INCREASING CLIMATE CHANGE ADAPTATION CAPACITIES OF AGRICULTURAL COMMUNITIES IN UGANDA

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Presented during GCCA+ event (19th June, 2018) at Adaptation Futures 2018
18-21 June 2018
Cape Town, South Africa
PRESENTATION OUTLINE

• Background to GCCA project action in Uganda – GCCA Phase I
• Barriers to climate change adaptation in Uganda at GCCA phase –I formulation
• Strategies and approaches to Climate Change adaptation (GCCA Phase I)
• Lessons learned for upscaling adaptation best practices in GCCA Phase II “GCCA+”
• The GCCA+ Uganda (GCCA PHASE II) Framework/Design
• Linking GCCA+ strategies and plans to National Paris Agreement commitments developed in Uganda NDC and NAPs
# PROJECT BACKGROUND – GCCA PHASE I

## PROJECT

**Global Climate Change Alliance (GCCA) - Uganda:**

Agriculture Adaptation to Climate Change

2012-2017

(54 months)

## FUNDING SOURCES / PARTNERS

- **EUROPEAN UNION,** with funding from the Republic of Ireland (*EURO 11 Million*)
- **ROYAL KINGDOM OF BELGIUM**
  - *EURO 3 Million*

## AREAS OF OPERATION & BENEFICIARIES

- Six districts in central cattle corridor of Uganda with awareness training, in 20 districts and national level interventions.
- Direct = 22,000 H.H

## IMPLEMENTING AGENCIES

- **FOOD AND AGRICULTURE ORGANIZATION (FAO)***
- **MINISTRY OF WATER AND ENVIRONMENT IN PARTNERSHIP WITH MINISTRY OF AGRICULTURE, ANIMAL INDUSTRY & FISHERIES***

## PROJECT OBJECTIVES

1. **Knowledge and capacities for climate change adaptation strengthened**
2. **Better access of livestock and crops to water**
3. **Resilience of agricultural production systems improved**

- **Human** – 1,921,278
- **Cattle** – 1,370,000
BARRIERS TO CLIMATE CHANGE ADAPTATION

• Lack of National Climate Change Policy as a guiding framework for adaptation and mitigation actions.

• Limited capacity at National and District level to implement and monitor CC project interventions

• Weak community / institutional structures and arrangements for participatory decision making process in identifying, assessing and managing adaptation strategies

• Low economic adaptive capacity due to high exposure to climate change impacts and limited households' access and ability to sustain adaptation strategies
STRATEGIES AND APPROACHES TO CLIMATE CHANGE ADAPTATION

National Level:
Strengthening technical and functional capacities of key national institutions for climate change adaptation

- Supported the mainstreaming of climate change into District development plans, National Development Plan and popularization of National Climate Change Policy
- Strengthened capacity of the Climate Change Department as well as increased knowledge base on Climate Change Adaptation
- Partnership with National Agriculture Research Organization to promote improved and drought resistant crop varieties and pasture
- Partnership with the Forest Sector Support Department to establish bio-energy plantations and promote efficient bio-energy production technologies.
- Partnership with Ministry of Water and Environment; and Ministry of Agriculture, Animal Industry and Fisheries to establish & manage community level water for production facilities
- Partnership with Makerere University to establish district knowledge management and communication systems for CCA
STRATEGIES AND APPROACHES TO CLIMATE CHANGE ADAPTATION

District Level

**Strengthening technical and functional capacities of District Local Government for climate change adaptation:**

- District, sub county and NGO staff from targeted districts were equipped with skills on promoting community based adaptation and as a result 6 district climate change task forces were established to enhance stakeholder coordination, knowledge sharing and awareness on climate change.
- District local government officials were trained as champions for mainstreaming climate change into district plans and budgets as a result.
- District NGO Implementing partners working directly with the Farmer Field School groups were trained on how to mainstream gender issues in climate change interventions and the use of the Gender Action Learning Systems.
- Knowledge Management and Communication System (KMCS) for climate change adaptation was established in each of the six districts which serve as a hub for the information needs of district local government technicians, planners, decision makers, civil society organizations, community members, farmers and pastoralists.
STRATEGIES AND APPROACHES TO CLIMATE CHANGE ADAPTATION

