



2023 Participant Based Survey: Titukulane Project

PaBS Outcome Report

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USAID
FROM THE AMERICAN PEOPLE



From Data to Wisdom



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List of abbreviations

BDS	Business development services
CBO	Community-based organization
CIA	Care International in Malawi
CSO	Civil society organizations
EWR	Early warning and response
FFP	USAID's Office of Food for Peace
FTE	Full time-equivalent
GMP	Growth monitoring and promotion
IC	Input costs
IPTT	Indicator Performance Tracking Table
Kg	Kilogram(s)
LOA	Life of Award
MCHN	Maternal and child health and nutrition
MSME	Micro, small and medium enterprises
MT	Metric ton
NGO	Non-governmental organization
ODF	Open defecation free
PIRS	Performance indicator reference sheet
QS	Quantity of sales
RiA	Required if applicable
TP	Total production
UP	Units of production
USAID	U.S. Agency for International Development
USD	U.S. Dollar
USG	U.S. Government
VS	Value of sales
WASH	Water, sanitation, and hygiene

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Executive summary

Background

Despite decades of robust government and donor investments in livelihoods, food security, nutrition, and resilience, over 50% of the population lives below the poverty line. Previous activities have not sufficiently reduced the number of chronically food and nutrition insecure households nor effectively enhanced the capacity of local and government structures to implement resilience focused policies and actions. To address these issues, the Government of Malawi developed a National Resilience Strategy 2018-2030 (NRS) to guide investments in agriculture, reduce impacts and improve recovery from shocks, promote household resilience, strengthen the management of Malawi's natural resources, and facilitate effective coordination between government institutions, civil society organizations and development partners. CARE and consortium partners designed the Titukulane Resilience Food Security Activity (RFSA) which means “let us work together for development” in the local Chichewa language—to support pilot implementation of NRS in Zomba and mangochi districts. The Titukulane RFSA, implemented by CARE International in Malawi (CIM), aims to achieve sustainable, equitable, and resilient food and nutrition security for ultra-poor and chronically vulnerable households. Specifically, Titukulane is designed to increase households' abilities to deal with shocks without experiencing food insecurity following a three-purpose approach:

1. Increased diversified, sustainable, and equitable incomes for ultra-poor, chronically vulnerable households, women, and youth.
2. Improved nutritional status among children under 5 years of age, adolescent girls, and women of reproductive age.
3. Increased institutional and local capacities to reduce risk and increase resilience among poor and very poor households in alignment with the Malawi NRS.

To meet these three purposes, the Titukulane RFSA provides households with a package of interventions, including: Care Groups with Nutritional Cash Transfers (NCT), Farmer Field Business Schools and crop marketing support, Village Savings and Loan Associations, Adolescent nutrition, Irrigation farming, Youth vocational training including start-up capital and Gender dialogues.

Methodology

Care International in Malawi contracted Everest Intelligence Consult to conduct an annual outcome survey to track progress of indicators which could not be tracked through routine monitoring. The annual survey tracked 33 indicators for the programme. The outcome survey used a two-stage cluster sampling design with selection of villages as clusters at the first stage and random sampling of beneficiaries at the second stage in Zomba and Mangochi. A total sample of 889 project participants was used covering both districts. Thus, Survey selected around 10 samples per cluster for each intervention. A total of 47 clusters were defined from the MCH sampling frame, marketable value chain, producers and off-farm activity. The results were weighted by the target beneficiary population.

Key findings

Purpose 1: In the report, the study revealed significant insights into the agricultural sector. Among the key findings, rice producers demonstrated the highest revenue at the producer level, with an average income of USD 222 per producer, closely followed by soybean producers at USD 85 per producer. The results also highlighted variations in crop yields, with rice averaging 1.77MT/ha, soybean at 0.91MT/ha, pigeon pea at 0.53MT/ha, and groundnut at 1.12MT/ha. Furthermore, access to quality inputs in local markets was reported by 97% of the surveyed producers, and improved management practices were adopted on an average of 0.6 hectares of land an increase from 0.3 average of previous year, with gender-neutral effects. The study indicates a high level of technology adoption at 99.5%, albeit with varying adoption rates for specific practices. Additionally, 20.8% of producers accessed labor-saving technologies, with a slight disparity between male (21.5%) and female (20.5%) participation. Notably, 74% of participants expressed confidence in negotiation and communication skills for marketing commodities, and 56% maintained comprehensive bookkeeping records. Moreover, 85% of crop and livestock producers demonstrated improved market engagement. These findings underscore the diverse dynamics and opportunities within the agricultural landscape, shedding light on the sector's performance and areas for potential growth and development.

Purpose 2: Several significant findings have emerged from the study around nutritional status among children under five, adolescent girls and women of reproductive age improved, shedding light on critical aspects of the surveyed communities. The research revealed that a substantial 67.6% of women were found to be consuming a diet of minimum diversity, indicating that they were incorporating a minimum of five food groups into their diets. Additionally, an encouraging 75% of households exhibited the ability to produce or procure adequate and diverse nutritious foods, underscoring a positive trend in food security. The study also uncovered a high level of adoption of nutrition and health practices, with approximately 85% of the targeted participants demonstrating application. However, concerning insights emerged concerning gender-based violence, as the Titukulane communities reported that 24% of women had experienced such violence within the twelve months preceding the survey. On a more positive note, 96% of caregivers displayed the ability to identify at least three of the listed best practices. Furthermore, 57% of surveyed households were equipped with both water and soap at handwashing stations, yet only 87% of participants reported consistent handwashing at three out of the five critical times. It is worth noting that a significant 97% of women utilized at least one child health service, while 95% availed themselves of at least one maternal health service. Notably, 60% of women had fewer than four antenatal care (ANC) visits during pregnancy, with only 21.5% meeting the recommended minimum of four ANC visits, emphasizing the need for targeted healthcare interventions and education. These findings provide valuable insights into the health, nutrition, and well-being of the surveyed communities and offer a foundation for strategic interventions to improve their overall quality of life.

Purpose 3: The annual survey findings are a testament to the positive change brought about by purpose 3 efforts, as approximately 99% of the project's households made investments in assets that enhance their adaptive capacity. Moreover, the study revealed that 78.7% of surveyed households had proactively drafted long-term plans to address their food and other essential needs, marking a significant step toward self-sufficiency. A remarkable outcome of the project was the empowerment of 68% of

both youth and women, enabling them to make autonomous decisions regarding productive resources and assets. Furthermore, the results from the outcome survey demonstrated a remarkable 72.9% of the targeted population utilizing climate information and undertaking actions to mitigate climate-related risks. Although there were disparities in understanding early warning information, with male participants showing a higher comprehension rate of 86% compared to their female counterparts at 66%, an overall 72% of those targeted reported timely receipt of early warning messages. The study's findings also highlighted the substantial progress made in enhancing social capacity, with a mean index score of 57 for households. These findings collectively underscore the project's effectiveness in bolstering resilience, empowerment, and preparedness within the communities it serves, ultimately contributing to improved overall well-being and sustainable development.

Conclusions and Recommendations

The findings from Purpose 1 of the project have shed light on key aspects of the agricultural sector, revealing both strengths and areas for improvement. It is evident that the agricultural sector in the Titukulane communities has significant potential, with rice producers leading in terms of revenue generation. This suggests that investments and support in rice cultivation can be a strategic move for further economic growth. However, the disparities in crop yields across different crops, such as soybean, pigeon pea, and groundnut, indicate a need for targeted interventions to improve crop productivity in these areas.

The high level of technology adoption is promising, but there is a need to address variations in the adoption of specific practices. Additionally, enhancing gender equality in access to labor-saving technologies and improving bookkeeping practices should be considered. The project's success in improving market engagement is commendable, and efforts should continue to sustain and further enhance market linkages for crop and livestock producers. Specifically, Titukulane need to:

- Invest in strategies to improve crop yields, especially for soybean, pigeon pea, and groundnut.
- Provide targeted training and support to ensure more equitable adoption of technology practices, focusing on gender-neutral access.
- Promote and expand financial literacy and bookkeeping skills among producers to increase transparency and business efficiency.
- Continue efforts to strengthen market engagement, exploring opportunities for value addition and market diversification within the agricultural sector.

The findings of Purpose 2 have revealed both positive and concerning aspects of the nutritional status and gender-based violence in the surveyed communities. While there have been improvements in the adoption of nutrition and health practices, the moderate percentage of women consuming a diet of minimum diversity indicates the need for enhanced nutritional education and support. The prevalence of gender-based violence among women is a concerning issue that requires urgent attention and continued intervention. The project has made significant strides in improving access to child and maternal health services. However, the suboptimal number of ANC visits among pregnant women suggests that targeted healthcare interventions and

education should be intensified to ensure proper maternal care. There it is recommended that Titukulane needs to:

- Strengthen nutritional education and support programs to increase dietary diversity among women and children.
- Develop and implement programs to address and prevent gender-based violence, providing support for victims.
- Intensify education and awareness campaigns on the importance of regular ANC visits for pregnant women.

Purpose 3 of the project has yielded highly positive results, indicating significant progress in enhancing adaptive capacity and climate resilience within the surveyed communities. The vast majority of households have invested in assets to increase their resilience, and a considerable number have drafted long-term plans for food and essential needs, indicating self-sufficiency efforts. Empowering youth and women to make autonomous decisions over productive resources and assets is a substantial achievement. The utilization of climate information and risk-reducing actions demonstrates an increased awareness of climate-related challenges and the importance of adaptation strategies. However, gender disparities in understanding early warning information need to be addressed. It is therefore recommended for Titukulane to:

- Continue to support and promote investments in adaptive capacity and long-term planning among households.
- Strengthen efforts to ensure gender equity in climate-related education and early warning information dissemination.
Build on the progress made in empowering youth and women by providing additional training and resources to support their decision-making capabilities.
- Scale out integration of interventions in communities where there were limited overlaps.

1. Introduction

1.1 Background to ABS

The food and nutrition security of ultra-poor households around the world is vulnerable to negative shocks to households' sources of income. To address this issue in Malawi, the United States Agency for International Development's (USAID) Bureau for Humanitarian Assistance (BHA) awarded a consortium led by CARE International in Malawi (CIM) to provide Resilience Food Security Activities (RFSA) for 723,111 people in 290,413 households in Mangochi and Zomba districts in Malawi. The activity, Titukulane, aligns with the National Resilience Strategy (NRS) developed by the Government of Malawi. Titukulane is being implemented by CIM along with Save the Children, Emmanuel International, WaterAid, the National Smallholders Farmers' Association of Malawi (NASFAM), and the International Food Policy Research Institute (IFPRI).

The goal of Titukulane is to promote "sustainable, equitable, and resilient food and nutrition security for ultra-poor and chronically vulnerable households." By the completion of the activity, targeted participants are expected to have "increased incomes from on and off-farm livelihoods, improved health, nutrition, and other behaviors equitable gender relations, expanded access to safe water and improved hygiene, and quality health and nutrition services, and will benefit from improved district-level systems for planning and resource mobilization around development, disaster risk management, and natural resource management." To achieve this, Titukulane is employing a wide variety of interventions, including but not limited to Integrated Watershed Management, Village Savings and Loan Associations (VSLA), Gender Dialogues, Care Groups with Nutritional Cash Transfers (NCT), Disaster Risk Reduction training, Farmer Field and Business Schools, Youth Savings and Loan Associations, formal and informal Technical and Vocation Training (TVET), and Youth Disaster Risk Management Clubs.

The Titukulane Theory of Change has three main objectives, or purposes:

- **Purpose 1 (P1):** Income. Increased diversified, sustainable, and equitable incomes for ultra-poor, chronically vulnerable households, women, and youth
- **Purpose 2 (P2):** Reproductive, Maternal, Newborn, Child and Adolescent Health, Nutrition, and WASH. Improved nutritional status among children under 5 years of age, adolescent girls, and women of reproductive age.
- **Purpose 3 (P3):** Resilience Capabilities. Increased institutional and local capacities to reduce risk and increase resilience among poor and very poor households in alignment with the NRS.

Each purpose has several sub-purposes with associated intermediate outcomes, indicators, and impact targets for improvement from baseline values. There are also four cross-cutting objectives: Gender integration, Social and behavioral Change Communication (SBCC), Governance & Accountability, Youth Engagement, and Environmental Safeguarding.

The eligibility of households for the various interventions depends both on demographic characteristics and socioeconomic status. For example, Care Groups

target pregnant and lactating women and caregivers with children under 2 years of age and TVET programming targets youths between 19 to 35 years. Among those who are eligible for a Care Group, only participants from certain categories of poorer households qualify for NCTs.

The categorizations of socioeconomic status of households Titukulane uses to determine eligibility is based on a community participatory listing exercise. With the help of community leader and other members, Titukulane staff categorized all households in all villages of the two districts where Titukulane is active into one of four categories: Tier 1 “Hanging in”, Tier 2 “Stepping up”, Tier 3 “Stepping out”, and Tier 4 “Well off”. Households in the well-off category are not eligible for any interventions hence these were not included as part of the sample.

Table 1 describes each of the first three categories that are eligible for Titukulane interventions by socioeconomic status.

Table 1. Household categories

Tier	Description
Tier 1 (Hanging in)	Ultra-poor households with limited labor capacities and in need of direct support.
Tier 2 (Stepping up)	Ultra-poor households with some labor capacity but with resources too limited to enable them to become food self-sufficient.
Tier 3 (Stepping out)	Chronically vulnerable households that are beginning to step out of poverty as they acquire additional assets, but that are food insecure for at least part of the year, every year.

The listing data provided by Titukulane has the following distribution of household types—Tier 1: 27%; Tier 2: 59%; Tier 3: 12%; Tier 4: 4%. As earlier pointed out, these were screened out during sampling as they did not receive any interventions.

1.2 Study objectives and scope of work

The overall objective of the FY23 PaBS was to assess the actual achievement of Titukulane’s key annual outcome indicators. Furthermore, the findings of the Survey were to be used to inform adaptive management decision-making. As defined in the project M & E plan, Titukulane planned to track a total of thirty-nine (39) annual indicators to generate data for annual reporting and measure progress against a set of annual targets in the Indicator Performance Tracking Table (IPTT). Bureau of Humanitarian Assistance (BHA) encourages projects to use a PaBS for those indicators for which data collection through routine monitoring is determined as not feasible or unreliable (due to the wide geographical coverage and the large number of people to be assessed). This approach is particularly useful for measuring knowledge, attitudes, or practices, which generally require more time for questions and for which questioning of all participants would be onerous. Based on this recommendation, the project identified a total of twenty-nine (29) annual indicators (12 BHA and 17 custom) to be measured through its PaBS as it allows to collect data from a much smaller sample of beneficiaries, than routine monitoring. A survey with a representative sample of the beneficiary population is also more appropriate for logistical and cost-

effective reasons.

