

**Endline Evaluation of “Savings and Credit Groups for Food Security and Ecosystem Sustainability in Tanzania:”
A CARE-WWF Alliance Project
Implemented in SAGCOT-Ihemi Cluster, Mufindi and Iringa Districts
(2021-2023)**



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List of acronyms

%	Percentage
AMREF	African Medical and Research Foundation
ASA	Agriculture Seed Agency
ASDP II	Agricultural Sector Development Programme Phase Two
AWG	Agriculture Working Group
C	Carbon
CARE	United States Based International Development Organization
CBNRM	Community Based Natural Resource Management
CBTs	Community Based Trainers
CCROs	Customary Certificate of Right of Occupancy
CDOs	Community Development Officers
CEAS	Community Environment Award Scheme
CEFA	Name of a Local Organization in Mufindi District
CHIDA	Name of a Local Organization in Mufindi District
CHOMOKA	
App	A digital VSLAs database platform used by CARE Tanzania
CI	CARE International
CO2	Carbon Dioxide
COMHESWA	Name of a Local Organization in Mufindi District
COVID-19	Corona Virus Disease 2019
COWEA	Name of a Local Organization in Mufindi District
CPPs	Community Paraprofessionals
CRDB	Name of a Commercial Bank
CSA	Climate Smart Agriculture
CSIs	Collective and Sustainable Investments
CSO	Civil Society Organizations
DALFO	District Agriculture, Livestock and Fisheries Officer
DAOs	District Agriculture Officers
DC	District Council
DED	District Executive Director
E.g.	Example
e.t.c	Et cetera
EMU	Environmental Management Unit
FFBS	Farmer Field and Business School
FGDs	Focus Group Discussions
FINCA	A Name of a Microfinance Institution
GAPs	Good Agricultural Practices
GDP	Gross Domestic Product
GNI	Gross National Income
Ha	Hectare
HQ	Head Quarters
HZPC	A Name of a Private Company Involved in Potato Seed Multiplication
i.e	That is
ICRAF	World Agroforestry Centre
ILWM	Integrated Land and Water Management

Kg	Kilogram
KIIs	Key Informants Interviews
KPIs	Key Performance Indicators
LGA	Local Government Authority
LIMAU	Name of a Local Organization in Mufindi District
LOP	Life of Project
Ltd	Limited
MAMCOS	Madibira Agricultural and Marketing Cooperative Society
MEL	Monitoring Evaluation and Learning
MoA	Ministry of Agriculture
MSP	Multistakeholder Processes
MT	Metric Tons
MUCOBA	Mufindi Community Bank
MUNGONET	Mufindi Nongovernmental Organizations Network
MUPCE	Name of a Local Organization in Mufindi District
MUYODESSO	Name of a Local Organization in Mufindi District
MUYOWIRUDE	Name of a Local Organization in Mufindi District
NACOPHA	Name of a Local Organization in Mufindi District
NADO	Name of a Local Organization in Mufindi District
NEMC	National Environmental Management Council
NFRA	National Food Reserve Agency
NGO	Non-Governmental Organizations
NLUC	National Land Use Council
NMB	A Name of a Commercial Bank
ODK	Open Data Kit
OECD	Organization for Economic Cooperation and Development
PCDO	Principal District Community Development Officer
PELUM	Participatory Ecological Land Use Management
PLUM	Participatory Land Use Management
QDS	Quality Declared Seeds
RBWB	Rufiji Basin Water Board
REGROW	Resilient Natural Resources for Tourism and Growth
REPOA	Research and Poverty Alleviation in Africa
RUWASA	Rural and Urban Water and Sewage Authority
SAGCOT	Southern Agriculture Growth Corridor of Tanzania
SAT	Sustainable Agriculture Tanzania
SGFES	Savings and Credit Groups for Food Security and Ecosystem Services
SMAJATA	Name of a Local Organization in Mufindi District
SMSP	Name of a Local Organization in Mufindi District
SOS	Name of an International Organization supporting Children
SSPs	Small Scale Producers
TAHEA	Tanzania Home Economics Association
TAHESO	Name of a Local Organization in Mufindi District
TANAPA	Tanzania National Parks
TANESCO	Tanzania National Electricity Supply Company
TARI	Tanzania Agriculture Research Institute

TBD	To Be Determined
TFS	Tanzania Forest Services
ToC	Theory of Change
TOSCI	Tanzania Official Seed Certification Institute
Tsh	Tanzanian Shillings
TZS	Tanzanian Shillings
USAID	United States Agency for International Development
USD	United States Dollar
VEMCs	Village Environmental Management Council
VEO	Village Executive Officer
VLAP	Village Land Action Plan
VLUMCs	Village Land Use Management Council
VLUPs	Village Land Use Plans
VNRC	Village Natural Resources Council
VSLA	Village Savings and Lending Association
WUAs	Water User Associations
WWF	World Wildlife Fund
YOWDO	Name of a Local Organization in Mufindi District

Executive Summary

The "Savings and Credit Group for Food Security and Ecosystem Sustainability (SGFSES) in Tanzania" was a CARE-WWF Alliance's project implemented in Southern Agricultural Growth Corridor of Tanzania (SAGCOT), focusing on the Great Ruaha River region. The initiative aimed to address climate vulnerabilities, improve livelihoods, and enhance ecosystem services. Among other interventions, the project promoted sustainable production of Irish potatoes and common beans, crucial for community livelihoods, but vulnerable to climate shocks. Challenges such as water and land shortages, deforestation, and weak governance had affected productivity and adaptation options.

Implemented from June 2021 to December 2023 in Iringa and Mufindi Districts, the project targeted 21 villages. Its primary goal was to enhance the household income of 5,000 farming families, particularly empowering women, directly impacting 22,500 individuals and indirectly benefiting at least 50,000 individuals within the Great Ruaha watershed.

The project employed traditional approaches like Village Savings and Loan Associations (VSLA), Farmer Field and Business Schools (FFBS), and Community-Based Natural Resource Management (CBNRM), along with Integrated Land and Water Resource Management (ILWM) integrating income-generating and market-engagement strategies with natural resource management and sustainable agriculture practices so that both communities and ecosystems thrive.

The endline evaluation utilizing OECD criteria to assess the relevance, coherence, effectiveness, efficiency, impact, and sustainability of the project. It measured the achievements of this integrated conservation and development compared to the baseline three years earlier.

The endline evaluation found that the project surpassed its targets, reaching 7,029 households (51% female-headed) with a total of 10,961 direct beneficiaries (55% women, 34% youth) across all 21 project villages. In another words, the project impacted directly 33,739 individuals from 7,029 households. This represents 141% of the target set by the project at its beginning. Findings from FGDs and KIIs, showed that the project improved well-being of these communities by enhancing equal opportunities for men, women, and youth. The project enhanced meeting of basic needs such as food, housing, clothing, health services, and education expenses.

They participants increased productivity of staple crops like maize, common beans, sunflower, and Irish potatoes which notably contributed to reliable food sources and increased income for the communities. These crops served for both food and income. The endline survey found that the average productivity of the common bean increased from 331.3 kg acre⁻¹ to 633 kg acre⁻¹ which is an increase of 91% compared to the baseline. This achievement surpasses the LOP target of 30% increment by 61%. Furthermore, the average productivity of Irish potato increased from 1,435.5 kg acre⁻¹ to 7,500 kg acre⁻¹, which is 423% of the baseline or 393% of the LOP target of 30% increase.

The average number of months that surveyed households were able to provide sufficient food to their families was 7.4 at endline, up from 4.0 months at baseline. This is an increase of 85% from the baseline. The achievement surpasses the Life of Project goal of a 20% increase by 65%. On average, 83% of households experience adequate food provisioning during the crop-harvesting period (May to November), 42% experience hunger during the planting and crop growing season (December to April).

83% of the surveyed households report consuming three meals a day for most of the year, 86% of respondents were not worried about facing food shortages throughout the year. For those households that do not have adequate food provisions throughout the year, they tend to reduce their meals to two a day between December and April. Communities regard having two meals a day during the lean period as an improvement, as food was sometimes insufficient for one meal among some families in the past.

Notably, women and youth constituted the largest groups among those not concerned about food shortages (58.5% and 35.7%, respectively), signaling positive food security conditions at the household level. The availability of food was not the only focus for the communities; they also diversified their diets as a result of the project interventions, with 82% of respondents indicating access to at least six different food groups.

The annual household income showed to have increased by 102%, rising from 1,265,658 TZS at baseline to 2,559,543 TZS at the endline (Figure 2). This exceeded the project's targeted average income increase by 42%. Notably, female-headed households experienced a substantial income boost of 157%, surpassing that of male-headed households at 145%. Male-headed households still maintained higher income levels than female headed households, with 3,391,071 TZS compared to 1,728,015 TZS, respectively. Contributing factors to this income disparity included the traditional Tanzanian culture of a male-dominated society, granting men greater access to opportunities. Observations and reports verified tangible outcomes of this increased income, including upgrades in housing, increased ownership of motorbikes, and widespread adoption of modern farming equipment such as power tillers, tractors, and oxen during farm preparation.

The endline survey also found that the small-scale producers (SSPs) increased the access to market and inputs by 87% and 94% compared to baseline, respectively. These achievements surpassed the LOP target of 50% increase from the baseline for each crop.

As the project implemented the integrated livelihoods and community based natural resources management, project participants also raised income from nature-based enterprises such as beekeeping and tree nurseries. This is a result of shift in mindset, moving away from subsistence reliance on maize and beans. Different age groups and genders utilized natural resources in varying ways, with men prioritizing land for farming and livestock for selling, while women focused on farming for home consumption. Youth sought quick income generation through engagement in horticulture, small businesses, and cash crop farming.

The community acknowledged that increased awareness of women and youth participation in decision-making, both at home and community levels, positively impacted their well-being. The reduction of the patriarchal system in their communities was evident, with village committees now achieving a balanced gender composition.

By using a Meta index scoring method, where 1 represent the weakest decision while 5 the strongest decision making power, determining the optimal quantity of crop yield to allocate for consumption versus sale, women exhibit a stronger inclination towards balance, earning a score of 5. In contrast, men express a slightly more conservative approach, scoring 4 in this aspect of decision-making. This is influenced by the understanding that women, who often bear the responsibility of caring for children, may suffer more when there is a shortage of food in the household, while men prioritize broader household development, such as building a better home

In the role of chief overseer, tasked with managing family assets, expenditures, and generating innovative ideas for family development, men scored 5, while women scored 4. This discrepancy is

attributed to the perception that men traditionally assume a greater responsibility, being considered the primary providers, while women are often seen as supporting their partners within the family structure. Although there was improvement in decision making by women and youth, overall, still men traditionally had twice the decision-making opportunities compared to women.

The endline evaluation noted that the implementation of integrated natural resource management by involving communities, local government authorities and other key stakeholders resulted to a notable increase in water flows in the Ndembera and Utosi Rivers, crucial for sustaining livelihoods in the targeted communities. Data collected from the Ndembera catchment, utilizing two river gauging stations, as evidenced in the semi - annual report 2022, indicated a consistent upward trend in river flows from 2021 to 2023. Specifically, the Mkikifu river stream, which gathers water from over 80 community conservation water sources, demonstrated a positive impact of the conservation initiatives supported by the Alliance, with an increase in water flows during both wet and dry seasons.

In the dry season (July-October) of 2022, the average water flow recorded was 0.34 m³Sec⁻¹, marking a substantial 42% increase from the 0.24 m³Sec⁻¹ recorded during the same period in 2021. In the wet season, the water flow increased to 1.45 m³Sec.

Despite lower rainfall in 2023, the consistent increase in water flows over the three-year project period suggests that the catchment is benefiting from community conservation actions.

In addition to monitoring water discharge in the Ndembera Sub-catchment Rivers, Utosi and Igomaaa, the Alliance project aimed to impact vegetation cover in water sources, wetlands, and forests. Although there was no specific initial target established, a baseline land size under vegetation cover was recorded at 37,141.9 hectares at the project's inception. The Endline evaluation determined that the project's restoration activities successfully increased vegetation cover by 887.25 hectares, equivalent to a 2.4% improvement from the baseline.

Figures 5 and 6 visually represent the increased water flow throughout the project period, a phenomenon corroborated by community reports during Focus Group Discussions (FGDs), where residents stated they have witnessed rivers with continuous water flow throughout the year.

Despite significant improvements in various aspects of well-being, challenges persist, including a lack of reliable markets for cash crops and potential future risks. Findings from the FGDs, KIIs and household survey found that the CARE-WWF Alliance project successfully addressed current drought challenges.

The consultants concluded that the Alliance project's interventions improved both ecosystem functions and services, enhancing the resilience of families and their livelihoods.

The endline evaluation drawn lessons learned that emerged from the data are:

- The planting to avocado trees, being one of potential trees for income generation and conservation of natural resources comes with a number of challenges. The first is it high water usage especially at the early stages of growth. The fruit tree have attracted large investors, who have been seen to open up large farms in forested lands. This has the risk of causing deforestation and drought in the near future, as the virgin land is turned into production land.
- The implementation of VSLAs have helped the village land use committee, village environmental committee members and village council leaders to get into engagement with conservation activities.
- The Alliance-promoted VSLA-based AMCOS model has several benefits: in addition to attracting farmers with its core collective marketing promise, the requirement that all AMCOS members should also be VSLA members both accelerated VSLA group formation and enhances trust in leaders, a critical component of successful AMCOS.

- The Alliance-piloted CSI model holds significant promise: Collective Investment trainings have not only supported VSLA groups in investing together but also have supported the individual members in starting their enterprises.
- VSLA members are confident to speak out on the enterprises which are destructive to environment in front of other members compared to period before the CSI training.
- VSLA members can see the benefits of individual and group investments that are made.
- Women have been in front line in undertaking collective investments activities at a group and individual level, which has resulted into family stability and reduced GBV issues as they also have something to contribute to their families.

The following are recommended for future programming:

- According to the representative of the Rufiji Basin Water Board, there is need to put beacons and fences in all water sources/ catchments to enhance protection against encroachment by clearing the demarcation for the communities to know the boundaries.
- As conservation activities take time to give tangible benefits, as well as since the conservation activities are not only for income generation rather they contribute to wide global benefits, there is need to incentivize conservation groups as well as providing reliable funding to support their conservation activities.
- Youth are mobile as they need quick income thus they are not readily available to participate into the conservation activities. As this is the largest and most energetic group in the communities there is need to incentivize them. Youth have the potential to protect the natural resources through patrolling for prevention of illegal harvesting of natural resources, there is need to optimize their involvement in conservation activities. These youth tend to be mobile and move away from their villages in search for quick income earnings.
- Address challenges in formal financial services access by enhancing the alignment between VSLAs and knowledge sharing platforms with formal financial solutions.
- Tailor market-oriented skills training to local contexts and ensure practical applicability, emphasizing direct market linkages, control of side selling, and agricultural product value addition.
- Provide adequate time for training and strengthen linkages to relevant service providers to enhance SSPs capacity in value addition and processing.
- Conservation groups need to be given more training and capacity strengthening on different aspects related to conservation and restoration of watersheds, such as laws and policies, to increase their confidence in defending conservation.
- Respondents who participated in the endline evaluation showed that villagers are digging shallow wells which basically drain water from the catchment areas to cater for either home consumption, livestock, or irrigation activities. As population grows, demand for water increases, there is a threat that large amounts of water would be drained from the catchments. Farmers recommend digging deep wells in single points per village and distribute to the villagers. Hence there could be control of the amount of water consumed in the villages.
- To ensure the results are equitable and inclusive at outcome and impact level, it would be important to expand the representation and strengthen the capacities of women and youth in leadership positions, not only in VSLAs/CSIs, FFBS, and AMCOS, but also in diverse community-based conservation groups.

1. BACKGROUND INFORMATION

1.1 Tanzania Country Context

According to World Bank (2020), agriculture remains a key source of income for many families, with 68% of Tanzania's workforce engaging in farming and related agri-business activities in rural and semi-urban areas. The sector generates 25% of GDP and supports up to 80% of livelihoods. Small family farm holdings dominate the agricultural sector (World Bank, 2020). As stated by the World Bank, almost half of the country's population live below the international poverty line of 1.9 USD per day. Nevertheless, Tanzania has sustained a steady economic growth over the last decade, averaging 6–7% a year. While the poverty rate in the country has declined, the absolute number of poor citizens has not because of the population growth rate. Due to the rise in the Gross National Income (GNI), the World Bank classified Tanzania as a lower middle-income country in 2020. Further, with the change in presidency beginning of 2021, more emphasis is being laid on the growth of the agriculture sector, in particular helping smallholder farmers to access affordable inputs, capital, and equipment.

Many households engaged in the sector live in persistent poverty, growing a limited number of food crops for subsistence. Climate change is exacerbating the vulnerability of the country's agriculture systems and predisposing households to food insecurity and economic shocks that, in turn, weaken their coping strategies, nutrition and health. According to Studysmarter.co.uk, agriculture has the potential to produce food, clothing and other products which enhance people's quality of life by providing a major source of employment and contributes to economic growth and reduce carbon dioxide (CO₂) levels in the atmosphere by storing the carbon (C) in soils. It also helps to conserve natural resources by using less land to produce more food. Unfriendly practices significantly impact on the ecosystem.

Unregulated practices in agriculture, such as the use of nitrite and nitrate fertilisers, have led to the pollution of underground water reserves (aquifers). Deforestation has also been among the important negative effects of agriculture. Deforestation creates desertification, which leads to a lack of food, water, and species displacement. Agriculture also causes water pollution from pesticides and fertilizers, soil erosion, and greenhouse gas emissions from livestock and heavy machinery. To mitigate these environmental risks, sustainable farming methods become essential. (

<https://www.studysmarter.co.uk>)

The poorest and most vulnerable people in the developing world, including Tanzania, depend on natural systems for food, fuel, and shelter, and they are disproportionately impacted by environmental degradation. CARE – WWF Alliance ventured into finding a way to ensure productive and equitable food systems and livelihood security for the most vulnerable, especially for small-producer farmers, 80% of whom are women. The Alliance needed to facilitate the strengthening of food systems without destroying the planetary systems.

1.2 Context of Savings and Credit Groups for Food Security and Ecosystem Sustainability (SGFSES) Project

1.2.1 The CARE-WWF Alliance SGFSES approach

The SGFSES project was implemented in the SAGCOT region focusing the Great Ruaha River catchment in Tanzania. This region provides a critical source of water for a diversity of users, including large- and

small-scale irrigated agriculture, livestock keeping, hydropower generation, and biologically and economically significant ecosystems, such as the Usangu wetlands and Ruaha National Park. In the early 1990s, the Great Ruaha River ceased flowing during the dry season, with consequences for the lives and livelihoods of the six million inhabitants of the basin.

The CARE-WWF Alliance has identified to facilitate livelihood improvement of the communities through supporting Irish potatoes and common beans because they are the key livelihood activities. However, these crops which are always mixed with rain fed maize were highly sensitive to unreliable rains, shorter rainy season, and increased incidence of crop diseases and pests, hence made the communities vulnerable to climate shocks. Water and land shortages were widespread due inward migration for agricultural opportunities; forced removal from other places; population growth; weak governance and planning; loss of trees; perceived declining fertility of land; and local agricultural practices that degrade water sources and wastewater. These shortages limited productivity; limited options to farmers and pastoralists to adapt to climate change; caused conflict between different water and land users; and limited domestic water supply. Cutting down of trees for firewood, charcoal, timber, house construction, and clearing land for farming, as well as trees lost to fires caused by farmland preparation, had left villages more open and less protected from strong winds and landslides.

The CARE-WWF Alliance embarked on an ambitious initiative to have impact at scale on food and nutrition security and climate resilience through addressing Climate Vulnerability and Capacities of the communities in the Mbarali and Ndembera sub-catchments. The project aimed at enhancing the capacities of the communities to be able to be resilient to the shocks, as well as contributing to conservation, protection, and restoration of ecosystems.

The CARE-WWF Alliance project aimed to foster livelihood diversification and economic opportunities while concurrently contributing to biodiversity conservation. The approach targeted collaborative engagement in agricultural and nature-based value chains, ranging from common beans and Irish potatoes to honey and tree nurseries. The project wanted to utilize a comprehensive model that combines traditional approaches such as Village Savings and Loan Associations (VSLA), Farmer Field and Business Schools (FFBS), and Community-Based Natural Resource Management (CBNRM), alongside innovative methods like Integrated Land and Water Resource Management (ILWM) innovations linked to Village Land Use Planning (VLUP) and Collective and Sustainable Investments (CSI).

Through Farmer Field and Business Schools (FFBS) and Village Savings and Loan Associations (VSLAs), the project intended to integrate income-generating and market-engagement strategies with natural resource management and sustainable agriculture practices. This approach aimed to ensure the prosperity of both communities and ecosystems. The project wanted to utilize FFBS to build the skills and knowledge of small-scale producers (SSPs) in sustainable agriculture practices, post-harvest techniques, and value addition, ultimately increasing agricultural productivity and market access. Village Land Use Planning (VLUP), Integrated Land and Water Management (ILWM), and Community Based Natural Resources Management (CBNRM) aimed at empowering communities to plan their land and water use, leading initiatives in ecosystem restoration and sustainable natural resource management.

The VSLA model aimed to enhance group self-management providing members with a safe place to save their money, access loans, and obtain emergency insurance. The FFBS aimed to facilitate women-focused extension approaches that could help small-scale farmers build skills to increase production;

access markets collectively; sell at competitive prices; and make informed decisions. The project thought that the status and recognition of women could be transformed as they became successful farmers, businesspeople, leaders, and agents of change. The inclusion of marketing and nutrition modules could help the transmission of improved yields to increased income, reduced hunger, and improved nutrition.

By combining conservation and development efforts, the Alliance wanted to pilot a sustainable, collective investment curriculum and model within existing value chain interventions. This innovative approach aimed to increase the financial capacity of small-scale producers and diversify their income streams without exacerbating pressure on forests, freshwater habitats, soils, animal diversity, or the climate. The project's holistic strategies wanted to contribute to the achievement of its goals and the sustainable development of the Great Ruaha watershed.

The CBNRM model was proposed for implementation by the project as it was recognized that communities were the best stewards of their natural resources when they had appropriate knowledge, skills, and systems to manage them. The project would build on WWF's experience in integrated land and water management (ILWM) to enhance ecosystem services for the benefit of small-scale farmers, especially women. The project planned to disseminate ILWM information through VSLAs and FFBSs, and empower other Community-Based Organizations, like Village Land Use Planning Committees and Water User Associations, to improve participatory planning and sustainable use of those resources.

1.3 The project's anticipated results

The CARE-WWF Alliance Project was implemented for a three-year period from 2021 to 2023 in twenty-one villages of Iringa Rural and Mufindi Districts whereby nine (9) Villages were in Iringa DC and 12 Villages in Mufindi DC. The primary objective of the project was to enhance the household income of 5,000 farming families, with a focus on empowering women, while simultaneously enhancing ecosystem services in the Great Ruaha catchment. The overarching goal was to improve the well-being of 22,500 individuals directly and at least 50,000 individuals indirectly within the Great Ruaha watershed.

The project intended to realize the following specific objectives:

- Extended informal savings groups and provided collective access to financial services for 5,000 farming families, benefiting 22,500 individuals, with a particular emphasis on women.
- Increased sustainable investment and production to boost small-scale farmer income by 60% and improve food security by 20%.
- Enhanced ecosystem resilience and functions in production landscapes through the implementation of sustainable natural resource use plans and management strategies.
- Strengthened public and private partnerships to enhance small-scale producer access to extension services, inputs, markets, financial services, and benefits from ecosystem services.

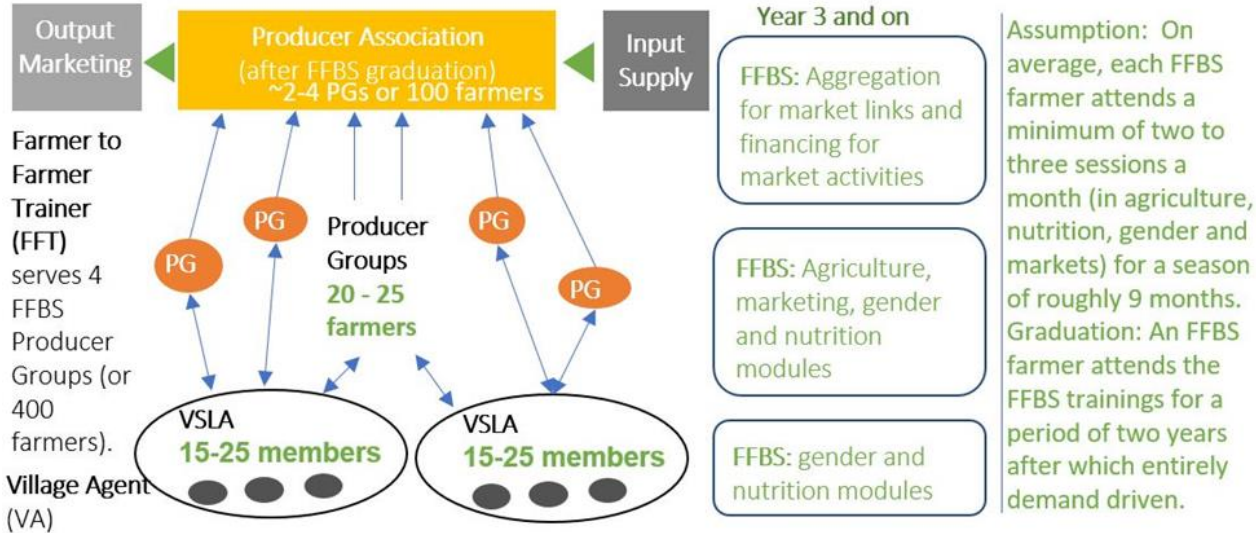
1.4 Project's design and rationale

The business case and rationale for the project was the drawn lessons from the previous phase that small-scale food producers who engage in savings groups quickly increased productivity and household incomes. Women in poor, rural communities use VSLAs to purchase agricultural seeds, tools, and labor, invest in sustainable methods to improve productivity, build their businesses, increase their incomes, rebuild after disasters, pay school fees for children, and purchase food during lean months. CARE also

learned that integrating VSLAs with food security and climate-resilient approaches is highly effective. Engaging small-scale farmers, particularly women, in integrated land and water planning for sustainable CBNRM will increase ecosystem services.

Based on the above lessons, CARE wanted to enhance VSLA groups to serve as a source of microcredit and function as a vehicle for disseminating information for agricultural extension, climate change adaptation, and watershed-based land and water management for sustainability. Figure 1 below shows the project’s adopted pathways.

Figure 1. Pathway for VSLA members to form Producer Groups



1.5 Partnerships

In ensuring synergies and complementarity the CARE-WWF Alliance believed in leveraging key government partners, such as the Rufiji Basin Water Board (RBWB) and National Land Use Planning Commission (NLUPC) in Tanzania, as well as local government authorities and civil society organizations. The Alliance planned to partner with Tanzania Climate Smart Agriculture Alliance on improved agricultural production, and research institutes like TARI UYOLO, Private Sectors to support access to inputs and markets, and the World Agroforestry Centre (ICRAF). The project also wanted to facilitate linkages to the private sector, using innovative technology called CHOMOKA, a digital app and social enterprise launched by CARE in 2019 for savings groups, financial institutions, and other private sector partners which could facilitate accurate recordkeeping, credit scoring, and linkages through its marketplace. Furthermore, the project intended to introduce innovative land use plan models that are cost effective and cost-efficient.

2. OBJECTIVES AND METHODOLOGIES OF THE ENDLINE EVALUATION

2.1 Overall project's endline evaluation approach

The endline evaluation utilized a mixed-methods approach featuring quantitative and qualitative data collection methods using a gender-sensitive lens. Quantitative methods involved administration of questionnaires with community members (mostly small-scale farmers) while qualitative methods included a review of literature, holding focus group discussions with representatives of project participants, and key informant interviews with selected stakeholders familiar with the project themes and interventions. The study focused on access to savings, credit / financial inclusion and sustainable management of land and water / restoration of water sources, land use management and impacts on food and income security.

The study design linked the evaluation questions to the data collected, the approach, and how these contributed to the overall project's outcomes and impacts. The endline evaluation assessed the extent the project was delivered as compared to the project document and project targets. The evaluation applied the six evaluation criteria developed by the OECD Development Assistance Committee. The consultants researched to find out to what extent the project's interventions were relevant, coherent, effective, efficient, had impact, and sustainable. The project's *relevance* relates to the policy and economic context, as well as the target or impact groups. It also evaluated the *efficiency* in terms of resource allocation, *effectiveness* in achieving desired outcomes, and perceived *sustainability of benefit flows* and likelihood of long-term *impacts*. The evaluation aimed to offer an external perspective based on project's participants and stakeholders' feedback and provide recommendations for the future programming if any.

2.2 Scope of the project's endline survey

The endline evaluation was conducted in the Iringa and Mufindi Districts, Iringa Region in the Southern Highlands of Tanzania, covering 10 preselected villages. The evaluation tracked the status of the project indicators related to increasing income, food security, yields, resilience, nutrition, and equality of 5,000 farming families. The evaluation assessed the status of the ecological and socio-economic outcome indicators as stated in the project Monitoring Evaluation and Learning (MEL) plan. The endline evaluation also researched other key stakeholders along the agricultural supply chain and representatives of organizations that were working with farmers supporting them with various services, including those who worked to address gender equity and equality and other relevant issues related to agricultural development, as per the project key performance indicators (KPIs) in the MEL framework and learning questions.

The ecological endline evaluation findings focusing on land / vegetation cover of the Ndembera sub-catchment were made available to the consultants by CARE-WWF Alliance and provided supplementary information to the development of this report. The evaluation also tracked the progress made towards realizing selected CARE International (CI) global indicators.

2.3 Data collection instruments

Quantitative and qualitative data collection tools, baseline report, and annual monitoring and study reports were provided to the consultants by the CARE-WWF Alliance. The consultants reviewed and adjusted the tools which were previously used for baseline and annual surveys. The consultants trained the enumerators with the skills to administer the tools during the end line evaluation field work. Mobile technology (ODK) was used in collecting the data, which were later analyzed using R statistics. Quantitative and qualitative data (both drawn from primary FGDs but also the collective and sustainable investment qualitative research reports) were used to prepare this endline report.

2.4 Qualitative data collection techniques used

Qualitative data collection was undertaken by the consultant's core team members, comprised by the Team Leader and other three members. Administration of the household questionnaires for the collection of quantitative data was done by the experienced and trained 7 enumerators drawn from among the consultant's network in Mufindi District. The qualitative data collection involved the Desk Review, Key Informants Interview (KIIs), Focus Group Discussion (FGDs), observations and taking pictures. Below were some of the documents and respondents consulted for the Desk review, KIIs and FGDs:

- 1) **Desk review:** Consultation of relevant project documents, including the following documents provided by the project team (list non-exhaustive):
 - Context of the CARE- WWF Alliance project in the SAGCOT Region, including outcomes from pilot project, i.e., phase 1 of the same program of work
 - Project document including theory of change (ToC) and MEL plan
 - Baseline Report of the Project, Inception Report and Appendices
 - Annual and Semi-annual Narrative Reports and Supporting Documents, including indicator frameworks.
 - Village Land Use Plans (VLUPs) conducted in the Mufindi and Iringa Districts
 - Reports of the Water Flow Analysis in the Ndembera River Catchment
 - Key Performance Indicators (KPIs) for the Collective and Sustainable Investment (CSI) Model
 - A Summary Report on Conservation Campaigns, including Report of the Community Conservation Plan 2021 to 2022
 - Collective 6 Village Land Use Plan (VLUP) report
- 2) **Key Informant Interviews:** In-depth interviews were conducted with key partners of the project, including 4 CARE-WWF Alliance field staff. In each of the Mufindi and Iringa Districts, 1 Principal Community Development Officer (PCDO), 1 District Agricultural, Livestock and Fisheries Officers (DALFO), and 1 District Natural Resources and Environment Officers were interviewed. The other interviewed key informants were Chairpersons of Lugodalutali, Wasa and Makongomi VSLAs conservation groups, Village Executive Officers of Lumuli, Igombavanu, and Makongomi. (See annex 6.1).
- 3) **Focus Group Discussions (FGDs):** FGD participants were selected by consultants to hear from a diversity of perspectives related to different economic activities, geographical locations, genders and ages. The FGDs were sex-disaggregated, i.e., held separately for women and men. A total of 32 representatives participated in 6 FGDs (three groups of men and three groups of women) that were held in five villages of Ugenza, Ukelemi, Igombavanu, Wasa and Mibikimitali. (See annex 6.2)

2.5 Sampling and quantitative data collection techniques

As per the terms of reference, the endline evaluation had to be done in 10 out of 21 villages targeting 258 households who participated for baseline data collection during the onset of the project. The missing participants were to be replaced from the same 10 villages where the baseline was conducted. The project team provided the consultants with 100 participants who had participated in the baseline survey and who were thought to be available during the period of the endline evaluation. However, when contacting them for interviews, only 73 out of the 100 were available, thus the replacements were done in 190, to make the total 263.

An excel-based simple random sampling technique was employed to identify the replacements from the project database of VSLAs participants. The VSLAs database with 1,416 members; 1,030 from four villages of Iringa and 386 from six villages of Mufindi was used because the CARE-WWF Alliance project's entry point working with communities was the community-based savings and lending scheme (*Table 1*). All activities supported and promoted by the project were offered through the VSLAs model. The list of villages, along with the corresponding number of participants, is provided below. The replacement sample size was drawn from this database.

Table 1: Number of VSLAs members in the 10 villages where respondents' replacements were drawn

Villages	Number VSLAs members	Percentage (%)
IBUMILA	283	20%
IGOMBAVANU	32	2%
LUGODALUTALI	24	2%
LUMULI	262	19%
MAKONGOMI	152	11%
MIBIKI MITALI	241	17%
UGENZA	37	3%
UKELEMI	94	7%
UTOSI	47	3%
WASA	244	17%
Grand Total	1416	100%

Source: VSLA database, December 2023

Therefore, 263 respondents comprising 70.0% females and 30.0% males participated in the endline evaluation for household interviews (*Table 2*).

Among the interviewed respondents, 21% were female-headed and 29% were male-headed households (*Table 3*). This means that there were project participants who were coming from households headed by someone else. There were more female-headed households among respondents from Iringa (28.4%) than those from Mufindi (19.6%) (*Table 4*).

Table 2: Number of respondents participated in household interviews

Age group	Female	Male	Grand Total
15-35	78 (29%)	28 (11%)	106 (40%)
36-45	57 (22%)	27 (10%)	84 (32%)
46+	49 (19%)	24 (9%)	73 (28%)
Grand Total	184 (70%)	79 (30%)	263 (100%)

Source: Field data December 2023

Table 3: Sex of the head of the household

Head of household	Female	Male	Grand Total
No	128 (49%)	3 (1%)	131 (50%)
Yes	56 (21%)	76 (29%)	132 (50%)
Grand Total	184 (70%)	79 (30%)	263 (100%)

Source: Field data, December 2023

Table 4: Percentage of household head per district by sex

District	Iringa DC		Mufindi DC		Grand Total
	Female	Male	Female	Male	
Age group					
15-35	13 (5%)	45 (17%)	11 (4%)	37 (14%)	106 (40%)
36-45	11 (4%)	33 (13%)	5 (2%)	35 (13%)	84 (32%)
46+	19 (7%)	29 (11%)	6 (2%)	19 (7%)	73 (28%)
Grand Total	43 (16%)	107 (41%)	22 (8%)	91 (35%)	263 (100%)

Source: Field data, December 2023

As per the terms of reference, the end-line evaluation sought to understand the participation of not just women but also youth in development and conservation activities. Selected randomly from the VSLA database, the largest proportion 40% of the respondents were youth aged 15 to 35 years old. This youth proportion was higher than the rest age groups: 32% for middle-aged participants (36 – 45 years old), with 46+ years olds comprising the smallest group (28%) (Table 2 above). This data stands in contrast with the general trends suggested by a 2019 REPOA study that suggests youth are moving away from agriculture due to the lack of land. The 2019 REPOA study showed that the more educated youth tended to move away from agriculture to seek wage employment. Agriculture being taken by the low education youth was in line with findings of the end line evaluation, as the majority (75%) of the studied population completed primary schools' education, with university graduates making 2% only (Table 5).

Table 5: Education level of the respondents

Education level	None		Primary Education		Secondary Education		University / College		Grand Total
	Female	Male	Female	Male	Female	Male	Female	Male	
15-35	0 (0%)	0 (0%)	40 (15%)	15 (6%)	37 (14%)	1 (4%)	1 (0%)	2 (1%)	106 (40%)
36-45	3 (1%)	0 (0%)	50 (19%)	25 (10%)	3 (1%)	2 (1%)	1 (0%)	0 (0%)	84 (32%)
46+	4 (2%)	0 (0%)	43 (16%)	24 (9%)	2 (0%)	0 (0%)	0 (0%)	0 (0%)	73 (28%)
Grand Total	7 (3%)	0 (0%)	133 (51%)	64 (24%)	42 (5%)	13 (5%)	2 (1%)	2 (1%)	263 (100%)

Source: Field data, December 2023

90% of the interviewed 263 respondents were primarily engaged in agriculture (farming and livestock keeping) (See Table 6), a proportion higher than the district average of 80% and national average 67%. This data is not surprisingly because the project worked with rural communities whose livelihoods depend on natural resources, farming being the most important economic activity for any rural community in Tanzania. Females taking the largest proportion 69%, as most of the farming activities are carried by women. Findings from focus group discussions showed that the women were more on crops that were important in enhancing food security, while men focused on crops that give income. 38% of youth were found to be involved in the agriculture economic activity. However, different focus group discussions held showed that youth involvement in agriculture was mainly in crops that give income within shorter period of time. These include mostly horticultural commodities. Other economic activities that the project respondents reported to have been engaged in were livestock keeping (piggery, cattle, poultry), beekeeping, as well as none farm activities.

Table 6: Primary occupation of the respondents

Occupation	Entrepreneur		Farming		Livestock Keeping		Trader		Grand Total
	Female	Male	Female	Male	Female	Male	Female	Male	
15-35	2 (1%)	1 (0%)	74 (28%)	26 (10%)	1 (0%)	1 (0%)	1 (0%)	0 (0%)	106 (40%)
36-45	0 (0%)	1 (0%)	56 (21%)	26 (10%)	0 (0%)	0 (0%)	1 (0%)	0 (0%)	84 (32%)
46+	0 (0%)	0 (0%)	49 (19%)	24 (9%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	73 (28%)
Grand Total	2 (1%)	2 (1%)	179 (68%)	76 (20%)	1 (0%)	1 (0%)	2 (1%)	0 (0%)	263 (100%)

Source: Field data, December 2023

2.6 Gender analysis

Gender analysis was conducted using a proxy indicator method. This method assessed gender indicators through meta-index scoring, employing a qualitative approach that concentrates on behavior change. The underlying principle is to reflect changes in power dynamics and incentive structures, thereby influencing how capacities are utilized to benefit men and women distinctly. The

evaluation assessed the extent to which the socioeconomic system is inclusive, i.e., provides both men and women with access to various opportunities and assets (e.g., services, finance, land, decision-making over revenues, etc.) to kick start and support income generation, wellbeing, and the ability to exercise voice and power in each society.

The survey team utilized a basket of indicative criteria to generate subjective assessments (scores) of the societal members' status in terms of behavior (actions, relationships, policies, or practices). The basket of indicative criteria had been developed at five levels, ranging from low (1) to high (5) for each of the gender impact and outcome indicator. An analysis of the scores, along with the narrative justification for the scoring, was employed to interpret gender trends. The process involved a comprehensive examination of the subjective assessments to discern patterns and variations in gender-related behaviors and outcomes within the surveyed communities.

2.7 Ethical considerations

A site-level consent had been sought from the village government authorities to engage community members in interviews. Furthermore, individual consent had been sought from all the respondents before the commencement of any interview, achieved through signing consent forms. The consent process emphasized various aspects, including the study's objectives, reasons for targeting the respondent, planned use of the findings, confidentiality of collected data, anonymity of identities, interview duration, the right to refuse participation, and assurance that there would be no negative consequences for refusal. Respondents were given an opportunity to ask any questions or seek clarifications they might have. Contact details were shared with respondents for any necessary follow-ups. Similarly, consent was sought from participants in FGDs, emphasizing the importance of individual discipline to ensure confidentiality within group discussions.

2.8 Limitation of the endline evaluation survey

Resource constraints, including limited budget, challenged the comprehensive assessment of the project covering all the context found in the targeted area. The evaluation consultants had to cut the initial proposed budget to be able to align with the available funds allocated for the endline evaluation.

CARE – WWF Alliance implemented an integrated livelihoods and conservation project. This initiative often targets long-term goals like sustainable farming practices, increased yields and income, improved river water flows, increased vegetation cover, communities tapping socioeconomic benefits from nature-based enterprises while ensuring the exploitation does not jeopardize the natural resources. This resulted in making the evaluation process complicated due to the time required for impacts to materialize, with short-term results potentially inadequately reflecting overall success. Additionally, measuring behavioral changes and adoption rates necessitates addressing the subjective nature of altering traditional farming practices.

As agriculture is highly sensitive to unpredictable weather events, this caused challenges to attribute outcomes solely to training interventions. Some of project indicators that were found during the endline evaluation to be partially achieved might have been so due to dependent on weather conditions. Cultural dynamics also play a pivotal role, requiring evaluators to comprehend and accommodate local customs, traditions, and social structures affecting the adoption of new practices. Thus, some practices and behavioral change might not have been adopted due to cultural issues thus affecting the results of the project. The evaluation did not go as far as looking at the culture and

traditions of the targeted beneficiaries. For instance, some of participants still believe that climate happens due to God's will but not resulting from human activities. They mitigate effects of climate change by praying and not changing their activities. This was the case of VEO of Makongomi village who believe that climate change could be addressed through praying. Farmers need to pray to ask God to bring rainfall. The other example is where some participants believe that when crop residuals are burnt produces higher yields are obtained from that particular field.

Data collection challenges arose during the endline evaluation due to low literacy rates, potentially compromising the reliability and completeness of gathered information. For instance, respondents didn't have written records, units of calculations were challenging to be understood by the respondents, low knowledge of what it means by nutritious food, low understanding of the relationships between climate change and favourable weather for production and conservation activities. The survey team had to spend more time than expected to elaborate the questions to the respondents. More capacity building need to be imparted to the communities in the area of understanding ways nutrition challenges could be addressed in the communities.