Community Level
Strengthening capacity of rural communities and community groups (commercial farmers, farmer groups, livestock keepers, etc.) to cope and adapt to present and future climate change impacts by enhancing their

- Knowledge adaptive capacity
- Economic adaptive capacity
- Institutional adaptive capacity
- Ecosystem adaptive capacity (pilot watershed management approach)

Through:
- Farmer Field Schools Approach as a mechanism for learning and organization in developing, testing and applying climate smart agriculture practices in the central cattle corridor.
Community-Based Adaptation Planning and Capacity building Process used in GCCA Phase I

- **Community Engagement**
  - Community mobilization and awareness raising

- **Participatory Vulnerability Assessment**
  - Determine/ assess exposure to CC risk
  - Assessing sensitivity
  - Assessing adaptive capacity

- **Community Adaptation Planning**
  - Identification and validation of adaptation options
  - Developing community adaptation plans & ME system

- **Implementation (including monitoring)**
  - Field-based demonstration and Application of adaptation options
  - Adaptive capacity building/ institutional & Technical

- **FAO Guidance, Support and GCCA Resources**

- **District Technical support and NGOs, CSO engagement**
CLIMATE CHANGE ADAPTATION FOR COMMERCIAL FARMERS (COFFER FARMERS)

ORGANIZATIONAL LEVELS AND FUNCTIONS

- **Uganda Coffee Farmers Alliance**
  - Registered Apex Organization
  - Coordination, market access, link to service providers, code of conduct

- **Depot Committees**
  - Registered Companies of 400-800 farmers
  - Bulking, value addition, logistics, quality control, marketing, access to service providers

- **Producer Organizations**
  - Village Groups of 20-30 farmers
  - Extension (Demo plots, Farmer Field Schools), collection of coffee
Some Key Achievements for building future interventions in the Central Cattle Corridor

- **Community capacity for CC adaptation strengthened**
  - 336 Farmer Field Schools (FFS) set up; tested/applying climate change adaptation measures for crops and livestock (10,000 H.H)
  - 700 hectares of bio-energy plantations established for fuel wood
  - 408 Farmer Field schools group organized for coffee adaptation (testing and applying adaptation options) (10,254 H.H)
  - 14 fodder-based-agro-forestry demos and 28 forage demo fields for cereal-legume integration established
  - 36 acres of community seed multiplication centres established

- **Small-scale water harvesting structures** constructed in six central cattle corridor districts (12,000 to 30,000 liters capacity)
  - 59 small-scale water harvesting structures
  - 20 Valley tanks (10,000 cu. m) established/rehabilitated to serve at least 40,000 heads of cattle during critical dry period
  - Piloted Community-based integrated watershed management interventions in 6 districts

- **Farmer field network** established
  - 11 Farmer field schools network established
  - 700 hectares of bio-energy plantations established for fuel wood
  - 14 fodder-based-agro-forestry demos and 28 forage demo fields for cereal-legume integration established
  - 36 acres of community seed multiplication centres established

- **Water management**
  - 59 small-scale water harvesting structures constructed in six central cattle corridor districts (12,000 to 30,000 liters capacity)
  - 20 Valley tanks (10,000 cu. m) established/rehabilitated to serve at least 40,000 heads of cattle during critical dry period
  - Piloted Community-based integrated watershed management interventions in 6 districts
As part of increasing knowledge base in climate change adaptation as well as helping to identify potential adaptation measures that can be scaled up in a systematic way, the GCCA project:

- **Conducted vulnerability assessments in 5 out of 10 Agro-ecological zones in Uganda** and based on the data generated, fact sheets were developed for 21 adaptation options for agriculture, water and environment sectors. Using additional criteria, 9 adaptation options were shortlisted for cost-benefit analysis: (a) Cover crops; (b) Improved maize variety; (c) Improved rice variety; (d) Improved cassava variety; (e) Improved beans variety; (f) Zero grazing livestock production; (g) Water harvesting; and (h) Low cost drip irrigation systems.