The rest of the report is organized as follows; the next chapter presents the methods used in the study, chapter 3 presents and discusses the key findings for each indicator. Chapter 6 draws conclusions and provides key programming lessons.

2. Methodology

2.1 Overview of the approaches

This section presents the methodology that was adopted to establish the indicator values for period of 2022/2023 reporting period. The study was purely quantitative focusing on the indicators that cannot be established through routine monitoring by project implementers. The approaches used are detailed in the succeeding sections.

2.2 Sampling design

The sample design process involved complex exercises related to clustering, choosing the number of clusters, stages of selection, and selecting a sample. The sample size calculations were also associated with different types of indicators. Selecting the appropriate sampling formula and applying multiplicative adjustments to the initial sample size is critical to the survey design and sampling plan. All 30 indicators selected for PaBS were linked with several individuals and combined sampling frames.

Thirteen (13) indicators are measured as total values, fifteen (15) indicators represent percentage values (proportion of the sample), and one (1) indicator measures index. Thus, the sample size estimation process is determined accordingly. The PaBS used a two-stage cluster sampling design with a systematic selection of participants, given that the communities in the project target areas are far apart, and subsequent logistical costs of the Survey would be much higher in the case of a one-stage sampling design. At the first stage villages/clusters for maternal and child health (frame 1), Value chain (frame 2) and off-farm (frame 3) frames were randomly selected from the 19 TAs¹ of Mangochi and Zomba (consisting of a total of 3,774 village/clusters) using Probability Proportional to Size (PPS) method. For the purposes of PPS selection, the size of the cluster was the total number of registered project participants in the cluster. For the second stage of sampling, the survey respondents were selected before fieldwork using the method of Fractional interval systematic sampling from a comprehensive list of beneficiaries using one of two variants of an equal probability method. The sample for the FY2023 PaBS was generated from the Titukulane STREAM MIS database. This database was designed to assign each participant with a unique identifier (ID) for households and individuals in these households. This unique ID was used during the actual data collection.

2.3 Sampling frames

During the FY23, Titukulane has been working with various community

¹ Titukulane covers a total of 19 TAs, however the purpose two activities will cover only 10 TAs (5 in Mangochi and 5 in Zomba)

structures/groups and individual households. Namely, the project reached a total of 95,247 participants. This includes 28,186 value chain farmers and 4,796 participants within its off-farm livelihood component (which includes IGA activities and youth vocational training). In addition, a total of 62,265 participants were reached by the Maternal and Child Health component, including caregivers (lactating mothers among them) (Table 2).

Table 2: Targets for FY23 participants related to the PaBS sampling frames:

Type of Beneficiary (FY 2023)	Number of Participants
Value Chain (VC) Participants (Producers)	28,186
Marketing of Rice	96
Marketing of Groundnut	527
Marketing of Soybean	3,524
Marketing of Pigeon peas	627
Off-farm livelihood, including micro-enterprise youth vocational training	4,796
Caregivers (including Lactating mothers)	62,265
Total Participants	95,247 ²

2.4 Estimation of sample size

As per the Participant-Based Survey Sampling Guide for Feed the Future Annual Monitoring Indicators, the Yield of the targeted Agricultural Commodities indicator should be reported for all producers working within crop, livestock, or aquaculture production systems. Titukulane sought to estimate sample size by applying the estimated maximum and minimum values for calculating standard deviation. Following are the formulas and calculations to estimate the minimum required sample sizes for indicators that require total values, percent values, and mean values.

- a) Sampling formula to estimate indicators with total values (indicators PM09-11-12, -15-16-33-38 and Custom 1-2-3-6-16-42:

$$n = \frac{N^2(Z^2)(S^2)}{MOE^2}$$

Where, z is critical value for the normal probability distribution (95% confidence level: 1.96); N is total number of beneficiaries in the respective sampling frame; S is standard deviation of the distribution of beneficiary and MOE is margin of error.

- b) Sampling formula to estimate indicators with percent value (indicators PM04-06 and Custom 10-11-17-18-19-23-24-25-28-38-39-40-41):

$$n = \frac{z_{\alpha}^2(p)(1-p)}{e^2}$$

Where, Z_{α} is the critical value for normal probability distribution at 95% confidence level which yields 1.96; p is Proportion of population with desired attribute; ϵ is Maximum desired sampling error of 6.5% (0.065).

² This figure is the total number of unique participants, and some participants participate or benefit from more than one intervention

When the initial sample calculated is greater or equal to 5% of the beneficiary population, a finite population correction factor needs to be applied: $FPC = 1/(1+n_1/N)$, where n_1 is the initial sample size and N is the population size. Based on the sample formulae presented above, the samples for respective frames are summarized in Table 2 below. The indicators with percentages and means are nested in the sample for indicators with totals.

Table 2: Minimum required sample size estimation for FY23 PaBS

Indicators	Frame	Sample	Achieved sample	Number of sample clusters
Indicators with Total	Off-Farm livelihoods	150	145	15
Value chain indicators with Total	Rice	96	91	8
	Soybean	100	100	10
	Pigeon pea	100	93	10
	Groundnut	100	94	10
Indicators with Total	Producers	300	440 ³	30
Indicators with Total	MCH participants	300	301	30
Total		1,031	1,038	48

2.5 Selection of Village/Cluster:

As there is no prescriptive formula for determining how many clusters and how many participants to choose within each cluster, however, there are competing interests in terms of what is most operationally expedient versus what is most statistically efficient. For statistical efficiency, BHA recommends the smallest number of participants possible from each cluster is proposed so that the largest number of clusters be selected and finally increase statistical efficiency and decrease the design effect. Thus, Survey selected around 10 samples per cluster, however, where the cluster size was less than 10, all subjects in that cluster were enumerated. A total of 30 clusters were defined from the MCH sampling frame, 10 clusters for pigeon pea and groundnut, 8 clusters for rice and 11 for soybean and 30 for producers. The marketing clusters were overlapped within the producer clusters. In addition, 15 clusters were selected from the off-farm sampling frame. Some clusters had overlaps with Producer, MCH and off-farm. Excluding overlaps, a total of 47 clusters were sampled. For detailed list of sample clusters for each intervention and overlaps see Annex A0. The primary selection unit was the beneficiary.

2.6 Data quality assurance

From the onset of the survey, quality control measures were put in place. Beginning with the selection of data collectors, only those with previous experience with Feed the Future surveys were recruited which eased understanding of the questionnaire. The survey used Computer Assisted Personal Interview (CAPI) which was programmed to automatically reject inconsistent entries, skip irrelevant questionnaires and control for

³ 440 instead 300 because the marketing sample was also a subset of producer group.

out-of-range entries which solved most of the problems associated with paper-based interviews. The interviews were supervised in the field and the consultants observed some of the interviews. Debriefing meetings were organized every close of a day to resolve any issues arising and share experiences. Community volunteers were also used to ensure that the farmer being interviewed is exactly the one whose name appeared on the sample lists.

Before training the enumerators, the survey instruments were bench tested and piloted to fine-tune them, to ensure that the questions flowed well, to ensure logic and skip patterns were well implemented and to estimate the duration of the interviews. One more pilot test was conducted during the training that took place. The training introduced enumerators to the survey instruments and explained the survey questions and procedures using the training manuals for supervisors and enumerators. During training, the enumerators practiced administering the survey instruments through role-playing by interviewing each other. A pilot test was conducted in one village, not part of the study sample but implementing Titukulane interventions, to allow enumerators to practice administering the outcome survey questionnaire in a real field setting and trouble-shoot any bugs in the programmed survey versions. Subsequently, a debriefing session was held in which enumerators shared their experiences and clarified issues that emerged during the pilot test. A few changes were made to the skip patterns and other sections of the survey based on the enumerators' observations and recommendations. The training was conducted jointly with technical leads of various sub-purposes of the Titukulane programme at Ekhaya Hotel in Mangochi. They provided continuous backstopping during the training process.

2.7 Sampling Weights and Response Rates

The annual survey used a 2-stage stratified cluster sampling design, where clusters are chosen during the first phase with proportional to size sampling. Beneficiary selection was carried out during in the second stage using a simple random sampling method. To ascertain that the information produced represents the underlying population of potential beneficiaries, survey sampling weights were calculated⁴ as in Figure 1. The intention was to compensate for the probabilities of cluster selections during the first sampling phase and the probability of beneficiary selection during the second phase. In addition, non-response rate adjustment was applied to the overall sampling weight to account for the sampled beneficiaries who chose not to respond to the survey questions.

⁴ Steps in Weight construction (Adapted from Stukel et al 2018 by author)
(Ref: Stukel, Diana Maria. 2018. Participant-Based Survey Sampling Guide for Feed the Future Annual Monitoring Indicators. Washington, DC: Food and Nutrition Technical Assistance Project, FHI 360)

1	$f_{1i} = \frac{(\text{number of clusters to be selected} * \text{total number of participants in selected cluster } i)}{\text{total number of participants in all clusters}} = \frac{m * B_i}{N}$
2	$f_{2ij} = \frac{\text{total number of participants selected for sampling in cluster } i}{\text{total number of participants in cluster } i} = \frac{b_i}{B_i}$
3	$f_{ij} = f_{1i} * f_{2ij} = \left(\frac{m * B_i}{N}\right) * \left(\frac{b_i}{B_i}\right) = \frac{m * b_i}{N}$
4	$W_{\text{non-response}} = \frac{\text{sum of } W_{\text{ProbSelection}} \text{ over participants selected to be interviewed (in a sampled cluster)}}{\text{sum of } W_{\text{ProbSelection}} \text{ over participants actually interviewed (in a sampled cluster)}}$
5	$W_{\text{final}} = W_{\text{ProbSelection}} * W_{\text{non-response}}$

Figure 1. Construction of sampling weights

2.8 Survey challenges

The survey team faced the following challenges during implementation of the annual survey. Below is a list of key challenges and how the evaluation team addressed them:

- **Sample frame quality:** Although the sample frames provided by project was of a good quality, there were some such as (i) duplication of some participants' names, and (ii) non-traceable participants. Non-existent participants, when revealed, were replaced with other randomly selected farmers.
- **Long travel distances:** The sample of beneficiaries was selected randomly; some clusters were located in remote areas and required a lot of traveling. Additionally, some beneficiaries in selected clusters and villages were located far apart from each other and covering them required additional long-distance walking. The issue was managed by limiting the total number of interviews to be completed by each enumerator to only four per day.
- **Absenteeism of sampled respondents at home.** There were many instances when sampled respondents were not at home at the time when enumerators visited them. In order to deal with this, enumerators had to visit each beneficiary up to three times.

3. Survey findings and discussion

3.1 Introduction

This chapter presents a full discussion of the findings of the study. The findings are presented based on the main objectives of the Titukulane project presented in the introduction. As much as possible, detailed explanation of the study results are presented in each section with disaggregation that are specified in the Titukulane PIRS document.

3.2 Relevance of the Titukulane project

The outcome evaluation went further to assess the project design in terms of its relevance to the overall development situation in Mangochi and Zomba and relevance to households participating households and care givers. The following section presents findings of the evaluation on the two levels.

Alignment with district development plans: The Titukulane PaBS found that the project districts had outdated District Development Plan (DDP). Titukulane study found that the project was directly contributing to objectives of the district development priorities. Given that Titukulane was building and scaling out the gains made by Njira project in Balaka and Machinga districts and UBALE project in Nsanje, Chikwawa and Blantyre both funded by USAID, it can be argued that Titukulane was relevant as it contributed to scaling out the impacts of USAID funded projects. In addition, the District Councils reported that Titukulane has contributed to building climate change resilience and improved coordination of nutrition programmes in the district, by revamping and strengthening community level nutritional structures.

Addressing poverty and economic goals: In the project districts, it was reported that the main constraints of socio-economic development amongst others poor road accessibility, Low pupil/student performance in school, inadequate access to health, HIV and AIDS services, Inadequate access to ECD services, high environmental degradation, food insecurity and malnutrition, climate change, low household income levels and high level of gender-based violence and low community participation in development work. In addition, both districts are among the districts in Malawi with the highest level of food insecurity of up to 81% against the national average of 40% (NSO, 2020). Both districts mostly hit by climate extremes including dry spells so food insecurity is high and the use of climate smart agriculture technologies is critical to address food shortages and malnutrition. In addition, frequent flooding in the project sites, made Titukulane's WASH intervention very relevant, especially in the last reporting year in which participants experienced flooding due to tropical cyclone. Due to high levels of poverty, in the district, there is also need for income generating activities. The Titukulane package is working to address most of the mentioned challenges. For example, addressing food security issues, dealing with the problem of malnutrition, building resilience to change climate and increasing disasters and again promoting income diversity through Off-farm livelihood interventions.

Women’s economic empowerment: Economic empowerment programmes such as Village Savings and Loans and collective marketing interventions were found to be relevant to beneficiaries, especially women who were in majority, because they provided additional income to beneficiary households. Beneficiaries who were participating in VSLs and collective marketing reported that they are now able to borrow money from VSLs and get better prices of their agricultural produce (hence more income) from collective marketing. The income earned is used to invest in small-scale businesses, in agricultural production and in building households’ assets, in buying food for their young children, paying for medical costs for their household members and also buying agricultural inputs, thereby contributing to food and nutritional security for the household.

Gaps in the project design: Further analysis of the design of the project showed that the project was well focused and geographically well targeted. The approach of combining nutrition and health interventions together with economic empowerment as well as agricultural production and livelihoods, ensured that critical needs of vulnerable groups (food, income, inputs, health and nutrition) were addressed concurrently to complement each other. The challenge, however, was that the integrated design approach, was not pursued in totality in some communities. This refers to communities where there were no overlaps of the elements of the full package of interventions under Titukulane, by design. As a result, a limited number of beneficiaries benefitted from all the three support areas of the project.

3.3 Effectiveness of Titukulane project implementation

This section of the report explains the calculation methodology for each of the outcome indicators along with the results for current reporting period. It should be noted that calculations of standard performance indicators followed the PIRS in the Handbook for Titukulane project. Overall, the study shows that the project is progressing well in terms of achieving indicators. A summary as presented in Figure below shows that 75% of the indicators exceed the current year’s target, 17% were behind the target and 8% were just on track.

