



IMPACT AND SUSTAINABILITY STUDY TANZANIA

GLOBAL CLIMATE CHANGE ALLIANCE IN TANZANIA

CRIS CODE: DCI-ENV/2009/021-477

AUGUST 2021

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List of Acronyms

ACRP	Agriculture Climate Resilience Plan
ARIH	Agricultural Research Institute Hombolo
CBO	Community-Based Organisation
CC	Climate Change
CDM	Clean Development Mechanism
CFI	Community Forests International
CfP	Call for Proposals
CFP	Community Forests Pemba
CGI	Corrugated Galvanised Iron
CRIS	Common Relex Information System
CRISTAL	Community-based Risk Screening Tool – Adaptation and Livelihoods
DCCFF	Department of Commercial Crops, Fruit and Forests
DCI	Development Cooperation Instrument
DMC	Dodoma Municipal Council
DoE	Division of Environment
DONET	Dodoma Environmental Network
ENV	Environment
ER	Expected Result
EU	European Union
EUD	European Union Delegation
EUR	Euro
FA	Financing Agreement
FYDP	Five Year Development Plan
GCCA	Global Climate Change Alliance
GCCA+	Global Climate Change Alliance plus
GEN	Global Eco-village Network
GoT	Government of Tanzania
GRET	Groupe de Recherches et d' Echanges Technologiques (<i>Group For Research and Technology Exchanges</i>)
ICRAF	World Agroforestry Centre (ex-International Council for Research in Agroforestry)
INDC	Intended Nationally Determined Contributions
IRDP	Institute for Rural Development Planning
ISCEB	Interlocking Stabilized Compressed Earth Blocks
MAMADO	Maji na Maendeleo Dodoma
M&E	Monitoring and Evaluation
MSTCTD	MS-Training Centre For Development Cooperation
NAO	National Authorising Office
NAPA	National Adaptation Programme of Action
NGO	Non-Governmental Organisation
NR	Natural Resources
OO	Overall Objective
OPV	Open-Pollinated Varieties
PMO	Prime Minister's Office
REDD	Reducing Emissions from Deforestation and forest Degradation
RIC	Rural Innovation Campus
RLRC	Resilient Landscapes for Resilient Communities
ROM	Result Oriented Monitoring
RWH	Rainwater Harvesting
SACCOS	Savings and Credit Cooperative Society
SAFEGE	Société Anonyme Française d 'Etude de Gestion et d' Entreprises
SAT	Sustainable Agriculture Tanzania Project
SO	Specific Objective
SUA	Sokoine University for Agriculture
TA	Technical Assistance

GCCA+

THE GLOBAL CLIMATE CHANGE ALLIANCE PLUS INITIATIVE



Funded by
the European Union

TAPS

TOAM

TZS

UNFCCC

VEO

VLUP

VPO

Technical and Administrative Provisions

Tanzania Organic Agriculture Movement

Tanzanian Shilling

United Nations Framework Convention on Climate Change

Village Executive Officer

Village Land Use Plan

Vice President's Office

I. Project Details and Outputs Delivered

PROJECT TITLE: Global Climate Change Alliance for Tanzania CRIS CODE: DCI-ENV/2009/021-477		
AAP YEAR: 2008	DURATION: 72 months ¹ starting with the signature of the Financing Agreement (FA) ² between the EU and the Government of Tanzania (GoT)	DATE OF COMPLETION: 12/2015
TOTAL PROJECT COST: 2,407,350.06 EUR ³		GCCA ALLOCATION: 2,205,816.06 EUR (92% of total project cost) Distributed as follows: <ul style="list-style-type: none">Grant contracts: 1,955,816.06 EUR⁴Overall Visibility, Information Sharing / Dissemination of Good Practices: 50,000 EURTA support to the Call for Proposals procedure: 100,000 EUR⁵Evaluation and audit: 100,000 EUR⁶
AID MODALITY: Project approach		MANAGEMENT ARRANGEMENTS: Partially decentralised management; with the grant contracts and visibility component decentralised and the Call for Proposals management support and evalution/audit components centralised.
GEOGRAPHICAL COVERAGE: Selected eco-villages in coastal zones and islands (lot 1 of the CfP), drylands (lot 2 of the CfP) and highlands (lot 3 of the CfP) of Tanzania. 1 grant was awarded to each of the targeted ecological zones: <ul style="list-style-type: none">For the coastal zones and islands (lot 1), the project <u>Resilient Landscapes for Resilient Communities</u> was selected. The project covered 19 rural communities on Pemba Island. Initially 6 communities were targeted (Uwandani, Vitongoji A&B, Pujini, Fundo Islet, Uvinji and Kokota Islet); during project implementation another 13 communities were added (Wingwi Mapofu, Kibubunzi, Pembani, Masota, Kiuyu Minungwini, Hindi, Minyenyeri, Chasasa, Kambini, Kiungoni, Kangagani, Mtambwe Chekea, Gando).		

¹ 72 months comprising of an operational implementation phase of 48 months and a closure phase of 24 months

² The FA was signed on the 28th of December, 2009.

³ GCCA allocation + co-financing by the three grantees.

⁴ Details on the 3 grant contracts that were awarded through a Call for Proposals procedure:

- Grant contract DCI-ENV/2011/270-674 for the action «Resilient Landscapes for Resilient Communities (RLRC)» with the local NGO Community Forests Pemba (CFP) (GCCA contribution: 495,000 EUR; co-financing by Community Forests International (CFI): 55,000 EUR; contract signed on 6/9/2011)
- Grant contract DCI-ENV/2011/270-677 for the action «Empowering Vulnerable Rural Communities to Adapt and Mitigate the Impacts of Climate Change in Central Tanzania» with the Institute for Rural Development Planning (IRDP) (GCCA contribution: 628,715 EUR; co-financing by IRDP: 74,334 EUR; signed on 6/9/2011)
- Grant contract DCI-ENV/2011/270-679 for the action «Enhancing Climate Change Adaptation and Mitigation Capacities of Vulnerable Communities in Eco-Villages of Different Ecosystems of the Uluguru Mountains» with the Sokoine University for Agriculture (SUA) (GCCA contribution: 649,800 EUR; co-financing by SUA: 72,200 EUR; signed on 6/10/2011)

⁵ A TA Service contract to manage the local Call for Proposals (CfP) was concluded with SAFEGE for a value of 90,265.21 EUR. The contract was signed on 16/6/2010.

⁶ A TA Service contract to conduct the ex-post evaluation was concluded with Particip for a value of 47,733 EUR. The contract was signed on 26/1/2016.

- For the drylands (lot 2), the project *Empowering Vulnerable Rural Communities to Adapt and Mitigate the Impacts of CC in Central Tanzania* was selected. The project focused on Chololo Village in Dodoma District.
- For the highlands (lot 3), the project *Enhancing CC Adaptation and Mitigation Capacities of Vulnerable Communities in Eco-Villages of Different Ecosystems of the Uluguru Mountains* was selected. The project was active in the Uluguru Mountains where it covered 7 villages in 2 divisions: Tawa, Konde, Milawilila and Kibungo Juu in Matombo Division and Masalawe, Londo and Luale in Mgeta Division.

MAIN STAKEHOLDERS:

AT OVERALL GCCA PROJECT LEVEL:

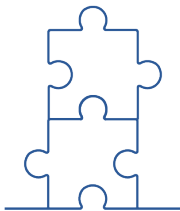
- Contracting Authority: Ministry of Finance and Economic Affairs
- Implementing Agency: Vice President's Office (VPO) – Division of Environment (DoE)
- Other government partners: Prime Minister's Office (PMO) – Division for Regional Administration and Local Government, line ministries and agencies (agriculture, livestock, water, forests).

AT GRANT LEVEL:

- **Resilient Landscapes for Resilient Communities:**
Grantee: Community Forests Pemba (CFP)
Implementing partners: Community Forests International (CFI), Bricks for Life, Blue Mountains Permaculture Institute, ICRAF, Ministry of Agriculture and Natural Resources, Department of Commercial Crops, Fruit and Forests (local Government Agency)
Target groups: CBOs, women, youth and rural farmers
Final beneficiaries: the population of the selected target villages (23,257 people)
- **Empowering Vulnerable Rural Communities to Adapt and Mitigate the Impacts of CC in Central Tanzania:**
Grantee: Institute for Rural Development Planning (IRDPP)
Implementing partners: Agricultural Research Institute Hombolo (ARIH) (Min.of Agr.), Dodoma Municipal Council (DMC), Dodoma Environmental Network (DONET), Tanzania Organic Agriculture Movement (TOAM), and Maji na Maendeleo Dodoma (MAMADO)
Target groups: Dodoma District Officials; the population and local leaders of Chololo village, with a focus on the village land and natural resources committee, the village government, the primary school teachers, and the community environmental groups
Final beneficiaries: the population of Chololo village (4,080 people / 1,110 households), with a focus on the most vulnerable and deprived farming families
- **Enhancing CC Adaptation and Mitigation Capacities of Vulnerable Communities in Eco-Villages of Different Ecosystems of the Uluguru Mountains:**
Grantee: Sokoine University for Agriculture (SUA)
Implementing partner: GRET (French NGO)
Target groups: 5,450 Children, 2,970 youth, 4,000 women, 18 local technicians (at ward and village levels), 7,200 farmers, 187 local authorities, 28 traditional local leaders, 4 existing producer associations, 2 Savings and Credit Cooperative Societies (SACCOS), local networks, Meteorological Agency officials, 100 national UNFCCC focal points and national decision makers
Final beneficiaries: the population of the 7 target villages (12,000 people) who will benefit from improved natural resources management and income generation opportunities; Tanzanian highland population for which tested approaches can be replicated, and downstream populations who will benefit from the various positive effects of upstream integrated and sustainable natural resource management.

GCCA PRIORITY AREA(S):

Adaptation, REDD



MAIN SECTOR(S):

Agriculture, Coastal zone management, Land management, Natural resources management, Community development & poverty reduction, Water & sanitation

OVERALL OBJECTIVE (OO):

AT OVERALL GCCA PROJECT LEVEL⁷:

To increase the most vulnerable Tanzanian communities' capacities to adapt to the adverse effects of climate change through sustainable use of their natural resources.

AT GRANT LEVEL⁸

- **Resilient Landscapes for Resilient Communities:** (1) To transition 5 of Tanzania's most vulnerable communities to resilient and exemplary eco-villages. (2) To contribute to the advancement of successful community-driven climate change adaptation and mitigation in the region.
- **Empowering Vulnerable Rural Communities to Adapt and Mitigate the Impacts of CC in Central Tanzania:** To strengthen the capacity of vulnerable rural communities in arid/semi-arid areas of Central Tanzania to adapt to adverse effects of climate change for improved livelihoods and natural resource management.
- **Enhancing CC Adaptation and Mitigation Capacities of Vulnerable Communities in Eco-Villages of Different Ecosystems of the Uluguru Mountains:** To strengthen the resilience of the most vulnerable communities of Tanzanian highlands to climate change through community-based innovative and sustainable initiatives which can be scaled up.

The ex-post evaluation report (2016) formulated the following common OO for the three grant projects: To strengthen capacity of vulnerable rural communities in the different ecological zones of Tanzania to adapt to adverse effects of climate change for improved livelihoods and sustainable natural resource management through sharing of best field lessons at landscape level and integration of sector policies.

SPECIFIC OBJECTIVE(S) (SO):

AT OVERALL GCCA PROJECT LEVEL⁹:

To support the setup of a limited number of eco-villages where innovative adaptation measures can be tested (in the field of agriculture/rangeland, water/sanitation, etc.) and energy (biomass) issues will be addressed through sustainable natural resources management practices (e.g. Participatory Forest Management).

⁷ As per initial logical framework attached to the FA/TAPS. There was no evidence in the available documents of logframe updates or revisions at overall project level.

⁸ As per revised logframes, presented in the ex-post evaluation report, 2016. The logframe revisions did not result in substantial changes of the OOs as compared to the initial ones (= the ones that were submitted under the Call for Proposals).

⁹ Idem as footnote 7

AT GRANT LEVEL ¹⁰:

- **Resilient Landscapes for Resilient Communities:** To mobilize the expertise of Community Forests Pemba (CFP) and its partners, the existing livelihood resources of target communities, the local native forest ecosystems and the appropriate technology towards the development of Climate Change adaptive eco-villages.
- **Empowering Vulnerable Rural Communities to Adapt and Mitigate the Impacts of CC in Central Tanzania:** To transform Chololo village into an eco-village, a model of good practice where the community identifies, tests, evaluates, takes up, and shares a comprehensive range of climate change adaptation strategies to meet their priority needs.
- **Enhancing CC Adaptation and Mitigation Capacities of Vulnerable Communities in Eco-Villages of Different Ecosystems of the Uluguru Mountains:** To increase resilience and CC adaptation and mitigation capacity through a range of multidisciplinary and integrated activities in 7 eco-villages in different agro-ecosystems of the Uluguru Mountains in Matombo and Mgeta Divisions.

The ex-post evaluation report (2016) formulated the following common SO for the three grant projects:
To provide institutional capacity building to the targeted communities through technical and financial support to enable them to make informed and innovative decisions for adopting models of good practice in CC adaptation and mitigation as a component of their development priorities through concerted participatory efforts with enabling policy support from national to regional levels.

EXPECTED RESULTS (ER):

AT OVERALL GCCA PROJECT LEVEL ¹¹:

1. Holistic, innovative and integrated approaches are tested, adopted and shared in a limited number of climate change affected areas of Tanzania (eco-villages).
2. Sustainable use of natural resources is enhanced at community level.
3. Local communities (especially women) are empowered and are able to cope with the consequences of climate change.
4. The Vice President's Office (VPO) – Division of Environment (Designated National Authority for CDM and UNFCCC Focal Point), Line Ministries and Local Authorities are involved as facilitators and integrate the results of the project into policy making, in line with the ongoing decentralisation process.

AT GRANT LEVEL ¹²:

- **Resilient Landscapes for Resilient Communities:**
The target communities:
 1. Gain legal title to degraded government-owned land.
 2. Implement diversified and resilient agricultural systems including agroforestry systems.
 3. Conduct community-based afforestation and reforestation.
 4. Employ a range of appropriate technologies including rainwater harvesting, charcoal substitutes, and seed saving.
 5. Implement multi-strata kitchen gardens.
 6. Diversify livelihood activities.
- **Empowering Vulnerable Rural Communities to Adapt and Mitigate the Impacts of CC in Central Tanzania:**

¹⁰ Idem as footnote 8

¹¹ Idem as footnote 7

¹² Idem as footnote 8

1. Chololo community members are empowered with knowledge on and skills in climate change adaptation and mitigation.
2. A range of innovative adaptation technologies are identified, tested, evaluated and shared.
3. A framework of land use plans and natural resource management principles is established.
4. Women are empowered to act at the forefront of transformation.
5. Household food security and incomes are increased, livelihoods improved.

▪ **Enhancing CC Adaptation and Mitigation Capacities of Vulnerable Communities in Eco-Villages of Different Ecosystems of the Uluguru Mountains:**

1. Farming systems are sustainable, climate resilient and generate higher incomes for the population of the 7 villages, including women.
2. Community-managed organisations ensure sustainable, fair and gender-inclusive use of natural resources.
3. Local stakeholders effectively supervise and monitor the management of natural resources.
4. Lessons learnt on tested innovative and holistic approaches are shared with other highland communities and development practitioners and contribute to policy recommendations on adaptation in Tanzania.

OUTPUTS DELIVERED:

RESILIENT LANDSCAPES FOR RESILIENT COMMUNITIES:

- 57.9 ha of state land surveyed and transfer in process (but community land title deeds have not been issued by the government to date) (12% of target)
- 36.9 ha of agroforestry systems established (148% of target) (expansion onto private plots in addition to cooperative plots)
- 120 farmers trained in agroforestry (24% of target) (less beneficiaries due to shift from farmer groups and cooperatives to individual farmers)
- 754,853 tree seedlings produced
- 234.6 has of land afforested (49% of target) (lack of available community land; expanded onto private land to reach the initial target as close as possible)
- 393 community members trained in nursery and afforestation techniques (197% of target)
- 4,691 community members trained and supported in livelihood diversification
- 66 multi-strata kitchen gardens established (132% of target)
- 17 fuel briquette presses distributed (340% of the 5 targeted)
- 70 community members (mostly female) trained in the production of fuel briquettes (140% of the 50 targeted)
- 5 ISCEB (Interlocking Stabilized Compressed Earth Blocks) machines procured and installed (100% of target)
- 37 community members (all male) trained in ISCEB production and construction (29% of target)
- 4 ISCEB school toilets constructed
- 1 demonstration ISCEB guardhouse at CFP campus constructed
- 8 low-cost ISCEB houses under construction in Kokota village
- Proven model (ISCEB technology) for reducing reliance on products associated with destructive coral mining
- 87 community members trained in apiculture (87% of the 100 targeted)
- 104 beehives distributed (37 colonized; 12 additional colonies in Wingwi Mapofu were provided by the community themselves).
- 554 fuel-efficient cooking stoves produced (222% of the targeted 250 stoves)
- 217 community members (mostly female) trained in the production of fuel-efficient cooking stoves (434% of the targeted 50)
- Small cooking stove businesses started (income generation activity)
- 6 composting systems established (120% of the targeted 5 systems)
- 70 households trained in composting
- 8 solar power systems established (160% of the targeted 5 systems), benefiting 2,046 community members

- 20 community members (all male) trained in maintenance of solar power systems (40% of the targeted 50)
- 4 rainwater harvesting systems installed (120% of the target, taking also into account the two wells that were constructed) with 2,295 direct beneficiaries

EMPOWERING VULNERABLE RURAL COMMUNITIES TO ADAPT AND MITIGATE THE IMPACTS OF CC IN CENTRAL TANZANIA

Act. 1 – Preparation

- 1 eco-village meeting and training centre constructed
- 1 automatic weather station supplied and installed

Act. 2 – Capacity building

- 68 farmers sensitised on CC impacts and adaptation

Act. 3 – Agriculture

- Local farmers supported through an agricultural extension programme (training, follow-up, assessments, demonstration plots, seed supply, etc.)
- Study report on the sunflower value chain

Act. 4 – Livestock/Beekeeping/Fishfarming

- Improved breeds for local cattle, goats and chickens introduced
- Farmers trained in livestock disease control and dry season feeding
- 60 beekeepers trained
- 2 village carpenters trained in modern beehive construction
- 60 modern beehives supplied
- 10 fishponds constructed
- Farmers trained in fish farming
- 40 villagers trained in vegetal leather tanning
- A leather processing group with 24 members established and productive
- 4 members of the leather processing group trained in the manufacturing of leather goods

Act. 5 – Forestry, Natural Resources, Bio-energy

- 24,000 tree seedlings produced and planted
- Community groups trained in nursery establishment and production
- Community nursery groups supplied with seeds and nursery equipment
- 317 villagers trained in community-based forest management
- A village NR committee (8 members) established and trained in forest policy and their roles
- Village Council trained in forest policy
- Village land use map and land management plan developed
- Village land use and management by-laws developed
- Local authorities (Village Natural Resources Committee, Village Land Use Committee, Village Land Council, Ward Tribunal and Village Council) (38 members) trained in land-related legislation and good governance
- 12 women trained in the production of fuel-efficient cooking stoves
- 12 women supplied with inputs for the production of fuel-efficient cooking stoves
- 240 fuel-efficient stoves produced and distributed
- Study report on the economics of fuel-efficient stoves
- 10 households provided with a domestic biogas plant (3x4m³ and 7x6m³), including biogas stove and biogas lamp; 9 are operational
- 10 labourers trained in biogas plant construction
- 15 farmers trained in bio-slurry compost making, preservation and application
- 3 bio-slurry compost making pits established

Act. 6 – Water

- 3 types of rainwater harvesting technologies promoted and demonstrated (rooftop catchment in the community school; ground catchment with sub-surface dam and ground catchment with sand dam, both for livestock and domestic water supply)
- Water user group established and trained
- Installation of a solar-powered borehole pump
- 9 village government leaders (1 councilor, 1 village chairperson, 1 VEO and 6 sub village leaders), 8 village water committees and 3 pump attendants trained on how to operate the solar pump
- Community sensitised on water use and water management

Act. 7 – Multiplier effect

- 60 farmers from 6 sub villages trained in the Farmer Field School approach for sharing a range of innovations, step by step
- Local Technology Transfer Committee established and trained (to enhance impact and sustainability)
- Chololo Eco-village Book produced and 2,000 copies disseminated

ENHANCING CC ADAPTATION AND MITIGATION CAPACITIES OF VULNERABLE COMMUNITIES IN ECO-VILLAGES OF DIFFERENT ECOSYSTEMS OF THE ULUGURU MOUNTAINS:

Component 1 – sustainable and climate-friendly farming systems

- 2,000 farmers and 4,500 students strengthened through the extension programme covering contour strip cropping, terracing, soil fertility management, promotion of high value crops and drought tolerant varieties, agroforestry, mulching and crop rotation (training, follow-up, demonstration plots) (Act 1.2)
- 52 farmers trained in spice & fruit tree seedling production and in mango and avocado grafting (Act 1.2)
- 5 nursery groups supplied with seeds and nursery equipment (Act 1.2)
- 10,100 spice and fruit tree seedlings raised and planted (Act 1.2)
- 35 farmers trained in managing fishponds (Act 1.2)
- 38 fish ponds established and stocked with about 5000 fingerlings in total. (Act 1.2)
- 8 Water User Groups in 3 villages (Luale, Londo and Masalawe) established and trained (510 participants) (Act 1.3)
- 7 irrigation canals with a total length of 778 m rehabilitated (water intakes and cement lining), benefitting around 1,300 people / 320 households and with a potential to irrigate 70 has of land (Act 1.3)
- 410 people trained in water resources management (Act 1.3)
- 2 participatory market surveys conducted (Act 1.4)
- 446 farmers trained in business planning and operations (Act 1.4)
- 60 farmers trained in the organisation of producer groups and entrepreneurship (Act 1.4)

Component 2: Community-managed organisations for sustainable use of natural resources

- Rainwater harvesting systems installed in 3 schools and 1 dispensary with a total capacity of 24,000 l and serving 1,530 people (Act 2.1)
- School tree nurseries set up in 6 schools (Act 2.2)
- 300 school children trained in tree nursery techniques (Act 2.2)
- 26,072 trees planted around school compounds, water sources and river banks, and on private farm land (about 10 has in total) (Act 2.2)
- 7 villages sensitised on the importance of conservation of natural resources (Act 2.2)
- 6 beekeeping groups (71 people) established (Act 2.3)
- 6 beekeeping groups (71 people) trained (Act 2.3)
- 87 improved beehives and 12 sets of beekeeping gear provided to 6 villages (Act 2.3)
- 307 people (over 7 villages) trained in construction and use of fuel-efficient cooking stoves (Act 2.4)
- 219 fuel-efficient cooking stoves built in the project area (Act 2.4)
- 2 feeder road groups trained in group management and in procedures to communicate with village governance and villagers to get assistance for road maintenance (Act 2.5)
- 5 feeder road maintenance groups established and mobilised (Act 2.5)
- Equipment and working tools provided to the 5 feeder road maintenance working groups (Act 2.5)
- New feeder road of 3,5 km built (Act 2.5)

Component 3 – Co-governance of natural resources for CC adaptation and mitigation

- 292 people sensitised on concepts of climate change, its causes, impacts on livelihoods, and on national, regional and global initiatives to mitigate climate change (208 students from school environmental clubs, 61 members of village environmental committees and 23 village and ward leaders) (Act 3.1)
- 7 rain gauges installed in 7 schools (Act 3.1)
- 233 villagers trained in monitoring rainfall patterns and recording rainfall data (+ follow-up training with 292 attendants) (Act 3.1)
- 1 Sengu committee established and functional (Act 3.2)
- 217 local leaders, members of village environmental committees and technicians trained on NR governance (Act 3.2)
- 9 school environmental clubs have been established (6 for primary schools and 3 for secondary schools) and are functional. (Act. 3.4)
- Organisational support provided to the village environmental committees in two villages (Act. 3.4)
- 4 collaborative village institutions (governance models) formed in 4 villages and villagers mobilised to undertake collective actions. (Act. 3.4)

Component 4 – Scaling up and national climate adaptation policy

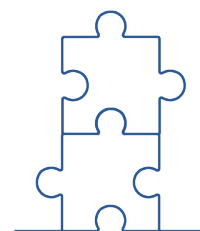
- A Manual on Sustainable Agriculture Practices developed and published in Swahili (Act. 4.2)
- A SACCOS Financial Management Guide developed (Act. 4.2)
- Brochures on Natural Resources governance developed (Act. 4.2)
- Guidelines for the constitution of Water User (and other) Groups developed (Act. 4.2)
- Project findings and lessons compiled and disseminated locally (70 participants) (Act. 4.3)
- Project findings and lessons shared with national policy makers (37 participants) (Act. 4.3)
- Paper on “Factors in Smallholder Farmers’ Vulnerability to CC impacts in the Uluguru Mountains, Morogoro, Tanzania” developed and presented at an international conference (Act. 4.4)

II. Analysis of impact

2.1. Impact expected as per logframe objectives and their indicators

AT OVERALL GCCA PROJECT LEVEL:

- **Overall Objective:** To increase the most vulnerable Tanzanian communities' capacities to adapt to the adverse effects of climate change through sustainable use of their natural resources
OO.1 indicator: Food security / Economic status of the targeted communities. No baseline, no target provided.
- **Specific Objective:** To support the setup of a limited number of eco-villages where innovative adaptation measures can be tested (in the field of agriculture/rangeland, water/sanitation, etc.) and energy (biomass) issues will be addressed through sustainable natural resources management practices (e.g. Participatory Forest Management)
SO.1 indicator: Number of eco-villages set up. No baseline, no target provided.



AT GRANT LEVEL:

RESILIENT LANDSCAPES FOR RESILIENT COMMUNITIES

- **Overall Objectives:** (1) To transition 5 of Tanzania's most vulnerable communities to resilient and exemplary eco-villages. (2) To contribute to the advancement of successful community-driven climate change adaptation and mitigation in the region
 - ♦ OO.1 indicator: 5 communities identified via CRiSTAL analysis engage in the project
 - ♦ OO.2 indicator: Successful implementation of the principal project actions in each target community
 - ♦ OO.3 indicator: Replication of project activities in other communities in the region
- **Specific Objective:** To mobilize the expertise of Community Forests Pemba (CFP) and its partners, the existing livelihood resources of target communities, the local native forest ecosystems and the appropriate technology towards the development of Climate Change adaptive eco-villages.
 - ♦ SO.1 indicator: Project activities selected for cultural acceptability, cost-effectiveness, and synergistic multiplier effects involving all stakeholders are carried out in target communities
 - ♦ SO.2 indicator: Participants, appropriate technologies, and improved lands are enumerated to indicate achievement

EMPOWERING VULNERABLE RURAL COMMUNITIES TO ADAPT AND MITIGATE THE IMPACTS OF CC IN CENTRAL TANZANIA

- **Overall Objective:** To strengthen the capacity of vulnerable rural communities in arid/semi-arid areas of Central Tanzania to adapt to adverse effects of climate change for improved livelihoods and natural resource management.
 - ♦ OO.1 indicator: CC strategies in central Tanzania influenced by Chololo eco-village
 - ♦ OO.2 indicator: Dodoma Municipal Council rolls out CC best practices across the district
 - ♦ OO.3 indicator: Government of Tanzania endorses Chololo innovations and supports roll-out
- **Specific Objective:** To transform Chololo village into an eco-village, a model of good practice where the community identifies, tests, evaluates, takes up, and shares a comprehensive range of climate change adaptation strategies to meet their priority needs.
 - ♦ SO.1 indicator: Chololo is recognised as an eco-village by the village community and local authorities
 - ♦ SO.2 indicator: 75% of farmers and livestock keepers are using CC adaptation innovations
 - ♦ SO.3 indicator: 50% of land improved
 - ♦ SO.4 indicator: Visitors attracted from all 7 districts in the region (50 from each district)
 - ♦ SO.5 indicator: Visitors attracted from all 10 regions in lot 2 (drylands) (25 from each region)

ENHANCING CC ADAPTATION AND MITIGATION CAPACITIES OF VULNERABLE COMMUNITIES IN ECO-VILLAGES OF DIFFERENT ECOSYSTEMS OF THE ULUGURU MOUNTAINS

- **Overall Objective:** To strengthen the resilience of the most vulnerable communities of Tanzanian highlands to climate change through community-based innovative and sustainable initiatives which can be scaled up
 - ♦ OO.1 indicator: By the end of the project at least 1 adaptive strategy with at least 10 activities has been identified, tested and documented and is ready for scaling up to other Tanzanian highland communities
 - ♦ OO.2 indicator: Experiences gained have been disseminated through professional and social networks in and outside Tanzania.
- **Specific Objective:** To increase resilience and CC adaptation and mitigation capacity through a range of multidisciplinary and integrated activities in 7 eco-villages in different agro-ecosystems of the Uluguru Mountains in Matombo and Mgeta Divisions
 - ♦ SO.1 indicator: By the end of the project, at least 5 adaptive strategies are adopted by 25% of the households
 - ♦ SO.2 indicator: By the end of the project, by-laws on natural resources management are in place and effective in seven villages
 - ♦ SO.3 indicator: By the end of the project, 60 local institutions and networks on natural resource management are functional

2.2. Direct and indirect impact as reported in the available documents (desk phase)

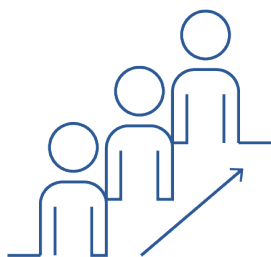
AT OVERALL GCCA PROJECT LEVEL:

- **From the ex-post project evaluation report, 2016¹³:**

General conclusions related to impact:

- The three projects financed under the GCCA-Tanzania programme (2011-2013) generated real changes in the field, as observed 1½ years after the end of the project. Changes include significant and tangible improvements for the communities, in terms of enhanced food security and nutrition and of increased income, wealth and resilience, illustrating that climate change adaptation action is fully compatible with poverty alleviation. There are also signs of private sector development initiatives.
- The projects produced positive (unplanned) 'emergent impacts'. In particular, they contributed to an empowerment of the target communities, and of women in particular, and to an improved local governance of natural resources.
- Changes in the state of the environment are much less visible, even though the projects have given attention to environmental conservation. The focus on a direct improvement of individual livelihoods has tended to limit attention for improved management of the village territories.
- Adoption and replication of a number of innovations is already happening without any external (project) support, in all project sites. The exchange visits, that were organised for farmers and staff, have proven to be an effective instrument. Still, with the exception of Chololo, external communication and sharing of experience should receive more attention, with a view to scaling-up of successful approaches.
- Based on the strengths and weaknesses in the projects evaluated, the evaluation identifies seven key success factors, as follows:
 1. Improvement of core livelihood activities, to strengthen food security and income generation;
 2. An integrated approach allowing for synergy between activities;
 3. Strong involvement of women;
 4. Availability of technical expertise and quality interventions;
 5. Accompaniment of physical infrastructure with social infrastructure;
 6. Integration into local administration planning and reporting;
 7. Linkage of village-level interventions to higher-level land-use plans

Detailed discussion of the **evaluation question 1** "*What real changes can be observed in the field that can be attributed to the interventions – or to which the project has made a significant contribution?*":



In all villages visited, many real improvements in food security and cash income can be observed, resulting in a significant increase in resilience (for example, thanks to food stocks it became possible to cover a year of poor harvest - Chololo) and reduction of poverty (for example, an increased use of CGI-sheet roofing). A fruit producer cooperative (Uluguru) now sells pineapples directly to a fruit processor in Dar es Salaam.

In some cases, there are spin-offs to other economic initiatives. One of the groups in Uluguru, for example, presented their plan for future investment in a vehicle to transport agricultural produce to the urban centres, based on capital accumulated through enhanced production thanks to the restored irrigation channel.

In all project sites visited, enhanced community awareness and organisation around the management of natural resources has resulted in an empowerment of these communities. This was most evident in a target village in the Ulugurus where initial political resistance had been overcome thanks to this enhanced awareness and a process of democratisation. Likewise, some of the village environmental committees

revised their by-laws for improved governance and representation of all hamlets, and are working with village governments in planting trees to protect river banks and water sources.

In Chololo, community sensitisation and training has led to community mobilisation for the rehabilitation of the existing cattle dip in Kikombo ward and for the construction of a new cattle dip in Idifu ward as a way to control livestock diseases. In Uluguru it was reported that in some project villages strong community environmental committees are emerging and that they appear to be committed to properly manage their natural resources.

Detailed discussion of the **evaluation question 2** “*What are the key success factors explaining the achieved results and in particular their impact on the eco-village communities?*”:

Seven factors explaining success and lasting impact from climate change adaptation actions on communities were identified. They are:

1. Improvement of core livelihood activities, in a perspective of food security and income generation

The success (in varying degrees) of all three projects can to a large extent be attributed to the fact that they address concerns related to core livelihood activities of the beneficiaries. In particular improvements in agriculture (agroforestry and tree planting, kitchen gardens, livestock raising, irrigation) score high in terms of appreciation, impact and sustainability. Beneficiaries of the agriculture and agroforestry interventions and improved seed varieties have reported increased harvests.

One conclusion is that it is important to work first of all on staple food crops. Besides improving the family food security situation and nutritional status, all projects also gave attention to income generation and value-addition, through such activities as production of cash crops, sales of seedlings, production of sunflower oil, or manufacturing of leather goods. In Pemba Island, beneficiaries of the land transfers and tree-planting activities have achieved greater land security and will, in future, generate income from planned woodlots.

In Uluguru, it was found that innovations that use locally available resources have a higher likelihood of adoption than those that depend on external resources. Examples include the production of tree seedlings from locally collected seeds versus introduced seeds, and the use of bananas - which are traditionally grown in the villages - as contour crop versus pineapples which are not readily available in the project area. Likewise, interventions that respond less directly to core livelihood activities, or that people are less familiar with, have tended to receive less interest from the communities and were therefore less successful. Examples are the fish farming, beekeeping, biogas production, or the energy-efficient stoves (in some cases). These activities clearly require a higher level of technical support, which could not always be provided.

Outside the agriculture sector, beneficiaries of the alternative energy systems are now able to access lighting in the evening and to charge cell phones locally, thereby increasing their energy security and reducing their expenses on batteries or electricity. Beneficiaries of the rainwater harvesting systems have improved their water security status and have reduced the number of hours they normally spend to fetch water from distant sources.

2. Integrated approach allowing for synergy between activities

Climate change adaptation, and enhanced resilience, can be attained through a combination of measures dealing with the management of soil, water, plant and animal resources, in an integrated manner. A ‘multi-dimensional approach’ generates many synergies and feedback loops and adds value to individual innovations. Supporting a range of different interventions was therefore one of the success factors of the projects.

¹³ The ex-post evaluation included a rapid assessment in each of the project sites of the benefits and changes brought about by the 3 grant projects, with a focus on sustainability and impact. At that moment, between 19 and 24 months had passed since the end of the projects (first phases), which is still early for an ex-post assessment. In 2 of the 3 sites, follow-up GCCA grant projects were started up /under implementation.

On the other hand, however, undertaking a high number of activities is sometimes done at the expense of proper follow-up. It was observed that a set of 10 - 15 different types of interventions to be managed by a relatively small project team seems to overstretch the available human resources. A focus on proper implementation of a limited set of synergistic activities is therefore recommended. An example of a successful cluster of activities – in the case of the Uluguru Mountains - is the rehabilitation of irrigation canals, combined with terracing or contour farming and the use of adapted crop varieties.

3. Strong involvement of women

Overall, in all three projects, women have played a prominent role in most activities. Some of the interventions, including the multi-strata kitchen gardens, fuel briquette production, fuel-efficient cook stove production and community composting facilities engaged primarily women. In general, women appear to have shown stronger interest in activities than men. In the case of Pemba, for example, out of a total of 1,407 direct beneficiaries (against a target of 1,000), 810 were women and 597 men.

Project monitoring has helped to ensure that gender equity was properly considered. Fifty-one percent of the final beneficiaries were women (Pemba). Data on beneficiaries – which are often gender disaggregated - suggest that women have benefited at least as much as men, in particular through (short-rotation) poultry rearing, goat production and/or vegetable farming. This enhanced the sustainability of the results.

In the case of Chololo, a study was carried out to identify and develop subsectors / value chains of particular benefit to women. As a result, income-generating activities such as chicken and goat rearing and fish farming were undertaken mostly by women, and their income increased more than men's (the average household income increased by 18% while the average income for women increased by 64%).

Other interventions were aimed at reducing women's workload, in particular by improving access to water and through the use of energy-saving stoves. This has resulted in increased engagement of women in income-generating activities and improved food security for the households.

4. Technical expertise and quality of interventions

Technical quality of interventions is key to project success. While for most activities this could be properly ensured through linkages with the district technical services or through mobilisation of external expertise, adequate technical expertise was not available in all cases. Limited success or failure of some of the activities was explained by the lack of expertise in design and implementation stages. Examples include the fuel-saving stoves (design needed to be adjusted to cater for the different requirements of communities or households, e.g. the use of smoke for drying crops), the agroforestry and briquettes production systems (case of Pemba), the beekeeping (Chololo) or the road construction (Uluguru).



Collaboration with research institutions, in two of the projects, has contributed to ensuring good quality standards in the interventions – at least in the short term – but the establishment of stronger linkages with district-level expertise is recommended from a long-term perspective.

5. Accompaniment of physical infrastructure with social infrastructure

In general, it is important to strike a balance between community-wide, group and individual-level initiatives. The focus, in all projects, on 'innovative farmers' (first movers), who show results and attract other community members, as a dissemination method has proven to be successful. At the same time, collective actions, at ward and district levels, allowing for greater impact and linkages with decision-making entities at village, ward and District levels need to be ensured - and were indeed ensured in the three projects.

In the case of physical infrastructure projects, such as the rehabilitation or extension of irrigation canals (Uluguru), organizational development is necessary for communities to sustain the activities and benefits.

In such cases, proper support for organisations such as Water Users Associations is essential, and significant resources must be mobilised to ensure such support over a longer period of time (3-5 years). A project cycle of 2-3 years seems to be insufficient to create viable users associations.

6. Integration into local administration planning and reporting

The three projects have been implemented with some degree of involvement of District (Extension) Services, as project partners providing one or more extension officers to support the project activities. Project activities are sometimes part of annual planning and reporting of the local administration services (example Dodoma Municipal Council), while in the case of Uluguru, the project did not include any component for involvement of the district-level government (agricultural, forestry, beekeeping and fisheries experts) in the implementation of project activities at the village and ward levels in the project area.

The representatives of District services that were met during the evaluation, expressed appreciation for the work undertaken by all projects, but also a desire and need for a more active involvement of their services, and a need for capacity building of district officials on issues related to climate change adaptation and mitigation. This would enable them to enhance mainstreaming of climate change adaptation and mitigation interventions into the District Development Plans and Budgets, which will – on a longer term – help ensure the sustainability and up-scaling of the innovations introduced in the villages. There is also a clear need to ensure their capacity to intervene, notably by ensuring that means of transport (motorbikes) are available.

7. Linkage of village-level interventions to higher-level land-use plans

The three projects have given attention to environmental sustainability, through capacity building activities in the fields of tree planting and environmental conservation. Furthermore, the use of energy saving stoves and domestic biogas plants reduce the amount of fuelwood used for cooking. In addition, good agricultural practices such as contour farming and the use of farm manure improve soil fertility and reduce erosion.

However, the interventions tend to be somewhat ‘ad-hoc’ and not strategically planned with a perspective of sustainable village land management or a wider geographical scope. Land degradation and its causes tends to get little attention, even though they contribute significantly to ‘climate vulnerability’ and need to be addressed as part of climate adaptation actions.

In Pemba and Chololo, some linkages to Village Land Use Plans (VLUPs) have been established while in Uluguru local groups for improved environmental/land management have been supported. However, the linkages to the VLUP and to related bylaws seem to be generally weak. The VLUPs (case of Chololo) tend to be formulated in very general terms and have not been translated into operational plans. Also, there is no evidence of enforcement of any of the bylaws e.g. to protect the forests or the soils.

It is recommended that more attention be given to the strategic planning of natural resource management and conservation activities in the context of a broader land-use plan, and to the development of monitoring of environmental impact and condition. At the same time, an increased focus on tree and forest conservation & planting to address the energy crisis and conserve watersheds and soils is recommended – combining short-term benefits with longer-term investments. There is a need to actively involve forest experts in the activities, including in the selection of appropriate tree species for restoration of degraded watersheds where indigenous tree species should be more appropriate than exotics.

Furthermore, there is a need to go beyond action at village level (the ‘ecovillage’ unit) and to place e.g. soil conservation interventions in a broader land use plan at District scale or in the framework of a broader watershed management plan. This, too, pleads for a stronger engagement with the District-level services.