- **Participated in FAO global study to capture, validate, and disseminates “good practice” technologies** aiming at reducing the risks and vulnerabilities of households and communities to disasters. A cost-benefit analysis was undertaken to guide the selection of eight good practice technologies likely to maximize the returns among GCCA beneficiaries (in the next slide).
GOOD PRACTICE ADAPTATION OPTIONS IN UGANDA

- Mushroom cultivation for livelihood diversification in the central cattle corridor
- Vegetable growing + rainwater harvesting for irrigation
- Banana cultivation + mulching + trenches + organic composting + improved varieties
- Cattle raising + Zero Grazing + Improved breeds + drought tolerant fodder
- Improved Drought Tolerant Maize Varieties
- Multi-stress tolerant bean varieties cultivation
- Chicken raising + chicken housing + improved breeds
- Coffee cultivation + mulching + trenches + organic composting + shade trees
Mushroom cultivation was introduced to farmers as a new income generating opportunity for livelihood diversification, especially in dry season. Mushrooms can be grown at very low cost, and the first mushrooms can be harvested two weeks after preparing the gardens. It is a good adaptation technology for small-scale farmers during the dry season, when lack of water may challenge the cultivation of other crops. Indeed, mushroom production can be done indoor and it requires little amount of water compared to other crops such as beans.
Rooftop water harvesting facilities were installed in a number of farms to increase the availability of water for domestic use and irrigation of backyard vegetable gardens. This measure allows farmers to harvest rainwater from roofs and store in tanks. This good practice ensures vegetable production in most part of the year, including during the dry season, when it would be otherwise impossible. The combination of rainwater harvesting with other good practices (e.g., staking, mulching, manuring) help increase productivity while reducing soil erosion, eventually strengthening the resilience of farmers to the impact of dry spells.
GOOD PRACTICE ADAPTATION OPTIONS

Banana cultivation + mulching + trenches + organic composting + improved varieties

Mulching is a low cost practice that reduce surface water runoff and improve soil quality. Locally available degradable plant materials were used. Digging trenches allows harvesting water during the rainy season while preserving soil quality. Locally produced organic compost increases soil organic matter, reduces erosion and improves water infiltration at a minimum cost. Finally, improved banana varieties were introduced to increase yields and reduce losses in the dry season.
A mix of good practices were introduced to increase productivity and enhance the resilience of cattle raising to increasing dry spells and diseases in the central cattle corridor of Uganda. The combination of good practices include: (1) zero grazing (2) improved cattle breeds, more productive and resistant to diseases; and (3) drought tolerant fodder to ensure cattle feed availability also in dry seasons.
Farmers were introduced to improved maize varieties and were trained on a set of good practices to enhance the resilience of maize production to increasing dry spells in the central cattle corridor of Uganda. Farmers raised concerns regarding the low average yields of local maize varieties, especially the Munandi variety. Although farmers do not have to buy seeds of local varieties - as they are usually saved from one cycle to the other - these varieties are vulnerable to fluctuating rainfall patterns and prolonged dry periods. Improved varieties, instead, are more tolerant to drought and diseases.
Farmers were introduced to multi-stress tolerant bean varieties (NABE 15 and NABE 17) and were trained on a set of good practices to enhance the resilience of bean production to increasing dry spells in the central cattle corridor of Uganda. The NABE series is especially resistant to drought and to diseases such as the Anthracnose and the Bean Common Mosaic Virus. Beans are an important staple crop in the central cattle corridor of Uganda. An increase in yields and production quantities due to enhanced resilience to extreme events would strengthen food security among vulnerable smallholder households.
The good practice involves the introduction of improved chicken breeds as well as the construction of chicken houses. Improved breeds are more resistant to climatic stresses and diseases. The transition from free range to chicken houses allows keeping track of the inputs used for raising chickens, and reduces the risks of disease. Small-scale farmers replicated this good practice package in their farms.
Coffee cultivation + mulching + trenches + organic composting + shade trees