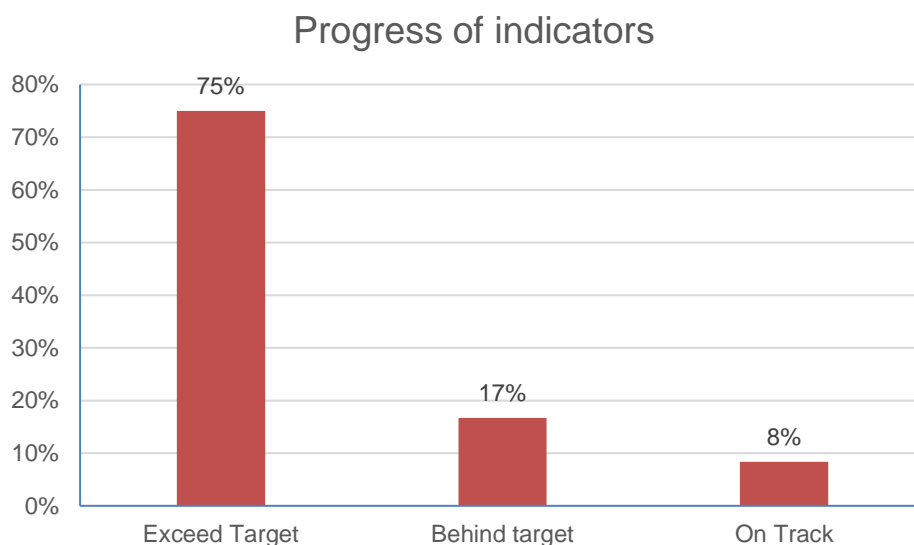


Figure 2. Effectiveness of achieving project objectives

3.3 Purpose 1: Increased diversified, sustainable and equitable incomes for ultra-poor, chronically vulnerable HHs, women and youth

Purpose 1 in Titukulane focuses on improving the resilience of ultra-poor and chronically vulnerable households by increasing income from both farm production and off-farm income-generating activities.

3.3.1 BHA PM33: Value of annual sales of producers and firms receiving USG assistance

This indicator measures the value in U.S. dollars of the total amount of sales for the promoted value chains during the reporting year within USG-supported agricultural commodity value chains or markets. Annual sales include all sales by producers participating in USG-funded activities. The survey only counted sales in the reporting year that were attributable to the USG, i.e. where the USG assisted the individual producer, or the market actor with which they are engaged directly, and only for those value chains/commodities/markets which the USG supports. While the indicator captures the total value of annual sales, Table below also presents the mean annual sales for the producer for ease of interpretation than the totals. The most revenue at producer level was reported from rice producers (USD222 per producer) followed by soybean producers (USD84 per producer). In comparison to the baseline, the current results show that there has been a positive movement. For example, Rice commodity has moved from USD9845.00 value of annual sales at baseline to USD15437.43. Soybean has increased from its total value of sales from USD3998.27 at baseline to 268,811.32.

Table 3. Weighted Value of annual sales of producers and firms receiving USG assistance

	Measurement	Mean	Std Dev	Median	Annual totals	Weighted Number of participant producers	Sample Number of participant producers
Rice	Value of Rice Sales (USD)	222.06	390.02	28.57	15437.43	96	91
	Volume of Rice Sales (MT)	0.19	0.30	0.03	13.96	96	91
Soybean	Value of Soybean Sales (USD)	83.71	127.31	42.86	268811.32	3489	100
	Volume of Soybean Sales (MT)	0.15	0.23	0.10	565.11	3489	100
Pigeon pea	Value of Pigeon Sales (USD)	36.30	52.35	17.14	21205.38	618	94
	Volume of Pigeon pea Sales (MT)	0.06	0.08	0.03	37.82	618	94
Groundnut	Value of Groundnut Sales (USD)	34.04	50.63	37.69	15432.70	505	99
	Volume of Groundnut Sales (MT)	0.5	0.9	0.07	26.25	505	99

3.3.2 BHA PM15: Yield of targeted agricultural commodities among program participants with USG assistance (EG.3-10, -11, -12)

Yield is a measure of the total output of production of an agricultural commodity divided by the total number of units in production (hectares planted of crops). Yield is calculated at the commodity level from the following data points; Total Production: MT by participants during the reporting period; Total Units of Production -Area planted in

ha (for crops); The sum of total production divided by the sum of units of production provides an estimate of the average yield achieved across the different production cycles. These two data points were captured for each of the value chain commodity. The results showed that the average yield for the rice, soybean, pigeon pea and groundnut were 1.77MT/ha, 0.910MT/ha, 0.53MT/ha and 1.12MT/ha, respectively (Table 4). With the tropical cyclones that hit the project sites, and southern Malawi in general, it was expected that the yield for project sites would go down for this reporting year. However, the increase in yield, prove more resilient farming systems especially in 2023 in which the year was characterized by serious tropical cyclones. The previous yields for soybean reported by FAO were 0.972 MT/ha, however, this includes areas not hit by tropical cyclones.

Table 4. Weighted total production and area under production for value chain commodities among program participants with USG assistance

	Measurement	Mean	Std Dev	Median	Weighted Annual totals	Sample number of participant	Weighted Number of participant producers	Yield (MT/ha)
Rice	Total Production (MT)	0.50	0.84	0.24	48.14	91	96	1.77
	Total Area (Ha)	0.28	0.13	0.20	27.16	91	96	
Soybean	Total Production (MT)	0.32	0.39	0.19	1107.23	100	3489	0.91
	Total Area (Ha)	0.35	0.25	0.30	1227.16	100	3489	
Pigeon pea	Total Production (MT)	0.15	0.15	0.11	93.01	94	618	0.53
	Total Area (Ha)	0.29	0.19	0.20	176.38	94	618	
Groundnut	Total Production (MT)	0.28	0.24	0.19	141.06	99	505	1.12
	Total Area (Ha)	0.25	0.13	0.20	125.48	99	505	

3.3.3 Custom 1: Number of producers who bought contextually suitable improved inputs in last 12 months (EMMP)

This indicator counts smallholder producers from hanging in, stepping up and out target groups who have received USG supported short-term agricultural sector productivity or food security trainings in use of improved inputs (such as: a) certified seed that could be higher-yielding, higher in nutritional content and/or more resilient to local climate impacts b) improved and environmentally sustainable fungicides, insecticides and fertilizers in last 12 months. Inputs considered include, certified seed, fertilizer, recommended pesticides and herbicides. Overall, there was high achievement under this indicator (97%) for both male and female producers. However, ability to purchase suitable inputs was not visibly sensitive to poverty states (Table 5).

Table 5. Custom 1: Weighted number of producers who bought contextually suitable improved inputs in last 12 months (N=28185)

		Sample Number of producers	Weighted Number of producers	Percent of producers	95% Lower CL	95% Upper CL
Producer Type	Hanging In	71	5027	100.0%	-	-
	Stepping Up	80	4458	100.0%	-	-
	Stepping out	275	17920	96.9%	96.6 %	97.1 %
Sex Disaggregate	Male	126	7745	100.0%		
	Female	305	19862	97.2%	96.9 %	97.4 %
	Total	431	27608	97.9%	97.8 %	98.1 %

3.3.4 Custom 2: Number of producers who reported quality input was available in local markets in the last 12 months

This indicator counts smallholder producers who have received USG supported short-term agricultural sector productivity or food security trainings in use of improved inputs such as: a) certified seed that could be higher-yielding, higher in nutritional content and/or more resilient to local climate impacts b) improved and environmentally sustainable fungicides, insecticides and fertilizers c) Veterinary products. The study defined local markets as agro-dealers and veterinary shops. A total of 95% producers reported that they had access or availability of quality inputs in their local markets over the reporting period. Again, there was no wide variation between the gender groups (Table 6).

Table 6. Custom 2: Weighted number of producers who reported quality input was available in local markets in the last 12 months (N=28185)

	Sample Number of producers	Weighted Number of producers	Percent of producers (%)	95% Lower CL	95% Upper CL
Male	120	7320	94.5%	94.0%	95.0%
Female	296	19323	94.5%	94.2%	94.8%
Total	416	26643	94.5%	94.3%	94.8%

3.3.5 BHA PM9: Number of hectares under improved management practices or technologies with USG assistance (EG.3.2-25)(EMMP)

This indicator measures the area in hectares where USG-promoted improved management practices or technologies were applied during the reporting year to areas managed or cultivated by producers participating in a USG-funded activity. The annual survey counted management practices which were agriculture-related, land- or water-based management practices and technologies including those that address climate change adaptation and mitigation. Table 7 and 8 presents a summary of areas under improved technologies and management practices. The survey found that producers on average applied the improved management practices on 0.6ha of their land. A check of gender effect showed that extent of use of improved management practices

on land was slightly higher for males than females. Again, younger population (15-29years) allocated less land on which to practice improved practices compared to the aged population (30+years). A further analysis of specific technologies showed that there was no wide variation in land sizes on which the practices were applied, rather the results show that there were a lot of overlaps, with several technologies being applied on same parcel of land.

Table 7. BHA PM9: Weighted Number of hectares under improved management practices or technologies (N=28042)

		Number of Hectares	Mean	Standard Deviation	Median	Weighted Number of farmers	Sample number of farmers
Sex Disaggregate	Male	5169.45	0.67	0.50	0.61	7745	126
	Female	11741.87	0.58	0.40	0.40	20297	311
	Total	16911.33	0.60	0.43	0.51	28042	437
Age Disaggregate	15 - 29 Years	2515.78	0.54	0.49	0.40	4675	75
	30+ Years	14395.55	0.62	0.41	0.51	23367	362

Table 8. BHA PM9: Weighted number of hectares under improved management practices or technologies with USG assistance (EG.3.2-25) (EMMP), by Management Practice or technology type (N=28042)

	Number of Hectares	Mean	Std Dev	Median	Weighted Number of farmers	Sample Number of farmers
Hectares Under Crop Genetics	6807.80	0.36	0.25	0.20	25596	305
Hectares Under Cultural Practices	6493.44	0.59	0.41	0.40	28014	436
Hectares Under Ecosystem Management	12556.45	0.52	0.37	0.40	24002	368
Hectares Under Pest and Disease Management	16658.94	0.60	0.41	0.51	27786	433
Hectares Under Soil fertilizer and conservation	14214.87	0.55	0.39	0.40	25709	406
Hectares Under Irrigation	2438.05	0.22	0.16	0.20	11303	199
Hectares Under Agriculture water management	14515.76	0.55	0.41	0.40	26260	405
Hectares Under Climate Mitigation	15318.43	0.57	0.39	0.40	27078	417
Hectares Under Climate Adaptation	15340.43	0.57	0.42	0.40	27026	425

	Number of Hectares	Mean	Std Dev	Median	Weighted Number of farmers	Sample Number of farmers
Total Area Under Improved practices	16911.33	0.60	0.43	0.51	28042	437

3.3.6 BHA PM16: Number of individuals in the agriculture system who have applied improved management practices or technologies with USG assistance (EG.3.2-24) (EMMP)

This indicator measures the total number of agriculture system actors participating in Titukulane-funded activity who have applied improved management practices and/or technologies promoted by the USG anywhere within the food and agriculture system during the reporting year. The indicator tracks those individuals who change their behavior while participating in USG-funded activities. Improved management practices or technologies are those promoted by the program as a way to increase agricultural productivity or support stronger and better functioning systems. The improved management practices and technologies are agriculture related, including those that address climate change adaptation or climate change mitigation. The summary results for the status of adoption for various technology practices is presented in Table 9 below. Overall, the results show that almost all individuals applied some technology practice (99.5%). However, there was wide variation in the rates of adoption for various and specific technology practices. The most practiced technologies included crop genetics, cultural practices, pest management, climate management and post-harvest management (>90%). Across various disaggregates, the results did not show any systematic patterns of differences in adoption rates.

Table 9. BHA PM16: Weighted number of individuals in the agriculture system who have applied improved management practices or technologies with USG assistance

	Sex Disaggregate				Age Disaggregate					
	Male		Female		15 - 29 Years		30+ Years		Overall	
	N	%	N	%	N	%	N	%	N	%
Applying Crop Genetics	7455	96.2%	18142	88.8%	4040	83.9%	21556	92.2%	25596	90.8%
Applying Cultural Practices	7745	100.0%	20269	99.2%	4675	97.0%	23339	99.9%	28014	99.4%
Applying Livestock management	1398	18.0%	3168	15.5%	1019	21.1%	3547	15.2%	4566	16.2%
Applying ecosystem management	7069	91.3%	16932	82.8%	3962	82.2%	20040	85.8%	24002	85.2%
Applying pest and disease management	7745	100.0%	20041	98.0%	4571	94.9%	23215	99.4%	27786	98.6%
Applying soil fertility	7335	94.7%	18374	89.9%	4151	86.1%	21559	92.3%	25709	91.2%
Applying irrigation	3369	43.5%	7934	38.8%	1866	38.7%	9437	40.4%	11303	40.1%
Applying water management	7433	96.0%	18827	92.1%	4521	93.8%	21739	93.0%	26260	93.2%
Applying climate mitigation	7344	94.8%	19734	96.5%	4342	90.1%	22735	97.3%	27078	96.1%
Applying climate adaptation	7557	97.6%	19469	95.2%	4675	97.0%	22351	95.7%	27026	95.9%
Applying marketing, distribution	6461	83.4%	16133	78.9%	3534	73.3%	19060	81.6%	22594	80.2%
Applying postharvest and storage	7717	99.6%	20099	98.3%	4648	96.5%	23169	99.2%	27816	98.7%
Applying value-added processing	6532	84.3%	16775	82.1%	4040	83.8%	19267	82.5%	23307	82.7%

Applying any technology	7745	100.0%	20297	99.3%	4675	97.0%	23367	100.0%	28042	99.5%
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3.3.7 Custom 3: Number of producers accessing labor-saving technologies

Access to effective, labor-saving technologies is one of the essential factors for adopting improved technologies and increasing incomes from farming. This indicator measures the effectiveness of program interventions in providing program participant producers with appropriate awareness and knowledge, as well as facilitating their access to sufficient resources (through VSLA and other financial institutions), necessary to access labour saving technologies. Labor saving technologies are important to saving women's time and effectively engage in the agriculture production. Possible Labor-saving technologies considered in this study included, recommended herbicides or pesticides, maize sheller, solar powered irrigation pump, ploughing equipment. Overall, the study finds that 21% of the producers accessed labour-saving technologies with slight disparity between male (21.5%) and female (20.5%). This presents an increase from the previous reporting year, from 661 to 5851 participants, which also exceeds the current annual target by 33%. Nevertheless, more is needed to achieve the project's global target. The most labour-saving technologies that had higher access included use of irrigation canals (10.8%). There was no gender disparity between men's and women's use of irrigation canals.