Detailed discussion of the **evaluation question 3** “*What expected results have not materialised, and what emergent (unexpected) results have been produced?*”:

In each of the projects, a number of results have not materialised, or could not be sustained. The projects’ final narrative reports provide details on unachieved results. In the case of Chololo, for example, the beekeeping activities failed; the failure was attributed to the cutting of trees during the construction of a rural

electricity transmission line passing the conserved forest area that disturbed the bee colonies. In Pemba Island, the main under-achievement concerned the land titling process, which turned out to be a much more cumbersome and time-consuming process than initially foreseen. In the Uluguru Mountains, the envisaged promotion of ecotourism was not implemented; it was not deemed feasible within the timeframe of the project for reasons of remoteness of the area and competition with nearby touristic sites and National Parks.

When analysing the least successful activities for each of the projects, underperformance is in most cases related to technical constraints (ex. fuel briquettes, cooking stoves) and/or the absence of (skilled) extension workers (fish production, biogas).

Based on these lessons learned, CFP and IRDP adjusted their approach or cancelled the unsuccessful interventions in the 'second phase' projects.

Besides the non-implementation or underperformance of a number of activities, the projects also produced a number of 'emergent' (i.e. non-foreseen) outcomes. Most of the positive indirect impacts that were registered, relate to 'good governance'. Implementation of the projects implied the adoption of good governance practices such as community involvement in decision-making and monitoring of project implementation as well as transparency. Another, positive 'side-effect' is the empowerment of villagers. Some refer to a 'new sense of self-governance', as illustrated in the example of villagers training other villagers, or the access gained to land in Pemba Island. More generally, beneficiaries refer to a 'change in attitude and behaviour' from a more dependent attitude towards increased self-reliance. Empowerment of women and a relative autonomy in terms of income, was also observed in all three projects. Other emergent impacts mentioned are a decrease in migration of villagers to Kongwa maize belt in search of food and jobs, in the case of Chololo; and positive effects on biodiversity from reforestation, in particular the return of bird species following reforestation, in the case of Pemba.

Detailed discussion of the **evaluation question 6** "*How can successful practice be disseminated, up-scaled or mainstreamed?*"

First, it is important to recognise that replication of a number of activities is already happening without any external (project) support. Examples are some of the practices applied in the kitchen gardens (Pemba), or the establishment of tree nurseries (Uluguru). As argued above, it is essential that these practices are well analysed and documented - which is currently not always the case - as they represent low-cost adaptation measures with scope for mainstreaming.

The projects in Pemba and Uluguru may be encouraged to invest in documenting one or two such practices, suitable for the purpose of upscaling and mainstreaming at District level. It is suggested that the Pemba experience in land titling and reforestation be further documented, as well as the rehabilitation of irrigation canals and accompanying measures in Uluguru.

Chololo is already used as a model village for Dodoma Municipal Council, locally, nationally and internationally (for example Malawi). The District Agriculture Service, for example, is considering replacing diesel-fuelled pumps for drip irrigation (Gawai) by solar pumps. Likewise, donors (World Bank, Japan) reportedly consider adopting solar water pumps for use in central Tanzania.

Extension staff and field animators play a key role in follow-up of the activities and advising farmers. In the absence of such staff, innovations have less chances of success. The government should be encouraged to assign an agricultural and natural resources officer to each ward (if not each village) where project interventions are undertaken. However, capacity development of District staff should also be accompanied by proper means for implementation, in particular means of transport, on a permanent basis.



In general, it is recommended to limit the number of interventions in villages to one 'package' of synergistic activities (example: irrigation canal rehabilitation + terracing + adapted crop varieties) that respond to primary needs and are technically correctly implemented with involvement of permanent structures (extension services).

Lastly, analysis of the Uluguru project highlights that working through interest groups to promote project interventions is useful as it helps ensure sustainability, once the farmer is convinced of the benefits of the

intervention. But it would take a long time for the project intervention to spread to the wider community. It was recommended to combine working with interest groups with regular village meetings and farmer field schools.

AT GRANT LEVEL:

RESILIENT LANDSCAPES FOR RESILIENT COMMUNITIES:

■ From the final project report, 2014

Regarding the achievement of outcomes and objectives:

CFP believes that the overall objective of transitioning 5 communities into resilient and exemplary eco-villages has been achieved. Moreover, CFP was able to expand the implementation of the activities to an additional 13 communities, thereby achieving replication in other communities in the region.

At outcome/output level, CFP was able to achieve or surpass nearly all of the quantifiable targets.

Regarding the impact on the final beneficiaries / target groups and the situation in the target country/region:

Overall, the target groups and beneficiaries have reported improved livelihoods. Many of the actions involve an income generation aspect. Beneficiaries of the land transfer and tree planting activities have greater land security, and will generate income from the envisaged woodlots. Beneficiaries of the agroforestry systems and improved seed varieties have reported increased harvests, which ultimately lead to increased income. Beneficiaries of the composting systems and multi-strata kitchen gardens have better nutrition and some have been able to sell small surpluses. Beneficiaries of the fuel briquette presses and improved cook stoves have reported fewer trips to cut firewood. Beneficiaries of the Interlocking Stabilized Compressed Earth Block (ISCEB) presses in Kokota have begun constructing eight economical houses and have constructed four toilets for their new primary school using the technology. An enterprising target group in Pujini has begun a small business selling the ISCEBs. 49 beehives will soon be harvested by 87 beekeepers trained through this project, providing both honey and income. CFP is also pursuing market research to link these beekeepers with local and regional markets going forward. Beneficiaries of the alternative energy systems are able to access lighting in the evening and charge cell phones locally, increasing their energy security and removing a barrier to poverty reduction. Beneficiaries of rainwater harvesting have improved water security and have reduced the number of hours required to fetch water from distant sources.

Further indications of generated impact:

- CFP focused on women for the production of fuel briquettes, as women are primarily responsible for household cooking and fuel collection. Currently the majority of the trainees use the briquettes personally. CFP is researching the market for these briquettes however, and hopes to generate a cottage industry surrounding their production.
- After starting implementation of the *RLRC* project, CFP was recognized by the government as playing a key role in climate change adaptation. As such, CFP was invited to participate in the sessions for the development of the *Zanzibar Climate Change Strategy*, a Zanzibar centric *Local Adaptation Programme of Action*, and the *Zanzibar Biomass Survey of 2012-13*.
- Some quantitative results: 70 households reported to have improved their food security situation (140% of the target); 524 community members are benefiting from the ISCEB constructions; 120 direct beneficiaries of the agroforestry activities (and their associated households) benefit from increased food security and diversified income.

EMPOWERING VULNERABLE RURAL COMMUNITIES TO ADAPT AND MITIGATE THE IMPACTS OF CC IN CENTRAL TANZANIA

■ From the final project report, 2014

Regarding progress towards the achievement of the indicators at SO level:

- ♦ Indicator 1 - Cholo is recognised as an eco-village by the village community and local authorities: 100 % achievement
- ♦ Indicator 2 - 75% of farmers and livestock keepers using CC adaptation innovations: Achieved for 60%

- ♦ Indicator 3 - 50% of land improved: "Land improvement" was measured by the parameter "average yield per acre". Progress made: 38% increase in average yield. Target achieved for 76%.
- ♦ Indicator 4 - Visitors attracted from all 7 districts in the region (50 from each district): Progress was not quantified. The "end of project situation" was described as: Chololo received many visitors during field days and requested visits. A tremendous change is realised.
- ♦ Indicator 5 - Visitors attracted from all 10 regions in lot 2 (25 from each region): Progress was not quantified. The "end of project situation" was described as: Chololo received many visitors during field days and requested visits. Tremendous change is realised.

Regarding impact on the final beneficiaries / target groups:

All indicators have moved in the right direction and at right speed. However, the changes on land improvement are slow (38% vs. 50% expected) mainly due to the short duration of the project. Activities that were planned to improve land were tree planting, contouring, use of energy saving stoves and biogas to reduce tree cutting for firewood and land use planning and management. To realise the 50% target, an implementation period of more than three years is needed.

The reduction of women's and children's workload was expected to be reduced by 50% but so far only 38% has been achieved. However in many cases the project has made the work easier (like through the introduction of ox-tillage implements instead of using the hand hoe for land preparation).

The project has increased the range of activities (fishponds; livestock keeping, leather and leather products manufacturing, improved agriculture practices etc.). These new activities have provided alternative livelihood opportunities, enabling women to engage in more productive activities, increasing their incomes and food security. Some of the villagers (agriculture and livestock farmers) now have productive opportunities throughout the year, whereas initially most of the crop producers were only busy during the rainy season.

The general increment of average household income (18%) is below the expected level (50%). Again, this is because of slow changes in the village community. More time is required for villagers to change their mindset. A good thing is that the income generated by women, which was very low (TZS 341,389) at the start of the project, has increased to TZS 560,344 at the end of the project (a 64% increase). This was due to an increase in the sales of chicken and goats thanks to the introduction of improved breeds, disease control and better management in general. The effects of introducing genetically improved breeds is quicker for chicken and goats than for cattle. According to the village cultural setup, women have the freedom to own small animals, like goats and chicken, and their husbands allow them to sell and spend the income, usually spent in support of the family's welfare.

The livelihoods in the Chololo community have improved through an increased sale of surplus yield in crops and livestock as well as through having enough water for domestic uses. This is manifested through an increased number of modern houses and the health status of adults and children. This is witnessed by Jeri Masianga, a female beneficiary, who says: "I have benefited a lot from keeping goats and chicken. I have sold goats and got TZS 550,000. I also sold chicken and got TZS 250,000. I spent the money I got for paying school fees for my children, investing in farming and business and some for household use. I now have a modern house. My husband has no job and he is totally dependent on me. The project has changed a lot for me. If I get problems I am able to solve them myself without depending on my husband". Another woman, Mary Mpilimi said: "With improved livestock management and disease control, I was able to sell 100 chickens and I got TZS 1,000,000. Now I don't have to beg money from my husband for things like clothing, medicine and school fees. I now have enough money for the household and extra money which is helping me to build our new house." The village chairperson commented: "In my village, everybody has benefitted from the project. Rainwater harvesting through roof catchment at school is providing water for the school and surrounding community. The solar pump has made water available every day of the year".

The village community's knowledge on climate change adaptation in agriculture has improved. Stephano Chifwaguzi says: "Initially I was planting my farm haphazardly. I was planting in the dry season when the first rains come in November, and seeds can germinate and then dry or die. But after being trained I am now waiting for the big rains, then I plough my farm, plant my crops in proper spacing and now the yields have increased." James Maligana says: "The most important agriculture practices which I won't forget are: using farm yard manure, ox-ploughing, proper planting date, using improved high yielding and drought resistant

varieties, planting in spacing and rows, proper weeding, thinning and on-farm rainwater harvesting using contours. These agriculture practices made great changes in my farm. The yields have more than doubled. We are now getting extra food for sale, and money for meeting daily expenses and building modern houses.”

Food security in the village has improved from having enough food for 4.7 months to 7.2 months. This is evidenced by the fact that the average number of meals per day has increased from 2.3 to 2.5. Presently, more than half of the households take three meals per day (51%); while in 2011 only 25% of the households could afford three meals. The village chairperson says “I assure you that during the two years of Chololo Ecovillage project implementation, our village has been free from hunger and according to the good condition of the farms this year (2013/14), my village will get more yield than in the previous years. Nobody is going out of the village in search of food. Those who have shortage get food within the village from farmers who have enough.”

There has been a reduction in women’s workload related to their task of fetching firewood. This is evidenced by women using energy saving stoves and biogas. Mama Chifaguzi says “In the past I was using two bundles of firewood per week on my three-stone traditional stove but now I am using less than one bundle per week with the energy saving stove. This has lessened the burden of fetching firewood, which is now scarce due to deforestation. I advise other women to just get an energy saving stove.” Agnes Mwalimu says that “The biogas is very useful to me. It helps me to cook tea and food quickly in the morning for the people going to herd livestock. Unlike in the past, I am no longer going to fetch firewood. There is no smoke during cooking and I don’t destroy the environment.”

Regarding the impact on the target country/region:

Chololo village is now a model of good practice in climate change adaptation and mitigation where many people from inside and outside the country come to visit and learn. Mr Steve Campbell, a representative of the American England Church, who visited Chololo Ecovillage and took rainwater harvesting innovations to Nzali village in Chamwino district says: “Many thanks for stopping by today in support of our efforts in Nzali. Your expertise and advice have been tremendously valuable to us. I’ve been a fan of the Institute for Rural Development Planning since I first spotted the Chololo website and I’m looking forward to learning more about Phase Two. We had a good day in Nzali today. We’ve replaced the fascia boards on two of the school buildings and have added nearly 120 feet of guttering for directing the rainwater to the new tanks. We also installed the tank frame and some of the piping to improve and increase the well’s delivery capacity. Many villagers (both young and old) turned out in support. The amount of hard work they completed was most impressive and enabled us progress beyond our original timetable.”

Other people who visited Chololo are replicating the good innovations in Kilimanjaro, Mwanza, Morogoro, Chamwino, Singida, Arusha, Liberia and Malawi and many more have requested to visit Chololo.

Mr Tim Clarke, former EU Ambassador says, “Within three years Chololo is becoming a household name for innovation and success in the world of rural development. One of the most fragile and vulnerable rural communities in Tanzania is showing the way.”

The project worked directly in only one village (Chololo) located in the semi-arid central zone of Tanzania, yet its work has already benefitted many villages facing similar challenges. The village has become a model for others to learn from, and other villages both within and outside the country will use the Chololo Ecovillage approach to improve the livelihoods and food security of so many rural people suffering the impacts of climate change.

▪ **From the project evaluation report, 2014**

Summary on Impact (achievement of higher level objectives):

The level of impact is considered as “Very Good”. There has been good progress towards the realization of project outcomes. This can be seen in high achievement levels of the indicators’ goals. Examples include: Chololo recognition as an eco-village; increased percentage of farmers and livestock keepers in using change adaptation innovations from 19% (2012) to 46% (2014); increased average yields from 234 Kg per acre (2012) to 351 Kg per acre (2014); 25 climate change adaptation innovations have been tested, evaluated and applied; 50% (2014) of women are in leadership position compared to 40% previously (2012); number

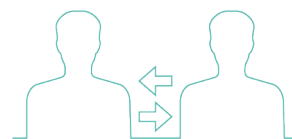
of households eating 3 meals per day has doubled (from 29% to 62%); increased average household income from TZS 585,042 (2012) to TZS 690,360 (2014); women income increased from TZS 341,389 (2012) to TZS 560,344 (2014); reduction by more than half on the number of months of food shortage from 7.3 months (2012) to 2.8 months (2014).

The Project has been there for three rainy seasons (first season most people were sceptical; second season more people joined; third season majority convinced), now an increasing number of people are actively looking for support and yet the project is ending. There is a need to support them for a bit longer (maybe another 2 rainy seasons) for impacts to spread out effectively to the remaining people in the village.

Full text on Impact:

The awareness creation, sensitization, support to group formation, and training within the project has definitely given the community members greater confidence in their ability to successfully undertake action(s) related to climate change adaptation. According to some members of the community, the village has moved from **“darkness to light”**. Before the project, people did not believe they could change the circumstances of their lives so profoundly. Today they believe that going back to where they were before the project is not an option and they have demonstrated this in the way they have been influencing the rest of the world through songs, drama, participation in a variety of district and national events, receiving and encouraging visitors, being active in promoting their achievements through different channels, such as the webpage, a newsletter, a magazine, and participation in the Global Learning Event held by the GCCA.

There has also been an increased networking with other individuals, groups, communities, organizations, and institutions dealing with climate change adaptation work. According to the Result Oriented Monitoring (ROM) report (May 2013), the deputy project manager, who also represents civil society in the task force in charge of the Agriculture Action Plan of the National Climate Change Strategy, has informally allowed the Chololo experience to be known at this level. This makes Chololo an international experience.



Increased income has also resulted in improved housing and a better capacity to pay school fees and medical services. Some farmers have also been able to develop new activities that were not included in the project design, such as fishponds. It has been noted that in the past Chololo village was getting food from neighbouring villages but to date people from neighbouring villages are the ones getting food from Chololo. This is due to increased productivity where now new crops from the farms are harvested while the crops from previous season are not finished yet. All this is indeed impact.

One of the beneficiary farmers - Stephano Chifwaguzi - adopted more than one innovation from the project. He has used and adopted several techniques such as: keeping improved cattle breeds; making compost manure; using improved cooking stoves; use of farmyard manure in his farms; using biogas for cooking and lighting the house-as this is made possible by the cattle he is keeping; leather shoe making; using improved food crop varieties for better yields; using local food crop varieties that are able to sustain the environment; and he plans to have a fishpond when there is enough water. This farmer has also used other improved farming techniques like timely planting to escape the prolonged dry months and is expecting bumper harvest from his crops as narrated by himself “I am looking forward to harvest this year a lot more than last season. Last season I was able to sell my crops even to the nearby villages and this year it will be even more.”

The inclusion of the Dodoma Municipal Council has also generated impact in terms of networking. It will enable the village to share experiences and expertise across the whole district and beyond. The partnership arrangement involving the IRDP, the Agricultural Research Institute Hombolo (ARIH) and the Tanzania Organic Agriculture Movement (TOAM), will also guarantee the dissemination of experiences and expertise all over Tanzania.

The attraction of financial resources beyond the budget provided by the project has been a tricky affair because the revolving fund suggested and included in the project design did not take off. We believe this is an area that could have been addressed more aggressively given that a community vulnerability and capacity analysis study done in September 2013 stated in no uncertain terms that “the lack of access to capital/finance is clearly a barrier to the uptake of adaptation innovations, suggesting that scalable technologies must be low

cost, and access to microfinance needs to be improved”. In addition to access to soft loans/credit etc, there is need to link the community to other sources of funding for further development that will entrench the adopted climate change adaptation technologies in the village.

Finally, and as the Dodoma Municipal Council (DMC) Representative of the area (Councilor) said, “the greatest impact of all from the project is not that there is increased production, productivity, employment or capacity to generate income, but being given the opportunity to proof that you can produce and be gainfully employed – that is human dignity and self-esteem”.

ENHANCING CC ADAPTATION AND MITIGATION CAPACITIES OF VULNERABLE COMMUNITIES IN ECO-VILLAGES OF DIFFERENT ECOSYSTEMS OF THE ULUGURU MOUNTAINS

■ From the final project report, 2014:

The main challenge encountered was the slow start of the project due to administrative hurdles which made us to miss one growing season. Another challenge related to the methodological approach that was deeply participatory and which involved very few direct hand-outs to the beneficiaries as incentive for the community to participate in implementing the activities. This was a deliberate decision to minimize creating dependency on the project, but rather to create a sense of self-reliance and to build sustainability of the activities. This has made the implementation slower but has tremendously increased the ownership and the sustainability of the actions implemented.

Experiences from this project have demonstrated technical feasibility, acceptance by the local communities and potential for adaptation to already observed climate change impacts of the interventions. Participatory evaluation has revealed a need for upscaling its first results and to give attention to 2 specific issues in particular:

- The strengthening of local government capacity to address and mainstream climate change in local development.
- Knowledge management (including experience analysis and sharing, lesson learning and dissemination of results), with a view to supporting the replication and scaling up of successful approaches tested in pilot eco-village projects.

COMPONENT 1 – SUSTAINABLE AND CLIMATE-FRIENDLY FARMING SYSTEMS:

- Impact in relation to the specific objective to increase resilience and CC adaptation and mitigation capacity: Five adaptive strategies at farm level have been identified and tested: i) income diversification through fruit trees, ii) income diversification through fish farming, iii) intensifying agricultural production through soil conservation practices such as permanent terracing and contour-strip cropping, iv) securing/improving access to water through irrigation for intensified agricultural production, v) increasing value of fruit production through increased linkages with financial services and food processing industries. However, project duration was not enough to make these strategies to be adopted by a wide section of the community. Therefore, these strategies will be further promoted in order to reach out to our target of 25% of families in the project area.
- Impact in relation to the overall objective to strengthen the resilience of the most vulnerable communities of Tanzanian highlands to climate change: Five adaptive strategies at farm level have been identified and tested, and have in part been documented. Lessons and best practices coming from these community-based innovative and sustainable initiatives are likely to contribute to the strengthening of the resilience of the most vulnerable communities of Tanzanian highlands to climate change.

COMPONENT 2 - COMMUNITY-MANAGED ORGANISATIONS FOR SUSTAINABLE USE OF NATURAL RESOURCES:

- Impact in relation to the specific objective to increase resilience and CC adaptation and mitigation capacity: Increased resilience and climate change adaptation and mitigation capacity have been put in place: i) reforestation, ii) water catchment protection through tree planting on river banks, iii) collective rainwater harvesting.