A number of good practices for soil and water conservation were introduced to coffee farmers in the central cattle corridor of Uganda, with the aim to enhance their resilience to dry spells, pests and diseases. The combination of good practices include: (1) mulching, a low cost practice that consists of covering the soil with locally available degradable plant materials to reduce water runoff and evapotranspiration; (2) digging contour trenches to harvest water during the rainy season while preserving soil quality; (3) preparation and application of organic compost to improve soil fertility at low cost; and (4) planting shade trees within the coffee plantation in order to provide shade and improve soil fertility.
LESSONS LEARNED FOR UPSCALING ADAPTATION BEST PRACTICES IN UGANDA

• Learning how to adapt in a systematic manner can influence resilience and adaptive decisions of local communities. Using the farmer field schools approaches have proven to be effective in empowering rural communities at a large scale to increase their knowledge and skills and taking self-initiatives in making adaptation decisions to climate change.

• Addressing climate change risks, reducing vulnerability and developing adaptive capacity of the target beneficiaries requires the cooperation and partnership among diverse stakeholder groups – public from both national and local level, private sector companies, NGOs, CBOs, international and national academic and research agencies, and UN agencies.

• Support for capacity development needs to move a step further, from focus on awareness of climate change impact on agricultural sector, to development of sector capacity to respond to climate change challenges in a gender responsive manner

• Integrated watershed management approach provides sustainable ways to improve climate resilience of land and water systems and the associated human vulnerabilities

• A holistic approach to improvement of knowledge, and institutional, economic and ecosystem adaptive capacities, is effective in building household and community climate change resilience
LESSONS LEARNED FOR UPSCALING ADAPTATION BEST PRACTICES IN GCCA PHASE II "GCCA+

• Communities where Village Savings and Loan Associations (VSLA) were established, farmers were able to invest more than 40% of the savings into adaptation and became more resilient than communities without VSLA’s

• Integrating gender household methodologies, and removal of discriminative attitudes among women and men, is essential for household technology adaptation and skills development

• Adaptation of technologies by farmers and willingness to invest are high when technologies have demonstrated benefits and are cost effective. The promotion and adoption of hay making techniques, soil and water conservation and small harvesting structures in the cattle corridor is one example.

• Though community livelihood projects have been established, the change requires a reasonable time of engagement, proper follow up support and linkage to financial services and innovative financial products before such interventions can become self-sustainable
LESSONS LEARNED FOR UPSCALING ADAPTATION BEST PRACTICES IN UGANDA

• Around 25 best practices in adaptation and mitigation in the project phase 1 have been tested, based on people’s preference and adoption, which need to be replicated through an improved communication strategy

• Organizing and strengthening the capacity of Farmer groups, Farmer Field Schools (FFS) networks and transforming them into more efficient economic groups like cooperatives and enterprise market-based networks through value chain development and linkages to the private sector for sustainability

• Farmer fields schools and participatory watershed management approaches are both process and technology oriented with multiple activities, it requires more time for capacity building and technology transfer as careful sequencing of technologies is crucial for farmer adoption and sustainability. Therefore for future climate change adaptation projects, it is recommended that a period of 5 years should be considered
LINKING GCCA+ PHASE II STRATEGIES AND PLANS TO NATIONAL PARIS AGREEMENT COMMITMENTS DEVELOPED IN NDC AND NAPS

The Uganda GCCA+ or GCCA Phase II has been designed to:

- be more gender responsive
- build upon and scale up the good practices of adaptation identified in GCCA Phase I.
- address new barriers to adaptation that have been identified in GCCA Phase I
- focus capacity building efforts on District local government level and Civil society organizations
- Show a better integration of adaptation and mitigation strategies to respond to Nationally Determined Contributions (NDC) in Uganda
- support the implementation of newly developed National Adaptation Plan for Agriculture Sector.
OVERALL GOAL
To Contribute to the sustainable and gender transformative improvement of livelihoods of rural populations in Uganda