Lack of baseline data on some of the indicators added to the complexity of accurately measuring the project achievements. The consultants had to rely on the life of the project's targets to determine the level of the achievement of the project. Examples of the outcome indicators that had missing baseline data were: average value of savings mobilized by VSLAs groups, average value of loans disbursed by VSLAs groups, number of collective and sustainable enterprises established, number of sustainable investments made by VSLA members, number of hectares officially under of village land use plans, and number and size (ha) of water sources sustainably managed by communities in the Ndembera sub-catchment, number of % of NR conflicts resolved, hectares of forest sustainably managed by communities in the Ndembera sub-catchment, number of small-scale producers w/ land titles, and total value of loans accessed from formal financial institutions by VSLAs or their members.

As the endline evaluation was conducted during heavy rain period, the weather and environmental condition happened during the period further complicated the assessments. Unpassable roads and respondents limited time since they needed to spend their valuable time in the field made the evaluation field data collection take more time than it was initially expected.

3. ENDLINE EVALUATION FINDINGS

This chapter presents key project findings, including successes and challenges, integrating insights from the household surveys, FGDs and KIIs conducted during field research, as well as findings from the documents reviewed. Presentation of key endline evaluation findings is organized per OECD evaluation criteria, assessing: the project's relevance; its effectiveness in achieving the desired results; coherence of with the interventions of like-minded organizations that could bring complementarity and synergy, its efficiency in terms of resource allocation; and the likelihood of long-term impact and sustainability beyond project period.

3.1 Impact of the Project

Interviews with sampled project participants in the project area showed that overall, their wellbeing has improved when compared to 10 years back. Findings from FGDs, KIIs and household interviews showed that availability and access to food and income has improved. Production and productivity of maize, common beans, sunflower, and Irish potatoes provided communities with reliable sources of food and income. The diversification included nature based enterprises such as beekeeping, tree nurseries and none farm like batik and soap making, Irish potato snacks and processing nutritious flour. More livelihood opportunities and diversification happened over the last year, in particular. There has been a change in mindset, with crop diversification from subsistence dependence on maize and beans to a greater reliance on cash crops including Irish potatoes, tomatoes, onions, and watermelon. Nature based enterprises such as beekeeping and tree nurseries were among important sources of income mentioned by the interviewed participants.

3.1.1 Impact against overarching project goal

The overarching goal of the project was to improve the well-being of 5,000 farming families (22,500 individuals, at least 60% women directly and at least 50,000 individuals indirectly within the Great Ruaha watershed) in Tanzania by increasing their household income by 60%, while improving the ecosystem services in production landscapes.

According to the project's semi-annual report of June 2023, a total of 7,029 households (51% Female headed) with a total of 10,961 direct beneficiaries (55% women,34%youth) across all 21 project villages were reached in improving their wellbeing and integrating with conservation, protection, and regeneration of their natural resources. The households' target was reached by 141% of the LOP target).

According to the results of the FGDs and KIIs, wellbeing is an equal opportunity for men, women, and youth. It meant the opportunities that enable both men and women fulfil the basic needs such as food, good housing, and clothes and be able to afford health services and manage to pay school fees and other expenses. Based on the above definition, the project key participants revealed during FGDs and KIIs that the communities have improved their wellbeing because of the project interventions. The project participants revealed that availability of food had improved a lot during the project period, thus there is no household that goes to bed hungry (refer to section 3.1.3). Incomes also have improved due to increased productivity, diversification of enterprises and entrepreneurship capacities (refer to section 3.1.2).

Livelihood diversification included growing the following crops in addition to maize; tomatoes, beans, watermelon, onions, and this was possible because of water sources which now produced water throughout. Findings from FGDs and KII showed that the whole community rely on ecosystem or natural resources for its well-being. In addition to that, they also explained how natural resources contributed to food security and income beyond farming. It was revealed that all the women, men, youth and children use Natural resources available in the village. These included but not limited to land, livestock keeping, water, forestry, and minerals. However, their uses are different depending on the age group and sex. The men's most important natural resource is land for farming, livestock for selling and timber products for cash income. The women's priority resources is the land for farming activities to supply food for home consumption, while youth wanted to use the resources to generate quick income. The youth were interested with engagement in horticulture, small businesses and farming of cash crops such as sunflower and Irish potatoes.

The communities also revealed that awareness of women and youth participation in decision- making power either at home or at community level helped improve their wellbeing as well. They said what they see today is different from what it used to be in the past. Patriarchy system has reduced in their communities compared to past years where women participation was low. Most of the village-based committees were composed of either men only or few women than the required numbers. Currently they are witnessing the composition being 50% women 50% men in almost village committees. This taking part of the women in decision making has been very important in contributing to the wellbeing of the women and youth.

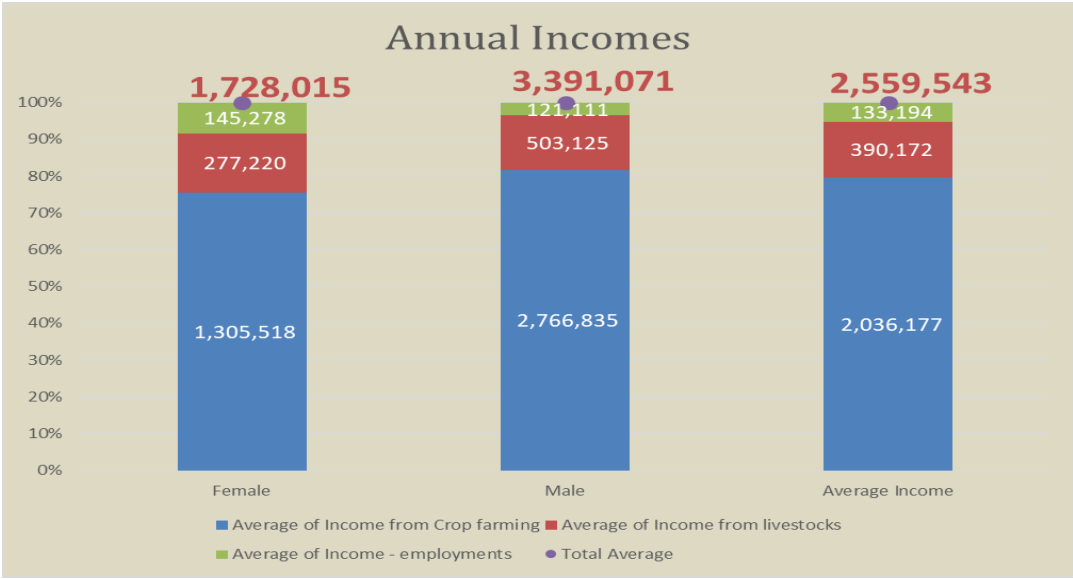
The FGDs also revealed that, although there have been significant changes on several aspects of their wellbeing, the main challenges reported during discussion is the lack of place to sell their cash crops. They said they don't have a reliable market for their crops, nor droughts pose a risk in the future. These challenges affect almost all small-scale producers and their family members. The current level of drought has been overcome through CARE- WWF Alliance project.

3.1.2 Household income

The project intended to increase the income of 5,000 farming families (22,500 individuals, at least 60% women) by at least 60%. The endline household survey found that the sampled 263 respondents of the total 7,029 households reached have increased their household income on average by 102% from 1,265,658 TZS at baseline to 2,559,543 TZS at endline (*Figure 2*). Surpassing the LOP average increased income target by 42%, female-headed households saw their income increase by 157% (relative to that of male-headed households at 145%). Women invested more on activities that have economic return than men who invested in various activities including those that do not have economic returns. Material observations and verifiable reports of this increased income included housing upgrades, an increase in motorbike ownership, and the widespread use of power tillers, tractors, and oxen during farm preparation. Very few farmers still rely on hand hoes, indicating that the drudgery of small-scale farming has been drastically reduced.

Income for the community is increasing, particularly earnings from farming.

Figure 2: Average income of project’s direct beneficiaries.



Despite the greater proportional increase in the income of female-headed households relative to male-headed households, male-headed household income remains outsized relative to female-headed household income at 3,391,071 TZS and 1,728,015 TZS, respectively (See table 7). Factors that contributed to this higher baseline and endline income for male-headed households include the traditional Tanzanian culture of a male-dominated society in which men have both greater access to opportunities like extension service provision and market linkages as well as greater decision-making power over productive assets. Table 9 shows that traditionally males have twice as much decision-making opportunity over women. Women’s time for income-earning activities is also limited by unpaid reproductive labor, like childrearing and household chores. Several interventions have contributed to this achievement. These included from skills learning that were provided by the project through FFBS-linked trainings and demonstration plots as well as VSLA- and CBNRM-related trainings and establishment of sustainable and collective investments that diversified income sources, including nature-based enterprises (Refer to Table 32).

Table 7: Average income of respondents

Average Annual Income	Female	Male	Average Income
Average of Income from Crop farming	1,305,518	2,766,835	2,036,177
Average of Income from livestock	277,220	503,125	390,172
Average of Income - employment	145,278	121,111	133,194
Total Average Income	1,728,015	3,391,071	2,559,543

Source: Field data, December 2023

3.1.3 Food security status

The project aimed at increasing household food security of the targeted communities by 20% by LOP. This was estimated by computing the number of months with adequate food provision and household expenditure. Findings of the household survey conducted for Endline evaluation found that the average number of months that surveyed households were able to provide sufficient food to their

families was 7.4 at endline, up from 4.0 months at baseline, which is an increase of 85% from the baseline. This surpasses the LOP goal of a 20% increase by 65%. On average, 83% of households experience adequate food provisioning during the crop-harvesting period (May to November), 42% experience hunger during the planting and crop growing season (December to April).

At the project endline, 83% of the surveyed households report consuming three meals a day for most of the year. For those households that do not have adequate food provisions throughout the year, they tend to reduce their meals to two a day between December and April. Communities regard having two meals a day during the lean period as an improvement, as food was sometimes insufficient for one meal among some families in the past.

Figure 3: Months of adequate household food provisioning (n = 263 households)



Household surveys, FGD and KIIs corroborate the conclusion that participants attribute the increase in the ability of the households to provide sufficient food for their families to project interventions. Community members used improved access to finance to invest in their farms, including the adoption of sustainable practices that increased productivity and so food supply. Although the available baseline data relates to the number of months of food shortage, findings of the household interviews conducted at endline showed that 86% of the respondents were not worried of facing shortage for the whole period of the year (Table 8). Women and youth comprised the largest groups of the respondents 58.5% and 35.7% respectively who are not worried of not having enough food to eat. As women are important in making decision for food matters at home, having no worries implies good food security condition at household level.

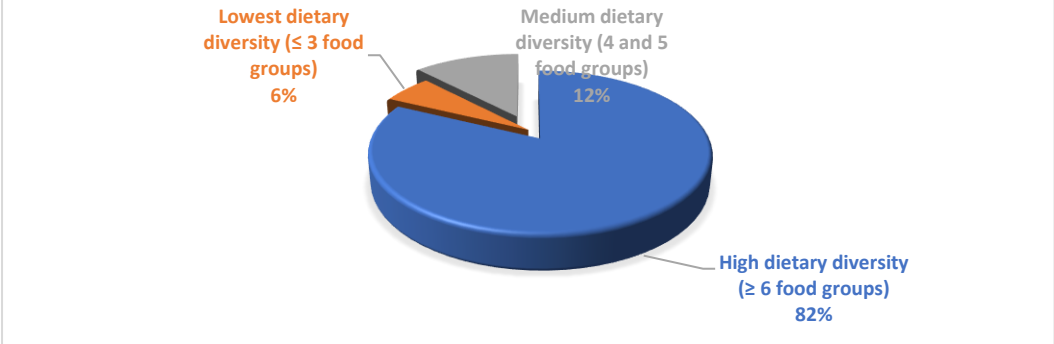
Table 8: Household worrying having nothing to eat for the period of one year

Categories		Count: During the past 12 months, was there a time when you or others in your household were worried you would not have enough food to eat?		
		No	Yes	Grand Total
Age of respondent	15-35	94	10	104
	36-45	69	12	81
	46+	56	13	69
Grand Total		219	35	254
Sex of respondent	Female	154	24	178
	Male	65	11	76
Grand Total		219	35	254

Source: Field data, December 2023

Not only the availability of food to eat was important by the communities but also they have diversified their diets as a result of the project interventions. 82% of the respondents revealed to have been able to get at least 6 different food groups (Figure 4).

Figure 4: Household diet categories



Qualitative findings also suggest that household food security increased due to increased diversification of both cash crops and household income sources, including into non-farm activities that helped to smooth income for purchasing food in the hungry season. The participants revealed that due to the Alliance project, farmer diversification toward the cultivation of common beans and Irish potatoes as dual cash and subsistence crops has contributed to increased food security for many households.

FGD and KII participants (Refer annexes 6.2 and 6.3) generally attributed increased income to crop productivity, some of which was sold and some of which was stored for food supply throughout the year. Members of target communities also report diversifying their crops and income generating activities. For instance, all the FGDs and KIIs showed that maize was the most important crop that brought communities with assurance for better food security and income, followed by common beans and Irish potatoes. These three crops have been among important, not only for food but also cash crops. The Alliance successfully adopted these crops, especially in the project villages of Iringa and Mufindi Districts.

Although there has been changes in rainfall patterns, where the fields received minimum rainfall, still the project had addressed this challenge by providing solution on how to cope with the challenges. Small farmers were trained on good agricultural practice which resulted to improving access food e.g., Maize, beans, sunflowers, potatoes, and groundnuts. More livelihood opportunities and diversification, business driven mindset had increased. Cash crops diversification happened during the period from depending on only maize and beans, to current producing Irish potatoes, tomatoes, onions and watermelon as cash crops.

The respondents also have been revealed to have improved levels of confidence in various aspects contributing to their wellbeing. Although there was no baseline data set for confidence, the following were some of important areas in which of the interviewed 258 respondents reported having greater confidence: Finance management and stability (69%), productive resources (64%), property that enable the securing of financial resources (64%), land control (63%), preparation of business plan (65%), argue for the rights (64%), and argue for right of their land (66%). The confidence level is an indication of livelihood resilience of the communities.

3.1.4 Effects of household decision making on wellbeing

FGDs held with men and women separately showed that decision making at household level had significant influence on the wellbeing of the communities at household level (Refer annexes 6.2 and 6.3) although there was no baseline data set for decision making among men and women at household level, still men and women have different roles in making decisions at household (*Table 9*).

Husbands are responsible for household decisions related to income and productive assets, while wives are responsible for making decisions on matters pertaining to taking care of the family. While household future for investment, control over assets, selling of cash crops and income expenditure rested on the men, women were given opportunity to discuss on how food can be used but the final decision remains to men. Women had the opportunity to make full decisions for those households where the head was a woman. However, the FGDs revealed that the level of men involving women in decision making also depends on the relationship between a women and man at the household. If they are in good terms, both men and women plan together for investment as well as on income expenditure.

Table 9: Percentage (%) of respondents' views of who makes decision on various household issues

S.No	Family member	Financ e	Land use	Crops to grow	Livestock use	Domestic issues	Overall
1	Men	31	28	24	24	10	48
2	Women	25	24	24	24	51	22
3	Both	43	47	51	50	38	29
4	Youth	0	0	0	0	0	0
5	All (Men, women, youth)	1	1	1	2	1	1

Source: Field data, December 2023

3.1.5 Ecosystem services in production landscapes.

The CARE – WWF Alliance project wanted to raise the awareness of the communities about their understanding of the relationship between wellbeing and natural resources and that involve the communities in the conservation, protection and regeneration of the natural resources. The end of the interventions is to have both the communities' wellbeing and natural resources improved. The natural resources are sustainably utilized by the communities, in turn the communities contribute to the continuity of the natural resources. The project intended to have an impact on the amount of water flowing and the vegetation cover in the Ndembera sub catchment.

Change in water discharge (dry v. wet months) in the Ndembera River

The endline evaluation team's review of secondary information confirmed an increase in water flows in the Ndembera and Utosi Rivers critical to sustainable livelihoods in the target communities. Data gathered from the Ndembera catchment using two river gauging stations show that river flows experienced an upward trend from 2021 to 2023. The water flows in Mkikifu river stream which collect water from over 80 water sources under community conservation shows an upward trend during both wet and dry seasons that demonstrates the positive impact of the conservation initiatives supported by the Alliance. The average water flow recorded during the dry season (July- October) in 2022 was

0.34 m³Sec⁻¹, which is an increase of 42% from 0.24 m³Sec⁻¹ recorded in the same period in 2021. As for the wet season, the water flow was 1.45 m³Sec⁻¹, which is an increase of 113% from the baseline in 2021 (1.45 vs. 0.68 m³Sec⁻¹) (See Figures 5 and 6).

Despite the low rain in 2023, the increasing water flows during the three years project period suggests that the catchment is benefitting from community conservation action. The consultants have concluded that both ecosystem functions and services, and by extension the resilience of families and their livelihoods, was improved because of the Alliance project’s interventions. *Figure 5 and Figure 6* below show that the water flow increased during the project period, a situation which was revealed during FGDs, where communities said they have experienced rivers with flowing water throughout the year.

Figure 5: Ndembera River Water Flow Trend for the period March 2021 to May 2023

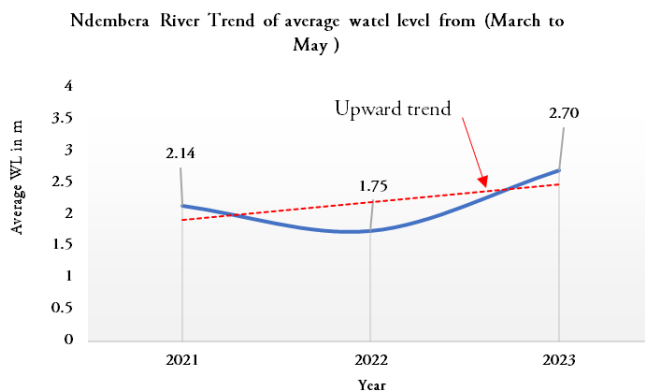
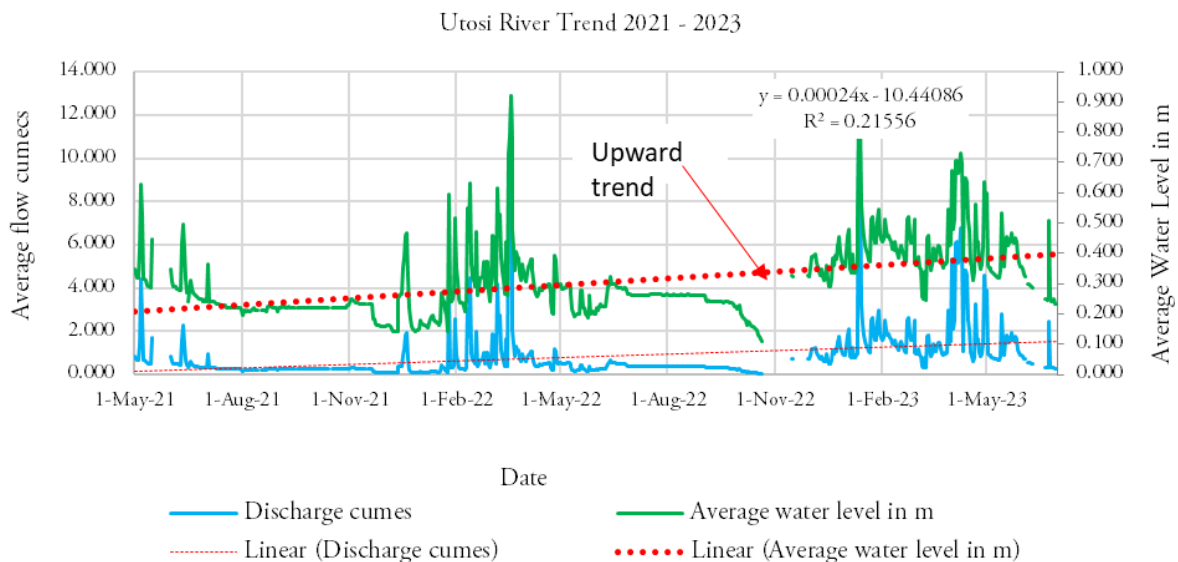


Figure 6: Utosi River Water Flow Trend for the period 2021 to 2023



Change in vegetation cover in wetlands and forests

Apart from the amount of water discharge in the two Ndembera sub catchment Rivers; Utosi and Igomaaa, the Alliance project had also a plan to impact on vegetation cover in the water sources/wetlands and forests. With no prior LOP target determined, a baseline of land size under

vegetation cover 37,141.9 ha was recorded at the start of the project. Endline evaluation found that the project through restoration activities had impacted vegetable cover.

Data obtained from updated google engine earth has shown that the Alliance project has made a significant change in terms of vegetation cover. The GIS data tracked by the project in December 2023 revealed that the vegetation cover in the project areas has significantly increased 153,915.7 ha, which is equivalent to 314% increase from the baseline. This has been resulted from the communities' efforts to conserve and restore water sources through tree planting and through maintaining the existing natural vegetation cover. As a result of project education and awareness on environmental conservation and restoration of water sources, bad practices such as cutting down indigenous trees and bushfires have been reduced.

3.2 Achievement of outcomes of the project

Annex 1 offers an overview of which impacts, outcomes and outputs we considered fully and partially achieved based on the full gamut of primary and secondary sources and quantitative and qualitative methodologies employed in the endline evaluation. No one of them not at achieved at all.

Although we consider all four objectives to have been widely achieved by the project, few of these outcomes and outputs under these objectives have not been fully achieved. We believe that objective 4 was only partially achieved due to relatively limited services flowing from formal financial providers to members of the target communities.

While at the impact indicator level, the project fully achieved all its targets against the KPIs, *Annex 1* shows that of the 14 outcome indicators, 11 were fully achieved and 3 were partially achieved; similarly, of the 13 output indicators, 11 were fully achieved and 2 were partially achieved. No one indicator hasn't been achieved at all.

3.2.1 Productivity

Through the application of sustainable production skills and knowledge learned from FFBS, demonstration plots and investment from VSLAs, the project achieved its productivity objective. *Annex 1* shows that with the LOP target for common beans +30% increase from the baseline (331.3 Kg/acre) and Irish potatoes with the baseline 4,663 Kg/acre, the achievement was 633 Kg/acre of common beans (91%) 60% higher than the LOP target. For Irish potatoes LOP target 1,534.89 Kg/acre increase on the baseline, the achieved amount is 7,500 Kg/acre, is 60.8% increase from the baseline and 84.8% higher than the LOP target (*See Table 10*).

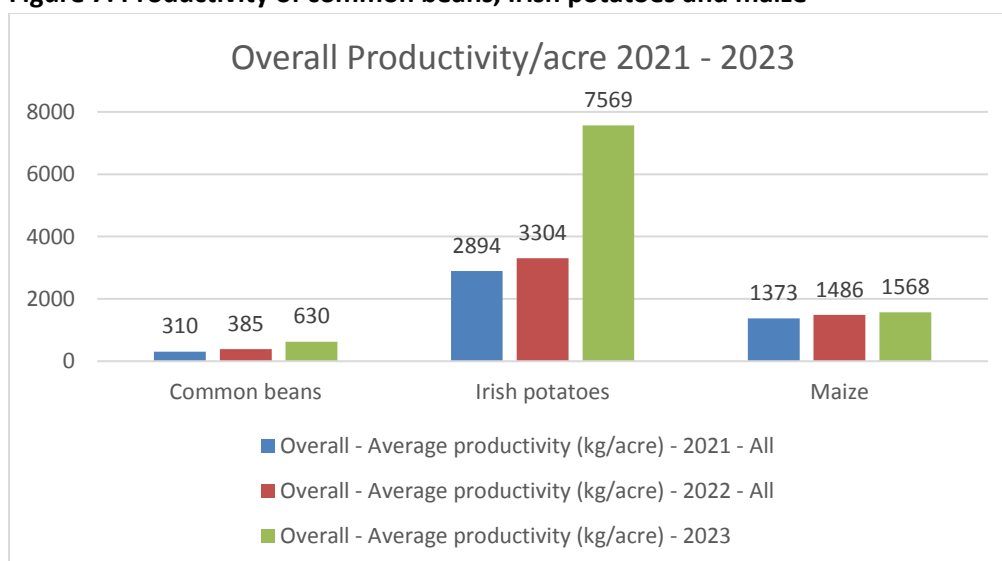
Participants of the FGDs and KIIs revealed that crop productivity has drastically increased following the project's interventions (*Figure 7*). They repeatedly mentioned maize to be among the crops that achieved highest in its productivity, where the increment was up to 25-30 bags per acre, compared to before the introduction of the project (7 to 12 bags of 100 Kg). Common beans and Irish potatoes were also mentioned to be among the crops that have experienced drastic increase in productivity from 280 Kg per acre to more than 600 Kg per acre. Irish potatoes which increased from 4.5 Metric Tons to 7.5 Metric Tons per acres, had however faced the challenge of seeds unavailability where the SSPs struggled to get the seeds timely.

Table 10: Productivity of Common beans, Irish potatoes and Maize

Productivity per acre	Common beans	Irish potatoes	Maize
Overall - Average productivity (kg/acre) - 2021 - Male	398	3433	1489
Overall - Average productivity (kg/acre) - 2021 - Female	277	2528	1327
Overall - Average productivity (kg/acre) - 2021 - All	310	2894	1373
Overall - Average productivity (kg/acre) - 2022 - Male	218	3339	2322
Overall - Average productivity (kg/acre) - 2022 - Female	432	3290	1151
Overall - Average productivity (kg/acre) - 2022 - All	385	3304	1486
Overall - Average productivity (kg/acre) - 2023 - Male	576	6527	1468
Overall - Average productivity (kg/acre) - 2023 - Female	651	8282	1468
Overall - Average productivity (kg/acre) - 2023	630	7569	1568

Source: Field data, December 2023

Figure 7: Productivity of common beans, Irish potatoes and maize



By using the Meta index scoring methodology using a scale of 1 to 5, the former being weakest and the latter being the strongest, decision-making on crop of preference to grow for food security was found to be slightly higher among women, scoring 4. In contrast, men exhibit a strongest inclination, scoring 5. This difference arises from the traditional belief that men, as heads of the family, should lead in household matters, including decisions related to agricultural choices and household development. In the areas of agronomic farm preparation and crop management, both men and women demonstrate a high level of competence, each earning a score of 5. This proficiency is attributed to the utilization of household labor for crop cultivation.

When determining the optimal quantity of crop yield to allocate for consumption versus sale, women exhibit a stronger inclination towards balance, earning a score of 5. In contrast, men express a slightly more conservative approach, scoring 4 in this aspect of decision-making. This is influenced by the

understanding that women, who often bear the responsibility of caring for children, may suffer more when there is a shortage of food in the household, while men prioritize broader household development, such as building a better home

In the role of chief overseer, tasked with managing family assets, expenditures, and generating innovative ideas for family development, men scored 5, while women scored 4. This discrepancy is attributed to the perception that men traditionally assume a greater responsibility, being considered the primary providers, while women are often seen as supporting their partners within the family structure.

Adoption of sustainable production practices

CARE – WWF Alliance scaled up the successes and positive experiences of FFBS implemented in the previous phase with the aim to enhance small-scale producer access extension services, productivity, and improve food security. The FFBS is an extension approach aimed at bringing together small-scale producers to access extension services, learn and exchange from each other. The FFBS had members who came from VSLAs and small-scale producer groups, who convened to access extension services, learning and exchanges. The model aimed to impart small scale producers with skills and knowledge for undertaking advocacy, accessing markets, enhancing sustainable production, and improving productivity, facilitating access to nutritious diets, and gender training. During the project period 2021 to 2023, 34 FFBS which is 85% of the LOP target were established. These comprised 768 members (128% of the LOP target) or 7,507 individuals (3,995 women or 53% women, 36% youth).

In practice, the evaluation team observed that FFBS are operationalized at the level of the demonstration plots. As planned, 34 demonstration plots for common bean and Irish potatoes were established to serve farmer demand in larger or more geographically dispersed villages. These demonstration plots were used as meeting places for farmer-led, hands-on experimentation and training of small-scale farmers related to different agricultural techniques, as well as skills building for value chain development and strengthening of market linkages. The demonstration plots provided members with an important avenue for learning about Climate Smart Agriculture (CSA) and sustainable practices, as well as demonstration of good agronomic practices for the two crops promoted by the project (Irish potatoes and common beans), and demonstration of importance of using of improved seeds for those same value chains. To support commercialization of Irish potatoes and common beans, four highly marketed varieties of common beans (Jesca, Uyole 96, Njano Uyole and Mwaspenjele) and one local variety Salundi were demonstrated, while three improved varieties of Irish Potatoes (Sagitta, Lumba and Panamera) were demonstrated against Kidinya which is a local variety in plots.

42 paraprofessionals (21 females and 21 males) were trained and were found to be providing agricultural extension and marketing services through the established demonstration plots.

Due to the potential of the demonstration plots in enhancing access to extension services, learning and exchanges, but also as good harvests were obtained from the demonstration plots, it was found during the evaluation that small scale producers who were organized in groups said they would continue having demonstration plots beyond the project period and without the support of the project. This would enhance continuation of provision of extension services and generating of income.

A review of the project's reports in June 2023 showed that cumulatively, the Alliance trained 7,507 farmers (53% women, 36% youth) through FFBS since inception of the phase II project in 21 villages. The Alliance surpassed this LOP target of 2500 farmers trained by 300%. To enhance local supply of quality inputs, the Alliance also supported the technical training of 42 Quality Declared Seed (QDS)

growers, of which 25 seed growers - 9 from Iringa and 16 from Mufindi - established seed farms in the 2022/23 production season. Their farms were inspected and registered by the Tanzania Official Seed Certification Institute (TOSCI) as per the National Seed Act No.18 of 2003 and its Regulation of 2007.

In ensuring SSPs get reliable extension services, the Alliance project trained 42 paraprofessional trainers who used the FFBS to impart skills to the SPPs. This was 100% of the LOP targeted by the project.



Planting maize and common beans complying to proper spacing at Ukelemi village.

The FFBS were used to impart small scale producers with sustainable practices that were crucial to enhancing the conservation of natural resources along with the farming practices. Household interviews conducted with 263 respondents showed that the project achieved very high in the area of enhancing adoption sustainable practices. The project had a LOP target of 80%, with baseline 61% of SSPs practicing at least 2 sustainable practices. At the end line this indicator was achieved by 98% (See *table 11 b*). The SSPs were motivated to adopt to sustainable agricultural practices following the economic and environmental benefits they realized out of it. The benefits included increased income as well as increased water flows from the catchments.

Table 11 a., also shows that there are still important sustainable practices that SSPs have not significantly adopted (live fencing, agroforestry, ridging, terracing, rainwater harvesting, and control of burning crop residuals), thus there is a need in the future to put emphasis on. These include prevention of burning crop residuals when preparing fields, integrated pest management as there is still policy emphasis on the use of synthetic fertilizers, minimum tillage, crop rotation might be challenged by the land scarcity, use of organic manure, livestock grazing on crop residuals and the need to facilitate communities use rainwater harvesting technologies. As women are the key players in farming activities and having appreciated the value sustainable agriculture practices have in farming, majority of the adoption was done by women (69.5%) followed by youth 36% (See *Table 11 b*). Findings from FGDs and KIIs show that the SSPs appreciated the project for raising the awareness of the communities on the importance of sustainable agriculture. This has resulted to improving the productivity in particular of the main crop, maize which increase from between 5 to 10 bags to 15 to 30 bags of 100 Kg.

Table 11 a: Level of small-scale farmers uses of (sustainable) production practices

Practice	Age group	Female	Male	Total	Percent
Crop rotation	15-35	35	12	47	18%
	36-45	19	15	34	13%
	46+	16	11	27	11%
	Grand Total	70	38	108	42%
Seed saving (recycled seeds for years)	15-35	35	6	41	16%
	36-45	22	8	30	12%
	46+	29	17	46	18%
	Grand Total	86	31	117	46%
Row Inter cropping maize and beans, each crop in separate rows	15-35	32	13	45	18%
	36-45	26	14	40	16%
	46+	30	8	38	15%
	Grand Total	88	35	123	48%
Slashing during weeding instead of hoe weeding	15-35	10	4	14	5%
	36-45	6	3	9	4%
	46+	3	3	6	2%
	Grand Total	19	10	29	11%
Burning crop residuals during land preparation or after harvest	15-35	48	16	64	25%
	36-45	36	16	52	20%
	46+	37	16	53	21%
	Grand Total	121	48	169	66%
Ridging or Terraces in hilly areas (to reduce erosion)	15-35	22	3	25	10%
	36-45	23	10	33	13%
	46+	26	12	38	15%
	Grand Total	71	25	96	38%
No burning (keeping crop residues) after harvest	15-35	18	14	32	13%
	36-45	12	9	21	8%
	46+	14	6	20	8%
	Grand Total	44	29	73	29%
Use of organic fertilizers (cover crops, green manure, livestock manure or composting)	15-35	28	10	38	15%
	36-45	23	11	34	13%
	46+	29	9	38	15%
	Grand Total	80	30	110	43%
	15-35	1	1	2	1%

Live fencing(plant crops/plants that use a trap or repellent the crop pests)	36-45	2		2	1%
	46+		1	1	0%
	Grand Total	3	2	5	2%
Rain water harvesting (guttering, Malambo, water ditches, Ndiva, e.t.c.)	15-35	31	10	41	16%
	36-45	16	8	24	9%
	46+	20	9	29	11%
	Grand Total	67	27	94	37%
Agroforestry practices (mixing crops with trees)	15-35	5	5	10	4%
	36-45	5	4	9	4%
	46+	5	6	11	4%
	Grand Total	15	15	30	12%
Row planting (proper crops spacing)	15-35	60	21	81	32%
	36-45	47	24	71	28%
	46+	40	18	58	23%
	Grand Total	147	63	210	82%
Integrated Pest Management	15-35	39	14	53	21%
	36-45	28	12	40	16%
	46+	24	14	38	15%
	Grand Total	91	40	131	51%
Drip irrigation	15-35	4		4	2%
	36-45	9	4	13	5%
	46+	4	1	5	2%
	Grand Total	17	5	22	9%
Industrial fertilizers	15-35	67	22	89	35%
	36-45	51	25	76	30%
	46+	44	22	66	26%
	Grand Total	162	69	231	91%
Grazing without limits	15-35	11	7	18	7%
	36-45	5	2	7	3%
	46+	10	5	15	6%
	Grand Total	26	14	40	16%
Mono-cropping	15-35	56	20	76	30%
	36-45	39	22	61	24%
	46+	40	18	58	23%

	Grand Total	135	60	195	76%
Use of improved seeds varieties	15-35	63	23	86	34%
	36-45	44	25	69	27%
	46+	44	23	67	26%
	Grand Total	151	71	222	87%
Buying new seeds from approved sources	15-35	60	21	81	32%
	36-45	42	24	66	26%
	46+	37	21	58	23%
	Grand Total	139	66	205	80%
Ploughing field	15-35	57	23	80	31%
	36-45	46	21	67	26%
	46+	35	17	52	20%
	Grand Total	138	61	199	78%
Minimum tillage minimum or furrowing e.g. using draught animals or rippers	15-35	37	10	47	18%
	36-45	33	16	49	19%
	46+	23	12	35	14%
	Grand Total	93	38	131	51%
Post-harvest handling (use plastic sheets/Turubali)	15-35	58	22	80	31%
	36-45	44	22	66	26%
	46+	35	21	56	22%
	Grand Total	137	65	202	79%
Storage practices that reduce crop losses (Modern metal silo, PICs, using organic pesticides in stores)	15-35	54	20	74	29%
	36-45	39	17	56	22%
	46+	30	19	49	19%
	Grand Total	123	56	179	70%

Source: Field data, December 2023

Table 11 b: SSPs adopted at least two sustainable practices

District	Age respondents of	Sex		Total SSP Adopted SA
		Female	Male	
Iringa DC	15 – 35	42	13	55
	36 – 45	28	16	44
	46+	35	13	48
	Total	103	44	147
Mufindi DC	15 – 35	35	13	48

	36 - 45	29	11	40
	46+	16	8	24
	Total	80	32	112
Grand total		183	76	259

Source: Field data, December 2023

Against a baseline of 61% and 80% LOP target, over 98% of surveyed SSPs (18% above the LOP target) reported adopting at least two of 12 sustainable agricultural practices; during FGDs and KIIs, participants reported that these good practices helped them increase the productivity of the crops. For example, members of FGDs reported that yields of their staple crop maize – from between 7 - 12 to between 15 to 30 bags of 100 Kg per acre produced through the application of improved practices.

SSPs also appreciated the project for the training and support they received to produce vegetables for food and nutrition security, alternative income generating activities such as poultry and piggery production that served not only for income and food security but also to produce organic manure, an important agroecological input. Many SSPs who increased their productivity and succeeded in their enterprises reported benefiting from training, mentorship and/or coaching from the project-trained Paraprofessionals and/or Community Based Trainers (CBTs). Entrepreneurship and business skills training offered to the SSPs – such as basic business development skills, identification of business opportunities and setting up of traditional and nature-based enterprises – played a pivotal role in shifting to farming as a business. It also opened farmers’ eyes to the identification of business opportunities beyond subsistence farming and livestock keeping.

Data collected with ultimate participants of the project at endline showed that almost 65% of the respondents were having sustainable and collective investments in the income generating activities (Table 12).

Table 12: Number of respondents having sustainable and collective investments

Categories		Count: Does your group have any collective investments or economic activities?		
		No	Yes	Grand Total
Age of respondent	15-35	35	50	85
	36-45	17	42	59
	46+	17	36	53
	Grand Total	69	128	197
Sex of respondent	Female	46	96	142
	Male	23	32	55
	Grand Total	69	128	197

Source: Field data, December 2023

The most important sustainable and collective investments were crop related (63%), followed by nature based enterprises; beekeeping (34%) and tree nurseries (17%) (See Table 13 below).

Table 13: Type of sustainable and collective investments

What are those collective investments?	Score	Percent
Agriculture	81	63%
Livestock keeping	12	9%
Beekeeping	44	34%

Fishpond	1	1%
Off-farm business (entrepreneurship activities out of agricultural value chain)	6	5%
Ecosystem protection	9	7%
Tree nursery	22	17%
Other	5	4%

Source: Field data, December 2023

3.2.2 Small Scale Producers' access to inputs

The endline survey found that 94% of respondents reported access to inputs for their agricultural production activities against 26.7% at baseline (*Table 14*). The evaluation team attributes this to the project interventions around financial inclusion (see Objective 1) and linking the SSPs with agro-dealers (*See Figure 14*). The achievement is 17.3% higher than the baseline set for the project, which was baseline + 50%. However, *Table 25* shows that 81% of the SSPs accessed the inputs individually, with women comprised the majority (69.1%), as their VSLA AMCOS were still at infant stage to be able to undertake collective access to inputs.

Table 14: Access to agricultural inputs, both as an individual and or as part of a group

Age group	Yes, as individual / household		Yes, as part of a community group		Both as an individual and part of community group		No		Grand Total
	Female	Male	Female	Male	Female	Male	Female	Male	
15-35	58	20	5	2	7	3	5	1	101
36-45	48	24		1	4	1	3	1	82
46+	42	22	1				4	1	70
Grand Total	148	66	6	3	11	4	12	3	253

Source: Field data, December 2023

However, 73% of the of respondents who said they do not have access to agricultural inputs revealed high cost of inputs to be among the challenges that hinders effective application of inputs in their fields (*Table 15*). FGDs held with women and men separately further revealed that animal manure that is available in the villages are equally expensive. Up to three trucks of animal manure are needed for an acre of farm. The FGDs further revealed that although the accessibility of the inputs was improved by the project, still more is needed for effective production activities. Improvements are still needed for agricultural inputs such as fertilizer, seeds, pesticides, and herbicides. This shortage hampers the farmers' ability to optimize their yields and maintain sustainable farming practices. In some villages there are no agro vet shops and that shortage causes SSPs to travel 50 kilometers to Mafinga town to purchase farm inputs.

Figure 8: Producers report improved access to inputs

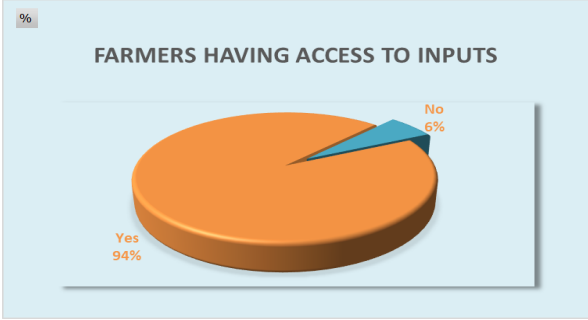


Table 15: Reasons for not accessing inputs

What are the reasons for not accessing inputs?	Score	Percent
Not available in the village	2	13%
High input costs	11	73%
Other	2	13%

Source: Field data, December 2023

Although the project had a LOP target of enhancing 5 linkages between agro dealers and the SSPs, by the time of evaluation none has been attained. However small scale producers were aware of the where they could get inputs, and that they had verbal (written agreements not evidenced) arrangements with input suppliers (See Table 16). SPPs who revealed to have arrangement to agro input suppliers meant they knew where they could buy the inputs.

Table 16: Contractual arrangement of obtaining these agro inputs

Response	No		Yes		Grand Total
	Female	Male	Female	Male	
15-35	48	19	18	4	89
36-45	36	20	11	5	72
46+	37	18	4	3	62
Grand Total	121	57	33	12	223

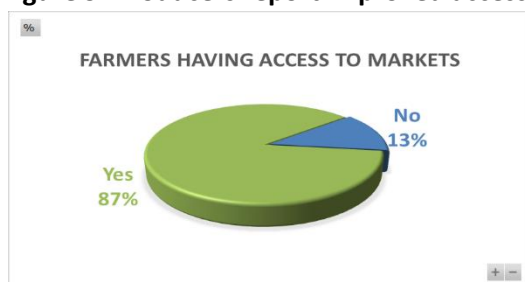
Source: Field data, December 2023

3.2.3 Small Scale Producers’ access to markets

The endline survey also found that 87% (59% Females, 28% Males) of the SSP report improvement in access to markets relative to 9.9% at baseline (See Figure 9). The achievement is against a LOP target of baseline +50% is a +77% higher than the target. Although there was improvement in access to markets, still SSPs were found struggling to access reliable markets for their produce. Interviews with households showed that 78.5% of the respondents revealed the markets to be not satisfactory (Table 17). The dissatisfaction is mainly due to low crop prices, regular price fluctuations and unreliable markets/buyers (Table 17). Table 18 shows that the existing market that was improved by the interventions of the project is largely informal.

The biggest challenged reported by women FGDs were the absence of collective marketing system, no legal measurement unit and the presence of brokers who usually use tin instead of formal measurements.