Table 10. Custom 3: Weighted number of producers accessing labor-saving technologies

		Male		Female		Total	
		Weighted Number of participants	Weighted %	Weighted Number of participants	Weighted %	Weighted Number of participants	Weighted %
Spraying of recommended herbicides & pesticides	Yes	2200	28.4%	6340	31.2%	8540	30.5%
	No	5545	71.6%	13957	68.8%	19502	69.5%
	Total	7745	100.0%	20297	100.0%	28042	100.0%
Maize Shellers	Yes	292	3.8%	417	2.1%	709	2.5%
	No	7453	96.2%	19880	97.9%	27333	97.5%
	Total	7745	100.0%	20297	100.0%	28042	100.0%
Irrigation pumps (motorized/solar powered)	Yes	232	3.0%	515	2.5%	747	2.7%
	No	7514	97.0%	19782	97.5%	27296	97.3%
	Total	7745	100.0%	20297	100.0%	28042	100.0%
Ploughing equipment	No	7745	100.0%	20297	100.0%	28042	100.0%
Bucket drip irrigation kits	Yes	343	4.4%	1494	7.4%	1837	6.6%
	No	7402	95.6%	18803	92.6%	26205	93.4%
	Total	7745	100.0%	20297	100.0%	28042	100.0%
Irrigation canals	Yes	786	10.2%	2248	11.1%	3034	10.8%
	No	6959	89.8%	18049	88.9%	25008	89.2%
	Total	7745	100.0%	20297	100.0%	28042	100.0%
Labour Saving Technologies	Yes	3455	44.6%	8764	42.9%	12219	43.4%
	No	4290	55.4%	11676	57.1%	15966	56.6%
	Total	7745	100.0%	20440	100.0%	28185	100.0%

3.4 Sub-Purpose 1.2: Increased engagement in off/non-farm livelihoods by ultra-poor, chronically vulnerable HHs members, women and youth

Major off-farm and non-farm livelihoods activities in Mangochi and Zomba for Hanging In, Stepping Up and Stepping Out households include wage employment in the form of ganyu, migration for employment, and self-employment in the form of petty trading or small IGAs. For self-employment, the youth were trained to analyze the specific local opportunities for engaging in off-farm or non-farm activities so that they can select the opportunity upon which they want to focus. In collaboration with the Youth department in each district, Titukulane built the literacy, numeracy and leadership skills of young adult participants in this component.

3.4.1 Custom 6: Number of participants who reported awareness of profitable off-farm livelihood options

This indicator measures the effectiveness of program interventions in providing program participants (especially those with low levels of agricultural assets) with information and knowledge on profitable off-farm livelihood options in high potential sectors. In this study, a participant was counted if they self-reported awareness of off-farm livelihoods options. Profitable off-farm options included income generating activities such as welding, cement block making & laying, tailoring, plumbing, carpentry, auto mobile mechanics, jam making, bee keeping, juice making, bakery. The survey asked participants if they were aware of the profitable off-farm livelihood options. Most of the participants for this sub-purpose (99%) reported that they were aware of some form of off-farm ventures (Table 11).

Table 11. Custom 6: Weighted number of participants who reported awareness of profitable off-farm livelihood options

	Male		Female		Total	
	Weighted Number of producers	Weighted %	Weighted Number of producers	Weighted %	Weighted Number of producers	Weighted %
Aware	1790	97.5%	3001	100.0%	4791	99.1%
Not aware	46	2.5%	0	0.0%	46	0.9%

3.4.2 Custom (CARE GEVV 4) 10: Percentage of individuals who report confidence in their own negotiation and communication skills

This indicator measures the level of confidence and that participants have to negotiate for better prices when engaging with markets. The annual survey has shown that 74% of the individuals reported that they had confidence in the negotiation and communication skills. Male participants presented more confidence in negotiation skills than their female counterparts (Table 12). This percentage has doubled from baseline (38%) and exceeded the current year target of 60%. However, more capacity building for farmers is required in the areas of market research for effective collective marketing. Still among the produce sample, 86% reported improvement in market engagement.

Table 12. INDICATOR 30: Custom 10: Weighted Percentage of individuals who report confidence in their negotiation and communication skills

		Sample Number of participants	Weighted Number of participants	Weighted %
Male	Yes	41	1,421.32	79.4%
	No	12	414.10	20.6%
	Total	53	1,835.42	100.0%
Female	Yes	69	2,131.19	71.0%
	No	27	869.94	29.0%
	Total	96	3,001.13	100.0%
Total	Yes	110	3,552.51	74.2%
	No	39	1,284.04	25.8%
	Total	149	4,836.55	100.0%

3.4.3 Percentage of IGA participants who maintained Book of Account for their businesses in the last 12 months

This indicator counts program IGA participants who have maintained a verified book of accounts in last 12 months. A book of account is defined as a record of all financial transactions for the IGA. Elements for a book of account included account receivable; money combined in the business; Accounts payable out. Verification was done during the survey by physically reviewing the book of accounts during the survey and confirming documented financial records. With this methodology, it was found that 56% of participants could be verified as having maintained book of accounts. There was a minimal variation between males (52%) and women (59%) with women being on the positive end (Table 13).

Table 13. Custom 13: Percentage of IGA participants who maintained Book of Account for their businesses in the last 12 months

		Sample IGA participants	Weighted Number of IGA participants	Percent	95.0% Lower CL	95.0% Upper CL
Maintain Book of accounts	Yes	77	2484.38	55.1%	55.1%	58.0%
	No	60	1908.50	42.0%	42.0%	44.9%
	Total	137	4392.88			
Male	Maintain Book of accounts	Yes	25	50.1%	54.9%	50.1%
		No	23	45.1%	49.9%	45.1%
		Total	48			
Female	Maintain Book of accounts	Yes	52	57.2%	60.9%	57.2%
		No	37	39.1%	42.8%	39.1%
		Total	89			

3.5 Sub-Purpose 1.3: Improved capacity of systems supporting on-farm and off/non-farm livelihoods

Three systems are targeted under this sub-purpose, including systems that provide access to capital, systems for providing business support services, and systems for job training and placement. Titukulane provides intensive business and technical training and support, to ensure that poor and chronically food insecure households become credit worthy and represent a profitable new market segment for rural financial service providers. For job training and placement, Titukulane has been working with Technical, Entrepreneurial and Vocational Education and Training Authority to map and assess the capacity of public, private and faith-based TVET providers serving the target districts. While our indicators under this sub-purpose were tracked through routine monitoring the annual survey tracked two indicators.

3.5.1 Custom 11: Percentage of crop and livestock producers who reported improved market engagement in the past 12 months

Participants counting toward this indicator were those who had improved market engagement in the reporting year. This indicator measures whether the efforts of the program (such as activities aimed at linkages and market organization, as well as improving adoption of crop and livestock marketing practices etc.) have led to an improvement in engagement of participants in markets. Market engagement was defined as participants that traded in one or all of the promoted commodities (Rice, Soya, ground nut and pigeon peas, goat and chicken). The annual survey shows that 85% crop and livestock producer had improved market engagement for both Men and women in the past 12 months of that reporting year. This exceeded the year's target of 75%.

Table 14. INDICATOR 33: Custom 11: Weighted Percentage of crop and livestock producers who reported improved market engagement in the past 12 months

		Sample Number of participants	Weighted Number of participants	%	95.0% Lower CL	95.0% Upper CL
Male	Yes	108	6,778.51	87.5%	86.8%	88.2%
	No	18	966.56	12.5%	11.8%	13.2%
	Total	126	7,745.07	100.0%		
Female	Yes	263	17,392.18	85.1%	84.6%	85.6%
	No	51	3,048.13	14.9%	14.4%	15.4%
	Total	314	20,440.31	100.0%		
Total	Yes	371	24,170.69	85.8%	85.3%	86.2%
	No	69	4,014.69	14.2%	13.8%	14.7%
	Total	440	28,185.38	100.0%		

3.6 Purpose 2: Nutritional Status among Children < 5, Adolescent Girls and Women of Reproductive Age Improved

Purpose 2 of Titukulane aims to improve the nutritional status of children under age five, adolescent girls and women of reproductive age. The three sub-purposes in this component focus on transformative social norms and behavioral change related to nutrition security, access to safe water and sanitation, and access to and utilization of quality community-based health and nutrition services with stronger linkages to health

facilities. The Purpose 2 strategy is fully aligned with the Government of Malawi commitment to prevent child malnutrition through a “First 1000 Days” approach and is aligned with Pillar 3 of the National Resilience Strategy.

3.6.1 BHA PM06: Percent of female direct beneficiaries of USG nutrition-sensitive agriculture activities consuming a diet of minimum diversity

A female participant of a nutrition-sensitive agriculture activity is defined as a female of any age who is directly reached by the activity with agriculture-related intervention that has explicitly stated nutritional objectives. Nutrition-sensitive agriculture activities are those with explicit consumption, diet quality, or other nutrition-related objectives and/or outcomes. In this study, a female was considered to be consuming a diet of minimum diversity if she consumed at least five of 10 specific food groups during the previous day and night. The 10 food groups included:

- Grains, white roots and tubers, and plantains
- Pulses (beans, peas and lentils)
- Nuts and (including groundnut)
- Dairy
- Meat, poultry, and fish
- Eggs
- Dark green leafy vegetables
- Other vitamin A-rich fruits and vegetables
- Other vegetables
- Other fruits

Overall, the study established that 41% of women were consuming a diet of minimum diversity, meaning they were consuming any five of the listed food groups. A disaggregation about age of 19 years showed that the younger population of women (aged less than 19 years) were not consuming a diet of minimum diversity while 68% of women aged 19 years or above were meeting a diet of minimum diversity. For specific food groups, grains, roots and tubers were the most consumed (99%) and there was a wide variation of consumption across the food groups (Table 15).

Table 15. BHA PM6: Weighted Percent of female direct beneficiaries USG nutrition-sensitive agriculture activities consuming a diet of minimum diversity (RiA)

		Sample Number of females	Weighted Number of females	Weighted percent (%)	95.0% Lower CL	95.0% Upper CL
Less than 19 Years	Yes	0	0	0.0%		
	No	0	0	0.0%		
	Total	0	0	0.0%		
19+ Years	Yes	212	13,808.67	67.6%	62.2%	72.5%
	No	102	6,631.64	32.4%	27.5%	37.8%
	Total	314	20,440.31	100.0%		
Total	Yes	212	13,808.67	67.6%	62.2%	72.5%
	No	102	6,631.64	32.4%	27.5%	37.8%
	Total	314	20,440.31	100.0%		
Specific food groups						
Grains, white roots and tubers, and plantains		310	20,087.29	99.0%	98.8%	99.1%
Pulses (beans, peas and lentils)		230	15,074.45	74.3%	73.7%	74.9%

Nuts and (including groundnut)	180	11,964.62	58.9%	58.3%	59.6%
Dairy	21	1,356.61	6.7%	6.3%	7.0%
Meat, poultry, and fish	191	11,857.05	58.4%	57.7%	59.1%
Eggs	147	9,838.87	48.5%	47.8%	49.2%
Dark green leafy vegetables	272	17,085.50	84.2%	83.7%	84.7%
Other vitamin A-rich fruits and vegetables	148	9,061.77	44.6%	44.0%	45.3%
Other vegetables	161	10,345.57	51.0%	50.3%	51.7%
Other fruits	113	7,658.72	37.7%	37.1%	38.4%

3.6.2 Custom 16: Number of HHs able to produce/purchase adequate diverse and nutritious food during the last 12 months

This indicator measures the ability of targeted households to produce or purchase adequate diverse and nutritious food in the last 12 months thereby reducing risk of malnutrition for PLW and CU2. “Diverse food” refers to nutrient-rich sources from the six food groups such as animal source foods (eggs, meat), fruits (banana, mangoes), vegetables (leafy greens such as pumpkin leaves), pulses (beans, pigeon peas, cow peas etc), staples (cassava, rice, sweet potato), fats (cooking oil, groundnuts). Titukulane is promoting production / purchasing of these food groups through the following activities: promotion of integrated homestead farming which includes homestead gardening, rearing of livestock, fruit propagation; door-to-door visits by care-group cluster leaders; cooking demonstrations; community-led complementary feeding and learning sessions (CCFLS); direct food assistance through provision of cash for purchasing food. The study registered 75% of households which were able to produce or purchase adequate and diverse nutritious foods. Where adult females were heads of households, there was relatively low score compared households which were headed by adult males (Table 16).

Table 16. Custom 16: Weighted Number of households able to produce/purchase adequate diverse and nutritious food during the last 12 months

	Sample Number of households	Weighted Number of households	Weighted percent (%)	95.0% Lower CL	95.0% Upper CL
Adult Male no Adult Female	16	3,196.38	75.5%	74.2%	76.8%
Adult Female no Adult Male	78	16,306.38	72.6%	72.0%	73.2%
Adult Male and Adult Female	132	27,250.09	77.1%	76.6%	77.5%
Female Child no Adults	1	207.55	100.0%		
Male Child no Adults	0	-	0.0%		
Total	227	46,960.40	75.4%	75.1%	75.8%

3.6.3 Custom 17: Percent of targeted participants who have applied optimal nutrition and health practices as a result of USG assistance

This indicator measures whether participants are applying nutrition practices promoted by Titukulane. Titukulane is promoting optimal nutrition practices such as optimal breastfeeding, timely introduction, frequency, diversity, quantity of complementary foods (from all six food groups promoted). The project is leveraging care-group model through which cluster leaders conduct home visits to provide nutrition counselling. The

annual survey result showed that about 85% of the targeted participants had applied the nutrition and health practices supported by USG assistance (Table 17).

Table 17. Custom 17: Weighted Percent of targeted participants who have applied optimal nutrition and health practices as a result of USG assistance

	Sample number of participants	Weighted Number of participants	Weighted percent (%)	95.0% Lower CL	95.0% Upper CL
Male	-	-	-	-	-
Female	256	53032	85.2%	84.9%	85.4%
Total	256	53032	85.2%	84.9%	85.4%

3.6.4 Custom (CARE GL3) 18: Percentage of women and girls aged 15 years and older subjected to gender-based violence in the last 12 months

This indicator measures the percentage of women and girls aged 15 years and older that have been subjected to physical and sexual violence. Intimate partner violence includes abuse perpetrated by a current or former partner within the context of marriage, cohabitation or any other formal or informal union. Violence directed at girls and women is the most common form of gender-based violence. Gender-based violence is defined as: any harmful act or threat based on a person’s sex or gender identity. It includes physical, sexual and psychological abuse, coercion, denial of liberty and economic deprivation whether occurring in public or private spheres. GBV is rooted in unjust and unequal power relations and structures and rigid social and cultural norms. The Titukulane communities registered 24% of woman proving to be subjected to gender-based violence 12months prior to the survey (Table 18). This is around the exact target for the 2023 reporting year which was set at 25%. Thus, there is wide room for the project to improve and contribute to reduction of the incidences of gender-based violence in the target areas and/or districts. The common forms of gender-based violence included Physical assault (43%), Denial of resources, opportunities/service (27%), Denial of economic opportunities (26%) and Psychological and emotional abuse (51%).