PURPOSE
To strengthen inclusive, gender responsive and climate smart resilience of rural populations depending on agricultural production systems in the cattle corridor

RESULT 1
Knowledge and institutional capacities for gender responsive climate change adaptation and mitigation strengthened

RESULT 2
Household income and climate resilient livelihood capacities improved in a gender-responsive manner

RESULT 3
Ecosystem adaptive and mitigation capacities enhanced

OUTPUTS:
1. Capacities of national government institutions and DLG for gender transformative climate change adaptation and mitigation developed
2. Capacities of non-state actors (CSOs and private sector) to support climate change adaptation and mitigation developed
3. Lessons learned and best practices are generated and shared among stakeholders

OUTPUTS:
1. Sustainable and gender-responsive climate resilient agriculture production practices promoted
2. Appropriate small and medium scale agricultural water management system established and rehabilitated to support crop and livestock
3. Agro-based gender-responsive income generating opportunities and linkages with the private sector are promoted along selected value chains
4. Household dynamics on gender equality and gender relations are enhanced, to support climate-resilient production

OUTPUTS:
1. Bioenergy plantations, biogas models, and energy saving technologies promoted
2. Capacities of LAs, NGOs, and local communities to plan, implement and mobilize resources for ecosystem based adaptation and mitigation developed
3. Degraded Watershed Ecosystems Rehabilitated
## LINKING GCCA+ (PHASE II) STRATEGIES AND PLANS TO NATIONAL PARIS AGREEMENT COMMITMENTS DEVELOPED IN NDC

<table>
<thead>
<tr>
<th>Sector</th>
<th>NDC Proposed Measures for Uganda</th>
<th>Link to GCCA+ Actions in Uganda</th>
</tr>
</thead>
<tbody>
<tr>
<td>Forestry</td>
<td>Reverse deforestation trend to increase forest cover to 21% in 2030, from approximately 14% in 2013, through forest protection, afforestation and sustainable biomass production measures</td>
<td>350 Hectares of bio-energy plantations established in targeted communities and amount of GHG emission reduction C02 equivalent measured</td>
</tr>
<tr>
<td>Energy</td>
<td>Promotion and wider uptake of energy efficient cooking stoves or induction cookers. (Residential biomass burning: ~30 MtCO2e in 2000)</td>
<td>At least 5,000 Energy Cook-stoves and 100 biogas established and amount of carbon offset measurement conducted</td>
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<td>Promotion and wider uptake of solar energy systems. (Emission reduction potential of about 1.5 million tons carbon dioxide equivalent by 2030)</td>
<td>Promotion of solar powered irrigation/ water management system</td>
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## LINKING GCCA+ PHASE II STRATEGIES AND PLANS TO NATIONAL PARIS AGREEMENT COMMITMENTS DEVELOPED IN NDC UGANDA