Figure 9: Producers report improved access to markets



The FGDs also revealed that market prices varied depending on the season. For instance, in the year 2022 the price of maize was good, but in during the evaluation period in 2023 the SSPs complained of the drop in price for the same crop from TZS 90,000 up to 60,000 per bag of 100 Kg. the SSPs also said that the reliable markets and warehouse were absent for small scale producers which affected both women and men equally.

Thus, the participants of the FGDs and KIIs proposed in the future the project need to focus on access to formal financial services and addressing the market challenges. However, as the conservation interventions are relatively new, the participants emphasized stressing more on beekeeping, tree nurseries and tree planting especially fruits trees.

Table 17: Satisfaction with the existing agricultural markets

Response	No		Yes		Grand Total
	Female	Male	Female	Male	
15-35	65	17	11	10	103
36-45	43	20	13	7	83
46+	40	17	8	6	71
Grand Total	148	54	32	23	257

Source: Field data, December 2023

Table 18: Dissatisfaction from the markets

Response	Low prices		Price fluctuations		No reliable market		Market distance		Poor measurement s of crops		Grand Total
	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	
15-35	35	11	13	9	24	4	0	2	3	2	103
36-45	26	15	10	4	18	7	0	0	1	0	81
46+	22	10	8	2	15	11	1	0	1	0	70
Grand Total	83	36	31	15	57	22	1	2	5	2	254

Source: Field data, December 2023

Table 19: Legal status of the arrangements for markets

Response	No		Yes		Grand Total
	Female	Male	Female	Male	
Age group					

15-35	71	24	5	4	104
36-45	51	25	5	2	83
46+	45	20	4	3	72
Grand Total	167	69	14	9	259

Source: Field data, December 2023

Access to markets through VSLA AMCOS

To address the marketing challenges, the Alliance collaborated with the District Cooperatives Officers and Agriculture officers to establish 8 AMCOS in 9 project villages to facilitate access to inputs and markets. The formation of the AMCOS in the remaining 8 villages with no AMCOS is in progress. During the AMCOS sensitization and training, 1,453 farmers (62% women, 37% youth) were reached across 665 households (42% female-headed).

However, the endline evaluation team found that the traditional challenge that has been facing the AMCOS – which is the shortage of good organizational management practices due to lack of integrity among leaders – persisted in the most of the traditional AMCOS. Members of the AMCOS showed signs of mistrust with their leaders. To mitigate the risk of poor organizational management, the project introduced and facilitated the formation and registration of an additional eight (soon to be nine) VSLA-based AMCOS across 9 villages (5 villages in Mufindi and 4 in Iringa district) to play a critical role in liaising with private sector partners for the collective purchase of inputs and collective access to the reliable markets for SSPs’ produce, especially common beans, and Irish potatoes. In this new VSLA AMCOS model, the AMCOS member should be a member of the VSLA group and therefore all AMCOS leader who will elected among AMCOS members automatically should be a member of the VSLA group. By forming AMCOS linked to VSLAs, these AMCOS facilitate SSPs access to bundled services, but also strengthening the accountability of the AMCOS leaders and members. In theory, VSLA-based AMCOS can serve as a one-stop shop for financial services, extension services and access to input and produce markets.

3.2.4 Small-scale producers access to financial services

The project implemented VSLAs as an entry point to the communities, targeting that at least one member of each of 5,000 households directly participate in VSLAs to benefit from improved savings practices and increased access to loans. Based on the June 2023 project progress report, the Alliance facilitated the establishment of 302 VSLAs (100.6% of the LOP target) in 21 villages (9 villages in Iringa and 12 villages in Mufindi district councils). With the LOP target of 5000 members (60% women, 35% youth), during the endline evaluation, it was found that the established VSLAs had 4,215 members (71% women, 39% youth), which is 70.2% of the LOP target.

Each of the 302 VSLAs functioned for one to two cycles of approximately a year. As per June 2023 report, the total value of savings from 238 VSLA groups for the two cycles that the project facilitated VSLAs was 545,137,950 TZS (US\$ 225,031). While the baseline target was not set during the beginning of the project, the average savings achieved 2,290,495 (\$916) is 38% of the LOP target (TZS 6,000,000). Loans disbursed during the period totaled TZS 492,229,795 (US\$ 203,191) 27.5% of the LOP target, of which TZS 291,144,295 (US\$ 120,1183) were issued to women. Of the 302 VSLA groups, 269 were registered by Central Bank of Tanzania through the respective local government authorities.

63 VSLA groups were established outside project villages with the support of the project technical staff, government officials and CBTs.

Overall, VSLAs were an effective vehicle for achieving greater financial inclusion for small-scale farmers, especially women. As the respondents were sampled from the VSLA database, it was not surprising having 97% of the interviewed respondents being members and accessing financial services from VSLAs (*Table 20*). VSLAs were the major source of finances for the production activities (63%), while own savings taking the second important source of finances (60%) for the SSPs (*See Table 21*). Since 97% of respondents were the members of VSLA groups, the own savings which account for 63% of the source of finance for production could be from the individual VSLA shares and agricultural funds. *Table 20* shows that as the largest age group that rely on VSLAs is the youth and in particular the women youth, followed by women. This portrays the traditional nature of the VSLAs where the majority members are women. Women have good financial management capabilities and trust and this they stand to be suitable for the VSLAs management.

Table 20: Sources of financial services

Source	Age group	Female	Male	Grand Total	Percent
Banks	15-35	2	3	5	2%
	36-45	0	2	2	1%
	46+	0	1	1	0%
	Grand Total	2	6	8	3%
VSLA	15-35	71	22	93	40%
	36-45	47	25	72	31%
	46+	40	20	60	26%
	Grand Total	158	67	225	97%
Family members	15-35	2	4	6	3%
	36-45	2	2	4	2%
	46+	5	1	6	3%
	Grand Total	9	7	16	7%
Market actors	15-35	1	0	1	0%
	36-45	0	0	0	0%
	46+	0	0	0	0%
	Grand Total	1	0	1	0%
SACCOS	15-35	0	0	0	0%
	36-45	0	0	0	0%
	46+	1	0	1	0%
	Grand Total	1	0	1	0%
TASAF	15-35	1	0	1	0%
	36-45	0	0	0	0%
	46+	0	0	0	0%
	Grand Total	1	0	1	0%
Individual Lenders	15-35	0	0	0	0%
	36-45	0	0	0	0%
	46+	2	0	2	1%
	Grand Total	2	0	2	1%
	15-35	0	1	1	0%

Government loan (10% District Loan)	36-45	2	0	2	1%
	46+	0	0	0	0%
	Grand Total	2	1	3	1%
Micro finance Institutions (FINCA, Platinum, Vision Fund, BRAC)	15-35	4	0	4	2%
	36-45	0	0	0	0%
	46+	0	0	0	0%
	Grand Total	4	0	8	0%

Source: Field data, December 2023

Table 21: Sources of finances for crop production

Source	Age group	Female	Male	Grand Total	Percent
Own savings	15-35	53	16	69	27%
	36-45	30	14	44	17%
	46+	28	13	41	16%
	Grand Total	111	43	154	60%
Contract farming	15-35	4	1	5	2%
	36-45	2	0	2	1%
	46+	2	2	4	2%
	Grand Total	8	3	11	4%
Lending from friends/neighbor/angels	15-35	0	0	0	0%
	36-45	2	0	2	1%
	46+	0	1	1	0%
	Grand Total	2	1	3	1%
Remittances	15-35	0	0	0	0%
	36-45	0	0	0	0%
	46+	0	0	0	0%
	Grand Total	0	0	0	0%
SACCOS	15-35	0	1	1	0%
	36-45	0	1	1	0%
	46+	2	0	2	1%
	Grand Total	2	2	4	2%
VSLA	15-35	53	15	68	27%
	36-45	31	19	50	20%
	46+	28	15	43	17%
	Grand Total	112	49	161	63%
Money lenders	15-35	0	1	1	0%
	36-45	0	0	0	0%
	46+	1	0	1	0%
	Grand Total	1	1	2	1%

Source: Field data, December 2023

The achievement from the VSLAs fills a public and private sector gap in Tanzania that has left rural poor families without adequate financial services for their livelihoods or the conservation of natural

resources. Ways the VSLAs financed livelihoods and natural resources conservation is presented in Objectives 2 and 3 below.

A total of 8 VSLA and non VSLA learning platforms and exchanges were facilitated by the project. This is 80% of the LOP target where all beneficiaries had the opportunity to learn and exchange ideas and experiences pertaining to ways the VSLAs finances conservation of natural resources.

Access to financial services through linking VSLAs with formal providers

The endline evaluation team found that although tremendous achievement has been achieved extending VSLA services to communities, and with the CARE – WWF Alliance project demonstrating the funding of conservation activities, linking the community based financial services with formal providers have not resulted in significant achievement as expected. While no formal arrangements have been agreed between input suppliers and SSPs, collective purchase of inputs haven’t been realized, 81.3% of SSPs continued to access inputs individually as it has been before the project interventions (See Table 14 above). The endline survey found that 73% of the respondents revealed the inputs to be of high cost. The AMCOS that were formed with the purpose to facilitate access to bundled services were still young to be able to effectively facilitate economies of scale in purchase of inputs.

The LOP target set for this indicator was the access of loan being 50% for women and youth. No value has been set for the loan to be achieved. Table 22, 23 and 24 however presents access to finance from VSLAs as the farmers feel that the community based financial provider to some extent has replaced formal providers in addressing the challenge of access to finance. Table 22 also shows that the target of enhancing access to finance to at least 50% women has been achieved, as 63.6% of the women access the finances through VSLAs. These results demonstrate that the VSLA is the most trusted means of financing the small-scale producers. Of 222 responded interviewed, 83% have said to be satisfied with the financial services they have received (Table 23). Also, Table 24 shows that youth is the largest age group satisfied by VSLAs followed by women because businesses of the two groups doesn’t require large amount of finances. FGDs and Key informants showed that men wanted large capital than that provided from the VSLAs as they needed to invest into higher capital businesses, such as investing in cattle.

Table 22: Access to loan by small scale producers

Response	No		Yes		Grand Total
Age group	Female	Male	Female	Male	
15-35	5	4	70	23	102
36-45	5	2	48	25	80
46+	5	2	44	21	72
Grand Total	15	8	162	69	254

Source: Field data, December 2023

Table 23: Sources of financial services for small scale producers

Source	Age group	Female	Male	Grand Total	Percent
Banks	15-35	2	3	5	2%
	36-45	0	2	2	1%
	46+	0	1	1	0%

	Grand Total	2	6	8	3%
VSLA	15-35	71	22	93	40%
	36-45	47	25	72	31%
	46+	40	20	60	26%
	Grand Total	158	67	225	97%
Family members	15-35	2	4	6	3%
	36-45	2	2	4	2%
	46+	5	1	6	3%
	Grand Total	9	7	16	7%
Market actors	15-35	1	0	1	0%
	36-45	0	0	0	0%
	46+	0	0	0	0%
	Grand Total	1	0	1	0%
SACCOS	15-35	0	0	0	0%
	36-45	0	0	0	0%
	46+	1	0	1	0%
	Grand Total	1	0	1	0%
TASAF	15-35	1	0	1	0%
	36-45	0	0	0	0%
	46+	0	0	0	0%
	Grand Total	1	0	1	0%
Individual Lenders	15-35	0	0	0	0%
	36-45	0	0	0	0%
	46+	2	0	2	1%
	Grand Total	2	0	2	1%
Government loan (10% District Loan)	15-35	0	1	1	0%
	36-45	2	0	2	1%
	46+	0	0	0	0%
	Grand Total	2	1	3	1%
Micro finance Institutions (FINCA, Platinum, Vision Fund, BRAC)	15-35	4	0	4	2%
	36-45	0	0	0	0%
	46+	0	0	0	0%
	Grand Total	4	0	8	0%

Source: Field data, December 2023

Table 24: Level of satisfaction of accessed financial services

Response	No		Yes		Grand Total
	Female	Male	Female	Male	
15-35	8	1	60	22	91
36-45	8	5	37	18	68
46+	9	6	34	14	63
Grand Total	25	12	131	54	222

Source: Field data, December 2023

Of the formal providers, NMB has been found to be the most prominent bank in the area, as it has been revealed by 56% of the interviewed participants. The bank offers group loan to the small-scale producers. Other potential banks are CRDB being revealed by 12% and Mufindi Community Bank (MUCOBA) by 12% (Table 25). Findings from FGDs showed that very few community members accessed loan from these banks, of which the CCROs served for the collateral. However, majority of the community members are not aware as to how the CCROs could be used to access loans. On the other side communities are still not confident of taking loans from formal financial institutions, they feel secure taking the loan from VSLAs.

Table 25: Potential formal banks serving small scale producers in the project area

Banks	Age	Female	Male	Total	Percent
CRDB	15-35	2	1	3	6%
	36-45	1	0	1	2%
	46+	1	1	2	4%
	Grand Total	4	2	6	12%
NMB	15-35	11	3	14	27%
	36-45	3	5	8	15%
	46+	3	4	7	13%
	Grand Total	17	12	29	56%
NBC	15-35	1	1	2	4%
	36-45	0	0	0	0%
	46+	0	0	0	0%
	Grand Total	1	1	2	4%
MUCOBA	15-35	2	1	3	6%
	36-45	0	1	1	2%
	46+	1	1	2	4%
	Grand Total	3	3	6	12%
TCB (Posta)	15-35	0	0	0	0%
	36-45	0	0	0	0%
	46+	0	0	0	0%
	Grand Total	0	0	0	0%
EQUITY	15-35	0	1	1	2%
	36-45	0	0	0	0%
	46+	0	0	0	0%
	Grand Total	0	1	1	2%
Other	15-35	5	0	5	10%
	36-45	1	2	3	6%
	46+	0	1	1	2%
	Grand Total	6	3	9	17%

Source: Field data, December 2023

FGDs and KIIs interviews showed findings that were in line with individual household interviews, which revealed that financial services within the community predominantly relied on Village Savings and Loan Associations (VSLAs). The other important lenders shared during the FGDs and KIIs were the individual lenders. The participants also hoped that the recently formed Agricultural Marketing Cooperative Societies (AMCOS) will soon facilitate collective input purchase.

Review from secondary information showed that 170 VSLAs have been linked with financial institutions and attended training in financial literacy and opened bank accounts. There was, however, no evidence for these VSLAs securing loans from the formal financial providers.

3.2.5 Conservation of natural resources

The Alliance project promoted ILWM through the participatory development of VLUPs and accelerated CBNRM particularly of watersheds by strengthening the capacities of community-based conservation organizations, including but not limited to conservation VSLAs. CBNRM is a community-led conservation initiative that enables the community to participate in conservation, protection, and restoration of key ecosystems. CARE – WWF Alliance implemented CBNRM to conserve and protect water sources and wetlands and restore destructed ecosystems. The project stressed not implementing any activity including sustainable activities in the areas that needed restoration.

The endline evaluation found that the Alliance project has outstanding achievement of identifying water sources important for conservation in the Ndembera sub catchment. A total 388 water sources against LOP target of 210 were identified, which is 184.7%. The project involved communities in the conservation of the water sources where 138,707 water friendly trees were planted in the water sources. This achievement is 138.7% of the target. This has been attributed by self-motivation of the communities, which is a result of a good understanding of the importance of conservation of natural resources to their wellbeing (*Refer Tables 24, 25 and 26*).

3.2.5.1 Natural resources conflicts

The endline evaluation found that communities are aware of the decreasing water, land use and boundary conflicts. This has been attested by 95.8% of the interviewed respondents (*Table 26*). Although the LOP target was to resolve 10 conflicts at the end of the project, FGDs and KIIs showed that this target has been achieved at an outstanding rate. At least two conflicts were resolved at each of the 10 project villages involved in the end line evaluation. At Makongomi village alone, 8 out of 10 identified conflicts were resolved. Not only the men who have the final decision over land use, but majority were the women (66.5%) and youth (35%) revealed the land use conflicts to have been decreasing (*Table 26*). Findings from KIIs and FGDs showed that the land use plans have drastically minimized and enhanced legal ownership of the land to women, men and youth and that each of the community member felt to have confidence in land ownership. In gender perspectives, women were assured of owning land as the CCRO is written in the names of both the husband and wives. Youth were assured of legal recognition and ownership of family land.

At Wasa village the participants of the FGDs said that the land use plan have helped the village to have proper planning of their land use including road passages in their village. Conflicts have been reduced among village to village and among community members themselves, and within families.

Table 26: Understanding of communities regarding status of natural resources related conflicts

Response	Decreasing		Increasing		None		Grand Total
	Female	Male	Female	Male	Female	Male	
Age group							

15-35	50	18	2	0	1	0	71
36-45	38	20	2	1	0	0	61
46+	41	19	0	0	2	0	62
Grand Total	129	57	4	1	3	0	194

Source: Field data, December 2023

3.2.5.2 Institutionalizing conservation interventions within government local machinery

The project had targeted to work with government local institutions with the purpose to complement and synergy resources and efforts, as well as targeting sustaining project interventions beyond the project period. These government local institutions included PLUM, VLUMC, VLC, VC, Ward Councilors, etc. The target was to reach 110 participants.

At the time of endline evaluation, a total 154 participants, equivalent to 140% of the LOP target were reached by the project. These were leaders and members of different government local institutions. The reviewed secondary information showed that the beneficiaries were 36 (50% women, 44% youths VLUMC, 24 VLC (54% women, 8.3% youth), 78 (55% women, 20.5% youths) VC, and 16 PLUM.

3.2.5.3 Village land use plan (VLUPs)

Village Land Use Plans (VLUPs) were developed to enhance communities to control/manage land use and natural resources, including natural forests, rivers, and watershed areas. Although there was no baseline for number of hectares under village land use plan, at the endline, a total 101,507.52 hectares were officially under of village land use plans. Of this, 4,818 hectares were a forest land sustainably managed by communities in the Ndembera sub-catchment. The endline evaluation found outstanding achievement of this indicator as the LOP target at the beginning of the project was 10.

Household interviews conducted at the time of endline evaluation showed that 81.7% of the respondents were aware of the presence of the VLUP where they reside. All 10 selected villages during the survey has land use plan, of which 3 were facilitated by LTA before the project started and 7 were facilitated by the Alliance (Table 27). 93% of the respondents revealed their land to have been zoned (Table 29). As the communities are aware of the importance of conserving their natural resources for sustained wellbeing, the communities revealed that fetching water and firewood for home consumption is still important for their livelihoods and that they need to effectively be involved in its conservation. Furthermore, the study revealed that 93% of the respondents are aware that the village land use plan zoned the land for agricultural activities (Table 28), proportionally no significant different between men and women (91% and 96%, respectively).

Table 27: Awareness of the Living in a community on existence of the village land use plan

Response Age group	I don't Know		No		Yes		Grand Total
	Female	Male	Female	Male	Female	Male	
15-35	2	2	8	1	66	23	102
36-45	3	2	15	1	38	23	82

46+	2	1	4	5	39	17	68
Grand Total	7	5	27	7	143	63	252

Source: Field data, December 2023

Table 28: Knowledge of the Status of land use plan for farmer's agricultural land

Response	I don't Know		No		Yes		Grand Total
Age group	Female	Male	Female	Male	Female	Male	
15-35	3	0	3	0	59	22	87
36-45	0	1	2	0	36	21	60
46+	2	0	2	1	34	16	55
Grand Total	5	1	7	1	129	59	202

Source: Field data, December 2023

Table 29: Participation of communities in zoned land

How you participate?	Age group	Female	Male	Total	Percent
I use the water for agriculture (crop irrigation and/or livestock).	15-35	3	3	6	4%
	36-45	5	4	9	6%
	46+	4	0	4	3%
	Grand Total	12	7	19	12%
I use the water for fishing / fish ponds.	15-35	1	0	1	1%
	36-45	1	1	2	1%
	46+	0	1	1	1%
	Row Labels	2	2	4	3%
I use water for domestic purposes, like cooking, drinking and washing close	15-35	39	15	54	34%
	36-45	19	13	32	20%
	46+	22	10	32	20%
	Grand Total	80	38	118	75%
I use the forest for beekeeping	15-35	10	3	13	8%
	36-45	7	8	15	9%
	46+	6	4	10	6%
	Row Labels	23	15	38	24%
I use the forest for firewood, charcoal or timber	15-35	29	9	38	24%
	36-45	10	10	20	13%
	46+	13	5	18	11%
	Grand Total	52	24	76	48%
I participate in water protection and management	15-35	12	3	15	9%
	36-45	3	6	9	6%
	46+	10	4	14	9%
	Row Labels	25	13	38	24%
	15-35	4	3	7	4%
	36-45	4	3	7	4%

I participate in forest protection and management.	46+	3	1	4	3%
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Source: Field data, December 2023

3.2.5.4 Access to Customary Certificate of Right of Occupancy (CCROs)

Project progress report of June 2023, showed that through the process of enhancing Village Land Use Plans, communities secured land titles for the residential and farmlands. Although the LOP target of 50% for women and 30% for youth was not met, 10,182 titles (33.8% to women; % jointly to households – i.e., men and women; 23.7% youth) were provided to the communities, which is an outstanding achievement (339.4%) of the overall LOP target of 3000 CCROs. However, findings of the endline survey which showed that 57% of the respondents who were women and 39.5% youth had CCROs (*Table 30 below*). *Table 30*, also shows that 19.7% of female headed household had CCROs. The project has successfully reached significant number of female headed households as the 19.7% is 90% of the female headed households interviewed during the endline survey. The male headed household CCROs were found to be 61.9%.

Table 30: Household with community customary rights of occupancy (CCRO) or title deed for the owned land

Categories		Count: Do you or your household have community customary rights of occupancy (CCRO) or title deed for the owned land?		
		No	Yes	Grand Total
Age of respondent	15-35	26	78	104
	36-45	11	70	81
	46+	2	67	69
Grand Total		39	215	254
Sex of respondent	Female	28	150	178
	Male	11	65	76
Grand Total		39	215	254
Sex of Head of Household	Female	11	52	63
	Male	28	163	191
Grand Total		39	215	254

Source: Field data, December 2023

The project capacitated the communities to appreciate the contribution of conservation, protection, restoration, and regeneration of natural resources on their livelihoods, in particular farming, livestock keeping, water availability for other domestic uses and wildlife. Further to that, the project capacitated the communities with their institutions to recognize the importance of their contribution and participation in the conservation, protection, restoration, and regeneration of natural resources as the natural resources were important and would continue to be important in their livelihoods. As a result of these project's interventions, communities' understanding about the importance of sustainable management of natural resources to their livelihoods improved.

According to the project's Conservation Campaign Report (June, 2023), the water flows in Mkikifu river stream which collect water from over 80 water sources under community conservation showed an

upward trend during both wet and dry seasons that demonstrates the positive impact of the conservation initiatives supported by the Alliance. For instance, the average water flow recorded during the dry season (July- October) in 2022 was 0.34 m³Sec, which is an increase of 42% from 0.24 m³Sec recorded in the same period in 2021. As for the 2022 wet season, the water flow was 1.45 m³Sec, which is an increase of 113% from the baseline in 2021 (1.45 vs. 0.68 m³Sec). As demonstrated by the impact data for the Utosi and Ndembera presented at the top of this Impact section, this trend has continued into 2023. These overarching water flow outcomes are the cumulative effect of conservation efforts of the project since its onset of the phase one project in 2018.

The endline evaluation team noted that each project village had three committees, namely Village Natural Resources Committee with 7 members, Water User Associations (WUAs) with 9 members and Village Land Council with 9 members as well. These committees that were formed according to the law were initially not facilitated to undertake environmental conservation, as a result they ended up having conflicting roles. All of them were found dealing mainly with land conflicts’ resolution, and in the end, they were less involved in natural resources and ecosystem conservation.

Based on Key Informant Interviews (KIIs), the application of the Village Savings and Loan Association (VSLA) approach has played a pivotal role in the conservation, protection, and regeneration of ecosystems. Committee members actively participated in conservation-focused VSLA groups, acquiring insights into how VSLAs could financially support conservation efforts. They collectively raised funds and collaborated with other VSLA members to contribute to the conservation of ecosystems. As committee members gained expertise in conservation practices, their respective committees became more actively and effectively engaged in the preservation of natural resources.

3.2.5.5 Integration of VSLAs in natural resources conservations

The project integrated VSLAs with conservation through the establishment of conservation groups within the VSLAs. The members of the Village Natural Resources Committees, Water User Associations and Village Land Council joined the VSLAs and joined their efforts where the VSLAs incentivized collaboration around conservation, protection, and regeneration of natural resources. As per the project semiannual report of June 2023, 24 conservation VSLAs groups were formed by the project and effectively participated in the conservation activities. This was an achievement of 114.2% of the LOP target of 21 conservation groups and or committees with 1,500 members.

Conservation VSLAs integrate conservation with savings and lending, providing an opportunity for communities to use VSLAs in financing nature-based enterprises and other activities relates to the conservation of natural resources. Of the 255 respondents, 71.3% were members of the conservation VSLA groups, with youth and females taking the largest parts, being 39.9% and 48.2% respectively (Table 31). Females are the largest group because of the largest participants in the VSLAs are the females.

Table 31: Membership of Conservation VSLA groups

Membership	No		Yes		Grand Total
	Female	Male	Female	Male	
15-35	22	9	56	18	105
36-45	18	4	38	20	80

46+	13	7	33	17	70
Grand Total	53	20	127	55	255

Source: Field data, December 2023

The Project's progress reports of June 2023, showed that five of the VSLAs established dedicated conservation funds. Members have made collective investments both through the normal VSLA loan process as well as through collective agreement around how to use conservation funds for sustainable investments in nature-based enterprises and community conservation actions. Conservation VSLAs regular meetings and financing structure have accelerated the establishment and strengthening of tree nurseries cultivating native and fruit trees and beekeeping activities. Apart from fruit trees that farmers anticipated to earn money, conservation VSLA members recognize the environmental and long-term economic benefits of water sources and forests trees and have influenced small-scale producers to plant the water-friendly native trees in and around the water sources to restore them. The VSLA model has enabled VSLAs to make bulk purchases of agricultural inputs and capital equipment, support group training on good agricultural practices and conservation of natural resources and build sustainable models of eco credit for smallholder farmers.



Honey processed at Lugodalutali village.

Water sources being one of most important natural resources was assessed during the endline survey. Table 32 below shows water sources that were found to be important by the communities were bore holes (54%), shallow well (27%) and river water (22%). The endline survey found that water utilization is related to gender roles. Table 33 shows that domestic use of water by women takes the largest proportion of the water use in the villages as the women need the water for handling household chores, while youth are using the water for irrigation of horticulture crops which they produce and sell to earn money within few weeks. The elderly men and especially those in the villages were termed as investors (large farmers) are irrigating tree and maize farms that they will grow and ell raw maize.

Table 32: What water sources household rely on

	Row Labels	Female	Male	Total	Percent
Bore hole	15-35	49	14	63	24%
	36-45	31	16	47	18%
	46+	21	12	33	13%
	Grand Total	101	42	143	54%
River water	15-35	14	3	17	6%
	36-45	12	7	19	7%

	46+	14	7	21	8%
	Grand Total	40	17	57	22%
Shallow well	15-35	19	9	28	11%
	36-45	11	8	19	7%
	46+	14	9	23	9%
	Grand Total	44	26	70	27%
Spring	15-35	17	9	26	10%
	36-45	6	6	12	5%
	46+	11	8	19	7%
	Grand Total	34	23	57	22%
Dam	15-35	0	0	0	0%
	36-45	0	1	1	0%
	46+	2	1	3	1%
	Grand Total	2	2	4	2%

Source: Field data, December 2023

Table 33: The use of water by communities

Use of water	Domestic uses		Irrigated agriculture		Livestock		Fish ponds	
	Female	Male	Female	Male	Female	Male	Female	Male
15-35	78	28	3	0	10	2	1	0
36-45	57	26	0	1	5	5	0	0
46+	47	23	3	2	6	4	0	1
Grand Total	182	77	6	3	21	11	1	1
Percent	69%	29%	2%	1%	8%	4%	0%	0%

Source: Field data, December 2023

Apart from water and land, the other important natural resource of importance in the surveyed area of the CARE – WWF Alliance project area are fire wood and charcoal (See Table 34). Both fire wood and charcoal have high priority by women as they are key in undertaking cooking activities at home. Finding from the FGDs and KIIs showed that these two resources as also important for men, but with the purpose to sell in the market for income. Honey and timber are engaged for income generation by few community members.

Table 34: Natural resources that households use

Natural resource	Timber		Firewood		Charcoal		Honey	
	Female	Male	Female	Male	Female	Male	Female	Male
15-35	9	3	68	25	45	19	20	6
36-45	4	3	51	22	23	9	7	5
46+	3	3	44	23	21	8	7	4
Grand Total	16	9	163	70	89	36	34	15
Percent	6%	3%	62%	27%	34%	14%	13%	6%

Source: Field data, December 2023

The CARE-WWF Alliance project pursued and sought to scale sustained access to services through Objective 4. The Alliance did so by working in collaboration with the key government partners, such as

the Rufiji Basin Water Board (RBWB), the National Land Use Planning Commission in Tanzania (NLUC), as well as local government authorities. The project also worked with private sector partners, such as agro dealers, off-takers, seed multipliers and distributors, and civil society organizations, like the Lutheran Center.

3.2.6 Communities’ resilience against shocks

With reference to annex 6.5, households participated in quantitative surveys showed that over the past two years their families have experienced shocks related to increase in prices of inputs, fall in selling prices of their commodities and outbreak of pests and diseases. These three shocks were revealed by 70%, 69.8% and 54.9% of the respondents respectively. Findings from FGDs showed that women and youth were more affected by the rise of the prices of the inputs and fall of selling price of their crops, crop production has been the main sources of income for women and youth, and food for their families. The individual interviews (Refer to annex 6.5) and FGDs (annex 6.3) also showed that the communities haven’t experiences severe droughts, floods and other types of shocks. The respondents also revealed that their crops failed mainly because of pests (70%), use of seeds that are not resilient to climate change (62%) and delay in accessing fertilizer (48%) (Refer to annex 6.6). In mitigating the effects of the shocks, 50% of the communities used their own savings and 60% borrowed money from their VSLAs to finance their farming activities (See annex 6.6).

3.2.7 Access to climate information and decision making

Findings from household survey showed that 78.9% of the respondents revealed to have access to climate information that helped them make decision to pre inform their investments. Although the proportion of respondents was 30% males, while 70% were females, 60% of males revealed to have accessed climate information against 19% females. The access of information by youth was revealed to be 40.4% (See Table 33). The main sources of climate information was found to be community radios and Tanzania Meteorological Agency (TMA). Climate information from TMA was access through the community radios as well as through social media. Both access means were more friendly to men and youth as compared to women (Table 34).

Table 33: Access to climate information

Response	No		Yes		Grand Total
Age group	Female	Male	Female	Male	
15-35	5	20	18	57	100
36-45	3	12	11	50	76
46+	5	7	18	41	71
Grand Total	13	39	47	148	247

Source: Field data, December 2023

Table 34: What are source of climate information

Response	Messages from TMA		Community radio		Village meetings from village leaders		Indigenous knowledge forecasters		Village notice board.		Magazine / newspaper	
	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male
15-35	19	11	40	11	14	3	1	0	1	0	1	0
36-45	17	8	20	15	10	5	2	0	1	0	0	0
46+	23	8	18	11	14	6	0	0	0	0	1	0
Grand Total	59	27	78	37	38	14	3	0	2	0	2	0
Percent	30%	14%	40%	19%	19%	7%	2%	0%	1%	0%	1%	0%

Source: Field data, December 2023

Table 35 show that the climate information significantly influenced decisions made by the communities.

Table 35: Ways knowledge on climate change influence the decision(s) taken

Response	Strong influence		Influence		Neutral		Not influence,		Not at all influence		Grand Total
	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	
15-35	17	8	39	13	15	6	5	1	0	0	104
36-45	4	2	28	17	11	4	7		2	0	75
46+	5	3	25	12	9	3	7	6	0	0	70
Grand Total	26	13	92	42	35	13	19	7	2	0	249

Source: Field data, December 2023

3.3 Findings against OECD criteria used for the endline evaluation

As it has been presented earlier that the key endline evaluation findings is organized per OECD evaluation criteria, assessing: the project's relevance; effectiveness, coherence, efficiency, the likelihood of long-term impact and sustainability beyond project period. Below is a detailed presentation of findings of the endline evaluation with regard to each of the criteria.

3.3.1 Relevance

The endline evaluation seeks to answer the following questions related to relevance:

- To what extent do the project Theory of Change (TOC), objectives, outcomes, and outputs reflected the needs and priorities of the target group, with emphasis in Small Scale Producers (SSPs)?
- To what extent do the project interventions contribute to empowering communities engaged in conservation of their natural resources? Does it adequately reflect and/or respond to the reality of the local economy and social dynamics?

- To what extent did key public and private stakeholders perceive the project, its interventions, and the results as relevant to the context?

The Project's ToC against the needs and priorities of target groups

Generally, the project's overall objective/goal of improving livelihoods (including income, food security and socio-economic leadership) for targeted communities, especially women by enhancing the involvement of communities in the conservation of their natural resources along with the integration of VSLAs and imparting skills and knowledge for sustainable agricultural production practices was relevant for the target group. All objectives, outputs, as well as the outcomes, were relevant by their own and especially capacitating the SSPs, particularly women farmers to improve their income and food security, Paraprofessionals and Local Government Authorities (LGAs) to implement their mandate would be pertinent for a longer-term impact.

As the small-scale producers, in particular the women farmers have been facing the challenges of unreliable rainfall patterns for agricultural production, the project addressed this by training small farmers with skills for adapting to the effects of climate change, such as adopting good, climate-smart and agro ecological agricultural practices. This is evident that the project was relevant to the needs of the communities. Below is the presentation of the extent the project objectives were relevant to the targeted communities.

There have been a lot of achievements that were highly rated by the project participants and other stakeholders that were interviewed and participated in FGDs during the endline evaluation. They indicated that the SGFSES project capacity-building package was relevant in responding to the economic needs of the project participants. The small scale producers, particularly women, have limited access to formal financial services such as loans. The introduction of the VSLAs enabled women SSPs and their families to save and generated a major source of capital in the form of loans at lower interest rates that they used to either invest or improve their individual or collective businesses.

The local government authority (LGA) staff found the project VSLAs interventions equally relevant and appreciated the project trainings, which were also relevant to other groups targeted by the government authorities and other development organizations working in Mufindi and Iringa. LGAs revealed that the SSPs that have been trained by the Alliance project were better equipped to undertake profitable agricultural enterprises, generate income, and undertake savings and provide loans to one another to sustain this virtuous cycle. The SSPs trained by the project were more proactive in seizing opportunities and more reliably involved communities in sustainable natural resource management.

The project was designed to address the pertinent challenges facing the agricultural sector such as climate change, poverty and environmental degradation. The project employed a common approach combining access to credit, markets and extension services with Climate-smart agriculture (CSA) and sustainable watershed management practices that are critical to productive small-scale agricultural systems and sustainable food supply. The models that were introduced by the project such as collective and sustainable investments (CSI), FFBS, income generating groups, and AMCOS are relevant to achieve the project goals. SSP adoption of sustainable investments and production practices illustrates their relevance.

Sustainable and collective investments (CSIs) were in line with the traditional culture of working together practiced under the VSLAs, thus having collective investments along with the savings and

lending associations well integrated the working together culture under the collective and sustainable investments with each VSLAs. CSIs created a sense of cohesion among SSPs, as they exchanged ideas, skills, knowledge, and experiences, mobilized resources, and invested together.

Among interventions most appreciated by the project stakeholders was Village Land Use Planning, which led to increased access to Customary Certificate of Right of Occupancy (CCROs). CCROs are the legal recognition of individual SSPs' farm and residential lands. Receiving a CCRO formalizes their land title and assures SSPs access to various services that they have previously lacked under a customary tenure regime. The most important service mentioned by SSPs of which they hope to tap in the future was access to loans from formal financial providers, such as banks.

Although the CCROs have potential to help them access loans, the SSPs were observed not aware of the process to use the CCROs to access loans. However, during FGDs, it was revealed few to have used CCROs to have access loans. At Lugodalutali village 2 people used the CCROs to access loan (Mr. Wisdom Choga and his friend). The FGDs with women showed that the CCROs reduced land use conflicts, strengthened marriage as result of facilitation of joint land ownerships. The land use plans also resulted to villagers moving away from doing economic activities in the forest area. An example was the case of 21 villagers of Lugodalutali village.

Other relevant interventions reported by project participants were facilitation of the establishment of water-friendly and fruit tree nurseries (including through training) and tree planting for the conservation of water sources and generation of income. SSPs appreciated the knowledge they received from the project that have enabled them to protect and conserve water sources. The SSPs said that before the project, they were facing water scarcity during the dry season and after the project interventions, they are currently able to access water throughout the year, as the water flow does not stop during the dry season. Before the introduction of the project in their villages, they used to cultivate near water sources, causing environmental destruction that contributed to drying water sources.

With the undertaking of Village Land Use Plans (VLUPs), water sources were identified, and village conservation action plans were developed by conservation committees. These two outputs of the VLUPs were relevant to inform the communities the water sources they were to conserve, and the plan informed them of what they needed to do to conserve the water sources. The achievement of improved water flow was a result of their involvement in implementing the conservation action plan.

Findings from KII interviews showed the same trend of the household interviews in the Table 9 above that the land use conflicts which existed before the project were either drastically reduced or solved completed after the project period. For instance, two land use conflicts were identified during VLUP at Lugodalutali village. The first involved individual farmers and the village government, centering around a boundary dispute between the forest area and individual farms. The second conflict arose between Lugodalutali village and Igombavana villages. These two conflicts were successfully resolved following the project's interventions.

The reduction of land use conflicts was also revealed during FGD at Makongomi village. The participants shared that in total 10 farm boundary conflicts were identified during VLUP. Through the project intervention, 8 conflicts were resolved while 2 were still to be resolved by the time of the survey. The same trend was attested during FGD held with women at Igombavanu village. The participants said that there were no conflicts because of the village land council which had the authority to resolve land conflicts. The participants further revealed that all community members paid respect to the land use as per agreement and by laws established to protect the forest and water source. This shows that the interventions was relevant to the needs of the communities.

During FGDs, women reported that the community relies on ecosystems and natural resources for its well-being. Women were also most quick to explain how natural resources contribute to food security and income beyond farming. Nonetheless, the endline evaluation confirmed that women, men, youth, and children all equally use local natural resources to contribute to their livelihoods and wellbeing. The SSPs articulated that their involvement in conservation of natural resources was critical to a sustainable future. The women who participated in FGD at Igombavanu village said that the natural resources interventions implemented by the project will be sustainable due to land use plans developed for better use of the land. They said that there is a forest set aside for firewood and there is an area of the forest set aside for conservation, there is also another area set aside for grazing and farming. If anyone is found conducting any economic activities in the forest set aside for conservation, he/she will be fined 50 thousand Tanzanian shillings. The existence of fines, bylaws, environmental management council and committees has helped to reduce land conflicts in their village and misuse of natural resources. Women who participated in the FGD at Ugenza reported that about 85% of community members in their village were willing to participate in sustainable natural resource management on a voluntary basis, because of the associated benefits they would realize in the future.

The Village Executive Officer (VEO) at Makongomi revealed that although the impact of drought on crops have been reduced recently, thus yields increased, the unreliability of rainfall remained a concern, with a delayed start observed this year. If drought persists the farmers will continue to experience its impacts which includes reduced crop yields, presence of pests and diseases. The VEO further revealed that the community generally exhibited a positive attitude towards addressing climate change. There was recognition that climate change occurred, and communities were increasingly willing to adopt sustainable practices like planting trees, conserving water catchments, practicing conservation agriculture. The establishment of the environmental committee stands as a pivotal initiative dedicated to safeguarding the village forest and water sources from environmental degradation.

A notable proportion of the community had embraced the principles of conservation agriculture, demonstrating a commitment to sustainable farming practices (Refer to section 3.5 and 3.6). This, coupled with a proactive approach to diversifying income-generating activities, served as a robust coping mechanism against the adverse impacts of climate change.

The VEO also said that as the intervention on conservation of natural resources was relevant to the communities and the village leadership, natural resources agenda was given priority in every village general assembly meeting which were conducted after every three months. All matters raised on natural resources were also given priority to be discussed and provide solution. An example is the issue of not burning the protected forested land. The communities collaborated well in the establishment of the Environment group, training in tree planting and conservation issues. Like in other villages, land use plans have been done where there is differentiation of land use, being for residential purposes, fields, tree planting for construction and firewood, pastures, and forests. The village also has bylaws that prevent people from causing fires around water sources and conducting any farming activities.

The Lumuli VEO revealed that the village had policy and bylaws to enforce community water and land use management. For instance, in September 2023 one livestock keeper was caught and fined because of grazing on farmland. In general the land use plan in the village is respected by the community. The VEO said that the water sources were well conserved, people did not farm nearby water sources, the forest was in good condition, however wild hunters were frequently burning forestry for hunting purposes. Effort is taken by VNRC together with the village government to ensure this habit is stopped.

The village addressed these challenges and leveraged opportunities over the last three years through support of the project, also in beekeeping, tree nurseries establishment, tree planting, capacity building to VNRC, Paraprofessionals and CBT who were trained in natural resource conservation and good agricultural practices (GAPs).

Training offered by the CARE-WWF Alliance were widely considered relevant, enhancing SSPs' skills to search for and work with private sector actors, access reliable inputs and increase their access to markets and formal financial services.

Objective 4 of the project's ToC was equally relevant: the promotion of partnerships among public and private sectors sought to enhance vital SSP access to markets and services, among other more systemic aspirations. CARE-WWF Alliance establishment of VSLA-based AMCOs was an important and useful step towards achieving this outcome, as AMCOs facilitated other market actors' linkages with SSPs. Generally, the project has made efforts to support the development of inclusive market systems by bringing together the SSPs, private sector, service providers, and buyers mainly through AMCOs and stakeholders' meetings, farmer field days.

Key project stakeholders not only from the community but also from the public and private sectors perceived the project positively and were happy with the results. The district LGAs and ward-level staff appreciated the participation of Extension Officers, Community Development Officers (CDOs), Village Chairperson and Village Executive Officers (VEOs) in all stages of the project implementation, including training and enterprise establishment, and for being connected with the services providers, such as off-takers and input suppliers.

