

**RISK MAPPING AND VULNERABILITY ASSESSMENT
UNDER THE PARTNERS FOR RESILIENCE CLIMATE-
PROOF DISASTER RISK REDUCTION (PFR) IN OTUKE
DISTRICT**

For CARE Uganda

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Acronyms

ACAO:	Assistant Chief Administrative Officer
CA:	Constituency Assembly
CAN-U:	Climate Adaptation Network Uganda
CAO:	Chief Administrative Officer
CCA:	Climate Change Adaptation
CDD:	Community Driven Development (
CHOGM:	Commonwealth Heads of Government Meeting
COP:	Conference of Parties
CRS:	Catholic Relief Services
CSOs:	Civil Society Organizations
CVCA:	Climate Vulnerability and Capacity Analysis
DCDO:	District Community Development Officer
DDMCs:	District Disaster Management Committees
DLG:	District Local Government
DM:	Disaster Mitigation
DRR:	Disaster Risk Reduction
DTPC:	District Technical Planning Committee
FGDs:	Focus Group Discussions
FMD:	Foot and Mouth Disease
GBV:	Gender Based Violence
GIZ:	German Technical Cooperation
GWI:	Global Water Initiative project
IUCN:	International Union for Conservation of Nature
IWRM:	Integrated Water Resources Management
LRA:	Lord's Resistance Army
MDGs:	Millennium Development Goals
MPs:	Members of Parliament
MWE:	Ministry of Water and the Environment
NAADS:	National Agricultural Advisory Services
NEMA:	National Environment Management Authority
NGOs:	Non-Governmental Organizations
NPA:	National Planning Authority
NUSAF:	Northern Uganda Social Action Fund
OPM:	Office of the Prime Minister
OPM:	Office of the Prime Minister
PAG:	Pentecostal Assemblies of God
PFCC:	Parliamentary Forum on Climate Change
PFR:	Partners for Resilience
UK:	United Kingdoms
UNDP:	United Nations Development Program
VHTs:	Village Health Teams
VSLA:	Village Savings and Loan Association
WASH:	Water Sanitation and Hygiene
WFP:	World Food Program

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Executive Summary

Introduction

Globally, the number of disasters, man-made and natural, has been increasing almost exponentially over the last twenty years. The intensity and the unpredictability of hazards (leading to disasters if combined with vulnerability) have been negatively related to climate change and the degradation of ecosystems. Through loss of lives, assets and production, hazards and disasters have negative impact on livelihoods and economic growth. Currently, Uganda is highly vulnerable to climatic variations and has been identified as one of the most vulnerable countries in the world to climate change. Climate change in Uganda is evidenced by rising temperatures and glacial melting, and an increasing frequency and intensity of extreme weather events such as droughts, floods and landslides. In consideration of the above, CARE has been implementing three year Global Water Initiative project (GWI) in arid mid Northern Uganda (Lango sub region-Lira district; 2007 to 2010) with higher vulnerability to water related shocks. Additionally, the communities are in transition to assume their ordinary livelihoods from twenty years of war, camp life and dependent on relief services by humanitarian agencies and government.

Purpose of the Risk Mapping

The overall purpose of the task is to conduct a comprehensive contextual analysis of climate change related hazards and their implications on livelihoods of the affected populations in Otuke District so as to generate information report for informing the CARE-PFR project design to reach the target area.

The specific objectives of the assessment were:

1. To understand the implications of climate change for the live livelihoods of the people in the project area.
2. To understand the applicability of the CVCA tool in this context, as a means of building capacity for the community to undertake the assessment
3. To illustrate current Disaster Risk Reduction policy implementation at community, district and national levels,
4. Provide analysis of other stakeholders' engagement in integration of DRR/CCA/EMR in projects/programs and spell out the gaps for redress.

Methodologies

Data was collected over a period amounting to 3 weeks. This included one week of literature review and preparation for data collection, one week of field work (in Otuke District) and one week of central level Key Informant interviews. The data collection team included a Senior Research Fellow as the team leader and a Research Officer. These were assisted for the participatory analysis by a team of 6 research assistants identified by CARE Uganda from among their trained resource persons.

Desk review of literature and adaptation of the CVCA tools

The CVCA Handbook which was used is designed to stimulate analysis and dialogue about climate change and human vulnerability. It uses guiding questions to examine

factors at multiple levels using a variety of tools to gather information. It is designed to be flexible so that the learning process can be adapted to suit the needs of particular users. The consultant conducted a thorough literature review of the CVCA handbook, the purpose being to understand the CVCA methodology, so as to apply it in the data collection. Other documents reviewed included the GWI baseline survey report and the IUCN hydrological survey report.

Identification and training of research teams

A research team of 6 research assistants was formed. These were identified from the pool of resource persons in Otuke District, who had earlier on been trained in conducting a CVCA. The team was divided in pairs, and each conducted 2 FGDs.

Data collection

Data collection was based on the CVCA procedures, using tools that had been adapted to the local situation. The following activities were undertaken in the implementing sub-counties:

At the community level, a combined total of 8 focus group discussions were conducted: 4 in Ogor and 4 in Olilim Sub Counties. The FGDs were moderated by the trained Research Assistants.

Data Analysis and Report writing

Data from the different activities was all types out into an electronic transcript. It was then analyzed for emerging themes using thematic content analysis in which responses were categorized under thematic sub-headings.

Findings

Climate Context

National context

Uganda is facing an increasing burden of disasters, both natural and technological. Natural disasters are much more common, although man-made disasters also play a significant role.

Natural disasters most likely to occur in Uganda are: Epidemics, drought and famine, deforestation, climate change, floods, landslides, earthquakes, hailstorms and environmental degradation.

The commonest man-made disasters are: Insurgency, environmental degradation, transport accidents, and fire.

The context in Otuke District

Otuke District is located in Northern Uganda. The district is part of the Lango sub-region, which consists of 8 districts. It was carved out of Lira District effective 1st July 2009. The 2002 national census estimated the population of the district at approximately 62,000. As of June 2009, the district population was estimated at about 77,800. As part of the Northern Uganda Catena, the district is mostly a savannah plain, with gently rising hills, shorter trees and dominant scrublands.

Ogor sub-county is a relatively new sub-county, established in 2008, and was formerly part of Orum sub-county. It is about 30 square miles in size. Parishes: 4 parishes including Anyalema (17 villages), Atangwata (14), Oluro (14) and Omonyelle (14). It has 59 villages. It has an estimated population of 13,726. According to the communities, the majority of the population (about 60%) is children, because families have as many as 10 children. About 15% of the population is men and 25% are women.

Olilim Sub-county is an old sub-county, established in 1954. Approximately 18 square miles in size, it has 6 parishes and 142 villages (2 of them only recently formed), with an estimated population of 19,000 people. It is estimated that the majority of the population (about 50%) are children, because families have as many as 10 children. According to the FGD participants, about 10% of the population is men and 20% are women.

Major hazard in Ogor Sub-county, based on the participatory discussions with community members include drought, hailstorms, diseases, famine, domestic violence, poor roads and floods. Key impacts that were mentioned included poverty, deaths in the community, famine and fights and violence over land conflicts are some of the impacts of the hazards. According to the FGDs, the recent years have been worse than the years back. The dry seasons are longer while the rains are heavier and more destructive, and thunderstorms are now more frequent. The female FGD participants also mentioned the increasing problem of poor quality of education, inadequate clean water sources (through there are many more bore holes nowadays). The youth FGD participants noted that hailstorms used to affect only a few parishes but now they affect all parishes. According to the FGD respondents, communities are not safe because there are people intent on taking advantage of the harsh weather to steal other people's property. Elderly people are specifically more vulnerable.

In Ogor Sub County, during the months of January and February, communities are clearing the land for the planting, fishing and trading. Planting is done from May to August. Weeding is usually done during the months of May and November. Harvesting is done during the months of July to November. Sheer nut butter harvesting is done during the month

The FGDs report that there have been some changes in timing of the seasons. Twenty years ago, respondents report that there was consistency in the rainfall patterns. As highlighted earlier, people used to sow seed on 15th March, but these days, the time for sowing is no longer certain. Respondents said that this year they did not see the traditional signs that mark the beginning of the rainy season and the dry season was un-expectedly longer.

FGD respondents reported that coping strategies have changed especially the planting season and increasing farming around the swamps, where the underground water is more reliable. Communities now have savings groups, which did not exist in the past. Currently also, households now plant more drought resistant seeds and farmers have also received training. In addition, 30 years ago, people used to perform cultural ceremonies when the rains took long to come. Some FGDs note that the current coping strategies are working, especially for women who have borrowed money and bought ox-ploughs and also those who have explored using the drought resistant crops. However others especially men FGDs note that these strategies are not working.

In Olilim Sub County, the major hazards identified include poverty, diseases, displacement and domestic violence. According to most FGD participants, the hazards have generally not changed over the years. However, farming does not yield as much as it used to yield in the past

According to the local leaders' FGD, seasonally, in Olilim Sub County, clearing the fields is done in January and February, 1st planting is done from February to April. Grazing and hunting are done throughout the year.

Copying strategies that were reported include increased food-crop growing (especially cassava and potatoes), but also diversifying to the cash crops; however, the yields are increasingly dissatisfying. According to the male FGD respondents, the current coping strategies are not sustainable because one time, food will be completely non-available.

According to Key Informants from the National Parliamentary Forum on climate change, climate change in Uganda is still doubted as not being real because the impacts are very difficult to see.

According to the District Planner and the District natural Resources Officer, climate change is recognized as a challenge in the district. There are some visible changes in weather patterns, especially the change in onset of the rainy season. He reports that farmers are now not sure about plant crops in March, as it used to be in the past. He also notes that the rains which used to end in June or July are now ending earlier

With regard to the presence of meteorological information and presence of meteorological station, it was noted that the whole of the Lango region depends on data from one meteorological station, Ngeta weather sub-station in Lira.

According to the key informants, the districts have been getting weather forecasts regularly from the national level over the radios, but there have been no documented or official communications. Key informants also note that the weather patterns have changed significantly and most of the information sent out in the media is not accurate.

Reported changes in climate as observed by the key informant at the district include prolonged dry spells; water logging; change in rain patterns (rains used to come in particular months, especially March and April) and a lot of deforestation especially around the IDP camps

According to the FGD participants, modern climate prediction systems are not present. The communities therefore have to rely on the traditional weather prediction systems.

Changes in the climate that the community observing in Olilim sub county observed include dry season is getting longer; un-reliable rainfall patterns; unexpectedly heavy rainfall; Swamps have dried up due to rice cultivation; winds are also much stronger and on the positive side, soil fertility has improved.

Livelihoods-Climate Linkages

According to the Key Informants at the districts level, the most affected people by climate change are the rural farmers. This is because they rely mostly on agriculture for

their livelihood and yet they have insufficient knowledge on climate change issues and what to expect.

In Ogor Sub-county and Olilim Sub Counties, the most important livelihood resources for different groups in the community include cutting trees, farming, tree planting, Village group savings, rearing of animals, cash crop growing, harvesting and selling shea nuts, brick-making, art and crafts, making and selling local brew, making and selling pastries, selling silver fish, and rearing of poultry.

From the vulnerability matrix computed from the three major FGDs, the overall resources most affected Ogor: animals (37); trade (31); students going to school (31); water (22); agricultural products (21); tree planting (13); bolicap savings (12); VSLA (11); hospital treatment (11); land (8).

From the vulnerability matrix computed from the three major FGDs, the overall resources most affected in Olilim: agriculture(31); trade (25); animals(leyi)(23); students schooling(13); health (13); food stores (12); vsla (12); brick laying (11); water (10); fish grounds (8); stone quarrying (7).

According to the national level key informants from the Parliamentary Forum on Climate Change (PFCC), climate change adaptation strategies that should be prioritized at national level include: Improved agricultural techniques, use of improved seeds, improved land management, community water management, efficient cook stoves and forest management.

From some of the district officials interviewed, climate change adaptation strategies should include growing of fast growing varieties of crops. In addition, action should be taken to prevent people from growing crops in the wetlands.

The FGD for men in both Olilim and Ogor, noted that households are not employing climate resilient agriculture approaches for reasons including lack of improved seeds for planting; inadequate; farming land; lack of gardening equipment; delays in planning due to climate change and lack of energy for manual digging.

District officials noted that the concept of climate change is new and there is not yet a clear understanding of this concept by both the district leadership and the people. As a result, there are no clear strategies.

Changing Disaster Risks

Priority climate related hazards for Ogor sub-county and their risk scores include famine (31), draught (30), bush burning (23), floods (17), hailstorms (16), deforestation (12), and pests (11). Non-climate related hazards included accidents (16), domestic violence (15), disease (14), poverty (13), bad roads (7), bad hospitals (6), and poor schools (1).

Climate related hazards in Olilim Sub-county, include long drought, leading to famine and poverty heavy rains and hailstorms which destroy crops, disease (malaria), wild weeds that destroy plantations, deforestation, bush burning during the dry season, water sources drying up, and pollution of the water sources.

Non-climate related hazards noted in Olilim Sub-county include insecurity due to attacks by the Karimojong, witchcraft, poor agricultural methods, destruction of crops by animals, violence, and few health facilities(poor healthcare).

According to the District Planner and the Natural Resources Officer, the district has conducted some sensitization to some extent but it is still very low.

According to the local leaders' FGD in both focal sub counties, currently, there is no official policy on assets ownership at the community level.

The local leader's FGDs also indicated that there are no disaster preparedness or disaster risk reduction plans at the sub county level.

It was noted from the literature review that Uganda has eminent gaps in its approach to disaster prevention and response. For many years, the country lacked a comprehensive policy on sustainable disaster preparedness and management.

Key informants note that current stakeholder capacity to handle disasters is low. Presently the Otuke DLG cannot provide for people affected by disasters because it does not even have a food store and its financial capacity is very low.

From the key informants, it was noted that communities in Uganda are highly vulnerable to the hazardous effects of disasters. Factors most responsible for this are: poverty, age, gender, disability, lack of information, lack of experience, inadequate health care, geographical isolation of some underserved areas, inadequate coordination, malnutrition, inappropriate development policies, food insecurity, societal stratification, poor water and food quality, limited district level resources, politics, graft, lack of social order, high burden of illness and inadequate disaster preparedness or mitigation.

Major constraints to adopting the coping strategies cited by the FGDs and KIIIs reported strategies include: lack of capital to buy the needed technology; lack of knowledge and skills; backward traditional practices; lack of veterinary services, inadequate medicine and poor services in the health facilities

Institutional Context Related to Climate Change

National level

Government of Uganda in the last 15 years put in place mechanisms for disaster management. The IDP policy was among the first steps. The Office of the Prime Minister (OPM) is charged with overall coordination of these activities. However, specific While emergency plans exist, several new districts have been formed and coverage

Parliamentary Forum on Climate Change (PFCC) was started four years ago during the CHOGM where climate change was on agenda. For the understanding of how climate change has affected the livelihoods in Uganda and how it may affect it in future. PFCC works very closely with CAN-U, Oxfam, GIZ, ACCRA, ACORD, DANIDA, DANIVA, and Water Governing Institute

Informed by the existing gaps, the Government has prepared a comprehensive national policy on disaster preparedness and management. The policy lays emphasis on a multi-sectoral and multidisciplinary approach. The goal of the draft policy is to establish efficient institutional mechanisms for disaster mitigation so as to promote its integration into the national and local government planning process.

At the national level, the biggest challenge is in coordination of response efforts. Also the country seems to be more focused on response than mitigation. Full scale operationalisation of the policy has not yet been undertaken, despite the policy, there is no uniform disaster response.

District level

The policy proposes District Disaster Management Committees to be the lead agencies at the district level and that disaster planning should be executed within the district framework.

At the district level, most districts do not have adequate capacity to plan for disasters. The support from GIZ and Oxfam only benefited a few districts in the West Nile (Nebbi, Arua, Moyo and about 30 new districts have been created over the last 10 years these have not been trained

According to the PFCC, there are no climate change officers in each of the ministries that have a strong stake in climate change. With regard to Disaster Risk Reduction, Government focuses only on Office of the Prime Minister for staffing. DRR has not yet been sufficiently rolled out to other ministries and neither have DRR activities been mainstreamed at all levels.

According to the PFCC, CSOs are doing so well with regard to integration and extension of climate change programmes to the sub-national levels.

According to the district Planner, the district has a Disaster Management Committee. This structure is supposed to coordinate disaster response and management at the district level. However, the structure was created but it is not functional.

According to the District Planner, there is no disaster early warning system in place at the district.

Key informants at the district level proposed some capacity needs that have to be addressed. Firstly, they noted, different departments in the district should have substantive staff to run the climate change programmes.

Underlying Causes of Vulnerability

According to the PFCC, the PFCC has pooled some data from international forums. This information is disseminated to the climate change unit. However, the current challenge is how to cascade this information to the districts and the lower levels.

According to the district planner, policy implementation on climate change is not yet adequate.

According to the district planner, there has been no sectoral guidance from the centre on establishment of an early warning system. He notes that the district rely on CSOs and NGOs to supplement government capacity which is a need because the capacity is not there.

Uganda does fairly well in providing the quarterly and biannual predictions, the biggest challenge has been in translating and utilization of the predictions in valuable programming for support of the communities which may be affected.

Sub-counties usually get information from the district on disasters. However, because of lack of a coordinated plan, information is not usually sufficient to empower communities

Sub-counties not that there are no disaster preparedness plans at the sub county level much as they received information from the district on how to create the

Participation (particularly of vulnerable groups) in policy decisions at national and local levels

According to the male FGDs, most men and women are working together to address climate change related challenges. The women FGD participants disagreed with the men.

According to the male FGDs, there is evidence that men and women are working together to address climate change related challenges

According to the FGDs, respondents were affirmative that households have a degree of control over the resources. However, this was mostly with regard to resources generated through subsistence farming.

The male FGD respondents think that women have access to information and skills and most female FGD respondents also concurred.

Male FGD respondents think that women do not have equal rights and access to resources.

According to the FGDs, the vulnerable groups have influence on the vulnerability factors. Measures include encouraging Afforestation

According to the FGDs, respondents were affirmative that households have a degree of control over the resources; both men and women agree on the sale of household assets and properties and there is usually general agreement at household level before decisions are made.

While in Ogor, men reported that women did not have equal access to resources, the same was not observed for Olilim.

According to the FGDs, the vulnerable groups have influence on the vulnerability factors. Measures include encouraging re-forestation and tree planting and planting quick maturing crops (e.g. soya beans, sun-flower, and green peas).

General Conclusions

1. In Uganda, natural disasters most likely to occur include: epidemics, drought and famine, deforestation, climate change, floods, landslides, earthquakes, hailstorms while the commonest man-made disasters likely to occur include insurgency, environmental degradation, transport accidents, and fires.
2. In both Ogor and Olilim Sub Counties, there have been observed changes in climate and weather patterns namely longer dry seasons, increased flooding, increased temperatures and changed rainfall patterns.
3. There are several coping strategies the communities have adopted including farming around the swamps, savings groups, planting more drought resistant seeds and training farmers. However these adaptation strategies are not yet effective
4. Agriculture is the major livelihood source for the communities in Otuke district, but unfortunately it is majorly subsistence, based on small holdings
5. All the people in the communities are affected by climate change. However, rural farmers, women and children are the most vulnerable to the different hazards the community members who are.
6. Climate change adaptation strategies that are prioritized at national level include: Improved agricultural techniques, use of improved seeds, improved land

- management, community water management, efficient cook stoves and forest management.
7. Majority of natural hazards namely drought, increased temperatures, famine, floods are predicted to increase while manmade hazards like insecurity, domestic violence, poor roads and poor infrastructure are predicted to generally decrease.
 8. There is no climate change early warning system at both nations and local levels.
 9. There are no clearly documented policies and bylaws addressing climate change issues at district and Sub County levels.
 10. The district has limited capacity in terms of human resources, financial and technocratic resources to adequately address climate change related issues.
 11. The planning processes at both Sub County and district levels are participatory in nature with clear consideration of vulnerable groups.

General Recommendations

1. Care Uganda should prioritize capacity building/awareness and training on climate change for all stakeholders including district leaders, sub-county leaders, institutional (school and church) leaders and communities own resource persons.
2. There is need to raise the awareness of NGOs implementing aspects of climate change adaptation strategies to full awareness of the contribution of their initiative for better streamlining and focused service delivery.
3. Community food saving systems likes granaries and district food stores need to be revisited and revitalized for community food security.
4. The metrology department in partnership with Care Uganda and Otuke DLG should provide timely and accurate data to the different planning departments and establish a clear feedback mechanism for the utilization of the provided metrology data by the different end users like farmers.
5. The Otuke DLG should expedite the process of formulation and enacting of by-laws that promote climate change resilient lively hoods among the community member.