- Impact in relation to the overall objective to strengthen the resilience of the most vulnerable communities of Tanzanian highlands to climate change: The above 3 adaptive strategies at collective level have been identified and tested, and have in part been documented. Through up-scaling in link with activities of cluster 3, lessons and best practices coming from these community-based innovative and sustainable initiatives will contribute to strengthening the resilience of the most vulnerable communities of Tanzanian highlands to climate change.

COMPONENT 3 – CO-GOVERNANCE OF NATURAL RESOURCES FOR CC ADAPTATION AND MITIGATION:

- Impact in relation to the specific objective to increase resilience and CC adaptation and mitigation capacity: Resilience and climate change adaptation and mitigation capacity have been increased through:
 - Enhanced awareness on climate change, more effective natural resource management and networking of populations, leaders, government authorities and natural resource management institutions.
 - Conditions are set in place to work on by-laws and define required institutional functions and interventions in relation to natural resource management (water user groups, environmental committees, other ad hoc institutions).
- Impact in relation to the overall objective to strengthen the resilience of the most vulnerable communities of Tanzanian highlands to climate change: The current outputs have enabled us to identify adaptive strategies related to natural resources (water management at watershed level, reforestation activities for water catchment protection). Further, these strategies were formalised through developing institutional entities which are now aware of e.g. how to protect their water resources.

COMPONENT 4 – SCALING UP AND NATIONAL CLIMATE ADAPTATION POLICY:

- Impact in relation to the specific objective to increase resilience and CC adaptation and mitigation capacity: The guidelines that have been developed will continue to be used by the project beneficiaries beyond the project period and so will ensure the sustainability of the activities that were started by the project.
- Impact in relation to the overall objective to strengthen the resilience of the most vulnerable communities of Tanzanian highlands to climate change: The sharing of the project findings with various stakeholders at different levels will contribute to the process of up-scaling to other similar geographical locations and will draw attention from key decision makers who may incorporate the lessons into national strategies and plans.



- From the project evaluation report, 2014:**

Regarding the adoption/acceptance of project interventions/adaptive strategies:

Assessment of stakeholders' views indicate a relatively high rate of adoption/acceptance of most of the interventions/adaptive strategies introduced by the project. The rate of adoption/acceptance of most (79%) of the project interventions/adaptive strategies was "average" or "high". Only 3 of the 14 (21%) project interventions/adaptive strategies had a low rate of adoption/acceptance. These are: *fanya juu*, fuel saving stoves and organisational improvement/sengu. Major reasons for their low adoption/acceptance were high labour demand, not meeting users' needs and village leaders being afraid of losing their powers respectively.

On outcomes and potential impact of the project:

Evidence from the stakeholders consulted by the Evaluation Team and review of project reports indicate that the project interventions have had a number of positive outcomes such as increased knowledge and awareness on climate change and its impacts, increased availability of irrigation water and reduction in water use conflicts, increased crop yields, increased incomes and increased household food security and nutrition. These outcomes are further detailed in the following paragraphs. Although it is too early to talk about impact of the project because it is less than three years since the commencement of the activities, the stakeholders

that were consulted during the visits to the project villages consider the potential impact of the project to be high.

- **Change in community understanding of climate change issues.**

Evidence from project reports and Focus Group Discussions indicate that communities in the project area have gained a better understanding of climate change issues. In Mgeta division, project reports show that before project interventions 4% of the community had a good understanding and 0% had a very good understanding of climate change issues. As a result of the project interventions, the proportion of community members with good and very good understanding of climate change issues increased to 39% and 41% respectively. In Matombo division, the proportion of community members with good and very good understanding of climate change issues has increased from 3% and 0% to 36% and 20% respectively.

- **Increase in water availability for irrigation and reduction in water use conflicts.**

Evidence from Focus Group Discussions held in Mgeta division indicates that the supported improvement of the village irrigation systems increased water availability. Apart from improving the irrigation systems, the project also strengthened the water user associations which manage and regulate water use among irrigators. Most of the water users acknowledged that conflicts had declined since the introduction of a water rationing schedule by the water user associations.

- **Change in crop yields.**

Evidence from farmers indicate that crop yields had increased since they started implementing farming practices and technologies introduced by the project. Table 8 shows crop yields before and after project interventions for some of the annual crops. The table shows substantial yield increases, ranging from 25% increase for garlic to 118% increase for chili pepper. The higher yields are associated with the promoted improvements in husbandry practices, including liquid manure and fertilizer use, quality seeds, spacing and efficient use of irrigation water. Farmers also reported improvements in the vegetative growth of perennial crops, such as pineapple and banana, planted on the field contours; data on the yields of these crops are not yet available as the fruit production was just starting.

Table 8 - Crop yields before and after project interventions

CROP	YIELD BEFORE PROJECT INTERVENTION (KG/ACRE)	YIELD AFTER PROJECT INTERVENTION (KG/ACRE)	% INCREASE
Chili pepper	550	1,200	118
Sweet pepper	900	1,700	89
Garlic	48 bags/acre	60 bags/acre	25
Green beans	700	1,120	60
Irish potatoes	1,500	2,800	87

- **Increase in incomes.**

Consulted individual farmers and groups of farmers in the project villages acknowledged an increase in household income as a result of the project interventions. The following were mentioned as the major sources for increase in household incomes:

(i) Income from crop sales: Crop sales were said to have increased due to yield improvement as indicated in Table 8 above. Farmers reported increases in crop income above those earned before project interventions of about TZS 120,000; TZS 150,000; TZS 300,000 and TZS 690,000 per acre for Irish potatoes, chili pepper, sweet pepper and garlic respectively.

(ii) Income from fish sales: Discussion with groups of farmers involved in fish farming revealed that fish farming had been beneficial. Those who started fish farming right from the beginning when the activity was introduced by the project are now earning income from the sales of harvested fish from their ponds. One of the fish farmers harvested four times since he started fish farming in 2012. The price of fish varies

from TZS 2,000 to TZS 4,000 depending on the size of the fish sold. One of the farmers interviewed in Masalawe village earned about TZS 450,000 from the sale of fish harvested from his pond in 2013/14. (iii) Sale of fruit and timber tree seedlings: Sale of seedlings was undertaken by groups of farmers involved in seedling production but the benefits trickle down to individual households. Some groups have re-invested the income in other income generating activities. The following are good examples of groups which have benefited from the sale of seedlings:

The Tushikamane group in Luale village. This group earned about TZS 750,000 from the sale of seedlings and decided to re-invest some of the earnings into Irish potato production. Then some of the income from the sale of potatoes was shared among the five members of the group (3 women and 2 men). Four of the five members used the income to buy solar panels for electricity generation, mainly for lighting but some of them make a commercial enterprise of it by allowing customers to charge their mobile phones at a cost of TZS 300 per phone. The fifth member decided to use the income to purchase corrugated iron sheets for improving his house. The group is planning to re-invest in chili pepper production in the 2014/15 farming season. Their medium and long term goals are to re-invest their earnings in a milling machine business and in transport business respectively.

The Wangahamwe group in Londo village. This group was involved in sustainable farming of garlic, chili pepper, beans and Irish potatoes. The group decided to buy a milling machine with the income they earned from the sale of these crops.

- **Increase in income stability.**

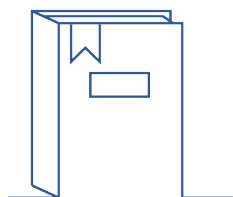
Discussions with farmers who adopted crop diversification indicated that the increase in crop diversity in their farming system had increased stability of the household income. They were of the opinion that their incomes were more stable now than before the project three years ago. This is largely due to a reduction in the risk of income fluctuation due to changes in the market prices.

- **Improvement in household food security and nutrition**

Consulted stakeholders in the project villages indicated that the crop diversification and the fish farming, both promoted by the project, not only improved the household food security but also the nutrition status of the household members, especially of the children.

2.3. Summary findings from the desk phase and specific issues to be further explored during the field phase

Substantial analysis on impact and on the underlying factors has been done by the individual grant project evaluations (2014) and by the ex-post overall evaluation (2016). The available documents provide detailed information on this aspect and are mostly positive on the generated impact, the adoption of innovations introduced by the project and on the potential for replication.



Still, the reports do not always assess impact against the logframe objectives and their indicators. In this respect, also the ex-post evaluation report (2016) stated that “the internal monitoring systems were relatively weak (with the exception of Chololo) and focused on outputs rather than outcomes and impact”.

During the field phase, emphasis will be on (1) verifying the impact levels to date, which is 3 years after the ex-post evaluation took place and on (2) assessing the impact in accordance with the common approach for the GCCA Impact and Sustainability Study so that the findings from Tanzania can be correctly integrated in the overall study.

2.4. Achievement of the logframe indicators at overall and specific objectives levels (direct impact)

INDICATOR	LEVEL OF ACHIEVEMENT (%)	EXPLANATORY NOTES
OVERALL GCCA PROJECT LEVEL		
<u>OO level, indicator 1:</u> Food security / Economic status of the targeted communities. <i>No baseline, no target.</i>	80%	<p>Available data and testimonies provide substantial evidence on improvements in agricultural production, income and nutritional status. Some examples: honey production in Pemba had doubled/tripled with the introduction of the modern beehives and improved techniques; in Chololo, highly dependent on food aid in the years before the project started, more than 50% of the population can now afford 3 meals per day; a fruit tree nursery group of 3 persons in the Uluguru mountains quickly generated an initial income that gave them access to a credit from SACCOS allowing to expand their commercial nursery and to cover the school costs of their children.</p> <p>The project has been active in 27 villages; the perception acquired during the field visit is that tangible and sustained – though variable - improvements have been generated in about 80% of the targeted villages.</p>
<u>SO level, indicator 1:</u> Number of eco-villages set up.	25%	As indicated above, the project implemented support activities in 27 villages. While the projects in the Uluguru mountains and in Chololo complied with the initial targets,

No baseline, no target.		<p>the project in Pemba added 13 villages to the 6 that were initially foreseen.</p> <p>Though the target in terms of numbers of supported villages has been exceeded, not all these villages demonstrate the characteristics of an eco-village, defined by the Global Ecovillage Network (GEN) as “an intentional or traditional community using local participatory processes to holistically integrate ecological, economic, social, and cultural dimensions of sustainability in order to regenerate social and natural environments.” In fact, none of the intervention villages under the first phase of the GCCA project in Tanzania is a GEN recognised eco-village. Only one village in Tanzania, notably Igunga, supported under the second phase of the GCCA project has gained this status.</p>
GRANT 1: RESILIENT LANDSCAPES FOR RESILIENT COMMUNITIES		
OO level, indicator 1: 5 communities identified via CRiSTAL analysis engage in the project	<100%	<p>The project started working with 6 communities, subject to prior CRiSTAL analysis as imposed by the CfP guidelines and ended up in working with 19 communities. The demand/pressure to get involved in the project was high in Pemba.</p>
OO level, indicator 2: Successful implementation of the principal project actions in each target community	80%	<p>There was a clear interest of communities in Pemba to get involved in the project, which was based on the observed achievements and positive impacts in the 6 initial communities.</p> <p>By the end of the project, the achievement levels for the 11 main activities are reported as follows:</p> <ol style="list-style-type: none"> 1. Transfer of 500 hectares of degraded land from government to community ownership: 12% 2. Establishment of 25 hectares of resilient agricultural systems on community land: 148% 3. Afforestation of 475 hectares of community land: 49% 4. Establishment of 50 multi-strata home gardens: 132% 5. Training of 100 community members in the production of fuel briquettes: 140% 6. Training of 50 community members in the production of earth blocks: 29% 7. Training of 50 community members in small-scale apiculture: 87% 8. Training of 50 community members in fuel-efficient cook stove production and distribute 250 units: 434% for training and 222% for distribution 9. Establishment of 5 community composting facilities: 120% 10. Establishment of 5 community alternative energy systems: 160% 11. Establishment of 5 community water harvesting systems: 120%

		<p>This means an arithmetical average achievement level of 138%; with 7 activities achieving their target.</p> <p>Further, the sustainability analysis (see annex) is quite positive for Pemba, with 75% of the outputs fully sustained (scores 1 and 2).</p>
<u>OO level, indicator 3:</u> Replication of project activities in other communities in the region	100%	<p>CFP, as a local NGO, declared its intentions to replicate the successful activities to other communities in Pemba, in line with its vision and objectives. The second phase of the GCCA project in Tanzania where CFP was one of the five grantees, provided a first opportunity in fulfilling this ambition. As a matter of fact, CFP covered 26 communities under the new grant.</p> <p>Apart from the above, stakeholders reported during the I&S visit replication of certain activities (e.g. beekeeping, use of fuel efficient cooking stoves, kitchen gardens) by neighbouring communities.</p>
<u>SO level, indicator 1:</u> Project activities selected for cultural acceptability, cost-effectiveness, and synergistic multiplier effects involving all stakeholders are carried out in target communities	80%	See explanatory notes under “OO level, indicator 2”
<u>SO level, indicator 2:</u> Participants, appropriate technologies, and improved lands are enumerated to indicate achievement	75%	Commendable efforts have been made to quantify targets and achievements at the output level. There is still scope for improvement in this respect at the outcome / impact levels.
GRANT 2: EMPOWERING VULNERABLE RURAL COMMUNITIES TO ADAPT AND MITIGATE THE IMPACTS OF CC IN CENTRAL TANZANIA		
<u>OO level, indicator 1:</u> CC strategies in central Tanzania influenced by Chololo eco-village	100%	<p>The project, apart from having been successful in the introduction of CC adaptive strategies and measures amongst the population of Chololo, has paid a lot of attention to visibility aspects and dissemination of good practices. For this purpose, many different communication channels were used: production of leaflets, brochures, publications, videos; the organisation of exchange visits with farmers from other villages or learning visits by development partners active in other parts of Tanzania; the use of Chololo eco-village as a living laboratory for IRDP students and researchers; the active participation in relevant events (national farmer days; GCCA learning events), etc.</p>

		<p>Though the specific and concrete effects of these combined dissemination efforts on CC strategies in central Tanzania have not been monitored / recorded, the following indications of (potential) influence can substantiate the score for this indicator: CC mainstreaming of the development plans of Dodoma Municipality was inspired by CC adaptation activities and results in Chololo; after his visit to Chololo eco-village, the District Commissioner started sensitising farmers in other villages within the District on the positive effects of the CC adaptation measures adopted in Chololo; development partners active in central Tanzania enriched their CC adaptation strategies / promotion packages with the experiences and knowledge gained in Chololo.</p> <p>The influence further expanded under the second phase:</p> <ul style="list-style-type: none"> ▪ The project took the initiative to organise the first National CC Adaptation Conference in Dar es Salaam. ▪ The intervention area was expanded with the neighbouring Chamwino District. ▪ 5 CC adaptation interventions – promoted and tested under the project – were newly incorporated in District development and/or land use plans: installation of solar water pumping for irrigation (partly replacing old diesel engines with solar powered pumps), production of improved sorghum seeds, Climate Smart Agriculture, training on vegetable leather tanning and manufacturing of leather goods.
OO level, indicator 2: Dodoma Municipal Council rolls out CC best practices across the district	75%	<p>Such rolling out takes place, though always within the constraining limits of available budgets.</p> <p>Concrete examples: the DMC extension service is largely built on the best practices that were developed / demonstrated in Chololo; the DMC has envisaged funding for the roll out of water supply systems in the area as per Chololo model (= boreholes with solar-powered pumps, including the set-up of a mechanism for management and maintenance).</p> <p>Under the second phase, more adaptation interventions were incorporated in the Dodoma development plans (see indicator OO.1)</p>
OO level, indicator 3: Government of Tanzania endorses Chololo innovations and supports roll-out	75%	<p>Phase I: Mainly at local level (Municipality / District). Official / formal endorsement does not exist, but the many learning visits to Chololo and the many references to the successes in Chololo give proof of recognition.</p> <p>Under phase II, the recognition continued growing and Chololo eco-village has become <u>the</u> reference in Tanzania for CCA in drylands.</p>

		In spite of the high recognition, a 75% score is assigned because government funding for an effective roll-out remains limited.
<u>SO level, indicator 1:</u> Chololo is recognised as an eco-village by the village community and local authorities.	100%	As could be observed during the visit, both the village community and the local authorities were very satisfied with the changes generated with the support of the project and proud of their good fame as successful eco-village.
<u>SO level, indicator 2:</u> 75% of farmers and livestock keepers are using CC adaptation innovations.	60%	According to a survey conducted by the end of the project (first phase), 46% of the farmers and livestock keepers in Chololo were found to apply CC adaptation measures. Though this was an improvement as compared to the initial 19%, the target was not fully achieved.
<u>SO level, indicator 3:</u> 50% of land improved	40%	<p>Under the first phase, this indicator was assessed by the parameter “average yield per acre”. By the end of the project (phase I), average yields of 351 kg/acre were recorded, hence an increase of almost 40% as compared to the baseline of 254 kg/acre.</p> <p>Monitoring data collected under the second phase indicate that by the end of the second phase 1,158 ha of land had been improved through better and sustainable management practices. What this means as “percentage of total arable land improved” is not known.</p> <p>None of the above records provides a direct result in terms of achievement of the indicator. Baseline data indicate that Chololo counts about 1,100 households with an average farm size of 2.8 ha (6.9 acres); which gives a total area of farm land of 3,080 ha. The 1,158 ha of land improved by the end of the second phase means a percentage of 37% of total farm land improved. This means an achievement of the indicator of 74% but only after an additional second phase.</p> <p>Based on the above, an indicative score of 40% is assigned.</p>
<u>SO level, indicator 4:</u> Visitors attracted from all 7 districts in the region (50 from each district)	75%	<p>Reports indicate that Chololo is visited frequently by different types of visitors, ranging from farmers to ministers, over extension workers, development partners, students and researchers; even from abroad (Liberia, Malawi).</p> <p>To what extent these visitors meet the exact target of 50 visitors from each of the 7 districts of Dodoma Region is unclear due to incomplete records (sometimes the</p>

		numbers are lacking, sometimes the origin of the visitor). In any case, the records are below the target set for the indicator.
<u>SO level, indicator 5:</u> Visitors attracted from all 10 regions in lot 2 (drylands) (25 from each region)	50%	Reports indicate that Cholulu is visited frequently by different types of visitors, ranging from farmers to ministers, over extension workers, development partners, students and researchers; even from abroad (Liberia, Malawi). To what extent these visitors meet the exact target of 25 visitors from each of the 10 dryland regions in Tanzania is unclear due to uncomplete records (sometimes the numbers are lacking, sometimes the origin). In any case, the records are below the target set for the indicator.
GRANT 3: ENHANCING CC ADAPTATION AND MITIGATION CAPACITIES OF VULNERABLE COMMUNITIES IN ECO-VILLAGES OF DIFFERENT ECOSYSTEMS OF THE ULUGURU MOUNTAINS		
<u>OO level, indicator 1:</u> By the end of the project at least 1 adaptive strategy with at least 10 activities has been identified, tested and documented and is ready for scaling up to other Tanzanian highland communities	100%	The project developed and published a “Manual on Sustainable Agricultural Practices” based on the adaptive strategies and practices that were promoted, tested and documented in the project villages. The manual is in Swahili language and meant to be used for the dissemination of these practices to other farmers in the Uluguru Mountains as well as in other mountain areas. Further to this, the project also developed a SACCOS Financial Management Guide as well as brochures on natural resource governance. The project also worked on the development of a guide for the establishment of community-based groups, such as e.g. Water User Groups.
<u>OO level, indicator 2:</u> Experiences gained have been disseminated through professional and social networks in and outside Tanzania	75%	Findings and lessons from the project were disseminated through the following events / initiatives: <ol style="list-style-type: none">1. A stakeholder workshop at SUA with 70 participants from Morogoro and Mvomero districts. The participants included individual farmers from the Uluguru mountains, representatives of local farmer networks, secondary and primary school teachers, ward and village leaders, ward and village level technicians, district level staff, SUA researchers, and media.2. A second workshop targeting national policy makers was held in Dar es Salaam. This workshop was attended by 37 participants, representing line ministries, development partners, international and national NGOs, academic institutions, media and the other two GCCA grant projects.3. In November 2013, the paper “Factors in Smallholder Farmers’ Vulnerability to Climate Change Impacts in the Uluguru Mountains” was presented at an international conference on “Climate Change, Sustainable Intensification and Food Security in Sub-