The DALFO of Mufindi District Council revealed the relevancy of the project's interventions in enhancing adaptation to effects of climate change. These included promotion of Climate-Smart Agriculture (CSA), tree nurseries and planting, rainwater harvesting techniques, crop rotation, and inter-cropping (with a focus on legume intercropping, especially beans and maize, and the introduction of soybeans). Additionally, the project diversified income sources by promoting activities like beekeeping, vegetable production, and raising pigs, chickens, and other small animals. Some groups also initiated collective investments to boost income for both the groups and their individual members. Farmers Field and Business Schools (FFBS) played a pivotal role in imparting communities with climate adaptation technologies. To ensure the sustainability of the promoted interventions and technologies, communities were facilitated in developing by-laws related to environmental conservation, livestock grazing, and control of bush fires. In Mufindi the DALFO also appreciated the 24 Quality Declared Seed (QDS) individuals who were trained with the skills aimed at increasing the use of improved seeds for enhanced agricultural productivity.

87% of interviewed respondents appreciated the project's interventions that helped them access markets. 94% of the respondents found the project to be relevant in facilitating access to inputs, even though the linkages were not formalized in contract agreements between the SSPs and input suppliers (Section 3.6). The project recently launched the new multi-stakeholder's community environmental award scheme (CEAS+) that brings together public sector, private sector, conservation NGOs, LGAs, SAGCOT and local communities around the Great Ruaha River Catchment to address environmental degradation. This initiative is relevant to the context of promoting public and private sector partnership. Furthermore, the project in collaboration with SAGCOT Centre Ltd established the Seed multi-stakeholders' platform (SMSP) for Mufindi district as part of strengthening partnerships between different value chain actors.

More efforts were needed to fully achieve objective 4, especially in access to formal financial services. There was no clear alignment between the outputs (VSLAs learning platform and the knowledge sharing among platform members) and the access to finance from formal providers. The project did invest in helping some SSPs participating in VSLAs, producer groups and AMCOs to link with formal financial providers such as NMB, MUCOBA and CRDB Banks. Nonetheless, VSLAs and other informal services, such as those from off-takers, constituted the largest and most widely available source of financial services to the communities (Refer section 3.5). This suggests that objective 4 failed to adequately scale the outputs of objective 1 as intended. Although huge interest and success was achieved around facilitating SSPs access financial services through VSLAs, their integration in formal financial solutions did not meet the project targets. Although a few SSPs, e.g., youth from Wasa village, got a loan from MUCOBA Bank, other villages had no SSPs interacting with the formal financial solutions despite project efforts. Commonly, a lack of collaterals from borrowers continued to present a barrier, despite the introduction of CCROs. Somehow, the project failed to help those SSPs with newfound collateral to leverage it to access larger loans from banks.

3.3.2 Coherence

The endline evaluation seeks to answer the following questions related to coherence:

- To what extent do the conservation and development interventions constitute an integrated project and coherent whole? I.e., how coherently was the project designed and were interventions like VSLAs and FFBS implemented alongside ILWM and CBNRM?
- To what extent were the project's interventions compatible with the interventions of other actors in the country and thematic field (complementarity and synergies)? Was there creation of synergies between the Alliance and the other actors? How much and how did the project coordinate its efforts with other actors' projects that contributed to the same/ similar goals?

The CARE-WWF Alliance was formed to implement various projects because of the complementarities and synergies between the approaches of the two organizations. The SGFSES project was designed not only based on experiences from the previous phase and similar CARE and WWF projects in other countries, but also on a context analysis, reflected in the project concept.

Regarding internal coherence within the CARE-WWF Alliance project, both Alliance KIIs and KIIs with other stakeholders confirm that CARE and WWF staff worked together as an integrated team. CARE staff led ground implementation such as VSLA establishment, FFBS trainings and project monitoring, while WWF provided overall managerial as well as implementation of ILWM and CBNRM related interventions.

The project was also aligned with similar interventions of other actors working in natural community based natural resource management. The SGFSES project's interventions had complementarities and synergies with the following projects in the same region of Tanzania: the World Bank funded Resilient Natural Resources Management for Tourism and Growth Project (REGROW) project implemented by Tanzania National Parks (TANAPA); the SAGCOT Center's support to SSPs in improving production and productivity of avocados and Irish potatoes; the EU-funded Agri Connect project that intervenes in nutrition and developing horticultural value chains; the Rikolto East Africa project developing pulses and cereals value chains; the TARI Mbeya Center enhancing use of improving seeds; the USAID-funded Farm to Market Nafaka Kilimo Project developing cereal value chains; the National Food Reserve Authority (NFRA) providing markets for cereals; and LGA interventions enhancing extension services and input subsidies.

The good internal collaboration within the CARE-WWF Alliance team is a good example of organizations working together to achieve shared goals.

A notable example was Tanzania Agricultural Research Institute (TARI) Uyole, Silverlands company, HZPC and Tanzanice Agrofood Ltd, with which the Alliance collaborated in the establishment of demonstration plots. The project focused on both the direct implementation of its interventions and scaling up its experiences and lessons by engaging other NGOs. Formal or informal exchanges with other NGOs, either through existing platforms or those initiated by SGFSES project to share learnings, avoid duplication, accelerate collaboration, and increase impact among the target groups have been implemented.

The project trained around 30 staff from NGOs/CSO working in Iringa and Mufindi on VSLA methodology and CHOMOKA App and facilitated NGOs forum meetings at least twice in Mufindi district, which act as the learning platform. It is through this interaction NGOs like World Vision Tanzania, SOS and TAHEA voluntarily handed over their savings groups to the Alliance. They also trained some of the Alliance VSLA groups on entrepreneurship skills.

The project also facilitated regional agricultural stakeholder's forum in May 2023 where NGOs working on agricultural and conservation sector met to learn from each other. The Alliance used that opportunity to share the innovative models for scaling. One of the resolutions of the regional agricultural forum was to establish a knowledge sharing hub under the Regional Administration Secretary (RAS) where all NGOs would share their reports and lessons learnt from their projects.

The project established multi-stakeholders' platform (MSP) of water users that brings together public institutions such as TANAPA, RBWB, RUWASA, TANESCO, National Irrigation Commission (NIRC), NEMC, LGAs and private investors such Silverlands, Madibira AMCOS (MAMCOS), Kapunga Rice farm etc. Through this, the establishment of the Community Environment Award Scheme (CEAS) basket fund is underway.

The project, in collaboration with SAGCOT Centre Ltd facilitated formation of the Seed MSP for Mufindi district- the platform that brings together all seed actors in the district. The platform is operating with the full support of the district facilitation team from DED office.

Another notable examples were the engagement of different market actors during the Farmers Field Days which were done twice a year whereby farmers and market actors (input suppliers, buyers, researchers meet on the SSP FFBS demo plots to learn on the best practices, challenges, and provision of solution on the production challenges, link farmers with markets and buyers). Collaborations were also experienced during the National Farmers' Exhibition (*Nanenane*) where farmers were able to participate in the event to secure buyers and linkages for their produces and products.

The project further collaborated with The Ministry of Agriculture (MoA), Environmental Management Unit (EMU), and Rufiji Basin Water Board, Agricultural Research Institute, Sokoine University of Agriculture, NGOs working on sustainable production/agroecology i.e., Sustainable Agriculture Tanzania (SAT), Tanzania Agroforestry Initiative, and District Crop and Nutrition Officer for Iringa and Mufindi who collaborated in the development of training modules on sustainable production and nutrition.

3.3.3 Effectiveness

The endline evaluation seeks to answer the following questions related to effectiveness:

- To what extent were the implementation approaches and strategies (e.g., integration of VSLAs, FFBS and CBNRM) adequate to achieve the project's intended results (goals, objectives, and outputs)?

- What were the main factors that influenced the achievement or non-achievement of the results?
- How effectively did the project work with the relevant institutions and authorities in preparing an enabling policy environment to promote effective VSLAs, FFBS and CBNRM measures? To what extent did the project enhance partnerships among key stakeholders?
- To what extent did the project contribute to improving access to finances, accelerate sustainable and collective investments, build communities' resilience, and contribute to conservation, protection, and regeneration of natural resources?

The CARE-WWF Alliance aimed to scaling up the VSLA approach in Tanzania, where VSLAs groups were formed. The VSLA groups would serve as a source of microcredit and function as a vehicle for disseminating information for agricultural extension, climate change adaptation, and watershed-based land and water management for sustainability. The CARE-WWF Alliance project team had a good understanding of the approach and successfully adapted it to the local context. Other elements of the project's methodology included public-private partnership building and private sector engagement to enhance SSP access to finance, markets, and inputs. The overall methodology, as well as the additional elements, were well suited for the project's ToC.

While the VSLA component was implemented by the Alliance largely through training of Community-Based Trainers (CBTs) and Paraprofessionals (CPPs), Community Development Officers (CDOs), District Agriculture Officers (DAOs), the Tanzania Agricultural Research Institute (TARI) Uyole Center and private sector actors, such as Silverlands, HZPC, Tanzanice Agrofood Ltd and SAGCOT were common collaborators in the development interventions. The project worked with an even greater diversity of institutions to promote effective integration of livelihoods with conservation of natural resources. Some of the institutions that the project collaborated with most closely and effectively include existing government and civil society organizations such as the Participatory Land Use Management (PLUM) Committee of the District Council, the Rufiji Basin Water Board (RBWB), the National Land Use Plan Commission (NLUPC), Village Land Use Management Councils (VLUMCs), Village Natural Resource Committees (VNRCs), and Water User Association (WUAs).

CBNRM is a community-led conservation initiative that enables the community to participate in conservation, protection, and restoration of key ecosystems. CARE – WWF Alliance implemented CBNRM to conserve and protect water sources and wetlands and restore destructed ecosystems. The project stressed not implementing any activity including sustainable activities in the areas that needed restoration. Village Land Use Plans (VLUPs) were developed to enhance communities to control/manage land use and natural resources, including natural forests, rivers, and watershed areas. The project capacitated the communities to appreciate the contribution of conservation, protection, restoration, and regeneration of natural resources on their livelihoods, in particular farming, livestock keeping, water availability for other domestic uses and wildlife. Further to that, the project capacitated the communities with their institutions to recognize the importance of their contribution and participation in the conservation, protection, restoration, and regeneration of natural resources as the natural resources were important and would continue to be important in their livelihoods. As a result of these project's interventions, communities' understanding about the importance of sustainable management of natural resources to their livelihoods improved.

The project worked very closely with the different organizations in enhancing the implementation of all the four objectives. The close collaboration the project facilitated with the other organizations was a critical factor in achieving the project results. Income was raised, as food security was attained by the households that participated in the project (See section 3.5). Not only on the direct result of the

communities but also the environmentally related result such as the increase in water flow in the Ndembera sub catchment rivers. The raising of awareness of the communities regarding the importance of their participation in conservation of natural resources was also result to collaborative efforts the project team built.

The project had an adequate understanding of the systemic shortcomings to create an effective and integrated approach involving VSLAs, FFBS and CBNRM. This was largely due to implementation of a range of assessments during the inception phase, including gender-aware climate vulnerability and capacity assessments, a market assessment for Irish potatoes, common beans and nature-based enterprises, a landscape assessment, a qualitative and quantitative baseline. These assessments went beyond the economic and ecological landscape to analyze social dynamics at the village and ward level where project implementation mainly happened.

Thanks to the project's effective MEL system, the project has clear numbers with which to access to finances through VSLAs, VLUP and CCRO reach, agricultural productivity and production, number of water points conserved, changes in water flow in the two river points of Utosi bridge and Igomaa, and other data around restored and protected natural resources. The MEL system provided good sex, age, and marital status segregated data. During the field visits of the endline evaluation, we found most SSPs active in various income-generating activities (mostly individually, but also in collective activities). Most of these economic activities were crop farming, honey processing and selling, vegetable gardening, tree planting along water sources, land use plan and management, etc.

Although most of the project interventions were effective in giving intended results, findings obtained during FGDs held with women and men and KIIs held with DALFOs, VEOs, Leaders of environmental conservation groups showed that project interventions have not been adequately effective to enhance access to markets (Refer to annexes 6.1)

3.3.4 Efficiency

The endline evaluation seeks to answer the following questions related to efficiency:

- To what extent have the project's financial and human resources been efficiently allocated?
- How effective and flexible were the project governance/steering mechanisms in guiding the right decisions during project implementation? Did those mechanisms sufficiently involve key stakeholders?

The endline evaluation team observed that the project beneficiaries (such as individual SSPs, SSP groups, VSLAs, AMCOS, FFBS, VLUPCs, VEMCs, WUAs, allocated away equitably, with project services inversely correlated with the remoteness of target villages or wards. Harder-to-reach areas required more resources associated with time and travel to be equitably supported by follow-up project activities, such as mentoring and technical support from the project staff. The project geography spanned villages scattered across two districts, while the project's manager sat in country HQ in Dar es Salaam meant prolonged travel times and high travel costs for the project and its staff. Soaring fuel prices further strained the travel budget.

To some extent, these travel costs were managed through the project's approach of developing Community-based Paraprofessionals (PPs) who served to provide agricultural extension services to their fellow farmers, engaged and trained village and ward agriculture officers who provide extension services to farmers, and trained Community Based Trainers (CBTs) who provided technical support, mentoring, and coaching of VSLAs. This approach had the added benefit of enhancing community trust

in the skills and knowledge provided. 42 PPs were provided with bicycles and mobile phones to support reach farmers and be able to report instantly

The project also capacitated other community-based organizations to help provide close leadership and technical support to their members. For instance, AMCOS were developed and capacitated with skills to support VSLAs and managed FFBS demonstration plots. This appears to have been less effective, in that AMCOS leaders seem not to be trusted enough. The project similarly capacitated VLUMCs), Village Environmental Committees, WUAs to provide leadership and skills to their fellow community members.

The Alliance also strengthened the capacity of community-based leaders, working closely with Village and Ward Leaders, such as Village Chairpersons, Village Executive Officers, and Ward Executive Officers to ensure close project monitoring and adequate support. Whereas this seemed like a good and cost-efficient solution from the viewpoint of the project, not all the community-based leaders had the same understanding of their roles.

The different stakeholder groups interviewed in the context of the endline evaluation of the project appreciated the project's various trainings and exchanges, which included not only the project ultimate beneficiaries but also other stakeholders. They also valued the project's approach to regular exchange and open communication and exchange, which allowed for honest feedback. Decision-making processes were widely considered inclusive.

For instance, multi-sector stakeholders appreciated the Seed Multi Stakeholder Platform that the Alliance held semi-annually in Mufindi District as a platform for feedback, exchanges and mutual learning related to the seed sub-sector. The learning platform consisted of representatives of the CARE – WWF Alliance, the local government authorities, Tanzania Research Institute (TARI), Agricultural Seed Agency (ASA), SAGCOT Center, Tanzania Official Seed Certification Agency (TOSCI), private sector in particular the seed suppliers and off-takers and agro dealers. Other participants were Tanzania Forest Services (TFS), Rufiji Basin Water Board (RBWB), and community organization leaders. The platform meetings offered an additional sounding board whose recommendations were incorporated into the decision-making. Meeting transcripts, as well as interviews with various stakeholders showed that the project team actively addresses issues raised.

The project facilitated two CBT alliances for Iringa and Mufindi district. This is a learning platform for CBTs who were formed and supported by other NGOs like World Vision, TAHEA, SOS etc. Another learning platform established under the steering of the project is the Community Environmental Award Scheme, which was launched in November 2023. This platform constitutes private and public sector actors in the water sector.

The development of sustainable and collective investments curriculum involved local project team, CARE-WWF global team and stakeholders were also consulted. However, its implementation involved the stakeholders in particular the LGAs. This has resulted in project participating ultimate beneficiaries venture into income generating undertakings, but also investments that were beneficial and sustainable for the environment. Nature based enterprises such as tree nurseries, tree planting for water sources conservation and for woodlots, beekeeping and honey businesses were among the enterprises that the community members who participated in focus group discussions and household interviews appreciated.

3.3.5 Impact of the project

The endline evaluation seeks to answer the following questions related to impact:

- What were the results achieved at impact and outcome level until the end of the life of the project (LOP)? What were the challenges faced by the project in achieving its targets, if any?
- To what extent did the project interventions integrate from one to another?
- How inclusive and equitable were the project processes and outcomes? To what extent did the project enable participation and benefits by all members of the society, especially women and youth?

Detailed presentation of the project impact is described under section 3.1 above

3.3.6 Sustainability

The endline evaluation seeks to answer the following questions related to sustainability:

- To what extent were the key stakeholders (e.g., Local Government Authorities, private sector actors) strategically engaged to contribute to improving the income, food security and natural resources conservation? What was the quality of the relationships and trust the Alliance built with the key stakeholders?
- To what extent were partners capable and motivated (technical capacity, ownership) to continue activities contributing to achieving the outcomes?
- To what extent did the project setup promoted mindset change towards CBNRM? What were indications of CBNRM continuity beyond the project period?
- Which results are likely to be sustained or not?

3.4 Partnerships

As mentioned in Coherence and Impact Objective 4, the project built good working relationships with the key stakeholders; all stakeholders interviewed spoke very positively of the project. The Alliance actively engaged them through various stakeholder for project coordination and collective action platforms from local to District levels. Through these platforms, the roles of each player were defined during the project implementation period and beyond. Stakeholders mentioned the work they plan to continue doing beyond the project period, including activities and relationships they will maintain with other stakeholders. Linkages to private sector actors was especially appreciated by other stakeholders. The endline evaluation team concluded that several key stakeholders are very likely to continue project interventions after December 2023.

For example, the establishment and registration of AMCOS engaged both the District Cooperative Officers of Mufindi and Iringa and members of the Regional Cooperative Union. By extension, the AMCOS are likely to continue to benefit from regulation, oversight, regulation, and support services from both the District Council and the regional body machineries. The AMCOS are thus expected to continue to facilitate access to markets and services, such as bulk purchase of inputs and finance from input suppliers and formal financial providers, respectively. However, the district councils and regional cooperative union will need to continuously address the issue of trust in leadership, particularly among the non-VBSLA-based AMCOS, for their sustainability.

3.5 Building community-based capacity for sustainable service provision

Lessons learned and experiences with the previous CARE projects showed that VSLA members traditionally build a culture of trust, facilitating members working together in collaboration. This has been one among the reasons CARE wanted to upscale access to financial services - and test the CSI model in this project. Most of the tasks related to technical expertise provision to the VSLAs and good management were undertaken by the CBTs.

These CBTs provide trainings as well as VSLA facilitation on a on-demand and pay-for-service basis. Beyond the VSLAs supported within the 21 target villages, the CBTs established 63 new VSLAs outside the project villages in the Mafinga township and wider Mufindi and Iringa Districts. World Vision Tanzania, SOS Village and TAHEA organizations contracted the CBTs to train their project staff with VSLA skills. The three organizations are reportedly rolling out the model, which indicates a high likelihood of not only sustained access to savings and loans amongst the 302 VSLAs in the 21 project villages but also upscaling of CARE's approach to financial inclusion beyond the project area. With the purpose to enhance sustainability of VSLAs, the end line evaluation found that 21 Community Based Trainers (CBTs) were trained and facilitated to provide and sustain the VSLAs trainings.

The Alliance approach to training / TOT was important to create local capacity. The CARE – WWF Alliance's approach has been very useful in cultivating local capacity in villages due to several key factors. ToT programs empowered communities from the community to become trainers, establishing a sustainable cycle of knowledge transfer that endures beyond the initial training phase, ensuring the continuity and longevity of capacity-building efforts.

Local trainers, intimately acquainted with the unique context, culture, and challenges of their villages, can tailor training programs to the specific needs and circumstances of the community, enhancing the relevance and effectiveness of the learning experience. These trainers facilitate better communication with villagers, overcoming potential cultural barriers faced by external trainers. Moreover, their understanding of cultural norms and social dynamics enables the delivery of training in a culturally sensitive manner, fostering trust and acceptance among villagers and increasing the likelihood of successful knowledge adoption. Recognized as relatable figures, local trainers can reach a larger audience, promoting higher participation rates and establishing a sense of trust and familiarity. The cost-effectiveness of training local individuals, coupled with their ability to address specific challenges, adapt content to local conditions, and quickly respond to changes, makes the investment in ToT a practical and sustainable approach. Empowering community members with skills and knowledge, ToT programs foster a sense of ownership and self-reliance, encouraging active participation in the development of the village. Establishing a network of trained local experts further contributes to a collaborative learning environment, where shared experiences and best practices collectively address challenges and contribute to overall community development. In conclusion the Alliance's investing in the training of trainers is an impactful and sustainable strategy for ensuring the transfer, retention, and application of knowledge within villages, fostering long-term development.

3.6 Shifting mindsets and linking with government authorities for community-led environmental stewardship.

The endline evaluation found that the communities' awareness of the importance of integrating livelihood activities and natural resources conservation, protection and regeneration was high.

The endline evaluation team believes there is also a high chance that communities, particularly those leaders and members who received training and/or are embedded in community-based conservation

groups and other environmental incentive structures - will continue to invest in sustainable livelihood and community-led ecosystem restoration and conservation activities. This is in large part due to the Alliance approach to facilitating conservation action through community-based group initiatives in close collaboration with and supervision of the village, ward, and district government leadership.

The Alliance also coordinated with RBWB and Tanzania National Parks (TANAPA) through the REGROW project. Not only has RBWB purchased water-friendly seedlings from conservation VSLA collective, sustainable enterprises, it has registered those VSLAs as key partners and clients in achieving its large-scale watershed restoration goals. Apart from providing a significant market for water-friendly trees, RBWB also supports the conservation VSLA nursery enterprise with seeds, working equipment and collects water user fees. Among those conservation VSLAs with conservation funds, this is another mechanism that will help to sustain locally led conservation action. The Alliance in collaboration with TANAPA, RBWB and LGAs reinstated the Community Environmental Award Scheme (CEAS) that brings together public and private sector actors. Through these new programs, the CEAS basket fund will be established to support communities in conserving water sources and environments.

The conservation VSLAs' nurseries are not the only enterprises linked to regional and local government authorities. Eleven collective enterprises (92% sustainable, the remainder environmentally neutral) have secured loans totaling 153,000,000 TZS from local government authorities. With this linkage to the local government funds, the District Councils of Mufindi and Iringa will continue to work with the eight and three VSLAs, respectively, to support enterprise success and ensure loan repayment but also look forward to the investments being their everlasting customers.

3.7 Private sector linkages for sustained market linkages and economic benefit flows

The Alliance engaged not only CPPs and FFBS members but also the public and private sector in demonstration plot establishment, given their interests in establishing economic relationships beyond the project period. The demonstration plots for common beans were established in collaboration with the public and private sectors, Raphael Group Company Limited an off-taker and TARI Uyole the government institution. The former wanted common beans that would grow their business, while the latter wanted to produce highly marketable common beans that can also enhance farmer food and nutrition security. Since the four selected varieties have high marketing potential, Raphael Group will likely continue to work with the SSPs to source good produce for their customers. Likewise, the project established Irish Potato demonstration plots with two seed multiplication companies, HZPC and Silverlands Ndolela Farm. During the project period, the two companies linked the SSPs with off-takers to ensure SSP markets for their produce and, by extension, continued demand for their companies' seeds. These economic relationships are mutually beneficial and, as with common bean value chain, likely to persist beyond the project period.

The above partnerships also achieved good results in engaging private sector actors, although there is room for improvement in case an opportunity would be available in the future. For example, through ensuring a balanced relationship between AMCOS and private sector companies where companies not only see SSPs as buyers of their products but also invest in them. Getting financing institutions and LGAs as funding providers of local loans was a challenging undertaking.

Although there was no evidence of private sector making formal arrangements with the SSPs or their organizations in the project area, several representatives of private sector companies expressed an interest to strengthen their collaboration with the project beneficiaries and other actors (e.g., providing advance payments to SSPs as mini loans, providing additional mentoring, and coaching and

following up with the businesses directly). This was the case with the seed multiplication companies, and the individual off-takers who did not want formal engagements with SSPs with the provided reasons of unreliability of the small-scale producers and changing market prices and other circumstances.

3.8 Cross-cutting theme: Gender and youth

The endline evaluation seeks to answer the following questions related to gender and youth mainstreaming:

- To what degree was the project implementation gender-responsive, addressing the needs of women not only on activity or output level, but also on outcome and impact level?
- To what extent did women, young people, the poor, people living with disabilities and other vulnerable groups effectively participate in project activities?
- To what extent were the specific needs of women, youth, the poor, people living with disabilities and other vulnerable groups reflected in project monitoring and reporting? Were achievements of the project equitable and inclusive?

First, the VSLA model is traditionally targeted to women and their unique financial barriers and needs. Thus, the core CARE-WWF Alliance project design - focused on its upscaling - was gender-responsive. Moreover, the project set a target that 60% of all the project beneficiaries should be women and 35% youth. Taking this into consideration, the project has sought to target these impact populations by being responsive to addressing their needs and priorities.

This was most evident at the activity and output level. In general, the MEL-system provided good quality, disaggregated data that allows assessment of disparities across gender and age. The project consistently tracked progress against these LOP proportional reach targets, with progress reports presenting percentages of participants that are women and youth.

The SGFSES project was successful in including and retaining women and youth participants because its interventions were responsive to them. Although some women and youth with special needs reportedly participated in the project, data disaggregation did not consider the participation of other vulnerable groups, progress reports did not disaggregate beneficiaries to include people living with disabilities. It is believed that the number of youths with special needs within the project remained low since it was not deliberately targeted. Recruiting youth with special needs to participate in the project could have been enhanced by working together with Youth with Disabilities Organizations (YOWDO). In future Alliance work, such organizations can help to adjust recruitment and training provision to ensure appropriate strategies for inclusion of youth with special needs in the project.

Although the number of participating women were always higher than that of male, the end line evaluation found that the average income of males was higher than that of females. This has been because of some cultural issues, ranging from males having more decision-making power and ownership of productive resources such as land, large livestock and women having shared their time and resources among income generating activities and household chores. Many opportunities and access of information favor more males than females. The FGDs held during the end line evaluation revealed that the main reason for males having a higher income than females were considered to be the following: Flexibility of men to engage in casual labor while women often have to do unpaid care/housework at home, men facing fewer/no cultural barriers in the community compared to women, women lacking choice of business opportunities as many of the occupations that were provided by the project were male dominant. According to the year 2 progress report, the Alliance

tried to address the limitations of occupational choice for women through CSI training that included how to identify enterprise opportunities and examples of diverse enterprises commonly embraced by women, such as batik making, liquid and bar soap making, snack and food vending, and other non-farm activities. Because such women- and youth-led collective enterprises were established relatively recently, results could not be measured yet.

4. LESSONS LEARNED AND RECOMMENDATIONS

This section seeks to answer the Alliance learning questions and elevate other lessons and recommendations to synthesize the most important insights from the endline data:

- How effectively did / how could the Alliance more effectively address barriers to women and youth engagement and empowerment in activities? How does that improve sustainable food/income generation and conservation outcomes?
- What linkages or pathways exist between conservation/sustainable natural management and food/income generation initiatives and security? How can the Alliance support an understanding of those linkages and an equitable distribution of benefits from those initiatives amongst community members?
- What trade-offs exist between conservation and development aspects of the project (for example, might investments undermine ecological sustainability)? What has and has not been successful in navigating them to maximize synergies, i.e., both conservation and development outcomes?
- How effectively did / how could the Alliance more effectively support communities to enhance their social, economic, and environmental resilience to market, climate, and public health stressors (e.g., price volatility, drought, COVID-19)?

The social fund from VSLA groups have been playing a big role in supporting members when they were sick, the survey which was conducted by CARE for health summit day, showed clearly that members were happy with the social fund than the health insurance scheme. Cash from the social fund could be obtained immediately when the group has been informed, and it started from 30,000 whereby a member could buy whatever medicine as directed by a doctor while with health insurance scheme sometimes had provided limited services.

The exit plans meeting organized by the Alliance in early February and June 2023 enhanced good relationship between the LGAs from the district level to the village level with the CBTs, PPs and the VSLA groups in general which is a good sign that the VSLAs will be in safe hands after the project life.

There is an increase in collaboration and cooperation amongst the Village leaders, WUAs, Conservation groups and ward leaders in implementation of Community conservation plan as Village leaders and ward leaders have now realized the benefits of water sources restorations in their respective areas. For instance, at Ufyambe, Lugodalutali, Utosi, Ukelemi, Igombavanu Villages to mention just few have started to get pipe and shallow well water from the conserve water sources.

Different engagements, training and capacity building conducted to the VSLA conservation groups have increased confidence in making decisions and communications amongst the group leaders and group members at large. For instance, conservation leaders are confident to ask village leaders on implementation status of VLUPs, natural resources use and management and now the voice of women have been amplified everywhere around the 21 project Villages.

4.1 Insights on Learning Questions and Other Lessons

Brief lessons learned emerging from the data are presented below:

- The planting to avocado trees, being one of potential trees for income generation and conservation of natural resources comes with a number of challenges. The first is its high water usage especially at the early stages of growth. The fruit tree have attracted large investors, who have been seen to open up large farms in forested lands. This has the risk of causing deforestation and drought in the near future, as the virgin land is turned into production land.
- The implementation of VSLAs have helped the village land use committee, village environmental committee members and village council leaders to get into engagement with conservation activities.
- The Alliance-promoted VSLA-based AMCOS model has several benefits: in addition to attracting farmers with its core collective marketing promise, the requirement that all AMCOS members should also be VSLA members both accelerated VSLA group formation and enhances trust in leaders, a critical component of successful AMCOS.
- The Alliance-piloted CSI model holds significant promise: Collective Investment trainings have not only supported VSLA groups in investing together but also have supported the individual members in starting their enterprises.
- VSLA members are confident to speak out on the enterprises which are destructive to environment in front of other members compared to period before the CSI training.
- VSLA members can see the benefits of individual and group investments that are made.
- Women have been in front line in undertaking collective investments activities at a group and individual level, which has resulted into family stability and reduced GBV issues as they also have something to contribute to their families.

4.2 Recommendations

- According to the representative of the Rufiji Basin Water Board, there is need to put beacons and fences in all water sources/ catchments to enhance protection against encroachment by clearing the demarcation for the communities to know the boundaries.
- As conservation activities take time to give tangible benefits, as well as since the conservation activities are not only for income generation rather they contribute to wide global benefits, there is need to incentivize conservation groups as well as providing reliable funding to support their conservation activities.
- Youth are mobile as they need quick income thus they are not readily available to participate into the conservation activities. As this is the largest and most energetic group in the communities there is need to be incentive them. Youth have the potential to protect the natural resources through patrolling for prevention of illegal harvesting of natural resources, there is need to optimize their involvement in conservation activities. These youth tend to be mobile and move away from their villages in search for quick income earnings.
- Address challenges in formal financial services access by enhancing the alignment between VSLAs and knowledge sharing platforms with formal financial solutions.
- Tailor market-oriented skills training to local contexts and ensure practical applicability, emphasizing direct market linkages, control of side selling, and agricultural product value addition.
- Provide adequate time for training and strengthen linkages to relevant service providers to enhance SSPs capacity in value addition and processing.

- Conservation groups need to be given more training and capacity strengthening on different aspects related to conservation and restoration of watersheds, such as laws and policies, to increase their confidence in defending conservation.
- Respondents who participated in the endline evaluation showed that villagers are digging shallow wells which basically drain water from the catchment areas to cater for either home consumption, livestock, or irrigation activities. As population grows, demand for water increases, there is a threat that large amounts of water would be drained from the catchments. Farmers recommend digging deep wells in single points per village and distribute to the villagers. Hence there could be control of the amount of water consumed in the villages.
- To ensure the results are equitable and inclusive at outcome and impact level, it would be important to expand the representation and strengthen the capacities of women and youth in leadership positions, not only in VSLAs/CSIs, FFBS, and AMCOS, but also in diverse community-based conservation groups.

5. CONCLUSIONS

Overall, the CARE - WWF Alliance project achieved its objectives as evidenced by the endline survey, FGDs, KIIs and general satisfaction of the participating communities. As presented, the SGFSES project met all the six OECD evaluation criteria, namely relevance, coherence, effectiveness, efficiency, impact, and sustainability. The project implemented interventions that addressed the needs of the targeted communities, as it improved their livelihoods. Working with multi-sector stakeholders and organizations in a coordinated and complementary fashion, the project achieved its objectives of improving income, food, and nutrition security, while enhancing the access to and flows of both ecosystem and market services from the wider ecological and organizational landscapes. The endline evaluation revealed a heightened awareness, motivation, and action of communities to sustainably manage ecosystems and their natural resources for the betterment of their livelihoods. They understand the importance and long-term benefits of the importance of nature conservation natural resources, which was not the case before the project. The Alliance modality of project delivery - working with other stakeholders, including market actors - has built a strong foundation for the continuity of economic, social, and ecological benefit flows beyond the project period.

6. LIST OF ANNEXES:

6.1: Progress against Baseline and LOP Targets as Recorded at Endline in December 2023

CARE - WWF Alliance Progress against Baseline and LOP Targets as Recorded at Endline in December 2023							
Project Objective	Indicator Levels	Indicator	LOP targets	Baseline	Achievements December 2023	% Achievement	Remarks
Goal - By December 2023: 5,000 farming families (22,500 individuals, at least 60% women) in Tanzania will increase their household incomes by at least 60%, while improving the ecosystem services in production landscapes.	Output indicator	# of farming households reached	5,000 farming families	253 HHs Male HH:217 FemaleHH:36	7,029 HH (51% Female headed), 10,961 HH direct beneficiaries (55% women, 34%youth) across all 21 project villages.	140.5	Achieved
	Output indicator	# of small-scale producers reached	5000 HHs (22,500 Individuals)		10,961 HH direct beneficiaries (55% women, 34%youth) across all 21 project villages	219	Achieved
	Impact indicator	<i>% of increase in household income</i>	60%	Average Income:1,265,658 Female HH:673,200 Male HH:1,384,150 Youth Average Income:910, 473	Average income: 2,559,543; Female HH 1,728,015; Male HH 3,391,071	102.2	Achieved
	Impact indicator	<i>average # months of adequate household food provisioning</i>	Baseline + 3 Months Targets:4+3=7	4	7.4	105.7	Achieved

	Impact indicator	<i>% change in vegetation cover in the water sources/wetlands and forests</i>	TBD	37,141.9 ha		2.4	Achieved
	Impact indicator	<i>% change in water discharge</i>	reduced number of dry months, change in flow % (targets TBD)	0.304 cm-3 recorded 1 July 2021	887.25 ha	213% and 139% in Utosi and Igomaa rivers respectively	Achieved
1. Extend informal savings groups and collective access to financial services to 5,000 farming families (22,500 individuals), especially women.	Outcome	Average value of savings mobilized by VSLAs groups	6,000,000TZS	n/a	2290495 (\$916)	38	Partially achieved
	Outcome	Average value of loans dispersed by VSLAs groups	7,500,000	n/a	2068192 (\$827.27)	27.5	Partially achieved
	Output	# VSLAs established and/or supported;	300 VSLA groups;	n/a	302 (269 registered by BoT)	100.6	Achieved
	Output	# VSLA members	6000 members (60% women, 35% youth)	n/a	4215 members (71% women, 39% youth)	70.2	Partially achieved
	Output	# of paraprofessional trainers trained	42	n/a	42	100	Achieved
	Output	# of VSLA and non VSLA learning platforms and exchanges visits.	10	n/a	8 (all beneficiaries had opportunity to learn)	100	Achieved

2. Increase sustainable investment and production to improve small-scale farmer income by 60% and food security by 20%.	Impact indicators	<i>INCOME and FOOD SECURITY (see goal level)</i>					
	Outcome indicators	% small-scale producers adopting at least 2 sustainable production practices	80%	61%	236	91.6	Achieved
	Outcome indicator	% increase in crop yields using sustainable practices	Baseline +30% Target common beans 430.69 Target Irish Potatoes:1534.89	Common beans: 331.3 Kg/acre Irish potatoes : 1435.5kg/acre	Beans: 265Kg/acre (Traditional), 633Kg/acre (Sustainable); Potato: 4,663Kg/acre (Traditional) and 7,500Kg/acre (Sustainable)	Increase by 91% (common beans), and 60.8% (Irish potatoes)	Achieved
	Outcome indicator	# collective, sustainable enterprises established	20	TBD	79	395	Achieved
	Outcome indicator	# sustainable investments made by VSLA members	20		74	370	Achieved
	Output level	# of FFBS established and supported	40		34 (Served all expected beneficiaries)	85	Achieved

	Output level	# of FFBS members	600		768 (3995 women or 53% women, 36% youth)	7507 farmers through FFBS since inception of the phase II project in 21 villages, of which 3995 (53% women, 36% youth).	Achieved
3. Improve ecosystem resilience and functions in production landscapes in Ndembera sub-catchment of the Great Ruaha River.	Impact indicator(s)	<i>VEGETATION COVER CHANGE, WATER DISCHARGE (see goal level)</i>					
	Outcome indicators	# of hectares officially under of village land use plans	area of 21 villages, including 6 villages where the Alliance facilitated VLUP		101,507.52 ha	n/a	Achieved
	Outcome indicator	# and size (ha) of water sources sustainably managed by communities in the Ndembera sub-catchment	210		388	184.7	Achieved
	Output Indicator	# trees planted in the water sources	100,000		138,707	138.7	Achieved

Outcome	#, % of NR conflicts resolved	10	n/a	Decreased by 93%	95	Achieved
outcome	hectares of forest sustainably managed by communities in the Ndembera sub-catchment	10	TBD (during the VLUP)	4818 ha	n/a	Achieved
outcome	# of small-scale producers w/ land titles	total #; 3000 50% women, 30% youth	TBD(during the VLUP)	10,182 (33.8% women, 23.7% youth).	339.4	Achieved
output	# coservation CBOs (VNRCs,conservation groups, WUAs) strengthened/support ed and # of community members trained in ILWM	21 CBOs; 1500 members trained		24 conservation VSLAs groups	114.2	Achieved
output	# of government local institutions (PLUM /VLUMC/VLC/VC/war d councilors /members) % women trained on ILWM	110 (VNRC-21, WUAs 24, VLUMCs,VLC,VC@21; PLUM-2)		36 (50% women, 44% youths VLUMC, 24 VLC (54% women, 8.3% youth), 78 (55% women, 20.5% youths) VC, 16 PLUM (total 154)	140	Achieved

4. Strengthen public and private partnerships to improve small scale producer access to extension, inputs, markets, financial services and benefits from ecosystem services.	Outcome	% increase in small-scale producers with access to markets	Baseline +50% Targets=14.85	Small scale producers with access to markets:9.9%	87% (59% Females, 28% Males) (+77%)	154	Achieved
	Outcome	% increase of small-scale producers with access to inputs	Baseline +50%	Access to inputs: 26.7%	26.7% (+67.3%)	94	Achieved
	outcome	Total value of loans accessed from formal financial institutions by VSLAs or their members	XX,XXX TZS (50% of individual loans by women and youth)				Partially achieved
	output	# of agrodealer/farmers linkage established	5				Partially achieved
	output	# professional and paraprofessional trainers trained			42	100	Achieved

Source: Field data (for achievements only), December 2023

Annex 6.2 Experience of shocks and its effects seriously effect normal living conditions

	Age group	Did your household experience any of the following in the last 2 years?					Did this seriously affect your normal living conditions?				
		No		Yes		Grand Total	No		Yes		Grand Total
		Female	Male	Female	Male		Female	Male	Female	Male	
Heavy rains	15-35	58	18	9	7	92	53	19	7	4	83
	36-45	44	21	4	5	74	40	23	2	3	68
	46+	33	16	7	4	60	32	14	5	3	54
	Grand Total	135	55	20	16	226	125	56	14	10	205
Severe illness, injury or death of a household member	15-35	58	24	9	1	92	51	19	9	3	82
	36-45	38	20	10	6	74	34	19	7	7	67
	46+	29	14	11	6	60	28	12	8	4	52
	Grand Total	125	58	30	13	226	113	50	24	14	201
Livestock death	15-35	47	19	19	6	91	43	18	18	6	85
	36-45	40	20	7	6	73	38	18	5	8	69
	46+	32	18	8	2	60	33	15	4	1	53
	Grand Total	119	57	34	14	224	114	51	27	15	207
Crop failure	15-35	29	11	38	14	92	30	14	36	11	91
	36-45	18	11	30	15	74	17	12	26	14	69
	46+	16	7	24	13	60	18	7	21	11	57
	Grand Total	63	29	92	42	226	65	33	83	36	217
Price increase	15-35	21	6	46	19	92	16	8	48	17	89
	36-45	14	4	34	21	73	11	6	32	18	67
	46+	11	10	29	10	60	13	9	26	9	57
	Grand Total	46	20	109	50	225	40	23	106	44	213
Market collapse	15-35	19	6	47	19	91	20	7	44	18	89
	36-45	13	5	35	20	73	9	7	33	18	67
	46+	16	4	24	16	60	18	3	21	15	57
	Grand Total	48	15	106	55	224	47	17	98	51	213
Extreme hunger / famine	15-35	62	19	3	6	90	58	19	3	3	83
	36-45	40	22	7	3	72	35	19	7	5	66
	46+	29	19	10	1	59	28	16	9		53
	Grand Total	131	60	20	10	221	121	54	19	8	202
Extreme poverty / bankruptcy	15-35	55	20	11	5	91	51	20	10	2	83
	36-45	42	22	6	3	73	35	20	7	5	67
	46+	31	16	8	4	59	29	14	8	2	53

	Grand Total	128	58	25	12	223	115	54	25	9	203
Drought	15-35	50	21	16	4	91	46	20	15	3	84
	36-45	35	20	13	5	73	33	19	10	6	68
	46+	28	18	12	2	60	28	14	10	2	54
	Grand Total	113	59	41	11	224	107	53	35	11	206
Floods	15-35	63	23	3	2	91	59	23	3	1	86
	36-45	43	21	3	2	69	42	22		1	65
	46+	35	19	5	1	60	35	16	2		53
	Grand Total	141	63	11	5	220	136	61	5	2	204
Crop pests and diseases	15-35	27	10	39	14	90	30	14	32	10	86
	36-45	12	10	36	15	73	13	12	30	13	68
	46+	14	8	25	11	58	16	7	23	9	55
	Grand Total	53	28	100	40	221	59	33	85	32	209
Inability to plant crops	15-35	40	18	25	7	90	41	21	21	2	85
	36-45	24	15	22	10	71	23	15	20	9	67
	46+	19	11	20	9	59	20	11	18	6	55
	Grand Total	83	44	67	26	220	84	47	59	17	207

Annex 6.3 Reasons for Inability to plant crops and/or crop failure

Reason	Age group	Female	Male	Grand Total	Percent
Pest	15-35	49	14	63	31%
	36-45	37	15	52	25%
	46+	19	11	30	15%
	Grand Total	105	40	145	70%
Problems with seeds	15-35	37	10	47	23%
	36-45	28	15	43	21%
	46+	24	14	38	18%
	Grand Total	89	39	128	62%
Problems with fertilizer	15-35	34	6	40	19%
	36-45	21	11	32	16%
	46+	20	7	27	13%
	Grand Total	75	24	99	48%
Delay from service/input providers	15-35	21	8	29	14%
	36-45	16	12	28	14%
	46+	22	6	28	14%
	Grand Total	59	26	85	41%
Floods / heavy rains	15-35	5	4	9	4%
	36-45	8	3	11	5%
	46+	5	1	6	3%
	Grand Total	18	8	26	13%
Monkeys / wild life	15-35	1	0	1	0%

	36-45	0	0	0	0%
	46+	0	0	0	0%
	Grand Total	1	0	1	0%
Drought/ no water	15-35	24	9	33	16%
	36-45	12	6	18	9%
	46+	9	3	12	6%
	Grand Total	45	18	63	31%
Other	15-35	3	0	3	1%
	36-45	1	1	2	1%
	46+	1	0	1	0%
	Grand Total	5	1	6	3%

Annex 6.4 Shocks/stresses experienced in the last 2 years VS Measures taken to overcome such shock/stresses

Measures taken	Shocks/stresses experienced in the last 2 years												
	Heavy rains	Severe illness, injury or death of a household member	Livestock death	Crop failure	Price increase	Market collapse	Extreme hunger / famine	Extreme poverty / bankruptcy	Drought	Floods	Crop pests and diseases	Inability to plant crops	Average
Nothing	0%	5%	2%	2%	3%	2%	3%	3%	4%	6%	3%	2%	3%
Sell animals	33%	30%	56%	39%	66%	43%	30%	35%	62%	19%	40%	37%	41%
Sell other assets	17%	16%	21%	25%	37%	21%	23%	38%	52%	19%	22%	17%	26%
Worked more	53%	65%	65%	62%	77%	61%	73%	76%	67%	69%	69%	74%	68%
Started a new job	19%	28%	35%	30%	41%	33%	27%	32%	33%	19%	34%	35%	31%
Migrated	0%	0%	4%	2%	2%	1%	0%	0%	0%	0%	2%	2%	1%
Withdraw children from school and sent them for wage employment	6%	2%	4%	2%	3%	3%	7%	8%	0%	6%	1%	2%	4%
Borrowed from relatives/friends	14%	23%	33%	18%	15%	15%	7%	22%	13%	19%	21%	22%	18%
Used savings	44%	58%	46%	51%	50%	50%	43%	32%	29%	38%	49%	55%	45%
Borrowed from informal institutions (VSLA)	64%	65%	50%	45%	60%	59%	40%	38%	23%	56%	51%	61%	51%
Reduce food consumption expenditures	33%	28%	25%	27%	30%	29%	33%	19%	23%	31%	25%	29%	28%
Borrow money from a formal lender / bank	8%	0%	2%	3%	8%	7%	3%	0%	0%	0%	4%	5%	3%
Reduced non-food expenditures	36%	42%	19%	26%	26%	27%	20%	30%	13%	31%	26%	31%	27%

Consumed lower cost, but less preferred foods	19%	19%	4%	13%	16%	16%	17%	16%	4%	31%	11%	19%	15%
Moving agricultural activities	3%	5%	0%	8%	9%	9%	7%	3%	0%	0%	7%	9%	5%
Participating in collective action	0%	5%	0%	8%	8%	7%	3%	3%	2%	0%	6%	8%	4%
Sought help, training or material, provided from Government	0%	7%	2%	2%	2%	1%	0%	3%	2%	0%	2%	1%	2%
Changed crop choices to avoid challenge (crop adaptation)	11%	26%	21%	14%	8%	6%	13%	22%	17%	25%	14%	10%	16%
Participate in community groups or meetings to improve collective response to these challenges	8%	9%	2%	10%	17%	17%	10%	3%	2%	13%	19%	27%	11%
Sought help, training or material, provided by an NGO	3%	5%	4%	2%	2%	1%	0%	0%	0%	0%	3%	1%	2%

6.5: Findings of Key Informant Interviews

Name of District: MUFINDI

Name of Respondent:

Position: The District Heads of Agriculture, Livestock and Fisheries (DALFO)

1. What is the district's priority crops?

District's priority crops were maize, Irish potatoes, beans, green peas, wheat, tomatoes, carrot, cabbage, Sunflower, tea and avocado

2. What is the current level of agricultural productivity for Common beans, Irish potatoes, maize and other dominant crops?