1.0 Introduction

Globally, the number of disasters, man-made and natural, has been increasing almost exponentially over the last twenty years. The intensity and the unpredictability of hazards (leading to disasters if combined with vulnerability) have been negatively related to climate change and the degradation of ecosystems. Through loss of lives, assets and production, hazards and disasters have negative impact on livelihoods and economic growth. It is well-established that poor people are disproportionately affected. Disasters wipe away gains in poverty reduction that took much time, energy and resources to achieve and threaten the achievement of the Millennium Development Goals (MDGs).

Currently, Uganda is highly vulnerable to climatic variations and has been identified as one of the most vulnerable countries in the world to climate change. Climate change in Uganda is evidenced by rising temperatures and glacial melting, and an increasing frequency and intensity of extreme weather events such as droughts, floods and landslides. These effects have far reaching consequences for the socio-economic conditions in Uganda. The effects look set to intensify with current average temperatures skewed upwards. Given Uganda's vulnerability to climatic changes and the apparent threat it poses to reverse the development gains of the last two decades, climate change has become an issue which is now reflected in the countries' main policy instrument to eradicate poverty: The National development Plan.

In consideration of the above, CARE has been implementing three year Global Water Initiative project (GWI) in arid mid Northern Uganda (Lango sub region-Lira district; 2007 to 2010) with higher vulnerability to water related shocks. Additionally, the communities are in transition to assume their ordinary livelihoods from twenty years of war, camp life and dependent on relief services by humanitarian agencies and government. This project aimed at 'ensuring that the vulnerable populations have reliable access to clean water in such a way that their dignity, rights, culture and natural environment are not negatively impacted'. This initiative is funded by the Howard G. Buffet Foundation.

Upon the fore-mentioned experiences, CARE secured five years funds from the Ministry of Foreign Affairs-Netherlands through CARE Netherlands to implement the PFR project which will compliment work of the GWI project. The PFR project will focus on strengthening the vulnerable communities' adaptive capacities and resilience to disaster risk reduction, climate change adaptation and eco system management and restoration. This will be implemented in Otuke district in the sub counties of Ogor and Olilim.

According to the design of the project, a detailed community risk mapping and vulnerability assessment is to be conducted for ensuring that a comprehensive contextual analysis is in place. There will also be need to undertake a stakeholder analysis and map actors that have influence on the candidate target (impact) group in

the project areas. The generated information will be used to refine the project design based on community needs.

2.0 Purpose of the Risk Mapping

2.1 General objective of the assessment

The overall purpose of the task is to conduct a comprehensive contextual analysis of climate change related hazards and their implications on livelihoods of the affected populations in Otuke District so as to generate information report for informing the CARE-PFR project design to reach the target area.

2.2 Specific objectives of the assessment

The specific objectives of the assessment were:

1. To understand the implications of climate change for the live livelihoods of the people in the project area.
2. To understand the applicability of the CVCA tool in this context, as a means of building capacity for the community to undertake the assessment
3. To illustrate current Disaster Risk Reduction policy implementation at community, district and national levels
4. Provide analysis of other stakeholders' engagement in integration of DRR/CCA/EMR in projects/programs and spell out the gaps for redress.

3.0 Methods

Data was collected over a period amounting to 3 weeks. This included one week of literature review and preparation for data collection, one week of field work (in Otuke District) and one week of central level Key Informant interviews. The data collection team included a Senior Research Fellow as the team leader and a Research Officer. These were assisted for the participatory analysis by a team of 6 research assistants from Otuke District, identified by CARE International from among their trained resource persons. The objectives of the analysis were:

1. To understand the climate context of the target area
2. To understand the linkages between the climate and livelihoods
3. To understand the changing disaster risks
4. To assess the institutional and policy context related to disaster risk related to climate change
5. To understand the underlying causes of vulnerability

The following methods were used:

3.1 Desk review of literature and adaptation of the CVCA tools

The CVCA Handbook is designed to stimulate analysis and dialogue about climate change and human vulnerability. It uses guiding questions to examine factors at multiple levels using a variety of tools to gather information. It is designed to be flexible so that the learning process can be adapted to suit the needs of particular users. The consultant conducted a thorough literature review of the CVCA handbook, the purpose being to understand the CVCA methodology, so as to apply it in the data collection. Other documents reviewed included the GWI baseline survey report and the IUCN hydrological survey report

The purpose of the literature review was to obtain a clear understanding of the CVCA methodology as used by CARE Uganda. The consultant then refined the methodology based on the CVCA tool. After reviewing the literature, a Research Officer worked with the consultant to extract, review and adapt the data collection tools to the setting in Otuke Districts, producing the final set of tools that were used in the field.

3.2 Identification and training of research teams

A research team of 6 research assistants was formed. These were identified from the pool of resource persons in CARE Uganda operation area, who had earlier on been trained in conducting a CVCA. The team was divided in 3 pairs, and each one conducted 2 FGDs. The teams underwent a one day training conducted by the Research Officer. This was a short refresher training course, since they had earlier undergone comprehensive training in the CVCA methodology.

3.2 Data collection

Data collection was based on the CVCA procedures, using tools that had been adapted to the local situation. The following activities were undertaken in the implementing sub-counties:

At the community level, a combined total of 8 focus group discussions were conducted: 4 in Ogor and 4 in Olilim Sub Counties. In each sub-county, the first FGD was comprised of adult males, the second FGD was comprised of adult females, the third group was for students while the fourth was comprised of local leaders. The FGDs were moderated by the trained Research Assistants. Each FGD was comprised of 12 - 15 participants, who sat in a circle, with all discussants in full view of each other. The moderators captured notes in a spiral notebook. FGD participants in the 3 categories were identified by the local CARE officers, based on their being opinion leaders in their villages.

From FGDs, the key outputs were a hazards map, seasonal calendar, historical time line and vulnerability matrix and Venn diagram detailing different institutions/organizations operating in the respective sub counties.

At the district level, about 9 key Informants were interviewed, including: The District Planner, The District Community Development Officer, The District ACAO, The Secretary for Natural Resources and Agriculture and the District LC V chairman. Several CSOs were consulted at the district level including: Beads for life, IUCN, Catholic Relief Services, German Agro Action, World vision, ACF, TPO, Joy drilling and International lifelines Fund. The district level key Informants were interviewed by the Research Officer and the Consultant. Key informants were identified based on a discussion with the project focal person at CARE headquarters.

At the National level, Key informants were interviewed from Climate Action Network Uganda, the Parliamentary Forum on Climate Change and the Ministry of Water Environment. The central level key Informants were interviewed by the Research Officer and the Consultant.

3.3 Data Analysis and Report writing

Data from the different activities was all types out into an electronic transcript. It was then analyzed for emerging themes using thematic content analysis in which responses were categorized under thematic sub-headings. These were summarized around the key areas of analysis summarized in the CVCA standard reporting format stipulated in the CVCA handbook. Recommendations on priority actions that need to be undertaken at the community and district level will be made. The draft results were validated in two meetings conducted over a two day district visit among key respondents in Otuke District. Following the validation visit, inconsistencies in earlier information will be resolved through dialogue with the community representatives in the validation meetings.

4.0 Findings

4.1 Climate Context

4.1.1 Current climate hazards, events and conditions facing target area

The Disaster situation for Uganda

Uganda is facing an increasing burden of disasters, both natural and technological. Natural disasters are much more common, although man-made disasters also play a significant role. A brief description of the main problems is outlined below:

Natural Disasters common in Uganda: The natural disasters most likely to occur in Uganda are: epidemics, drought and famine, deforestation, climate change, floods, landslides, earthquakes, and hailstorms.

Droughts and Famine: Parts of the country are affected by cyclic famine due to prolonged periods of drought occurring in a cyclic pattern every 3 to 5 years. The North Eastern part of the country is most affected with significant food insecurity, often necessitating humanitarian assistance; there is a high prevalence of under nutrition especially in children. Drought has also contributed to insecurity in the region, with cattle rustling and attacks on neighboring populations and the proliferation of small arms. Other parts of the country are also hit by sporadic drought, especially along the 'cattle corridor' of the mid-western districts.

Epidemics: They are the single most important public health emergency in the country. In 2007 alone, there were 5 outbreaks over a period of 8 months. There are repeated propagated epidemics of cholera especially around the rift valley areas of western Uganda, the IDP camps of Northern Uganda, and parts of Kampala City, where human settlement in wetlands has disrupted storm water flow and has led to extensive contamination of underground aquifers. There was an outbreak of meningitis in the West Nile, hepatitis in Kitgum and Plague in Nebbi and Apac Districts. In the last 10 years, Uganda has had three outbreaks of Hemorrhagic fever, two of which have been due to Ebola. 90% of the country is hyper-endemic for malaria. The country is also at risk for influenza and other zoonotic diseases.

Floods: Floods are relatively common in parts of the country, especially during the cycle of adverse weather that follows the El-Niño years. Recently, there was a large scale disaster in the areas around Lake Kioga and in the flood plains of the Aswa River in Northern Uganda as well as the low lying suburbs of Kampala.

Land-slides: In Uganda, areas prone to landslides include the mountainous regions of Kabale and Kisoro (Western Uganda) and Mbale, Bulambuli, Bududa, Sironko and Kapchorwa (Eastern Uganda).

Hail Storms: Parts of Uganda have frequent hail storms characterized by heavy rains and violent winds. Hailstorms and thunderstorms result in destruction of crops, animals, public infrastructure and human settlements. They are also associated with flooding.

Pests: Pests are a major problem and may lead to food insecurity. Common pests include weevils, locusts and caterpillars; diseases include coffee wilt, banana wilt and cassava mosaic.

Earth Quakes and Volcanic Activity: Uganda is located in the middle of both the Eastern and Western Rift Valleys. Many parts of Western Uganda are prone to seismic activity. In 1994, an earthquake hit districts in Rwenzori region affecting over 50,000 people. There were numerous tremors in 2007. Parts of Western Uganda are prone to volcanicity.

Man-Made Disasters of Major Importance in Uganda: The commonest man-made disasters are: Insurgency, environmental degradation, transport accidents, and fire.

Conflict and Internal Displacement: Since independence, Uganda has been affected by successive armed conflicts. In 1979, about 300,000 persons were displaced during the war that ousted Idi Amin. Between 1980 and 1986, a civil conflict raged in the central region; it is estimated that over 500,000 people were displaced and another 200,000 lost their lives. The Northern Region of Uganda has been hard hit by a 20 year conflict, mainly propagated by the Lord's Resistance Army (LRA). At least 2 Million people have been displaced, 5 districts in the region being hardest hit.

Fires: Fires are a common occurrence in Uganda. They are caused by haphazard electrical wiring and poor construction standards. Industries, schools, congested human settlements and markets have been common scenes of fire outbreaks.

Transport accidents: According to WHO, Uganda ranks 2nd only to Ethiopia in the magnitude of Road Traffic Accidents in Sub-Saharan Africa. These mainly occur in vehicles that transport larger numbers of people and are confounded by long distance trucks that transport refined fuels to Central Africa.

Environmental Degradation: Over the last 3 decades, there has been significant damage to the environment, increasing the potential for major natural disasters. This is closely related to deforestation in the rural areas and encroachment into wetlands in the urban areas. The cost of water treatment in urban areas has tipped, while the incidence of major flooding in the city has increased dramatically.

Terrorism: Uganda is located in the heart of the Great Lakes Region which has been faced with armed conflict and terrorist attacks. In the late 1990s and early 2000, Kampala witnessed a wave of urban terrorist attacks. The simultaneous attacks on American Embassies in Nairobi and Dar-es-Salaam in 1998 are an indication of Uganda's own vulnerability to terrorism.

The context in Otuke District

Otuke District is located in Northern Uganda. The district is part of the Lango sub-region, which consists of 8 districts. It was carved out of Lira District effective 1st July 2009. The district is administered by the Otuke District Administration, with headquarters in Otuke Town Council next to Orum Sub County Headquarters. It is bordered by Agago District to the north, Abim District to the northeast, Napak District to the east, Amuria District to the southeast, Alebtong District to the south, Lira District to the southwest and Pader District to the northwest. The 2002 national census estimated

the population of the district at approximately 62,000. As of June 2009, the district population was estimated at about 77,800. As part of the Northern Uganda Catena, the district is mostly a savannah plain, with gently rising hills, shorter trees and dominant scrublands. The swampy nature of the district is influenced by the Lake Kyoga basin. Part of the district is swampy. Rains in the district are largely conventional in nature.

Ogor Sub-county: Ogor sub-county is a relatively new sub-county, established in 2008, and was formerly part of Orum sub-county. It is about 30 square miles in size. Parishes: 4 parishes including Anyalema (17 villages), Atangwata (14), Oluro (14) and Omonyelle (14). It has 59 villages. It has an estimated population of 13726. According to the communities, the majority of the population (about 60%) is children, because families have as many as 10 children. About 15% of the population is men and 25% are women. However, these figures were estimates as provided by the community. It was noted that the population of women is higher because during the raids by the Karimojong and the LRA, it is mainly the men who are taken as opposed to the women. Also during birth, many children mostly boys are affected and killed by malaria. Because of lack of sensitization, many men are infected by HIV Aids but they do not go for testing and treatment so they end up dying very fast.

Services:

The sub county has 1 functional health unit. However, another health unit is under construction. It has 23 churches but no mosque. 70% of the population is Roman Catholic. It has 10 primary schools but no secondary or tertiary institution. It has 27 boreholes, 2 protected springs and 2 rope pumps. According to the FGD respondents, there are many unprotected open wells, with no exact estimates of their numbers. There are also many swamps. There are many small markets (called Sunday clubs), but the main markets are 4 in number. Each parish has 4 'Sunday clubs'. It has 1 Savings and Credit Cooperative (Sacco).

Olilim Sub-county: It is an old sub-county, established in 1954. Approximately 18 square miles in size, it has 6 parishes and 142 villages (2 of them only recently formed), with an estimated population of 19,000 people. It is estimated that the majority of the population (about 50%) are children, because families have as many as 10 children. According to the FGD participants, about 10% of the population is men and 20% are women.

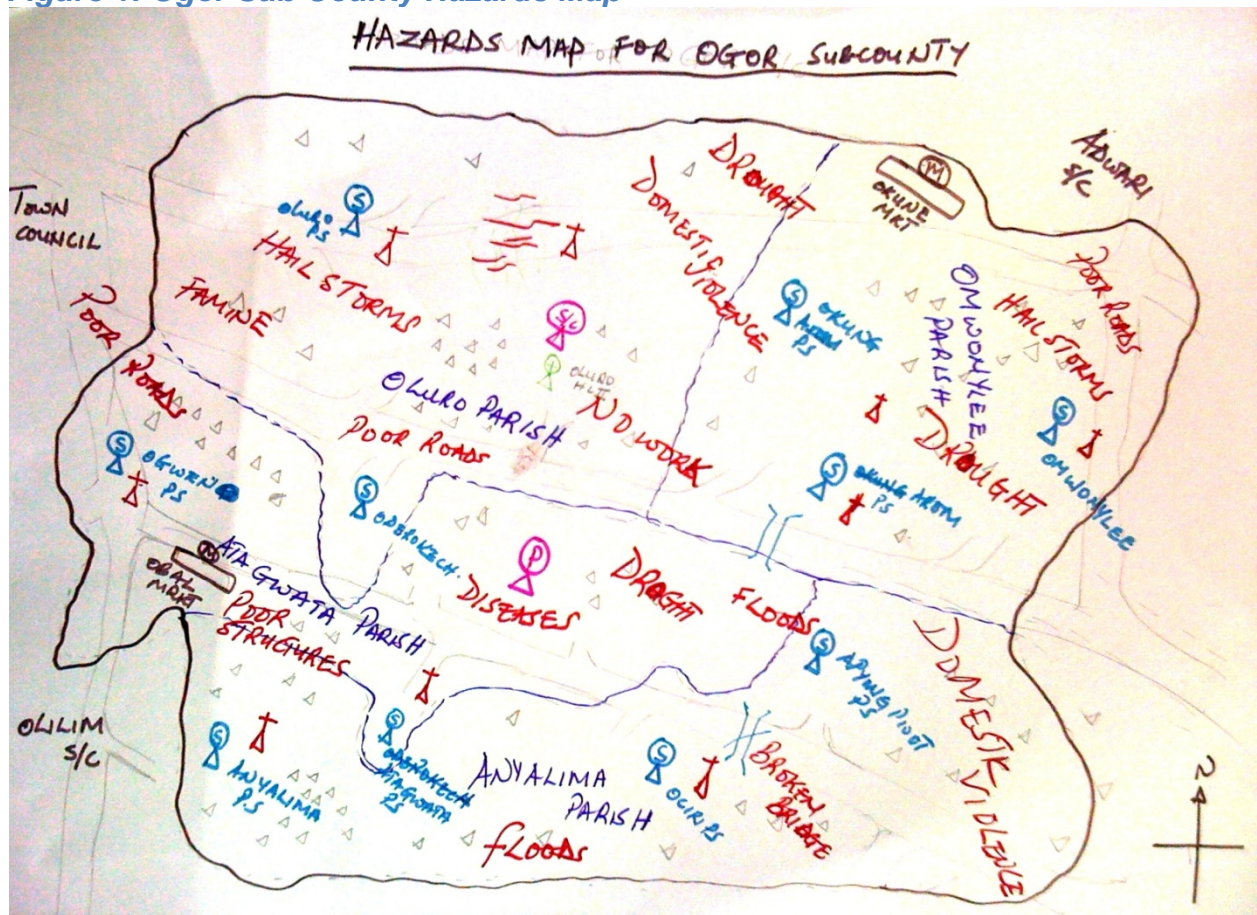
Social services:

The sub county has 2 health units (a HC III and a HC II that is not yet functional). It has 27 catholic churches, 3 protestant churches and 22 PAG churches but no mosque. It has 15 primary schools, 3 secondary schools and 1 tertiary institution (a technical school). It has 67 boreholes in total (although 7 are broken down) mostly constructed with support from GWI. It also has tap water in the town, constructed by an NGO but managed by the community. It has one main market and several small markets.

Hazard Mapping for Ogor

The figure below shows the hazard map for Ogor Sub-county, based on the participatory discussions with community members:

Figure 1: Ogor Sub County Hazards Map



KEY



Discussion of the Hazard Map:

FGD respondents involved in the mapping provided the following discussion points regarding the map:

Access to the resources on the map:

According to the FGDs, everyone in the community has access to the resources, including the households and the local government leaders.

Impacts of the hazards identified:

Key impacts that were mentioned included poverty, deaths in the community, famine and fights and violence over land conflicts are some of the impacts of the hazards. The adverse climate leads to low crop yields, which precipitates the famine. In addition, roads are often destroyed by the harsh climate, especially the heavy rains. Floods over bridges make them impassable.

Difference in hazards compared to what they were 10/20/30 years ago:

According to the FGDs, the recent years have been worse than the years back. The dry seasons are longer while the rains are heavier and more destructive, and thunderstorms are now more frequent. The female FGD participants also mentioned the increasing problem of poor quality of education, inadequate clean water sources (through there are many more bore holes nowadays). The youth FGD participants noted that hailstorms used to affect only a few parishes but now they affect all parishes.

Community safety:

According to the FGD respondents, communities are not safe because there are people intent on taking advantage of the harsh weather to steal other people's property. Elderly people are specifically more vulnerable.

Adaptation to hazards: According to respondents, people are now constructing on higher ground, to avoid floods. These people request their neighbours for some land to allow them to construct their homes on higher ground.

Seasonal Calendar for Ogor

Respondents in the FGDs provided the following seasonal calendar for Ogor Sub-county:

Table1: Ogor Sub County Seasonal Calendar

No	Activity	Period of the year											
		J	F	M	A	M	J	J	A	S	O	N	D
1	Yobo poto pur	X	X										
2	Coyokoti		X	X	X	X	X	X	X	X			
3	Doyo koti				X	X							
4	VSLA	X	X	X	X	X	X	X	X	X	X	X	
5	Pito yen					X	X	X					
6	Cato wil	X	X	X	X	X	X	X	X	X	X	X	X
7	Kwanyo cem						X	X	X	X	X	X	X
8	Mato kongo										X	X	X
9	Clearing land	X	X										
10	Festive season	X			X	X	X						
11	Funerals											X	
12	Planting				X	X	X	X	X				
13	Weeding						X	X	X	X	X	X	X
14	Hunting	X	X	X	X	X	X	X	X	X	X	X	X
15	Harvesting						X	X	X	X	X	X	X
16	Shear nut butter harvest				X	X	X						
17	Building									X	X	X	X
18	Trading	X	X	X						X	X	X	X
19	Grass cutting	X	X										
20	Marriages	X		X									X
21	Fishing	X	X						X				X

Discussion of the seasonal calendar:

FGD respondents involved in the mapping provided the following discussion points regarding the seasonal calendar:

Most important livelihood strategies at different points in the year:

The most important livelihood activity is farming. This is mainly from January to April, when the communities prepare the land and plant. In the drier season, farming is mainly in the swampy areas. Other activities include animal rearing, brick making, fishing (normally in April and August) and hunting. Another important activity is the village group savings, which are undertaken from January to November. Small scale business is undertaken throughout the year. Tree planting is undertaken from April through October. Trading is an important activity, and involves selling of food crops, including sim sim, green peas, cassava, maize and beans.