		<p>Saharan Africa”, organised in Morogoro and funded by NORAD and USAID. The main message of the paper was that - based on the project experiences - crucial factors in local smallholder farmers’ vulnerability to climate change include: access to information and resources, road and market infrastructures, and smallholder farmers’ organisation. The conference had attracted more than 100 scientists from different countries.</p> <p>4. The development of several dissemination materials as indicated above (OO indicator 1).</p> <p>Though dissemination events have been organised and dissemination materials developed, an achievement level of 75% (and no 100%) has been given because of the seemingly limited impact of the above dissemination events and materials, based on:</p> <p>(1) There is not much evidence of effective replications.</p> <p>(2) The project has been criticised for not adequately linking up with the District officials, and in particular with the District extension services, which has negatively affected effective dissemination.</p> <p>(3) The added value of the project experiences after only two growing seasons is questionable.</p>
<p><u>SO level, indicator 1:</u> By the end of the project, at least 5 adaptive strategies are adopted by 25% of the households</p>	10%	<p>According to the project’s final report, “5 adaptive strategies at farm level have been identified and tested: i) income diversification through fruit trees, ii) income diversification through fish farming, iii) intensifying agricultural production through soil conservation practices such as permanent terracing and contour-strip cropping, iv) securing/improving access to water through irrigation for intensified agricultural production, and v) increasing value of fruit production through increased linkages with financial services and food processing industries. However, project duration was not long enough to have these strategies adopted by a wide section of the community. Therefore, these strategies will be further promoted in order to reach out to our target of 25% of families in the project area”.</p> <p>So, by the end of the project, 5 adaptive strategies were identified and introduced, but the adoption target of 25% of families in the project area was not achieved. The intended/required continued promotion after the closure of the project has never taken place. (SUA had been unsuccessful in obtaining a grant under the second phase of the GCCA project in Tanzania, which would have allowed to increase the adoption rate)</p>
<p><u>SO level, indicator 2:</u> By the end of the project, by-laws on natural resources management are in place</p>	0%	<p>In 2014 (i.e. towards the end of the project) the project provided a 3-days training to “enhance awareness on by-laws governing the use of natural resources” for stakeholders from the 4 target villages in Matombo</p>

and effective in seven villages		<p>Division. In Mgeta Division, no activities were organised to support the development of by-laws.</p> <p>After the training, no further progress on by-law development was made. This was confirmed in the project evaluation report, more specifically in the section where beneficiaries' views were presented on different aspects of the project. Regarding by-laws, they indicated that the development of by-laws is still relevant and is yet to be undertaken.</p> <p>Also during the I&S visit in Mgeta Division, the need to develop by-laws was mentioned during one of the stakeholder meetings.</p>
<p><u>SO level, indicator 3:</u> By the end of the project, 60 local institutions and networks on natural resource management are functional</p>	50%	<p>While it is certainly true that the project involved local institutions and networks to promote sustainable management of natural resources in the intervention area, the reports do not suggest that the target number of 60 was achieved. Further, the “involvement” was mainly related to participation in awareness raising sessions, training and planning meetings and – while capacities might have been strengthened – the I&S visit did not reveal much evidence of these local institutions and networks being really active / functional in the field.</p>

2.5. Achievement of the overall and specific objectives (direct impact, exceeding the scope of the indicators)

OVERALL GCCA PROJECT LEVEL

- **OVERALL OBJECTIVE (OO):** To increase the most vulnerable Tanzanian communities' capacities to adapt to the adverse effects of climate change through sustainable use of their natural resources

Achievement: “1” (>75%)

EXPLANATORY NOTES:

Through the 3 grant projects, such capacities were increased in a number of selected communities located in the 3 most challenging agro-ecological environments in Tanzania: (1) coastal land and small islands; (2) semi-arid areas; and (3) mountain areas. More details on how these capacities have been strengthened are given below in the sections per grant project.

- **SPECIFIC OBJECTIVE (SO):** To support the setup of a limited number of eco-villages where innovative adaptation measures can be tested (in the field of agriculture/rangeland, water/sanitation, etc.) and energy (biomass) issues will be addressed through sustainable natural resources management practices (e.g. Participatory Forest Management)

Achievement: “1” (>75%)

EXPLANATORY NOTES:

The project effectively supported the set-up of “eco-villages” in each of the 3 targeted agro-ecological zones. Together, the 3 grants covered a total of 27 communities. Nonetheless, stating that to date all these 27 communities qualify as “eco-village” thanks to the project support activities would be overrating the achievements.

The activity areas as envisaged by the objective, were fully covered by the 3 grant projects.

GRANT 1: RESILIENT LANDSCAPES FOR RESILIENT COMMUNITIES (RLRC)

- **OVERALL OBJECTIVE (OO1):** To transition 5 of Tanzania's most vulnerable communities to resilient and exemplary eco-villages.

Achievement: “3” (between 25 and 50%)

EXPLANATORY NOTES:

The RLRC project has worked on 11 different CC adaptation/mitigation measures with initially 6, and ultimately 19, communities in Pemba. The target communities' vulnerability was assessed with the “CRiSTAL” tool, hence considered as sufficiently vulnerable to be involved in the project. As indicated above, the project generated quite good results with output targets achieved (and exceeded) for 7 of the 11 measures and 75% of the outputs checked for sustainability fully sustained to date. Beneficiaries reported that their livelihoods had improved: increased incomes e.g. through beekeeping; increased yields through more appropriate agricultural practices; increased nutrition and feed security a.o. through the production of the kitchen gardens; local access to schooling (Kokota), to fresh water and to electricity.

While impact has certainly been generated, stating that the target communities have been transitioned to resilient and exemplary eco-villages would be overrating the achievements.

- **OVERALL OBJECTIVE (OO2):** To contribute to the advancement of successful community-driven climate change adaptation and mitigation in the region

Achievement: “1” (>75%)

EXPLANATORY NOTES:

With the “region” being Pemba, the wide range of relevant adaptation and mitigation measures promoted by the project and the positive adoption levels by the beneficiaries, it is justified to conclude that this objective has been achieved.

- **SPECIFIC OBJECTIVE (SO):** To mobilize the expertise of Community Forests Pemba (CFP) and its partners, the existing livelihood resources of target communities, the local native forest ecosystems and the appropriate technology towards the development of Climate Change adaptive eco-villages.

Achievement: “1” (>75%)

EXPLANATORY NOTES:

Idem as above for OO.2

GRANT 2: EMPOWERING VULNERABLE RURAL COMMUNITIES TO ADAPT AND MITIGATE THE IMPACTS OF CC IN CENTRAL TANZANIA

- **OVERALL OBJECTIVE (OO):** To strengthen the capacity of vulnerable rural communities in arid/semi-arid areas of Central Tanzania to adapt to adverse effects of climate change for improved livelihoods and natural resource management.

Achievement: “3” (between 25 and 50%)

EXPLANATORY NOTES:

The sub-project in Chololo has not strengthened the capacity of all vulnerable rural communities in arid/semi-arid areas of central Tanzania. The most one can say is that the potential has been created by providing an example (Chololo) and that the project has facilitated dissemination and capacity building in other communities through the impressive set of communication and knowledge products it has developed and through the close link it established with the local government extension services and with other development NGOs active in central Tanzania.

In summary, the project went as far as possible in creating the conditions for capacity strengthening of communities with conditions similar to the ones in Chololo.

- **SPECIFIC OBJECTIVE (SO):** To transform Chololo village into an eco-village, a model of good practice where the community identifies, tests, evaluates, takes up, and shares a comprehensive range of climate change adaptation strategies to meet their priority needs.

Achievement: “1” (>75%)

EXPLANATORY NOTES:

This paragraph can be opened with the quote from Mr. Tim Clarke, former EU Ambassador, during a visit to Chololo: *“Within 3 years, Chololo is becoming a household name for innovation and success in the world of rural development. One of the most fragile and vulnerable rural communities in Tanzania is showing the way”*.

Some of the most noteworthy improvements relate to:

- **Improved food security:** The period with sufficient food availability in Chololo has increased from 4.7 months to 7.2 months. Further evidence is provided by the increase of average number of meals per day from 2.3 meals to 2.5. By the end of the project, 51% of the households took three meals per day; while in 2011 only 25% of the households could afford three meals. Over the last years, there was no need anymore for Chololo to request external food aid.
- **Increased income:** The average household income increased by 18% in 2014. This is expected to further increase over time. However, the women engaged in keeping goats and poultry (improved breeds) were doing much better than the average. They had realised an increase of 64%. The other thriving business in Chololo is the production and sales of Quality Declared Seeds.
- **Increased agricultural production:** The package of appropriate (dry areas) and climate smart agricultural practices promoted by the project has by the end of the project allowed yields to increase with approximately 40%. Also the fact that Chololo farmers - thanks to irrigation - can now practice off-season cropping has significant effects on both food production and income generation.
- **Improved living conditions:** Improved access to clean water thanks to the new / rehabilitated boreholes and the solar powered pumps.

GRANT 3: ENHANCING CC ADAPTATION AND MITIGATION CAPACITIES OF VULNERABLE COMMUNITIES IN ECO-VILLAGES OF DIFFERENT ECOSYSTEMS OF THE ULUGURU MOUNTAINS

- **OVERALL OBJECTIVE (OO):** To strengthen the resilience of the most vulnerable communities of Tanzanian highlands to climate change through community-based innovative and sustainable initiatives which can be scaled up

Achievement: “4” (between 0 and 25%)

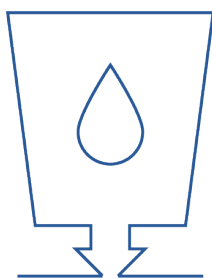
EXPLANATORY NOTES:

A similar rationale as given for the OO related to the sub-project in Chololo (“Empowering Vulnerable Rural Communities to Adapt and Mitigate the Impacts of CC in Central Tanzania”) is applicable, with the difference that the CC adaptation and mitigation strategies suitable for mountain areas were - due to initial delays in start-up of the project and to the missed opportunity of a follow-up grant – less developed / matured and certainly less documented. Therefore, the conditions put in place for scaling up to other communities with similar challenges are less conducive than in the case of Chololo / drylands.

- **SPECIFIC OBJECTIVE(SO):** To increase resilience and CC adaptation and mitigation capacity through a range of multidisciplinary and integrated activities in 7 eco-villages in different agro-ecosystems of the Uluguru Mountains in Matombo and Mgeta Divisions

Achievement: “3” (between 25 and 50%)

- EXPLANATORY NOTES:



A range of actions aiming at increasing resilience against negative effects of CC and at building capacity to respond to CC were promoted by the project in 7 villages. At the end of the project, the following achievements were reported based on these combined actions:

- the local understanding of CC issues increased;
- crop yields increased thanks to the promotion of more appropriate husbandry practices and a more efficient use of irrigation;
- incomes increased thanks to the introduction of fish farming and nursery production – both demonstrated to be profitable activities - and the sales of surplus crop yields; the importance of good management of natural resources in CC adaptation is understood and local initiatives in this respect (environmental committees, water user groups, by-laws, reforestation, protection of water sources) are being undertaken.

However, mainly due to lack of time, adoption rates were moderate by the end of the project and the above improvements relate to relatively small groups of direct beneficiaries. Moreover, no follow-up support was provided to the beneficiaries as the implementers (SUA) had not succeeded in getting a follow-up grant under the second phase of the GCCA project and did not have sufficient own means to continue travelling to the intervention areas. So, the final impact of the project has remained fairly limited. During the I&S visit, it was observed that particularly in the villages of Matombo Division the project had hardly achieved any impact.

2.6. Signs of indirect impact

- Visibility and recognition of the local non-governmental implementing partners of the GCCA sub-projects by the Tanzanian Government as well as by donor agencies. They are, for example, increasingly invited to participate in (high level) conferences and in national advisory committees related to CC. Apart from

contributing to the dissemination of good practices developed in the sub-projects, it also demonstrates that local experience in and capacity for climate resilience - and for development in general - has been strengthened.

- General empowerment of the people involved in the 3 sub-projects was often mentioned as an important indirect impact. There are numerous examples of new initiatives that were taken thanks to increased self-esteem and self-confidence.
- The additional income that is generated thanks to new and/or improved activities, is most often spend for schooling of the next generation. Improving education levels is one of the better and proven ways to boost a country's general development in the long term.
- In certain areas, conflicts around water use have decreased thanks to increased water availability.

2.7. Conclusions on direct and indirect impact generated by the project and discussion on factors for success and failure

The average achievement level of the entire set of indicators linked to the objectives (section 2.4) of the overall project as well as the three sub-projects, results to 60%. The sub-project in the Uluguru mountains scores well below the average.

As for the achievement levels of the objectives themselves, taking into account impact beyond the parameters that were considered by the indicators, the average comes down to category « 2 », meaning an achievement between 50 and 75%. Again, the sub-project in the Uluguru mountains is the one lowering the average score.

As indicated several times, the short duration of the sub-projects has affected their outcomes and impact. This also explains why the project in the Uluguru mountains, where no follow-up phase could be organised, demonstrates less favourable results than the other two sub-projects.

It should also be mentioned that the scores and the perception they create on the achieved impact depends very much on the actual choice of the indicators and the formulation of the objectives. For example, given the duration of the project, an objective like «To strengthen the resilience of the most vulnerable communities of Tanzanian highlands to climate change through community-based innovative and sustainable initiatives which can be scaled up» is far too ambitious and actually completely unrealistic. Another « blurring » factor in this assessment is the lack of systematic monitoring and data collection on impact. If replication, up-scaling and rolling out of good practices are pursued – as is the case in this project – much more emphasis should be put on data collection and documentation of the effects of the concerned measures.

Related to indirect impact, the general empowerment of people is a very positive outcome, and one of utmost importance for lasting impact and development.

FACTORS CONDUCIVE TO GENERATING IMPACT:

- Improving core livelihood activities, in a perspective of food security and income generation.
- Linking up beneficiaries with relevant agencies and learn them how to lobby (e.g. buyers of produce, government services).
- Adequate technical skills and competence amongst project staff / consultants and effective transfer of competences to target groups, including frequent follow-up visits
- Instigating self-confidence amongst beneficiaries to enhance local initiative.
- Encouraging beneficiaries to share acquired skills and knowledge with neighbours.
- Working with primary schools for awareness creation and the establishment of environmental clubs.
- Working with synergetic, holistic packages and approaches.
- Strong involvement of women.

FACTORS HAMPERING THE GENERATION OF IMPACT:

- Too short duration of the project
- Competition from similar projects that operate with free inputs / paid labour.
- Changes in government priorities, something that frequently occurs at local government level where the influence of individual preferences tends to be high.

III. Analysis of sustainability levels

3.1. List of services, systems and products that were established/delivered under the project and that should have been maintained (based on the outputs delivered)

RESILIENT LANDSCAPES FOR RESILIENT COMMUNITIES (DCI-ENV/2011/270-674):

- Process of state land surveying and transfer to communities continued in Pemba
- 234.6 ha of forested land still standing
- Multi-strata kitchen gardens (66) still productive
- Fuel briquette presses (17) still in use and fuel briquette production ongoing
- ISCEB (Interlocking Stabilized Compressed Earth Blocks) machines (5) still in use and ISCEB production ongoing
- ISCEB school toilets maintained and in use
- ISCEB demonstration guardhouse at CFP campus maintained and in use
- 8 low-cost ISCEB houses in Kokota village completed, maintained and in use
- Apiculture still practiced as a viable enterprise
- Production of fuel efficient cooking stoves ongoing as a viable enterprise
- 8 solar power systems maintained and producing energy
- 4 rainwater harvesting systems maintained and in use



EMPOWERING VULNERABLE RURAL COMMUNITIES TO ADAPT AND MITIGATE THE IMPACTS OF CC IN CENTRAL TANZANIA (DCI-ENV/2011/270-677)

- Eco-village meeting and training centre maintained and in use
- 1 Automatic weather station still functional and in use
- Beekeeping continued as a viable enterprise
- Beehive construction continued as a viable enterprise
- 10 Fishponds maintained and in production
- Leather processing group still active and producing leather goods as viable enterprise
- Community nurseries still productive
- Village NR committee still active and assuming its role
- Extent to which the village land management plan has been implemented
- Land-related village by-laws still in force
- Production of fuel-efficient stoves continued as a viable enterprise
- 10 domestic biogas plants still operational and producing biogas
- Bio-slurry compost making continued and 3 pits still in use
- Water user group still active and assuming its role
- The solar powered borehole pump still operational
- The local Technology Transfer committee still active and assuming its role

ENHANCING CC ADAPTATION AND MITIGATION CAPACITIES OF VULNERABLE COMMUNITIES IN ECO-VILLAGES OF DIFFERENT ECOSYSTEMS OF THE ULUGURU MOUNTAINS (DCI-ENV/2011/270-679):

- Continued production of spice and fruit tree seedlings, including mango and avocado grafts as a viable enterprise
- 38 fishponds maintained and in production
- 8 Water User Groups still active and assuming their role
- Irrigation system/canals maintained and operational
- Rainwater harvesting systems installed in 3 schools and 1 dispensary maintained and operational
- Continued production in the 6 school tree nurseries
- Continued production by the 6 beekeeping groups
- Continued use and production of fuel-efficient cooking stoves
- 5 feeder road maintenance groups still active and assuming their role

- New feeder road well maintained
- 7 rain gauges in 7 schools still functional and in use (data recorded and analysed)
- Sengu committee still active and assuming its role
- 9 school environmental clubs still existing and active
- Village environmental committees (2) and collaborative village institutions (4) still existing and assuming their role
- Manual on Sustainable Agriculture Practices still in use
- The SACCOS Financial Management Guide still in use

3.2. Information and comments on sustainability aspects from the available reports (desk phase)

FOR THE OVERALL GCCA PROJECT:

- **From the ex-post project evaluation report, 2016:**

GENERAL CONCLUSIONS RELATED TO SUSTAINABILITY:

- In general, the benefits of the interventions are being sustained, thanks to the integrated and participatory approach adopted and the creation of the necessary 'social infrastructure'. A number of interventions was found to be too costly for replication at a wider scale and may not be carried forward in follow-up projects.
- Projects tend to include physical infrastructural works, such as rehabilitation of irrigation schemes, reforestation on former state land or improvement of feeder roads. The organisational structures and skills required for the management of these infrastructures were found to be relatively weak and in need of further support.

Detailed discussion of the **evaluation question 5** "*Can the benefits from the interventions be sustained? What are the conditions for sustenance of the results?*":

Most of the interventions and resulting benefits can be sustained thanks to the adopted approach, which may be summarised as an integrated approach with strong community participation.

Examples of mechanisms that are put in place and ensure the sustainability of benefits include, inter alia:

- ♦ Collection of water fees allowing for maintenance of systems and permanent access to clean and safe water
- ♦ Training of Water User Associations, in charge of maintenance of the irrigation systems – even though some seem to require further capacity strengthening
- ♦ Use of low-cost technology, such as the use of improved seeds that can be reproduced at village level (case of Chololo)

In some cases, project interventions spurred private sector developments, such as the small leather industry in Chololo. Likewise, a producer group in Uluguru presented its business plan for the purchase of a vehicle to transport cash crops to a market place avoiding local middlemen.

Some of the interventions were found to be less sustainable. Examples from Chololo ecovillage include the biogas installations, fish ponds, introduction of improved bulls, the sub-surface dam, RWH (rainwater harvesting) and others. The main prohibitive factor is the (relatively) high initial investment cost. In the case of the Uluguru project, the lack of transport means for extension staff has hampered proper follow-up by the extension officer.

Based on the analysis of strengths and weaknesses encountered in the projects visited, in addition to the seven factors discussed in the previous chapter on impact, four specific conditions for sustainability of

project results have been identified. They do not apply specifically to climate change adaptation actions but seem to apply more broadly to community development action. These four conditions are:

1. Active involvement of communities from the initial stages (awareness raising, problem identification) through to implementation and results monitoring

The evaluation team observed a strong sense of commitment in the implementation among the stakeholders of all three projects. A genuine participatory approach has clearly contributed to high own contributions and a strong sense ownership. Actions undertaken by the projects to create this sense of commitment include:

- (1) Sensitisation on climate change issues and information sessions on how the projects could help address the challenges, followed by participatory planning exercises, using tools such as CRiSTAL, and the assignment of responsibilities to stakeholders, including the target group;
- (2) Identification of interest groups to work with on the different activities, such as water user associations, beekeeping and other farmers' groups, ward and village governments, women's groups, environmental committees, youth groups, school environmental clubs and local technicians.
- (3) Leaders at village and ward levels were systematically involved since the start of the projects, and in some projects (Uluguru, Pemba) specific activities were organized to increase their understanding of climate change and adaptive strategies.

A challenge reported by the implementers (Uluguru) related to the methodological approach, which involved very few direct hand-outs to the beneficiaries as incentive to participate in the activities. This had however been a deliberate decision to minimize dependency on the project and, in turn, to create a sense of self-reliance and to build sustainability of the activities. While this approach has certainly slowed down the pace of implementation, it has also increased the ownership and the sustainability of the actions implemented.