Crop	Average yield per acre (Ton)
Maize	1.5
Irish potatoes	8
Beans	0.6
Green peas	0.6
Wheat	0.6
Tomatoes	12
Carrot	10
Cabbage	20
Avocado	15
Sunflower	0.6

3. i) How has climate change affected crop yields to date?

Climate change caused serious threats to farming and food security, as a result of crop failures and erratic rainfall, communities had increasing difficulties meeting their food needs through the year and were unable to pay for social services such as school fees and medicines.

The fragile nature of the soil and land formation made the area highly vulnerable to erosion, which was eating into the fields. Herds of cattle roamed the area, eating whatever they could find. There were few trees left: the rest had been cut down for firewood. Poor farming practices, which failed to yield rewards for farmers, made soil erosion worse while the area experienced heavy soil structure destruction, soil fauna depletion, and soil moisture loss.

ii) What measures have been promoted to mitigate and/or adapt to effects of climate change in their communities such as warming temperatures, drought, heavy rains and flooding?

- The use of Farmers Field and Business School (FFBS)

The initial objectives of the FFBS were to involve members in collective activities in which soil erosion controlled, environmental protected (reduction of gullies), engaged in income generating activities and promoted CSA to increase yield. To meet these goals, the FFBS participants conducted the following:

- Employed erosion-control technologies such as tree planting (including creating tree nurseries to raise and care for tree seedlings, the tree nurseries include water friendly tree and fruit seedlings)

- Adopted sustainability measures such as rain harvesting techniques, crop rotation, and intercropping (legume intercropping, especially of beans and maize, Irish potatoes and Soybean was new for the farmers and were highly popular as it provided a very profitable and easy to sell crop).
- Developed new income sources such as beekeeping, vegetable production, and raising pigs, chicken and other small animals. Also, some groups started collective Investment to increase income for the groups and their members.

iii) To what extent are communities adopting these practices?

- Communities were aware of those practices from which soil erosion controlled, water friendly trees were planted by buying from the nurseries and planting to their areas, crop rotation and intercropping were practiced.
- In a farmer field and business school (FFBs), farmers learned how to improve production by observing, analyzing, and trying out new ideas on their own fields. They met every week from planting to harvest, checked on how the crops were growing, examined soil moisture, counted the number of pests and beneficial creatures such as earthworms and spiders, and strategized possible solutions to the problems encountered.

4. What is the most relevant climate, water and land use policies and regulations that are enforced at district level? For instance, to what extent has ASDP II and CSA guidelines been rolled out to / implemented / enforced with farmers and other water users?

5. What mechanisms exist to roll out relevant regulations at the community level? What opportunities and challenges exist for their implementation or enforcement?

Communities developed by-laws of environmental conservation, livestock grazing and bush fires were controlled. These included measures for self-governance, which facilitated transparency and encouraged collective responsibility and provided poor, female group-members equal voice and leadership opportunities. For example, you're not allowed to do any human activities 60 meter from water source.

Challenge:

Cultivation of vinyungu near water source was still a problem.

Opportunities:

- The FFBs Approach used to scale up Climate Smart Agriculture adaptation.
- Presence of Development stakeholders such as CARE/WWF Alliance and NADO promoted integrated agricultural production and environmental conservation.
- Mufindi district Council and other Stakeholders continued to train and Agricultural paraprofessionals were used to help Extension Officers in their respective villages.

6. i) What is the status for farmers practicing Good Agronomic Practices?

- Farmers increased crop production and productivity
- Farmers increased income and were able to pay for social services such as school fees, medicines and buy agricultural inputs for next season.

ii) To what extent are farmers adopting conservation agriculture and climate smart agriculture and what is the impact of the CARE-WWF Alliance project on this trend?

- Irish Potato and common beans were adopted as a business/cash crops by the local communities. The project for the first demonstrated that the Irish potato in particular can be grown and perform well under lower altitude with relatively high temperature.

- The Mufindi district under Agriculture office has adopted Irish potato as one of the strategic crops in the lower Mufindi area- where the project operated and beyond. This covered Sadani, Igombavanu, Ikweha and nearby ward of Isalavanu which were located at Mafinga Town Council.
- Use of certified beans seed was increased to farmers
- CARE /WWF Alliance trained 24 Quality Declared seed (QDS) in Mufindi district 2 from each project village.
- Input fund to each group member was introduced and helped farmers to get fertilizers, quality seed and pesticides timely.
- The project had significantly transformed community knowledge on sustainable agricultural practice, like use of quality seeds, planting at recommended spacing, cereal-beans rotation, better managing agrochemical wastes and no burn of the farms as means of clearing the farms prior planting.
- Conservation practices adopted and enabled farmers, both individually and collectively, adopted new activities that provided them with immediate income.
- Conservation agriculture also resulted in savings, as farmers reduced their use of inputs and saved money by not having to buy expensive fertilizers and herbicides.
- Households have also reported easy availability of water—both for domestic use such as washing clothes and utensils and for their livestock. Previously, villagers had to walk up to two km to fetch water

7. What is the state of post-harvest crop management for Irish Potatoes and Common beans, as well as the staple crops like maize?

i) Through project initiatives the state of post-harvest crop management for Irish potatoes improved Irish potatoes farmer knew:

- The maturity period for Irish potatoes.
- The visible signs that the potatoes were ready for harvesting.
- The right time of the day and the best weather to harvest potatoes
- How to harvest potatoes
- How to sort and grade potatoes
- The right condition for storing potatoes
- The best way to transport potatoes
- Most of Irish potatoes farmers of Mufindi district sell the crop direct from their farms.

ii) The postharvest management of maize and beans in the district.

Production and storage of these grains before project was greatly hampered by inappropriate storage practices and pest infestation. CARE and WWF Alliance trained farmers on aspects of post-harvest storage practices and management in the project villages and farmers increased production of these crops by reducing crop losses.

8. What market outlets exist around project area and beyond?

Market existed around the project area and beyond for round potatoes, beans and maize were Mafinga, Makambako, Madibira, Iringa, Mbeya and Zanzibar Markets. Also, RAPHA group and TANZANICE Companies for beans and Irish potatoes respectively.

Do farmers have access to reliable market for their produce?

The respondent said Yes, farmers had access to reliable market for their produce

What are their challenges in accessing good markets and how has the project helped to overcome those challenges, if at all?

Challenges:

- Lack of market information
- High cost of transport
- Unpredictable weather condition
- High cost of agricultural inputs

The project helped to overcome the challenges through:

- Market committee from group level, village and ward level formed and helped farmers to search for markets and sell their crops collectively.
- Public- private partnership organized for market information system.
- Market survey was conducted by the farmers organized by CARE/WWF Alliance at Nanenane Mbeya region.
- Match- making were conducted in every project village on Farmers field days where by farmers met with other stakeholders from input suppliers, buyers to processors.
- 5 AMCOS formed in Ugenza, Lugodalutali, Mapogoro, Kibada and Ukelemi villages.

9. What is the status of women/youth engaging in agriculture?

About 61% of women and 395 men were involved in agriculture among them 45% were youth

10. What are their challenges in participating in and benefiting equitably from agricultural value chains, and how has the project helped to overcome those challenges if at all?

Challenges:

- Low capital for agriculture
- Lacked focus on post-harvest management and processing technologies.
- Some financial institutes gave not loans to small scale farmers
- High cost of agricultural inputs
- Limited Agricultural Extension Officers

The project helped to overcome those challenges by:

- Saving and loans groups were formed, where women and youth accessed agricultural loans.
- Input fund introduced for each of group member according to their plan.
- Collective investment introduced to the saving and loans groups
- The linkage between Mufindi District Council and women and youth groups was made, and the group accessed loan.
- 12 CBTs and 24 Agricultural paraprofessionals were trained to help Government Extension Officers.
- Working tools provided to 24 Agricultural paraprofessionals and CBTs.
- Farmers especially women and youth were trained on beans and potato value addition.

Name of Village: MAKONGOMI

Name of Respondent:

Position: Village Executive Officer

1. What is the Village population?

-The village population is 3500 where 1200 male and 2300 female

2. What is the total number of households in this area?

-The total number of households is 350 since there was no data for female headed and male headed

3. What is status and what are trends of your community's population regarding income/poverty and food/nutrition security?

-Food security had overall increased, with a significant improvement in maize production, reaching up to 30 bags per acre, particularly with the application of fertilizers and the use of oxen in farming.

However, the income levels remained low, primarily due to 95% of farmers relied on rainfed farming. Also, there was a reliance on food crops for generating income, as there were no dedicated cash crops. Crops such as maize, sunflower, beans, vegetables, tomatoes, and African eggplants served both as staple food sources and as potential cash crops

4. How did COVID-19 affect peoples' health and livelihoods in your community? To what extent do you feel that the pandemic is behind us v. still affecting people in your district and why?

-No cases reported for Covid peridermic however people were vaccinated

5. What are the climate trends in your community? What climate change impacts exist to date? E.g., how has climate change affected crop yields to date?

- Drought conditions were gradually diminished. However, the reliability of rainfall remained a concern, with a delayed start observed this year. Typically commencing in November, the rains in 2023 began on December 5

The impact of drought included reduced crop yields, occasionally intensified by the presence of pests and diseases. "Drought conditions are gradually diminished. However, the reliability of rainfall remained a concern, with a delayed start observed this year. Typically commencing in November, the rains in 2023 began on December 5.

The impact of drought includes reduced crop yields, occasionally exacerbated by the presence of pests and diseases.

6. What is you're the level of your community's awareness and knowledge about climate change? In general, what is the attitude towards climate change in your community?

- The level of awareness in our community regarding climate change was moderated. While many residents were familiar with the term 'climate change,' there was a varied degree of understanding about its causes and potential impacts. Efforts had been made by government, CARE-WWF project to disseminate information through community trainings and workshops, but ongoing education was necessary to enhance overall awareness,
- The community generally exhibited a positive attitude towards addressed climate change. There was recognition that environmental changes were occurred, and residents were increasingly willing to adopted sustainable practices like planting trees, conserving water catchments, practicing conservation agriculture. However, there was still work to be done in terms of translated awareness into concrete actions, and some community members needed further encouragement and supported to made meaningful changes in their daily lives

7. Are you aware of how the climate is projected to change in the future?

- Respondent said that, he was not aware with regarded on how the climate was projected to change in the future. He was uninformed about future climate projections

8. What measures have been promoted to mitigate and/or adapt to effects of climate change in their communities such as warming temperatures, drought, heavy rains and flooding? To what extent are community members adopting those practices?

The establishment of an environmental committee stands as a pivotal initiative dedicated to safeguarding the village forest and water sources from environmental degradation. In tandem with this, the village government enforces bylaws to fortify the protection of these vital natural resources. An illustrative example of such enforcement occurred in August 2023 when a penalty was imposed on an individual engaged in unauthorized charcoal production within the village forest.

Further fortifying the environmental resilience of the community, a concerted effort had been made to mobilize residents to plant a minimum of two trees per household annually. This collective action contributed significantly to the preservation and enhancement of the local ecosystem.

In response to the challenges posed by climate change, local farmers adopted adaptive strategies. These included the cultivation of drought-resistant crops, the utilization of early-maturing seeds, and the implementation of innovative farming techniques such as crop rotation and intercropping. Additionally, farmers diversified their sources of income and engaged in supplementary activities such as small-scale businesses, livestock keeping, and casual labor.

A notable proportion of the community had embraced the principles of conservation agriculture, demonstrating a commitment to sustainable farming practices. This, coupled with a proactive approach to diversifying income-generating activities, served as a robust coping mechanism against the adverse impacts of climate change. The multifaceted efforts undertaken by the community underscored their resilience and dedication to both environmental conservation and economic sustainability.

9. What is climate, water and land use policies and regulations being implemented in your village?

Within the village, comprehensive measures had been instituted to manage land use effectively, including the implementation of a structured land use management plan and a community-based forest management plan. These plans served as crucial frameworks for sustainable resource utilization and environmental conservation.

Also ensured the seamless execution of these plans, the village had put in place established by laws that govern their implementation. These bylaws played a pivotal role in regulating and guiding the community towards adhering to the principles outlined in the management plans, fostering a harmonious balance between development and environmental preservation.

10. What are the current challenges facing small-scale farmers in your community? (Inputs, markets, post-harvest, extension services, access to finance, etc) How has the project mitigated these challenges in your community, if at all?

The challenges faced by small-scale farmers in the community were diversified and interconnected. One prominent issue was the scarcity of crucial agricultural inputs such as fertilizer, seeds, pesticides, and herbicides. This shortage hampers the farmers' ability to optimize their yields and maintain sustainable farming practices.

Financial services within the community predominantly relied on Village Savings and Loan Associations (VSLAs), with the expectation that Agricultural Marketing Cooperative Societies (AMCOS) will facilitate collective input purchasing. This reliance underscored a need for broader financial inclusion strategies.

Another significant challenge pertained the absence of a reliable market, specifically concerned the stability of prices for agricultural produce. Farmers often contended with uncertainties, made it difficult to plan and manage their resources effectively.

Illegal measurement practices by brokers further exacerbate the challenges faced by our farmers. Unfair trade practices hinder the economic prospects of the community, emphasizing the need for measures to ensure equity and transparency.

Additionally, the village lacks a storage facility, contributing to post-harvest losses. This absence of infrastructure further amplifies the difficulties experienced by farmers in preserving their harvest and maintaining the quality of their produce.

In response to these challenges, the CARE-WWF alliance has implemented a multifaceted approach. Initiatives such as land use planning have been instrumental in reducing land conflicts, creating a more stable environment for agricultural activities. The alliance also focuses on capacity-building for farmers through training sessions on good agricultural practices, including spacing planting, intercropping, crop rotation, and the use of improved seeds. Financial inclusion measures involve the introduction of VSLAs, collective investments, and the establishment of AMCOS.

The alliance extended its impact beyond agriculture, engaged in environmental conservation efforts such as tree planting in catchment areas and supporting beekeeping enterprises. Additionally, the project actively supported the provision of essential seeds, such as beans, Irish potatoes, and soya, reinforcing the agricultural foundation of the community. Through these concerted efforts, the CARE-WWF alliance addressed the interconnected challenges faced by small-scale farmers, promoting sustainability and resilience within the community.

11. What is the current state for farmers practicing Good Agronomic Practices? To what extent are farmers adopting conservation agriculture and climate smart agriculture? How has the project affected adoption, if at all?

-Farmers adopted Good Agricultural Practices (GAP) was commendable, evident in their diligent implementation of practices such as appropriate spacing during planting, early planting, intercropping, precise fertilizer application, crop rotation, and the utilization of improved seeds within their farms.

The project had played a pivotal role in fostering these positive changes. Interventions included the introduction of Farmer Field Business Schools (FFBS), the establishment of Village Savings and Loan Associations (VSLAs) and environmental groups, advocacy for the formation of Agricultural Marketing Cooperative Societies (AMCOS), the training of paraprofessionals, and the promotion of tree planting and tree nursery enterprises. These strategic interventions had a profound impact, lead to widespread adoption of Climate-Smart Agriculture (CSA) practices throughout the entire community in the village

12. Please provide the List of existing community groups, type of groups and activities of the groups (there are 12 groups)

Group type/Name	Focus of the group	Number of Members		Contact Information of leader
		Male	Female	

13. What is the status of environment / natural resources in your community? What challenges exist for sustainable management and use? What opportunities exist for conservation? How has the project affected these challenges and leveraged opportunities, if at all, over the last three years?

The community had done well in conserving water resources and catchment areas. The forestry was generally in good shape, but there is an issue with people making charcoal.

However, we challenged in ensuring sustainable management and use. One challenge was poor leadership in overseeing laws related to resource management. Additionally, the depth of rivers poses a problem as our community lacked adequate technology to utilize them effectively.

On the bright side, there were opportunities for conservation. There was available land, water sources, and healthy forests. The community was also aware and supportive of conservation efforts.

Over the last three years, the project had made positive strides. Village had received valuable advice, aided them in making informed decisions for resource management. Moreover, the project provided essential training to the Village Natural Resource Committee (VNRC), paraprofessionals (PP), and Community-Based Trainers (CBT) on natural resource conservation. These efforts contribute to overcoming challenges and leveraging opportunities, reinforcing our community's commitment to responsible resource use and preservation.

14. What are main sources of water in this area? What challenges exist with sustainable water management and use? What opportunities exist for watershed restoration? How has the project affected these challenges and leveraged opportunities, if at all, over the last three years?

- In this village, the primary sources of water were 16 catchments, 7 wells, and 1 river. However, sustainable water management faced challenges, particularly with livestock grazing in farms and catchment areas, as well as the threat of bushfires.

Opportunities for watershed restoration are present, notably through the engagement of environmental groups that can mobilize the community for conservation efforts. Additionally, the village policy of every household planting at least two trees per year contributes to the potential restoration of watersheds.

Over the last three years, the project had made a positive impact. Planting trees had been a key initiative, enhanced the environment and contributed to watershed restoration. Educational efforts

had also played a role in creating awareness about sustainable water management. Importantly, the project had actively discouraged people from cultivating near water sources, mitigating potential harm to these vital areas. By addressing challenges and capitalizing on opportunities, the project had been instrumental in promoting responsible water use and contributing to the restoration of watersheds in the community.,

15. How does sustainable natural resource use contribute to your community's livelihoods (income and food security)?

- Sustainable natural resources use contributed to income and food security to community members, people were used water for irrigation farming, tree nursery raising, beekeeping enterprise

New nature-based enterprises emerged in community over the last three years was beekeeping where the group has 20 beehives in the village forest

16. If we haven't already spoken about them, what are your community's greatest strengths and weaknesses, opportunities and challenges?

Strengths of the Community:

The community's inherent strength lied in its rich tradition of natural resource conservation, particularly in safeguarding forests and water sources.

Weaknesses of the Community:

However, the community faced challenges, primarily stemming from a deficient Village Natural Resource Committee (VNR) that struggles in fulfilling its responsibilities. Additionally, there was resistance from a small segment of community members with limited understanding of environmental conservation.

Opportunities for the Village:

The village was presented with several opportunities, included abundant water resources, well-maintained forests, a knowledgeable community on environmental conservation, available farmland, the presence of Village Savings and Loan Associations (VSLAs), and the contribution of paraprofessionals.

Challenges Faced by the Community:

Challenges included a lack of market access, issues related to illegal measurements, insufficient financial services, and a shortage of agricultural supply shops (agrovet shops).

Advice for Improvement:

To address these concerns, it was advised to consider the following strategies:

Project Extension: Extending the current project can further enhance the community's capabilities and address existing challenges.

Formation of a New VNR: Given concerns about corruption, establishing a new, transparent Village Natural Resource Committee (VNR) is recommended.

Promotion of Good Governance: Emphasizing and promoting principles of good governance will contribute to the effective and equitable management of resources within the community

Name of village: Lugodalutali village

Name of respondent:

Position : KII Environmental Group Leader

1. Number of Farmer Field and Business Schools (FFBS), agriculture VSLA groups and AMCOS
 - There were two FFBS groups, namely Wanawake na Maendeleo (28 members) and MwanzoMgumu Group (22 members, consisting of 4 males and 18 females). Also, there was one existing Agriculture VSLA called Muungano Group (23 females and 11 males, totaling 34 members). Furthermore, Lugodalutali AMCOS had 31 members, comprising 19 females and 12 males.
2. Number of members for the FFBS groups and AMCOS
The total number of FFBS was 104 where by 76 were female and 28 were male.
3. Commodities dealt by the FFBS groups
Commodities deal with FFBS were maize, beans and Irish potatoes while AMCOS was dealing with inputs supply and collective selling
4. Services provided by the FFBS groups and AMCOS to the members
FFBS provided various services, including knowledge on good agricultural practices, financial services through VSLA, enhancement of yields (e.g. from 4 to 25-30 bags per acre), fostering positive social relationships among members, and acquiring skills in entrepreneurship development. In general, FFBS has proven highly beneficial. For instance, as stated by Sara Ngailo, the secretary of the FFBS environmental group, 'Now, we are producing up to 25-30 bags per acre, compared to before the introduction of the project'
AMCOS had been just formed and not yet started operating
5. Organizational structures and legal status
 - The groups were all registered, they had leadership (Chairperson, secretary, treasurer and key keepers)
 - The AMCOS was formed by members from VSLA, with leaders already selected; however, committees were not yet established
6. Sources of income and how do they meet their financial needs
 - Many members relied on income from farming and small businesses, such as selling bites and snacks, local brews, vegetables, and engaging in casual labor
7. Number of women leaders in the FFBS groups and AMCOS.
 - Number of women leaders was 9 (2 MwanzoMgumu 3 women and Maendeleo, 2 Muungano and 2 AMCO).
8. Crops planted and practices tested in the FFBS
 - Crop planted in FFBS was maize (36m²), Irish potatoes and beans
9. How the FFBS and Community-Based Trainers (CBTs) were used in providing extension services
Paraprofessionals served as agricultural extension officers leading FFBS, while Community-Based Trainers (CBTs) acted as facilitators in VSLA groups. The VSLA groups mobilized by CBTs were utilized by Paraprofessionals to disseminate agricultural knowledge through FFBS. Occasionally, VSLA meetings were conducted at the FFBS field.

Paraprofessionals also extended their services to individual farmers beyond the group members. CBTs, on the other hand, provided services related to group formation, the operation of VSLAs, and assist Paraprofessionals in supervising FFBS activities

10. What changes in approaches, strategies or plans did you make re: agriculture / FFBS during the project implementation?

- The application measurements of fertilizer, diseases, and pesticides had increased, and depended on the actual conditions in the field. Also sometime, farmers do not used the recommended seeds, as they believe these seeds are not suitable for their specific environment, especially considering rainfall.
- In honey harvesting, traditional methods were employed, such as using smokers
- The VSLA was utilized a collective investment fund that was mobilized from sources outside the VSLA fund

INTEGRATED LAND AND WATER MANAGEMENT

1. Number of villages and total area under village land use plans (% allocated for agriculture, -350 forest, -31 water sources, etc., 418 viwanja, 220 area of grazing)

-350 acres allocated for village forest, 220 acres for grazing, 31 water catchment, 418 plots. The total area reserved for agriculture was not known.

2. What made the Alliance village land use planning process different (e.g., participation, efficiency, ecosystem connectivity) than the national process?

-No information as respondent was not aware with land use planning process with national process. But Alliance land use process conducted in participatory way and it involved community at all stages

3. Number of natural resource/boundary conflicts identified during VLUPs and % resolved

-Two conflicts were identified. The first involved individual farmers and the village government, centering around a boundary dispute between the forest area and individual farms. The second conflict arose between Lugodalutali village and Igombavana villages. Fortunately, the conflicts were successfully resolved in the end

4. Respect of the land use plans by communities, including trends in encroachment of catchment and forested lands

The community was committed to respecting the Village Land Use Plan (VLUP) and was aware of the concerning trend of encroachment on catchment and forested land. Despite the efforts of a few individuals attempting to violate these regulations, the Village Natural Resources (VNR) committee was diligently working to address and overcome the issue.

5. Number of plots acquired CCROs 418

The number of plots CCROs acquired was 418 (females owned, male owned, jointly owned)

6. Total.....% of size of the land with CCROs

-No data available and nowhere to be found

7. How the CCROS enhanced the livelihoods of the SSPs and conservation of the ecosystems

-Reduce land use conflict, strengthen marriage because of jointly land ownership, 2 people used for getting loan (wisdom choga and his friend)

-Boundaries were known by community so encroachment to forest and water sources decreased

8. Number of trees planted by whom, and land area covered.

No data obtained

9. Trends/number of farmers moved away from doing economic activities in the catchment areas (e.g. viyungu)

-Number of farmers moved away from doing economic activities was 21

10. Trends of the amount of water flow in the Great Ruaha River and Ndembera sub-catchment and known contributors/reasons for change

- The trend was not very much good it seems there were farmers upper of the river were overspending water for farming activities. For instance, this year 2023 the trend of river flow was decreasing

11. Number of community conservation action plans, how they were developed, and the extent to which they have been implemented.

- The action plan for land use management and environmental conservation was developed with the active involvement of the Lugodalutali community at every stage, supported by the CARE-WWF alliance and Mufindi district. The community highly regards this action plan, and since its inception, there had been no reported cases of violence associated with it

12. Nature-based income generating activities established and number of people depending on

-There was a beekeeping group comprising 24 members, along with 7 individuals who also engage in beekeeping. Additionally, there was a tree nursery group and 250 farmers involved in irrigation farming

13. Motivation to the people to minimize dependency on – and/or maximize sustainable management of – forest, agriculture/soils and other natural resources

-People were motivated by provided good agricultural practices that increasing productivity, supported on environmentally friendly income generating activities like beekeeping, fishing, tree nursery enterprise, honey processing, batik and soap making. Also, community were mobilized to establish VSLA as the source of financial services

14. What changes in approaches, strategies or plans did you make re: VLUP, ILWM, restoration and conservation in the course of the project implementation.

-No changes had been made

Name of village: Makongomi

Name of respondent: Edwin

Position: Environmental Group Leader

15. Number of villages and total area under village land use plans (% allocated for agriculture, forest, water sources, etc.)

o 85% were allocated for Agriculture, 65% for forests and 75% for water source

16. What made the Alliance village land use planning process different (e.g., participation, efficiency, ecosystem connectivity) than the national process?

- Education was first given to community on why the village should have land use planning and its importance to reduce unnecessary conflict
- Education on ecosystem connectivity to climate change had affected everyone in the community
- The project provided training to the council and committee to build their capacity on how to manage NR
- Project facilitated the community participatory approach throughout the development of VLUP

17. Number of natural resource/boundary conflicts identified during VLUPs and % resolved

- In total 10 farm boundary conflict identified during VLUP (8 conflicts were resolved and 2 were not resolved)

18. Respect of the land use plans by communities, including trends in encroachment of catchment and forested lands.

- All community paid respect to the land use as per agreement and by laws set protected the forest and water source.

19. Number of plots acquired CCROs (females owned, male owned, jointly owned)

According to the information from Environmental chairperson, the CCROs was issued on land and not plots. Total number of people received CCROs were 947, Total number of people in the village is 3500 (including women, men and children under 18 years). Unfortunately, He had no data on number of plots owned by female, male owned and jointly owned with CCROs. I'm making follow up from Village chairperson and V.E.O on number of adult women and men above 18 years in the village, but also female owned, men owned and jointly owned plots.

20. Total/% of size of the land with CCROs – Were almost 85%

21. How the CCROs enhanced the livelihoods of the SSPs and conservation of the ecosystems

- Through CCROs helped to took loan by using land as collateral if required
- Ownership of CCROs proved that the ownership of land
- CCRO had reduced conflict and helped proper use of NR

22. Number of trees planted by whom, and land area covered.

- Tree planting 2021
 - 1st phase- 600 trees equivalent to one acre
 - 2nd Phase -700 trees equivalent to 1 acre and ¼
 - 3rd phase – 520 trees equivalent to 1 acre
- Tree planting 2022
 - 1st phase – 800 trees planted nearby water source equivalent to 1.5 acre
 - 2nd phase -1000 trees almost near to 2 acres

23. Trends/number of farmers moved away from doing economic activities in the catchment areas (e.g. viyungu).

- Almost 100% of farmers moved away from doing economic activities in the catchment areas

24. Trends of the amount of water flow in the Great Ruaha River and Ndembera sub-catchment and known contributors/reasons for change

- Trend of water flow in the great Ruaha river and Ndembera sub -catchment was increased due to initiative done on water source conservation because no any economic activities had been conducted nearby Ndembera sub-catchment.

25. Number of community conservation action plans, how they were developed, and the extent to which they have bene implemented

- Putting sign boards- 100% implemented
- Tree planting around water source-water friendly trees- Almost 3,620 trees planted in 2021 and 2022
- Village bylaws and fines -50,000/= had been implemented.
- Community conservation actions plans were developed through community participatory approach while the project facilitated the development

26. Nature-based income generating activities established and number of people depending on

Beekeeping – 20%

Farming – 80%

27. Motivation to the people to minimize dependency on – and/or maximize sustainable management of – forest, agriculture/soils and other natural resources

- NR agenda were given priority in every village general assembly meeting which were conducted after every three months. All matters rise from NR were also given priority to be discussed and provide solution.
- Presence and recognition of the Environment group in the village for creating awareness in the community on the sustainable use of NR
- Capacity building to the groups where by in 2022 the groups received training on tree planting and conservation issues.
- Provision of training to council and committee to build their capacity on how to manage NR

28. What changes in approaches, strategies or plans did you make re: VLUP, ILWM, restoration and conservation in the course of the project implementation?

- Settled aside area for residential, fields, pastures and forests
- Tree planting
- Prevented people from conducting economic activities in the forest set aside for conservations. E.g. cutting trees for constructions, charcoal making, firewood
- Prevented people from causing fire around water source and conducting any farming activities

Name of village: Wasa Village

Name of respondent:

Position: Environmental Group Chairperson

11. Number of Farmer Field and Business Schools (FFBS)

- There were 2 FFBS in the village in which were Tumaini and Umoja group.

12. Number of members for the FFBS groups

- Tumaini group total number was 30, female 24 and male was 6
- Umoja group total number was 26 whereby female was 23 and male was 3

13. Commodities dealt;

-sunflower and soya for Tumaini while Umoja group dealing with maize, potatoes and beans

14. Services provided by the FFBS groups

-members were getting knowledge on good agricultural practices like fertilizer application, proper spacing planting, pesticide application, inter cropping, crop rotation, financial services through VSLA and collective inputs purchasing through extension officer and paraprofessional

15. Organizational structures and legal status

The groups were all registered, they have leadership (Chair person, secretary, treasurer and key keepers)

16. Sources of income and how do they meet their financial needs

-Sources of income were mainly depended on Farming activities after selling the produces, small business and casual labor. Financial services obtaining on VSLA, "We give thanks to CARE-WWF because all VLSA groups had been our economic booster" said environmental group leader

17. Number of women leaders in the FFBS groups 8

Women group leader were 8 in position of chairperson, secretary and treasurers

18. Crops planted and practices tested in the FFBS (Maize, Iris potatoes and maize).

-Crops planted include maize, Irish potatoes, sunflower, and soya. The Tumaini group focuses on sunflower and soya, whereas the Umoja group practices maize, Irish potatoes, and beans. In Farmer Field Business Schools (FFBS), good agronomic practices were emphasized, such as farm preparation, the use of improved seeds, proper spacing during planting, timely weeding, identification of pests and diseases, control of pests and diseases, fertilizer application, and marketing. For example, the Umoja group planted maize on an area of 0.5 acres and harvested 5 bags, while the yield for potatoes and beans was 30 kg and 90 kg, respectively, on an area of 0.25 acres.

19. How the FFBS and Community-Based Trainers (CBTs) were used in providing extension services

-Paraprofessionals was used as agricultural extension officers to lead FFBS while CBT is facilitator in VSLA group. The group of VSLA which mobilized by CBT were used by PP to deliver agricultural knowledge through FFBS. Sometime VSLA meeting was being done at FFBS field
- PP also provide services to individual farmers even outside of the group members
-CBT provide services on group formation, operation of VSLA and assisting pp on FFBS supervision.

20. What changes in approaches, strategies or plans did you make: agriculture / FFBS during the project implementation?

- Umoja group planted soya as the way to diversify crop for income generating and food security, the project aimed three crops of maize, beans and Irish potatoes
- To ensure members were participating full in FFBS sometime VSLA meetings were being done in the field/demo plot farm.

INTEGRATED LAND AND WATER MANAGEMENT

29. Number of villages and total area under village land use plans

-4000 acres allocated for grazing, 34 springs water sources reserved and 2 rivers. The total area reserved for agriculture was not known.

30. What made the Alliance village land use planning process different (e.g., participation, efficiency, ecosystem connectivity) than the national process?

- The project participated the community during land use plan in all process of allocating areas for uses, management of the village land use plan, decision making on natural resources management, In general the whole process was participatory.

31. Number of natural resource/boundary conflicts identified during VLUPs and % resolved

- VLUP reduce land conflict, provide opportunities to provision of road services within the village, reduce risk caused by hazards as hazard exposure area were not located for settlement, value of land increased, source of revenue to villages, provide opportunity for women to own land).

32. Respect of the land use plans by communities, including trends in encroachment of catchment and forested lands

-Community respecting the VLAP and trend for encroachment of catchment and forested land was none, It happened one person blocked the area allocated for service road but due to VLUP the issue was dissolved.

33. Number of plots acquired CCROs 418(-females owned, male owned, jointly owned)

-Number of plots acquired CCROs was 418 there was no data for disaggregation of gender

34. Total/% of size of the land with CCROS

- There was no data of land size with CCROS.

35. How the CCROS enhanced the livelihoods of the SSPs and conservation of the ecosystems

-VLUP reduced conflict within community hence people were cooperating each other, strengthen marriage in house hold as both wife and husband had equal ownership of the land

-Conservation and ecosystem- Boundaries were well known by the community so now people do not encroach to catchment were and reserve forest.

36. Number of trees planted by whom, and land area covered.

-600 tree planted in the catchment area by environmental group in coverage area of 4acres.

37. Trends/number of farmers moved away from doing economic activities in the catchment areas

-About 30 famers moved away from the doing economic activities.

38. Trends of the amount of water flow in the Great Ruaha River and Ndembera sub-catchment and known contributors/reasons for change;

-The water flow trend was increased, as exemplified in the Nyakigongo and Igingilani sub-villages.

Currently, water levels had raised, whereas previously they were on the verge of drying up. This change can be attributed to the efforts of people who had shifted their focus towards working on the catchment area and project effort in restoration activities, such as tree planting

39. Number of community conservation action plans, how they were developed, and the extent to which they have been implemented

-The village has a land use plan and a natural resource management plan, both of which had been legally developed by the village with assistance from technical officers from the district and Alliance

to enforce the management plan. The community had consistently respected the management plan, and to date, no one had been fined for violating the land use plan.

40. Nature-based income generating activities established and number of people depending on Nature based income generating activities established during alliance project were beekeeping, tree planting, fishing and irrigation farming, there were reasonable number of communities benefiting from nature-based activities.

41. Motivation to the people to minimize dependency on – and/or maximize sustainable management of – forest, agriculture/soils and other natural resources

- People were motivated by provided good agricultural practices that increasing productivity, supported on environmentally friendly income generating activities like beekeeping, fishing, tree nursery enterprise, honey processing, batik and soap making. Also, community were mobilized to establish VSLA as the source of financial services

42. What changes in approaches, strategies or plans did you made;

- The group added 14 traditional bee hives apart from the ones given by Alliance project, but also the group initiated rising tree seedling of traditional trees which was friendly to be planted to catchment areas.

Name of District: MUFINDI

Name of respondent:

Position: Principal District Community Development Officer

43. What is the total population in the District?

According 2022 census the district had a population of male 138,114 and female 150,882; Where, the total population number was 288,966.

44. What is the total number of households in this area?

Female headed male headed

Where the total number was 77,197

45. What are the primary sources of GDP for the District? What is the economic trend for the region? To what extent does sustainable management/use of natural resources, including agriculture, contribute to job creation/self-employment in the District?

Primary sources of Mufindi GDP were

- a. forest products such as timber and electric poles
- b. Industrial activities
- c. Agriculture

GDP 3,546,770 Tsh

46. What is status of the district's population regarding income/poverty?

As of 2022 Mufindi district had a population of 288,966 where male was 138,114 and female was 150,882 indicated growth by 1.6 percent from 2012 to 2022. In this case the most of working age

group of population (15-64) lived in urban areas greater than in rural areas pushed the district's dependency ratio higher, this implied that high number of the working aged population migrating to urban areas migrate for job searching and employment opportunities due to poor living condition in rural areas. Despite of 80 percent population of the district employed in agriculture still lacked the reliable market and price to sold their yields led to low-income generation and consequently poor living condition. Also, more youth were unemployed working as part time labor force in timber production (loading and off-loading timber wood).

Due to that, the government programs or initiatives was proposed and other established aimed to reduce poverty and improve economic conditions with collaboration of NGOs projects and private sectors in mufindi district which created friendly environment to home and foreign investors, promoted beekeeping, avocado production, fish farming, grain processing factory, milk processing plant, wood by-product processing factories, tea processing factories and pine plantation.

47. What is status of the district's population regarding food/nutrition security?

Agriculture employed nearly 80% of the population of Mufindi District, Good climatic condition, and arable land where farmers practiced the production to supplement the food and income generation. Common food crops in the district included maize, beans, ground nuts, iris potatoes, sunflower, peas, vegetables, and tropical fruits. Also, small scale livestock production was increased. The distinction between food crops for home consumption and cash crops for sale was not always clear where many households sold food crops for complementary income. However, in general food crops are those that are processed and consumed at home or sold locally in informal markets, while cash crops are virtually never consumed at home, and were generally processed for sale in urban areas or internationally. Most farmers were food secured in due season and become insecure from February, March and April this implied that the population still insecure in some month of the production seasons. High percent of the population was still unable to afford well balanced diet.

From that case the government programs or initiatives proposed and other established with the aim of increasing household food production and improving nutrition conditions with collaboration of NGOs projects and private sectors through provided agricultural subsidy/inputs and extension to farmers, provision of agricultural officers in every wards and villages, provided nutrition education, established financial services to small scale farmers (VSAL and MUCOBA) and protected ecosystem and natural resources through adapted sustainable agricultural practices.

What are trends of the district's population regarding income/poverty in last three years?

From the survey conducted on 2015 shown that GDP was 740.9 billion TZS, currently no data available but likely increased

48. What are trends of the district's population regarding food/nutrition security in last three years?

49. What are the main sources of household income around project communities?

The main sources of house-holds income were agriculture such as maize, beans, iris potatoes, sunflowers, peas, ground nuts and some engaged in livestock keeping, selling local bear and bee keeping.

50. How did COVID-19 affected peoples' health and livelihoods in your district? To what extent do you feel that the pandemic is behind us v. still affecting people in your district and why?

Healthy

Some people death

Economic Effect

- i) Some Business was Closed due to lack of customers, Business like Bars, and refreshment because people were fearing interaction to get COVID 19
- ii) Purchasing power of people decreased because people where dealing with treatment of COVID -19 rather than purchasing other goods.
- iii) Closed of Business Boarders like Uganda, Kenya since we were depending to import some goods for business.