Differences in timing of the seasons and events compared to 10/20/30 years ago:

The FGDs report that there have been some changes in timing of the seasons. Twenty years ago, respondents report that there was consistency in the rainfall patterns. As highlighted earlier, people used to sow seed on 15th March, but these days, the time for

sowing is no longer certain. Respondents said that this year they did not see the traditional signs that mark the beginning of the rainy season and the dry season was unexpectedly longer. The time for planting the key food crops has also changed. Communities have fewer granaries indicating that the amount of food available to storage has reduced. The drought is also longer. Flooding used to occur in the month of August but today, there is a possibility of floods every time it rains.

Change in livelihood coping strategies based on the changing seasons:

FGD respondents report that coping strategies have changed, especially the planting season and increasing farming around the swamps, where the underground water is more reliable. Communities now have savings groups, which did not exist in the past. Currently also, households now plant more drought resistant seeds and farmers have also received training. In addition, 30 years ago, people used to perform cultural ceremonies when the rains took long to come. These cultural practices have now died out. In addition, 30 years ago, people who had a poor harvest would borrow food from neighbours and friends. This was called 'borrowing from the food-basket'; according to the FGD respondents, there was more love for each other then and neighbours were like family. However, this practice has died out. Cooperation and mutual assistance has instead been replaced by perennial land wrangles. In addition, because of the increasing drought and hunger, more people are selling off their land. However, today there are more adult education programmes. However, people have also become wiser and are now joining savings groups. People also have to work harder, because every household has to fend for itself. People have also diversified to other businesses, e.g. brick-making. With regard to cash crops, people are now also diversifying to sun-flower instead of rice and cotton because it takes fewer months to grow. Other food crops (e.g. potatoes, cassava, millet and maize) are also now used for small scale trade as cash-crops. Charcoal burning is also a relatively new economic activity that used not to be common 30 years ago.

How decisions are made on the timing of livelihood strategies:

According to the FGDs, these decisions are often discussed and passed in the village meetings. Decisions are often based on 3 criteria: how and when the rains will come, how much savings one has for investment in agricultural inputs, and whether there is insecurity or not.

Existence of safe places used to protect produce and people from hazards:

According to the FGDs, there are no permanent or safer structures for protection of produce. The harvest is normally hang on the roof or kept in semi-permanent granaries. Grass-thatched storage places are continually at risk of fire. Livestock usually stay outside and are therefore not protected from harsh climate conditions or the warriors. The communities also re-surface their storage huts with cow-dung, which makes them cleaner and safer.

Whether the current coping strategies are working: According to the male FGD respondents, the current coping strategies are working, especially for women who have

borrowed money and bought ox-ploughs and also those who have explored using the drought-resistant crops.

Whether the current coping strategies are sustainable:

According to the male FGD respondents in Ogor Sub County, the current coping strategies are not sustainable.

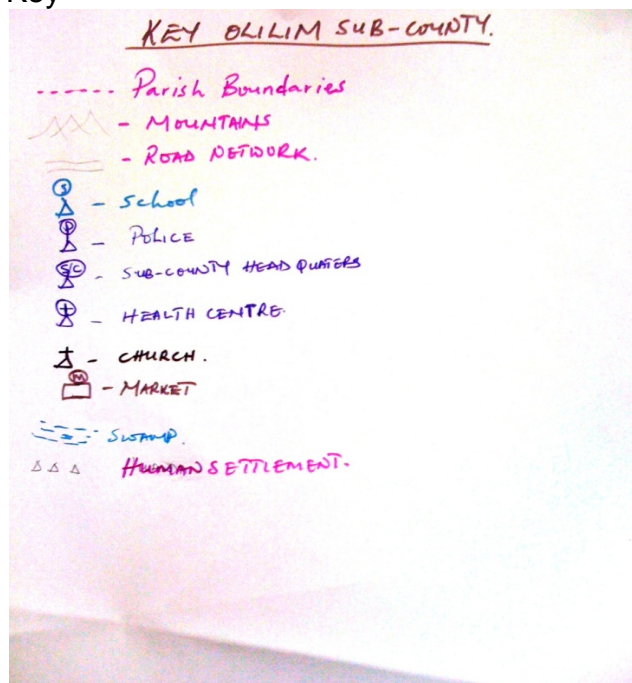
Hazard Mapping for Olilim

Based on discussions with FGDs in Olilim, the Hazard map for the sub-county is presented in the figure below:

Figure 2: Olilim Sub-county Hazards Map



Key



Discussion of the Hazard Map for Olilim:

FGD participants commented as follows with regarding the hazard map:

Access to the resources shown on the map:

The community uses the resources, as well as the government.

Impacts of the hazards identified:

Those cited include poverty, diseases, displacement and domestic violence.

How the Hazards differ from what they were 10/20/30 years ago:

According to the FGDs, the hazards have generally not changed over the years. However, farming does not yield as much as it used to yield in the past.

Seasonal Map for Olilim

FGD discussants presented the following as the seasonal calendar for Olilim sub-county:

Table 2: Olilim Sub County Seasonal Calendar

No	Activity	Period of the year											
		J	F	M	A	M	J	J	A	S	O	N	D
1	Land clearing	X				X					X	X	X
2	1 st planting			X	X								
3	Weeding				X	X							
4	2 nd planting						X	X	X				
5	VSL	X	X	X	X	X	X	X	X	X	X	X	X
6	Harvesting		X					X	X	X	X	X	X
7	Building	X											
8	Brick laying	X	X	X									
9	Hunting	X	X	X	X	X	X	X	X	X	X	X	X
10	Festivals	X			X		X		X		X		X
11	Traditional dances	X	X								X	X	X
12	Traditional marriages	X	X	X									
13	Trading	X	X				X						X
14	Fishing	X	X									X	X
15	Grazing	X	X	X	X	X	X	X	X	X	X	X	X
16	Quarrying (stone and sand)	X	X	X			X					X	X
17	Charcoal sale												
18	Sheer butter harvest (yao)			X	X	X	X			X	X	X	

Discussion of the seasonal calendar for Olilim:

FGD participants presented the implications of their seasonal calendar as follows:

Most important livelihood strategies at different points in the year:

These include: cash-crops growing (e.g. Sun-flower and Cotton) and food-crop growing (e.g. cassava and potatoes)

Current strategies to cope during the difficult times and whether they are working:

Strategies that were reported include increased food-crop growing (especially cassava and potatoes), but also diversifying to the cash crops; however, the yields are increasingly dissatisfying.

Differences in timing of the seasons and events compared to 10/20/30 years ago:

The FGDs report that there have been great changes. For example, the rains which used to start in March now start in May (2 months late).

Any change in livelihood coping strategies based on the changing seasons:

FGD respondents from Olilim report that coping strategies have changed, especially the planting season. People not plant later, in response to the rains, yet in the past they used to plant at a specific time even before the rains, since the rains were reliable

How decisions are made on the timing of livelihood strategies:

According to the FGDs, these decisions are often discussed at household level.

Existence of safe places used to protect produce and people from hazards:

According to the FGDs, there are no permanent structures for protection of produce. The harvest is normally kept in sacks, which are not safe as they are easily attacked by vermin.

Most at risk sub-groups in the population: According to the FGDs, the community members who are most vulnerable to the different hazards are women and children. This is because during the dry season, it is the women who have to search for food, and the children are dependent on the women.

Coping with the impact of specific hazards:

According to the FGD participants, people cope in a number of ways including:

1. 'Surviving like birds' – i.e. 'you eat what you see'
2. People are often involved in Barter trade, in which you they can exchange food and other groceries
3. Sometimes all you can do is dig larger areas
4. Other people are involved in casual labour and odd jobs, in which you dig for someone, who pays you with food.

Whether the current coping strategies are sustainable:

According to the male FGD respondents, the current coping strategies are not sustainable because one time, food will be completely non-available.

4.1.2 How climate hazards events and conditions are likely to change based on available climate change predictions

Views on climate change at the national level

According to Key Informants from the PFCC, climate change in Uganda is still doubted as not being real because the impacts are very difficult to see. The Key informants note that even though the country has been faced with storms, floods, landslides and drought, it is difficult to directly link them to climate change and this is a big gap that has to be addressed. However, the key informants at the parliamentary forum note that climate change is real in Uganda and some of its impacts have started being visible. They noted that the rains in Uganda have been changing: they are much more unpredictable, they are much heavier, the dry season is dryer and longer. Because of Uganda's high level dependency on agriculture, it is more vulnerable. They conclude that it is important to consider the fact that the communities are able to identify these changes much more than the scientists and therefore the community need to be adequately consulted.

Views on climate change by the district technocrats

According to the District Planner and the District natural Resources Officer, climate change is recognized as a challenge in the district. They report that there are some visible changes in weather patterns, especially the change in onset of the rainy season. He reports that farmers are now not sure about planting crops in March, as it used to be in the past. He also notes that the rains which used to end in June or July are now ending earlier.

With regards to what is causing the climate change, Key Informants noted that environmental degradation is the primary. They note widespread deforestation as a key factor. They noted that because of the previous conflict and insurgency due to the LRA, people did not have any source of livelihood apart from depending on relief while in the camps. They turned to charcoal burning as the only source of livelihood especially using the trees around the camps which affected the vegetation. Secondly, they note that in Otuke, people have encroached on the Wetlands for rice growing which will affect the climate. According to the District Planner and the Natural Resources Officer, one of the key issues that needs to be addressed is water shed management, including protecting vegetation and planting trees and preventing wetland degradation.

The District Community Development Officer confirmed these observations further:

"In my opinion, I think it is due to human activity that leads to degradation like encroachment on the wetlands. There is also a very high rate of tree cutting which we have tried to discourage but it still continues" (DCDO Otuke)

Meteorological information and presence of meteorological station

The whole of the Lango region depends on data from one meteorological station, Ngeta weather sub-station in Lira.

Quoting the Ag. Natural Resources Officer: *"Whenever we need the meteorological data, we go and get it from Ngeta Substation though in some cases they say they do not give until it reaches Entebbe then get back; however because we have got personal understanding with the people who are in charge, sometimes they release this data to us".*

Other key informants note that Ngeta does not give information unless you demand for it. Key Informants also note that when you look closely at the weather patterns in Otuke, the weather conditions are not similar to those in Lira because Otuke tends towards Karamoja. Key informants at the district level note that there is need to establish a small weather station in Otuke, to better monitor the climate conditions there. Key informants note that in 2007 there was a mini substation that was set up in Okwang Sub County where a rain gauge was set up at the sub county and someone was assigned to take the measurements of the rainfall so that they could compare with the patterns recorded at Ngeta and establish the variations but up to now the findings have never been released and this is a big loophole.

Access to climate information

According to the key informants, the districts have been getting weather forecasts regularly from the national level over the radios, but there have been no documented or official communications. Key informants also note that the weather patterns have changed significantly and most of the information sent out in the media is not accurate. They also note that there are so many radio stations in Lira that our people listen to but some radio stations give information that is not reliable.

Accuracy of the weather prediction: According to the Key Informants at the District level, in many cases the predictions that are given are wrong. Quoting the DCDO Otuke:

"We usually depend on the data sent from Entebbe. Unfortunately, this information is very unreliable because some time last year, we were told there was going to be rain and advised people to plant the second season and advised people to plant. Some people planted and rains never came and those who planted lost their crops".

This may be due to the fact that the predictions are made basing on Lira and yet the climatic conditions in Otuke are different. The District Planner noted that recently they had a meeting on this issue and one of the biggest issues that came up was that farmers are not being guided by the meteorological department. They note that the department usually predicts that rains will end in June but rains continue up to August and farmers lose their crops.

District level views on whether there have been changes in the climate

According to the District Planner and the Natural resources Officer, the following are the major changes that have been observed:

Reported changes in climate as observed by Key Informants at the District are summarized in the text box below.

Text box 1: Reported changes in climate in Otuke district

1. Prolonged dry spells
2. Water logging: this is because the basement rock in Otuke is not far so when it rains heavily, the soil gets saturated and starts oozing the water which leads to water logging and flooding.
3. Rains used to come in particular months, especially March and April, so that people would plant their crops; however, these have completely changed. They note that 15 years ago, rains used to start in middle of March for the first rains but over the last three four years, the first rains started in the second week of April, 2011.
4. In the past, the Rainy season would run from March to September but this year, the rains started a month later (in April) and ended a month earlier (in August)
5. Even the water catchments have been affected to the extent that some unprotected wells have dried now and this was experienced when people returned from the camps. People went into the camps in 2002 and returned in 2009 but found that the sources had dried. There is no clear explanation as to why it happened because one would have attributed it to human activity but all people were in the camps and therefore it must be climate change.
6. There was a lot of deforestation especially around the IDP camps where people cut down trees including the sheer tree for charcoal burning as the only source of income. The district has tried to do sensitization in partnership with NEMA and Ministry of Agriculture but little progress has been made.

4.1.3 Community observations of climate change

Based on the Focus Group Discussions held with community members, the communities have observed a number of climate related changes. Communities also reported a wide range of local criteria commonly used for prediction of the weather. Key findings from the community perspective are summarised in the section below by sub-county.

Community observations on climate change in Ogor Sub-county

Weather prediction systems in this community in Ogor:

According to the FGD participants, modern climate prediction systems are not present. The communities therefore have to rely on the traditional weather prediction systems (Commonly known as 'Tek-kwaro'). Key local criteria that communities use in predicting the weather in Ogor are summarised in the text box below:

Text box 2: Local weather prediction systems in Ogor Sub County

1. When there is a lot of mist early morning, the communities suspect that the season will bear a lot of rain
2. When the winds are blowing from West to east and from North to South, it means there will be rain
3. When there are 'heavy' and strong winds blowing from East to West, or when the wings are so cold and biting, it means there will be no rain or it will be very hot
4. When the wind is a very warm and there are increasing temperatures, it means there will be rain
5. When the moon 'bends' towards the North, it shows there will be dryness and hunger; when very early in the morning, the sun rises with a lot of ferocity with a 'red hot colour' then there will be dryness and famine.
6. The elders used to plant a seed called 'Ogogo'; when the seed germinates and protrudes, it shows the beginning of the rainy season
7. When the frogs increase their noises in the swamps and lake, then the wet season is approaching
8. When the cows jump or fight with their tails up, then it is a sign that the rainy season is approaching
9. The doves and crickets make a characteristic cry when the dry season is to continue for a period. These birds are called 'Ecency' and they sing "Kweri, Kweri, Kweri", meaning "Hope, hope, hope".
10. When your foot itches, it means you are about to step on water.
11. When the trees shed off their leaves, it is a sign that the dry season is approaching and when they start to put on their leaves, the wet season is approaching

Whether the weather prediction system is working in Ogor:

According to the male FGD, the weather prediction mechanisms are working and have been used reliably since time immemorial, passed on from generation to generation. Some villages organize traditional dances which are then used to discuss issues concerning the planting season. In these meetings, some rules on farming practices are set and all villagers have to adhere to them.

Changes in the climate that the community is observing in Ogor:

According to the FGD participants, there has been a significant change in the climate. Key climate changes observed by community members in Ogor are summarised in the text box below:

Text box 3: Community observations on how the climate has changed in Ogor Sub County

1. There used to be enough rainfall and it came on time i.e. on the 15th of March. However, today, things have changed: The community is un-certain of when the rains start
2. The dry season is getting longer; the heat is now too much, and has destroyed the crop; the harvests have therefore reduced drastically
3. Un-reliable rainfall patterns
4. The community has also experienced un-expectedly heavy rainfall, with thunderstorms that have caused fear. When they come, the rains are so 'violent', with a lot of wind and lightening, killing people and destroying houses, classrooms and other utilities

Community observations on climate change in Olilim Sub-county

Weather prediction systems in this community in Olilim: According to the FGD participants, there are weather prediction systems in the community. These, according to the respondents in Olilim sub-county include:

Text box 4: Local weather prediction systems in Olilim Sub County

1. When the cows fight in a group then it is a sign that the rainy season is approaching
2. The doves and crickets make a characteristic cry when the dry season is to continue for a period. These birds are locally called 'arum'.
3. When birds called 'Ogalkot' sing, it means the rains are coming
4. When the trees shed off their leaves, it is a sign that the dry season is approaching and when they start to put on their leaves, the wet season is approaching
5. When domestic ducks start flying while making a funny noise, it's a sign that the rains are soon coming
6. The direction of the winds can be used to predict when rain is coming
7. We can know that the rainy season is coming to an end when we start experiencing very cold weather in the mornings
8. Formation of a certain type of clouds can be used to predict rainfall. 'Blue' clouds in the morning indicate there will be no rain while 'dark' clouds indicate there will be rain
9. There are certain tree species which when they flower, it indicates the coming of the rainy season. An example is the 'Owilakot tree'.
10. When the frogs increase their noises in the swamps and lake, then the wet season is approaching

Whether the weather prediction system is working in Olilim: According to the male FGD, the weather prediction mechanisms are working and have been used since time immemorial, passed on from generation to generation. However, this year, the rain did not come as expected despite the flowering of the ‘Owilakot’ tree.

Changes in the climate that the community observing in Olilim:

According to the FGDs in Olilim, the following changes in the climate have been observed as indicated in the text box below:

Test box 5: Community observations on how the climate has changed in Olilim

1. The dry season is getting longer; since the year 2008 and 2009, the droughts have been consistently longer and drier; specifically, Ogwette village has not had rain and all crops are now wilting. As a result, the sub-county has seen poor harvests in the period 2007 to 2010.
2. Un-reliable rainfall patterns; for example, the rains used to come in Late February but this time round they started in May.
3. The community has also experienced un-expectedly heavy rainfall, with thunderstorms that have caused fear. In addition, the heavy rains have destroyed the crops e.g. in Anyalima, all simsim gardens have been destroyed by the heavy rains
4. Swamps have dried up due to rice cultivation. People are reclaiming the swamps because of the long dry season
5. The winds are also much stronger because of the deforestation, and they destroy houses and property
6. On the positive side, soil fertility has improved – this was mainly because of the displacement of people for a long period of time because of the 20 year insurgency.

Historical timeline for Ogor Sub-county

The table below presents the historical timeline for Ogor sub-county, as developed from the FGD sessions:

Table 3: Ogor Sub County historical timelines

Dates	Activity
2011	Draught, famine, poverty
2010 – 2011	Foot and mouth disease.
2010	Politics (politicians brought poverty)
2009	Draught, hailstorms
2008	Land wrangles;
2007	Floods, food drops by plane; return from the camp
2002 – 2007	LRA and Karimojong warriors killed people and destroyed crops and stole animals.
2002 – 2006	People displaced into camps, LRA attacks; national census
2000 - 2001	Elections
1996	Famine
1994	Famine; CA elections
1990	Earthquake
1980 – 1987	Karimojong raids, government change (Tito Okelo to NRM)
1980 – 1984	Famine, yellow posho,
1980	Karimojong raids (took animals, raped women, abducted boys, burnt houses)
1973	Army worms

Discussion issues arising out of the historical timeline for Ogor:

FGDs in Ogor provided the following additional information regarding the historical timelines for the sub-county.

Trends or changes in frequency of events over time:

According to the male FGDs, attacks from the Karimojong warriors increased a few years back but they have also reduced over time. In addition, the dry season has become slightly longer and the rainy season does not always start at the actual expected time. Planting is now in April, yet years ago it was in mid-March. Land wrangles have also increased. In addition, more people know their rights today that it was some years ago.

Current strategies to cope as a result of the changes:

According to the FGD participants, there is no way of protection from the changes. With regard to the Karimojong raids, all the communities have to do is to run away and stay away in camps until the warriors leave. However, education of community members is more frequent, especially regarding better methods of production, planting trees and practicing family planning. Men are also being counseled to reduce alcohol intake. To reduce land wrangles, communities are also being trained on arbitration and conflict resolution.