2. Use of low-cost innovations

Even though the focus was, generally speaking, on low-cost interventions, including trials of low-cost biogas plants, a number of interventions were too costly or not of interest for a majority of beneficiaries. Examples are the biogas installations or use of improved bulls (Chololo), the rainwater harvesting systems (Pemba, Uluguru), or the feeder roads (Uluguru). It is therefore recommended to focus in the future on those innovations that are within reach of the majority of the final beneficiary group. Practically speaking, this would imply that more demanding innovations, such as fish ponds, biogas or bee-keeping would receive lower priority.

This is not to suggest that communities have not made significant contributions to these activities. Besides the financial contributions to the project by partner organisations – amounting to approximately 10% of the project funding - communities contributed important non-financial resources to the project in terms of labour, time, local experts (farmers training other farmers), locally available materials and locally available knowledge.

In the case of Chololo for example the village community participated in the collection of locally available building materials (stones, sand etc.) for the rehabilitation of the water infrastructure. Village leaders assisted in the mobilisation and supervision and provided accommodation and food for the technicians. This has rendered most of the project interventions highly cost-effective (efficient).

A good example of an intervention allowing for low-cost innovation is the strengthening of the capacity of the farmers to produce Quality Declared Seeds at village level. This will enable farmers to procure quality seeds of adapted crop varieties nearby and at a reasonable cost.

3. Strategic fit with local-regional-national policies and plans

The design of the three projects is well aligned with national policies and strategies on climate change adaptation, agricultural resilience or the Mkukuta (poverty eradication strategy).

A particularly strong alignment with the National Adaptation Programme of Action (NAPA) is notable. The NAPA identified (1) efficiency in crop irrigation to boost production while conserving water; (2) alternative farming systems and water harvesting; and (3) alternative water storage programmes and technology for communities, as key adaptation activities for Tanzania.

Regarding the National Climate Change Strategy (2012), this strategy stressed the need for strengthening capacities to cope with climate change impacts, particularly in highly vulnerable sectors such as agriculture. The strategy also envisaged the development of a Policy on Conservation Agriculture and a national Agriculture Climate Resilience Plan (ACRP). The Chololo and Uluguru projects had direct links with the national task force charged with the development of this policy and the formulation of the ACRP. As such, the Chololo and Uluguru experiences were taken into account in this policy development process and were also disseminated at national level.

Alignment helps to ensure support at national, regional and local level for the initiatives of the projects, and for scaling up good practices. The case of Chololo, in particular, demonstrated how village-level support was incorporated in the Municipal (Dodoma) planning and reporting processes, notably feeding into Dodoma's 2016-2020 FYDP (Five Year Development Plan), which was under formulation at the time of evaluation.

The more recent (2015) Intended Nationally Determined Contribution (INDC) also identified the agricultural sector, as well as access to clean and safe water and adaptation to sea level rise by island and coastal communities, as priority adaptation measures.

However, while all projects clearly contribute to the implementation of national policies and strategies, they do not explicitly refer to these nor indicate how they will contribute to the implementation of strategies and action plans. More explicit linkages would be recommendable.

With regard to EU policies, the actions are clearly conceived in the context of the GCCA priorities for Tanzania, notably to 'Increase the capacity of vulnerable Tanzanian communities to adapt to the adverse effects of climate change and contribute to poverty reduction in rural areas'. This has helped to increase the chances for follow-up funding and support.

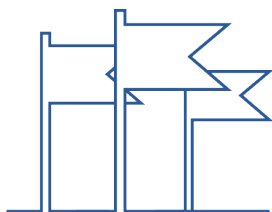
4. Support from local and national level politicians and outside actors

Overall, political support for the projects was ensured. Regional as well as local leaders (including Regional Commissioners, District Commissioners and District Executive Directors, District and Ward Extension Officers, Ward and Village Executive Officers) have been involved in awareness creation, sensitization, and promotion of project activities. This resulted in local leaders playing an active role in the implementation of project-related interventions and in resolving conflicts.

The support has also helped to overcome specific challenges, such as for example the obstacles to land ownership and titling in the case of Pemba Island.

Conversely, lack of local political support for the Uluguru project hampered project progress for some time, though this could eventually be resolved. Also in Uluguru, significant differences in the level of implementation of project activities were observed due to differences in the quality of the leaders. Committed leadership at village level, involving Village Chairpersons, Village Executive Officers and Village Council Members, has contributed greatly to the project achievements.

Lastly, the international support for the various projects, by donors (EU, Finland), private organisations and supporters (Community Forests International, in the case of Pemba), is still essential for the



sustainability of the project results. International solidarity can strengthen project achievements and sustainability, as shown most clearly in the case of the Pemba project.

The various project managers stressed that support for climate change adaptation requires a medium to long term perspective and commitment. The evaluation team is also of the opinion that longer project implementation periods (4-5 years, rather than 2-3 years) would enhance sustainability, in particular for the more complex interventions requiring high levels of community organisation, such as the management of irrigation systems or the transfer of 500 ha of degraded land to community ownership, including subsequent reforestation.

AT GRANT LEVEL:

RESILIENT LANDSCAPES FOR RESILIENT COMMUNITIES

- **The Description of the Action (2011) commented the following regarding sustainability expectations for the various activities:**

ACTIVITY	MAIN PRECONDITIONS AND ASSUMPTIONS	
	DURING IMPLEMENTATION PHASE	AFTER IMPLEMENTATION PHASE
1. Land Transfer	<ul style="list-style-type: none"> ▪ Government will survey the land ▪ Community will request land title 	<ul style="list-style-type: none"> ▪ The land title will be respected ▪ Sheba will enforce property violations
2. Agroforestry	<ul style="list-style-type: none"> ▪ Land is easily accessible ▪ Crops can be protected from theft 	<ul style="list-style-type: none"> ▪ The land title will be respected ▪ Unregulated animal grazing is prohibited on site
3. Afforestation	<ul style="list-style-type: none"> ▪ Land is easily accessible ▪ Trees planted can be protected from theft 	<ul style="list-style-type: none"> ▪ The land title will be respected ▪ Animal grazing is prohibited on site
4. Kitchen Gardens	<ul style="list-style-type: none"> ▪ Innovative gardening techniques will increase food production 	<ul style="list-style-type: none"> ▪ Homeowner will maintain gardens
5. Fuel Briquettes	<ul style="list-style-type: none"> ▪ Briquette materials are widely available 	<ul style="list-style-type: none"> ▪ Briquettes meet or exceed charcoal as an alternative cooking fuel
6. Earth Blocks	<ul style="list-style-type: none"> ▪ Earth brick building is adaptable to Pemba's architecture and building styles 	<ul style="list-style-type: none"> ▪ Community will adopt new building techniques
7. Beekeeping	<ul style="list-style-type: none"> ▪ Traditional knowledge and practices can be built upon and improved 	<ul style="list-style-type: none"> ▪ Honey produced is marketable
8. Efficient Stoves	<ul style="list-style-type: none"> ▪ A new industry around stove production is viable 	<ul style="list-style-type: none"> ▪ New stoves meet or exceed traditional cook stoves
9. Composting	<ul style="list-style-type: none"> ▪ Organic waste material is easily collected 	<ul style="list-style-type: none"> ▪ Results warrant continued facility usage
10. Energy and Water	<ul style="list-style-type: none"> ▪ Technology is adaptable to Pemba's climate 	<ul style="list-style-type: none"> ▪ Results warrant continued system usage

- **The final project report (2014) on sustainability and continuation after grant support has ended:**

The Action will continue and expand after support from the European Union will have ended. CFP had requested and received permission to use contingency funds for upgrading its Rural Innovation Campus (RIC), located in Minyenyezi, Pemba. With the RIC as its operational base, CFP confirmed its commitment to continue developing and disseminating effective climate change adaptation practices and alternative livelihood options throughout Pemba and the wider region. Under the GCCA project, CFP piloted and refined more than ten innovative interventions, now ready to be replicated in any community on Pemba, Unguja or Tanzania's coastal mainland.

CFP is currently working with CFI to develop small training modules on each of the successful interventions; the modules will be used during training sessions organised at the RIC as well as in targeted communities.

EMPOWERING VULNERABLE RURAL COMMUNITIES TO ADAPT AND MITIGATE THE IMPACTS OF CC IN CENTRAL TANZANIA:

- **The final project report (2014) on sustainability and continuation after grant support has ended:**

Chololo village falls under the Dodoma Municipal Council (DMC), which was one of the project implementing partners. DMC claims they will continue to support the village after the EU support will have ended. IRDP, the project's lead implementing organisation, states that they will continue to use Chololo Ecovillage for practical trainings for the students in the Master and Bachelor Degrees in Environmental Planning and Management. Therefore, IRDP will continue to support the village after the EU support ends. In phase II¹⁴ of the project, Chololo Ecovillage expressed the ambition to become a leading centre where other projects will come to learn about good practices in climate change adaptation and mitigation. Farmers from Chololo will be able to teach farmers from elsewhere, while they themselves will continue to practice what they learned in phase I.

Follow up activities envisaged:

- Continuous follow-up of weather station activities
- Linking up the village with different organisations and important occasions like trade fairs, farmers exhibition days, graduation ceremonies, World Environmental Day and others to promote the village and its achievements

Elements that will ensure the sustainability of the project:

- Practical knowledge on climate change adaptation gained by the village community
- Tangible and appreciated benefits such as increased crop yields and food security, increased income through the sales of livestock, increased water availability and reduced workload for the collection of firewood were realised and the village community is genuinely interested in maintaining these benefits.
- The Municipal Council is committed to continue to roll out the good innovations in the entire district.
- The presence of the Institute of Rural Development Planning (IRDP) as a training institute on rural development / environmental management within Dodoma Municipal.
- The fact that Chololo Ecovillage - as a model for undertaking climate change adaptation and mitigation action - will attract donors and other stakeholders who will facilitate further action and development in Chololo.
- The presence of genetically improved bulls, bucks and cocks in the village. The improved livestock breeds will continue to enhance the potential of the local livestock sector.
- Water charges (TZS 25.00 per bucket) will provide the village with the necessary funds to maintain the new water infrastructure.
- The presence of drought resistant and high yielding crop seeds within the village.

- **The project evaluation report (2014) on potential for sustainability, replication and magnification:**

¹⁴ Equally with GCCA support.

Summary:

The potential is good. There is evidence that sustainability and replication is all possible given the enthusiasm, increased awareness and the good will all around. This evidence includes the alignment of the project with the NAPA, the feedback to the piloted innovations, the contributions to national CC policy development by informing this process and the involvement of the DMC, who will assist in the further roll out of successful innovations to other villages in Dodoma.

However, according to the climate vulnerability and capacity analysis study that was conducted in 2013, the key barriers to sustainability that were then identified – notably the poor availability of financial resources and the limited knowledge on how to address CC - are still existing within the project area and its environs. Clear resource mobilisation mechanisms would go a long way to ensure sustainability and replication within Chololo village and beyond.

Full text:

The sustainability of the project processes, methodology and outcomes will depend on the following: (1) How the project outputs and outcomes uptake process (exit strategy) will be managed; (2) How they link up with Tanzania's NAPA¹⁵ and related strategies; (3) Whether Dodoma Municipal Council will put in place effective mechanisms to continue addressing the attitudinal, financial, knowledge and skills barriers that still exist within and beyond Chololo; (4) Whether climate change adaptation actions continue to focus on community priorities; and (5) On the development of accountable, functional and responsive institutions at both community and district level to carry on the climate change adaptation agenda.

There is no clear-cut exit strategy for the project but the various ROM reports indicate that the uptake of project outputs and outcomes will probably be smooth. The statement is based on the following elements:

- The local communities already benefit from an improved food security and from a number of income generating options.
- All climate smart practices promoted by the project are low cost. Seeds and seedlings that were distributed to the farmers can now easily and locally be reproduced. The same applies to the improved livestock breeds.
- Farmers are paying a small fee for the use of water from the borehole which ensures continued maintenance. Major works to ensure continued water availability such as sub-surface and sand storage dams are already in place.
- The project has systematically promoted local participation and empowering local community members, including village leaders and management.
- The project was implemented with the active involvement of Dodoma Municipal Council. Good relationships were established, enhancing the chances of continued support, e.g. in providing extension services.
- The communities demonstrate ownership and their knowledge on CC has increased through various training activities, including sensitization meetings, technical trainings related to the specific innovations that were promoted, farmer field school, etc.

¹⁵ The existing strong link with Tanzania's NAPA is important in that the project is piloting actions and outcomes that may influence climate change adaptation policy formulation and application in Tanzania and thus national priorities. The 14 key NAPA priorities (NAPA, 2007, pages 37 and 38) are, in order of importance: (1) Increased irrigation by using appropriate water efficient technologies to boost crop production in all areas; (2) Alternative farming systems and relocation of water sources including wells along the low lying coastal areas; (3) Development of water harvesting and storage programmes for rural communities particularly those in dry lands; (4) Community-based catchments conservation and management programmes; (5) Exploration and investment in alternative clean energy sources e.g. wind, solar, bio-diesel, etc. to compensate for lost hydro potential; (6) Promotion of the use of alternative energy sources in the industry sector to compensate for lost hydro potential; (7) Afforestation programmes in degraded lands using more adaptive and fast growing tree species; (8) Development of community forest fire prevention plans and programmes; (9) Community awareness programmes on preventable major health hazards; (10) Sustainable tourism activities in the coastal areas and relocation of vulnerable communities from low-lying areas; (11) Enhancing wildlife extension services and assistance to rural communities in managing wildlife resources; (12) Water harvesting and recycling; (13) Construction of artificial structures, e.g. sea walls, artificially placed sand dams on the beaches, coastal drainage systems; and (14) Establishment of a good land tenure system that facilitates sustainable human settlements.

- Important factors for sustainability such as land tenure and land use planning are addressed by the project through the Dodoma Municipal Council.
- The active role of local partners and target groups in the implementation of the project has helped in building their overall capacity (technical skills, coordination skills).

However, even with all the above in place, this evaluation believes that there should be a clear exit strategy, developed early in the course of project implementation, that ensures that all the processes that were put in place are well connected, coordinated, and fully owned by the community and other relevant stakeholders and are managed for better outcomes. The added value of having such an exit strategy is the availability of a clear list of potential pitfalls and associated mitigation measures to be taken. The exit strategy should also include an overview of local capacities that are needed to take over after the close of the project.

A good project exit strategy should e.g. be based on:

- A project strategy that is well aligned with the stakeholders' aspirations and interest.
- An effective risk management strategy.
- An analysis of alternative uses and benefits of the various project investments and facilities.
- Cost-benefit analyses of the various innovations promoted by the project, that are shared with the target groups.
- Findings of continuous monitoring, information gathering and analysis (knowledge management).
- The establishment/installation of adequate systems to operate and manage infrastructure (e.g. water pumps, dams) that was built with project support.

The future performance of Dodoma Municipal Council (DMC), responsible body for the development in Chololo village, can be enhanced by the development of strong institutions at community and municipal levels, all interlinked through an effective and efficient information and knowledge management system. Finally, the development of financial capacity and access to capital - either through a revolving development fund, soft loans, or special arrangements with financial institutions or funding agencies - is imperative for the creation of sustainability, and a responsibility that the Dodoma Municipal Council cannot shy away from.

ENHANCING CC ADAPTATION AND MITIGATION CAPACITIES OF VULNERABLE COMMUNITIES IN ECO-VILLAGES OF DIFFERENT ECOSYSTEMS OF THE ULUGURU MOUNTAINS (DCI-ENV/2011/270-679):

▪ **From the final project report, 2014:**

The main challenge encountered during project implementation was the slow start of the project due to administrative hurdles which made us miss one growing season. Another challenge related to the methodological approach, which was highly participatory and involved very few direct hand-outs to the beneficiaries as incentive for community participation in the implementation of project activities. This had been a deliberate decision to minimize dependency on the project and, in turn, to create a sense of self-reliance and to build sustainability of the activities. While this approach has certainly slowed down the pace of implementation, it has also increased the sense of ownership and the sustainability of the actions implemented.

▪ **From the project evaluation report (2014)**

SUMMARY ON POTENTIAL FOR SUSTAINABILITY, REPLICATION AND OUT-SCALING MAIN INNOVATIONS:

The evaluation team considers the potential for sustainability, replication and out-scaling of the main project innovations to be high. Factors that were identified as contributing to this high potential, are: (1) the close involvement of the target groups right from the initial planning stages; (2) the approach of working with interest groups of stakeholders; (3) the philosophy of avoiding to supply target groups with free inputs or subsidies; (4) the strong involvement of youth, who are the future farmers; (5) important marketing opportunities for the agricultural products promoted by the project; (6) the effective income generating character of the innovations introduced by the project; and (7) the support provided for upgrading feeder roads to the project villages, thereby improving access to the major roads and hence to the markets.

FULL TEXT ON POTENTIAL FOR SUSTAINABILITY, REPLICATION AND OUT-SCALING MAIN INNOVATIONS:

The likelihood of the project being sustainable was examined by considering the following aspects:

- Involvement of the target group right from the beginning

The extent to which stakeholders in the project were consulted on the project objectives from the onset and whether they agreed with them and remained in agreement throughout the duration of the project, was closely examined by the evaluation team. During the field visits, the team observed a strong sense of commitment to project implementation amongst all stakeholders. Actions taken by the project to instil this sense of commitment, include:

- ♦ Communities were first sensitized about issues related to climate change and they were duly informed on the intended achievements of the project. After that, a process of participatory planning was organised whereby indicative project activities were identified, including the assignment of responsibilities to the respective concerned stakeholders / target groups.
- ♦ Identification of relevant interest groups with whom to work with in the various project activities. Examples of such interest groups are: environmental committees, water user associations, beekeepers, farmer groups interested in climate smart farming practices.
- ♦ Village and ward leaders were involved step by step since the commencement of the project and specific activities were organised to increase their understanding of climate change issues and adaptive strategies. When asked to give their views on the relevance of the project, most of the leaders were positive about the project and mentioned that the project outputs and outcomes should be sustained after closure of the project.

- The project approach

An important element of the project approach was to work through various interest groups, amongst others for the demonstration of the introduced innovations. In doing so, individual farmers could witness the benefits coming from the innovations without taking any risk themselves. This approach somehow delays the dissemination of the introduced practices, but it enhances the potential for sustainability because an individual farmer who decides to adopt an innovative practice after having been convinced of the benefits will continue to use it, even after the end of the project.

- Project philosophy

The project philosophy of avoiding giving away free inputs and hand-outs and of encouraging people's active involvement in project activities, is likely to enhance the sustainability. While this philosophy slows down the process, it tends to result in a higher sustainability because those who decide to engage in the project activities are only those who are ready to invest their resources and not those who want to take advantage of the subsidies.

- Involvement of youth

The involvement of youth, including children, enhances continuity as they are the future farmers and heads of households. This is not only because of their young age, but also because of their quick learning abilities.

- Profitability of the promoted practices and innovations

The individual farmers and farmer groups that started practicing sustainable farming techniques, seedling production, fish farming, etc. were earning considerable income, implying that the benefits from the interventions outweigh the costs. The profitability of the interventions is a key incentive for the beneficiaries to continue after the end of the project. Apart from the direct project beneficiaries, other farmers from outside the target villages are likely to adopt the profitable interventions once they will have witnessed the potential.

- Markets for agricultural products

Farmers will not continue to practice sustainable farming, fish farming and beekeeping if there is no market to sell their surplus production. So, with good reason, the project deployed substantial efforts to link the farmers to the available markets. To this end, the project organised meetings between the farmers and potential buyers of agricultural products, such as AZAM in Dar es Salaam. AZAM buys fruits for processing, and mainly for fruit juices. Strengthening and diversifying the farmers' links with buyers definitely contributes to creating sustainability of the project's outputs and outcomes.

- Road infrastructure

As indicated above, the production of various crops increased as a result of the project interventions. Similarly, fish and honey production may increase in the future with a growing number of farmers

adopting these technologies. They might all continue to engage themselves in sustainable farming, fish farming and beekeeping if they can market their surplus produce. Access to local markets like Tawa in Matombo Division and Nyandira in Mgeta Division, depends on the condition of the feeder roads connecting the project villages with these markets. The better the condition of the feeder roads, the more accessible the markets will be. Also big traders will be more attracted to come and buy from these markets as they will be better supplied thanks to the improved condition of the feeder roads and hence the easiness for the farmers to ferry their produce to the markets. Currently, the feeder roads from most of the project villages to the bulk markets of Tawa and Nyandira are in bad condition and inaccessible during the rainy season. The accessibility of the roads to the markets is likely to improve in the next few years if the interventions initiated by the project will continue after the end of the project.