Social Effect

- i) Social entertainment lacked due to fearing of transmission of COVID 19
- ii) Social discrimination due to fearing to get COVID 19
- iii) Lack of socialization among families, communities, friends etc.
- iv) Culture Change like Greetings through shaking hands (Hehe and Bena tribes)

Positive Effect

- i) COVI-19 increased social hygienic due to tendency of washing hands
- ii) Reduced some diseases caused due to lack of self-hygienic

51. How accessible is credit to farmers and other community members in your district? How is that changing in the last years and how project affected those changes, if at all?

Accessibility of Credit to farmers and other community members was present to all community of Mufindi District and it helped them to increase individual income, and community income through getting credit for supporting farming and Business.

52. Kindly provide a list NGOs working in your district and/or the project communities:

N	NGO's NAME	GEOGRAPHICA AREA	KIND OF WORK AND SPECIFIC PROJECT COMMUNITIES WITHIN THE DISTRICT	REGISTRATION NUMBER
1	Rural Development Organisation (RDO)	MDABULO KIDETE VILLAGE	<ul style="list-style-type: none"> • Building water supply projects in Mdabulo, Ihanu, Luhunga and Ifwagi wards • Provided vocational training for orphans and vulnerable children • Provided scholarships for orphans 	00NGO/00007700
2	Foxes' Community and Wildlife Conservation Trust	LUHUNGA IGODA VILLAGE	<ul style="list-style-type: none"> • Protected the environment • orphanage • Provided AIDS education 	SO 8940
3	EVERY CHILD Tanzania (ECT)	LUHUNGA IKANING'OMBE VILLAGE	<ul style="list-style-type: none"> • Helped orphaned and vulnerable children such as food, clothing, housing and vocational college 	00NGO/00009700

			<ul style="list-style-type: none"> • Empowered social welfare for malnourished children and adolescents • Empowered communities with clean water and sanitation training for young people 	
4	Haki Na Uchumi	MAFINGA Office of INCOMET Ltd	<ul style="list-style-type: none"> • Promoted the formation of women's groups • Provided education to women, youth and the disabled on land and children's rights • Educated women and children against Gender based violence. • Empowered women to take control of the land 	OONGO/R/048 7
5	Mufindi Non Governmental Organization Network (MUNGONET)	MAFINGA	<ul style="list-style-type: none"> • coordinated of CSOs, • Empowered CSOs in good governance, project scripts and management, monitoring and monitoring and reporting, • Influenced and advocacy in policy and conflict resolution issues. 	04 NGO/1561
6	TAHESO FOUNDATION	MAFINGA	<ul style="list-style-type: none"> • Provided AIDS education • Project scripts • Helped children and children living in dangerous environments 	
7	Afya Women Group (AWG)	MAFINGA Workers from 27 wards	<ul style="list-style-type: none"> • Raised household income (HES), • Patient care at home • Home Patient Care (HBC), • Legal aid (gender and violence service) • Psychological support, • food and food, • House • Provided support in education and vocational colleges, • Educational Testing in partnership with TWaweza Program 	NGO/1021 (2007)
8	Community Health and Social Welfare Africa (COMHESWA)	MAFINGA	<ul style="list-style-type: none"> • The project connected young people between the ages of 15 and 35 with employment and entrepreneurship opportunities. • Nutrition • Good health 	00NGO/R2/000 84

			<ul style="list-style-type: none"> • Communication Change Education (SBCC) for specific groups (Key and vulnerable population/KVPS) • Provided reproductive health education 	
9	Mufindi Environmental Conservation and Health	MAFINGA	<ul style="list-style-type: none"> • Provided environmental protection education • Protected the environment and tree planting • Empowered the community about the Importance of Health Care 	00NGO/00003386
10	CO.P.E – Coperation Development Countries	NYOLOLO	<ul style="list-style-type: none"> • Provided health care • Supported orphaned and vulnerable children • Provided AIDS education to the community 	00NGO/0964
11	Community water & Association (COWEA)	IGOWOLE	<ul style="list-style-type: none"> • Provided environmental protection education • Provided AIDS education • Provided training to groups on entrepreneurship 	00NGO/00004044
12	INCOMET 2001LTD	MAFINGA	<ul style="list-style-type: none"> • Provided education in a vocational college • Educated young people about HIV 	00NGO/00001490
13	Community Grassroot initiative association (COAS)	MAFINGA	<ul style="list-style-type: none"> • Provided SACCOs education • Provided education on quality agriculture • Inspected cooperatives, SACCOS, AMCOS 	00NGO/RI/00427
14	National Council of People Living With HIV/AIDS (NACOPHA MUFINDI)	MAFINGA AND 27 WARDS OF MUFINDI DC	<ul style="list-style-type: none"> • Organized the wards in Mufindi DC • Teaching the Fight Against AIDS • Monitored the patients of the drug and returning them to the Service • Provided Aid to WAVIU • Coordinated stakeholders • Provided HIV/AIDS services 	
15	Mufindi Pride for Community empowerment (MUPCE)	NYOLOLO	<ul style="list-style-type: none"> • Provided legal assistance to the community • Provided human rights education, children's education • Enable health issues 	00NGO/0008811
16	AMREF HEALTH AFRICA	MAFINGA AND 8 WARDS OF MUFINDI DC	<ul style="list-style-type: none"> • Provided Empowerment for Citizens for Youth and Women groups • Provided health education 	

17	Development Initiatives for youth Foundation	MAFINGA	<ul style="list-style-type: none"> Empowered women and youth through agriculture, farming, SACCOs, staging and borrowing groups Provided environmental protection education Provided entrepreneurial education Provided aid to orphans and vulnerable children Provided AIDS education Land ownership for young men and women Sex Crimes Against Women and Young People Introduced valuable worms to youth groups in sunflower crops and beekeeping Established and managed vocational training for carpentry, pipeline, plug-in and mechanics 	00NGO/0667
18	Tanzania Voiceless Empowerment Organization (TAVEO)	MBALAMAZIWA	<ul style="list-style-type: none"> Reproductive health Fight against AIDS for young people and girls outside of school Provided life skills training 	00NGO/00005743
19	SOS Children Village Tanzania	LUHUNGA	<ul style="list-style-type: none"> Created formation groups Provided training for caregivers on positive nurturing, entrepreneurship Empowered gender desks at county level Established CBO in wards Provided CBO capacity building training Enabling the creation of children's councils and building capacity 	I-NGO/RS/0005
20	Mufindi Youth and Women Initiative for Rural Development (MUYOWIRUDE)	MTWANGO MAFINGA	<ul style="list-style-type: none"> Provided entrepreneurship education to youth groups Promoted the cultivation of avocado. Provided life skills, AIDS and communication skills 	00NGO/98585
21	AHADI FOR EXCELLENT DEVELOPMENT (AFED)	MBALAMAZIWA	<ul style="list-style-type: none"> Provided education on how to Provided AIDS education Provided tailoring education 	00NGO/00009772
22	SISI NI KESHO	NYOLOLO	<ul style="list-style-type: none"> Provided services to young children in the center 	

23	Tanzania Home Economics (TAHEA)	MAFINGA	<ul style="list-style-type: none"> Created groups of girls aged 15-24 Provided AIDS training Provided entrepreneurial training Provided nutrition education Provided family planning education Provided Life Skills Education 	000NGO/9501
24	IDYDC	MAFINGA	<ul style="list-style-type: none"> Provided AIDS education Promoted HIV testing for women, especially men. Referrals for people diagnosed with HIV infection in health care facilities Created WAVIU groups Provided entrepreneurial training Empowered the community in relation to good governance 	SO 7552
25	CEFA	IRINGA	<ul style="list-style-type: none"> Provided nutrition education to the community Provided nutrition for malnourished children Provided Vegetable and Fruit Farming Education in the Households. 	
26	World vision Tanzania (Nyololo AP)	NYOLOLO	<ul style="list-style-type: none"> Fight poverty in the community Building better toilet and water infrastructure in schools Provided entrepreneurial education Provided animal support (cattle, pigs and chickens in households (group members) Good nutrition training 	I-NGO/R1/00440
27	World Vision Tanzania (Malangali AP) IDUMBALA (IDUNDA, Ihowanza , Malangali na Mbalamaziwa	MALANGALI	<ul style="list-style-type: none"> Fight poverty in the community Building educational infrastructures Provided entrepreneurial education Created Children's Councils in Schools Provided Formation Education 	I-NGO/R1/00440
28	WWF/CARE Alliance	MAFINGA	<ul style="list-style-type: none"> Provided education for the formation of VICOBA groups Provided entrepreneurial education Provided shares, savings and deposit education through an electronic system for groups Provided education for environmental protection. 	
29	Tanzania Red Cross	IGOWOLE	<ul style="list-style-type: none"> Provided education on how to respond to disasters and disasters 	

			<ul style="list-style-type: none"> • Provided assistance to victims of disasters • Promoted safe blood donation • Providing first aid to victims during disasters and disasters 	
30	People Development Forum (PDF)	MAFINGA	<ul style="list-style-type: none"> • Health and sanitation campaign • Building better toilets in primary schools and health care facilities • Provided training on how to protect against COVID 19 • Provided training for the data collection of quality toilets. • Building water infrastructure in schools, clinics and villages 	
31	Vision Transformation		<ul style="list-style-type: none"> • Protected the environment • Provided entrepreneurial education 	
32	Participatory Ecological Land use Management TZ (PELUM)	MOROGORO	<ul style="list-style-type: none"> • Measured the effective use of land in villages • Prepared of customary documents 	
33	Water for Africa	IRINGA	<ul style="list-style-type: none"> • Drilled water wells • Created water user communities 	
34	Heifer Internation	IRINGA	<ul style="list-style-type: none"> • Created youth groups • Provided entrepreneurship training for youth groups 	
35	CAMFED TANZANIA	MAFINGA	<ul style="list-style-type: none"> • Educating girls in secondary education to college for vulnerable girls. • Provided life skills training for girls • Provided entrepreneurship training to groups of daughters and caregivers 	00NGO/00001730
36	Community Health Issues and Development Association (CHIDA)	NYOLOLO AND MALANGALI	<ul style="list-style-type: none"> • Provided education on the laws of the child, land and children's rights • Provided legal assistance to the community 	00NGO/004935
37	Village school Tanzania	IRINGA	<ul style="list-style-type: none"> • Running three high schools • Supported orphaned and vulnerable children 	
38	Mufindi YOUTH Development and Social Welfare Organization	MAFINGA	<ul style="list-style-type: none"> • Provided AIDS education • Supported for young people living in a vulnerable environment • Provided vocational training • Provided breastfeeding training for children in the mother's lake 	00/NGO 1323

	(MUYODESSO)		<ul style="list-style-type: none"> Supported for children living with HIV 	
39	MUFINDI ENVIRONMENTAL TRUST		<ul style="list-style-type: none"> Provided education to protect the environment Planted trees Preserved water resources 	
40	USAIDS JIFUNZE UELEWE	IRINGA	<ul style="list-style-type: none"> Fighting sexual violence in schools Encouraged communities to improve infrastructure 	
41	USAIDS AFYA YANGU	MAFINGA	<ul style="list-style-type: none"> Provided services at CTC Monitored the care of patients at home Tracked PLHIV drug addicts 	
42	USAIDS MUM PROJECT	IRINGA	<ul style="list-style-type: none"> Collaborated with other stakeholders in the health and sanitation campaign Raised awareness about health and sanitation issues Provided knowledge and knowledge of female towel making 	
43	LISHE BORA, MAZINGIRA MAZURI, UCHUMI MZURI (LIMAU)	MGOLOLO	<ul style="list-style-type: none"> Provided health and nutrition education Provided entrepreneurial education Provided vegetable and fruit education 	00NGO/1953
44	SHUJAA WA MAENDELEO NA USTAWI WA JAMII TANZANIA (SMAJATA)	MAFINGA	<ul style="list-style-type: none"> Educated women and children in Tanzania Empowered communities to report sexual violence incidents Influenced and advocacy for victims of sexual violence 	

53. What are the opportunities and challenges for the establishment and strengthening of community-based groups, such as farmer groups, savings and loan associations, conservation groups or water user associations?

Opportunities

- i) Capital for initiate and strength their project or business
- ii) Different training on how to manage the project or business was provided
- iii) Promoted skill and technology on how to use available resources effectively without affecting water sources such as conservation and farmers groups.
- iv) Farmers were linked with financial institution to be easy to get financial services
- v) Farmers were linked with NGOs and other institutions supported to improve and strengthen the groups.

Challenges

- I) Lack of awareness among the community to form or to join groups
- II) Poor leadership in groups
- III) Lack of commitment among members groups

- IV) Migration of group members especially youth (marriage, jobs)
- V) Lack of experience in managing project or business
- VI) Misallocations of fund and goals.

Name of Village: IGOMBAVANU

Name of Respondent:

Position: Village Executive Officer (VEO)

17. What is the Village population?

- The village population was 1517 where by Male 808 and Female 709

18. What is the total number of households in this area?

- The total number of house hold was 390, There was no data for Female headed and male headed

19. What is status and what are trends of your community's population regarding income/poverty and food/nutrition security?

- Food security was increased because the production of maize had now risen to 20 bags per acre, whereas previously it ranged between 7-12 bags. Due to the intervention of the CARE-WWF project, farmers have diversified into the production of beans, and the cultivation of Irish potatoes has also contributed to increased food security for many households in the community.
- Income for the community is also increasing, particularly earnings from farming. Indicators of this improvement include upgraded houses, an increase in motorbike ownership, and the widespread use of power tillers, tractors, and oxen during farm preparation. Very few farmers still rely on hand hoes.
- Many households used to consume three meals per day, though from January to April, this is reduced to two meals

20. How did COVID-19 affected peoples' health and livelihoods in your community? To what extent do you feel that the pandemic is behind us v. still affecting people in your district and why?

- No cases of the Covid pandemic had been reported in the village; however, a considerable number of individuals had been vaccinated as a preventive measure against Covid

21. What are the climate trends in your community? What climate change impacts exist to date? E.g., how has climate change affected crop yields to date?

- there was a notably strong winds increased, with seven houses being affected by wind in 2023. Additionally, drought occurred and raised, contributed to a heightened sense of vulnerability. Furthermore, the reliability of rainfall had become inconsistent, posing challenges, particularly in relation to its impact on crop yields.

22. What is you're the level of your community's awareness and knowledge about climate change? In general, what is the attitude towards climate change in your community?

- The level of awareness in our community regarded to climate change was moderate. While many residents were familiar with the term 'climate change,' there was varied in degree of understanding about its causes and potential impacts. Efforts had been made by government,

CARE-WWF project to disseminate information through community trainings and workshops, but ongoing education was necessary to enhance overall awareness,

- The community generally exhibited a positive attitude and addressed towards climate change. There was recognition that environmental changes occurred, and residents were increasingly willing and adopted sustainable practices like planting trees, conserving water catchments, practicing conservation agriculture. However, there was still work to be done in terms of translating awareness into concrete actions, and some community members may need further encouragement and support to be made meaningful changes in their daily lives

23. Are you aware of how the climate is projected to change in the future?

-Respondent said No that he was not aware with regarding on how the climate was projected to change in the future. Since he was not uninformed about future climate projections

24. What measures have been promoted to mitigate and/or adapt to effects of climate change in their communities such as warming temperatures, drought, heavy rains and flooding? To what extent are community members adopting those practices?

- Several measures have been promoted within community to mitigate and adapt to the effects of climate change, including warming temperatures, drought, heavy rains, and flooding. These initiatives are aimed at fostering sustainability and resilience. Some notable practices include preventing tree falling, preserving water sources and catchment, and avoiding cultivation near water sources. Environment groups play a vital role in implementing these measures, often employing strategies such as fencing water sources to protect them. Additionally, the village assembly has established bylaws to regulate and enforce these practices. The extent to which community members are adopting these measures varies, with ongoing efforts to encourage widespread participation and ensure the long-term effectiveness of these climate change adaptation strategies

25. What is climate, water and land use policies and regulations being implemented in your village?

-in the village there was VLUP Committee, VNRC, water user association which had been formed to work out with

-management of bylaws enforced by environmental committee;

-In the village, several policies and regulations had been implemented to address climate, water, and land use issues. VLUP Committee, VNRC, water user association has been formed to promote sustainability, protect natural resources, and mitigate the impacts of climate change. Climate policies focused on reduced carbon emissions and increased resilience to extreme weather events. Water policies aimed to sustainably managed water resources and prevented contamination. Land use regulations guided responsible development and prevent activities that could lead to environmental degradation. Environmental committee and village government ensured regular monitoring management of these policies in created resilient and environmentally consciousness to the village, the village also had by laws for enforcement of the policies.

26. (What are the current challenges facing small-scale farmers in your community? Inputs, markets, post-harvest, extension services, access to finance, etc.) How has the project mitigated these challenges in your community, if at all?

-crop disease, lack of market, no collective marketing system, no legal measurement unit Eg brokers use tin of 22kg for measurement.

-There were no financial services available to lend farmers for agricultural activities, it was only VSLA and individual money lender provided financial services to farmers.

-there is only one extension officer at ward level who overwhelmed by the workload

-No agro vet shops at village level farmers compelled to walk 50kilometre to Mafinga town to purchase farm inputs.

- Many farmers used traditional silos and nylon sacs to keep maize and beans storage, they do not used pics bag which saw to be improved, that was due to government which do not promote much pics bags but also the price for pics were high

- The project put effort and mitigated the challenges by promoting collective marketing particularly through initiated AMCOS, trained paraprofessionals, tree planted, VSLA, Good Agricultural Practices, supported training to farmers and environment committees to be enforced in management of environment conservation, supported land use plan management

27. What is the current state for farmers practicing Good Agronomic Practices? To what extent are farmers adopting conservation agriculture and climate smart agriculture? How has the project affected adoption, if at all?

- 79% of farmers were aware on GAP, before project intervention farmers used hand hoe and not tractor for farm preparation and also used oxen to randomly planting without considering spacing, farmers used improved seeds which led to increased yield from 2 to 5 bags up to 30 to 35 bags
- Early planting, short term matured seed, drought resistant crops, inter cropping, crop rotation and tree planting, was among of conservation and climate smart agriculture
- The project played great role through mobilizing farmers to adopt GAP, CA and CSA by providing support on training and farm inputs

28. Please provide the List of existing community groups, type of groups and activities of the groups

- Village Leaders were not had proper record kept for list of groups in their village

Group type/Name	Focus of the group	Number of Members		Contact Information of leader
		Male	Female	
1. Hisa na mazingira	Uhifadhi na hisa			
2.				

29. What is the status of environment / natural resources in your community? What are challenges exist for sustainable management and use? What opportunities exist for conservation? How has the project affected these challenges and leveraged opportunities, if at all, over the last three years?

-Status of environment/ natural resource was not bad, in the village there were two forests under TFS and CBFM, the TFS forest was hundred percent and good but CBFM there was somehow degraded though not very much. water sources management was good and status was at good situation, there were 7 sources of water and all are well conserved, for instance 6000 trees have been planted in catchment areas. Land use conflict is reduced since CARE-WWF introduced land use plan in the village. For some issues raised on land conflict Baraza la Ardhi kata responsible for dissolving the conflict

-The challenges exist for sustainable management and use of natural resource are some few village members still not adhering to LUP, they are grazing to the agricultural land

-opportunities exist for conservation are there as farmers can use village forest for beekeeping enterprise, the village has bylaws supporting conservation of natural resources, village community members are ready to learn about conserving environment and existing of natural resources at good state provide opportunity continuing protecting them

-Since intervention of the project supported so much in conservation of the environment, the project supported on tree planting, village land use plan, providing education about agricultural smart agriculture. Environmentally friendly enterprises like beekeeping, sustainable water use management,

-Also project reduced gender discrimination particularly on land ownership where village women owned land and had a say on management of their land

30. What are main sources of water in this area?

- The main sources of water in the village were well, rivers and water catchment
- Challenges existed with sustainable water management and use were burning fire to the forest, grazing to the forest and water sources, tree felling.
- Opportunities lied in fostering community engagement and collaboration. Since local communities involved in restoration projects and not only enhanced the sense of ownership but also brings valuable traditional knowledge and practices to the effort. Also, other opportunities existed in implementing educational initiatives which raised awareness about the importance of watershed conservation. This involved workshops, and outreach campaigns which promoted sustainable practices.
- The project affected these challenges and leveraged opportunities by introduced VSLA, tree planting activities, mobilizing for initiating environmental enterprises like beekeeping, training farmers in GAP, Environmental conservation FFBS, support formation of VNRC and VLUM committee which helped in enforcement of Natural resource management by laws

31. How does sustainable natural resource use contribute to your community's livelihoods (income and food security)?

- Community practiced beekeeping, doing irrigation farming particularly in horticulture, planted fruits tree (Avocado) and timber trees all these practices provided income and food security to community
- New nature-based enterprises had emerged in your community over the last three years was traditional local tree planting and beekeeping enterprise.

32. If we haven't already spoken about them, what are your community's greatest strengths and weaknesses, opportunities and challenges?

- Community strengths were presence of good leadership, farmers who were aggressive in conservation environment, farmers who were ready for adaptation to climate change,
- Weakness of the community was still there are some few members about 20% resistant to change on conserving environment, VNRC needed capacity to build in performing their responsibilities
- The opportunities the village had was the presence of the water resources, forestry, knowledge on conservation of environment, farmland, VSLA and paraprofessionals
- The challenges of the community were the lack of the market, illegal measurement, adequate source of financial services and agrovet shops

Request from community

- Extension of the project for another three years since the established activities not well strengthened hence needed to be sustained
- Area of the market was still a challenge to farmers and not well addressed

Name of Village: LUMULI

Name of Respondent:

Position: Village Executive Office (VEO)

33. The Village population was 2300 where by male was 1114 and female was 1186

34. Total number of households was 581

Where there was no data for Female headed and male headed households.

35. What is status and what are trends of your community's population regarding income/poverty and food/nutrition security?

- Food security was good as production of maize increased for an acre up 20bags, Other crops improved its productivity are iris potatoes, peas, beans,
- No famine reported for the period of three years up to date, rainfall was reliable in the area as not experienced drought recently
- income increased as many dwellers improved houses, furniture and practicing diversification of income generating activities

36. How did COVID-19 affected peoples' health and livelihoods in your community? To what extent do you feel that the pandemic is behind us v. still affecting people in your district and why?

-There were cases reported for COVID-19 pandemic however people were vaccinated, prevention measure was taken during eruption of the disease

37. What are the climate trends in your community? What climate change impacts exist to date? E.g., how has climate change affected crop yields to date?

- 2022 rainfall delayed started on Dec instead of November however it ended on normal month on May and the harvest was good. Otherwise the trend was not bad

38. What is your level of your community's awareness and knowledge about climate change? In general, what is the attitude towards climate change in your community?

- Community had knowledge on climate change and are practicing some adaptive practices commonly use of drought resistant crops, early matured seeds, intercropping, crop rotation, diversification of IGA, food reserve practices

39. Are you aware of how the climate is projected to change in the future?

-in future climate change can bring more challenges on getting reliable rainfall if no strong measures were taken against deforestation activities and destruction of water sources

40. What measures have been promoted to mitigate and/or adapt to effects of climate change in their communities such as warming temperatures, drought, heavy rains and flooding?

- Tree planting
- Education on fire burning
- Promoted uses of early matured seeds and drought resistant crops
- Encouraged farmers to engage in other income generating activities like poultry keeping, small business, beekeeping
- Formed income enterprise groups like batiki and soap making,
- Budgeted and reserved food
- Livestock keeping eg cow, chickens

41. What is climate, water and land use policies and regulations being implemented in your village?

-The village had policy and bylaw to enforce community in water and land use management. For instance, in September 2023 livestock keeper caught and fined because of grazing to farm land. In general land use plan in the village is respected by community

What are the current challenges facing small-scale farmers in your community? (Inputs, markets, post-harvest, extension services, access to finance, etc How has the project mitigated these challenges in your community, if at all?

- The price of fertilizer was high
- The price of improved seed was high and not available in the village
- Farmers depended financial services mostly from VSLA and few getting from vision fund and black
- Market price was varied depend on the season for instance 2022 price was good, but now maize dropped from 90,000 up to 60,000 currently
- Extension service was provided by ward extension officers and paraprofessionals which was not enough

- The project mitigated these challenges by doing the following

- Promoted establishment of VSLA where members can get loan from their own sources
 - Provided education GAP through establishment of FFBS
 - Trained paraprofessionals to assist in providing extension services to farmers
 - Supported purchasing of farm input in bulk system
 - Formed AMCOS

What is the current state for farmers practicing Good Agronomic Practices? To what extent are farmers adopting conservation agriculture and climate smart agriculture? How has the project affected adoption, if at all?

The current status of farmers practicing GAP is good as in their farms is seen practicing proper space planting, early planting, inter cropping, proper fertilizer application, crop rotation and using improved seeds

The project intervened in introducing FFBS, formation of VSLA and environmental groups, promoting establishment of AMCOS, training of paraprofessional, promoting tree planting and tree nursery enterprise. These interventions gave great impact to adoption of CSA to the whole community in the village

42. Please provide the List of existing community groups, type of groups and activities of the groups (there are 12 groups)

The village leader is aware with the groups implementing project but the office has no proper records for the groups

Group type/Name	Focus of the group	Number of Members		Contact Information of leader
		Male	Female	
Mazingira	Elimu ya utunzaji wa mazingira			
.				

43. What is the status of environment / natural resources in your community?

-water sources were well conserved, people do not farm near by water sources, forestry was good however wild hunters were frequently burning forestry for hunting purposes, Effort is taken by VNRC together with village government to ensure this habit is topped

-No challenges existed for sustainable management and use

-The opportunities existed for conservation was availability of water supply project and the area was not much affected by climate change so little effort used for conservation and restoration

The project affected these challenges and leveraged opportunities over the last three years through support beekeeping project, tree nurseries establishment, tree planting, provided training to VNRC, Paraprofessionals and CBT on natural resource conservation and GAPs

44. What are main sources of water in this area?

- The main source of water in the village was rivers, catchments and well

What challenges exist with sustainable water management and use

- The challenges exist with sustainable water management and use was livestock and bush firing

- What opportunities exist for watershed restoration?

- Presence of VNRC, environment groups, land use management plan that can be used for water shed restoration

- How has the project affected these challenges and leveraged opportunities, if at all, over the last three years?

- The all intervention had been done by the CARE- WWF project

45. How does sustainable natural resource use contribute to your community's livelihoods (income and food security)?

- Farmers were cultivated off season crops like maize, iris potatoes, peas, beans by irrigation system and vinyungu so they assured food security and income

What can you tell me about any new nature-based enterprises have emerged in your community over the last three years?

- Beekeeping and mushroom business

46. If we haven't already spoken about them, what are your community's greatest strengths and weaknesses, opportunities and challenges?

- Strength:

Leader ship, enforcement of bylaws, some villagers were knowledgeable on conservation of environment

- Weakness;

VNRC were not well organized and needed capacitated in their responsibility

- Opportunities;

Because of having water source where village got house hold water supply project supported by TZ government

Acknowledgement

He thanked CARE-WWF for the project however appeals the groups to have diversification of enterprises not to depend in one enterprise that was increased and assured income to the group members

District Community Development Officers (CDO)

Name of respondent: Dorah Josia Mlomo

Title: Community Development Officer

Organization: Iringa District Council

Mobile number 0755195366

54. What is the total population in the district?

The total population is 314860 where 153307 male and 161563 females

55. What is the total number of households in this area?

The total house hold is 80975 no data for female headed or male headed

56. What are the primary sources of GDP for the District? What is the economic trend for the region?

The primary source of GDP for district is;

-Agriculture-82%

- Livestock and fisherie-8%

-Forest- 3%

-Business-2%

-Employment -4%

-Transport-1%

To what extent does sustainable management/use of natural resources, including agriculture, contribute to job creation/self-employment in the district?

-Agriculture 82%, livestock and fisheries 8%, forest 3%, tourism 1%,

57. What is status of the district's population regarding income/poverty?

As of 2022, the population of Iringa District stood at 314,860, with 153,307 males and 161,563 females, reflecting a growth of 1.6 percent from 2012 to 2022. The majority, constituting 82% of the population, were employed in the agricultural sector, contributing 24.5% to the district's GDP.

A notable trend was the concentration of the working-age population (15-64) in urban areas, surpassing rural areas. This shift contributed to a higher dependency ratio in the district. The higher ratio suggested that a significant portion of the working-age population migrated to urban areas in search of job opportunities, driven by the challenging living conditions in rural areas.

Remarkably, a considerable portion of the rural population consisted of youth and women in Standard Seven, engaged in farming activities. This demographic distribution highlights the rural-urban migration dynamics driven by economic opportunities and challenges in living conditions.

58. What is status of the district's population regarding food/nutrition security?

Agriculture plays a significant role in Iringa District, engaging nearly 82% of the population. The abundance of arable land, rivers, and favorable rainfall creates a conducive environment for farmers to cultivate crops for both sustenance and income generation. Common food crops in the district encompass maize, beans, groundnuts, Irish potatoes, sunflower, peas, various vegetables, and tropical fruits. The distinction between crops for home consumption and those designated as cash crops for sale is often blurred, with many households selling food crops to supplement their income. Despite achieving food security in certain seasons, a notable portion of the population faces insecurity during February, March, and April, emphasizing a need for improved production strategies. This insecurity results in a significant portion of the population being unable to afford a well-balanced diet, particularly during certain months of the production seasons.

In response to these challenges, the government has introduced programs and initiatives aimed at enhancing household food production and improving nutritional conditions. Collaborating with NGOs and the private sector, these initiatives include providing agricultural subsidies and inputs, extending agricultural extension services to farmers, stationing agricultural officers in every ward and village, offering nutrition education, establishing financial services for small-scale farmers, and implementing sustainable agricultural practices to safeguard ecosystems and natural resources. These concerted efforts seek to address the complex dynamics of food security and nutrition in the district.

59. What are trends of the district's population regarding income/poverty in last three years?

From the survey conducted on 2012 shown that GDP was 1,206.91 TZS and the survey conducted on 2019 was 3,546,770

60. What are trends of the district's population regarding food/nutrition security in last three years?

61. What are the main sources of household income around project communities?

The main sources of house-holds income were agriculture such as maize, beans, soya, iris potatoes, sunflowers, peas, ground nuts and some engaged in livestock keeping, selling local bear, bee keeping, tree nursery and casual labor

62. How did COVID-19 affect peoples’ health and livelihoods in your district? To what extent do you feel that the pandemic is behind us v. still affecting people in your district and why?

Several deaths occurred, students experiencing pregnancies during an extended holiday period. A substantial number of resources was allocated to raising awareness and implementing measures against the disease. Household incomes were severely impacted as restrictions on unnecessary movement were enforced.

63. How accessible is credit to farmers and other community members in your district? How is that changing in the last years and how project affected those changes, if at all?

Access to credit for farmers and community members in our district has been a dynamic aspect in recent years. Traditionally, credit accessibility faced challenges due to various factors such as financial constraints, stringent lending criteria, and limited financial literacy. Over the past few years, there has been a noticeable shift with efforts to improve credit accessibility.

The introduction of CARE-WWF Alliance project has played a pivotal role in positively impacting credit accessibility. For instance, collaborative efforts involving Iringa DC and CARE- WWF Alliance have worked towards providing financial support and enhancing financial education among farmers and community members.

As a result of these efforts, there has been a gradual improvement in credit accessibility. Farmers and community members now find it somewhat easier to secure credit for agricultural activities and other community projects. The projects, through their focus on financial inclusion, have contributed to changing the landscape of credit accessibility, making it more inclusive and supportive of community development.

However, it is essential to continue monitor and assess the effectiveness of these projects in influencing positive changes in credit accessibility for farmers and the broader community.

64. Kindly provide a list NGOs working in your district and/or the project communities:

NGO name	Kind of work and specific project communities within the district	More specific geographic area (if applicable)

65. What are the opportunities and challenges for the establishment and strengthening of community?

based groups, such as farmer groups, savings and loan associations, conservation groups or water user associations?

Opportunities

- Micro financial services initiated through VSLA manage their project or business
- Different training on how to manage the project or business was provided
- Provided training on good agricultural training like CA and CSA
- Farmers were linked with financial institution to be easy to get financial services
- formation of AMCOS for collective marketing and collective inputs purchasing
- Collaborative efforts within these groups help members better cope with challenges such as economic downturns, environmental changes, or other uncertainties by sharing risks collectively

Challenges

- Many community-based groups face challenges related to limited financial resources, making it difficult to implement projects or sustain ongoing initiatives effectively.
- Illegal measurement used by brokers
- Lack of reliable market for farm produce
- Lack of commitment among members groups
- Migration of group members especially youth (marriage, jobs)
- Lack of experience in managing project or business
- Misallocations of fund and goals.

The District Heads of Agriculture, Livestock and Fisheries (DALFO)

Name of respondent: Lucy Nyale/David Daudi Amos

Title: DAICO/Focal person

Organization: Iringa District Council

Mobile number: 0754867756 (0784798881)

66. What are the district's priority crops?

- Strategic crops: sunflower, avocado, soya
- Cash crops: cash nut, tobacco and cotton;
- Horticultural crops as business crop: tomatoes, onion, Irish potatoes, green maize, garden peas, miner crops are African eggplant, green peppers, hot pepper, water melon

67. What is the current level of agricultural productivity for Common beans, Irish potatoes, maize and other dominant crops?

Crop	Average yield per acre
Beans	500-800kg
Irish potatoes	7000-8000 kg
Maize	High land zone 1000-1200kg Midland zone and lower 400-600kg
Rice	1500-2200kg
Soya	400-800kg- new crop introduced
Sunflower	700-1200 midland and lower zone
Peas/njegere	20-25 bags
Tomatoes	800 Kreet (48tons)
Onions	120 bags (12tons)

68. How has climate change affected crop yields to date? What measures have been promoted to mitigate and/or adapt to effects of climate change in their communities such as warming temperatures, drought, heavy rains and flooding? To what extent are communities adopting these practices?

-There has been a significant difference between 1919 and the present day in terms of rainfall pattern distribution. Currently, the distribution is uneven and unpredictable. Formerly, November was the planting period, but now it extends up to January. For instance, in 2023, crops dried at the tassel stage, and there were occurrences of heavy rainfall events. In general, climate change has led to a decrease in crop yield and outbreaks of pests and diseases, such as the armyworm and the Rangi Mbili disease affecting Irish potatoes.

-Several measures have been promoted to help communities adapt to the effects of climate change. These include the cultivation of drought-tolerant crops, diversification of crops, adoption of irrigation farming, and careful management of wetlands. Education has been provided through alternative farming practices like home gardening. Additionally, communities have been presented with alternative enterprises such as beekeeping, batik making, and tree nursery initiatives. For instance, in the fiscal year 2023/2024, the district allocated a budget of 1,170,000/= for the CA tool.

-Furthermore, there has been a noticeable adoption of climate-smart agriculture practices within the community. This involves the use of organic fertilizers, contour farming, and the utilization of early-maturing seeds. The adoption rate is substantial, with farmers now actively seeking out soya seeds, improved seeds, fertilizers, and implementing intercropping and proper spacing during planting.

69. What are the most relevant climate, water and land use policies and regulations that are enforced at district level? For instance, to what extent has ASDP II and CSA guidelines been rolled out to / implemented / enforced with farmers and other water users?

- Regulations exist at the district level, but political influences have led to leniency in their enforcement
- The ASDP, CSA initiative begins at the community level
- Bylaws and regulations regarding the conservation of hotspots are in place
- These policies, regulations, guidelines, and bylaws are communicated to the community through FFBS, village general assemblies, and water user associations.
- Enforcement is carried out by ward and village officers

70. What mechanisms exist to roll out relevant regulations at the community level? What opportunities and challenges exist for their implementation or enforcement?

-The mechanisms in place to implement regulations at the community level include the presence of village committees and associations responsible for enforcing laws at the village level.

Opportunities: There has been an increase in understanding within the community, with scholars actively contributing to rural education (Form IV). Additionally, various committees are established, engaging in alternative Income Generating Activities (IGAs) such as beekeeping, fisheries (wasa village), tree nurseries, and batik making, thereby boosting community income.

Challenges persist, including political interference, limited knowledge in certain communities, absence of compensation and incentives, as the work is voluntary

71. What is the current status for farmers practicing Good Agronomic Practices? To what extent are farmers adopting conservation agriculture? what is the impact of the CARE-WWF Alliance project on this trend?

- More than 80% of farmers are practicing good agricultural techniques, with a notable focus on crop diversification, proper spacing, judicious fertilizer application, intercropping, and effective post-harvest handling.

-While there is no unanimous adoption of Conservation Agriculture (CA) principles, as some principals are embraced while others are not, a significant 95% of farmers in project villages have adopted more than three key principles. Notably, intercropping, proper spacing, and the use of improved seeds are among the practices embraced by the majority.

-The CARE-WWF Alliance project has played a pivotal role in transforming the mindset of farmers. Farmers are now engaging in bulk ordering of farm inputs, producing seeds, establishing links with

service providers and markets, collectively bulking resources, conserving natural resources, utilizing services provided by paraprofessionals, and minimizing the use of chemicals in farmland.

72. What is the state of post-harvest crop management for Irish Potatoes and Common beans, as well as the staple crops like maize?

-Post-harvest handling for maize and Irish potatoes is currently at approximately 65%, indicating a need for improvement. Maize and beans are stored in sacks, as keeping in pics bags farmers feel is a bit more expensive. In the case of potatoes, a direct link to buyers has been established

73. What market outlets exist around project area and beyond? Do farmers have access to reliable market for their produce? What are their challenges in accessing good markets and how has the project helped to overcome those challenges, if at all?

The market for farmers' produce is available both within and outside the area; however, a significant challenge lies in securing a reliable market due to insufficient production volumes. For example, while there is a market for soya in Silver Land and Mama Chi, farmers struggle to meet the volume requirements. Similarly, Tanzanice can purchase the entire yield of Irish potatoes, but farmers struggle to fulfill the market demand.

In addition to cultivation, farmers have undergone training in processing soya and Irish potatoes into various forms. Some farmers have diversified their sales strategies by selling snacks to schools and supplying soya flour to different regions within and outside the country, including the Democratic Republic of the Congo (DRC).

The CARE-WWF Alliance project has actively supported the market by organizing Farmer Field Days, inviting buyers, and promoting produce at various trade fairs. Furthermore, efforts have been made to establish Agricultural Marketing Cooperative Societies (AMCOS) in project villages to serve the same purpose.

However, a significant challenge faced by farmers is low production, which hampers their ability to fully capitalize on market opportunities.

74. What is the status of women/youth engaging in agriculture? What are their challenges in participating in and benefiting equitably from agricultural value chains, and how has the project helped to overcome those challenges if at all?

Women are actively involved in agriculture, participating in various activities such as FFBS, conservation groups and VSLA. Also, women engaged in processing soya and Irish potatoes. Women are now empowered reached a state of independently purchase farm inputs. Even in the AMCOS formed is predominantly women members

The youth have also joined the initiative and have shown a keen aptitude for adopting technology. Trained paraprofessionals, who are predominantly young individuals, play a crucial role in the community. They contribute by applying chemicals, including herbicides and insecticides, to support their fellow farmers. The project further aids the youth in pest control and the proper use of farm equipment.

Despite these successes, there are challenges participating in and benefiting equitably from agricultural value chains. The challenge of youth is mobile moving to other area to look for better livings, women are married to other areas, the impact of climate change affecting their farming activities. Additionally, some men may exhibit reluctance or distrust regarding their wives' participation in communal activities, posing a further challenge.

Recommendation

-As DAIC department pushing their budget to scale up to another new villages

-The project approach was commendable, addressing various components such as land use, production, marketing, environmental conservation, financial services, and gender issues.
-In the next phase, adopting a landscape approach to land use could enhance the protection of forests or water sources across the entire area. Unlike the current situation, where project villages allocate land for reserved forests and neighbouring villages allocate land for farming, this dilutes conservation efforts.

District Land, Environment and Natural Resources Officers

Name of respondent: Richard James

Title: District Environment Management Officer (DEMO)

Organization: Iringa District Council

Mobile number: 0754203116

75. What is the current status of forests, water (including rivers and wetlands) and wildlife in the IDC?

Moderately, encroachment is not a significant issue. VNRC is performing well; however, challenges related to uniform of VNRC members, field gear, allowances, and transportation facilities persist. Another challenge involves the changing dynamics of the Natural Resource Committee due to various factors, such as immigration, political interference, marriage, lack of incentives, and individual private obligations. Regular training and education for incoming members are necessary to address this issue.

Continuous support remains essential for both VNRC and the Village Council in their natural resource conservation management activities.

While 4 VLUM is also performing well, there is a challenge of responsibilities becoming intertwined.

In most cases, tasks are delegated to VNRC after the completion of the village land use plan.

Although VLUM participates in the land use plan, more duties are often assigned to VNRC.

Wetlands and rivers are effectively managed by JUBODOMLYA (Jumuiya ya watumia maji bonde dogo la mto Lyandembela), Rufiji basin water board, Village Council, eight environmental conservation groups, and Village Land Use Management (VLUM).

76. What are the trends for forests, water (including rivers and wetlands) and wildlife in the region in the last 10 years? How has the project affected those trends, if at all?

The trend for forest and water conservation has shown improvement compared to the past 10 years. This positive trajectory attributed to initiatives such as Land Use Management, regular awareness campaigns, and activities like tree planting (e.g., in 2022/2023, 10,185 trees were planted) and the adoption of good agricultural practices.

However, there are some instances of minor encroachment into forests and Waterland, primarily as a result of the impact of climate change, specifically drought.

77. What are the climate trends for the district in last 10 years? What climate change impacts exist to date? What is projected to change in the future? What measures have been promoted to mitigate and/or adapt to effects of climate change in communities? To what extent are communities adopting these practices, and what is the effect of the project on this trend if at all?