Whether coping strategies have changed based on the changing frequency of events:

According to the FGD respondents, the coping strategies have changed. Since about 5 years ago, Government came in to provide more security from the raids and this has

brought a sense of peace. With regard to the adverse climate and the resulting poverty and famine, the Government and some NGOs have now come in and are providing farming materials and also some capital to groups.

Adverse events expected in the future and when they are expected:

Asked about what events are expected in the future, respondents report that they expect more famine because food crops have not yielded as expected. It is expected that deaths and illness due to inadequate feeding will increase.

Whether the perception of the future events affects communities' plans for the future:

FGD participants agreed that the current perceptions about what is likely to happen have affected their plans for the future. Firstly, it keeps them worried about how the future will be and how they will handle. Communities are scared about the impending famine, especially the lack of food and fear of more attacks from the cattle rustlers.

Historical timeline for Olilim Sub County

The table below presents the historical timeline for Olilim sub-county, as developed from the FGD sessions:

Table 4: Olilim Sub County historical timelines

Dates	Activity
2011	Draught, lightning, hail storms, famine
2010	Earthquake and droughts
2009	Hailstorms, draught, land disputes
2008	Famine leading to deaths
2007/2008	(Astu) Resettlement, floods, food drops by the government
2007	Too much rain leading to flooding; mist and fog, pests and diseases
2006	Government soldiers killed many people.
2005	Amuka killed people in Ogwetta; Obote died; insecurity
2003 – 2006	Kony War and people go to camps
2003 – 2004	Deforestation, displacement, no schools, a lot of disease, Karamajong attached
2003	Floods
2001	Displacement by the Karamajongs
1999	Earth quakes
1994 – 1997	Famine/Hunger, displacement by the Karamajongs
1990 – 2000	Olumolum people left their homes
1986 – 1988	Floods, bridge destroyed, communication broken down; NRM came into power
1980 – 1984	Famine; yellow posho was the only relief
1971 – 1979	Amin in power
1968 – 2011	Karamajongs raid cattle in Lango regions.
1955 – 1957	Locusts invaded the Lango region
1943	An Epidemic with symptoms like Tetanus

Discussion issues arising out of the historical timeline for Ogor:

FGDs in Ogor provided the following additional information regarding the historical timelines for the sub-county:

Trends or changes in frequency of events over time:

Cattle raids from the Karimojong have reduced, mainly because of the government's intervention. The need for water sources has also increased with the growing population.

Current strategies to cope as a result of the changes:

According to the FGD participants, there is no way of protection from the changes. With regard to the Karimojong raids, all the communities have to do is to run away and stay away in camps until the warriors leave.

Whether coping strategies have changed based on the changing frequency of events:

According to the FGD respondents, the coping strategies have changed. The young men are now more vigilant in dealing with the Karimojong warriors and provide some protection. In addition, methods of cultivation have changed. People used to dig manually in the 1980s but currently, most people use ox-ploughs. The young people are also now more involved in petty trade than they used to be. VSLAs have also improved finances and working together.

Adverse events expected in the future and when they are expected:

Asked about what events are expected in the future, respondents report that they expect more drought and famine. This will push the Karimojong to conduct more raids. In addition, school drop-outs may increase because of the lack of poverty.

Whether the perception of the future events affects communities' plans for the future:

FGD participants agreed that the current perceptions about what is likely to happen have affected their plans for the future. The anticipated challenges keep them worried about famine as well as attacks from Karimojong warriors. In addition, communities are worried about their shelter, poor harvests and keeping their children in school.

4.1.4. Analysis of integration of climate change issues in relevant policies and programs

According to the national level consultative meeting, climate change issues have not been integrated into relevant policies because there is no direct policy related to climate change.

It was further noted that the development of a Climate Change Policy is underway. Currently the Terms of Reference have already been issued and the international consultant has already been identified and the process is underway for the identification of the local consultant. The climate change policy will address all issues integration of climate change aspects in policy and development programs under different line ministries

4.1.5. Conclusions on the Climate Context of the target area

1. In Uganda, natural disasters most likely to occur include: epidemics, drought and famine, deforestation, climate change, floods, landslides, earthquakes, and hailstorms while the commonest man-made disasters are: Insurgency, environmental degradation, transport accidents, and fire.
2. Major hazard identified in Ogor Sub-county include drought, hailstorms, diseases, famine, domestic violence, poor roads and floods.
3. In Olilim Sub County, the major hazards identified include poverty, diseases, drought, floods, people displacement and domestic violence.
4. In both Ogor and Olilim Sub Counties, there have been observed changes in climate and weather patterns namely longer dry seasons, increased flooding, increased temperatures and changed rainfall patterns
5. There are several coping strategies the communities have adopted including farming around the swamps, savings groups, planting more drought resistant seeds and training farmers. However these adaptation strategies are not yet effective
6. Climate change, its causes and impact in Otoro and Uganda are not yet clearly understood because the impacts are very difficult to see.
7. Much as climate change is recognized as a challenge in the district it is not among the district's top five priorities due to other pressing priority issues.
8. Mass media particularly radio is the commonest source of weather forecasts/information for the community. However the community doubts the accuracy of the information.
9. Climate change issues have not yet been integrated into relevant policies because there is no direct policy related to climate change.

4.2 Livelihoods-Climate Linkages

4.2.1 Identify vulnerable livelihood groups or economic sectors

According to the Key Informants at the Districts level, the most affected people by climate change are the rural farmers. This is because they rely mostly on agriculture for their livelihood and yet they have insufficient knowledge on climate change issues and what to expect.

According to the FGDs, the community members who are most vulnerable to the different hazards are women and children. This is because during the dry season, women and young girls have to walk longer distances in search of water. Women also have to walk longer distances to the swampy areas to look for green vegetables as food for the family. The men tend to live for town, in search of casual jobs, leaving the women and children without food. The women therefore have to search for food so that their families do not starve. Women are also victims of domestic violence, while some are widows and have no control over land. Another vulnerable group is the elderly because society no longer cares for them. Children are vulnerable because many of them are orphans.

4.2.2 Resources important to livelihoods and adaptation

District level views on livelihood resources

According to the district planner, agriculture is the major livelihood source for the population in Otuke, but unfortunately it is majorly subsistence, based on small holdings. Recently upon resettlement, the community has embarked on rice cultivation in the low lands. Other crops like simsim have also now been considered for fairly large scale farming. Rearing of animals both goats and cattle is a major activity here but the cattle rustling is a big threat.

Community views on livelihood resources in Ogor Sub-county

Most important livelihood resources for different groups in the community: According to the FGD for men, the main livelihood sources for the parish include:

1. Cutting trees to make charcoal for selling
2. Farming (especially potatoes, tomatoes, cassava, beans and maize etc)
3. Tree planting
4. Village group savings
5. Rearing of animals (poultry, goats, cattle, pigs, sheep)
6. Cash crop growing, especially sun-flower, which is sold to Mukwano Industries; others include cotton and tobacco
7. Harvesting and selling Shea nuts and shear nut butter
8. Brick-making
9. Art and crafts (especially ropes from sisal and pots)

However, the women FGDs reported additional activities, including:

1. Making and selling local brew (locally called 'maruwa' and 'arenge')
2. Making and selling pastries (like pan cakes)
3. Selling silver fish ('wagiri')
4. Rearing of poultry (but on a small scale)

The youth FGDs also noted some additional livelihood options including:

1. Selling fruits like mangoes, oranges
2. When there is a bumper harvest, the excess is sold off to generate income, especially from Millet and Simsim.

Community views on livelihood resources in Olilim Sub-county

Most important livelihood resources for different groups in the community: According to the FGDs, the main livelihood sources for the sub county include:

1. Cutting trees to make charcoal for selling; this costs 12,000/= per sack; many people earn a living from this
2. Farming (especially cassava, sweet potatoes as food crops; some people plant rice, but this year it has not been possible because the seasons are very bad. Some people grow tomatoes.
3. Cash crop growing, especially sun-flower, which is sold to Mukwano Industries at a cost of 1000/= per kilo; however, the seeds are expensive and cost 25,000/- for those needed to cover an acre.
4. Village Saving and Loans Associations (e.g. Bolichup); these groups bring men and women together and promote savings
5. Rearing of domestic animals (poultry, goats, cattle, pigs, sheep)
6. Marketing of produce which is done by individual households and in different places
7. Other people are involved in brick-making, collecting and selling sand as well as breaking and selling stones to those who need these materials for construction
8. Women are involved in making Shea nut butter for sale
9. Women are involved in distilling alcohol, which is sold to cater for basic needs like clothes and food in the dry season

4.2.3 Impact of current and future climate hazards (including changing conditions) on resources and livelihoods

According to the Key Informants, livelihoods that will be most affected by the climate change are those tied to agriculture and productivity. The most affected people will be the peasant farmers who predominate in this area. Based on ranking from the hazard mapping exercise, the following analysis was presented as the priority resources that are likely to be affected in the two sub-counties:

Overall resources most affected Ogor: Animals (37); trade (31); students going to school (31); water (22); agricultural products (21); tree planting (13); bolicap savings (12); VSLA (11); hospital treatment (11); land (8).

Overall resources most affected in Olilim: Agriculture(31); trade (25); animals(leyi)(23); students schooling(13); health (13); food stores (12); VSLA (12); brick laying (11); water (10); fish grounds (8); stone quarrying (7).

4.2.4 Current coping strategies identified and evaluate their effectiveness and sustainability

National level views on coping strategies

According to the national level key informants from the Parliamentary Forum on Climate Change (PFCC), climate change adaptation strategies that should be prioritized at national level include: Improved agricultural techniques, use of improved seeds, improved land management, community water management, efficient cook stoves and forest management. The PFCC notes that there are funds for safe ecosystem management and these can be tapped into. According to the PFCC, the Uganda Carbon Bureau has a program funded by the UN where the users of the energy efficient stoves will earn some shillings directly. The PFCC noted that whereas there are some emerging programmes on climate change, diffusion of these programmes to the communities has not been adequate. They note that it is important to focus in building communities' resilience and capacity to sustain the program after the funding has been stopped for the different programs.

District level views on climate change adaptation

According to the district officials interviewed, climate change adaptation strategies should include growing of fast growing varieties of crops. In addition, action should be taken to prevent people from growing crops in the wetlands.

Current coping strategies by the communities in Ogor Sub-county

According to FGD participants in Ogor, the communities have devised a number of coping strategies at household and community level. This section describes key issues that arose from the discussions:

Coping strategies currently employed to deal with shocks and stress from the environment:

According to the community members, these strategies include:

1. Food-crop growing (especially cassava and potatoes) which is mostly in the swampy areas
2. Planting of vegetables (especially in the swampy areas)
3. During the most difficult time of the year (which FGD participants reported is from March to September – before the maturity of their crop) – the villagers reported that they borrow money from the village savings. Some people then undertake petty business while others survive on casual labour.
4. Storing food for future use; some of the food is sold while part of it is stored in the households and used during the periods of scarcity
5. Early preparation of land for crop production and early planting
6. Planting and eating greens and vegetables (e.g. Boyo, Alayu, Malakwang and onions) which mature quickly; these are also sold to generate some income, which can be used for other purposes

7. Wild plants that are used as food (e.g. Acwi Wang Gweno, Ayuu, Apuruku, Aconge). These plants withstand the harsh seasons
8. Hunting (e.g. Anyeri, Amor, Fox and monkeys). The reason why they eat monkeys is that 'their hands test like egg yolk'. Communities also keep dogs, which are used for hunting
9. Fishing
10. Growing food crops (e.g. cassava and potatoes) which stay for long in the ground
11. Termites also provide alternative food
12. Sometimes, farmers irrigate their crops, but this is on a very small scale
13. Rearing animals is also an alternative source of livelihood

According to the female FGDs, the culture of saving has been introduced to the community. According to them, everyone who would like to join the savings is given an opportunity and people save according to their capacity. Savings start from 500/- upwards to the capacity that one can save. Usually every village has at least one savings group and the membership is not limited.

1. There are people who cannot save at all – during the hunger season, they dig on other peoples' farms to obtain food
2. During the dry season, some people dig in the swampy areas. They mainly grow food crops and vegetables like tomatoes and greens.
3. Some people are now planting drought resistant crops, especially green peas
4. People also store food when there is a bumper harvest and keep it for the hunger season

According to the seasonal calendar discussions, communities cope in a number of ways including:

1. Feeding poorly on greens from the swampy areas
2. Having one meal a day
3. Burning off trees for charcoal, which they sell to raise money for buying food
4. Men often go drinking, to forget the challenges at home
5. We can obtain loans from village savings and 'bolichup'
6. In case of drought, communities plant drought resistant crops
7. Using better methods of farming – especially ox-ploughs – to develop more land in a shorter time

Climate resilient agricultural practices at household level

According to the FGD for men, households are not employing climate resilient agriculture approaches. The reasons for this include:

1. Lack of improved seeds for planting
2. Inadequate farming land, resulting in small holdings
3. Lack of gardening equipment, e.g. hoes, rakes, watering cans etc
4. Delays in planning due to climate change in weather patterns
5. Lack of energy for manual digging; families that have ox-ploughs (supplied by ACF) are performing better than those that do not have

However, the female FGDs noted that there are some few measures undertaken by households including using oxen and ox-ploughs. Ox ploughing, according to the respondents is advantageous because it digs deeper and moisture is therefore stored deeper. When the dry season comes, it takes longer for the moisture to dry up.

Communities are also increasingly planting the drought resistant crops like cassava, green peas, vegetables and cassava. The youth FGDs also noted that some people are diversifying with small businesses like buying chicken and other forms of poultry from the communities and selling them in the town to generate an income. The youth FGDs noted that most households now have animals like goats and cows.

Strategies for diversification of livelihoods:

According to the male FGDs, households have developed ways of diversifying their livelihoods. These include:

1. Growing cash-crops like sun-flower, which is sold to Mukwano industries
2. Growing regular rice in the swamps, but also upland rice on higher ground; rice is sold in the market in Lira. Un thrashed rice is sold at 400/= a kilo during peak abundance and at 1000/= during scarcity. It is also sold as far as Juba
3. Soya is another cash-crop option that generates good returns. Income generated is used for paying school fees for children, but is also used for marriage
4. Food crops include cassava, potatoes and green peas: these are mainly used for household consumption
5. Growing green vegetables in the swamps

Apart from farming as a means of livelihood, communities have diversified to bee-keeping and brick making. These are undertaken by both men and women, and the youth are also involved. Other diversification measures include:

1. Transport motorcycles ('Boda-boda') for the men
2. Women make winnowers for sale
3. Some men go hunting for game
4. Some people do pottery as an alternative source of income

However, male FGD respondents noted that all these measures are taken at individual household level and not in self help groups. Different households therefore vary in their coping mechanisms. The youth FGDs also noted that as a diversification measure, groups have been formed. The women's circles are involved in savings and rotational loans while Men's circles are mostly involved in rotational digging.

Management of risk by planning for an investing in the future:

Responses to this were mixed. Some respondents said there is some form of planning, but others reported that many people live on the basis of 'to whom it may concern'. Among the people who undertake some planning, this is implemented by:

1. Buying domestic animals (cattle, goats, sheep and pigs) for domestic rearing to increase household income
2. Village saving groups are a common form of planning at the moment. As an example, the women FGDs cited that they start saving from January to

November. In December, the accumulated savings are divided up among the members, proportionate to their contribution. These groups have been formed in each village and they are commonly called 'Chan aporo afura'. In the groups, every member is required to save a given amount of money. Members can borrow the money in the event of an emergency, then payback later

3. Implementing alternative sources of income (e.g. brick making and growing cash crops like sun-flower)
4. Tree planting
5. By laws against deforestation; for example, if you cut down a tree without planting another, the axe is taken
6. Constructing granaries and storing some of the crop for future use
7. Creating awareness by training community members on the importance of protecting their resources

Current coping strategies by the communities in Olilim Sub-county

According to FGD participants in Ogor, the communities have devised a number of coping strategies at household and community level. This section describes key issues that arose from the discussions. The coping strategies currently used in Olilim Sub County include:

1. Planting early maturing crops (e.g. improved sorghum – known locally as 'Awera'. It is a short type from Serere Agriculture Research Station
2. Planting and eating greens (e.g. Boyo, Alayu, Malakwang, Ngobe) which mature quickly
3. Growing food crops in the swamps (e.g. potatoes and tomatoes)
4. Small markets all over in the villages where trade is undertaken
5. Village savings and loans associations (VSLA) are becoming popular as many people are becoming involved. They are locally known as 'Bolucup'.
6. Some people are involved in rearing animals like goats, cattle, sheep, pigs and local chicken, which sustain livelihoods
7. Picking wild fruits that are used to generate income, particularly the Shea Nut oil seeds, mostly in May and June of every year. Their oil is of high value, costing at least 3000/- a litre. It mostly benefits women and children.
8. Some households switch to charcoal making during the dry season
9. Some people replant after their crops have been destroyed by the adverse weather
10. When people anticipate shocks in the climate, some of them try to offset the shock by planting enough so as to store some for the downtime periods.
11. Storing of food for later use is also a common practice
12. Saving of money has also increased

Climate resilient agricultural practices at household level:

According to the FGDs, many households are not employing climate resilient agriculture approaches. However, some few households implement the following:

1. Using ox-ploughs to prepare the land in the dry seasons
2. Growing early maturing crops like tomatoes and greens

3. Rearing poultry (e.g. chicken, ducks, pigeons), which are usually resilient even in the dry weather
4. Rearing domestic animals, as an alternative to crops growing
5. Planting drought resistant crops e.g. millet and cassava

Strategies for diversification of livelihood:

According to the FGDs, households have developed ways of diversifying their livelihoods. These include:

1. Some people have diversified to growing Sun-flower, which has a ready market and is sold to Mukwano industries
2. Others engage in cotton growing. This is sold to Lango Cooperative Union and Dunavant and a Kilogram goes for 1500/-
3. Other people diversify to charcoal making and brick making

Management of risk by planning for an investing in the future:

According to the FGDs, many people are not planning for the risks they face. However, some FGD respondents noted that there is evidence that people are planning for risk and planning for the future. This is exemplified by:

1. Some people are drying vegetables (like 'Boyo' and 'Malakwang') for consumption during the dry season.
2. Some people have slowly stopped cultivating in the wetlands, especially those who got training, as well as the local leaders
3. Tree planting is now becoming part of the day to day farming practices; people are planting both fruit trees and timber trees
4. Paying school fees for the children is also perceived as an investment
5. By laws against deforestation have now been set; for example, if you cut down a tree, you are required to plant 5 trees, within 2 days of cutting the tree
6. People are forming village saving groups and loans associations, where they can access financial services.

4.2.5 Analysis of the contribution to resilience of relevant sectoral policies

District officials however note that the concept of climate change is new and there is not yet a clear understanding of this concept by both the district leadership and the people. As a result, there are no clear strategies. To start with, the district technocrats recommend, there is need to sensitize district leaders and communities on climate change.