3.3. Summary findings from the desk phase and specific issues to be further explored during the field phase

Substantial analysis on sustainability and on the underlying factors has been done by the individual project evaluations and by the ex-post overall evaluation. As reflected in the available documents, there is ample evidence that many of the outcomes of the three projects were sustained (up to 2016), though at varying levels across the different types of activities.

During the field phase, emphasis will be on (1) verifying the sustainability levels to date, which is 3 years after the ex-post evaluation took place and on (2) assessing the sustainability in accordance with the common approach for the GCCA Impact and Sustainability Study so that the findings from Tanzania can be correctly integrated in the overall study.

3.4. Results of the sustainability analysis (as per table in Annex)

44 items were checked for their sustainability and information could be collected for 42 of these.

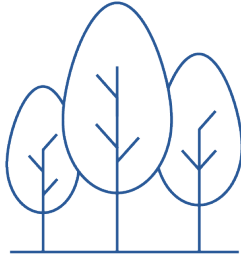
The scores of the 42 items are as follows:

- 4 items (9%) scored 1, meaning that they were fully sustained and expanded/improved
- 18 items (43%) scored 2, meaning that they were fully sustained in a “status quo” situation
- 10 items (24%) scored 3, meaning that they still exist but with quality and/or coverage issues
- 10 items (24%) scored 4, meaning that they disappeared or lost functionality

Evidence was found through direct observation for 12 items (28%); through reporting by reliable sources for 13 items (31%); through reporting by uncertain sources for 2 items (5%); and through a mixture of methods (D/R) for 15 items (36%).

3.5. Conclusions on the sustainability aspects and discussion on factors for success and failure

As the statistics in section 3.4. demonstrate, just over 50% of the checked items were fully sustained (scores 1 and 2), while one fourth of the items had not been sustained. Overall, this gives an average sustainability of the several project outputs.



The 4 items for which expansion and/or improvements were observed, are the afforestation and beekeeping activities in Pemba, the commercial fruit and spice tree nurseries in the Uluguru Mountains and the water supply system through solar powered pumping from boreholes in Chololo. The success of both beekeeping in Pemba and the sales of tree seedlings of commercial spices and genetically improved fruit varieties in the Uluguru Mountains is directly linked to their relatively high-income generation potential. Water supply is obviously a high priority in dry areas such as Chololo, improving living conditions in many ways. The success of afforestation in Pemba is based on increased environmental awareness together with the economic long-term perspective of getting valuable timber products; securing land tenure seems to play a role as well.

At the other end of the range, 10 items were discontinued. It concerns a number of livelihood options that were promoted by the project but resulted to be unviable enterprises in the local context: beekeeping and fishfarming in Chololo, beekeeping in the Uluguru mountains, and the production of ISCEB building blocks in Pemba. In this respect, it seems that a more detailed contextual analysis prior to the decision of promoting a certain livelihood option, could have avoided such a waste of time and project resources. The discontinuation of a few other items was linked to changed government policies and activities: the land transfer process in Pemba, the implementation of the village use plan in Chololo, and the services of community-based road maintenance groups in the Uluguru mountains. Finally, indications of decreased interest and lack of motivation to keep initiatives alive are observed in the environmental school clubs and the school-based rainfall monitoring in the Uluguru mountains and the technology transfer committee in Chololo.

FACTORS CONDUCIVE TO CREATING SUSTAINABILITY:

- Adequate attention for building a sufficiently robust and strong social infrastructure or mechanism accompanying physical installations and constructions to ensure proper management and maintenance
- Active involvement of the targeted beneficiaries throughout project implementation, including participatory needs assessments and planning
- The generation of tangible and valued benefits (increased yields, increased income, increased food security, etc.)
- Alignment with government policies and strategies and the creation of adequate linkages with government support and/or extension programmes
- Effective capacity building and empowerment
- Due consideration of sustainability aspects by project staff as from the initial planning stages
- Establishment of a low-intensity post-project monitoring service whereby skilled professionals/ technicians visit the beneficiaries from time to time to give advice, coach, show interest and encourage



FACTORS HAMPERING SUSTAINABILITY:

- Lack of in-depth feasibility analysis before embarking on the promotion of a certain activity (climate adaptation measure, livelihood option, etc.)
- Linked to the above, promotion of financially unaffordable services/measures
- A too short project implementation period
- Insufficient intensity of follow-up and coaching efforts during project implementation

IV. Additional elements

4.1. M&E Practice

M&E ACTIVITIES THAT HAVE TAKEN PLACE:

- **Internal:**

- ♦ The project in Pemba had recruited an M&E Officer who was tasked with providing the weekly plans and quarterly reports. Additionally, the CFP team would meet weekly to discuss project progress and modify any activities to ensure that they were duly implemented.
- ♦ The project in the Uluguru mountains (1) instituted monthly stakeholder meetings for monitoring progress on the implementation of activities and for assessing their (potential) impact, amongst other objectives; (2) and organised monitoring missions in the field, in particular during visits of representatives of the European implementing partner GRET.
- ♦ Apart from stakeholder meetings and interim reporting, the project in Chololo conducted a sort of internal ROM missions. They also conducted an endline survey, to be able to compare the situation at the end of the project with the baseline one.

In spite of the efforts described above, the ex-post evaluation report (2016) stated that “the internal monitoring systems were relatively weak (with the exception of Chololo) and focused on outputs rather than outcomes and impact”. To improve monitoring practices and to make monitoring consistent across all five sub-projects, a separate TA Service contract for M&E was concluded in the second phase of the GCCA project.

- **External:**

An external ROM (Result Oriented Monitoring) mission was carried out in May 2013; two of the three sub-projects (Chololo and Uluguru mountains) commissioned an external evaluation at the end of the resp. projects (2014); and the EUD had commissioned in 2016 an external ex-post evaluation through the EU Framework Contract.

% OF BUDGET ALLOCATED TO M&E THAT HAS BEEN USED:

The FA envisaged a budget of 100,000 EUR for evaluation and audit. The contract value for the above mentioned ex-post evaluation (TA Service Contract with Particip) was 47,733 EUR. How much was spent for the audits could not be verified. Further, the cost of the external ROM was covered by the central ROM budget and the costs of the two end-of-project evaluations were covered by the respective grants.

ADDITIONAL M&E REPORTS THAT HAVE BEEN COLLECTED:

Only monitoring reports related to the second phase of the GCCA project.

4.2. Contributions to GCCA+ knowledge management and communication

PROJECT SUPPORTED RESEARCH AND RESEARCH FINDINGS:

Interesting links with the scientific community

Several of the implementing partners are research organisations: Sokoine University of Agriculture (SUA), the Agricultural Research Institute of Hombolo (ARIH), and the Institute for Rural Development Planning (IRDP). Nevertheless, mainly their “development-oriented” departments were involved in project implementation. Rather than supporting research, the project focused on demonstration of possible adaptation and mitigation options in the specific contexts of the sub-projects’ intervention areas.

Research results that are relevant for wider dissemination outside the country

As indicated above, the publications concern rather “best practices” and document “experiences”, rather than research results.

The main publications are:

- Manual on Sustainable Agriculture Practices developed and published in Swahili (SUA)
- Brochure on Natural Resources Governance (SUA)
- Guidelines for the constitution of Water User (and other) Groups (SUA)
- Paper on “Factors in Smallholder Farmers’ Vulnerability to CC impacts in the Uluguru Mountains, Morogoro, Tanzania” (SUA)
- Booklet on “Leather for Development in Rural Areas” (IRDP)
- Booklet on CC and Adaptation (IRDP)

COMMUNICATION MATERIALS

WEBSITES:

- www.chololoecovillage.wordpress.com/; <https://chololo2.wordpress.com/about/>
- www.forestsinternational.org/pemba

VIDEOS

- <http://www.youtube.com/watch?v=SnFOG7ZKILE> (Pemba)
- 3 videos were produced by Chololo (see website)

PUBLICATIONS:

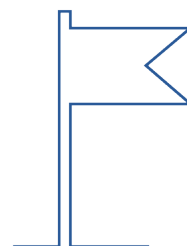
- Chololo Eco-village book
- Chololo: leaflets, newsletters

4.3. Opportunities for scaling up (future GCCA support activity)

- The entire project was designed to generate experiences and materials for subsequent scaling up. These experiences relate to CC adaptation (and to a lesser extent also mitigation) and to enhancing resilience against the adverse effects of CC. They were developed for 3 specific agro-ecological zones, considered as most vulnerable in the context of CC, in Tanzania: (1) mountain areas, (2) dryland/semi-arid areas and (3) coastal lands and small islands. The experiences and materials were developed in selected locations under an integrated/holistic and participatory “eco-village”; whereby an “eco-village” is defined by the Global Ecovillage Network as: “An intentional or traditional community using local participatory processes to holistically integrate ecological, economic, social, and cultural dimensions of sustainability in order to regenerate social and natural environments.” The GCCA funded a second phase of the project (already completed by now) with 5 intervention areas, or eco-villages. 2 of the 3 intervention sites from the first project benefitted from a follow-up grant: Chololo and Pemba.
- The sub-project in the Uluguru mountains attempted to re-introduce the traditional and very inclusive local governance model, called “sengu”. The model sounds very promising for a better and more sustainable management of communal natural resources, and by extension for a better local development. “Accountability” is a key element of “sengu”, reason why local authorities were not very keen on adopting the model.

4.4. Climate Finance – evidence of funding mobilised from public and/or private local sources

- Several cases were observed where beneficiaries who participated in testing income generating activities with the project became successful and re-invested income in the expansion and/or improvement of the profitable enterprise. Relation with CC: building of resilience against the adverse effects of CC.
- Based on successful demonstrations by the project, the Dodoma Municipal Council funded the purchase and installation of solar powered pumps (integrated in a system of borehole construction, pipeline and management arrangements) in the area.
- In Pemba, agreements were concluded with various departments of the Government of Zanzibar (e.g. Zanzibar Water Authority, Ministry of Education, Department of Forest and Renewable Resources) for the continuation and roll out of actions that were piloted by the project. Although there is a political will to contribute, the actual funds that are allocated remain very limited.



V. Sources of Information

DOCUMENTS COLLECTED AND CONSULTED FOR THE DESK PHASE ANALYSIS:

- **Programming documents**
 - ◆ Identification Fiche, 2008
 - ◆ Financing Agreement between the EU and Government of Tanzania, + TAPS, + indicative logframe, December 2009
 - ◆ Grant contract with CFP (2011/270-674) + Description of the Action, logframe and budget, September 2011
 - ◆ Grant contract with IRDP (2011/270-677) + Description of the Action, logframe and budget, August 2011
 - ◆ Grant contract with SUA (2011/270-679) + Description of the Action, logframe and budget, October 2011
- **Progress reports**
 - ◆ Summary table of awarded contracts
 - ◆ Progress report CFP (2011/270-674) for August-December 2011
 - ◆ Progress report CFP (2011/270-674) for July-February 2013
 - ◆ Final narrative report CFP (2011/270-674), 2014
 - ◆ Progress report IRDP (2011/270-677) for September – December 2011
 - ◆ Progress report IRDP (2011/270-677) for January – June 2012
 - ◆ Progress report IRDP (2011/270-677) for July – December 2012
 - ◆ Final narrative report IRDP (2011/270-677), 2014
 - ◆ Progress report SUA (2011/270-679) for October – December 2011
 - ◆ Final narrative report SUA (2011/270-679), 2014
- **Monitoring and Evaluation reports¹⁶**
 - ◆ Ex-post evaluation report, Particip, May 2016
 - ◆ Final evaluation report IRDP (2011/270-677), 2014
 - ◆ Final evaluation report SUA (2011/270-679), 2014

ADDITIONAL DOCUMENTS COLLECTED AND CONSULTED DURING THE FIELD PHASE:

- GCCA Tanzania. An overview of achievements and lessons learnt. 2018.
- GCCA Tanzania. Annual M&E Report for 2017. J. Swennenhuis, 2018
- GCCA Tanzania. Eco-Villages in Tanzania: A model for climate change adaptation. Highlights, 2017.
- Dynamics of Indigenous Organisations: the Sengu gathering of the Matengo people of Mbinga District, Tanzania. David Gongwe Mhando, Centre for Sustainable Rural Development, SUA. International Journal of Education and Research, December 2014.
- National Adaptation Programme of Action (NAPA), Vice President's Office, Division of Environment, January 2007.

RELEVANT WEBSITES:

- GRET: www.gret.org
- IRDP: www.irdp.ac.tz
- www.mamado.org
- www.chololoecovillage.wordpress.com/; <https://chololo2.wordpress.com/about/>
- SUA: www.suanet.ac.tz
- www.forestsinternational.org
- www.envaya.org/cfp

¹⁶ No final evaluation report for the CFP-implemented project available.

CONTACTS OF STAKEHOLDERS COLLECTED DURING THE DESK PHASE:

■ EUD to Tanzania:

- ♦ Mr Mathew Mathayo Mpanda, GCCA Programme Officer, mathayo.mathew@eeas.europa.eu
- ♦ Mrs Jenny Correia-Nunes, Head of Section, jenny.correia-nunes@eeas.europa.eu
- ♦ Mrs Maria Chiara Femiano, previous GCCA Programme Manager (now in EUD to Thailand), Maria-Chiara.Femiano@eeas.europa.eu

■ Implementers:

Resilient Landscapes for Resilient Communities:

- ♦ Mr Mbarouk Moussa Omar, Executive Director CFP, mbaroukmussa@gmail.com or mbarouk@forestsinternational.org
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- ♦ Ministry of Agriculture and Natural Resources, kilimo@zanlink.com
- ♦ Mr Mussa Saidi Bakar, Executive Director, Dept. Of Commercial Crops, Fruit and Forests (DCCFF), bakarhijah@yahoo.com

Empowering Vulnerable Rural Communities to Adapt and Mitigate the Impacts of CC in Central Tanzania:¹⁷

- ♦ Dr Francis Bernard Njau, Project Leader, Institute of Rural Development Planning, frabe59@gmail.com or rector@irdp.ac.tz or info@irdp.ac.tz
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- ♦ Mr Msangu Mathew Halla, Managing Director, MAMADO, mamadotz@yahoo.com
- ♦ Project evaluators: (1) Dr John Munyoli Musyoka, Evaluation Team Leader, MS-Training Centre For Development Cooperation (MSTCTD), munyolij@yahoo.co.uk; (2) Mr Nesserian Mollel, Evaluation Team Member, MSTCTD, molleln@mstcdc.or.tz; and (3) Mr Stephen Joseph Nyagonde, Evaluation Team Member, stnya19@yahoo.com

Enhancing CC Adaptation and Mitigation Capacities of Vulnerable Communities in Eco-Villages of Different Ecosystems of the Uluguru Mountains¹⁸:

- ♦ Prof. Amon Z. Mattee, Project Coordinator, Sokoine University of Agriculture (SUA), zmattee@suanet.ac.tz
- ♦ Prof. Dismas L. Mwaseba, vc@suanet.ac.tz (signatory of the grant contract)

■ Government official focal persons:

- ♦ Godlove Stephen, Programme Officer, Ministry of Finance, godlovelema@hotmail.com or gstephen@mof.go.tz (No longer working with NAO).
- ♦ Dr. Grace Aloyce, Programme Officer, Ministry of Finance and Planning, GAloyce@psu.go.tz, gracealoyce@gmail.com,
- ♦ Dr Constantine Shayo, Vice President's Office – Division of Environment, cmshayo@yahoo.com (No longer working with the Vice President Office)
- ♦ George Kafumu, Principal Officer, Vice President Office – Division of Environment, kafumu.revocatus@vpo.go.tz

¹⁷ The project evaluation report provides a list with contact names but without e-mail addresses

¹⁸ Idem as footnote 10

▪ **Persons contacted during the field phase:**

EUD to Tanzania:

- ♦ Mathew Mathayo Mpanda, GCCA Programme Officer, mathayo.mathew@eeas.europa.eu
- ♦ Jenny Correia-Nunes, Head of Section, jenny.correia-nunes@eeas.europa.eu

In relation to the project in Chololo eco-village Pemba (*Resilient Landscapes for Resilient Communities*)

- ♦ Mbarouk Moussa Omar, Executive Director CFP and project manager, mbaroukmussa@gmail.com or mbarouk@forestsinternational.org
- ♦ Ali Abdullah Mbarouk, M&E Officer CFP
- ♦ Maryam Bakari Sharif, Administration Officer CFP
- ♦ Ali Hamad Ali, Agroforestry Officer CFP
- ♦ Omar Mtariika, Enterprise Development Officer CFP
- ♦ Rehema Abrahiman, Alternative Energy Officer, CFP
- ♦ Representatives of beneficiaries of Fundo Islet
- ♦ Representatives of beneficiaries of Kokota Islet
- ♦ Representatives of beneficiaries from the villages Hindi, Kiungoni, Vitongoji

In relation to the project in Chololo eco-village (Empowering Vulnerable Rural Communities to Adapt and Mitigate the Impacts of CC in Central Tanzania)

- ♦ Francis Bernard Njau, Project Leader, Institute of Rural Development Planning, frabe59@gmail.com
- ♦ Elirehema Y. Swai, Principal Agricultural Research Officer, ARIH, arihombolo@yahoo.com or eyswai29@gmail.com or eyswai@yahoo.com
- ♦ Athumani Mpanda, Agricultural Officer, Dodoma Municipal Council, athumanimpanda2@gmail.com
- ♦ Michael John Langiboli, Officer at the Agriculture, Irrigation and Cooperatives Department, Dodoma Municipal Council
- ♦ Venance Mwaluko, Village Executive Officer, Chololo
- ♦ Michael Mbumi, Village Chairperson, Chololo
- ♦ Various Chololo community members, stakeholders of the project

In relation to the project in the Uluguru Mountains (Enhancing CC Adaptation and Mitigation Capacities of Vulnerable Communities in Eco-Villages of Different Ecosystems of the Uluguru Mountain)

- ♦ C.P. Mahonge, Department of Policy Planning and Management, SUA
- ♦ E.T. Malisa, Department of Development Studies, SUA, malisaet@sua.ac.tz
- ♦ Joel Paulo, Project Field Facilitator, Mgeta Division
- ♦ F.L. Mwondo, Agricultural Field Officer, Mgeta Division
- ♦ Solomon, Councilor of the Uluguru Green Gold company and Manager of the Farmer Training Centre
- ♦ Silivery Mpeka, Extension Worker, Luale Village
- ♦ Nestorius Mlelwa, Head Master Kikeo Secondary School, Luale Village
- ♦ Members of the Tushikamane (Fruit) Tree Nursery Group, Luale Village
- ♦ Member of the Sengu Committee, Luale Village
- ♦ Simon P., Village Chairman, Londo Village
- ♦ Members of the Wangahamwe Sustainable Farming Group, Londo Village
- ♦ Member of the Sengu Committee, Londo Village
- ♦ Members of the Fish Farming Group, Masalawe Village
- ♦ Godfrey Mgata, Ward Community Development Officer, Matombo Division
- ♦ Hamisi Chitemo, Ward Livestock Officer, Matombo Division
- ♦ Andrew Mandia, Ward Agricultural Extension Officer, Matombo Division
- ♦ Kung'ato, Primary School representative, Matombo Division
- ♦ Mzee Msumi, Fish Farming group, Tawa Village, Matombo Division

Annex to the report: Sustainability Analysis

NR	DESCRIPTION OF SYSTEM/SERVICE/PRODUCT TO BE SUSTAINED	SCORE	EVIDENCE	EXPLANATORY NOTES
PEMBA -RESILIENT LANDSCAPES FOR RESILIENT COMMUNITIES				
1	Process of state land surveying and transfer to communities continued in Pemba	4	R	<p>At the moment of the I&S visit, not one land title had been issued yet. The promising process was blocked by the change of Government of Zanzibar and subsequent changes in policy. The current Government tends to prioritise major development initiatives rather than transferring the state land to communities for afforestation and conservation purposes.</p> <p>Though CFP is still lobbying to obtain title deeds for some of the areas, the results of the efforts are highly uncertain.</p>
2	234.6 ha of forested land still standing	1	D/R	<p>CFP continues to monitor the plantations and the survival rate and confirmed during the visit that the areas are still covered with trees. During the I&S some of the areas were visited (e.g. in Hindi) and their “forest status” could be confirmed.</p> <p>Moreover, the communities in Pemba have become quite committed to afforestation following awareness raising under the GCCA project and other activities with CFP (who has forestry at the core of its actions) and further afforestation initiatives are being taken on the Pemba Islands.</p>
3	Multi-strata kitchen gardens (66) still productive	2	D	<p>During the I&S field mission, a few kitchen gardens were visited. All owners – groups or individual households – explained that they keep up the production as they greatly benefit from the vegetables they harvest.</p> <p>Though not all 66 gardens could be visited and no relevant data were collected by CFP, one can safely conclude on the basis of the feedback from the consulted stakeholders and of the low-cost & low-tech nature of the kitchen gardens that the activity has been sustained.</p>
4	Fuel briquette presses (17) still in use and fuel briquette production ongoing	3	D/R	<p>The production of fuel briquettes with the technology promoted by the project has generally been abandoned, with only a few households continuing at small scale. It concerns households that have access to the required raw materials, e.g. households living in the vicinity of a sawmill. Access to inputs is indeed mentioned as the main obstacle. As a result, the production of fuel briquettes has never developed into a commercially viable activity.</p>