-Over the past decade, the district has experienced notable climate trends, including changes in temperature, precipitation patterns, and extreme weather events

- Current impacts of climate change in the district encompass like changes in crop yields for instance 2021/2022 farmers from Iringa dc harvest up to 2-1 bags of sunflower per acre due to drought, increased frequency of floods or droughts, impacts on biodiversity. For instance, rain starts from end

of October but this year starts on December. On the months of January to March the area is used to be full with fog but now days disappear

-Though currently we do not have specific forecasts or predictions based on scientific model but future climate projections for the district suggest potential changes in temperature, precipitation, and wind

- As Iringa DC various measures have been promoted to mitigate and adapt to the effects of climate change. These include afforestation, sustainable agricultural practices and water conservation initiatives. For example, there is a campaign of planting tree 20million in every year, but also the district supporting environmental community groups to participating in conservation of water and natural forest

- The communities in reaction to climate change are practicing Vinyungu farming, conservation farming, tree harvesting, diversification of seeds, engaging in environmentally friendly enterprise like beekeeping,

- Ongoing projects in the district, CARE-WWF Alliance project have contributed to water and forest restoration by support the community in conservation awareness raising, tree planting, environmentally friendly enterprises like beekeeping and tree nurseries, Village land use plan, VSLA, Smart agriculture particularly conservation agriculture

78. What are the threats to the sustainability of forest, water and wildlife resources? What is the approach to – and what are the biggest challenges for – their management? (Probe: climate change; equitable governance)

- Threats to sustainability include the expansion of agricultural land into forests, cultivation near water sources, planting trees unsuitable for water ecosystems, and illegal timbering

- The primary challenge faced by community environmental groups is the lack of essential field gear and incentives, coupled with the absence of alternative water sources for irrigation and instances of political interference. But also lack of adequate fund for District for managing conservation of natural resources

- The district collaborates with the Village Council, VNRC, VLUM, and environmental groups to manage water and forest natural resources effectively

79. What are the climate, water and land use policies and regulations that are most relevant at the district level? To what extent are they rolled out / enforced and what challenges exist in doing so?

-There are by-laws at District level, at village level, land use and forest management plan, Water User Association laws which are relevant and enforced at all level by legalized organizations.

- The main challenge is inadequate education to the community on communal ownership of Natural Resources

80. Beyond agriculture, what are the natural resources that communities most depend on? What are the most common uses and who are the most common users of those resources (men v. women, etc.)?

- Forest particularly men doing farming, charcoal making, hunting, fetching building materials

- Water the main users are women for domestic use

81. Do you know how many community-based conservation groups (such as water user's groups, village natural resource committees, and village land use planning committees) there are in the district?

-There are 134 VNRC (9) implementing CARE-WWF Alliance project, 5 Water User Group, 1 WUA, 9 environmental. Groups and 4 VLUPC

82. What is the status or performance, strengths and weaknesses of these community-based conservation groups? How has the CARE-WWF Alliance project affected this, if at all?

-The performance of conservation groups is ok, the groups are committed, passionate and voluntarily engage in environmental conservation work. In all project villages there are VNRC, VLUPMC, environmental groups that are actively engaged in conservation activities supporting the project,

- weakness; poor commitment to some member due to lack of incentive, No fund for purchasing field gears like uniform, gumboots, transport facilities, smart phone for record taking and documentation
- strength: committees are knowledgeable on conservation activities, they groups are cooperative they feel sense of ownership of community natural resources, the groups doing other income generating activities apart from conservation work

83. Specifically, how does the district engage through water user groups to sustainably manage water?

-provision of trainings to water user groups; promoting conservation through motivating groups planting trees, supporting the groups engaging in environmentally friendly enterprise like tree nursery, beekeeping, group registration, getting fund from District youth and women fund

84. What is the status of women/youth engaging in natural resource management?

What are their challenges in participating in and benefiting equitably from natural resource management and nature-based enterprises? How has the CARE-WWF Alliance project affected this, if at all?

-Women and youth actively participate in natural resource management initiatives in the region. The regulation needs 1/3 of NR committee members to be women, but also youth and women are most targeted group for benefiting from the natural resources and the main power for natural resource conservation. All VNRC, VLUM, WUG and WUA comprises over 50% are women and youth

- Despite their active involvement, women and youth encounter various challenges in fully participating in and benefiting equitably from natural resource management and nature-based enterprises. Women and youth facing limited access to resources they do not own land, youth are mobile always moving here and there looking for green pasture, women are getting marriage so immigrating to their husband regions, youth are so attracted by quick win enterprise instead of voluntary work.

- The CARE-WWF Alliance project has played a significant role in addressing some of the challenges faced by women and youth in natural resource management. The intervention of using VSLA which comprises women, Land use plan, Conservation farming, diversification of enterprises and programs of empowering women

85. Are there any of natural resources conflicts (land, water, boundary) occurred in this area?

Number conflicts resolved in the village in last three years? Trends of conflict occurrence are increasing or decreasing? How has the CARE-WWF Alliance project affected this, if at all?

-Natural resource conflict still existing though in minor cases, based on project area there were 5 land conflicts, 2 water use conflict (Itengulinyi) and 2 village boundary conflict (Ufyambe)

-The trend of conflict to current is decreased almost absent this contributed by the CARE-WWF intervention particularly after intervention of village land use plan and conservation initiatives

Rufiji Basin Water Board

Name of respondent Eng. Fred Haule

Title: Ag- manager RBWB

Organization: Rufiji Basin Water Board

Mobile number 0758258605

86. What is the current status of water (including rivers and wetlands) and in the basin and Iringa region?

- The current condition of water resources, encompassing rivers and wetlands, in the basin and Iringa region has undergone significant positive changes due to the collaborative efforts of the WWF-CARE alliance. Noteworthy achievements include the restoration of forests, rivers, and water lands across nine villages. In particular, the water lands of Lugodalutale have been effectively protected through fencing measures, and the ambitious planting of 5000 trees has taken place. Furthermore, the establishment of three tree nurseries in Lumuli village serves as a testament to the sustainable approach taken.

As a direct result of these concerted initiatives, the overall status of water resources has witnessed marked improvement since the inception of the project. The positive impact on the ecosystem underscores the success of the interventions, highlighting a promising trajectory toward the restoration and preservation of crucial water-related environments in the area.

87. What are the trends of water (including rivers and wetlands) in the region in the last 10 years? How has the project affected those trends, if at all?

-It is somewhat challenging to discern the impact of the project on the water trend, considering rainfall as the primary factor influencing river water. However, certain rivers exhibit average to above-average levels, yet the flow into the main river remains consistent and above average. The project activities have played a crucial role in sustaining the flow of rivers, resulting in a positive impact.

-RBWB is currently in the planning stages to measure the flow of the Ndembera River accurately, aiming to understand the trend of the main river in Ndembera

88. What are the climate trends for the district in last 10 years? What climate change impacts exist to date? What is projected to change in the future? What measures have been promoted to mitigate and/or adapt to effects of climate change in communities? To what extent are communities adopting these practices, and what is the effect of the project on this trend if at all?

-The challenge persists in understanding the trend of climate change, given its global nature and multifaceted causes. One evident consequence of climate change is the reduction in the flow of river water, downstream floods and droughts that contribute to the decline of rivers.

-Collective efforts are crucial for addressing these issues, exemplified by initiatives such as the WWF-CARE alliance project. Without coordinated measures, the situation is likely to worsen.

The project has actively promoted climate change mitigation measures within communities. It provided education on natural resource conservation in nine villages and established environmental groups focused on tree planting around the Waterland. Additionally, the government has a longstanding plan to construct the Lugodalutali dam.

As part of its initiatives, the WWF-CARE alliance project supported the establishment of two water user associations in the project areas: Jumuiya ya watumia maji bonde dogo la mto Lyandembera (JUBODOMLYA) and Jumuiya ya watumia maji Lyandembera na Mufindi (LYAMFI). The project also played a role in building the capacity of village councils and village governments, focusing on water resource conservation, the development of by-laws, and the creation of water user management plans.

89. What are the threats to the sustainability, water and wildlife resources? What is the approach to – and what are the biggest challenges for – their management? (Probe: climate change; equitable governance)

-Poor agricultural practices, farm expansion, bushfires, livestock grazing, and mining activities conducted along water sources, particularly in Sadani village, pose a significant threat to the sustainability of water and wildlife resources.

-RBWB consistently adopts a legal approach, taking cases of law violation to court. In some instances, minor cases are resolved by water user associations, and communities receive education on resource management.

-The primary challenge lies in the ineffective management of land use plans and the disregard for water use laws, emphasizing the necessity for cooperation among various stakeholders. RBWB plays a crucial role in overseeing and enforcing these laws.

90. What are the climate, water and land use policies and regulations that are most relevant at the district level particular Mufindi and Iringa rural district? To what extent are they rolled out / enforced and what challenges exist in doing so?

RBWB operates under the National Water Policy, which outlines the permissible uses of water for domestic purposes, irrigation, and environmental conservation. Additionally, it adheres to the Water Resources Act of 2009 and the National Environment Management Act (No 8 of 2020). Specific regulations for water resource management, including abstraction and underground water, are also in place. Environmental laws and associated regulations are considered in RBWB's operations. Enforcement measures are actively implemented, and there is a widespread awareness among the populace regarding the significance of conserving water resources.

However, a notable challenge arises from political influences and the interference of laws and regulations by various authorities, posing obstacles to effective implementation and enforcement

91. Beyond agriculture, What are the most common uses and who are the most common users of those resources (men vs. women, etc.)?

- Domestic use, mainly are women)
- Irrigation (mainly are youth and men
- Hydro power though not developed

92. Do you know how many community-based conservation groups (such as water user's groups, village natural resource committees, and village land use planning committees) there are in the districts of Mufindi and Iringa rural?

-There are two main water user associations tasked with conserving water sources and coordinating various activities related to water management. In collaboration with the 9 Village Natural Resource Committees and 9 Village Land Use Management Committees, RBWB actively collaborates with these committees to implement water use management initiatives

93. What is the status or performance, strengths and weaknesses of these community-based conservation groups? How has the CARE-WWF Alliance project affected this, if at all?

The performance of community-based conservation groups has significantly improved since the project's intervention, effectively putting a halt to the destruction of water sources. In addition to conservation activities, these groups engage in income-generating pursuits aligned with environmental conservation, such as tree nursery management, beekeeping, batik making, and VSLA (Village Savings and Loan Associations).

Strengths: The groups are well-educated and possess substantial knowledge about the conservation of natural resources. Members exhibit a strong passion and spirit for conserving the environment, receiving support from both the district council and RBWB.

Weaknesses: The groups face challenges such as insufficient field gear, political interference, purely voluntary work (without allowances), and a shortage of youth participation in the groups.

The CARE-WWF Alliance project plays a pivotal role in enhancing the capacity of these conservation groups. The project also provides support in the form of inputs, such as tree seeds for establishing tree nurseries. The initiation of Village Savings and Loan Associations (VSLA) is instrumental in actively involving these groups in conservation activities.

94. Specifically, how does the RBWB engage through water user groups to sustainably manage water?

- RBWB ensures that water user groups adhere to relevant water management regulations and policies. This involves providing guidance on legal frameworks and facilitating compliance to promote sustainable water use practices.
- The RBWB allocate technical resources, to support the initiatives and projects of water user groups. This assistance contributes to the sustainable development and management of water resources.
- RBWB works closely with water user groups to monitor the implementation of water management strategies. Regular evaluations help assess the effectiveness of these measures and identify areas for improvement.
- Conflict Resolution: In cases of disputes or conflicts related to water use, RBWB plays a role in mediating and resolving issues through dialogue and negotiation, fostering a cooperative and sustainable approach to water management.
- RBWB encourages the adoption of best practices among water user groups. This includes promoting efficient water use, conservation measures, and environmentally friendly practices to ensure the long-term sustainability of water resources.

95. What is the status of women/youth engaging in natural resource management?

What are their challenges in participating in and benefiting equitably from natural resource management and nature-based enterprises? How has the CARE-WWF Alliance project affected this, if at all?

-1/3 WUA are women, youth are not interested as this is voluntarily work (no allowance), but also, youth are mobile immigrate for looking green pasture and marriage

- CARE-WWF Alliance project affected the presence of women in the water user committee by emphasizing community adherence to the legal requirement that at least 1/3 of the committee members should be women. The other thing that project managed to engage more women in the natural resource management is using intervention of VSLA which have more women in managing natural resource

96. Are there any of natural resources conflicts (land, water, boundary) occurred in this area?

Number conflicts resolved in the village in last three years? Trends of conflict occurrence are increasing or decreasing? How has the CARE-WWF Alliance project affected this, if at all?

- Since the intervention of the CARE-WWF Alliance project and the establishment of water user associations, no conflicts over water resources have arisen. There was a potential conflict between the investor (Silverland) and Muhimbi Bonde regarding water use, with the community expressing concerns that the investor was consuming an excessive amount of water, impacting the community's access. RBWB intervened and resolved the issue, determining that the water supply was sufficient for both the community and the investor.
- Minor conflicts at the water user association (WUA) level were successfully resolved.
- In the realm of land conflicts, the CARE-WWF Alliance project played a significant role in preventing conflicts related to land use in the project areas after introduced village land use plan

Recommendation from RBWB

- Protection of water sources through the installation of visible demarcations such as beacons or fences.
- Full involvement of RBWB in all stages of project implementation, avoiding partial engagement in specific events.
- RBWB plays a crucial role in water resource management but encounters challenges related to transportation facilities, particularly the availability of motor vehicles. This aspect should be taken into consideration in the planning of upcoming projects.

6.6. Focus Group Discussions

FGD GUIDE

Name of village: MIBIKIMITALI

Group type: Men

Wellbeing and Agriculture

1. What does **wellbeing** mean in your community? (*Probe: does wellbeing mean something different to women than men?*)

Wellbeing was means development for all men and women

For example, Mr. Titus had harvested 5 sacks of beans in 2023

- Maize were 5 to 15 bags
- Sunflower uses better seeds and has increased income from 2 to 7
- Iris potatoes Seed availability is a challenge

2. What are the main sources of **livelihoods** that provide food and income in your community?

- Farming (maize, beans, sunflower, iris potatoes, peas)
- Livestock (cow, chicken, pigs, goats)
- Business (shops, food vendors)
- Beekeeping
- Horticulture farming (cabbage, Chinese, spinach,)
- Fruits tree farming, timber tree farming (Avocado, pine)
- Tree nursery (Avocado)
- Causal labour

3. **Trends.** Are people better off or worse off today than they were 10 years ago? (*Probe: trends refer to poverty, adequate access to nutritious food*) Why? (*Probe: climate, other things affecting productivity*)

Current life

- Hunger has been reduced so many people are not asking for corn to buy
- Livestock is faced with Newcastle disease for poultry, sludge

4. What are the most common **crops** farmed for cash and subsistence in your community?

Common food crops in the community were maize, Iris potatoes and beans

Common cash crop in community were peas (bags 30,000/- 60,000/=) cultivation started from February to April.

5. What are the most common farming **practices** used in your community? (*Probe: to understand if farmers know environmental impact of farming? use of slash/burn, pesticides/fertilizers, consideration of environmental impact as part of decision-making; use of specific climate-smart farming practices, such as mulching and intercropping*) Are there specific farming practices that are used by women or men, respectively? Why?

Common farming practices used in the community

- Farm preparation by clearing no burning
- Planting seeds by spacing (75cm, 25-30cm)
- Hybrid 614, PANAR 691, DK 777
- Weeding by hand hoe,
- Insecticide
- Fertilizer during planting and urea, CAN
- Hand harvesting
- Slowing Down at Home
- Storage and medication in bags
- Keeping at Home
- Weeding by using herbicides and prepared farm by using paraforce, T. maguguma
- Personal safety
- Containers to be disposed safely
- Crop rotation
- Inter cropping

6. What are the biggest opportunities and **challenges** facing small-scale farmers in your community? (*probe: climate change impacts, inputs, markets, post-harvest, access to finance – financial services from whom?; regularly of extension services - from whom? existence of producer groups*)

Opportunities

- Training of agriculture
- Coming of the market availability
- Availability of river for irrigation

Challenge:

- Capital
- High price of inputs
- Measurement
- Climate-dependent agriculture
- No agro-vet shop in the village
- Eruption of pest and diseases in maize and peas

7. What are the **roles** of men and women in your households and communities? (*probe: gender and age differences between men, women, youth and girls in the division of labour throughout the agricultural value chain; household decision-making in the use of produce for food or income, control over productive assets income*)

Role for men

- Clothing, education, food, shelter, medical treatment
- Chief steward of property, and expenditures.
- The last decision maker is the father.

- Most men don't like their affairs other people know so they agreed with their mother to hide their secret. Sometimes they agreed with their spouses so that after the event they learned by making assessments

Role for women

- Raising a family, identifying daily needs, taking care of the home,
- Harvest, food budget

Role on household food expenditure

- Women were given opportunity to discuss on how food can be used but the final decision remained to men
- During selling of cash crops- Men decided
- Households future plan for investment – men planned
- Income expenditure – women were involved in planning but the final decision made by men

The FGD highlighted distinct roles for men and women within the community. According to the discussions, men play a pivotal role as the primary decision-makers in critical matters such as managing the family's finances derived from crop sales and devising plans for household investments. Additionally, men are actively engaged in various aspects of household responsibilities, including decisions related to family clothing, education, food supply, housing, and overall healthcare.

Men also hold the position of chief overseer, responsible for managing family assets and expenditures, while being the primary source of innovative ideas for the family. On the other hand, the discussions shed light on the roles of women, emphasizing their significant contributions to child care, upbringing, and daily household obligations. Women are instrumental in nurturing the family, recognizing daily needs, and effectively managing household assets.

Moreover, it was observed that in agricultural activities, both men and women are equally involved in various tasks, with the exception of the application of pest and insecticides, a responsibility typically shouldered by men. In the decision-making process, women actively participate by contributing ideas; however, the ultimate decision-making authority rests with the men

In metal index scoring 1-5, decision making for critical matters such as managing the family's finances derived from crop sales and devising plans for household investments men scored 4 while women scored 3, this is because traditionally men perceived as head of the family and all critical matters rest to men '*wanawake wameolewa wewe baba ndio unatakiwa kuwa kila kitu katika famili*' said one man during group discussion

In the role of chief overseer, tasked with managing family assets, expenditures, and generating innovative ideas for family development, men scored 5, while women scored 4. This discrepancy is attributed to the perception that men traditionally assume a greater responsibility, being considered the primary providers, while women are often seen as supporting their partners within the family structure.

Regarding family roles, encompassing childcare, upbringing, nurturing, recognizing daily needs, managing household assets, and daily household obligations, women scored 5, while men scored 3. This is explained by the belief that women historically spend more time at home, focusing on familial responsibilities, whereas men are assumed to be more present in the home during the evening hours.

Natural Resources

8. What **ecosystems**, or natural resources, does your community rely on for its well-being? (*probe: soils, water, forests, wildlife; and how they contribute to food security or income*)

Land

-No burning crop remains, crop rotation, no grazing on farm, crop lime use, compost fertilizer and manure, mixed crops were adapted

Water sources

-14 planting trees with water for example 2022 were planted 3700, 2022 were 20 tanks and 6000 seedlings planted on water sources, prevented livestock nearby water resources, settled bylaws, farming 60 meters away.

-Beekeeping

-Tree planting

-Proximity to the water supply

Challenges

- Investors are asking for permission from the water basin so the Village does not know how much water it is supposed to use and the Village is not involved.

Forest had 12acre of pine and 25acre of poles' farms

- Fire line

- Not burning the fire

- Conservation education at conferences

Challenge:

- Investors were slashed forests without starting production even after 5 years

- Forest maintenance work equipment

9. Beyond farming, **who uses** those natural resources and how? (*probe: gender, age.*)

10. **Trends.** What is the status of those natural resources today compared to in the past - e.g., ten years ago? (*Probe: quality, quantity of different NR bases, NR conflicts and trends in conflict-resolution*)

- There were changes occurred and the status of natural resources were suitable, hence the water resources increased.

11. How are those natural resources **managed** today? Who has the **decision-making power**? Who is **most affected** by those decisions? (*Probe: VLUPs, integrated land and water management practices, the extent to which village land use plans affect management decisions in the day to day, for sustainability practices to see if there are changes over the last years, gender, age, different levels/sectors, e.g., CBOs v. government v. private companies*)

12. What **challenges and opportunities** exist for community participation and leadership in sustainable natural resource management and enterprises based on nature?

Opportunities

- Availability of water supply for agriculture, domestic uses and beekeeping

Challenge

-Education was still the requirement to all people, capital for management, and communication was still the challenge, Poor infrastructure, smartphones for picture as evidence

Resilience

13. **Trends.** How is the climate today compared to the past (e.g., 10 years ago)? (*probe: frequency/extremity of weather events, change in temperature, variability of rainfall – droughts, floods, etc.; scale of impacts on farming*)

-Increase in rainfall from 1986 to 95, Also after planting of trees and conservation of natural forest and water bodies was increased

14. How do you **cope** with shocks and stresses, like droughts or price volatility? (*probe: examples, differences by gender, age*)

-adequate storage and casual labor

15. What has worked and what **challenges** remain for coping with the changing climate and other shocks or stressors, like the COVID-19 pandemic?

-Water resources were protected,

-Protective equipment like mask were used

-market for products was still the challenge

16. What are the most common ways you **save** for the uncertainties of the future, whether informally or formally? (*probe: existence of informal savings/loans groups*)

17. If you don't have enough cash on hand, what kind of **financial services** does your community have access to? (*probe: differences by gender, age; ability/barriers to access formal banks/loans*)

18. When you have made larger investments in the past (e.g., in a new business), what are the key things you consider determining how to spend the money? (*probe: is impact on the environment, the sustainability of natural resource use/management a part of the equation*)

-Collectively investment of established group was unsuccessful

-A lot of money was spent on buying of agricultural inputs and school fees

Conclusion

19. To summarize, what would you say are the main **challenges** that community members face in achieving and sustaining wellbeing? (*probe: what challenges does everyone face – e.g., climate change, COVID; what challenges are unique to some groups or affect some more than others, e.g., women and girls?*)

- Illness or diseases
- Inadequate collective investment,
- Inadequate sustainable natural resources
- Weather changes

20. What has been most **effective in overcoming** these challenges – approaches, interventions or groups that emerged locally or were brought in by external partners (e.g., NGOs, the government or the private sector)? (*probe: opportunities, barriers for farmer groups, VSLAs, WUAs?*)

-Education on collective investment was required, irrigation and entrepreneur skill

21. Are there examples of things that have worked locally to increase the **participation and decision-making power of women and youth** in the home or in community groups?

22. What **fears** do you have and **opportunities** do you see for the future of natural resources and its effects on the wellbeing of today's children and future generations? (*probe: the impacts of climate change, the pathways of impact between NR and livelihoods*)

- Climate change was the biggest problem
- Population increase was threat to NR
- Avocado Cultivation required excess water
- Short wells seen to reduce ground saturation and springs it was better advised to consume water from large sources like river and dams.
- pines cultivation consumes water

Opportunities

- Irrigation and domestic use
- Beekeeping
- Women use water from nearby sources
- Agricultural education, VSLA, NMB, CRDB
- Provided education on opening and importance of banking account in village

23. Is there **anything else** you'd like me to share with the CARE-WWF Alliance to inform the project here?

- People involved in the project gave thanks to CARE-WWF
- Continue providing education to the people
- Solving other challenges facing small scale farmers
- Market improvement
- Provide beehives
- Equipment and working materials for protection of natural resources
- smart phone provision

FGD GUIDE

Name of village: Wasa

Group type: Women

Wellbeing and Agriculture

24. What does **wellbeing** mean in your community? (*probe: does wellbeing mean something different to women than men?*)

Wellbeing means good livings for both men and women. To be assure with getting food, clothes, money for daily spend for both men and women

25. What are the main sources of **livelihoods** that provide food and income in your community?

- Agriculture Farming- (maize, beans and irish potatoes)
- Livestock (chicken, pigs, Cow)
- Small business eg mama ntilie, local brews, vegetable, shops and casual labour
- Bodaboda particularly for youth

26. **Trends.** Are people better off or worse off today than they were 10 years ago? (*probe: trends refer to poverty, adequate access to nutritious food*) Why? (*probe: climate, other things affecting productivity*)

Current life is better than ten years past because there has been more livelihood opportunities
 ☑ skills and knowledge have enabled people to produce more food, especially in maize, potatoes, and beans as now many families in the village are food secured.

☒ Knowledge of environmental conservation is increased hence farmers are practicing sustainable agricultural practices. People are planting trees around water sources. Previously, cutting down trees and farming near water sources were common practices in our community.

☒ Agricultural farming practices have improved due to the initiatives of CARE-WWF Alliance project through the Farmer Field and Business School (FFBS) which led to increase of crop yield

☒ Individuals have gained knowledge and skills on the proper disposal and application of pesticides and herbicides, as well as how to handle containers.

☒ The community diversified enterprises of environmental conservation friendly like beekeeping and tree nursery

27. What are the most common **crops** farmed for cash and subsistence in your community?

- Common food crops – Maize, beans- cultivated by both men and Women
- Common cash crops - Maize, Beans, Potatoes, Tomatoes, Watermelon, Avocados, sunflower, Avocado -cultivated by both men & women (Tomatoes, water melon,Avocado- cultivated by youth & old men)

28. What are the most common farming **practices** used in your community? (*probe: to understand if farmers know environmental impact of farming? use of slash/burn, pesticides/fertilizers, consideration of environmental impact as part of decision-making; use of specific climate-smart farming practices, such as mulching and intercropping*) Are there specific farming practices that are used by women or men, respectively? Why?

-The most common farming practices include the application of fertilizer, the use of improved seeds, proper spacing, pesticide application, intercropping, weed management, terracing, and crop rotation.

-Avoidance of burning farm residuals and the planting of trees that are friendly to water catchments, such as mivengi and mihululenga, are also emphasized.

-The most widely adopted technique by farmers is planting in proper spacing and intercropping

-These farming practices are adopted by both women and men.

29. What are the biggest opportunities and **challenges** facing small-scale farmers in your community? (*probe: climate change impacts, inputs, markets, post-harvest, access to finance – financial services from whom?; regularly of extension services - from whom? existence of producer groups*)

Opportunities-

- Presence of extension officers and paraprofessional that assist on provision of extension services
- Presence of Collective investment system enable members to earn extra income
- Presence of WASA AMCOS help members to get farm inputs easily and at low price
- Presence of VSLA help members to secure loan, savings and agricultural education
- Presence of FFBS enabled members to get knowledge on good agricultural practices

Challenges:

- Lack of a reliable market for farm produce.
- Absence of proper legal measurements, off takers are using their own measurement
- Low prices for farm produce
- Some farm inputs are not available in the village you need to travel to Mufindi town to access the services.
- Inadequate sources of finance. We rely solely on the Village Savings and Loan Association (VSLA), which is insufficient to meet our financial needs

30. What are the **roles** of men and women in your households and communities? (*probe: gender and age differences between men, women, youth and girls in the division of labor throughout the*

agricultural value chain; household decision-making in the use of produce for food or income, control over productive assets income)

- Initiators of the crops to be grown: Both husband and wife (Women scored 4, while men scored 5. This is because men have taken it upon themselves as their responsibility to ensure the development and food security of the family).
- Farm preparation: Both wife and husband (Women and men scored 5. This is because both men and women are capable of performing the task, and it is customary in the community that farming work requires cooperation between wife and husband).
- Farm sowing: All wife, husband, and children (Both scored 5 because the task involves the whole family).
- Weeding: All wife, husband, and children (Men scored 5, while women scored 4. This is because when herbicides are used for weed control, men are responsible. However, if a hand hoe is used, both men and women are responsible. The community received training from the CARE-WWF Alliance project, advising against women spraying chemicals due to their potential adverse effects).
- Fertilizer application: Both wife and husband (both scored 5 as this work is done by both equally)
- Herbicide and pesticide application: Husband/men (Men scored 5, while women scored 1. This is because women are not recommended to apply chemicals).
- Crop harvesting: Both husband and wife (Men scored 5, and women scored 5, as this work is traditionally done by both sexes).
- Transporting crops to home: Husband/men (Men scored 5, while women scored 3. This is because men use motorcycles to transport crops).
- Packaging and storing: Both wife and husband (Both scored 5, although there is a division of work, with women doing cleaning while men handle packaging and stacking in the storeroom).
- Selling crops to the market: Both wife and husband (Both scored 5, as it is normal in the community for anyone to sell crops after mutual agreement between wife and husband).
- Initiator for household investment: Husband scored 5, while wife scored 4. Men are seen as the heads of the households and are responsible for household development.
- Caring for children and family members: Wife (Women scored 5, while men scored 3. Traditionally, this is the responsibility of women).
- Doing household chores such as cooking, sweeping, and washing dishes: Wife (Women scored 5, while men scored 1. This is mainly the task of women to ensure that the house is clean and to cook for the family).
- Decision-making on household income expenditure: Both men and women (Women scored 4, while men scored 5. Wives advise their husbands, but the final decision rests with the husband as the head of the household).
- Household treasurer: Wife (Women scored 5, while men scored 4. Women are perceived to have more discipline in expenditure than men).
- Schooling children: Both men and women (Women scored 4, while men scored 5. This is because both men and women plan and work together to generate funds for educating children, primarily through the sale of jointly produced crops by wife and husband).

Natural Resources

31. What **ecosystems**, or natural resources, does your community rely on for its well-being? (*probe: soils, water, forests, wildlife; and how they contribute to food security or income*)

-Farmland, water and Forest

32. **Trends.** What is the status of those natural resources today compared to in the past - e.g., ten years ago? (*Probe: quality, quantity of different NR bases, NR conflicts and trends in conflict-*

resolution) (river improved, education and formation of NR committee, land use, by laws, women managed to own land, education on land right for both women and men)

- Currently natural resources are at good state, forest is protected by community, water sources are well conserved, soil and water management technique are applied in farm field. For instance, 4260 trees planted around water catchment. There are sign board to the source of water and reserved forest that warning people not to destroy forest
- There also by laws, Environmental conservation committee and conservation groups all together protecting the natural resources
- Land conflict is reduced to the maximum as a result of Village Land Use plan that was conducted in 2021/202, encroachment of reserved forest is reduced to the maximum

33. How are those natural resources **managed** today? Who has the **decision-making power**? Who is **most affected** by those decisions? (*Probe: VLUPs, integrated land and water*)

- Natural resources are managed by the community through VNRC and VLUMC.
- Natural resource committees have given power to make decision on behalf of the community and the whole community is affected by the decisions taken

34. What **challenges and opportunities** exist for community participation and leadership in sustainable natural resource management and enterprises based on nature?

Challenge – Some people still violate village bylaws, and the work is voluntary without any allowances. There is a lack of funds to support natural resource conservation activities, such as field gears, transport facilities, and allowances for VNRC members as incentives. Additionally, there is political interference for conservation groups that are protecting natural resources.

Opportunity – There are already functioning conservation committees in place, and over 60% of the community is aware of natural resource conservation. Some environmental groups are now directly benefiting from natural resources, such as beekeeping and tree nursery enterprises. Community members receive support for the existing leadership of the conservation committees. Youth and women are integral parts of environmental committees.

Resilience

35. **Trends.** How is the climate today compared to the past (e.g., 10 years ago)? (*probe: frequency/extremity of weather events, change in temperature, variability of rainfall – droughts, floods, etc.; scale of impacts on farming*)

The climate has undergone significant changes compared to the past 10 years. The distribution pattern of rainfall has shifted; previously, we received rain from November to April, but now it occurs from December to March. Additionally, there is uncertainty regarding the onset and conclusion of the rainy season, making it unpredictable and unreliable.

Temperature has increased, with the winter period shortening over less months. In the past, winter typically started from April to August, but nowadays, it begins from May to July.

36. How do you **cope** with shocks and stresses, like droughts or price volatility? (*probe: examples, differences by gender, age*)

Short matured crops, resistant crops, food budgeting, drought crops)- No shocks

- Early preparation of farms,
- Early planting
- Applying fertilizer on time
- Engage in other income generating activities apart from agriculture
- Use of short-term matured crops

37. What has worked and what **challenges** remain for coping with the changing climate and other shocks or stressors, like the COVID-19 pandemic?

What worked for coping with the changing climate

- Knowledge on practicing sustainable farming
- Enterprise diversification
- Engaging in VSLA
- Mobilization on collective investment

What challenge remain

- Reliable market
- illegal measurement
- Agro input shops
- Reliable sources to support conservation activities

38. What are the most common ways you **save** for the uncertainties of the future, whether informally or formally? (*probe: existence of informal savings/loans groups*)

- Reserving large amount of harvested crops
- people are farming around wetland (Vinyungu)
- engaging in VSLA
- Diversify in other IGA apart from agriculture
- engaging in livestock farming

39. If you don't have enough cash on hand, what kind of **financial services** does your community have access to?

- VSLA
- Loan from bank through group vision fund

40. When you have made larger investments in the past (e.g., in a new business), what are the key things you consider determining how to spend the money? (*probe: is impact on the environment, the sustainability of natural resource use/management a part of the equation*)

- Schooling children, purchasing farm inputs, home usage and investing in fixed assets

Conclusion

41. To summarize, what would you say are the main **challenges** that community members face in achieving and sustaining wellbeing? (*probe: what challenges does everyone face – e.g., climate change, COVID; what challenges are unique to some groups or affect some more than others, e.g., women and girls?*)

The main challenge reported are;

- inadequate capital to meet their financial need for farming*
- Lack of reliable market for farm produce*
- Un available agro shops*
- illegal measurement used to purchase farm produce*

42. What has been most **effective in overcoming** these challenges – approaches, interventions or groups that emerged locally or were brought in by external partners (e.g., NGOs, the government or the private sector)? (*probe: opportunities, barriers for farmer groups, VSLAs, WUAs?*)

- There has been interventions and approaches to overcome the drought through CARE- WWF alliance project to overcome challenge like initiative of establishing AMCOS. However, no intervention from external partner brought in to overcome the challenges

43. Are there examples of things that have worked locally to increase the **participation and decision-making power of women and youth** in the home or in community groups?

- Village government is trying to mobilise women coming up to compete to different positions of leadership in the village. Also in committee that directed certain number of women needed is adhered

44. What **fears** do you have and **opportunities** do you see for the future of natural resources and its effects on the wellbeing of today's children and future generations? (*probe: the impacts of climate change, the pathways of impact between NR and livelihoods*)

- Vinyungu farming will not be practices since the government has a plan of establishing dam for basin that they are farming

45. Is there **anything else** you'd like me to share with the CARE-WWF Alliance to inform the project here?

- Nothing more than to say thank you for what has been done. But also, if there is other opportunity, we would like the project to focus on community to get soft loan, , addressing on Market challenges, more support on beekeeping, tree nursery, strengthening collective investment and AMCOS

Name of village: Igombavanu

Group type: women

Wellbeing and Agriculture

46. What does **wellbeing** mean in your community? (*probe: does wellbeing mean something different to women than men?*)

- Group respondents said No to mean that the same " equal opportunities for men, women, and youth"

According to them Equal opportunity for men, women and youth meant on livelihood opportunity enable them fulfil the basic needs, food, good housing, clothes and be able to afford health services and manage to pay school fees and other expenses. This what wellbeing meant to their understanding.

47. What are the main sources of **livelihoods** that provide food and income in your community?

- Farming (Maize, Beans, Tomatoes, Watermelons, Irish potatoes, Avocados)
- Livestock (Chicken, Pork, cows) – for women and men
- Small Business (small shops, selling of local brews & Beer, restaurant, selling vegetable) -men & women
- Small Business for Youth (boda boda)

48. **Trends.** Are people better off or worse off today than they were 10 years ago? (*probe: trends refer to poverty, adequate access to nutritious food*) Why? (*probe: climate, other things affecting productivity*)

People are better off today than they 10 years ago

- Availability of food had improved a lot, there is no household that goes to bed hungry
- Road infrastructure had been improved especially during rainy season people were able to transport their crops without any problems, even off-takers are able to come and buy our crops
- Knowledge on Environment conservations through Care project e.g. trees planting around water sources. Before that, cutting trees and farming nearby water sources was common behaviors in our community
- There was no emphasis on good toilets but now a large percentage of households have good toilets.

- Preparation of tree nurseries through containers for business (water-friendly trees and Fruits).
- Received Knowledge and skills on how to dispose herbicides and pesticides containers where in the past there was no such thing.
- Received knowledge on beekeeping (first phase produced 14L, second phase 22.5L) of harvested honey from beehives supported by the project.
- Knowledge on Land use planning by issuing documents (CCROs) to each household.
- Currently there were no conflicts because there was a village land council with the authority to resolve the conflict together with the committee for better use of land.
- Our society knows the best use of land

49. What are the most common **crops** farmed for cash and subsistence in your community?

- Common food crops – Maize- Both, beans- Both & men, pulses - Women
- Common cash crop in community -Maize, Beans, Potatoes, Tomatoes, Watermelon, Avocados, sunflower, Avocado -men & women (Avocado-Youth & men)

50. What are the most common farming **practices** used in your community? (*probe: to understand if farmers know environmental impact of farming? use of slash/burn, pesticides/fertilizers, consideration of environmental impact as part of decision-making; use of specific climate-smart farming practices, such as mulching and intercropping*) Are there specific farming practices that are used by women or men, respectively? Why?

Common farming practices used in the community

- Used improved seed according to soil type & Weather
- Proper Use of fertilizer and other agricultural inputs
- Seeds spacing
- Line spacing
- Use of intercropping (maize & beans)

51. What are the biggest opportunities and **challenges** facing small-scale farmers in your community? (*probe: climate change impacts, inputs, markets, post-harvest, access to finance – financial services from whom?; regularly of extension services - from whom? existence of producer groups*)

1. Big opportunities:

- Livelihood diversification e.g. tree nursery activities, Beekeeping,
- presence of informal services e.g. VSLAs for saving and loan, as well as formal financial services e.g. NMB, MUCOBA & CRDB for accessing loans
- Cash Crop diversification e.g. potatoes, tomatoes, sunflowers, watermelon,

2. Challenges:

- No permanent place for selling crops every one decides where to put his/her commodities and sell. Hence there should be a permanent place/ collection centre where are crops/commodities will be sold.
- Short rainy durations with minimum rainfall (droughts)

52. What are the **roles** of men and women in your households and communities? (*probe: gender and age differences between men, women, youth and girls in the division of labour throughout the agricultural value chain; household decision-making in the use of produce for food or income, control over productive assets income*)

- Provision of education to children – Depends on who was the head of households, if it was a women or men.
- Caring for children and other group members e.g. Food preparation, washing clothes-women

- Agricultural value chain production
- Farm preparation – Both men, women and youth
- Planting- Both
- Weeding – both
- Harvesting -both
- Households' food expenditure – Women were given opportunity to discuss on how food can be used but the final decision remains to men
- Selling of cash crops- Men decide but women also are involved
- Households future plan for investment – For households headed by men- men make decision while for households headed by women- women make decision
- Income expenditure: The same to income expenditure and control over assets

In metal index provision of education to children both scoring 5 as this is depend to who is the head of the family. On the matters of caring the children, food preparation, washing clothes women scored 5 while men scored 2, this is because these tasks believed in the community is for women. In the areas of agronomic farm preparation and crop management, both men and women demonstrate a high level of competence, each earning a score of 5. This proficiency is attributed to the utilization of household labor for crop cultivation.

In household financial matters, women excel as house treasurers, earning a commendable score of 5, this is because men are perceived to have less discipline in managing expenditures compared to women. However, when it comes to the ultimate decision on expenditures, men take the lead

Natural Resources

53. What **ecosystems**, or natural resources, does your community rely on for its well-being? (*probe: soils, water, forests, wildlife; and how they contribute to food security or income*)

- Land – Used for agricultural activities – Food and Cash crop production, brick making, livestock keeping
- Forestry – Get timber for construction, Firewood for cooking, Charcoal for business a bag is sold at 15,000/=, for Beekeeping, source of food e.g. mushrooms, wild fruits
- Water source – domestic use and for supporting agriculture activities during dry season e.g. vegetable, watermelon, beans, GOBO -MAHINDI
- Other activity beyond farming NR is used for construction activities e.g. Timber, Brick Making

54. **Trends.** What is the status of those natural resources today compared to in the past - e.g., ten years ago? (*Probe: quality, quantity of different NR bases, NR conflicts and trends in conflict-resolution*)

Quality of the NR has improved a lot through the knowledge received from the project.

It will be sustainable due to better use of the land, there is a forest set aside for firewood and there is an area of the forest set aside for conservation, there is also an area set aside for grazing and farming. If someone is found conducting any economic activities in the forest set aside for conservation, he/she will be fined 50 thousand shillings, Existence of fines, bylaws, environmental management council and committee has helped to reduce land conflicts in our village and misuse of NR

10. How are those natural resources managed today? Who has the decision-making power? Who is most affected by those decisions? (Probe: VLUPs, integrated land and water management practices, the extent to which village land use plans affect management decisions in the day to day, for sustainability practices to see if there are changes over the last years, gender, age, different levels/sectors, e.g., CBOs v. government v. private companies)

- Management on NR was done by the land use council & Environment committee, they had been given the responsibility to manage NR in our village in collaboration with the whole community (men, Women and youth)
- Most affected – The whole community.

What **challenges and opportunities** exist for community participation and leadership in sustainable natural resource management and enterprises based on nature?

- Challenge – Some people violated village bylaws
- Opportunity- 85% of community members in our village were willing to participate in sustainable natural resource management
- 85% of community members were willing to give support on the leadership of the selected councils and committee

Resilience

55. **Trends.** How is the climate today compared to the past (e.g., 10 years ago)? (*probe: frequency/extremity of weather events, change in temperature, variability of rainfall – droughts, floods, etc.; scale of impacts on farming*)

Change in rainfall Pattern receiving low expected amount of rainfall which led to droughts

- o Current -Nov- March or April - A little rain which was not very reliable but because of the best farming methods they helped to get a lot of crops, also the presence of agribusiness concept for food crops
- o In the past - the rain season used to start in October - June
- o The rains were plentiful and reliable but due lack of knowledge on good agriculture practices they ended up by poor harvest even though they seemed to meet the needs of food because they did not have agribusiness mindset like today. The focus was to produce food crops mainly for consumption and not for business as we experience today maize and beans had been played role as food and cash crops

56. How do you **cope** with shocks and stresses, like droughts or price volatility? (*probe: examples, differences by gender, age*)

- Early preparation of farms,
- Early planting
- Applying fertilizer on time
- Engage in other income generating activities apart from agriculture,
- Use of short-term matured crops

57. What has worked and what **challenges** remain for coping with the changing climate and other shocks or stressors, like the COVID-19 pandemic?