4.2.6 Conclusions on Livelihoods-Climate Linkages

1. Agriculture is the major livelihood source for the population in Otuke, but unfortunately it is majorly subsistence, based on small holdings.
2. All community members are affected by climate change. However, rural farmers, women and children are the most vulnerable to the different hazards the community members who are.
3. The most important livelihood resources for different groups in both Ogor and Olilim community include cutting trees; farming, tree planning; village group

- savings; rearing of animals; cash crop growing; harvesting and selling shea nuts, brick-making ; art and crafts , making and selling local brew, making and selling pastries, selling silver fish and rearing of poultry
4. Climate change adaptation strategies prioritized at national level include: Improved agricultural techniques, use of improved seeds, improved land management, community water management, efficient cook stoves and forest management.
 5. Coping strategies currently employed to deal with shocks and stress from the environment include food-crop growing, planting of vegetables, storing food for future use, early preparation of land for crop production and early planting; wild plants that are used as food; hunting; fishing; growing food crops; eating, irrigating crops and rearing animals
 6. Factors inhibiting adoption of climate resilient agriculture approaches include lack of improved seeds for planting; Inadequate farming land; lack of gardening equipment, delays in planning due to climate change; and lack of energy for manual digging

4.3 Changing Disaster Risks

4.3.1 Current and future disaster risks (climate-related and non-climate-related)

Local leaders' views on current and future disaster risks

According to key informants at the local leaders, the priority hazards district are summarized in the tables below for the two sub-counties:

Table 5: Hazards identified by the local leaders in Ogor Sub County, most affected parishes and projection

Hazard	Climate related	Last occurred	Details	Projection	Parishes at risk
Floods	Yes	2007	Cut off roads, Gov. aid came by air and dropped in field, few benefited, no life lost	Will increase	Oluro, Atangwata(surrounded by swamp)
Hail storms	Yes	Yesterday	Destroyed sim sim and sorghum and birds	May be the same	All parishes
Drought	Yes	June 2011(minor) 1997 (major)	The crop yield very poor	May increase	All Parishes
Locusts	No	April 2011(minor) 1984 (Major)	They eat up crops and reduce yields	Not anticipant in near future.	All parishes
Bush fire	Yes	Nov – Dec. 2011	During the December dry season when grasses are dry. Hunters are the ones who set the fires to catch animals. They affect soil productivity.	May remain the same	All parishes
Charcoal burning	Yes	Now	Both men and women do but men mostly,	May reduce due to sensitization	Atangwata and Oluro
Diseases in humans Malaria, Cholera / HIV/AIDS	Yes & No	Cholera 2004, Malaria & HIV/Aids Now	Cholera in rainy season, Malaria is very common when moving from wet to dry season	Some will increase others decrease ¹	All parishes
Diseases in animals(F MD)	No	Over 2 years ago	Animals die and people pose money	No sure	All parishes
Disease for poultry (Coccidiosis)	Not	Last dry season	Every dry season birds suffer and dies if not vaccinated	Will remain the same	All parishes

¹ Cholera may attack if rains come; malaria may increase with rains and sunshine; HIV will decrease with Health Education

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Diseases for plants	Yes	Now	There is a particular weed that if in the garden takes all nutrients and the other plants cannot grow	Will remain the same	All parishes

Ranking of Hazards for Ogor Sub-county: The text box below summarizes the local community ranking of priority climate related and non-climate related hazards for Ogor Sub-county

Text box 6: Priority climate related and non-climate related hazards for Ogor Sub-county

Climate related

Famine (31)
Draught (30)
Bush burning(23)
Floods(17)
Hailstorms(16)
Deforestation (12)
Pests (11)

Non-Climate related

Accidents(16)
Domestic Violence (15)
Disease(14)
Poverty (13)
Bad roads (7)
Bad Hospitals (6)
Poor schools (1)

Table 6: Hazards identified by the local leaders in Olilim Sub County

Hazard	Climate related	Most affected population	Details	Projection	Parishes at risk
Cattle rustling	No	Men ²	Karimojong who are neighboring Olilim come raid the cattle in the area. Even kill owners before taking cattle	Will increase	All but esp. Adra and Ogwate ³
Hail storms	Yes	Mainly farmers	These destroy mainly	Not sure	All the parishes
Drought	Yes	Farmers	There are very poor crop yields	Will increase	All the parishes
Cutting down trees	Yes	Youths	Trees are cut down for charcoal	Will increase	All the parishes
Grass hoppers	Yes	Farmers	They are very common in rainy seasons and destroy the crops	Not sure	All the parishes
Water shortage	Yes	All the people	During dry seasons, the shallow wells are dried up	Will Increase	All the parishes
Poverty	Yes	Old men and women	People's poverty is linked to people's failure to have goods yields due to climate change	Will increase ⁴	All the parishes
Poor education system	No	Children	There is limited access to good education	Will increase ⁵	All the parishes
Lack of skills	No	All men and women	This is linked to poor education systems	Will decrease ⁶	All the parishes
Diseases in animals	Yes	Farmers	Quarantines lead to lose of livelihoods		All the parishes
Wild dogs	No	Men mainly	Since it is a hunting community, when dogs are not immunized	Will decrease ⁷	All the parishes
Diseases for poultry	Yes	Poultry farmers	Some diseases are seasonal	Will be same	In the centre
Diseases for humans(malaria)	Yes	All but children	Some many diseases like cholera are climatic	Will decrease ⁸	All the parishes
Poor	Not	The elderly	The rainmakers change	Will decrease	All the parishes

2 Because when the raiders come, the men are the

3 They are at the border with Karamoja

4 Cited the high cost of living in the area day by day

5 There is an increasing number of School dropouts

6 With sensitization

7 Fewer people are now hunting

8 There are fair treatment services

cultural practices			the rain patterns and stop it from raining using charms		
Violence (domestic)	Not	women	Men are violent and there is a lot of crime.	Will increase ⁹	All the parishes
Fires(bush)	Not		Karimojong set fires when they are coming to raid. Hunters also set fires. The soils are degraded by the burning grasses		All the parishes

Ranking of Hazards for Olilim Sub County

The text box summarizes the local leaders' ranking of priority climate related and non-climate related hazards for Olilim Sub-county

Text box 7: Priority climate related and non-climate related hazards for Olilim Sub-county

Climate related:

Draught (33)
Floods (30);
Hail storms (13);
Deforestation (12);
Pests (12);

Non climate related:

Diseases (25);
Insecurity (15);
Poverty (8);
Poor roads (6)

Community views on priority disasters in Ogor Sub-county

FGD participants in Ogor presented a number of views on priority hazards likely to affect them currently and in the future. This section presents key findings from the discussions:

Climate related disasters have been experienced in the past in Ogor:

According to the community members the climate related hazards are cited in the text box below:

⁹ There is more alcoholism

Text box 8: Climate related hazards in Ogor Sub-county

1. The sub-county has experienced a long drought, leading to famine and poverty
2. During the rainy season, the sub county was hit by hailstorms, especially Anyalima village.
3. Bush burning
4. Deforestation
5. Lightening
6. Floods
7. Destruction of roads during the rainy season, especially those crossed by rivers

Non climate related hazards experienced in Ogor Sub County: According to the FGDs, key non-climate related hazards experienced in the area include:

Text box 9: Non-climate related hazards in Ogor Sub-county

1. Many people do not have easy access to safe water and regularly drink dirty water
2. Diseases attacking both animals and human beings. Human epidemics are common, especially cholera
3. Raids by neighboring tribes, resulting in cattle rustling, rape and murder
4. Low use of family planning resulting in a rapidly increasing population
5. Violence in households
6. Laziness and drunkenness
7. Land wrangles resulting in fighting and violence
8. Poverty and lack of capital
9. Poor health services and lack of drugs in the health facilities
10. Corruption in the society
11. Disproportionate education for young girls, who drop out of school early
12. Children who lost their parents due to the insurgency are finding it a challenge to cope with life after the war
13. Widows are suffering because surviving relatives do not recognize their rights. Their land is forcefully taken away from them
14. The available schools do not have adequate resources like desks, chairs and other materials. Children sit on dusty floors during their lessons
15. The quality of teaching is poor. The Government paid teachers are not teaching properly because they are not adequately motivated
16. There is only one health facility in the district and people have to walk long distances
17. Destruction of crops by pests

How hazards are likely to change over time as a result of climate change:

The male FGDs in Olilim did not mention any information on how hazards are likely to change over time. However, the female FGD respondents noted the following:

1. Droughts are expected to get longer and more disastrous. This may increase the threat of raids from the Karimojong
2. Due to the food shortage as a result of drought, cases of domestic violence are likely to increase
3. As a consequence of the climate change, our household incomes are likely to get smaller, resulting into poor feeding, failure to pay school dues, and increased sickness among the children.

However, to prevent climate change, the FGDs recommend the following:

1. Afforestation
2. Setting by-laws against indiscriminate cutting of trees
3. Avoiding planting of building houses in the low lying areas prone to floods
4. Planting early maturing crops

Community views on priority disasters in Olilim Sub-county

FGD participants in Olilim presented a number of views on priority hazards likely to affect them currently and in the future. This section presents key findings from the discussions:

Climate related disasters have been experienced in the past:

According to the community members, the sub-county has experienced the following climate related hazards:

Text box 10: Climate related hazards in Olilim Sub-county

1. The sub-county has experienced a long drought, leading to famine and poverty
2. During the rainy season, the sub county was hit by heavy rains and hailstorms, which destroy crops; they also flood and destroy the roads, break up the bicycles that we use for transporting the produce
3. Malaria also increases during the rainy season
4. Wild weeds that destroy plantations
5. Deforestation
6. Bush burning
7. During the dry season, the water sources also dry up
8. The heavy rains also lead to pollution of the water sources (especially the open wells) which become dirty and muddy.

Non-climate related hazards:

According to the FGDs, key non-climate related hazards experienced in the area are indicated in the text box below:

Text box 11: Non-climate related hazards in Olilim Sub-county

1. Insecurity due to attacks by the Karimojong; they steal animals, burn up houses and food stuff
2. Witchcraft, which some people say destroys crops or stops the rain
3. Poor agricultural methods e.g. using hand hoes
4. Destruction of crops by animals, both wild and domestic
5. Violence in households, sometimes resulting in death
6. Bush burning, initiated by individuals
7. The soil not adequately fertile and this results in inadequate harvests which cannot take households through the dry season
8. Health facilities are few and do not often have adequate drugs
9. Schools have poor facilities and teachers teach very poorly

How hazards are likely to change over time as a result of climate change:

Asked whether hazards are likely to change over time, the FGDs in Olilim mentioned the following:

1. They expect hunger to increase due to the increasing drought
2. Water levels in the water sources are also dropping. People now have to pump longer for water to start coming out of the bore holes; some water sources are expected to dry up

To prevent climate change, the FGDs recommend the following

1. Stopping deforestation
2. Acquire knowledge through training
3. Avoid planting in the swamps

4.3.2 Analysis of disaster risk management policies

National Level Climate Disaster Risk Reduction Policies

Translation of climate change adaptation programs into policy:

According to the Parliamentary Forum on Climate Change, this has not yet been done. Key informants report that Uganda is currently working on a Climate change policy but it is still a very long way. They note that all the work that is currently being done to promote climate change risk reduction is being done by donors and CSOs. They explain that this is because climate change is a 'new thing' and a difficult theme – it is currently difficult to get high level people like MPs to firstly understand it and recognize that it is a national challenge. Disasters are easy to show in that its effects including deaths are easy to show and gain political support for policy. However it is very difficult to explain the issues of increase in temperatures due to pollution that has occurred for over 150 years and linking it to changing rain patterns, increased droughts and other efforts. In fact it sounds ambiguous.

PFCC influence on climate change policy issues:

According to the PFCC, they are currently working with MPs on disaster committees and other committees to push for the climate change policy agenda. The MPs also ensure that the funds that have been sent different ministries to fund disaster related programs are well accounted for and the activities are implemented as planned. They are also working with MPs in building their capacity. They are also undertaking advocacy and lobbying activities. Key informants also noted that members of the PFCC are likely to influence the policy agenda on climate change because of their interaction with the different ministries; In Uganda, the Parliament directs actions of the Ministries through setting laws, passing the sectoral budgets and scrutinizing the sectoral plans and accountabilities.

Challenges faced by PFCC:

Key among the key challenges faced by the PFCC is convincing the parliamentarians that climate change does exist and is big issue are a very big challenge. Quoting one Key Informant:

“Keeping these people on track and keeping climate change issues top on their agendas is indeed a big challenge”

From a CSO perspective, PFCC key informants note that the lack of coordination is a very big challenge. There are gaps in communication among CSOs which should share details like areas of focus, deliverables, the population and other basics. For example GTZ did a comprehensive stakeholder analysis about 18 months ago and it noted that there are about 180 CSOs in Uganda dealing with climate change issues but all these lack a platform for coordination and collaboration.

District Level Climate Disaster Risk Reduction Policies

District priorities and climate change issues:

According to the District Planner, climate change does not feature among the top five district priorities in Otuke district planning processes. This is driven by the fiscal priorities determined at the central government level. Currently, the funding that the Ministry of Water gives to the Natural resource Department is a conditional grant which is attached to specific programs and activities which are particularly focused on wetland management and nothing else. The unconditional grant money from the district is very little that it is only used to run the office.

Integration of climate change issues in district policies and by laws:

According to the District Planner and the Natural Resources Officer, the district does not have policies or by laws at the district that are linked to climate change. This is because our district started in January 2010 and we are still putting together many things. Since 2010, we have been having an interim Government who did not have the mandate to make any policies and the first full council has been in office for only 3 months. We entirely depend on the national laws. However some sub counties especially the old ones have some bylaws that are sensitive to climate change.

According to the Community development officer, Otuke Districts does not have any ordinances related climate change because this is a new district. He notes that there was a circular from the president that gave guidelines on how districts can come up with bylaws for environmental protection and the older districts implemented this about three years ago, before Otuke became a district. However, it was noted that the districts have a verbal policy protecting the sheer nut tree (Yao tree) in that whoever wants to cut down the tree must plant three more and wait until they start giving off the nuts before cutting the old one and since the sheer nut tree takes more than 5 years to start yielding the fruits. However, this policy is mostly focused on this particular tree. Whoever cuts the tree is arrested and prosecuted with a fine.

Level of understanding of climate change issues by the local government staff:
According to the District Planner and the Natural Resources Officer, the district has conducted some sensitization to some extent but it is still very low. They note that the way Council members discuss climate change issues shows that they are not fully aware of the consequences of climate change and its link to environmental degradation. This same state of affairs is reflected in the lower local councils.

Community policies on assets ownership:

Currently, there is no official policy on assets ownership at the community level. This means that communities follow the cultural dictates to assets ownership. Based on culture, it is clearly known that as long as the husband is still alive, all the assets like land are under the control of the husband. However, if the husband dies, widows are often left without control of the assets as they are taken on by the patrilineal control systems.

Community challenges to climate change adaptation strategy implementation:

According to the district level Key Informants, the main challenge faced at the community level is the limited capacity and understanding of climate change issues.

Presence of disaster management plans at the Sub County:

According to different key informants at the sub-county level, there is no disaster preparedness or disaster risk reduction plans at the sub county level. They note however that there have been some initiatives. There is a tree planting project for schools, supported by an NGO. There have also been attempts to promote disaster preparedness plans for schools but these are still in their infancy.

For the churches (especially the Catholic Church), key informants note that there is a chairperson for disaster management. Church members make collections every Sunday after church when people give some money to the treasurer. That money is used to help a member of the church in case they have problems like losing a family member, or making contributions to households that have had a major incident (e.g. a house getting burnt).

4.3.3 Monitoring and dissemination systems for disaster risk information

Disaster early warning system:

According to key informants at the district level, there is no effective early warning system for disasters in the district.

4.3.4 Capacity at national, local and community level to respond to disasters, including evaluation of past responses

National level capacity for climate related disaster risk reduction and response:

Uganda has eminent gaps in its approach to disaster prevention and response. For many years, the country lacked a comprehensive policy on sustainable disaster preparedness and management. Emergency response, relief and rehabilitation approaches have dominated disaster interventions in the country, as opposed to prevention and mitigation.

District level capacity of disaster risk reduction and response

Planning process at Sub County level:

The planning process is participatory because it involves all stakeholders whose interests are included in the plans. The sub-county collects plans from the PDCs and the compiled them into a sub-county plan. However, because of the current fiscal agenda, sub-county plans do not contain sufficient focus on Disaster Risk Reduction and climate disaster resilience.

Stakeholder capacity to handle disasters:

Key informants note that current stakeholder capacity to handle disasters is low. Presently the District Local Governments cannot provide for people affected by disasters because it does not even have a store and its financial capacity is very low. At institutional levels, there have been attempts to mobilize schools for disaster risk reduction. However, churches have not yet been adequately involved in DRR.

Organizations in the community dealing with climate change and disasters:

There are no organizations that are dealing with climate change issues in the sub county levels. However there are a number of CSOs involved in different activities that have a bearing on environmental protection and improving agriculture. These are summarised in the Venn-diagrams presented later on in the report.

Information flow in the Sub-county:

According to the district and sub-county leaders, there a communication mechanism exists to enable information flow from the sub-counties to the lower levels. Normally, from the sub county the information flows down to the PDC then LC1 then to the community. The schools and churches also get their information directly from the Sub County office. At the Sub county level there is the chair person Head teachers association and it is this head teacher who gets information them disseminates to other teachers

Capacity needs within the community:

According to various key informants at the district level, the community is green about climate change issues so they should be educated it. Sub-county authorities note that there were Sub county granaries where people would store their produce and during the times of need, they would go to the granary and get the produce they kept their. However, these services are no longer available.

Capacities and mechanisms for Disaster Risk Reduction and Response at the community level in Ogor and Olilim Sub-counties:

Discussions with the community focus groups yielded a number of insights in the status of capacities for Disaster Risk Reduction and response at the community level.

Generation and use of climate change information for planning:

According to the FGD for men, there is evidence that households are using information for planning. For example, the farmers plant crops immediately when they see signs that the rainy season is approaching. A variety of crops is planted including vegetables like 'boyo', cash crops such as sorghum, cow peas and green peas and food crops such as cassava and potatoes.

According to the female FGDs, the sub-county now has what is called 'the 5-year Plan of Action Against Hunger'. Based on this plan, the sub-county authorities encourage people to keep some food during the bumper season and not to use food wastefully. This year, communities were told there will be a long dry season, with hunger, so the communities are doing everything possible to keep some food reserved in the granaries. People are planting a variety of seed crops (especially beans, pigeon peas, green peas, maize and cassava). When they get some money, people plan ahead and may buy and store some dry foods.

According to the youth FGD participants, communities are increasingly planting trees which act as shades for their crops. They are also involved in maintaining streams, so that they can grow crops alongside them in the dry season. There is a 'serious' by law against indiscriminate bush clearing.

According to the FGDs, there is evidence that households are using information for planning. For example, there are farmer-to-farmer services in which peer farmers are used to pass on information. There are trained service providers at parish level who also pass on information.

4.3.5 Analysis of household/individual vulnerability to hazards

Vulnerability to disasters at national level:

According to the PFCC, communities in Uganda are highly vulnerable to the hazardous effects of disasters. Factors most responsible for this are: Poverty, age, gender, disability, lack of information, lack of experience, inadequate health care, geographical isolation of some underserved areas, inadequate coordination, malnutrition, inappropriate development policies, food insecurity, societal stratification, poor water and food quality, limited district level resources, politics, graft, lack of social order, high

burden of illness and inadequate disaster preparedness or mitigation. Based on risk and vulnerability, the top 3 disasters that may have the highest negative effects on Uganda are: Epidemics, Drought and Conflicts, in that order.

District level views on Vulnerability of communities to climate disasters:

Categories of people most affected by the hazards:

According to Key informants in Otuke, all people in the district are vulnerable to the effects of climate related disasters but farmers are the most affected. However, Women and children are particularly vulnerable to climate related disasters because they are the ones to look for alternative means of survival during the times of scarcity. It was also noted that people with disabilities are highly vulnerable. In addition, orphans, especially those in child headed households are particularly vulnerable, as are the widows.

Most affected Sub Counties:

According to the district key informants, all the sub-counties in Otuke are vulnerable to climate related disasters but Ogor, Olilim and Adware are the most vulnerable. These sub-counties also border with Karamoja region, and are therefore subject to the adverse climates that Karamoja usually faces. They are also prone to attacks from the Karimojong warriors.

Factors contributing to vulnerability at the community level in Ogor Sub-county:

Households having protected reserves of food and agricultural products:

According to the FGD for males, there was evidence that households have some protected reserves of food and other agricultural products. These are kept as follows:

1. Some foods are kept in sacks (e.g. rice, Simsim, maize); a household may keep 5 to 6 bags
2. Some foods are kept in pots and jerrycans e.g ground nuts
3. Some foods are stored by hanging them in trees or on the rooftops e.g. maize

However, respondents reported that it is not common practice to construct food stores in this area, mostly because the harvests are relatively small. However, some households construct granaries in which they keep agricultural outputs like millet, ground nuts and Simsim.

However, the female FGD respondents reported that it is only a few households that keep sufficient food reserves. They noted that most households do not have granaries and do not keep sufficient food. As a result, most households have to buy food stuff from the market.

Secure shelter:

Asked whether households have secure shelter, most respondents report that most households do not have reliable shelter.

1. Their huts can easily burn due to the bush fires
2. Heavy winds sometimes carry off the roofs of the grass thatched huts and also throw down the granaries
3. Rats and termites often eat up the stored agricultural products

4. Heavy rains and the resulting dampness due to leaking roofs as well as the excessive heat during the dry season often results in rotting of stored produce
5. Because of poverty, most people cannot construct permanent and strong buildings

According to the female FGDs, when raids are anticipated, households often collect their farming equipment and store them in one more secure place. Security of the huts depends on the way they are constructed.

Protection of key assets from hazards:

Asked whether key assets are protected from hazards, most respondents from the male FGDs reported that this is not so. This was illustrated with the following examples:

1. Animals are not safe because they are kept outside, tethered on the huts – they can easily be stolen or raided by rustlers. Animals are also at risk because of the poor veterinary services.
2. However, female FGD respondents noted that they try to protect their food reserves from vermin by suspending the sacks of food on wooden poles. However, granaries can easily be opened and contents stolen; they can also be destroyed by heavy rain and winds

Mobility to escape danger in the event of a hazardous event:

Asked whether people have mobility to escape danger in the event of a disaster, most of the male FGD respondents reported that this is not so. For some acute hazards that occur without a warning (e.g. heavy rains and fire) communities have no means of quick mobility to avoid loss. The same applies to raids from the Karimojong warriors. The usual mechanism of escape for long distances is public vehicles or bicycles. Otherwise, most people flee on their feet.