5	ISCEB (Interlocking Stabilized Compressed Earth Blocks) machines (5) still in use and ISCEB production ongoing	4	R	The activity turned out not to be viable. Amongst the main reasons: lack of market (the communities were generally reluctant to buy the blocks for construction) and the limited availability of raw materials. The soil quality in most of the demonstration sites in Pemba was inappropriate for ISCEB production and cement needed to be added what considerably increased the production cost, in addition to the unreliable supply of cement in Pemba.
6	ISCEB school toilets maintained and in use	2	D	Four school toilets had been constructed at the school premises in Kokota. The school was visited; the toilets were maintained and still in use.
7	ISCEB demonstration guardhouse at CFP campus maintained and in use	2	D	The CFP campus, including the ISCEB demonstration guardhouse, was visited during the I&S field mission. The guardhouse was maintained and is still in use.
8	8 low-cost ISCEB houses in Kokota village completed, maintained and in use	2	D	By the end of the project, the 8 houses were still under construction. During the visit to Kokoto village, the consultant observed that the houses had been completed and that they are in use.
9	Apiculture still practiced as a viable enterprise	1	D/R	<p>As could be observed, the project has been very effective in facilitating the modernisation of beekeeping in Pemba. All beekeepers / beekeeping groups reported to be doing well. The modern beehives, the equipment and their increased skills had allowed them to considerably increase their honey production. (up to 3 times the prior harvest levels).</p> <p>Beekeeping as income generating activity is quickly gaining popularity in Pemba. The beekeepers supported and trained by the project reported that they are now training their interested neighbours, while also expanding their own businesses. Moreover, the continued supply of modern beehives after project closure was secured by the training of some local carpenters in beehive production.</p> <p>An important factor in this respect is the excellent reputation of Pemba honey (organic / cloves honey / mangrove honey) in Eastern Africa and in some Arabic countries. Recently, also the European market is showing some interest.</p>
10	Production of fuel efficient cooking stoves ongoing as a viable enterprise	2	D/R	The level of success of this activity line varied considerably from one beneficiary to another. While a very successful female cooking stove producer was visited in Kiungoni, several others that had been trained by the project had abandoned the activity due to lack of clients and/or raw materials. In turn, the successful producer in Kiungoni had developed alternative models that were in high demand; she also trained other women in producing the basic models for which she was paid a small fee by the trainees.
11	8 solar power systems maintained and producing energy	2	D/R	The two solar power systems that were visited during the I&S mission were both found working. CFP staff reported that all others were also still functional.

				<p>To enhance sustainability and to keep the systems operational, the project had trained a local electrician as well as some representatives of the communities where solar power systems had been installed. The training covered the operational aspects of the system and basic troubleshooting. So far, all problems had been solved locally; the training has been effective in keeping the systems operational.</p>
12	4 rainwater harvesting systems maintained and in use	2	D/R	<p>The project built two large rainwater harvesting systems (one in the school in Kokota; and one behind the mosque in Uvinje) and two small systems (one in Fundo and one in Pujini, both connected to kitchen gardens).</p> <p>During the I&S mission, the systems in Kokota and Fundo were visited and both found working. CFP staff reported that the other two systems were also in good condition and in use.</p> <p>An interesting point to mention here is the fact that GIZ had supported the installation of a desalination plant in Kokota. The plant broke down and the required spare parts could not be obtained. As a result, the desalination plant had only worked for a short period and resulted to be a less sustainable solution to the lack of fresh water supply than the rainwater harvesting system installed under the GCCA project.</p>
DODOMA - EMPOWERING VULNERABLE RURAL COMMUNITIES TO ADAPT AND MITIGATE THE IMPACTS OF CC IN CENTRAL TANZANIA				
13	Eco-village meeting and training centre maintained and in use	2	D	<p>The eco-village centre was constructed to act as a central project office, a village training centre and meeting place, and as an office for the village government / leadership.</p> <p>The stakeholder meeting, organised for the I&S assessment visit, took place in the centre. There were several signs of active use of the centre: noticeboards with activity calendars, educational posters on various topics on the walls, the presence of a women group attending a training on artisanal products delivered by the SAT project.</p> <p>The centre was well maintained and clean. Electricity and running water was available.</p>
14	1 Automatic weather station still functional and in use	2	D	<p>An automatic weather station was installed in Chololo village close to the eco-village centre. The station records rainfall, temperature, relative humidity, pressure, wind speed and direction and the dew point but the main interest is in the valuable information it provides on the local rainfall pattern. The data gathered support research and the development of series and models for future forecasting.</p>

				The automatic weather station is still functional and data analysis continues. Moreover, the Ministry of Agriculture – having seen the initiative in Chololo – became interested in the technology and included a provision for the procurement, installation and management of real-time weather stations in climate risk hotspot localities under the Tanzania Agriculture Resilience Plan.
15	Beekeeping continued as a viable enterprise	3	R	<p>Beekeeping was a traditional activity in Chololo. The project worked on improving the harvests through the introduction of modern type beehives with a bigger capacity (60 pieces were distributed) and through training 60 beekeepers in best practices and using the new type of beehive.</p> <p>At the moment of the I&S visit, only 1 person, the village chairman, continued keeping bees with the modern beehives. He operated, however, on an individual basis. He was of the opinion that it is too difficult to undertake beekeeping as a group.</p> <p>Amongst the reasons for having practically abandoned modern beekeeping as an income generating activity are: problems with having the beehives colonised; problems with the invasion of wasps; seasons with low rainfall and hence poor vegetation cover and poor pollen production; and lack of follow-up by skilled extension workers.</p>
16	Beehive (modern type of beehive) construction continued as a viable enterprise	4	R	Beehive construction is abandoned as it was not a viable activity. See also issue 16.
17	10 Fishponds maintained and in production	4	R	Fish farming had been promoted and tested during the first phase; for that purpose, 10 fishponds had been created. However, by the end of the first phase, fish farming was assessed as an unviable livelihood option due to water scarcity in the area. As a consequence, fish farming was abandoned.
18	Leather processing group still active and producing leather goods as viable enterprise	3	D	<p>The group is still existing and active. The production of leather goods is mainly household-based, with the group taking care of the marketing aspects. The group still maintains commercial contacts with WOISO, a leather processing company in Dar es Salaam, with whom linkages were established during the first phase of the project.</p> <p>At the moment of the visit, sales and profits were limited. Involved stakeholders mentioned that they need to improve the quality of their products.</p>
19	Community nurseries still productive	3	D	Only the school tree nursery was still active, though with a limited production of seedlings.

20	Village NR committee still active and assuming its role	2	R	<p>The village NR committee still exists. Actually, the presence of a village NR committee is mandatory by law in Tanzania. The contribution of the project was hence in assisting Chololo to comply with this legal requirement. The project facilitated the establishment and the internal organisation of the committee and provided training in relevant topics.</p> <p>Though the committee was not very “visible” during the I&S visit, it was said to be still active and assuming its role.</p>
21	Extent to which the village land management plan has been implemented	4	R	<p>The original Chololo land management plan, as developed under the project needs to be adjusted prior to implementation, the reason being that a good portion of Chololo’s land has recently been reserved for the military HQ. This decision was taken as part of the process of effectively turning Dodoma into the Capital City.</p>
22	Land-related village by-laws still in force	2	D	<p>The stakeholders present at the meeting during the I&S visit confirmed that they still have the by-laws and that they are respected/enforced.</p>
23	Production of fuel-efficient stoves continued as a viable enterprise	2	R	<p>The 12 women that were trained under the project to construct fuel-efficient stoves still continue the activity. As the stoves they use/produce are not of the mobile type, they work as paid labour and build the stoves directly in the clients’ houses. They are also asked outside Chololo. The demand is good.</p>
24	10 domestic biogas plants still operational and producing biogas	3	D/R	<p>The interviewed stakeholders only remembered 4 households having a domestic biogas plant. From these 4, only one was still working well and producing substantial biogas. This operational biogas plant was visited.</p> <p>The stakeholders further reported that in two cases the plant stopped functioning because of shortage of “fuel” (= cowdung / bio-slurry) due to livestock being sold in one case and to livestock being moved to places with better grazing conditions in the second case. In the case of the 4th owner, the plant had broken down and the owner had failed to find the required spare parts.</p> <p>There is no replication observed due to the high initial cost and the complexity of the system.</p>
25	Bio-slurry compost making continued and 3 pits still in use	3	D/R	<p>This issue is fully linked to the biogas plants; it should be considered as 1 output/service.</p>
26	Water user group still active and assuming its role	2	R	<p>The Water User Group is still active and assuming its role. Their membership expanded since their establishment.</p>

				Representatives of the Water User Group reported that they had been able to have the water distribution system repaired when it was broken down. The collection of user fees is going well and the collected funds are used for rehabilitation and repair works.
27	The solar powered borehole pump still operational	1	D	<p>As could be observed during the I&S visit, the system was still operational. The site looked well maintained and the pump was kept in a locked cabin to protect it against theft and damage.</p> <p>Neighbouring villages / districts and development partners show a lot of interest in the system and in some places it is already replicated.</p>
28	The local Technology Transfer committee still active and assuming its role	4	R	The committee was dissolved, no particular reason was mentioned.
MOROGORO - ENHANCING CC ADAPTATION AND MITIGATION CAPACITIES OF VULNERABLE COMMUNITIES IN ECO-VILLAGES OF DIFFERENT ECOSYSTEMS OF THE ULUGURU MOUNTAINS				
29	Continued production of spice and fruit tree seedlings, including mango and avocado grafts as a viable enterprise	1	D/R	<p>At the end of the project, 5 groups (3 in Mgeta and 2 in Matombo) were involved in the production of spice and fruit tree seedlings.</p> <p>During the visit to Mgeta Division, 2 groups were interviewed and 1 group was visited.</p> <ul style="list-style-type: none"> The group from Luale Village testified that they continue producing and selling, and that they had expanded the business after closure of the GCCA project. They focus on improved fruit varieties and are in regular contact with the SUA nursery for obtaining quality grafting and budding material. Since the end of the project, the group has undergone several re-organisations, with less people involved. Currently, the nursery is mainly run by women, a situation that originated by the District Council providing loans to support small business development specifically by women and youth. The group took this loan for the expansion of the nursery. The group benefits from a high demand for seedlings in Morogoro; locally there is demand for improved avocado seedlings. Their main challenge is related to pest and pest control; the Uluguru Green Gold Company ¹⁹ currently provides support in that area. The aim of the group is to further expand the seedling production up to the point where buyers will find it worthwhile to come to the village for purchasing. The nursery in Londo Village was also still producing and selling. This nursery expanded after project closure, thanks to a loan obtained from SACCOS. Apart from the expenses for business expansion, the loan also covered school fees and materials for the children of the group members. At the moment of the

¹⁹ Originated from the Uluguru Mountain Agricultural Development Project (UMADEP), also implemented by SUA.

				<p>visit, the loan was fully paid back. Also in this case, the group membership was reduced and, more specifically, limited to only 3 persons. Their main selling point is the market in Nyandira, where they fetch a much higher price than on the local market.</p> <ul style="list-style-type: none"> The third group from Mgeta Division was not directly interviewed, but others reported that they also continue producing and selling. <p>During the visit to Matombo Division, the nursery group in Tawa was visited.</p> <ul style="list-style-type: none"> The group had continued the nursery activities and focused on the production of spices (cloves, vanilla, cinnamon, black pepper). They reported that after closure of the GCCA project, they received further support from a GEF/UNDP project, in particular for quality improvement and marketing (they even mentioned the international market). Importantly, they also mentioned that the nursery production (spices) as income generating activity had been picked up by other small groups/individuals in the area. <p>Overall, one can conclude that the nursery production was well sustained, and even expanded.</p>
30	38 fishponds maintained and in production	3	D/R	<p>By the end of the project, 35 farmers had been trained on fish farming and a total of 38 fish ponds (18 in Mgeta Division and 20 in Matombo Division) had been established and stocked with about 5,000 fingerlings in total. Fish farming had been promoted to provide the villages with a new source of protein and an additional source of income.</p> <p>During the I&S visit, not all fishponds could be visited and only a few fish farmers could be interviewed. The information obtained was not fully coherent with the data from the final project report. For example, the SUA researchers mentioned that the reported total of “38 fishponds established” had never been achieved; they could however not provide an alternative figure. In Mgeta Division, the gathered stakeholders reported that in their Division 9 ponds were initially established and 6 were still remaining now. In Matombo Division, no quantified data could be provided.</p> <p>On the current situation, the interviewed farmers in Mgeta testified that the 6 ponds are still producing well but that the income generating potential is rather limited. Marketing of fresh fish is a challenge; transport is an issue and fish is mainly sold on the local market, even house to house. Processing fish was mentioned as a possible solution, but no initiatives were taken so far. One person had specialised in producing fingerlings and he was satisfied with the earnings, mainly used to cover school costs for his children. Another challenge consisted in the reduced fresh water supply for the ponds due to (1) damage in the canals and (2) increased number of water users.</p>

				<p>The visited fish farmer group in Matombo (Tawa Village) was in the process of expanding and improving the GCCA-supported fishpond with the assistance of the UNDP/GEF project. They said the pond was too small to make it a viable enterprise. The initial fish farmer group had now incorporated the members of the disintegrated road maintenance group of Tawa.</p> <p>Interestingly, the Ward Community Development Officer had been active in disseminating the practice of fish farming in the area and the activity had been replicated in a few places.</p> <p>Overall, one could say that the activity is partially sustained.</p>
31	8 Water User Groups still active and assuming their role	5		
32	Irrigation system / canals maintained and operational	3	D/R	<p>Although farmers were very satisfied with the improved water supply which had been at the basis of a significantly increased agricultural production, including the new opportunities of off-season cropping (generating very good income) and fish farming, the irrigation systems and canals do not seem to be adequately maintained as several remarks were made on leakages and water losses in the system, affecting the productive activities.</p> <p>During the visit, the farmers showed some of the places where leakages had appeared over time.</p>
33	Rainwater harvesting systems installed in 3 schools and 1 dispensary maintained and operational	2	D/R	<p>Four rainwater harvesting systems had been installed in resp. Kikeo Secondary School, Luale Primary School, Luale Dispensary and Milawilila Primary School for demonstration purposes.</p> <p>During the I&S visit, 1 place was visited (Kikeo Secondary School) and positive (= still functional) feedback was given on the other 3 sites. At Kikeo Secondary School, the tap was broken but would be soon repaired.</p>
34	Continued production in the 6 school tree nurseries	3	D/R	<p>The schools that participated in tree nursery activities were Kibungo, Bandasi, Masalawe, Luale and Konde Primary Schools and Kikeo Secondary School.</p> <p>Information could be obtained for four schools:</p> <ul style="list-style-type: none"> - The Kikeo Secondary School (visited) had discontinued the seedling production due to the departure of the teacher in charge. - In Matombo Division (Kibungo, Bandasi and Konde), it was reported that the nurseries (small) still exist but that the production is very irregular. It seems that the schools are dependent on external seed supply: in

				2014 there was no production due to lack of seed; the seedlings in 2017 were grown from seed received from the UNDP/GEF project; in 2019 the SAT project supplied seed; and only recently one of the schools had taken the initiative to collect some seed themselves.
35	Continued production by the 6 beekeeping groups	4	R	<p>Improved beekeeping was promoted in 6 villages (Konde, Luale, Masalawe, Londo, Kibungo and Milawilila) with the involvement of about 70 people.</p> <p>Very little seemed to have remained from the beekeeping activities. In Mgeta Division, beekeeping was not mentioned at all. In Matombo Division, the activity had been picked up by the SAT project in some places and in other places the activity had been discontinued. Inadequate technical backstopping was reported as a major factor in the abandonment of the activity.</p>
36	Continued use and production of fuel-efficient cooking stoves	3	R	<p>During project implementation, 3 models of improved cooking stoves had been identified and demonstrated and a total of 219 fuel saving stoves had been built.</p> <p>At household level, the adoption/success of the improved cooking stoves had been very partial. It was reported that the stoves were not responding to an urgently felt need. As a consequence, no much effort is presently going into replacing the stoves as needed or in starting up production of stoves as a commercial activity. On the other hand, the SUA representatives mentioned that the adoption rate at institutional level (small institutions) had been higher and that they are currently looking into the possibility of expanding the capacity of the stoves from the initial two plates to three.</p>
37	5 feeder road maintenance groups still active and assuming their role	4	D	The groups were dissolved as road maintenance was taken over by the government who works with contractors and not with the community groups.
38	New feeder road well maintained	2	R	The project had supported the construction of a 3.5 km feeder road in Londo Village, going from the Kiengere mountain hills to the village centre. The road had been well maintained, reflecting the high importance of the road to the local communities.
39	7 rain gauges in 7 schools still functional and in use (data recorded and analysed)	4	D/R	<p>In the two schools that were visited (Kikeo Secondary School and Bandasi Primary School), the rain gauges were broken down and never repaired or replaced.</p> <p>As gathered from the interviews, the interest in collecting and analysing rainfall data was minimal.</p>

				Also the ex-post evaluation report (2016) indicates that the “meteorology station” (in reality, only a rain gauge) initiative was rated amongst the least successful / useful activities by the direct project beneficiaries as well as by the local governments.
40	Sengu committee still active and assuming its role	2	D/R	<p>Based on the positive experience in Mbinga (outside the project intervention area) with the re-introduction of the traditional “sengu” local governance model in terms of sustainability and increased accountability, the project had organised a week-long visit to Mbinga for 12 participants from the project area to get acquainted with the sengu model. “Sengu” is known as an inclusive mechanism for steering community development, including natural resource management, and for monitoring the performance of local leaders. Following the visit, Konde Village established its own sengu committee. It was further assumed that, if Konde would demonstrate positive results, the concept would likely be adopted in other villages as well.</p> <p>At the stakeholder meeting in Mgeta Division, two participants presented themselves as member of the local sengu committee; one was from Luale Village, the other from Londo Village. They explained that their villages had indeed adopted the model and that they were active – still today – in promoting development initiatives such as conservation of water sources and planting trees; in sensitising and mobilising people to participate in major community works; in enforcing bylaws; and in monitoring the implementation of projects in the area. Regarding the latter, they noted a number of weaknesses and reported back to the government. In particular, they had reported that inputs provided by the government did not reach the people in the foreseen amounts because of the village leadership taking more than their shares. Since that event, being part of the sengu committee is risky, but they are still functioning.</p> <p>The sengu committee set up in Konde Village was reported to have functioned well initially but ended when one of the driving forces was accused for distortion.</p> <p>So, while the initial committee in Konde was dissolved, at least two new committees (Luale, Londo) were set up and were found to be still functional today. Therefore, a score of 2 is assigned.</p>
41	9 school environmental clubs still existing and active	4	D	In the two schools that were visited (Kikeo Secondary School and Bandasi Primary School), the school environmental clubs were found to be inactive. No information could be given on the situation in the other schools.
42	Village environmental committees (2) and collaborative village institutions (4) still existing and assuming their role	5		

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43	Manual on Sustainable Agriculture Practices still in use	2	U	The SUA representatives considered the Manual as still relevant and assume that the manual is still in use by agricultural extensionists. There is however no further active dissemination of the manual. .
44	The SACCOS Financial Management Guide still in use	2	U	The SUA representatives considered the Guide as still relevant and assume that the guide is still used in SACCOS settings. There is however no further active dissemination of the guide.



This **Impact and Sustainability Assessment of Global Climate Change Alliance in Tanzania** (2009/O21-477) is one of the 22 case studies that were conducted to feed into the overall **EU GCCA/EU GCCA+ Impact and Sustainability Study**.

This case study report provides a summary list of outputs delivered, a detailed analysis of ex-post impact and sustainability levels as well as additional information on the project's M&E practices, on the available knowledge and communication products, on scaling-up opportunities and on ex-post climate finance mobilised from local public and private sources.

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