What worked for coping with the changing climate

- Livelihood diversifications apart from agriculture
- Knowledge on Environment conservations through Care project e.g. tree planting
- Preparation of nursery tree through for business
- Received Knowledge and skills on good agriculture practices
- Received knowledge on beekeeping
- Knowledge on Land use planning by issuing land title to each household.
- Currently there were no conflicts because there was a village land council with the authority to resolve the conflict together with the committee for better use of land.
- Knowledge on VSLAs for accessing for saving and accessing loans

What challenge remained

- No permanent place for selling crops every one decided where to put his/her commodities and sold.
58. What are the most common ways you **save** for the uncertainties of the future, whether informally or formally? (*probe: existence of informal savings/loans groups*)
- Becoming a member of Informal serving e.g. VSLAs
 - Engage in livestock keeping
 - Engage in other income generating activities apart from Agriculture.
 - Investing in productive assets e.g Wanyama kazi.
59. If you don't have enough cash on hand, what kind of **financial services** does your community have access to? (*probe: differences by gender, age; ability/barriers to access formal banks/loans*)
- Access loans from informal financial service e.g. VSLAs and Individual loan. Terms and conditions are not complicated compared to formal financial services e.g. banks
 - Selling of assets e.g. cattle
60. When you have made larger investments in the past (e.g., in a new business), what are the key things you consider determining how to spend the money? (*probe: is impact on the environment, the sustainability of natural resource use/management a part of the equation*)

There are criteria set by the group members on spending the money obtained from communal investment

- The money is given to an individual who is member of the group if that member wants to invest on other income generating activities and return back the money with interest.
- Also, there is an emergency loan that has no interest and should paid back within 2 weeks after borrowing

Conclusion

19. To summarize, what would you say are the main **challenges** that community members face in achieving and sustaining wellbeing? (*probe: what challenges does everyone face – e.g., climate change, COVID; what challenges are unique to some groups or affect some more than others, e.g., women and girls?*)

-Main challenges reported during discussion is lack of place for selling their cash crop e.g. permanent and reliable market as well as droughts. These challenges affect almost all small-scale producers and their family members

20. What has been most **effective in overcoming** these challenges – approaches, interventions or groups that emerged locally or were brought in by external partners (e.g., NGOs, the government or the private sector)? (*probe: opportunities, barriers for farmer groups, VSLAs, WUAs?*)

-There has been interventions and approaches to overcome the drought through CARE- WWF. But for challenge regarding place for selling their cash crops, no any effective ways in overcoming the mentioned above challenge locally or brought by external partners. That's why they still asking the project if possible next phase to focus on addressing market

21. Are there examples of things that have worked locally to increase the **participation and decision-making power of women and youth** in the home or in community groups?

There has been several initiatives done by Care and other NGOs to create awareness on women and youth participation in decision- making power either at home or at community level. What we see today, Patriarchy system has reduced in our community compare to past years where women participation was low. Most of the committee were composed with either men only or few women than the required numbers. Currently we are witnessing the composition being 50% women 50% men in almost village committees

22. What **fears** do you have and **opportunities** do you see for the future of natural resources and its effects on the wellbeing of today's children and future generations? (*probe: the impacts of climate change, the pathways of impact between NR and livelihoods*) has been answered above on NR
- No fear at all because as we are moving, we see science and technology is increasing even to NR. If there is proper land use and management, the NR will fulfil today's children and future generation
23. Is there **anything else** you'd like me to share with the CARE-WWF Alliance to inform the project here?
- Nothing more than to say thanks for what the project been done. They are requesting for the project to extend the time in order to complete what the project promised e.g. cattle and chicken keeping, soap making, Boutique making and nutrition education

Name of village: Ugenza

Group type: Women

Wellbeing and Agriculture

61. **What does wellbeing mean in your community?** (*probe: does wellbeing mean something different to women than men?*)

For women wellbeing mean

- equal livelihood opportunities for men, women, and youth
- equal right to participate in community development in their villages

62. **What are the main sources of livelihoods that provide food and income in your community?**

- Farming
- Livestock
- Small Business (local brews, local restaurants, selling vegetable)
- Small Business for Youth (Brick making, boda boda)
- Beekeeping
- Carpentry – For men
- Tree planting (Nursery)
- Tailoring – Women & girls
- Boutique making – After being trained from care – currently the business has stopped because no materials
- Soap Making – After being trained from care they started soap making and business was going on.

63. **Trends.** Are people better off or worse off today than they were 10 years ago? (*probe: trends refer to poverty, adequate access to nutritious food*) Why? (*probe: climate, other things affecting productivity*)

- People were better off today than they were 10 years ago
- Though there had been changed in rainfall patterns, received minimum rainfall, still the project had addressed this provided solution on how to cope with the challenges where small farmers trained on good agricultural practices

- Availability and access to food had improved compared to 10 years ago e.g. Maize, beans, sunflowers, potatoes, and groundnuts
- More livelihood opportunities and diversification were made compared to 10 years ago.
- Business driven mindset had increased
- Cash crops diversification depended only on maize and beans, current they produced potatoes, tomatoes, onions and watermelon as cash crops.

64. What are the most common crops farmed for cash and subsistence in your community?

- Common food crops in the community – Maize- Both, beans- Both, kunde - Women
- Common cash crop in community (Maize, beans, Potatoes, sunflower, cabbage, tomatoes, watermelon & onions were cash crops produced by both men, women & youth.

65. What are the most common farming practices used in your community? (probe: to understand if farmers know environmental impact of farming? use of slash/burn, pesticides/fertilizers, consideration of environmental impact as part of decision-making; use of specific climate-smart farming practices, such as mulching and intercropping) Are there specific farming practices that are used by women or men, respectively? Why?

(i) Common farming practices used in the community

- Farm preparation by clearing/ burning grasses
- Seeds spacing (65 cm, 35cm)
- Proper use of inputs e.g. fertilizer, pesticides, herbicides
- PICS used for cereals and grains storage instead of using local storage facilities e.g. Kihenge.
- Improved seed varieties used especially for cash crops
- Extension services used

(ii) specific climate-smart farming practices in the community were

- intercropping (beans & maize)

(iii) specific farming practices that are used by women or men, respectively? Why?

- No any specific farming practices were used by women or men reported during focus group discussion with women

66. What are the biggest opportunities and challenges facing small-scale farmers in your community? (probe: climate change impacts, inputs, markets, post-harvest, access to finance

– financial services from whom? regularly of extension services - from whom? existence of producer groups)

(I) Biggest challenges: The biggest challenged reported by women was on climate change and market

- Climate change impacts- They had been receiving short rainy seasonal durations
- Inputs – For 2022/2023 season no any challenge observed on accessing as well as cost of inputs. However, for 2021/2022 the cost for fertilizer was high due to fact that there was no Government subsidy
- Market
 - No reliable markets everyone sold his or her own crops as per availability of buyers and off-takers
 - Price fluctuations were also the challenge
 - The middlemen were used, of which most they benefited themselves instead of farmers

- No standardized price for cash crops produced
- the Oversized bag (*Rumbesa*) used from which exploited much farmers.
- Post-harvest- No any challenged revealed
- Financial services – No any challenge, financial service were available both formal (NMB, MUCOBA & CRDB) and informal (VSLAs and other informal services)
- Extension service – No any challenge reported during the FGDs
- Existence of producer groups- Producers groups were present

Opportunities

- Livelihood diversification on Agriculture and non- Agriculture activities
- Production of crops throughout the years e.g., tomatoes, beans, watermelon, onions, due to water sources were available in the villages
- Financial service increased both formal and informal for accessing loans.

67. What are the roles of men and women in your households and communities? (*probe: gender and age differences between men, women, youth and girls in the division of labor throughout the agricultural value chain; household decision-making in the use of produce for food or income, control over productive assets income*)

- Education to children and Both were provided,
- Main decision Maker in family was men e.g. livelihood activities, income management
- Women were responsible for caring for children and other group members e.g. Food preparation, washing clothes
- Agricultural value chain production
 - Planting- was for both men and women
 - Weeding – was for both men and women
 - Harvesting -was for both men and women
- Household's food expenditure – Women were given opportunity to discuss on how food can be used but the final decision remained to men
- Cash crops sold and other productive assets- only Men decided
- Households future plan for investment – this depended on the relationship between wife and husband, if they were in good terms both planned for investment as well as on income expenditure.

In the index scores, both men and women received a score of 5 for educating children, handling investments, and managing income expenditures. This based on the perceived dependency on the relationship dynamics between wives and husbands within the household.

In agricultural activities such as planting, weeding, and harvesting, both men and women scored 5 in work participation, recognizing the collaborative effort required from family labor.

Regarding final decision-making, men scored 5, while women scored 4. This discrepancy is attributed to the traditional perception that men are considered the heads of the household, while women are viewed as providing support to men in decision-making processes.

Natural Resources

68. What ecosystems, or natural resources, does your community rely on for its well-being?

(probe: soils, water, forests, wildlife; and how they contribute to food security or income)

beyond farming, **who uses** those natural resources and how? Both men & men (*probe: gender, age.*)

During discussion, women reported that the community rely on ecosystem or natural resources for its well-being. In addition to that, also explained how natural resources contributed to food security

and income beyond farming. It was revealed that both women, men, youth and children use Natural resources available in the village

- Land
 - Used for agricultural activities – Food and Cash crops
 - Livestock keeping
 - Minerals for business
 - Forestry
 - accessed timber for construction
 - Firewood as a primary source of energy for cooking
 - Charcoal for business as one sack is being sold for 15,000/=, thousands
 - Beekeeping- honey production for business
- source of wild food e.g. mushrooms, fruits, vegetables.
- Water source
 - used for supporting agriculture activities especially off-farming seasonal
 - Used for domestic purposes e.g. cooking, washing clothes, drinking for both human and livestock, constructions of buildings and brick making.

69. Trends. What is the status of those natural resources today compared to in the past - e.g., ten years ago? (*Probe: quality, quantity of different NR bases, NR conflicts and trends in conflict-resolution*)

Quality and Quantity of the NR had improved a lot through the knowledge received from the project. there had been improved due to village land use and planning that introduced by the project. Apart from that signed boards had been placed in the village to direct the community on proper use of Natural resources. Hence conflict on NR had reduced compared to the past

70. How are those natural resources managed today? Who has the decision-making power? Who is most affected by those decisions? (*Probe: VLUPs, integrated land and water management practices, the extent to which village land use plans affect management decisions in the day to day, for sustainability practices to see if there are changes over the last years, gender, age, different levels/sectors, e.g., CBOs v. government v. private companies*)

- NR were managed by regulations and bylaws set by village. Environmental committee and VLUP Councils were responsible and ensured that regulation and bylaws set were followed by the community.
- The VLUP councils, Environmental committee and the community in general had the decision-making power on management and use of NR.
- The existence of by-laws for the efficient use of land had greatly helped to stimulate the efficient use of land and resources

Most affected – The whole community.

71. What challenges and opportunities exist for community participation and leadership in sustainable natural resource management and enterprises based on nature?

Challenge

– Some people were not followed the organized rules and few of them do not want to participate in community activities related to conservation of natural resources.

Opportunity

- 90% of community members in our village are willing to participate in sustainable natural resource management

Resilience

72. **Trends.** How is the climate today compared to the past (e.g., 10 years ago)? (*probe: frequency/extremity of weather events, change in temperature, variability of rainfall – droughts, floods, etc.; scale of impacts on farming*)

- Rainy Pattern changed- short rainy seasons

-droughts experienced

-Current was Nov to March or April while in the past – the rainy season started in November – May/June

73. How do you **cope** with shocks and stresses, like droughts or price volatility? (*probe: examples, differences by gender, age*)

- Early preparation of farms,
- Early planting
- Applied fertilizer on time
- Engaged in other income generating activities apart from agriculture,
- Used of short-term matured crops

74. What has worked and what challenges remain for coping with the changing climate and other shocks or stressors, like the COVID-19 pandemic?

Things addressed and worked were;

- VLUP and management of NR were introduced
- Knowledge on financial services especially VSLAs was provided
- Knowledge on Good Agriculture Practices were provided

Challenge remained

- Village warehouse for storing food crops was absent. Where the presence of a warehouse reduces the misuse of food marketing
- Lack of market for selling cash crops

However, no any challenges brought by COVID-19 reported by women in the discussion.

75. What are the most common ways you save for the uncertainties of the future, whether informally or formally? (*probe: existence of informal savings/loans groups*)

Reducing food expenditure,

-Informal serving as well as formal serving e.g Bank MUCOBA were common ways the community used for saving for the uncertainties of the future

76. If you don't have enough cash on hand, what kind of financial services does your community have access to? (*probe: differences by gender, age; ability/barriers to access formal banks/loans*)

-Informal services e.g. VSLAs

– Selling of assets e.g. cattle

- Loan from individual

77. When you have made larger investments in the past (e.g., in a new business), what are the key things you consider determining how to spend the money? (*probe: is impact on the environment, the sustainability of natural resource use/management a part of the equation*)

- Consideration on spending money obtained from communal investment are

The money used to support other income generating activities related to nursery trees, beekeeping, Agriculture activities and opening shops for inputs.

Conclusion

19. **To summarize, what would you say are the main challenges that community members face in achieving and sustaining wellbeing?** (*probe: what challenges does everyone face – e.g., climate change, COVID; what challenges are unique to some groups or affect some more than others, e.g., women and girls?*) Market challenges

-Drought every one face in the community- both women, men youth, girls were faced the same challenge.

-The reliable markets and warehouse were absent for small scale producers -both women & men were equally affected

20. **What has been most effective in overcoming these challenges – approaches, interventions or groups that emerged locally or were brought in by external partners** (e.g., NGOs, the government or the private sector)? (*probe: opportunities, barriers for farmer groups, VSLAs, WUAs?*)

-There were no any effective ways in overcoming the mentioned above challenges locally or brought by external partners. That's why we were still asking the project if possible next phase to focus on addressing market

21. **Are there examples of things that have worked locally to increase the participation and decision-making power of women and youth in the home or in community groups?**

- To involve young people and women in various community programs
- Ensuring that every committee that is formed includes women and youth to get their contributions.
- Motivating young people and women to participate well in various decision-making levels
- Giving priority to youth and women when various economic opportunities arise in the village

22. **What fears do you have and opportunities do you see for the future of natural resources and its effects on the wellbeing of today's children and future generations?** (*probe: the impacts of climate change, the pathways of impact between NR and livelihoods*)

- No fear at all regarded to depletion of NR because there was an increase community awareness on the management of NR as well as the benefits of managed NR for today and for future. If every community member took a proper pathway introduced by the project, the NR will be sustainable and will bring some positive impact on the climate change we were facing today.

23. **Is there anything else** you'd like me to share with the CARE-WWF Alliance to inform the project here?

- The respondent said that "Nothing more than to say thanks for what had been done. But also, if there is other opportunity, we would like the project to focus on Loan, addressing on Market challenges, Beekeeping, Nursery tree planting especially fruits trees".

FGD GUIDE

Name of village: Ugenza

Group type-Men

Wellbeing and Agriculture

78. What does **wellbeing** mean in your community? (*probe: does wellbeing mean something different to women than men?*)

From the outlook of the focus group discussion, wellbeing is understood as the overall development of both men and women in terms of economic and social welfare. Examples provided include savings

habits, social capital, discipline in behaving, GAP not cultivating in sources of water, tree planting, land conflict, collateral using land lease and proper use of inputs.

79. What are the main sources of **livelihoods** that provide food and income in your community?

- Farming
- Livestock (goat, cow, chicken)
- Business (agribusiness, local brews, welding, bodaboda, shops, cash point like m-pesa).
- Beekeeping
- Carpentry
- Mason
- Tree planting (Nursery)
- Tailoring
- Casual labour
- Vegetables
- Welding

80. **Trends.** Are people better off or worse off today than they were 10 years ago? (*probe: trends refer to poverty, adequate access to nutritious food*) Why? (*probe: climate, other things affecting productivity*)

In focused group discussion respondents described that for the current period was better than 10 years because there have been more livelihood opportunities, skills and knowledge had been provided especially in agriculture production particularly irish potatoes and beans decreased in iinvasion of forest, increased production and adapted Good Agriculture Practices (irrigation, forest restoration, resistant seed).

81. What are the most common **crops** farmed for cash and subsistence in your community?

Common food crops in the community were maize, beans and sunflower. Previously have started to rise iris potatoes.

82. What are the most common farming **practices** used in your community? (*probe: to understand if farmers know environmental impact of farming? use of slash/burn, pesticides/fertilizers, consideration of environmental impact as part of decision-making; use of specific climate-smart farming practices, such as mulching and intercropping*) Are there specific farming practices that are used by women or men, respectively? Why?

Farming practices to all stages done by men and women like unburning residual, compost manure application in horticulture farm, improved seed, space planting, intercropping. Except application of pesticides was performed by men because women were prohibited by safety rules based on their domestic activities like breast feeding, cooking and taking water for domestic uses, she must be free from contamination

83. What are the biggest opportunities and **challenges** facing small-scale farmers in your community? (*probe: climate change impacts, inputs, markets, post-harvest, access to finance – financial services from whom? regularly of extension services - from whom? existence of producer groups*)

Challenges:

Drought, unreliable rainfall, inadequate of capital, eruption of diseases, getting late inputs, unavailability of inputs in the nearby point in which farmers were travelled to far distant, low support

from the government on good market, poor transport facilities, lack of reliable market, no legal measurement, lack of storage facilities.

Opportunities

- Self-employment,
- improve livelihood of households
- Availability of land
- readiness of community for farming activity
- availability of farm inputs

84. What are the **roles** of men and women in your households and communities? (*probe: gender and age differences between men, women, youth and girls in the division of labor throughout the agricultural value chain; household decision-making in the use of produce for food or income, control over productive assets income*)

Role for men

– Provision of school fees to children, Main decision Maker in family (e.g. Livelihood activities, income management, family safety, overall in charge of family property, discipline of the households), establishing of settlement,

Role for women

– Caring for children and other group members e.g. Food preparation, washing clothes, house security

Role of men and women in Agricultural value chain production

Planting- Both, Weeding – both, Harvesting -both

Also:

- Role on household food expenditure – Women are given opportunity to discuss on how food can be used but the final decision remained to men.
- During selling of cash crops- Men decided
- Households future plan for investment – men planned
- Income expenditure – women were involved in planning but the final decision made by men.

Men scored 5 in providing school fees for children and in decision-making for various family matters such as livelihood activities, income management, family safety, overseeing family property, disciplining household members, and constructing the family house. In contrast, women scored 3, reflecting traditional beliefs that designate men as the heads of the family upon marriage.

On the other hand, women scored 5 in caring for children, food preparation, washing clothes, and ensuring house security. This aligns with the perception that women, being married for housekeeping and supporting their husbands, excel in these domestic responsibilities.

In decision-making related to income expenditure, selling household property, and planning for family investments, men scored 5, while women scored 4. The rationale behind this discrepancy is that women are seen as advisors, but the ultimate decision rests with men, who bear the primary responsibility for family matters.

Natural Resources

85. What **ecosystems**, or natural resources, does your community rely on for its well-being? (*probe: soils, water, forests, wildlife; and how they contribute to food security or income*)

Land

For agriculture, forestry, for beekeeping, livestock, farm land, plots, housing,

Forestry

Land/farms, Livestock, Plots, Houses/settlement, Rivers

Beyond farming, **who uses** those natural resources and how? (*probe: gender, age.*)

- Men for beekeeping, timber and charcoal production
- Women for collecting firewood, mushroom, fruits collection, grazing, and traditional medicine

86. **Trends.** What is the status of those natural resources today compared to in the past - e.g., ten years ago? (*Probe: quality, quantity of different NR bases, NR conflicts and trends in conflict-resolution*) (*river improved, mapango, education and formation of NR committee, land use, by laws, women managed to own land, education on land right for both women and men*)

The status of NR had increased through the knowledge provided from the project. Hence influenced big changes, in which signed boards had been placed in the village to direct the community on the use of NR in sustainable way.

Also, tree planting campaign had been conducted in all water source (*Miulure species*) which were water friendly.

Conflicts concerning about NR had been reduced since the project started the interventions by introduced legal permit for harvesting natural resources, However, distance from the village to Mafinga.

87. How are those natural resources **managed** today? Who has the **decision-making power**? Who is **most affected** by those decisions? (*Probe: VLUMs, integrated land and water management practices, the extent to which village land use plans affect management decisions in the day to day, for sustainability practices to see if there are changes over the last years, gender, age, different levels/sectors, e.g., CBOs v. government v. private companies*)

- NR was managed by the village land use management committee (VLUM) and Environment committee, they had been given the responsibility to manage NR in the village in collaboration with village government (both men, women and youth).
- The decision-making power was under control of village government.
- Most affected was the whole community.

88. What **challenges and opportunities** exist for community participation and leadership in sustainable natural resource management and enterprises based on nature?

Challenge

Some individuals disregard established bylaws, engaging in activities such as unauthorized grazing in forests and near water sources. This behavior has led to conflicts between the village government and the community, highlighting the need for effective enforcement of regulations and the importance of fostering understanding and cooperation among residents to ensure sustainable and harmonious coexistence.

Opportunities

Beekeeping, availability of water throughout the year, adequate rainfall and good air.

Resilience

89. **Trends.** How is the climate today compared to the past (e.g., 10 years ago)? (*probe: frequency/extremity of weather events, change in temperature, variability of rainfall – droughts, floods, etc.; scale of impacts on farming*)

The climate has undergone significant changes, marked by shifts in rainfall patterns, increased occurrences of droughts, and unpredictability in rainfall. Historically, the rainy season spanned from October to June, but presently, it has been condensed to the period between November and March. This alteration underscores the need for adaptability and proactive measures in response to the evolving climate dynamics..

90. How do you **cope** with shocks and stresses, like droughts or price volatility? (*probe: examples, differences by gender, age*)

The project supported us on cultivating short-matured crops, resilient crop varieties, efficient food budgeting, and drought-resistant crops. Valuable knowledge on planting crops with shorter growth cycles, contributing to both increased agricultural productivity and environmental conservation imparted which cope with shocks. Through this initiative, the project strives to enhance sustainability in farming practices while addressing the challenges posed by shorter growing seasons and water scarcity

91. What has worked and what **challenges** remain for coping with the changing climate and other shocks or stressors, like the COVID-19 pandemic?

Challenge was;

- use of solar energy for irrigation and soil testing
- Land use planning to reduce invasion to natural forest and water bodies

92. What are the most common ways you **save** for the uncertainties of the future, whether informally or formally? (*probe: existence of informal savings/loans groups*)

- Reducing food expenditure, irrigation
- Use some of birds
- *Makwasa* fruits represent hunger when are many
- Media

93. If you don't have enough cash on hand, what kind of **financial services** does your community have access to? (*probe: differences by gender, age; ability/barriers to access formal banks/loans*).

– Livestock like pigs were sold, Getting loans from individual or VSLA

94. When you have made larger investments in the past (e.g., in a new business), what are the key things you consider determining how to spend the money? (*probe: is impact on the environment, the sustainability of natural resource use/management a part of the equation*)

- Purchasing on farm inputs

- Home consumption
- Investing in tree planting
- Members are getting shares eg 50,000 (15members), (honey 80,000 / 15 members)
- Distributing tree seedlings for each member

Conclusion

95. To summarize, what would you say are the main **challenges** that community members face in achieving and sustaining wellbeing? (*probe: what challenges does everyone face – e.g., climate change, COVID; what challenges are unique to some groups or affect some more than others, e.g., women and girls?*)

- Poor attendance of members in group activities, community do not respect the group work.

96. What has been most **effective in overcoming** these challenges – approaches, interventions or groups that emerged locally or were brought in by external partners (e.g., NGOs, the government or the private sector)? (*probe: opportunities, barriers for farmer groups, VSLAs, WUAs?*)

-By seeking assistance from village government.

97. Are there examples of things that have worked locally to increase the **participation and decision-making power of women and youth** in the home or in community groups?

- Village government assisted the group

98. What **fears** do you have and **opportunities** do you see for the future of natural resources and its effects on the wellbeing of today's children and future generations? (*probe: the impacts of climate change, the pathways of impact between NR and livelihoods*)

The growing awareness of sustainable natural resource management brings about a sense of confidence, given the evident advancements in science and technology related to natural resources. As we progress, it becomes evident that there is no need for apprehension, especially when there is a commitment to proper land use and management. Embracing sustainable practices ensures the responsible utilization of natural resources, fostering a harmonious balance that mitigates concerns and supports a more resilient and eco-friendly future.

99. Is there **anything else** you'd like me to share with the CARE-WWF Alliance to inform the project here?

Respondents replied that nothing was more than to say thank you for what has been done. But also, if there is other opportunity, we would like the project to focus on Loan, addressing on Market challenges, Beekeeping, Nursery tree especially fruits

- Beekeeping gears
- Storage facilities
- Transport facility for pp and VNRC
- Few completed wit CCRO

FGD GUIDE

Name of the Village: Ukelemi

Group type- Men

Wellbeing and Agriculture

100. What does **wellbeing** mean in your community? (*probe: does wellbeing mean something different to women than men?*)

According to the group discussion Well-being" in their community refers to the overall improvement of food security, knowledge on agricultural practices, peace and security.

101. What are the main sources of **livelihoods** that provide food and income in your community?

- Farming of maize, beans, iris potatoes, sunflower, vegetable particularly spinach, African eggs, tomatoes and *amarandus ssp*
- Livestock particularly cattle, goats, pigs and local chicken
- Small business of maize trade, bodaboda, small shops, cash point agent services like M-Pesa, Tigo pesa, Airtel money), vegetable vendor, food vendors
- Beekeeping
- Carpentry
- Tree planting (Nursery)
- Tailoring
- Causal labour

102. **Trends.** Are people better off or worse off today than they were 10 years ago? (*probe: trends refer to poverty, adequate access to nutritious food*) Why? (*probe: climate, other things affecting productivity*)

Current status was better than 10 years because there had been more livelihood opportunities created. Also, skills and knowledge had been provided which increased production particularly in maize, iris potatoes and beans.

103. What are the most common **crops** farmed for cash and subsistence in your community?

- Common food crops in the community were maize for both, beans for both, kunde for Women
- Common cash crop in community was iris potatoes for both women and men, cassava sunflower, tomatoes performed by men, and onions by men

104. What are the most common farming **practices** used in your community? (*probe: to understand if farmers know environmental impact of farming? use of slash/burn, pesticides/fertilizers, consideration of environmental impact as part of decision-making; use of specific climate-smart farming practices, such as mulching and intercropping*) Are there specific farming practices that are used by women or men, respectively? Why?

Common farming practices used in the community

- Farm preparation by clearing/ burning grasses
- Planting seeds by spacing (65 cm, 35cm)
- Others buys seeds from Agro-suppliers while other uses second seed generation
- Use of fertilizers as well as pesticides
- Once the crops are harvested and decision are made some will be sold and other will be stored for food.
- Maize grain for food were stored using PICS
- No intercropping for simplification of weeding
- Also weed crop by spraying the weed chemicals/ herbicides
- Also, they have equipped with the knowledge of herbicides and how can be stored

105. What are the biggest opportunities and **challenges** facing small-scale farmers in your community? (*probe: climate change impacts, inputs, markets, post-harvest, access to financial services from whom?; regularly of extension services - from whom? existence of producer groups*)

Challenges:

1. Seed 2. Fertilizers 3. Pesticides 4. Drought for two season cropping 2021/ 2022 and 2022/2023, 5. Inadequate knowledge on seeds spacing (Minor Challenge) 6. Unreliable market especially for Maize, 7. Capital still challenge however sourced from VSLA, 8. Inadequate extension services.

Opportunities;

1. Self-employment, 2. improve livelihood of households and input subsidy

106. What are the **roles** of men and women in your households and communities? (*probe: gender and age differences between men, women, youth and girls in the division of labor throughout the agricultural value chain; household decision-making in the use of produce for food or income, control over productive assets income*)

Role for Men: – Provision of education to children, primary decision-maker in family matters (e.g., livelihood activities and income management).

• Role for Women: – Caring for children and other family members, e.g., food preparation and washing clothes.

• Role of Women in Agricultural Value Chain Production:

– Planting - Both, Weeding - Both, Harvesting - Both.

• Role in Household Food Expenditure:

– Women are given the opportunity to discuss how food can be used, but the final decision remains with men.

– During the selling of cash crops, men make the final decision.

– Household future investment planning is mainly the responsibility of men

. – Income expenditure - Women are involved in planning, but the final decision is made by men.

In index scoring, crucial family matters rest with husbands, scoring 5 in issues of income management, family investment, and initiation of ideas, while women scored 4. Regarding child care, food preparation, and washing clothes, women scored 5, and men scored 4 because the community believes that minor issues should be taken care of by women.

Natural Resources

107. What **ecosystems**, or natural resources, does your community rely on for its well-being? (*probe: soils, water, forests, wildlife; and how they contribute to food security or income*)

Land

– For Agriculture, Forestry -for Beekeeping, Livestock

Benefits from forestry

- Firewood
- Timber
- Beekeeping
- Water source

Beyond farming, **who uses** those natural resources and how? (*probe: gender, age.*)

108. **Trends.** What is the status of those natural resources today compared to in the past - e.g., ten years ago? (*Probe: quality, quantity of different NR bases, NR conflicts and trends in conflict-resolution*)

-Status of natural resources had changed to high due to the knowledge provided by the project to the community village. Henceforward there is big changes, because the signed boards had been placed in the village to direct the community on how use of natural resources in sustainable manner.
 -Tree planting campaign has been conducted on water source (*miulure* species) which are water friendly
 NR conflicts has been reduced

109. How are those natural resources **managed** today? Who has the **decision-making power**? Who is **most affected** by those decisions? (*Probe: VLUPs, integrated land and water management practices, the extent to which village land use plans affect management decisions in the day to day, for sustainability practices to see if there are changes over the last years, gender, age, different levels/sectors, e.g., CBOs v. government v. private companies*)

110. What **challenges and opportunities** exist for community participation and leadership in sustainable natural resource management and enterprises based on nature?

Challenge

– Some of people does not obeyed bylaws

Opportunities

- availability of water supply for agriculture
 -Forest used for beekeeping and firewood

Resilience

111. **Trends.** How is the climate today compared to the past (e.g., 10 years ago)? (*probe: frequency/extremity of weather events, change in temperature, variability of rainfall – droughts, floods, etc.; scale of impacts on farming*)

The climate has undergone a shift in rainfall patterns, leading to periods of drought. Historically, the rainy season spanned from October to June, but currently, it has been compressed to November through March. This alteration in the precipitation timeline highlights a noticeable change in the seasonal distribution of rainfall, impacting the environment and necessitating a reevaluation of customary expectations regarding weather patterns and agricultural practices.

112. How do you **cope** with shocks and stresses, like droughts or price volatility? (*probe: examples, differences by gender, age*).

Project has come up with knowledge on planting short matured crops as well as conservation of environment.

113. What has worked and what **challenges** remain for coping with the changing climate and other shocks or stressors, like the COVID-19 pandemic?

- Livelihood diversifications apart from agriculture
- Knowledge on Environment conservations through Care project e.g. tree planting
- Preparation of nursery tree through for business
- Received Knowledge and skills on good agriculture practices
- Received knowledge on beekeeping
- Knowledge on Land use planning by issuing land title to each household.
- Currently there are no conflicts because there is a village land council with the authority to resolve the conflict together with the committee for better use of land.
- Knowledge on VSLAs for accessing for saving and accessing loans

114. What are the most common ways you **save** for the uncertainties of the future, whether informally or formally? (*probe: existence of informal savings/loans groups*)

- Reducing food expenditure and irrigation

115. If you don't have enough cash on hand, what kind of **financial services** does your community have access to? (*probe: differences by gender, age; ability/barriers to access formal banks/loans*).

Livelihood diversifications apart from agriculture like small business

- Casual labor
- Engaged in tree nursery business
- VSLA for getting loan
- Beekeeping enterprise
- AMCOS are still infant to serve the purpose collective buying farm input and selling
- Collectively investment is challenging, especially for the inheritance after death of the share owner.

116. When you have made larger investments in the past (e.g., in a new business), what are the key things you consider determining how to spend the money? (*probe: is impact on the environment, the sustainability of natural resource use/management a part of the equation*).

- Purchasing on farm inputs
- Home consumption
- Investing in tree planting

Conclusion

117. To summarize, what would you say are the main **challenges** that community members face in achieving and sustaining wellbeing? (*probe: what challenges does everyone face – e.g., climate change, COVID; what challenges are unique to some groups or affect some more than others, e.g., women and girls?*)

- unpredictable rainfall,
- Drought
- Lack of permanent investment
- Lack of reliable market
- Illegal measurement for farm produces

118. What has been most **effective in overcoming** these challenges – approaches, interventions or groups that emerged locally or were brought in by external partners (e.g., NGOs, the government or the private sector)? (*probe: opportunities, barriers for farmer groups, VSLAs, WUAs?*)

- *In addressing the prevailing challenges, interventions of VSLA, water and land use management, FFBS, and IGA have proven to be highly effective approaches. However, issues of market access, formal finance, and illegal measurements still pose challenges to community development*

119. Are there examples of things that have worked locally to increase the **participation and decision-making power of women and youth** in the home or in community groups?

Numerous gender-focused training sessions have been conducted, raising awareness among both women and men on gender sensitivity. Nowadays, within our groups, women hold leadership positions and have influence in decision-making processes. Additionally, the efforts of CCROs have enabled women and youth to legally own land, further contributing to the empowerment of women. This land is utilized by women and youth for both settlement and productive activities

120. What **fears** do you have and **opportunities** do you see for the future of natural resources and its effects on the wellbeing of today's children and future generations? (*probe: the impacts of climate change, the pathways of impact between NR and livelihoods*)

Raising awareness about sustainable natural resource management is crucial, and it's reassuring to acknowledge the advancements in science and technology that empower us to address environmental challenges. With the right approach to land use and management, we can foster a future where sustainable practices harmonize with our growing technological capabilities.

Embracing sustainable practices not only ensures the preservation of natural resources but also paves the way for a resilient and thriving ecosystem. As we continue to leverage advancements in science and technology, there is a unique opportunity to integrate innovative solutions into our natural resource management strategies.

By promoting responsible land use, we can strike a balance between meeting the needs of a growing population and safeguarding the environment. It's essential to advocate for policies that encourage sustainable development, emphasizing the importance of preserving biodiversity, protecting ecosystems, and minimizing environmental impact.

121. Is there **anything else** you'd like me to share with the CARE-WWF Alliance to inform the project here?

The respondent expressed gratitude with a simple "thank you" for the work that has been accomplished. However, they also indicated a potential interest in exploring additional opportunities for the project. Specifically, they highlighted an interest in directing attention towards addressing market challenges, enhancing support for beekeeping initiatives, and focusing on the cultivation of nursery trees, particularly fruit-bearing ones.

While appreciating the current efforts, the respondent subtly conveyed a desire for the project to extend its scope to encompass areas that could contribute to broader community benefits. These potential avenues—tackling market challenges, supporting beekeeping, and nurturing fruit tree nurseries—reflect the respondent's interest in sustainable and impactful initiatives that could have positive economic and environmental implications for the community.

In essence, the respondent's message suggests an openness to further collaboration and expansion of the project's focus, with an emphasis on areas that align with sustainable practices and economic development, such as addressing market dynamics and promoting beekeeping and fruit tree cultivation.

6.7 List of Key Informants, group leaders and number of members of conservation groups

SN	Name	Sex	Village	Title	Group	Mobile	Date of interview
1	Sarah Patson Ngailo	F	Lugodalutali	Chairperson	Environment	0763784151	13/12/2023
2	Rosa S. Chota	F	Wasa	Chair person	Environment	0744546811	15/12/2023
3	Monalisa Byemba	F	Lumuli	VEO	Lumuli	0672605510	14/12/2023

4	Ephraimu N. Mgina	M	Igombavanu	VEO	Igombavanu	0743475183	12/12/2023
5	Albert Mgya	M	Makongomi	VEO	Makongomi	0657116396	12/12/2023
6	Edwin L. Nyilaga	M	Makongomi	Chairperson	Environment	0717868643	12/12/2023
7	Coster Mkisi	M	Ugenza	Member	Twibita Farmers group	0764450035	11/12/2023
8	Apitae I. Mbembe	M	Ugenza	Secretary	Environment	0762766987	11/12/2023
9	Method R. Chafumbwe	M	Ugenza	Member	Ebenezer Farmers group	0762770018	11/12/2023
10	Aidani Nyakunga	M	Ugenza	Member	Environment	0757446397	11/12/2023
11	Tiberi V. Msungu	M	Ugenza	Secretary	Ugenza VSLA group	0769064641	11/12/2023
12	Cyprian Raphael Kiyeyeu	M	Mibikimitale	Secretary	Environment B group	0758702363	17/12/2023
13	Efeso Andrew Mwalongo	M	Mibikimitale	Member	Environment A group	0655193943	17/12/2023
14	Tito Issa Kagu	M	Mibikimitale	Member	Environment A group	0765018546	17/12/2023
15	Wilbert H. Msigala	M	Mibikimitale	Member	Environment A group	0752054850	17/12/2023
16	Happiness Ng'owo	F	Wasa	Paraprofessional	Umoja VSLA group	0747070552	15/12/2023
17	Odima Nyenza	F	Wasa	Member	Umoja VSLA group	0752573788	15/12/2023
18	Stella A. Simbagi	F	Wasa	Secretary	Environment	0758883566	15/12/2023
19	Adela Kuwoko	F	Wasa	Secretary	Twisavage VSLA group	0675159411	15/12/2023
20	Doris Mashimbi	F	Wasa	Member	Umoja VSLA group	0765067614	15/12/2023
21	Teofrida Nyigu	F	Wasa	Chairperson	Umoja VSLA group	0745564554	15/12/2023
22	Irene Mhagama	F	Igombavanu	Member	Environment	0656059580	12/12/2023
23	Prisca E. Mgumba	F	Igombavanu	Chairperson	Environment	0746171846	12/12/2023
24	Maida C. Mkalimoto	F	Igombavanu	Member	Environment	0766046867	12/12/2023
25	Blandina C. Chalamila	F	Igombavanu	Member	Mshikamano VSLA group	0757948106	12/12/2023

26	Erenesta Chota	F	Igombavanu	Member	Mshikamano VSLA group		12/12/2023
27	Elika T. Ngasi	F	Igombavanu	Member	Mshikamano VSLA group	0749486112	12/12/2023
28	Rita T. Chaula	F	Ugenza	Secretary	Wajane Mahangaiko VSLA group	0756647135	11/12/2023
29	Clementina Manyanga	F	Ugenza	Chairperson	Wajane Mahangaiko VSLA group	0754057975	11/12/2023
30	Rita Mbwilinge	F	Ugenza	Accountant	Wajane Mahangaiko VSLA group	0759397503	11/12/2023
31	Raphaella Kipangule	F	Ugenza	Member	Wajane Mahangaiko VSLA group	0768369215	11/12/2023
32	Machelina Silinu	F	Ugenza	Member	Wajane Mahangaiko VSLA group		11/12/2023
33	Daniel Hassan Nyakunga	M	Ukelemi	Accountant	Environment	0769213236	11/12/2023
34	Fredy Anthony Mgeni	M	Ukelemi	Member	Amani VSLA group	0652334168	11/12/2023
35	Kili Maiko Nyakunga	M	Ukelemi	Secretary	Amani VSLA group	0765774808	11/12/2023
36	Lubila Raphael Mdundwige	M	Ukelemi	Member	Environment	0752715721	11/12/2023
37	Henry Elias Chapuga	M	Ukelemi	Member	Tuungane VSLA group	0744977296	11/12/2023

Names of key informants

SN	Name	Village/organization	Title	Group	Mobile
1	Sarah Patson Ngailo	Lugodalutali	Chairperson	Environment	0763784151
2	Rosa S. Chota	Wasa	Chair person	Environment	0744546811
3	Monalisa Byemba	Lumuli	Veo	Lumuli	0672605510
4	Ephraimu N. Mgina	Igombavanu	Veo	Igombavanu	0743475183
5	Albert Mgaya	Makongomi	Veo	Makongomi	0657116396
6	Edwin L. Nyilaga	Makongomi	Chairperson	Environment	0717868643
7	Dorah Josia Mlomo	Iringa DC	CDO		0755195366
8	Lucy Nyale	Iringa DC	DALFO		0754867756
9	Richard James	Iringa DC	DEMO		0754203116
10	Fred Haule	Rufiji water basin board	Ag- manager		0758258605

Number of participants attended FGDs

SN	Village	Number of participants	Male	Female
1	Ugenza	5	5	0
2	Ugenza	5	0	5
3	Ukelemi	5	5	0
4	Igombavanu	6	0	6
5	Wasa	6	0	6
6	mibitimitali	5	5	0
	Total	32	15	17

6.8. Field data collection programme

CARE – WWF Alliance

Savings and Credit Groups for Food Security and Ecosystem Sustainability in Tanzania Project

Programme of the Data Collection for the Project Endline Evaluation

Village	Date	Participants	FGD	Key Informants Interview	Comments
Ukelemi	11/12/2023	21 respondents interviewed	Focus Group Discussion conducted	None	Interviewing process conducted twice due to absence of 8 respondent in day one.
Ugenza	11/12/2023	14 Respondents interviewed	Focus Group Discussion conducted	None	
Igombavanu	12/12/2023	12 Respondents interviewed	Focus Group Discussion conducted	VEO, Env Group leader interviewed	
Makongomi	12/12/2023	26 Respondents interviewed		None	
Utosi	13/12/2023	15 Respondents interviewed	Focus Group Discussion conducted	VEO, ENV group leader interviewed	The time table changed lugodalutali due to funeral occurred at utosi village
Lugodalutali	13/12/2023	12 Respondents interviewed		None	The timetable changed due to funeral occurred at utosi village.
Lumuli	14/12/2023	39 Respondents interviewed		PCDO and DALFO interviewed	Failed to conduct interview to two

					villages due to large number of interviewees
Wasa	15/12/2023	37 Respondents interviewed	Focus Group Discussion conducted	VEO and ENV group leader interviewed	Failed to conduct interview to two villages due to large number of interviewees
Ibumila	16/12/2023	40 Respondents interviewed		None	
Mibikimali	17/12/2023	36 Participants interviewed	Focus Group Discussion conducted	Respondents from RBWB was interviewed	The day was extended away from the planned time table due to large number of interviewees

6.9. Project Closing Plan

Project Endline Evaluation Consultancy		
1 st Dec	Inception meeting	Masenga Consultant team, Alliance team (Althea, Winfrida, Matrida, Kijoji, Lilian, Makfura, other CARE staff, Other WWF staff invited
4 th Dec	Revised Consultant's Inception report approved	Masenga Consult.; Kijoji, Winfrida
4-5 th Dec	Review data collection tools and protocol	Masenga Consult. and Alliance team (Winfrida, Kijoji, Althea, Matrida, Lilian, Makfura)
6-7 th Dec	Kick-off meeting and training of Enumerators	Consultant; Winfrida, Kijoji, Makfura, Lilian
8-16 th Dec	Field data collection (HH interview, FGDs, KIIs)	Masenga Consult
17-22 Dec	Data analysis and reporting	Masenga Consult
23 rd Dec	Submission of the 1 st Draft of the report	Masenga Consult
25-27 th Dec	Review the report and feedback	Alliance team (Althea, Matrida Winfrida, Kijoji, Lilian, Makfura)
28-30 th Dec [1]	Incorporation of the comments and submission of the Final Report and Invoices	Masenga Consult