Ogor Sub County Vulnerability Matrix

Discussions with FGD participants in Ogor sub-county yielded 3 tables that represent core vulnerabilities of different resources in the sub-county. These are summarized in the tables that follow:

Table 7: Vulnerability Matrices for Ogor Sub-county

Men

Hazard Resource	Drought	Poverty	Famine	Deforestation	Bush burning	Total
Animals	3	1	3	1	3	11
Students going to school	3	3	3	3	3	15
Agricultural products	3	3	3	3	3	15
Water	3	3	3	3	2	14
Bolicap savings	3	3	3	2	1	12
Total	15	13	15	12	12	

Women

Hazard Resource	Poverty	Draught	Domestic Violence	Bad roads	Bad Hospitals	Poor schools	Total
Crops	0	3	3	0	0	0	6
VSLA	3	3	3	0	2	0	11
Trade	3	3	3	3	2	1	15
Animals	3	3	3	2	0	0	11
Tree planting	3	3	3	2	2	0	13
Total	12	15	15	7	6	1	

Students

Hazard Resource	Disease	Famine	Floods	Pests	Hailstorms	Accidents	Total
Hospital treatment	3	2	1	1	1	3	11
Food reserves	2	3	3	3	3	2	16
School going	3	3	3	1	3	3	16
Land	1	1	2	1	2	1	8
Animals	3	3	2	1	3	3	15
Markets	1	3	3	3	3	3	16
Water sources	1	1	3	1	1	1	8
Total	14	16	17	11	16	16	

Discussion of the Vulnerability Matrices:

The following discussion issues emerged out of the vulnerability matrices:

Whether there are different strategies that communities would like to adopt to reduce the impacts of the hazards: The FGD respondents report that there are different strategies they would like to adopt. They expressed the following:

1. Using oxen and ox-ploughs for cultivation will enable them to cover more land; however, they reported that they need to be supported with these inputs
2. Rearing animals, which provide milk in addition to the labour
3. Government should reduce on the costs of groceries and school fees
4. Communities need to use irrigation as an alternative during the drought. This they say is feasible, but they need support with the implements
5. Planting on higher ground that is safe from flooding
6. Stocking food in houses for use in times of scarcity
7. Growing crops that do not take long in the gardens

The female FGDs also proposed the following strategies:

1. More promotion of the village savings
2. Counseling men to reduce domestic violence and alcohol taking
3. More education on environmental conservation

Resources that communities have to help them adopt the new strategies: According to the FGD participants, resources cited as already available in the communities include:

1. Borrowing money from the village savings, especially in the hard times
2. Fish ponds
3. Areas where they can plant trees if provided with the tree seedlings
4. Poultry for rearing
5. Bee hives for generating honey, which can be sold
6. Land for farming and agriculture
7. Using better farming methods (e.g. line cropping, intercropping and terracing)

Constraints to adopting the coping strategies: Constraints to adopting the reported strategies include:

1. Lack of capital to buy the needed technology e.g. oxen and ox-ploughs, watering equipment and improved seeds and tree seedlings
2. Lack of knowledge and skills for improved farming and animal husbandry
3. Backward traditional practices
4. Lack of veterinary services
5. Inadequate medicine and services in the health facilities.

Factors contributing to vulnerability at the community level in Olilim Sub-county:

Households having protected reserves of food and agricultural products:

According to the female FGD participants, most households do not have food reserves and the granaries are empty. However according to the FGD for males, some households have some protected reserves of food and other agricultural products. These are kept as follows:

1. Some foods are kept in sacks
2. Vegetables are dried so that they can be eaten later
3. Only a few households have granaries

Whether households have secure shelter:

Asked whether households have secure shelter, most respondents report that most households do not have reliable shelter. Most households live in grass-thatched huts. These huts are prone to destruction from both climate and non-climate hazards.

1. Their huts can easily burn due to the bush fires
2. Rats and termites often eat up the stored agricultural products
3. Karimojong warriors often attack and easily destroy their huts

Protection of key assets from hazards:

Asked whether key assets are protected from hazards, most respondents from the FGDs reported that since most households are poor, they have very few assets to protect. There are a few measures to protect their assets and these include:

1. Animals are sometimes vaccinated and treated
2. Local leaders are sometimes involved in talking to people about preparation for fore-seen hazards
3. Households dig around their homesteads, clearing bushes as a means of protecting them from bush fires

Access to early warning for climate hazards:

According to the male FGDs, people have some limited access to early warning for climate hazards. This is mostly through:

1. Traditional methods like the direction of the winds, which can be used to predict when rain is coming; increasing temperatures are also a sign of impending drought.
2. Sometimes the communities receive messages from the radio

However, the FGDs noted that most households do not receive information in time

Mobility to escape danger in the event of a hazardous event:

Asked whether people have mobility to escape danger in the event of a disaster, most of the male FGD respondents reported that this is not so. This is especially for raids, where people flee or report to the local authorities and security forces. FGD respondents also noted that the roads are often in very bad shape.

Vulnerability matrix for Olilim sub-county

Whether there are different strategies that communities would like to adopt to reduce the impacts of the hazards: The FGD respondents report that there are different strategies they would like to adopt. They expressed the following:

1. Irrigation
2. Working in groups of households rather than individual households
3. Changing from manual digging to modern technologies like ox-ploughs and tractors
4. Farming more cash crops, especially sun-flower

Resources that communities have to help them adopt the new strategies: According to the FGD participants, resources cited as already available in the communities include:

1. Land for farming and agriculture
2. Readiness by the communities to be trained in better production methods

Constraints to adopting the coping strategies: Constraints to adopting the reported strategies include:

1. Lack of capital to buy the needed technology e.g. oxen and ox-ploughs, watering equipment and improved seeds and tree seedlings
2. Lack of knowledge and skills for improved farming and animal husbandry
3. Backward traditional practices

Vulnerability Matrix for Olilim Sub-county: Discussions with FGD participants in Olilim sub-county yielded 3 tables that represent core vulnerabilities of different resources in the sub-county. These are summarised in the tables that follow:

Table 8: Olilim Sub County Vulnerability Matrix

Men

Hazard Resource	Draught	Deforesta tion	Wild fires	Flooding	hailstorms	Total
Animals(Leyi)	2	2	3	3	3	13
Agriculture (Pur)	3	3	3	3	3	15
Students schooling	3	2	2	3	3	13
Health (Yat kom)	3	2	2	3	3	13
Water (Pii)	3	3	2	1	1	10
Total	14	12	12	13	13	

Women

Hazard Resource	Insecurity	Poverty	Draught	Diseases	Poor roads	Total
Farming	3	0	0	2	0	5
Animals	3	0	2	0	0	5
VSLA	3	2	2	3	2	12
Brick laying	3	3	0	3	2	11
Trade	3	3	2	3	2	13
Total	15	8	6	11	6	

Students

Hazard Resource	Diseases	Flooding	draught	Pests	Total
Animals	3	2	0	1	6
Land	2	3	3	3	11
Trading	3	3	3	3	12
Stone quarrying	2	3	1	1	7
Fish grounds	1	3	3	1	8
Food stores	3	3	3	3	12
Total	14	17	13	12	

4.3.6 Conclusions on Changing Disaster Risks

1. There is limited knowledge about the trends in different hazards by both local leaders and the community.
2. Majority of natural hazards namely drought, increased temperatures, famine, floods are predicted to increase while manmade hazards like insecurity, domestic violence, poor roads and poor infrastructure are predicted to generally decrease.
3. Factors most responsible for high community vulnerability to disaster and climate related hazards include poverty, age, gender, disability, lack of information, lack of experience, inadequate health care, geographical isolation of some underserved areas, inadequate coordination, malnutrition, inappropriate development policies, food insecurity, societal stratification, poor water and food

- quality, limited district level resources, politics, graft, lack of social order, high burden of illness and inadequate disaster preparedness or mitigation
4. Major constraints to adopting the coping strategies include: lack of capital to buy the needed technology; lack of knowledge and skills; backward traditional practices; lack of veterinary services; inadequate medicine and poor services in the health facilities

4.4 Institutional Context Related to Climate Change

4.4.1 Government structures to address climate change

Efforts at disaster risk reduction and Disaster Management at the national level

Overall coordination and sector responsibilities:

Informed by the existing gaps, the Government of Uganda in the last 15 years put in place mechanisms for disaster management. The IDP policy was among the first steps. The Office of the Prime Minister (OPM) is charged with overall coordination of these activities. However, specific responses were decentralized to line ministries, which developed plans to deal with specific emergencies e.g. health emergencies in MoH. The Ministry of Water is particularly responsible for oversight of sectoral issues related to climate change. Other line sectors like the Ministry of Agriculture, Animal Industry and Fisheries (MAAIF) are also responsible for food security issues that arise out of unstable climates. The Office of the Prime Minister is responsible for coordination of emergency relief. The OPM has set up a Disaster forum. This is an inter-ministerial and interagency committee that meets every two months to discuss issues related to disaster prevention and response in the country. It has two sub-committees, one focusing on Disaster Response and another focusing on Disaster Risk Reduction.

Inter-ministerial Agency:

The management of responses has been undertaken by a multiplicity of actors. In order to streamline and harmonize them an inter-ministerial agency has been formed. The Joint Monitoring Committee has been the highest form of Government's attempts to put in place a coordinating framework.

The Parliamentary Forum on Climate Change (PFCC):

The PFCC was started four years ago during the CHOGM where climate change was on agenda. For the understanding of how climate change has affected the livelihoods in Uganda and how it may affect it in future. Several MPs got together and with support from the British Council created the Forum. It is modeled on the UK model of multiparty platforms which they have on many topics now in the UK. The forum acts as a medium for multiparty engagement for multi-disciplinary issues. Many MPs feel that parliament does not have the capacity and institutional mechanisms to deal with climate change. On institutional mechanisms, climate change falls into so many committees. They felt there is need to understand the complexity and need to separate climate impacts. The forum brings together MPs who are seating on different committee's health, natural resource, water and environment, works, transport and communications. Most of the forum's work involves Advocacy, capacity building and technical support. The forum works directly with members of parliament. It partners with NGOs to host capacity building workshops/seminars. MPs have attended global forums on climate change like the conference of parties (COP) on climate change. The PFCC also provides short policy briefings on key topics related to climate change. When the MPs have anything they would like to understand with regard to climate change, they call the PFCC which

then elaborates on these issues in their committees. The Parliamentary forum is made up of Parliamentarians, CSOs and the private sector. Currently 120 MPs in the 9th parliament have signed up. The forum has already run three trainings: one on climate change and how does it impact their constituency; another on natural resources and the budget process and another on adaptive options in Uganda.

Government ministries and Agencies working with PFCC:

The PFCC works with the Ministry of Water and Environment through the Climate Change Unit, NEMA, Agriculture, National Planning Authority (NPA), Finance, NAADS, and Energy and Mineral Development.

CSOS working with PFCC:

The PFCC works very closely with CAN-U, Oxfam, GIZ, ACCRA, ACORD, DANIDA, DANIVA, and Water Governing Institute.

Policy on Disaster Management:

Informed by the existing gaps, the Government has prepared a comprehensive national policy on disaster preparedness and management. The policy lays emphasis on a multi-sectoral and multidisciplinary approach. The goal of the draft policy is to establish efficient institutional mechanisms for DM so as to promote its integration into the national and local government planning process. The policy is still in draft and has not yet been passed by Cabinet. The draft policy has the following highlights:

The National Level: It provides for an implementation structure that caters for long term Disaster Preparedness and Management interventions and planning, as well as immediate response. The institutional framework underscores the involvement of government ministries in collaboration with humanitarian and development partners, the private sector, local governments and the community. The Ministry responsible for Disaster Preparedness and Refugees in the Office of the Prime Minister is the designated lead agency in coordinating all stakeholders.

The draft policy provides for an Inter-Ministerial Policy Committee that shall handle cross sectoral matters. It also proposes the setting up of a National Disaster Preparedness and Management Centre. Government will keep a pool of trained individuals across all ministries who can easily be mobilized and deployed in the face of a complex disaster. The government is also preparing the Disaster Preparedness and Management Act, to provide the legal framework for these interventions.

What the policy says about Districts: The policy proposes District Disaster Management Committees to be the lead agencies at the district level and that disaster planning should be executed within the district framework. New and existing DDMCs should be strengthened, trained and equipped. The committee is chaired by the District Chairperson, while the Chief Administrative Officer in the technical focal point.

Sub-district structures: At the lower level, the Sub-county Disaster Preparedness and Management Committee shall be the lead agency. The Chairperson chairs the

committee while the Sub County chief shall be its secretary. At village level, the local councils shall be the first line community response mechanism.

Text box 13: Gaps in national implementations on DRR and DM programs

1. The biggest challenge is in coordination of response efforts. In the event of disasters, there is often a lot of confusion on the layering of interventions – different actors do different interventions in their own ways leading to un-coordinated response, confusion, in-fighting and duplication.
2. The country seems to be more focused on response than mitigation
3. Unclear distinction between the roles of the Ministry of Health and those of the Office of the Prime Minister
4. Full scale operationalisation of the policy has not yet been undertaken; all districts have not transmitted capacity to sub-county and lower levels
5. Despite the policy, there is no uniform disaster response plan that connects ministries. Some ministries do not even have disaster plans

The District Level: District level coordination during emergencies has been a big challenge. Between 1997 and 1998, the Ministry of Local Government with support from GTZ and OXFAM organized training for technical staff in selected districts. The key output was the formulation of District Disaster Plans.

In districts affected by IDPs, response mechanisms have been through the District Disaster Management Committees. The DDMCs were initiated with support from UNDP in the insurgency affected districts (Kasese and Kamwenge in the South West; Soroti, Kumi, Lira, Gulu, Kitgum and Pader in the North; and Adjumani in West Nile).

Text box 14: General gaps in districts implementations on DRR and DM programs

1. Most districts do not have adequate capacity to plan for disasters. We do not have adequate information on the types of training undertaken by district.
2. The support from GIZ and Oxfam only benefited a few districts in the West Nile (Nebbi, Arua, Moyo), and it is unknown if the effect of the training persists
3. In the few districts trained, the implementation of these plans was constrained by lack of resources and poor understanding of their responsibility
4. It is not known how the training in various districts has impacted on the processes and institutional framework for DM.
5. About 30 new districts have been created over the last 10 years. It is unlikely that disaster committees in the new districts have been composed or trained

Gaps specific to Otuke district are shown in table below

Text box 15: Gaps in Otuke districts implementations on DRR and DM programs

1. The district is new, with a formed DDMC but inactive
2. District lacks disaster preparedness and Management Plans
3. There is limited financing for climate change related programs
4. There is Inadequate staffing (most of the staff are acting)
5. There is limited prioritization of climate change issues due to other more urgent issues.
6. The level of awareness about climate change and its impact is low among the district officials
7. The district officials lack experience of responding to a previous disasters at district level
8. There are no policies and by-laws for promotion of climate change resilient livelihood in the communities.

At community level, the following gaps are identified

Text box 16: Gaps in Ogor and Olilim Sub County implementations on DRR and DM programs

9. The Sub Counties lack disaster management committees
10. Sub counties lack disaster preparedness and Management Plans
11. There is financing for climate change related programs
12. Inadequate staffing (most of the staff are acting)
13. There is limited prioritization of climate change issues due to other more urgent issues.
14. The level of awareness about climate change and its impact is low among the sub county officials and general community.
15. The sub county officials lack experience in responding to a previous disasters at sub county level
16. There are no policies and by-laws for promotion of climate change resilient livelihood in the communities.

4.4.2 Capacity of relevant institutions to integrate climate change considerations into their work

National Level Capacities

Integration of climate change issues into policy:

According to the PFCC, currently, there is no integration of climate change issues in policy issues and climate change issues are also not adequately addressed in the national development plan. The PFCC has been working with climate change unit to try and mainstream climate change programming in all ministries but this has not yet translated into policy.

Integration of climate change in DRR:

According to the PFCC, climate change issues are not integrated into DRR interventions. However, the PFCC notes that CSOs are doing a remarkable job in integrating climate change issues in their programming.

Capacities of Government ministries and agencies to deal with climate change issues:

According to the PFCC, there are no climate change officers in each of the ministries that have a strong stake in climate change. With regard to Disaster Risk Reduction, Government focuses only on Office of the Prime Minister for staffing. DRR has not yet been sufficiently rolled out to other ministries and neither have DRR activities been mainstreamed at all levels. The climate change unit is underfunded and under staffed and they do not possess enough high level support in their activities. Consequently, there is little to show their efforts.

Capacities of CSOs to deal with climate change issues:

According to the PFCC, CSOs are doing so well with regard to integration and extension of climate change programmes to the sub-national levels. The only limitation is that they are not well coordinated. In addition, there are a lot of overlaps and missed opportunities for intervention. Because of inadequate coordination, different CSOs do not know what the others are doing and yet in reality they should be well coordinated.

Gaps in terms of preparedness:

According to the PFCC, the government has just rolled out a new DRR policy and there is need to give it time to carry on the implementation. However since the launch of the policy in April 2011, several districts who are even supposed to implement it are not even aware that it does exist. Therefore there is a very huge capacity gap. In addition, the PFCC noted that there are no funds for the implementation of the new policy. Whenever a disaster occurs, government reaches out to the CSOs for support both financial and human resource.

District level capacities for climate change programmes

Presence of DDMC and the DTPC:

According to the District Planner, the district has a Disaster Management Committee. This structure is supposed to coordinate disaster response and management at the district level. However, the structure was created but it is not functional. The District also has a district Technical Planning Committee (DTPC) but the DTPC has not discussed climate change issues as a priority agenda. The committee is headed by the CAO and all heads of departments are members. The District Planner noted that not much has been done. He noted that some sectors have sector specific plans at departmental level

but climate change issues have not yet been mainstreamed into the District Development Plans. He also noted that since they Otuke was granted district status, they have not yet experienced any disaster which calls the team to act.

Presence of an Early warning system:

According to the District Planner, there is no disaster early warning system in place at the district.

Information flow in the district during disasters:

According to the District Planner, there are mechanisms for information flow in the district. These provide an opportunity for establishment of an early warning system. In case there is a disaster in the community, people report to the Sub-county which reports to the district and the district reports to OPM and report to line ministry depending on the nature of disaster.

Capacity of the district to plan and implement climate change adaptation strategies:

According to the District Planner, the district does not have enough capacity to plan and implement climate change adaption strategies, considering the present funding and human resource.

District officials' understanding of climate change issues:

According to the District Planner and the Natural Resources Officer, the district officials recently had a two weeks training on climate change and this gave as a good introduction to climate change. This was the first of this kind in the district. However, the District Natural Resources Officer feels this was not enough and proposed the need for further training and leadership in climate change mitigation.

Resources for climate change adaptation:

According to the District Planner, whereas the districts have not been involved in the planning for climate change adaptation strategies, CSOs have been undertaking some work. However, he notes that CSO budgets for their operations are very large and non-sustainable for the districts. Districts rely on Conditional Grants from the Ministry of Water and the Environment (MWE) and non-conditional grants from the Ministry of Finance which are small. Recently, the districts have received funds for tree planting from the NUREP program in the Office of the Prime Minister

Needed capacities:

Key informants at the district level proposed some capacity needs that have to be addressed. Firstly, they noted, different departments in the district should have substantive staff to run the climate change programmes. In addition, politicians at lower levels who are the community mobilisers need to be sensitized so that they can mobilize and sensitize people in their localities. Furthermore, the district and Sub county staff needs further training for better understanding of climate change issues.

4.4.3 Conclusions on institutional context related to climate change

1. Activities to address climate change adaptation are just starting to gain momentum at all levels. A lot needs to be done to develop capacities at all levels
2. There are insufficient resources for climate change adaptation at all levels
3. There are insufficient mechanisms for coordination of stakeholders in climate change related risk reduction
4. Currently CSOS.NGOs are implementing the bulk of climate change related programmes at the lower levels

4.5 Underlying Causes of Vulnerability

4.5.1 Analysis of impact of policies and programs on access to and control over critical livelihoods resources

National level policy impacts

Access to climate change data and its dissemination:

According to the PFCC, the PFCC has pooled some data from international forums. This information is disseminated to the climate change unit. However, the current challenge is how to cascade this information to the districts and the lower levels.

