace Mugabi	Buikwe District HealthManagement Team	Health Educator
11) Ms. Dorothy Nalwoga	Ssi Health Centre III	Enrolled Midwife
12) Mr. Simon Buluma	Ssi Health Centre III	Veterinary Officer
13) Mr. Ivan Obella	Ssi Health Centre III	Medical RecordsOfficer
14) Mr. Richard Muzito	Ssi Health Centre III	Medical RecordsAssistant
15) Ms. Salome Nakimuli	Ssi Health Centre III	Enrolled Midwife
16) Ms. Rita Kirungi Cleophas	Ssi Health Centre III	Medical ClinicOfficer
17) Dr. John MarkBwanika	Rocket Health	Chief of Operations and Research Officer
18) Mr. Bob Natifu	Climate Change Department, Ministry of Water and Environment	Senior Climate Change Officer
19) Hon. Winifred Masiko	Ministry of Gender,Labour, and Social Development	National ProgramCoordinator of Uganda Women Entrepreneurship Programme/ National Negotiator – Gender and

		Climate change
20) Ms. Betty Mbolanyi	Ministry of Water andEnvironment	Principal Environmental Officer
21) Dr. Gladys Kalema-Zikusoka	Conservation ThroughPublic Health	Founder and Chief Executive Officer
22) Stephen Rubanga	Conservation ThroughPublic Health	Co-Founder andChief Veterinary Technician
23) Kawolo Hospital Staff (22 total attendees)	Kawolo GeneralHospital	Nurses, doctors,OB/GYNs, administrators

Box 3. About Regenerate Africa

Regenerate Africa is a non-profit organisation that aims to contribute to, and accelerate Africa's transition to a regenerative economy for the purpose of restoring climate stability, ending hunger, rebuilding deteriorated social, ecological, health and economic systems that benefit people, nature and the climate across Africa.

Regenerate Africa is officially registered (registration number: INDR165075792NB) with the Non-Government Organization Board as a Ugandan non-governmental organization, incorporated as a company limited by guarantee. Regenerate Africa is governed by an Independent Board that is responsible for providing strategic oversight of the organization including ensuring its integrity as a voluntary service organization.

Vision- *'An Africa where human choices ensure a regenerative economy for the benefit of people and nature, and for a sustainable future.'*

Mission – *´Support increased adoption of regenerative human development approaches across Africa by building strategic partnerships, cultivating initiatives and innovations in production landscapes and supply chains, leading to healthier people, environment, climate, communities and sustainable livelihoods.´*

Our Core competencies

a) Responsive and targeted training and capacity building for community
b) Partnerships and relationships building
c) Gender responsive programming
d) Evidence based Advocacy

The work is aligned to deliver the desire change along the following thematic areas:

1) *Regenerative food, agriculture and land management;*
2) *Climate and green energy solutions;*
3) *Forests and water resources;*
4) *Gender, health and environment;*
5) *Environment, Social, Governance (ESG), Nature and Sustainability; and*
6) *Scaling up of Science and Practice.*

Our goals:

Regenerate Africa striving at delivering the following goals:

1) *To promote, facilitate and accelerate the African transition to a regenerative economy for the purpose of restoring climate stability, ending hunger, and rebuilding deteriorated ecological and economic systems*
2) *To develop and implement action that contributes to broad climate resilience of communities, their environment-dependent livelihoods, and ecosystems*
3) *To enhance rights-based and socially-inclusive approaches to conservation for effective natural resource management, community wellbeing and biodiversity*
4) *To advance practical nature-based solutions and enterprises and sustainable value chains centred on better conservation, management and restoration of Africa's ecosystems*
5) *To promote and advance the science and practice of sustainable scaling up of programs, projects, and innovations that cut across sectors*

Further information about Regenerate Africa is available at:

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