Table 18. Custom (CARE GL3) 18: Weighted Percentage of women and girls aged 15 years and older subjected to gender-based violence in the last 12 months (N=75587)

	Sample number of participants	Weighted Number of women and girls	Percent of women and girls, %	95.0% Lower CL	95.0% Upper CL
women and girls aged 15 years and older subjected to gender-based violence in the last 12 months	158	17854	23.6%	21.3%	21.9%
Women and girls aged 15 years and older NOT subjected to gender-based	549	57733	76.4%	78.1%	78.7%

violence in the last 12 months					
Total	707	75587	100.0%	-	-
Disaggregation of typology of GVB					
Rape	1	180	1.0%	0.9%	1.2%
Sexual assault	6	533	3.0%	2.7%	3.2%
Physical assault	73	7822	43.8%	43.1%	44.5%
Forced marriage	4	380	2.1%	1.9%	2.3%
Denial of resources, opportunities/service	50	4753	26.6%	26.0%	27.3%
Denial of economic opportunities	48	4674	26.2%	25.5%	26.8%
Psychological and emotional abuse	89	9257	51.9%	51.1%	52.6%

3.6.5 Custom 19: Percent of primary caregivers who can identify recommended nutrition practices

This indicator measures the knowledge of caregivers on the recommended nutrition practices. This indicator measures percentage of participants (primary caregivers) who can identify at least three recommended nutrition/dietary practices. Titukulane has been promoting the following nutrition/dietary practices: exclusive breastfeeding, initiation of breastfeeding within one hour of delivery, continuing to breastfeed a sick child, appropriate complementary feeding, timely immunizations, feeding iron-rich foods, dietary diversity, use of micronutrients. The study finds that 97% of the caregivers were able to identify at least three of the listed practices. The number is higher than that of the previous year of evaluation and the baseline (18%).

Table 19. Custom 19: Weighted Percent of primary caregivers who can identify recommended nutrition practices (N=60,644)

		Sample number of caregivers	Weighted Number of caregivers	Percent of caregivers, %	95.0% Lower CL	95.0% Upper CL
Male	Can Identify	0	0	0.0%	-	-
	Cannot Identify	0	0	0.0%	-	-
	Total	0	0	0.0%	-	-
Female	Can Identify	285	58691	96.8%	96.6%	96.9%
	Cannot Identify	9	1953	3.2%	3.1%	3.4%
	Total	294	60644	100.0%	-	-
Total	Can Identify	285	58691	96.8%	96.6%	96.9%
	Cannot Identify	9	1953	3.2%	3.1%	3.4%
	Total	294	60644	100.0%	-	-

3.7 Sub-Purpose 2.2: Women, men, girls and boys use safe drinking water, basic sanitation and adequate hygiene at home

Under this Sub-Purpose, Titukulane seeks to support the improvement of sustainable WASH and ensure alignment with the National Resilience Strategy, which refers to WASH as a key determinant of nutrition and health. WASH activities are foundational for Stepping Up, Stepping Out, and Hanging-In Households; and underlines the importance of WASH integration with agriculture, risk reduction, and natural resources management. The Titukulane WASH approach centers on two broader pillars: 1) strengthening capacity of district government and community structures, including Water Users Associations and Water Point committees to plan, budget, maintain, operate and sustain water infrastructure and service delivery, and; 2) improve supply chains for water, sanitation, and hygiene to increase household access to affordable WASH products and services. This includes investment in the rehabilitation improvement of WASH hardware and strengthening systems for (water source provision, rehabilitation and waterpoint management including operations and maintenance, and in reinforcing WASH software (including WASH governance at the community and district levels, (increasing household demand for and choice of latrines and improving the supply chain to ensure a sustainable and affordable supply of materials and parts), in alignment with the district development plans in each district. CARE has been reinforcing and supplementing other WASH and health investments in Zomba and Mangochi and collaborate with programs such as Tiwalere II, Health Communications for Life, and ONSE. While there are several indicators under this purpose, the annual survey tracked two indicators.

3.7.1 BHA PM04: Percent of households with soap and water at a handwashing station on premises

A handwashing station is a location where household members go to wash their hands. In some instances, these are permanent fixtures, while in others the handwashing devices can be moved for the family's convenience. The study measured this indicator via observation during the household visit, and both soap and water must be available at the station. The cleansing product must be at the handwashing station or reachable by hand when standing in front of it. A “commonly used” handwashing station, including water and soap, was one that can be readily observed by the enumerator during the household visit, and where study participants indicate that family members generally wash their hands. The results of the survey showed that 57% of the surveyed households had water and soap at the handwashing stations against a target of 42% (Table 20).

Table 20. BHA PM04: Weighted Percent of households with soap and water at a handwashing station on premises (N=62265)

	Sample number of households	Weighted Number of households	Percent of households %	95.0% Lower CL	95.0% Upper CL
Water and Soap	173	35808	57.5%		
Otherwise	128	26457	42.5%	57.1%	57.9%
Total	301	62265	100.0%	42.1%	42.9%

3.7.2 Custom 23: Percentage of participants who know at least 3 of the 5 critical times to wash hands

This indicator measure percentage of participants who know (can list) at least three out of five critical times to wash hands. Five critical times to wash hands include before eating, before cooking, after using the latrine, after cleaning a baby or an adult's bottom or cleaning the potty, before and after taking care of a sick person. Titukulane has been implement the care group model whereby cluster leaders trained in hygiene and sanitation deliver the hygiene and sanitation messages to households, where handwashing is integral.

The findings of the study reveal a noteworthy insight into hand hygiene practices among the surveyed participants. The results indicate that a significant portion of the respondents, specifically 87%, reported consistently washing their hands at a minimum of three out of the five critical instances, emphasizing a commendable level of adherence to this essential health practice. While this percentage reflects a substantial majority, it also underscores the need for targeted efforts to further promote and educate individuals on the importance of consistent handwashing to enhance public health and minimize the risk of infectious diseases.

The critical times that were considered included before eating, before cooking, after using the latrine, after cleaning a baby or an adult's bottom and before feeding a child. Most of this practice was reported in the area of washing hands before eating (91%). While this is high, it is also more of cultural norm to wash hands before eating formal meals. The higher percent was reported on washing hands after visiting a latrine (95%) (Table 21). Overall, the target for the reporting period was 69% which shows that the project is on track under this indicator.

Table 21. Weighted Percentage of participants who know at least 3 of the 5 critical times to wash hands (N=62,262)

		Sample Number of participants	Weighted Number of participants	Percent of participants %	95% Lower CL	95% Upper CL
Male	Know	0	0	0.0%		
	Dont know	0	0	0.0%		
	Total	0	0	0.0%		
Female	Know	263	54469	87.5%	87.2%	87.7%
	Dont know	38	7796	12.5%	12.3%	12.8%
	Total	301	62265	100.0%		
Total	Know	263	54469	87.5%	87.2%	87.7%
	Dont know	38	7796	12.5%	12.3%	12.8%
	Total	301	62265	100.0%		

3.8 Sub-Purpose 2.3: Increased Utilization of Quality Reproductive, Maternal, Newborn, Child and Adolescent Health (RMNCAH) and Nutrition Services

In targeted TAs, Titukulane has been supporting HSAs Care Group Supervisors and Care Group Promoters on case detection, referral and treatment for integrated management of childhood illness (IMCI) and community-based management of acute

malnutrition (CMAM), especially during crisis and emergencies. This includes defining and emphasizing referral pathways, monitoring and reporting referral completion, supporting referral logistics, and data management. Mentorship and on-the-job training and support for referrals will be supported in coordination with ONSE, HCL and Tiwalere II. As a member of the DNCC, Titukulane has been strengthening the capacity of the District Monitoring and Evaluation Committee to monitor nutrition intervention reporting on a regular basis.

3.8.1 Custom 24: Percentage of WRA who used at least one Child health service (such as consultation, immunization, growth monitoring, case- finding for acute malnutrition etc.) in the last 12 months

This indicator measures the proportion of women of reproductive age who, on their own willing and due to the awareness campaign conducted by the project, use at least one child health service offered by the health centers closest to their homes in the last 12 months. Child health services could be information on child safety, immunization, breastfeeding, nutrition and family planning, child growth monitoring and development in a series of one-on-one consultations, children feeding and behavior problems. Table 22 below shows weighted percentages of households of women of the reproductive age who used at least one Child health service in the previous 12 months prior to the outcome survey. Here the focus is on child health service which the WRA had used including any of the following; consultation, immunization, growth monitoring and case-finding for acute malnutrition among others. The study found that about 98% of women reported to have used at least one of the child health services. This has been maintained high like the previous year.

Table 22. Percentage of WRA who used at least one Child health service (N=62265)

		Sample number of WRA	Weighted Number of WRA	Percent of households %	95% Lower CL	95% Upper CL
Used at least one Child health service	At least one service	294	60804	97.7%	97.5%	97.8%
	None	7	1461	2.3%	2.2%	2.5%
	Total	301	62265	100.0%		

3.8.2 Custom 25: Percentage of WRA who used at least one Maternal health service (such as ANC, post-natal care, family planning) in the last 12 months

This indicator measures the proportion of women of reproductive age (WRA) who, on their own willing and due to the awareness campaign conducted by the project, use at least one reproductive health services offered by the health centers closest to their homes in the last 12 months. Reproductive health services could be family planning/birth spacing services, antenatal care, skilled attendance at delivery, and postnatal care, management of obstetric and neonatal complications and emergencies, prevention of abortion and management of complications resulting from unsafe abortion, prevention and treatment of reproductive tract infections and sexually transmitted infections including HIV/AIDS, early diagnosis and treatment for breast and cervical cancer, promotion, education and support for exclusive breast feeding, prevention and appropriate treatment of sub-fertility and infertility, active discouragement of harmful practices such as female genital cutting, adolescent sexual and reproductive health and prevention and management of gender-based violence.

Table 23 below shows weighted percentages of households of women of the reproductive age who used at least one Maternal health service (such as ANC, post-natal care, family planning) in the last 12 months prior to the outcome survey. About 95% of the women reported to have used at least one Maternal health service.

Table 23. Custom 25: Percentage of WRA who used at least one Maternal health service (such as ANC, post-natal care, family planning) in the last 12 months

		Sample number of WRA	Weighted Number of WRA	Percent of households %	95% Lower CL	95% Upper CL
Used at least one Maternal health service	At least one service	285	59137	95.0%	94.8%	95.1%
	None	16	3128	5.0%	4.9%	5.2%
	Total	301	62265	100.0%		

3.8.3 BHA PM24: Number of live births receiving at least four antenatal care (ANC) visits during pregnancy

This indicator sums the number of women ages 15 to 49 supported by a BHA activity who, after attending antenatal care (ANC) four or more times, delivered a live child during the reporting year. The study only considered the ANC provided by skilled health personnel. Skilled health personnel referred to a doctor, nurse, midwife, skilled birth attendant, or clinical officer. Live birth is the birth of one or more child after 22 weeks gestation or weighing 500 g or more that shows signs of life—breathing, cord pulsation, or audible heartbeat. The study did not measure the quality of the ANC visit. In terms of Antenatal Care although the number of women with live births seemed to be high, our results in Table 24 below show better Antenatal Care visits among these women. The majority of the women, about 60%, had at least four ANC visits during pregnancy. This is at least higher than the reports from the Ministry of Health and what the 2015-16 DHS⁵ found 51% of women of the reproductive age group who completed four or more ANC visits. Again the performance exceeded the target of 55%.

Table 24. BHA PM24: Weighted Number of live births receiving at least four antenatal care (ANC) visits during pregnancy (N=60,644)

	Sample Number of livebirths	Weighted Number of livebirths	Weighted %	95% Lower CL	95% Upper CL
At least 4	176	36472	60.1%	59.8%	60.5%
Less than 4	118	24172	39.9%	39.5%	40.2%
Total	294	60644	100.0%		

3.8.4 Custom 28: Percentage of participant women reporting improved quality of RMNACH and nutrition services in last 12 months

The study counted participants who reported improved quality of targeted reproductive, maternal, newborn, child, adolescent health and nutrition (RMNCAH&N) services annually. The study considered family planning, antenatal care, post-natal care, delivery by skilled birth attendant, immunization, vitamin A supplementation,

⁵ National Statistical Office (NSO) [Malawi] and ICF. 2017. *Malawi Demographic and Health Survey 2015-16*. Zomba, Malawi, and Rockville, Maryland, USA. NSO and ICF.

growth monitoring, nutrition screening. The improved quality was defined as improved accessibility, quantity, and affordability, or the issue of facilities for adequate RMNACH and nutrition services. Table 25 below is a comparison of results of the perceptions of two groups of WRA (those less than 19 years of age, those more than 19 years old) reporting whether the quality of RMNACH and nutrition services had improved or not. Although utilisation of at least one child health service appeared to be very high among WRA as noted previously, the result below on the perception about quality of RMNACH and nutrition services shows high improved quality of RMNCAH among the 19+ years old care givers (31%) compared to care givers who were less than 19years (23%). Overall, 23% of care givers affirmed improvement in the quality of RMNCAH and nutrition services for the past year.

Table 25. Custom 28. Weighted Percentage of participant women reporting improved quality of RMNCAH and nutrition services in last 12 months

		Sample Number of participants	Weighted Number of participants	Percent of participants %	95% Lower CL	95% Upper CL
Less than 19 Years	Improved	4	811	31.1%	29.4%	32.9%
	Otherwise	9	1796	68.9%	67.1%	70.6%
	Total	13	2607	100.0%		
19+ Years	Improved	65	13672	22.9%	22.6%	23.3%
	Otherwise	223	45986	77.1%	76.7%	77.4%
	Total	288	59658	100.0%		
Total	Improved	69	14483	23.3%	22.9%	23.6%
	Otherwise	232	47782	76.7%	76.4%	77.1%
	Total	301	62265	100.0%		

3.9 Sub-Purpose 3.2: Increased adaptive capacity of structures and chronically vulnerable households and communities to changing environmental, climate and other risks

The frequency and severity of droughts, floods and storms is increasing in the targeted districts, and the slow onset stress of declining soil fertility, soil erosion and watershed deterioration continues relatively unabated. The National Resilience Strategy lays out strategies that reduce the negative impact of these shocks and stress, and Titukulane project aims to support the natural resource management structures, especially Village Natural Resource Management Committees (VNRMCS) and the Civil Protection Committees (CPC) structures to be able to more effectively address the slow onset environmental deterioration as well as the rapid onset disasters that regularly occur. In providing this support, Titukulane has been building the capacities of these systems to identify and respond to how women, men, girls and boys and different wealth groups are affected in the different geographic contexts in Mangochi and Zomba. The annual outcome survey focused on 3 indicators under this sub-purpose and these are discussed below.