District level policy impacts

Implementation of climate change policies at the district:

According to the district planner, policy implementation on climate change is not yet adequate. However, there are a number of CSOs involved e.g. those under the Global Water Initiative Consortium that are operating in Otuke and are implementing some programs relating to climate change. They are duly recognized by the districts as partners in development. According to the District Planner, the CSOs have the capacity both financial and human resource to effectively plan and implement such programs. He notes that they have been instrumental in supporting the climate change adaptation efforts in the districts.

Presence of an early warning system:

According to the District Planner, there has been no sectoral guidance from the centre on establishment of an early warning system. He notes that the district rely on CSOs and NGOs to Supplement Government capacity which is a need because the capacity is not there. He noted that while information comes in to the center, it is often politicized and may not be as useful to the communities; often times it comes too late. He also notes that information is not getting to the communities that actually need it. According to the District Natural resources coordinator, IUCN introduced the topic of climate change about 3 to 6 months ago at the community level but it has not been fully understood. They targeted the youths who are mainly involved in tree cutting for charcoal. He notes the need to mobilize the community and train them in the area of climate change and this can be done by training the local leaders to go and train the community.

Institutions working in Otuke addressing Climate change issues:

The District Natural Resources Officer notes that apart from the Global Water Initiative consortium and IUCN, there have been no CSOs focusing on climate change risk reduction in the district. At the district level there are Local Environment Committees which have also been created at the sub county level. However, much as they have been created, there is a very big gap in their capacity for example most of them if not all do not know what they are supposed to do. So they need training. In addition, he notes

that the districts and the sub counties should come up with bylaws and ordinances to protect the environment.

Role of CSOs in climate change program implementation:

CSOs like those in the GWI consortium have been involved in planning, implementation as well as monitoring and evaluation. Districts note that CSOs are actually the ones taking a lead in climate change related programs at the community level in the district. Recently the NUREP program under OPM opened some funding for NGOs and CSOs, related to promotion of tree planting. Because NGOs have to compete for these funds, they have been contacting the districts to seek approval for their community level operations in the district. Such incentives are encouraged.

Predictions:

The District Natural Resources Officer noted that the district gets access to quarterly reports but they are quite inaccurate. He notes that Uganda has several micro climates and it is therefore it is very difficult to give independent predictions of these micro-climates, thereby resulting in predictions that are not specific enough.

He also noted that whereas Uganda does fairly well in providing the quarterly and biannual predictions, the biggest challenge has been in translating and utilization of the predictions in valuable programming for support of the communities which may be affected. This information is not passed on to the people who need to know what should be done and who should advise the community. He cites the National Agricultural Advisory programme (NAADS) which is supposed to advise farmers on when they should be planting – it has a NAADS officer in each district in addition to the District Production Coordinator but they do not access this information to disseminate it to the farmers in time. He notes that even the line ministries are not getting the information they need on climate change (including the Ministry of Agriculture and the Ministry of Health). He concludes that such information should be given to enable ministries plan better. This may be due the fact that we do not factor health into DRR.

Possible sources of funds:

The District Natural Resources Coordinator noted the need for improved funding for climate adaptation activities. He notes that Government should look at climate change adaptation as a long time investment whose benefits will come over time.

Sub-county level policy impacts

Disaster related information flow:

Sub-counties usually get information from the district on disasters. However, because of lack of a coordinated plan, information is not usually sufficient to empower communities.

Presence of disaster preparedness plans:

Sub-counties note that there are no disaster preparedness plans at the sub county level much as they received information from the district on how to create them

NAADS:

The NAADS is coordinating agricultural initiatives in our area. It gives out seeds (ground nuts and sorghum) that grow fast and those that can withstand the drought as well as upland rice. There is however need for more involvement of the NAADS programme in climate change resilience education for communities

General Information flow at the Sub County level:

According to the sub-county officials, there are mechanisms for dissemination of information from the sub-counties to the lower levels. When there is any information for dissemination at the community level, from the Sub County, it goes to the Parish Development Committee (which is made up of LC1 chairmen) who then disseminates it to the LC committee which disseminates to the community. However, these mechanisms have not yet been adequately used for dissemination of climate change information.

Budgetary allocation for climate change adaption:

According to the sub-county key informants, budget allocation for Disaster Risk Reduction is a key challenge that affects programming and is one of the greatest challenges the sub-counties are facing. They note that the sub-county usually puts a token figure of 100,000/= for emergencies but this is grossly inadequate.

Policy Impacts at the Community level in Ogor sub-county

Access to early warning for climate hazards:

According to the male FGDs, people have access to early warning for climate hazards. This is mostly through:

1. Radio messages including weather forecasts
2. Observations from neighbors and other opinion leaders in the community
3. When there is a very dry grass layer, there is a high risk of bush fires
4. When smoke is seen in the fields, it is important to clear the area around the home because fire will approach soon
5. Warnings also come from the birds, animals and frogs
6. Even years are considered locally to have a lot of rain while odd years are considered for scarce rain
7. In the past, the rains used to come in mid-march. When the rains delay, the farmers now use this period as an opportunity to prepare the land. When the rains do not come in March, the farmers now start to prepare the gardens in April because they know the rains will come in May.

Social and economic safety nets available to households:

Most FGD respondents noted that overall the social safety nets were limited nowadays. They were more organized during the times of the insurgency, up to 2007. Some of the existing social economic safety nets for households that were cited include:

1. Four children per household are supported on the UPE programme

2. The Universal Secondary Education programme pays half of the school fees so that parents contribute the other half that includes the school uniform and welfare fees for the child
3. ACDI/VOCA provides food to HIV/AIDS patients
4. CARE and ACF train people while VSLA and ACF gives loans of between 300,000/= and 700,000/= to most vulnerable individuals
5. NAADS provides services to groups in terms of improved crop varieties and seeds (e.g. beans and ground nuts). About 14 households have been supported from each parish
6. NAADS provided improved animal breeds (e.g. goats, cows, oxen), as well as ox-ploughs to only 4 households per parish; however, participants note that most people who received the bulls were the ones who were better off economically
7. NUSAF provides seed funding to organized groups; groups should constitute at least 14 people. About 10 Million shillings is given per village
8. Community Driven Development (CDD) gives 3 to 5 Million shillings to groups of 30 people. This money is for goat rearing and is tied to hygiene and sanitation performance in the village.
9. ACF supported the communities with money for buying agricultural tools for 5 of 20 most vulnerable households in each village
10. IUCN, CRS and ACF have supported the drilling of bore holes; UNICEF has also supported the construction of water sources
11. IUCN is involved in promoting protection of the environment through tree planting and also diversification of livelihoods through animal husbandry.

Financial services available to households:

According to FGD participants, financial services are not directly available to households. Available services are usually targeted to groups. Some of these are digging groups (Akiba) but some are drinking groups. However, respondents noted that these services are not accessible to those who cannot afford savings.

Knowledge and skills to employ adaptation strategies:

Asked whether people have the knowledge and skills to employ adaptation skills, most male FGD participants reported that this was not so, as the majority of people neither have the knowledge nor the skills.

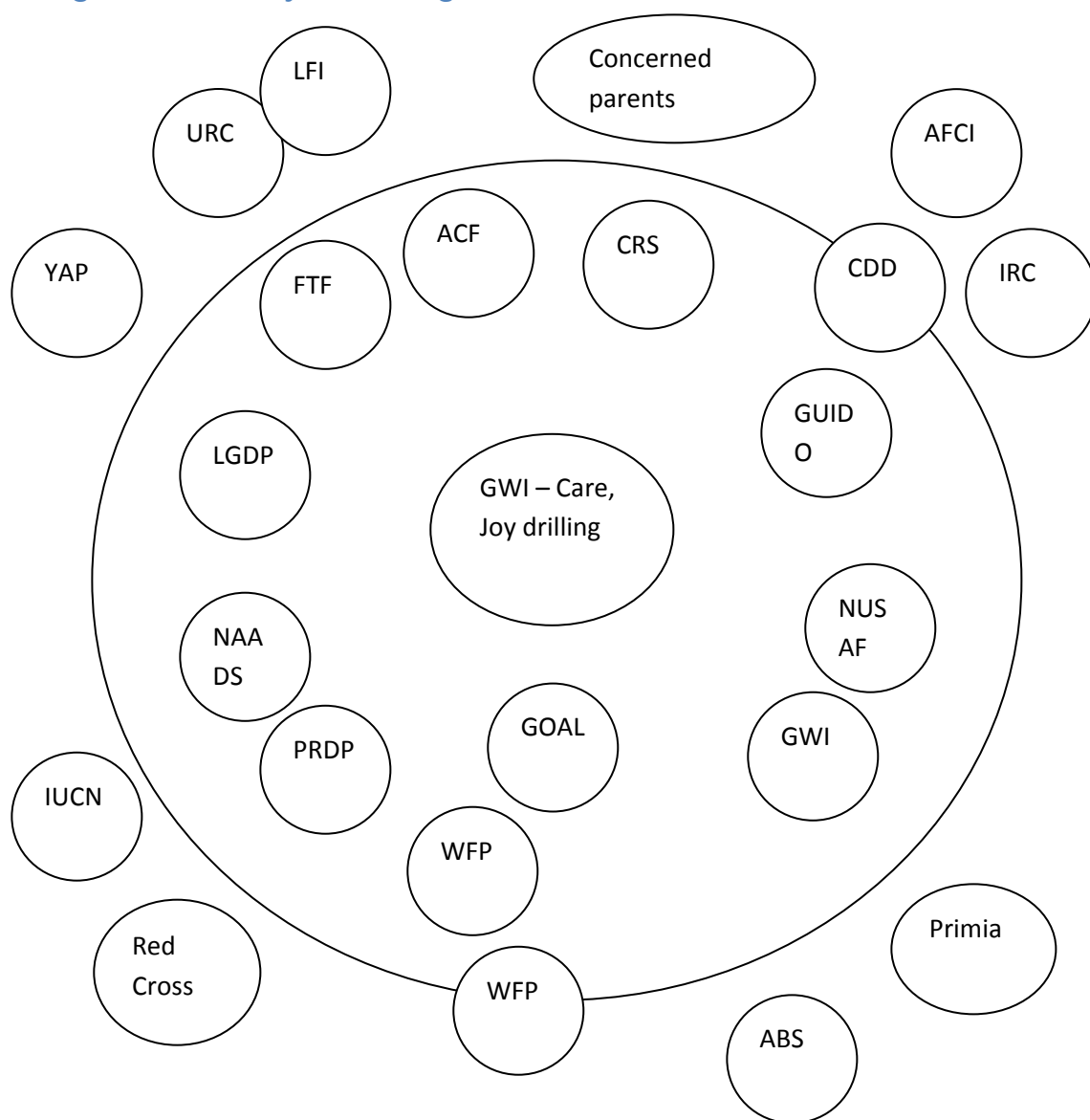
However, female FGD respondents reported that they had some knowledge and skills to adapt to changes in the climate. Some female respondents reported that during the drought, they borrow money from the savings groups, which they use to brew alcohol. The alcohol is then sold to generate income, which can be used to purchase food. Others make ropes, brooms and other crafts, while some collect firewood for sale. Women FGD respondents reported that they have skills in petty trade, but often cannot apply them due to lack of capital. The men on the other hand work as casual laborers and do not require a lot of skills.

Access to seasonal fore-casts and other climate information:

Asked whether people have access to seasonal fore-casts and other climate information, FGD participants reported that this was true. For example, people usually plant from the 1st to the 15th of March, in anticipation of the rains which come in mid-march. People who have access to radios sometimes receive messages when it is due to plant. However, FGD participants reported that the weather fore-casts are usually unreliable and they mostly rely on local predictors. According to the female FGDs, communities are only able to forecast consequences of poor climate – for instance, when the harvest is small or there is too much sunshine, they expect poor harvests and famine.

Venn diagram for Ogor Sub-county:

Figure 3: Ogor Sub County Venn diagrams



Issues arising from the Venn Diagramming:

Whether the available services are offered to both men and women: According to the FGD participants, available services are accessible to both men and women.

Where there are any groups excluded from membership in the organisations supported: According to the FGD participants, currently no specific groups of people are excluded from services except those who are lazy, and those who are not willing to join and work as groups.

Organizations that offer support in times of crisis: These include:

1. The World Food Program

2. The ACF (Action against hunger)
3. The government, which provided food drops during the famine

Other organizations include:

1. Catholic Relief Services
2. CARE Uganda
3. GWI
4. Farmer to Farmer
5. WFP
6. CDD
7. NAADS
8. NUSAF
9. PRDP
10. Uganda Red Cross Society
11. LGDP

How information is received from different support organisations:

According to the FGD participants, information about available programmes is received in different channels but especially through local leaders, and church leaders. Others include radio, phone, letters, school pupils, churches as well as the drinking 'joints'. Phone calls and messages are now also becoming more common.

How communities communicate information to the different organizations:

According to the FGD participants, communities communicate through

1. The local leaders (from LC I to III)
2. Directly to the NGO representatives and field personnel
3. Through the elders and opinion leaders
4. Through writing letters of application when there is a specific opportunity
5. Physical communication with NGO staff when they come to the field

Questions that were raised after the mapping exercise

1. During the mapping, it was realized that while some areas had clean water sources, others had un-safe water – what can be done about this?
2. The community is facing famine in the future – how can they be assisted with improved seeds for planting early enough?
3. How can the education system in the sub-county be improved?

Policy Impacts at the Community level in Olilim sub-county

Social and economic safety nets available to households:

The FGD respondents agreed that there are some existing social and economic safety nets for households, but the options available had relatively limited coverage. Those cited include:

1. ACF gives loans of between 300,000/= and 700,000/= to most vulnerable individuals
2. World Vision is giving seedlings and ox-ploughs to groups of about 18 members

3. VSLA groups have been formed, which are supported with loans
4. NUSAF is giving seeds and ox-ploughs
5. The District Local Government is constructing primary schools and teachers' quarters
6. NAADS provides services to groups in terms of improved crop varieties and seeds (e.g. beans and ground nuts), improved animal breeds (e.g. goats, cows, oxen), as well as ox-ploughs.
7. CARE, CRS and AAH are providing safe water, supporting VSLAs and training communities in sanitation and hygiene

Financial services available to households:

According to FGD participants, there are some financial schemes in the sub-county, including:

1. SACCOS and VSLA programmes which are giving out loans
2. The disabled have been organized into groups of 25 members and given loans
3. Some women groups were also given 1 Million shillings

Knowledge and skills to employ adaptation strategies:

Asked whether people have the knowledge and skills to employ adaptation skills, FGD participants in Olilim reported that most people have not yet acquired the appropriate knowledge and skills to adapt effectively to climate change. However, some people in the sub-county have developed skills in some areas like:

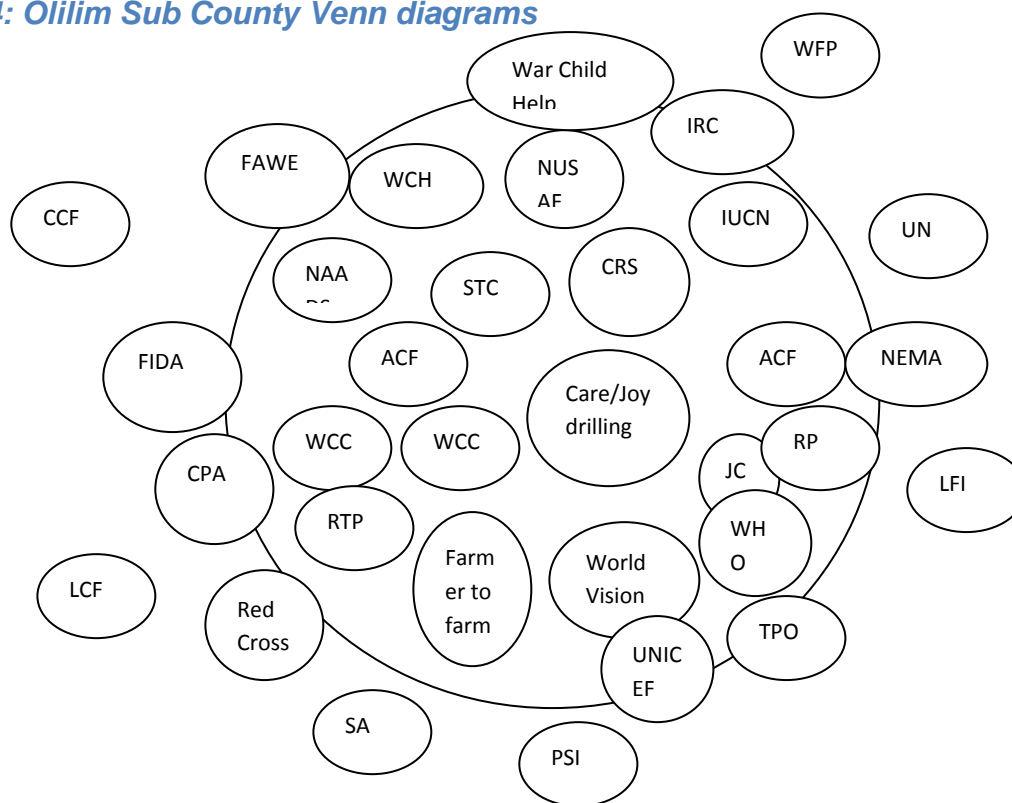
1. Planting food crops that withstand harsh climatic conditions
2. VSLAs have become widely understood and many people have joined. However, peoples' savings are still at a very low scale
3. Some people have developed skills in animal rearing
4. Others have developed skills in brick making
5. Some NGOs have been training youth in vocational skills like tailoring and carpentry

Access to seasonal fore-casts and other climate information:

Asked whether people have access to seasonal fore-casts and other climate information, FGD participants from Olilim reported that this was true. Information was mainly from the radio – especially the weather forecasts. The local leaders also obtained information from news papers and passed it on.

Venn diagram for Olilim Sub-county

Figure 4: Olilim Sub County Venn diagrams



Discussion of issues arising out of the Venn Diagramming for Olilim:

Whether the available services are offered to both men and women:

According to the FGD participants, available services are accessible to both men and women.

Where there are any groups excluded from membership in the organisations supported:
According to the FGD participants, currently no specific groups of people are excluded from services.

Organizations that offer support in times of crisis:

These include:

1. The World Food Program
2. The ACF (Action against hunger)
3. The government, which provided food drops during the famine

How information is received from different support organisations:

According to the FGD participants, information about available programmes is received in different channels but especially through parish leaders, who communicate directly or through announcements. Others include churches and telephone

How communities communicate information to the different organizations:

According to the FGD participants, communities communicate through the existing local structures. For instance, they attend meetings convened by the local leaders, who then pass on the resolutions to those concerned.

4.5.3 Participation (particularly of vulnerable groups) in policy decisions at national and local levels

Participation of vulnerable groups at the community level:

Men and women working together to address climate change related challenges in Ogor:

According to the male FGDs, most men and women are working together to address climate change related challenges. This was exemplified by the following:

1. Weeding of the gardens, sowing and harvesting is done by both men and women
2. Both are involved in the village groups
3. Harvesting of the valuable shear nuts involves both

However, the women FGD participants disagreed with the men. They report that most men are drunkards. This was further supported by the youth FGDs who noted that in times of famine, the men usually abandon the women and the children, leaving them to face the hunger alone. Women have to look for greens and other forms of food to feed their family. In addition, men do not want to take the girl children to school beyond Primary School because of the perception that girls will be married off. Other men argue that since Senior 4 graduates do not get jobs easily, then boys should also spend more time rearing the animals instead of going to school.

Men and women working together to address climate change related challenges in Olilim:

According to the male FGDs, there is evidence that men and women are working together to address climate change related challenges. This was exemplified by the following:

1. Both men and women are involved in the VSLA groups
2. Farming is done by both men and women
3. Brick making is done by both men and women
4. Petty business at household level and in the markets is also done by both men and women

However, the female FGDs disagreed, noting that men spend a lot of time taking alcohol while the women hassle.

4.5.4 Inequalities within communities or households which exacerbate vulnerability

Inequalities that exacerbate vulnerability at household level in Ogor

Household control over critical livelihood resources:

According to the FGDs, respondents were affirmative that households have a degree of control over the resources. However, this was mostly with regard to resources generated through subsistence farming. The women too concurred that they had control over their animals and crops, as well as their savings in their associations.

Level of women's and other marginalized group's access to information, skills and services:

The male FGD respondents think that women have access to information and skills and most female FGD respondents also concurred. However, female FGD respondents note that a few of their colleagues, mostly the men, do not have equal access. This is because most women stay at home and information reaches them before it reaches the men.