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<th>Sector</th>
<th>NDC Proposed Measures for Uganda</th>
<th>Link to GCCA+ Actions in Uganda</th>
<th>GCCA+ (Adaptation) - FAO</th>
<th>GCCA+(NDC) –GIZ</th>
</tr>
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<tbody>
<tr>
<td>Agriculture</td>
<td>Climate Smart Agriculture techniques for cropping (Agricultural soils: 36% of national GHG emissions (13.5 Million tons of carbon dioxide equivalent per year (MtCO2eq/yr in 2000) National target: 2.7 Million tons of carbon dioxide equivalent per year (MtCO2eq/yr). in 2030 (0.33-0.35 tons carbon dioxide equivalent per hectare ) (Smith et al 2008)</td>
<td>160 new Farmer Field Schools, 300 old Farmer Field schools and 350 Coffee producer Groups strengthened for promoting climate-resilient agricultural technologies and practices CSA practices in the region will be compiled by multi-disciplinary team and shared by relevant organisations. An upsampling strategy will be prepared. The CSA research will take economic parameters into account including adaptation and mitigation costs and benefits of different measures, together with gender implications.</td>
<td>160 new Farmer Field Schools, 300 old Farmer Field schools and 350 Coffee producer Groups strengthened for promoting climate-resilient agricultural technologies and practices</td>
<td>650 hectares of fodders plantations established</td>
</tr>
<tr>
<td>Livestock</td>
<td>Livestock breeding research and manure management practices (Enteric fermentation: 19% of national GHG emissions (7 Million tons of carbon dioxide equivalent per year (MtCO2eq/yr.) in 2000. Projected to increase by 4 times by 20</td>
<td></td>
<td>650 hectares of fodders plantations established</td>
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LINKING GCCA+ PHASE II STRATEGIES AND PLANS TO NATIONAL PARIS AGREEMENT COMMITMENTS DEVELOPED IN NAPS

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<td>GCCA+ (Adaptation) -FAO</td>
</tr>
<tr>
<td>Agriculture</td>
<td>Expanding extension services</td>
<td>Training packages for FFS (women leadership, gender mainstreaming, agricultural and livestock technical knowledge; income generating activities, credit and savings schemes, group coordination and family financial planning)</td>
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<td></td>
<td></td>
<td>160 new Farmer Field Schools, strengthen 300 old Farmer Field schools and 350 Coffee Groups for promoting climate-resilient agricultural technologies and practices</td>
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<tr>
<td></td>
<td>Expanding Climate Smart Agriculture (CSA)</td>
<td>25 gender-responsive CSA technologies demonstrated and available to men, women, youth and disadvantaged groups</td>
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<tr>
<td><strong>Agriculture</strong></td>
<td>Expanding diversification of crops and livestock</td>
<td>GCCA+ (Adaptation) – FAO</td>
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<tr>
<td></td>
<td>Expanding value addition, post-harvest handling and storage and access to markets, including micro-finances</td>
<td>GCCA+ (NDC) – GIZ</td>
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<tr>
<td></td>
<td>Farmer-managed seed multiplication and nursery centres for drought-resistant seeds/crop varieties and fruit trees</td>
<td>Community-Based Indigenous Livestock and Poultry Breeding Centres (CBBC) set up</td>
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<td></td>
<td>Training packages for 460 Farmers Field Schools in post-harvest handling, clean and low carbon processing technologies, negotiation and marketing products with the private sector.</td>
<td>Value chains (for specific crops, livestock, poultry, herbal plants and fruit trees) will be analysed, to understand needs and preferences.</td>
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<td>At least 9 value chain Enterprises on crops/livestock/poultry/dairy in 09 districts developed to benefit farmers groups, cooperatives, youth groups and women groups.</td>
<td>Targeted alternative income generating activities and jobs for youth, women will be supported, depending on the value chain assessments.</td>
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<td></td>
<td>Linkages with private sector companies and Farmers Field Schools Networks, Farmers Groups, Women’s Groups, Cooperatives and Youth Groups established</td>
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<tr>
<td>Sector</td>
<td>Adaptation for Uganda</td>
<td>Priorities</td>
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<tr>
<td>Agriculture</td>
<td>Expanding rangeland management</td>
<td>The proposed 32 degraded watershed ecosystems rehabilitation will cover rangelands</td>
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<td>Expanding small scale water infrastructure</td>
<td>At least 6 valley tanks, catering for 12,000 heads of livestock and 300 small scaled irrigation schemes benefiting 5,000 farmers constructed.</td>
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<tr>
<td></td>
<td>Expanding research on climate resilient crops and animal breeds</td>
<td>✓ 25 gender-responsive CSA technologies demonstrated and available to men, women, youth and disadvantaged groups ✓ Best practices on Climate Change Adaptation and Mitigation, reviewed, documented and shared</td>
</tr>
</tbody>
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# LINKING GCCA+ PHASE II STRATEGIES AND PLANS TO NATIONAL PARIS AGREEMENT COMMITMENTS DEVELOPED IN NAPS