3.9.1 Custom 38: Percentage of households who reported having invested more resources (financial, material and human) and/or assets in preparation for future shocks and stresses in the last 12 months

This indicator measures the effectiveness of the program strategies in reducing the negative impact of shocks and stresses, by increasing the adaptive capacities of households and communities to changing environmental, climate and other risks. The idea is to get targeted households start investing more in preparing for and preventing shocks. The annual survey found all male participants invested in the assets that increase adaptive capacity as shown in Table 26. Again 99% of the participants invested in the productive resources. There was an increase number of participants investing in productive assets compared with previous years of implementation. The key areas of investment included deposits at Villages Savings and loans and purchase of livestock as a safety net during the times of shocks.

Table 26. Custom 38: Percentage of households who reported having invested more resources (financial, material and human) and/or assets in preparation for future shocks and stresses in the last 12 months (N=94728)

		Sample Number of Households	Weighted Number of Households	Percent of Households	95% Lower CL	95% Upper CL
Male	Invested	179	18869	100.0%		
	Not Invested	0	0	0.0%		
	Total	179	18869	100.0%		
Female	Invested	701	75093	99.0%	98.9%	99.1%
	Not Invested	8	766	1.0%	0.9%	1.1%
	Total	709	75859	100.0%		
Total	Invested	880	93962	99.2%	99.1%	99.2%
	Not Invested	8	766	0.8%	0.8%	0.9%
	Total	888	94728	100.0%		

3.9.2 Custom 39: Percentage of households that planned for their long-term food & other vital needs (health, education, water etc.)

This indicator counts the percentage of households who reported that beyond the short-term needs they considered and planned for long-term food and other vital needs using various adapting mechanisms. This contributes to the Ministry of Agriculture's programme of household approach and envisioning. The programme seeks to lobby households to have a vision and make a plan on how to achieve their long-term plan. The study showed that 79% of the surveyed households reportedly had drafted their long-term plan for their food and other vital needs (Table 27). This indicator exceeded the project's annual target of 65% for the reporting year.

Table 27. Custom 39: Weighted Percentage of households that planned for their long-term food & other vital needs (N=95059)

	Sample Number of Households	Weighted Number of Households	Percent of Households	95% Lower CL	95% Upper CL
Plan available	694	74850	78.7%	78.5%	79.0%
Plan not available	195	20209	21.3%	21.0%	21.5%
Total	889	95059	100.0%		

3.9.3 Custom 40: Weighted Percentage of women and youth who reported being able to make decision over productive resources and/or assets

Productive resource and assets refer to any machineries or items, or resources that are used to generate income, e.g. land, agricultural machinery, seeds, livestock, or financial assets such as savings etc.; This indicator allows for tracking progress toward increasing control and decision making over productive economic resources, which are frequently cited as a major impediment to gender equality and the empowerment of women and youth, and is a particularly important factor in making women/youth vulnerable to poverty. Titukulane has been training gender champions to facilitate gender dialogue sessions with traditional and religious leaders as well as community gatekeepers in efforts to enforce and protect women and youth's rights to productive assets and resources. These efforts have resulted in 68% of both youth and women being able to make autonomous decisions over productive resources or assets. There was a slim gap between women and youth's decision-making power with the women registering about 99.9% and youth registering about 65% (Table 28). Key areas of decision making included Spending money that has earned by herself, Selling of produced crops, Buying or selling major household assets (land, livestock) and Buying or selling gold jewelry

Table 28. Custom 40: Weighted Percentage of women and youth who reported being able to make decision over productive resources and/or assets (N=47518)

		Sample Number of women	Weighted Number of women	Percent of women	95% Lower CL	95% Upper CL
Women and youth	Makes decisions	546	55369	68.2%	67.9%	68.5%
	Otherwise	214	25845	31.8%	31.5%	32.1%
	Total	760	81214	100.0%		
Women participants	Made decision	708	75786	99.9%	99.9%	99.9%
	No decision	1	73	0.1%	0.1%	0.1%
	Total	709	75859	100.0%		
Youth participants	Made decision	305	30963	65.2%	64.7%	65.6%
	No decision	145	16555	34.8%	34.4%	35.3%
	Total	450	47518	100.0%		

3.10 Sub-Purpose 3.3: Increased Capacity of Systems, Communities and Individuals to anticipate and absorb shocks and stresses

The outcomes targeted under this Sub-Purpose are focused on (a) making early warning systems more functional to build household and communities ability to anticipate and respond to shocks and stress and (b) enabling households and communities to be better able to absorb and recover from a disaster when it occurs. Early warning systems are being tailored to a population with low levels of literacy, and capacities are being expanded for these populations to understand and act on early warning information. When a shock occurs, whether it be a relatively localized disaster that only affects a few households or a major disaster that may affect hundreds of households, the CPC structure is the system that is designed to facilitate a response from the GoM and NGOs. In addition to the resource mobilization capacity building for the CPC structure, Titukulane will strengthen other mechanisms that are used to enable households to absorb and recover from a shock, including VSLA social funds and savings, informal community safety nets, and financial services such as various forms of asset insurance. Youth have special roles to play, given their energy and enthusiasm, and Titukulane has been building their capacities to support both early warning as well as emergency response when a disaster occurs. For this sub-purpose, the annual survey focused on 4 indicators which are presented below.

3.10.1 BHA PM11: Number of people using climate information or implementing risk-reducing actions to improve resilience to climate change as supported by USG assistance (EMMP)

Climate information is important in the identification, assessment, and management of climate risks to improve resilience and can serve a variety of sectors such as agriculture, livestock, health, or natural resource or urban management. Any adjustment or new approach to the management of resources or implementation of actions that responds to climate change risks and increases resilience is considered under this indicator. Using climate information or implementing risk-reducing practices does not always involve expenditure of funds. For instance, a farmer may choose to harvest a crop earlier or plant a different crop due to a climate-related forecast, thus making adoption of risk-reducing actions affordable for low-income households. The result for outcome survey shows that about 73% of the targeted people were using climate information and climate related risk reducing actions (Table 29). Male participants (86%) used climate risk reducing actions more than women (67%).

Table 29. BHA PM11: Number of people using climate information or implementing risk-reducing actions to improve resilience to climate change as supported by USG assistance (RiA)

		Sample Number of people	Weighted Number of people	Percent of people	95% Lower CL	95% Upper CL
Male	Using Climate information/ Risk reducing actions	157	16271	86.2%	85.7%	86.7%
	Not Using	22	2598	13.8%	13.3%	14.3%
	Total	179	18869	100.0%		
Female	Using Climate information/ Risk reducing actions	285	27446	66.8%	66.4%	67.3%

	Not Using	123	13632	33.2%	32.7%	33.6%
	Total	408	41078	100.0%		
Total	Using Climate information/ Risk reducing actions	442	43717	72.9%	72.6%	73.3%
	Not Using	145	16230	27.1%	26.7%	27.4%
	Total	587	59948	100.0%		

3.10.2 Custom 41: Percentage of participants who reported they could understand EW information they received in the past 12 months

To ensure that there is improved messaging of early warning information, national weather forecasts the project seeks to provide downscaled and translated climate information with specific guidance. Women, youth and extension workers are being linked to existing Early warning (EW) information sharing platforms so that they could access timely and accurate EW information. This indicator measures the improvement in the understanding and acting on EW messages, because of these activities. For the reporting period, the project has registered 72% of participants who confidently reported that they could understand the EW information when they received it. There was better understanding of information among the male participants (about 86%) than their female counterparts (about 66%). The result is not surprising as the national literacy scores show that male population is more literate than the female population (NSO, 2020)⁶. As such, it is expected that males could be on a better stance to comprehend EW information.

Table 30. Custom 41: Weighted Percentage of participants who reported they could understand EW information they received in the past 12 months (N=59948)

		Sample Number of participants	Weighted Number of participants	Percent of participants	95% Lower CL	95% Upper CL
Male	Understood EW information	156	16195	85.8%	85.3%	86.3%
	Not Understood	23	2675	14.2%	13.7%	14.7%
	Total	179	18869	100.0%		
Female	Understood EW information	282	27107	66.0%	65.5%	66.4%
	Not Understood	126	13971	34.0%	33.6%	34.5%
	Total	408	41078	100.0%		
Total	Understood EW information	438	43302	72.2%	71.9%	72.6%
	Not Understood	149	16646	27.8%	27.4%	28.1%
	Total	587	59948	100.0%		

3.10.3 Custom 42: Number of people who reported timely receipt of EW information

A rapid assessment conducted for the design of Titukulane identified significant issues constraining the effectiveness of early warning systems. They are generally no extensive coverage and some of the equipment and processes used for gathering

⁶ <https://microdata.worldbank.org/index.php/catalog/3818/related-materials>

early warning data are outdated or dysfunctional. This indicator measures the effectiveness of program efforts to improve the access to EW information. EW messages are different from general extension messages as they need to be delivered within specific time and geography if the messages are to be relevant and effective. The survey found that 97% of the targeted participants received EW messages on time with around similar proportions across the gender groups (Table 31).

Table 31. Custom 42: Weighted Number of people who reported timely receipt of EW information (N=43303)

		Sample Number of people	Weighted Number of people	Weighted Percent (%)	95% Lower CL	95% Upper CL
Male	Timely EW information	151	15908	98.2%	98.0%	98.4%
	Not Timely	5	287	1.8%	1.6%	2.0%
Female	Timely EW information	274	26226	96.8%	96.5%	97.0%
	Not Timely	8	881	3.2%	3.0%	3.5%
Total	Timely EW information	425	42134	97.3%	97.1%	97.5%
	Not Timely	13	1167	2.7%	2.5%	2.9%

3.10.4 BHA PM36: Index of social capital at the household level

The indicator measures the ability of participant households in the target area to draw on social networks to get support to reduce the impact of shocks and stresses on their households. It measures both the degree of bonding among households within their own communities and the degree of bridging between households in the area to households outside their own community. If the household have reciprocal, mutually reinforcing, relationships through which they could receive and provide support during times of need, they are considered to have social capital. The social networks cover both the relations and non-relations to the household both within and outside the community. The higher the index signifies the strength of social capital. The study shows that the mean index score for the households was 56.93 against a target of 60 (Table 32). The decomposed scores were also slightly less than the target for bonding (ability of the housed to leverage on social networks within the community) while about the target for the bridging (ability of the household to leverage on social networks outside the community). Which signifies better resilience to covariate shocks.

Table 32. BHA PM36: Weighted Index of social capital at the household level (RiA)

	Sample number of people	Weighted Number of participants	Mean Index	Standard Deviation
Bonding sub-index	889	95245	58.43	28.78
Bridging sub-index	889	95245	55.43	30.46
Index of social capital at the household level	889	95245	56.93	27.90

4. Food price dynamics

As of August 2023, The Malawi Food and Non-Food Inflation rates are at 39.4 percent and 16.1 percent, respectively. The national month to month Inflation rate for August 2023 stands at 1.8 percent. Food inflation rate is at 2.3 percent while Non-Food Inflation rate was at 1.2 percent. The urban month to month inflation rate was at 1.4 percent⁷. The study explored the dynamics of price hikes among the project participants given that this has implications on the household resilience and welfare. Participants were asked to report whether the prices of key food commodities have changed over the period of 6 months prior to the survey. It was found that almost universally, the participants were of the view that the prices of food commodities have changed as in Table 33 below. A further analysis showed that the essential foods with price hike included Meat and meat products (53%), Pulses (Beans related food) (51%), Cooking oil (60%).

Table 33. How were the prices of essential food commodities over the last six months?

	Mangochi		Zomba		Total	
	Number of participants	%	Number of participants	%	Number of participants	%
Increased	53246	99.6%	41179	99.7%	94425	99.7%
Decreased	198	0.4%	104	0.3%	303	0.3%
Don't know	0	0.0%	0	0.0%	0	0.0%

A price hike, or an increase in the prices of goods and services, can have various effects on households, depending on the magnitude of the price increase, the specific items affected, and the household's income and spending patterns. There are a number of effects that resulted from price hike among the studied households, however the key areas affected were three. The most affected area was access to food. About 98% of households reported that they failed to meet food expenses for their households because their budget constraint could no longer contain the new food prices. The impacts tricked down to non-food commodities. Due to increased expenditures on food items, it meant that the resource initially allocated to non-food items were now reallocated towards food items. About 77% of the households had failed to meet their non-food expenses. Stii 80% of the households reported that they observed a reduced standard of living as can be seen in Table 34 below.

Table 34. Impacts of price hike of households

	MANGOCHI		ZOMBA		Total	
	n	%	Number of n	%	n	%
Failed to meet food expense	442	96.5%	682	85.3%	1124	89.3%
Failed to meet non-food expense	367	80.1%	605	75.6%	972	77.3%
Failed to meet education expense	167	36.5%	282	35.3%	449	35.7%

⁷ NSO (2023). Consumer Price Indices: August 2023. <http://www.nsomalawi.mw>

Failed to meet medical expense	168	36.7%	200	25.0%	368	29.3%
Suffered from nutritional deficiencies	11	2.4%	29	3.6%	40	3.2%
Reduced living standard	361	78.8%	650	81.3%	1011	80.4%
Domestic violence increased	25	5.5%	29	3.6%	54	4.3%
School drop out of the children	33	7.2%	66	8.3%	99	7.9%
Early marriage of girl children	22	4.8%	32	4.0%	54	4.3%
Children engaged in income earning	24	5.2%	87	10.9%	111	8.8%
Others	0	0.0%	24	3.0%	24	1.9%

To counter the impacts of food price hikes, households engaged in various coping strategies. Most of the households (70%) reduced the quantities of the food they usually purchased, still 56% of the households reduced the quality of food they purchased, related to this, 68% started taking less meals that they usually do. For those that belonged to a Village Savings and Loans groups, the study observed 50% households took loans to cushion a price hike. Other coping strategies can be observed in the Table 35 below.