Level of women's and other marginalized group's access to resources:

The male FGD respondents think that women do not have equal rights and access to resources. The FGDs report that men control the resources and often sell off what has been produced in the households. Men also spent a lot of the money earned from household resources on drinking. According to the female FGD participants however, most women have equal access to resources. However some women have 'selfish' husbands who forcefully take the money the women have borrowed from the savings groups and spend it on alcohol. In addition, women do not have equal right on property and land, especially those who get married to someone but hail from another sub-county as the men claim the land is ancestral.

Other social, political and economic factors that make particular people within the community more vulnerable:

According to the male FGDs, there are other socio-economic factors contributing to vulnerability, especially the lack of awareness about their vulnerability, as well as the over reliance on subsistence farming. However, the women FGDs do not mention any other factors.

Ability of vulnerable groups to exert influence on the vulnerability factors:

According to the FGDs, the vulnerable groups have influence on the vulnerability factors. Measures include encouraging Afforestation and tree planting, planting at the right time of the year, avoiding destruction of swamps and wells, avoiding bush burning, and encouraging food storage. However, the women FGD participants think vulnerable people have no influence on these factors.

Inequalities that exacerbate vulnerability at household level in Olilim

Household control over critical livelihood resources:

According to the FGDs, respondents were affirmative that households have a degree of control over the resources; both men and women agree on the sale of household assets and properties and there is usually general agreement at household level before decisions are made. However, the female FGD respondents disagree entirely with this. They note that men have control of the critical resources in the household, especially the land. When a woman plants crops on the ancestral land, the men claim the crops

are theirs because they were planted on their land and they insist that they will be the ones to sell the produce.

Level of women's and other marginalized group's access to information, skills and services:

The male FGD respondents think that women have access to information. Community capacity building activities are taking into consideration both men and women. However, female FGD respondents noted that while access to information was equal, access to skills was not equal.

Level of women's and other marginalized group's access to resources:

While in Ogor, men reported that women did not have equal access to resources, the same was not observed for Olilim. In Olilim, most men think that women have equal access, and are equally involved in digging and selling off produce. However, female FGD participants noted that women and children have almost no rights of ownership of resources, even when they work hard to get them.

Other social, political and economic factors that make particular people within the community more vulnerable:

According to the male FGDs, there are other socio-economic factors contributing to vulnerability, especially political interference by local governments in some activities. In addition, the government policy that allows freedom on land use promotes the Karimojong attacks.

Ability of vulnerable groups to exert influence on the vulnerability factors:

According to the FGDs, the vulnerable groups have influence on the vulnerability factors. Measures include encouraging re-forestation and tree planting and planting quick maturing crops (e.g. soya beans, sun-flower, and green peas. Some community members have stopped cultivating in the wetlands, after realizing its negative effects, while others have abandoned the practice of bush burning.

4.5.5. Institutional mapping:

There are several local and international institutions working at Regional and district level implementing programs that are related to climate –resilient livelihood and climate-change adaptation. Those that were consulted during the assessment include:-

Each of these organizations has specific programs and Activities in specific area targeting particular categories of people.

Table 9: Organizations that are involved in Climate change adaptation program implementation

Organization	Area of operation	Target population	Program/Activities related to Climate – resilient livelihood
Beads for life	¾ Otuke district	Women (760 women)	Agro business: Promote protection of Sheer nut tree
IUCN	Ogor – Agago; Odit – Moroto; Amonjor – Dokolo; Okwochwa – Moroto (14 parishes in Otuke)	HH in Hydrological units/Water shades; Water resource users	Mobilize and train Water Resource users (charcoal burners, rice growers, domestic water users, cattle keepers)
CRS	Olilim, Ogor, Orom S/Cs (7 parishes)	HHs, VHTs, Village Mentors	Focus on IWRM and WASH; Community training; tree planting
German Agro action (Welt Hunger Hilfe)	Lira, Otuke and Oyam	2500 farmers,	Tree planting, Improved agricultural practices, Promoting low cost cooking stoves
World vision- Lira	Oyam, Pader, Otuke (Olilim, Orum, Ogor),	1500HH	Promote improved farming methods,
ACF	All 6 S/Cs in Otuke, 2 parishes in each	Those ever faced GBV (90% women)	Food security, Women economic empowerment against GBV (Cash transfers) WASH
TPO	Lango region	Children; youths, women; disabled and elderly.	Social protection Research: Vulnerability Risk Assessment
Joy drilling	Ogor, Orum, Olilim, (16 parishes) Oyam	Community, 320 HH	Advocacy for IWRM, Rehabilitation and Construction of boreholes, establishment of wood logos
International life lines Fund	National	Households	Promoting low cost cooking stoves (KUC Okello stove)

All these organizations are characterized by structures to the grassroots level as a strength which they operate through.

Whereas most NGOs were implementing programs related to promoting climate-resilient livelihood, they were not actually aware that their programs are linked to/inline with fundamental climate change adaptation strategies.

4.5.6. Conclusions on underlying causes of vulnerability

1. At national level, there is inadequate coordination and collaboration among different stakeholders who are addressing different aspects related to climate change
2. There is no climate change early warning system at both nations and local levels.
3. There are no clearly documented policies and bylaws addressing climate change issues at district and Sub County levels.
4. The district has limited capacity in terms of human resources, financial resources and technocratic resources to adequately address climate change related issues.
5. The planning processes at both Sub County and district levels are participatory in nature with clear consideration of vulnerable groups.

6. There are several Local and international institutions involved in addressing climate related challenges. However many of them implement these activities without clear understanding of their linkages with climate change.

5.0 General Recommendations

Based on the key findings of the needs assessment, the assessment team makes the following key recommendations:

1. Care Uganda should prioritize capacity building/awareness and training on climate change for all stakeholders including district leaders, sub-county leaders, institutional (school and church) leaders and communities own resource persons.
2. There is need to raise the awareness of NGOs implementing aspects of climate change adaptation strategies to full awareness of the contribution of their initiative for better streamlining and focused service delivery.
3. Otuke district local government should supported in its planning process for creation of a district Disaster Preparedness plan and District DRR plan while ensuring that climate change issues as put in perspective
4. While implementing this project, Care Uganda should establish partnerships with other relevant CSOs who are involved in specific climate –resilient livelihood programs have established structures.
5. Otuke district Local government should be supported in creating partnerships and lobbying for funds to facilitate planning and implementation of climate change adaptation strategies.
6. Care Uganda should prepare policy brief(s) to inform and influence relevant policy review and the upcoming Climate Change Policy formulation.
7. Community food saving systems like granaries need to be revisited and revitalized for community food sustainability.
8. Community awareness should be raised with regard to water shed management, including protecting vegetation and planting trees and preventing wetland degradation
9. There is need to establish a clear flow of weather information from the national level to the district level as well as to the different relevant sectors.
10. Otuke district through the CDO office should establish a forum for information sharing for all the local and international organizations implementing programs/projects and activities linked to climate change adaptation and resilient livelihood.
11. The metrology department in partnership with Care Uganda and Otuke district Local govern should provide timely and accurate data to the different planning departments establish a clear feedback mechanism for the utilization of the provided metrology data by the different end users like farmers.
12. The Otuke DLG should expedite the process of formulation and enacting of by laws that promote climate change resilient lively hoods among the community member.
13. Otuke DLG should solicit for more funds to facilitate planning and implementation of climate change resilient livelihood promotion programs.
14. While addressing climate change related challenges in the district, the Otuke DLG should also address holistically other development issues including infrastructure (roads, schools and health facility buildings), insecurity and domestic violence among others.

References

1. The CARE – CVCA Handbook
2. Situational Analysis Report on Capacity for Disaster Response and Management in Uganda, Health Emergencies Management Project, School of Public Health Makerere
3. Program documents for the CVCA Project

Annexes

Annex 1: Community FGD discussion guide:

Community FGD discussions guide:

General questions

1. How villages are in this Sub County (Ogor/Olilim)
2. When was the sub county established? (if recent (less than 2 years), what was the original sub county?)
3. What is the **estimated** population in the sub county?
4. Estimate the composition of the different categories of people in the community (Men, Women Children, Youths) (*may be percentage*)
5. How many health units, schools (primary, secondary, tertiary), prayer places (churches, mosques, others), markets, water sources are in the sub county.
6. What is the political arrangement (comment on the relationship between ruling party and opposition) (do not let this go out of hand)

Resilient Livelihoods

1. What are the most important livelihoods¹⁰ resources to different groups within the community¹¹? (specify by category)
2. What changes in climate is the community observing? (specify these with clear explanations)
3. Do you have weather prediction systems in place in this community? (specify the systems and how they are operate)
4. Are these weather prediction systems working? (if not explain why. Probe furthers for details on where they are, who manages them, the state in which they are etc.)
5. What coping strategies¹² are currently employed to deal with shocks and stresses? (details on who is involved (role of different stakeholders))
6. Are people generating and using climate information for planning? (if no, explain why. If yes, probe for details, on what information, who in charge, how it is being used)
7. Are households employing climate-resilient agricultural¹³ practices?
8. Do households have diversified¹⁴ livelihoods strategies? (if no why? If yes, discuss the different alternatives of different groups in community)
9. Are people managing risk by planning for and investing in the future? (If no why? If yes, probe for examples)

¹⁰ Means of earning a living e.g. occupation or employment

¹¹ The respective Sub County

¹² Short term, reactive strategies for reacting to effects of climate related hazards like floods, water shortage etc

¹³ Methods that are mean to counter effects of climate change like using manually operated weather station, artificial insemination for cows, improved water harvesting structure, use of drought resilient seeds

¹⁴ More than one source

Disaster Risk Reduction

10. What are the biggest climate-related hazards ¹⁵ faced? (list all of them the rank)
11. Non-climate related hazards?
12. How are hazards likely to change over time as a result of climate change?
(discuss the top five)
13. Do households have protected reserves of food and agricultural inputs? (if)
14. Do households have secure shelter? (from their perspective)
15. Are key assets ¹⁶ protected from hazards? (if no why? If yes, discuss the details)
16. Do people have access to early warnings for climate hazards? (if no why? If yes, discuss the details)
17. Do people have mobility to escape danger in the event of climate hazards? (if no why? If yes, discuss the details)

Capacity Development

18. Are social and economic safety nets ¹⁷ available to households?
19. Are financial services ¹⁸ available to households?
20. Do people have knowledge and skills to employ adaptation strategies ¹⁹?
21. Do people have access to seasonal forecasts and other climate information?

Addressing Underlying Causes of Vulnerability

22. Are men and women working together to address challenges related to climate change? (if no, why, if yes, discuss details)
23. Do households have control over critical livelihoods resources? (if no, why, if yes, discuss details)
24. Do women and other marginalized groups have equal access to information, skills and services? (if no, why, if yes, discuss details)
25. Do women and other marginalized groups ²⁰ have equal rights and access to resources? (if no, why, if yes, discuss details)
26. Are there other social, political or economic factors which make particular people within the community more vulnerable than others? (discuss details)
27. Do these vulnerable groups have any influence over these factors?

¹⁵ Remember definition of hazards

¹⁶ Those that the households consider as valuable

¹⁷ Social and economic safety nets are non-contributory transfer programs seeking to prevent the poor or those vulnerable to shocks and poverty from falling below a certain poverty level. Safety net programs can be provided by the public sector (the state and aid donors) or by the private sector (NGOs, private firms, charities, and informal household transfers). Safety net transfers include: Cash transfers, Food-based programs such as supplementary feeding programs and food stamps, vouchers, and coupons; In-kind transfers such as school supplies and uniforms; Conditional cash transfers; Price subsidies for food, electricity, or public transport; Public works and Fee waivers and exemptions for health care, schooling and utilities

¹⁸ Microfinance, loans, saving schemes

¹⁹ Long term continuous, planned actions to deal with the effects hazards of climate change on a sustainable manner

²⁰ Children, disables, People living with HIV, youths

Group discussion from field guide 2 - 6

Learning and Discussion for group discussions after drawing map (after guide tool 2)

1. When the map is complete, ask the group members the following questions:
2. Who has access to the resources shown on the map? Who controls this access?
3. What are the impacts of the hazards identified?
4. Are the hazards different now than they were 10/20/30 years ago (depending on age of participants)? How?

Learning and Discussion group discussions after drawing seasonal map(after guide tool 3)

1. When the calendar is complete, ask the group members the following questions?
2. What are the most important livelihoods strategies employed at different points of the year?
3. What are current strategies to cope during the difficult times? Are they working?
4. Are there any differences in the timing of seasons and events as compared to 10/20/30 years ago?
5. Have livelihoods/coping strategies changed based on the changing seasons or events?
6. How are decisions made on timing of livelihoods strategies?
7. Are these safe places used to protect from hazards (e.g. to store food and inputs, or to shelter livestock)?
8. Who are the members of the community who are most at risk from the different hazards? Why?
9. How do people in the community currently cope with the impacts of the specific hazards identified?
10. Are the current coping strategies working?
11. Are they sustainable?

Learning and Discussion Questions after drawing historical timeline (after guide tool 4)

1. When the timeline is complete, ask the group members the following questions:
2. Are there any trends or changes in the frequency of events over time?
3. What are current strategies to cope during the difficult events? Are they working?
4. Have coping strategies changed based on the changing frequency of events?
5. What events do you expect will occur in the future? When?
6. Does this perception of future events affect your plans for the future?

Learning and Discussion Questions after drawing vulnerability matrix (after guide tool 5)

1. What coping strategies are currently used to deal with the hazards identified?

- Are they working?
2. Are there different strategies that you would like to adopt which would reduce the impact of hazards on your livelihoods?
 3. What resources do you have that would help you to adopt these new strategies?
 4. What are the constraints to adopting these new strategies?
 5. The note taker should carefully transcribe the key points of the discussion

Learning and Discussion Questions after drawing ven diagram (after guide tool 6)

1. Are any of the organizations shown only open to membership by men or women?
2. Do any only offer services to men or women?
3. Are there any other groups that are excluded from membership or service for the organizations identified?
4. Do any of the organizations offer support in times of crisis?
5. How do you receive information from the different organizations?
6. How do you communicate information to the different organizations?

Annex 2: District level Key Informant interview guide

Local Government/Community Level (Otuke district)

Resilient Livelihoods

1. Are scaled-down climate projections available? If so, what are the observed and predicted impacts of climate change for the region and/or ecological zone?
2. Do local institutions have access to information on current and future climate risks?
3. What livelihood groups or economic sectors are most vulnerable to climate change?
4. Do local plans or policies support climate-resilient livelihoods?
5. Do local government and NGO extension workers understand climate risks and promote adaptation strategies?

Disaster Risk Reduction

1. What are the most important climate-related hazards the region and/or ecological zone faces? Non-climate related? How are hazards likely to change over time as a result of climate change?
2. What groups within the community are most vulnerable to disasters?
3. Do local institutions have access to disaster risk information?
4. Are local disaster risk management plans being implemented?
5. Are functional early warning systems in place at the local level? Does the local government have the capacity to respond to disasters?
6. Which other institutions are engaged disaster risk management at local level?

Capacity Development

1. What institutions (governmental and non-governmental) are involved in research, planning and implementation of adaptation?
2. What are the most important institutions in facilitating or constraining adaptation?
3. Do local institutions (governmental and non-governmental) have capacity to monitor and analyze information on current and future climate risks?
4. Are mechanisms in place to disseminate this information?
5. Do local institutions have capacity to plan and implement adaptation activities?
6. Are resources allocated for implementation of adaptation-related policies?
7. What is the budget?
8. Where are the resources coming from?
9. What are the existing capacity and resource needs and/or gaps for climate change adaptation?
10. What new capacities may be needed to address changing circumstances due to climate change?

Addressing Underlying Causes of Vulnerability

1. What social groups within the community are most vulnerable to climate change?
2. Are local planning processes participatory?
3. Do women and other marginalized groups have a voice in local planning processes?

4. Do local policies provide access to and control over critical livelihoods resources for all?
5. What are the other factors constraining adaptive capacity of the most vulnerable groups?
6. Do vulnerable communities and groups have any influence over these factors?

Annex 3: National level Key informants interview guide

National level

Resilient Livelihoods

1. Is the government monitoring and analyzing current and future climate information related to livelihoods?
2. If so, is this information being disseminated? How? To whom?
3. What are the observed and predicted impacts of climate change for the country?
4. What livelihood groups or economic sectors are most vulnerable to climate change?
5. Is climate change integrated into relevant sectoral policies?
6. Is climate change integrated into poverty reduction strategy and/or other development policies and programs?

Disaster Risk Reduction

1. What are the most important climate-related hazards the country faces? Non-climate related?
2. Are there particular parts of the country that are vulnerable?
3. How are hazards likely to change over time as a result of climate change?
4. Is the government monitoring and analyzing disaster risk information?
5. If so, is this information being disseminated? How? To whom?
6. Is the government engaged in planning and implementation of disaster risk management? If so,
7. Which ministries and/or government agencies are actively involved?
8. Is climate change integrated into planning for disaster risk management?
9. Are functional early warning systems (EWS) in place at the national level?
10. Does the government have the capacity to respond to disasters?
11. Which other institutions are engaged disaster risk management at national level?

Capacity Development

1. What institutions are involved in research, planning and implementation of adaptation?
2. What are the most important institutions in facilitating or constraining adaptation?
3. Does the government have capacity to monitor and analyze information on current and future climate risks?
4. Are there mechanisms in place to disseminate this information?
5. Is an appropriate structure in place within the Government with a mandate to integrate climate information into relevant policies?
6. Is this information being integrated into relevant policies?
7. Are national policies rolled out at regional and local levels? Is the government responsive to local priorities?
8. Are resources allocated for implementation of adaptation-related policies? What is the budget?
9. Where are the resources coming from?

10. What are the existing capacity and resource needs and/or gaps for climate change adaptation?
11. What new capacities may be needed to address changing circumstances due to climate change?

Addressing Underlying Causes of Vulnerability

1. Do those responsible for climate change policies and programs demonstrate understanding of the link between poverty and climate change vulnerability?
2. Do those responsible for climate change policies and programs recognize the specific vulnerability of women and other marginalized groups to climate change?
3. Is this knowledge and recognition translated into policy and implementation of programs? Do policies and programs support empowerment of vulnerable groups?
4. Do vulnerable groups have advocates at national level?
5. Is civil society involved in planning for adaptation?

Annex 4: Institutional mapping guide

Institutional mapping will guiding questions:

1. Which organizations (governmental, non-governmental and community-based) are involved in addressing key issues and problems related to climate change?
2. What do they do?
3. Where do they work?
4. How do they interact with the target population?
5. Where are the overlaps with other organizations?
6. Where are the gaps in capacity?
7. How might some organizations impede the work of others?
8. What are their longer term plans for working in the area?
9. What are the strengths and weaknesses of the institutions?
10. What is the institution's level of influence over planning and implementation of adaptation?

Annex 5: Pictorial



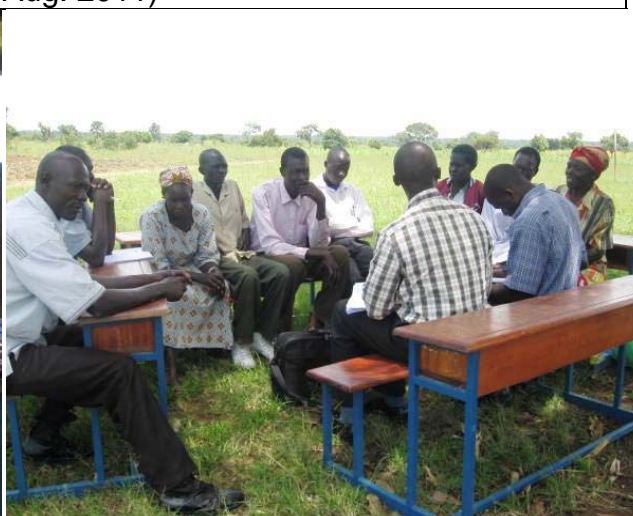
Above: Research Assistants' training at CARE Ug. Lira Office(25th Aug. 2011)



Women's FGD in Ogor Sub-County (26th Aug. 2011)



Men's FGD in Ogor Sub-County (26th Aug. 2011)



Local Leaders' FGD in Ogor Sub-County (26th Aug. 2011)



Women drawing hazards map in their FGD in Ogor Sub-County (26th Aug. 2011)



Men drawing hazards map in their FGD in Ogor Sub-County (26th Aug. 2011)



Women discussing historical timelines in their FGD in Ogor Sub-County (26th Aug. 2011)



Youths discussing vulnerability matrix in their FGD in Ogor Sub-County (26th Aug. 2011)



Women's FGD in Olilim Sub-County (27th Aug. 2011)



Youths' FGD in Olilim Sub-County (27th Aug. 2011)



Local leaders' FGD in Olilim Sub-County (27th Aug. 2011)



Men's FGD in Olilim Sub-County (27th Aug. 2011)