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<tr>
<td>Forestry</td>
<td>Promoting intensified and sustained forest restoration efforts (afforestation and reforestation programmes, including in urban areas)</td>
<td>350 Hectares of bio-energy plantations established in targeted communities</td>
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<tr>
<td></td>
<td>Promoting biodiversity &amp; watershed conservation (including re-establishment of wildlife corridors)</td>
<td>32 degraded watershed ecosystems rehabilitated</td>
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<td></td>
<td>Encouraging agro-forestry</td>
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<td>Encouraging efficient biomass energy production and utilization technologies</td>
<td>At least 5,000 Energy Cook-stoves and 100 biogas established</td>
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<tr>
<td>Water</td>
<td>Improving water efficiency</td>
<td>Water Users’ Groups formed/ strengthened, trained to maintain and manage 20 water schemes.</td>
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<td>Gender dimensions are mainstreamed into Water related activities</td>
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**LINKING GCCA+ PHASE II STRATEGIES AND PLANS TO NATIONAL PARIS AGREEMENT COMMITMENTS DEVELOPED IN NAPS**

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<td>Infrastructure (including human settlements, social infrastructure and transport)</td>
<td>Ensuring that land use plans and building codes reflect the need to make public and private buildings more climate-resilient</td>
<td>GCCA+ (Adaptation) -FAO                                                                  GCCA+(NDC) -GIZ</td>
</tr>
</tbody>
</table>
| Improving water catchment protection | ✓ Government catchment management planning processes for Kafu and Katonga catchments strengthened  
   ✓ 225 DLG’s, sub-counties and NGO staff trained using TOTs approach on gender responsive community based watershed ecosystem adaptation and mitigation  
   ✓ 32 watershed Management associations, resource users groups trained on watershed ecosystem adaptation and mitigation |
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<tr>
<td>Energy</td>
<td>Promoting renewable energy and other energy sources</td>
<td>GCCA+ (Adaptation) -FAO</td>
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<td>GCCA+(NDC) -GIZ</td>
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<tr>
<td></td>
<td>Promoting Solar Pumps and solar based irrigation system</td>
<td>GCCA+ (Adaptation) -FAO</td>
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<td>GCCA+(NDC) -GIZ</td>
</tr>
<tr>
<td>Health</td>
<td>Making provision for a safe water chain and sanitation facilities to limit outbreaks of water-borne diseases and implement strong public awareness programmes to promote better hygiene</td>
<td>Promoting rain water harvesting systems</td>
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<td></td>
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<td>Promoting rain water harvesting system</td>
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</tbody>
</table>

- GCCA+ (Adaptation): United Nations Framework Convention on Climate Change (UNFCCC) Global Climate Change Alliance (GCCA) Phase II Adaptation
- GCCA+(NDC): UNFCCC Global Climate Change Alliance (GCCA) National Determination for Climate Change (NDC)
**LINKING GCCA+ PHASE II STRATEGIES AND PLANS TO NATIONAL PARIS AGREEMENT COMMITMENTS DEVELOPED IN NAPS**

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<tr>
<td>Risk management (particularly in urban areas)</td>
<td>Mainstreaming climate resilience in all sectors</td>
<td>✓ Development frameworks, policies and plans mainstreamed with climate change actions</td>
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<td>✓ Participatory gender responsive climate resilient plans, following the participatory and inclusive planning process produced, and resourced each planning cycle</td>
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<td>✓ Knowledge, information and communication systems strengthened for community adaptation to climate change</td>
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<tr>
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<td>Building more effective early warning systems</td>
<td>Climate information services mainstreamed into farmer field schools in the target nine districts.</td>
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 GCCA+ (Adaptation) -FAO  
 GCCA+(NDC) -GIZ
THANK YOU FOR YOUR ATTENTION!!!