Table 35. Coping strategies to price hike

	MANGOCHI		ZOMBA		Total	
	Number of households	%	Number of households	%	Number of households	%
Reducing food purchase	50717	79.1%	37523	60.5%	88240	70.0%
Reducing the quality of food	41049	64.0%	29466	47.5%	70515	55.9%
Taking less meal than usual	44220	69.0%	41579	67.1%	85798	68.0%
Consuming wild foods	4604	7.2%	4589	7.4%	9193	7.3%
Change food intake habit (without oil, onion etc.)	34017	53.1%	31228	50.4%	65245	51.7%
Unusual consumption of livestock/ poultry	11886	18.5%	3322	5.4%	15208	12.1%
Curtailing non-food expense	5313	8.3%	16791	27.1%	22104	17.5%
Curtailing recreation expense (cut down cable TV line, stop/ reduce outing)	435	0.7%	803	1.3%	1238	1.0%
Curtailing treatment expense (visit to general practitioner/ homeopathic doctor/ pharmacy instead of specialist)	1185	1.8%	209	0.3%	1394	1.1%
Selling productive assets	931	1.5%	1120	1.8%	2051	1.6%
Selling stored Agri products	13596	21.2%	5923	9.6%	19519	15.5%

Selling livestock/ poultry	12154	19.0%	5035	8.1%	17189	13.6%
Taking loan from MFIs/ Banks	0	0.0%	595	1.0%	595	0.5%
Taking loan from money lender	3612	5.6%	1310	2.1%	4922	3.9%
Borrowing money from friends/ relatives	7081	11.0%	6080	9.8%	13161	10.4%
Taking loan from Village Savings and Loan Association (VSLA)	36629	57.1%	26404	42.6%	63033	50.0%
Food Purchase on credit	667	1.0%	3492	5.6%	4160	3.3%
Using savings amount	7710	12.0%	8494	13.7%	16203	12.9%
Take new wage labor	2110	3.3%	12247	19.8%	14357	11.4%
Start up new small business (e.g., Charcoal production, firewood sell etc.)	15970	24.9%	20517	33.1%	36487	28.9%
Buy food from TCB	0	0.0%	0	0.0%	0	0.0%
Get allowance or support from UP	99	0.2%	79	0.1%	179	0.1%
Reduce time of food intake	11204	17.5%	18752	30.3%	29955	23.8%
Stop children schooling	1375	2.1%	1244	2.0%	2619	2.1%
Others	3812	5.9%	4935	8.0%	8747	6.9%

5. Impact of layering different interventions on same project participants

Titukulane project implemented a strand of different interventions, some targeting unique participants while for others several interventions were layered on top of each other targeting same participants. Table 33 below yields a summary of participation rates in various interventions for project participants. The table does not show which combinations of interventions were observed but the percentages give an explicit indication that there existed combinations of interventions for the same beneficiaries. On the higher end, it was observed that WASH (70%), Village savings and loans (63%), Natural Resource Management, agriculture input loan or training (about 55%), Gender dialogue sessions (47%), care groups (39%), marketing and Disaster Risk Management (35%). The participation rates for the rest of the interventions were less than 35% respectively. The distribution of the interventions per participant is captured by Figure 2 below. On average each participant engaged in 5 different interventions.

Table 36. Participation in various Titukulane interventions

	Mangochi District		Zomba District		Total	
	Participants	%	Participants	%	Participants	%
Agriculture input loan and/or training	25394	47.2%	26337	63.8%	51731	54.4%

	Mangochi District		Zomba District		Total	
	Participants	%	Participants	%	Participants	%
Collective Marketing and/or marketing training	15833	29.4%	18054	43.7%	33887	35.6%
TVET informal	6310	11.7%	3291	8.0%	9601	10.1%
TVET formal	2618	4.9%	1638	4.0%	4256	4.5%
MEG	15655	29.1%	7829	19.0%	23484	24.7%
Village Savings & Loans Association	40232	74.8%	19389	47.0%	59620	62.7%
Care Group	24185	45.0%	13544	32.8%	37729	39.7%
Nutrition Cash Transfer	16539	30.8%	10950	26.5%	27489	28.9%
WASH	41455	77.1%	25744	62.4%	67199	70.7%
Gender dialogue sessions	29036	54.0%	15748	38.1%	44785	47.1%
Watershed management	11082	20.6%	11683	28.3%	22765	23.9%
Dyke construction	8659	16.1%	5650	13.7%	14309	15.1%
Disaster Risk Management	21954	40.8%	11515	27.9%	33470	35.2%
Livestock	16984	31.6%	10065	24.4%	27049	28.5%
Participate in Youth Group	11542	21.5%	5235	12.7%	16777	17.6%
Natural Resource Management	32160	59.8%	20467	49.6%	52626	55.4%

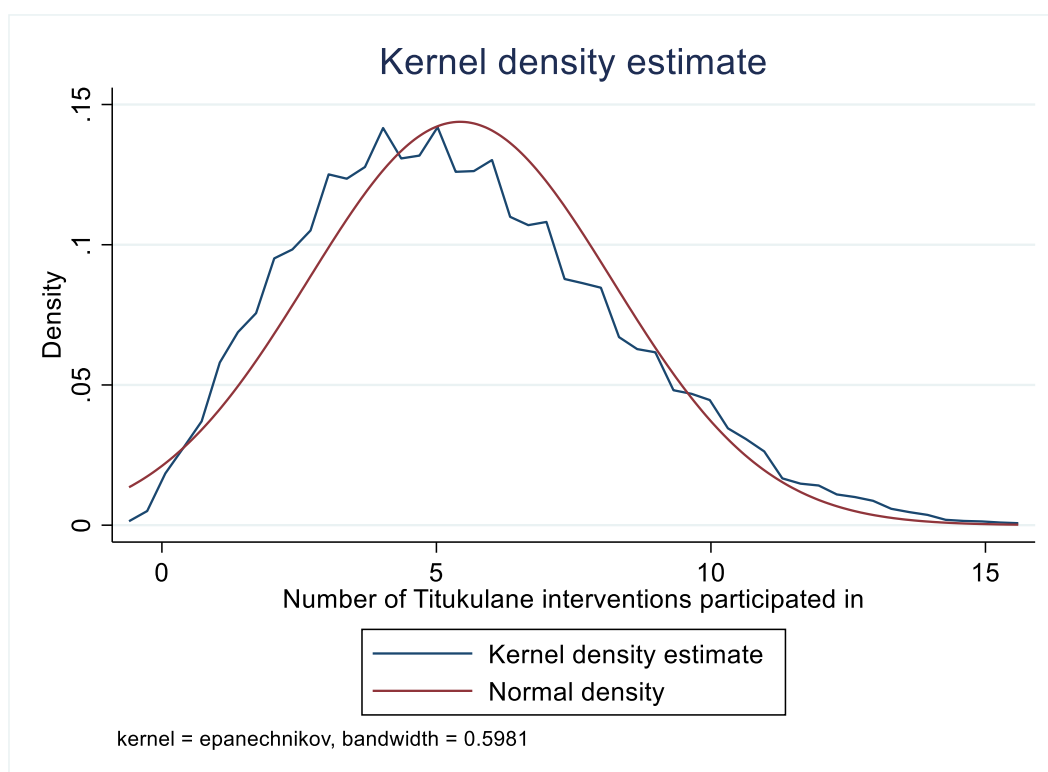


Figure 2. Distribution of the number of interventions per participant

Resilience can be measured using various indicators, such as income stability, food security, and adaptability to shocks. The number of interventions should be evaluated in terms of their impact on these resilience metrics. This study enumerated the impacts of the interventions combination on ability to recover from shocks, household food security and exposure to impacts of food price hikes. Table 34 provides regression results of these impacts. The study captured qualitative perception of the household's

ability to recover from shock (i.e meet its food needs now or the following year compared to the time was hit by a shock). A logistic regression model was implemented with ability to recover as the depended variable and number of interventions participated in as an independent variable of interest. Age, land size and gender were added to the model as control variables. The results showed a statistically significant effect of number of interventions a household participated in and the its ability to recover from a shock ($p<0.01$). With more layered interventions on same household, the higher was the probability of the household to have recovered from the shocks that hit it last time, or at the worst, the higher the probability that the household would recover in the next 12 months.

Food security was measured by adequacy of food production in the household. Similarly, since food security as a dependent variable was binary (Food secure, not food secure), a logistic regression model was used. As expected, the results show a significant positive relationship between increasing the number of interventions per household and the food security status. Participating in more interventions increased the household's likelihood to be food secure ($p<0.01$).

Table 37. Participation in various Titukulane interventions

	Coeff	S.E.	Wald / t-value	p-value
Dependent: Ability to Recover				
Number of interventions	0.180***	0.043	17.203	0.000
Age (Years)	-0.030***	0.008	14.492	0.000
Land size (Ha)	0.160	0.103	2.409	0.121
Gender (Male=1)	0.545**	0.259	4.422	0.035
Constant	0.928**	0.449	4.277	0.039
Dependent: Food Security				
Number of interventions	0.075**	0.019	4.320	0.028
Age (Years)	-0.012	0.017	0.489	0.484
Constant	1.037	0.550	3.556	0.059
Dependent: Price Hike Impacts				
Number of interventions	-0.039***	0.011	-3.417	0.001
Gender (Male=1)	0.212***	0.077	2.748	0.006
Age (Years)	0.006***	0.002	2.685	0.007
Land size (ha)	0.063*	0.034	1.82	0.069
Constant	2.915***	0.110	26.516	0.000

*** $p<0.01$, ** $p<0.5$, * $p<0.1$

Lastly, the study calibrated role of layering interventions on moderating impacts food price hikes. Price hike had various impacts on the studied households including:

- Failed to meet food expense
- Failed to meet non-food expense
- Failed to meet education expense
- Failed to meet medical expense
- Suffered from nutritional deficiencies
- Reduced living standard
- Domestic violence increased

- School dropout of the children
- Early marriage of girl children and
- Children engaged in income earning

These areas of impacts were assigned an indicator value equal to 1 if the household experienced impact and 0 if no impact in the dimension. An aggregate impact value was calculated by summing the scores across all the impact areas. The result was used as a dependent variable in a regression analysis. Given that this was a count variable, Poisson regression model was used to test the relationship between number of interventions and number of impact areas, listed above, experienced by a household. The results established a significant negative relationship between number of interventions a household participated in and the number of exposures to different impacts of prick hikes ($p < 0.01$).

6. Lessons learnt and recommendations

There are a number of lessons worth learning from and suggested recommendations which could be key in improving programming of Titukulane programme:

1. There is need to improve timing of distribution of seed to farmers for those that distribute. Some farmers complained to have received the seed late. The misaligned timing with rainfall calendar was one of major issues in both districts, this affected the productivity. At the same time, there are other commodities in some areas whose seed were distributed on time (thus, before the onset of first rains), which made farmers to plant on time and benefit from the produce.
2. Proper awareness is key to manage interventions associated with cash transfers. There were some inconsistencies in 'cash in' transfers to the beneficiaries for the care group members. Members were ignorant of how the process of money transfer was being regulated hence some were thinking that they were duped of their funds especially at the cash-out points. The project can provide extensive awareness around cash transfers while also considering the literacy levels of the beneficiaries. Related to the same issue of awareness, some women received their SIM cards through which they were supposed to receive their cash transfer but they had never received cash. When they report to the duty bearers, they were often told to wait but with not success.
3. The seed that was distributed to farmers need to be attested for its quality and viability. Some of the beneficiaries reported to have received seed that did not germinate. As such, such communities mistook the survey teams for credit recovery team and hence members were escaping interface with the survey team. With proper explanation to the communities, the members were able to provide audience for the interviews.
4. Registration of young clients under the Health and Nutrition and cash transfer component - There were some cases where the young mother was not registered as a beneficiary but the grandmother of a child who was the one attending Care Group. Thus, there is need for cleaning of beneficiary lists.
5. The project can explore adopting the seed pass-on programme to increase the potential for sustainability. This would also require complementary training on

seed pass-on and some ground rules to facilitate pay back needs to be put in place. Farmers need also to be civic educated on appropriate seed packaging. The same would also be adopted for the livestock component

6. Integration. The integration of various interventions at the household level provides a powerful combination of knowledge and money that is available at the right time to allow smallholder farmers to make their own decisions and plan ahead for the forthcoming agricultural season. In the case of Titukulane project, Early Warning Messages (provided through extension officers, radio and SMS) gave farmers information about seasonal forecasts and options about agricultural practices; the collective marketing interventions provides cash that can be saved through the VSL; the VSL enables money to be available when it is needed to purchase the agricultural inputs that had been planned. The livestock component acts as an insurance cover when there is crop failure, helps to allow for this cycle of forward planning to continue into the following season in the event of drought because livestock sales make money available to purchase food and agricultural inputs needed to prepare for the following winter cropping cycle. In a good year, on the other hand, part of the proceeds from increased agricultural production can be reinvested in VSL to support the cycle of forward planning in the following season.

The findings of this study provide enlightenment for improved programming. It is therefore recommended that the program:

- Invest in strategies to improve crop yields, especially for soybean, pigeon pea, and groundnut.
- Provide targeted training and support to ensure more equitable adoption of technology practices, focusing on gender-neutral access.
- Promote and expand financial literacy and bookkeeping skills among producers to increase transparency and business efficiency.
- Continue efforts to strengthen market engagement, exploring opportunities for value addition and market diversification within the agricultural sector.
- Strengthen nutritional education and support programs to increase dietary diversity among women and children.
- Develop and implement programs to address and prevent gender-based violence, providing support for victims.
- Intensify education and awareness campaigns on the importance of regular ANC visits for pregnant women.
- Continue to support and promote investments in adaptive capacity and long-term planning among households.
- Strengthen efforts to ensure gender equity in climate-related education and early warning information dissemination.

Build on the progress made in empowering youth and women by providing additional training and resources to support their decision-making capabilities.

Scale out integration of interventions in communities where there were limited overlaps.

References

- Gourichon, H., Mkomba, F.. 2014. Analysis of price incentives for groundnuts in Malawi. Technical notes series, MAFAP, FAO-UN, Rome, Italy.
- ICRISAT. (2017). Activity Monitoring and evaluation: Malawi improved seed system and technologies (October 2014 – June 2019).
- National Statistics Office. (2014). Malawi MDG endline survey. Zomba. Malawi.
- Nation Statistics Office (2017). Malawi's Fourth Integrated Household Survey. Zomba, Malawi.
- SOFA Team and Cheryl Doss, (2011). The role of women in agriculture. *ESA Working Paper No. 11-02*. The Food and Agriculture Organization of the United Nations, Italy, Rome.
- USAID (2016). Feed the Future Indicator Handbook Definition Sheets. US Government Working Document. USA

Annex

A0 List of sample clusters

Clusters	Marketing				Producer	NCT	Off-farm
	Rice	Groundnut	Soybean	Pigeon pea			
Abina							
Bamusi							
Chingwalu							
Chocho							
Ipilu							
Msonthe							
Nasuluma							
Chimesya							
Chiunda							
Kwisinje							
Machemba							
Mponda							
Chindamba							
Mase							
Nkata							
Kamwepe							
Kwiputi							
Malekano							
Mtanga							
Nombo							
Chiponda							
Fowo							
Kadango							
NAMABVI							
Kamphande							
Saidi Matola							
Chimbalanga							
Kaselema							
Pongwe							
Namadingo							
Namasalima							
Kumbwani							
Chopi							
Gh Mtwiche							
Kapyepye							
Machinjiri							
Masambuka							
Mpeseni							
Mtogolo							
Likhomo Mliya							

Clusters	Marketing				Producer	NCT	Off-farm
	Rice	Groundnut	Soybean	Pigeon pea			
Muhilili							
Matumbi							
Nawani							
Mbalu							
Namakhuwa							
Ngwelero							
Chisutu							

A1 Disaggregation of value chain commodity data points

Table 38. Weighted Value and volume of annual sales for Rice producers receiving USG assistance

			Annual totals	Number of participant producers (N)
Value of Rice Sales (USD)	Sex Disaggregate	Male	12042.04	48
		Female	3395.40	48
		Total	15437.43	96
	Age Disaggregate	15 - 29 Years	841.85	11
		30+ Years	14595.59	85
		Total	15437.43	96
Volume of Rice Sales (MT)	Sex Disaggregate	Male	10.27	48
		Female	3.69	48
		Total	13.96	96
	Age Disaggregate	15 - 29 Years	0.75	11
		30+ Years	13.20	85
		Total	13.96	96

Table 39. BHA PM33: Weighted Value and volume of annual sales for Soybean producers receiving USG assistance

			Annual totals	Number of participant producers
Value of Soybean Sales (USD)	Sex Disaggregate	Male	121466.77	1265
		Female	147344.55	2223
		Total	268811.32	3489
	Age Disaggregate	15 - 29 Years	40526.00	631
		30+ Years	228285.32	2858
		Total	268811.32	3489
Volume of Soybean Sales (MT)	Sex Disaggregate	Male	257.57	1265
		Female	307.54	2223

		Total	565.11	3489
	Age Disaggregate	15 - 29 Years	85.46	631
		30+ Years	479.66	2858
		Total	565.11	3489

Table 40. BHA PM33: Weighted Value and volume of annual sales for Pigeon peas producers receiving USG assistance

			Annual totals	Number of participant producers
Value of Pigeon Sales (USD)	Sex Disaggregate	Male	5547.27	113
		Female	15658.11	505
		Total	21205.38	618
	Age Disaggregate	15 - 29 Years	2467.72	104
		30+ Years	18737.66	515
		Total	21205.38	618
Volume of Pigeon pea Sales (MT)	Sex Disaggregate	Male	8.42	113
		Female	29.40	505
		Total	37.82	618
	Age Disaggregate	15 - 29 Years	3.19	104
		30+ Years	34.63	515
		Total	37.82	618

Table 41. BHA PM33: Weighted Value and volume of annual sales for Groundnut producers receiving USG assistance

			Annual totals	Number of participant producers
Value of Groundnut Sales (USD)	Sex Disaggregate	Male	3837.02	120
		Female	11595.67	385
		Total	15432.70	505
	Age Disaggregate	15 - 29 Years	1612.00	107
		30+ Years	13820.70	398
		Total	15432.70	505
Volume of Groundnut Sales (MT)	Sex Disaggregate	Male	5.89	120
		Female	20.35	385
		Total	26.25	505
	Age Disaggregate	15 - 29 Years	2.83	107
		30+ Years	23.41	398
		Total	26.25	505

Table 42. Weighted total production and area under production for rice among program participants with USG assistance

			Annual totals	Number of participant producers
	Sex Disaggregate	Male	33.14	48
		Female	15.00	48
		Total	48.14	96
	Age Disaggregate	15 - 29 Years	2.39	11
		30+ Years	45.75	85
		Total	48.14	96
Total Rice Area (Ha)	Sex Disaggregate	Male	14.95	48
		Female	12.21	48
		Total	27.16	96
	Age Disaggregate	15 - 29 Years	2.41	11
		30+ Years	24.75	85
		Total	27.16	96

Table 43. BHA PM33: Weighted total production and area under production for soybean among program participants with USG assistance

			Annual totals	Number of participant producers
Total Soybean Production (MT)	Sex Disaggregate	Male	502.67	1265
		Female	604.56	2223
		Total	1107.23	3489
	Age Disaggregate	15 - 29 Years	178.91	631
		30+ Years	928.32	2858
		Total	1107.23	3489
Total Soybean Area (Ha)	Sex Disaggregate	Male	529.63	1265
		Female	697.53	2223
		Total	1227.16	3489
	Age Disaggregate	15 - 29 Years	198.37	631
		30+ Years	1028.79	2858
		Total	1227.16	3489

Table 44. BHA PM33: Weighted total production and area under production for pigeon peas among program participants with USG assistance

			Annual totals	Number of

				participant producers
Total Pigeon peas Production (MT)	Sex Disaggregate	Male	20.73	113
		Female	72.29	505
		Total	93.01	618
	Age Disaggregate	15 - 29 Years	9.24	104
		30+ Years	83.78	515
		Total	93.01	618
Total Pigeon peas Area (Ha)	Sex Disaggregate	Male	30.62	113
		Female	145.76	505
		Total	176.38	618
	Age Disaggregate	15 - 29 Years	26.42	104
		30+ Years	149.97	515
		Total	176.38	618

Table 45. BHA PM33: Weighted total production and area under production for groundnut among program participants with USG assistance

			Annual totals	Number of participant producers
Total Groundnut Production (MT)	Sex Disaggregate	Male	32.22	120
		Female	108.84	385
		Total	141.06	505
	Age Disaggregate	15 - 29 Years	22.80	107
		30+ Years	118.26	398
		Total	141.06	505
Total Groundnut Area (Ha)	Sex Disaggregate	Male	30.57	120
		Female	94.91	385
		Total	125.48	505
	Age Disaggregate	15 - 29 Years	27.12	107
		30+ Years	98.37	398
		Total	125.48	505

A2. Sample weights applied

A21 Rice Marketing

District	TA	GVH/CLUSTER	Frame	Cluster Universe	Planned Sample	Total Interviews	No of clusters selected (m)	Total No of participants in all clusters (N) for district i	1st stage - Probability of selecting cluster (f1i)	2nd stage - Probability of selecting participants (f2ij)	Overall Probability of selection (fij)	Sampling weight (W_prob)	Weight for Non-Response (W_nonresponse)	Final Sample Weight (SAM_WT)
ZOMBA	MALEMIA	CHOPI	Rice	1	1	1	8	96	0.083333333	1	0.083333333	12	1.000	12.000
ZOMBA	MALEMIA	GH MTWICHE	Rice	9	9	9	8	96	0.75	1	0.75	1.333333	1.000	1.330
ZOMBA	MALEMIA	KAPYEPYE	Rice	3	3	3	8	96	0.25	1	0.25	4	1.000	4.000
ZOMBA	MALEMIA	MACHINJIRI	Rice	4	4	4	8	96	0.333333333	1	0.333333333	3	1.000	3.000
ZOMBA	MALEMIA	MASAMBUKA	Rice	5	5	5	8	96	0.416666667	1	0.416666667	2.4	1.000	2.400
ZOMBA	MALEMIA	MPESENI	Rice	26	26	23	8	96	2.166666667	1	2.166666667	0.461538	1.130	0.520
ZOMBA	MALEMIA	MTOGOLO	Rice	8	8	6	8	96	0.666666667	1	0.666666667	1.5	1.333	2.000
ZOMBA	MWAMBO	MBALU	Rice	40	40	40	8	96	3.333333333	1	3.333333333	0.3	1.000	0.300

A23 Pigeon pea Marketing

District	TA	GVH/CLUSTER	Frame	Cluster Universe	Planned Sample	Total Interviews	clustered selected	Total No of participants in all clusters (N)	1st stage - Probability of selecting cluster (f1i)	2nd stage - Probability of selecting participants (f2ij)	Overall Probability of selection (fij)	Sampling weight (W_prob)	Weight for Non-Response (W_nonresponse)	Final Sample Weight (SAM_WT)
MANGOCHI	NAMABVI	KADANGO	Pigeon peas	19	10	10	10	627	0.30303	0.52632	0.15949	6.27	1	6.270
ZOMBA	MALEMIA	CHOPI	Pigeon peas	33	10	11	10	627	0.52632	0.30303	0.15949	6.27	0.90909	5.700
ZOMBA	MALEMIA	GH MTWICHE	Pigeon peas	47	10	10	10	627	0.7496	0.21277	0.15949	6.27	1	6.270
ZOMBA	MALEMIA	KAPYEPYE	Pigeon peas	10	10	7	10	627	0.15949	1	0.15949	6.27	1.42857	8.960
ZOMBA	MALEMIA	MASAMBUKA	Pigeon peas	30	10	11	10	627	0.47847	0.33333	0.15949	6.27	0.90909	5.700

District	TA	GVH/CLUSTER	Frame	Cluster Universe	Planned Sample	Total Interviews	clustered selected	Total No of participants in all clusters (N)	1st stage - Probability of selecting cluster (f1i)	2nd stage - Probability of selecting participants (f2ij)	Overall Probability of selection (fij)	Sampling weight (W_prob)	Weight for Non-Response (W_nonresponse)	Final Sample Weight (SAM_WT)
ZOMBA	MALEMIA	MTOGOLO	Pigeon peas	38	10	10	10	627	0.60606	0.26316	0.15949	6.27	1	6.270
ZOMBA	MBIZA	MUHILILI	Pigeon peas	37	10	8	10	627	0.59011	0.27027	0.15949	6.27	1.25	7.840
ZOMBA	MLUMBE	MATUMBI	Pigeon peas	16	10	8	10	627	0.25518	0.625	0.15949	6.27	1.25	7.840
ZOMBA	MLUMBE	NAWANI	Pigeon peas	27	10	10	10	627	0.43062	0.37037	0.15949	6.27	1	6.270
ZOMBA	MBIZA	LIKHOMO MLIYA	Pigeon peas	95	10	9	10	627	1.51515	0.10526	0.15949	6.27	1.11111	6.970

A24 Groundnut Marketing

District	TA	GVH/CLUSTER	Frame	Cluster Universe	Planned Sample	Total Interviews	clustered selected	Total No of participants in all clusters (N)	1st stage - Probability of selecting cluster (f1i)	2nd stage - Probability of selecting participants (f2ij)	Overall Probability of selection (fij)	Sampling weight (W_prob)	Weight for Non-Response (W_nonresponse)	Final Sample Weight (SAM_WT)
MANGOCHI	CHILIPA	ABINA	groundnut	13	10	11	10	527	0.24668	0.76923	0.18975	5.27	0.90909	4.790
MANGOCHI	CHILIPA	NASULUMA	groundnut	81	10	10	10	527	1.537	0.12346	0.18975	5.27	1	5.270
MANGOCHI	JALASI	NOMBO	groundnut	9	10	9	10	527	0.17078	1.11111	0.18975	5.27	1.11111	5.860
ZOMBA	MALEMIA	CHOPI	groundnut	59	10	10	10	527	1.11954	0.16949	0.18975	5.27	1	5.270
ZOMBA	MALEMIA	KAPYEPYE	groundnut	4	10	4	10	527	0.0759	2.5	0.18975	5.27	2.5	13.180
ZOMBA	MALEMIA	MTOGOLO	groundnut	66	10	10	10	527	1.25237	0.15152	0.18975	5.27	1	5.270
ZOMBA	MALEMIA	GH MTWICHE	groundnut	96	10	12	10	527	1.82163	0.10417	0.18975	5.27	0.83333	4.390
ZOMBA	MALEMIA	MACHINJIRI	groundnut	73	10	9	10	527	1.3852	0.13699	0.18975	5.27	1.11111	5.860
ZOMBA	MALEMIA	MPESENI	groundnut	32	10	11	10	527	0.60721	0.3125	0.18975	5.27	0.90909	4.790
ZOMBA	NKAPITA	CHISUTU	groundnut	19	10	13	10	527	0.36053	0.52632	0.18975	5.27	0.76923	4.050

A22 Soy Marketing

District	TA	GVH/CLUSTER	Frame	Cluster Universe	Planned Sample	Total Interviews	clustered selected	Total No of participants in all clusters (N)	1st stage - Probability of selecting cluster (f1i)	2nd stage - Probability of selecting participants (f2ij)	Overall Probability of selection (fij)	Sampling weight (W_prob)	Weight for Non-Response (W_nonresponse)	Final Sample Weight (SAM_WT)
MANGOCHI	CHIUNDA	CHIMESYA	Soybean	19	10	10	10	3524	0.0539	0.5263	0.028376844	35.24	1.00	35.240
MANGOCHI	CHIUNDA	MPONDA	Soybean	44	10	10	10	3524	0.1249	0.2273	0.028376844	35.24	1.00	35.240
MANGOCHI	JALASI	MTANGA	Soybean	24	10	10	10	3524	0.0681	0.4167	0.028376844	35.24	1.00	35.240
MANGOCHI	NANKUMBA	KAMPHANDE	Soybean	42	10	10	10	3524	0.1192	0.2381	0.028376844	35.24	1.00	35.240
ZOMBA	CHIKOWI	CHIMBALANGA	Soybean	19	10	10	10	3524	0.0539	0.5263	0.028376844	35.24	1.00	35.240
ZOMBA	CHIKOWI	KASELEMA	Soybean	77	10	11	10	3524	0.2185	0.1299	0.028376844	35.24	0.91	32.040
ZOMBA	MALEMIA	CHOPI	Soybean	17	10	10	10	3524	0.0482	0.5882	0.028376844	35.24	1.00	35.240
ZOMBA	MALEMIA	MTOGOLO	Soybean	16	10	10	10	3524	0.0454	0.6250	0.028376844	35.24	1.00	35.240
ZOMBA	NGWELERO	NAMAKHUWA	Soybean	42	10	10	10	3524	0.1192	0.2381	0.028376844	35.24	1.00	35.240
ZOMBA	NGWELERO	NGWELERO	Soybean	55	10	10	10	3524	0.1561	0.1818	0.028376844	35.24	1.00	35.240

A25 Producer

District	TA	GVH/CLUSTER	Frame	Cluster Universe	Planned Sample	Total Interviews	clustered selected	Total No of participants in all clusters (N)	1st stage - Probability of selecting cluster (f1i)	2nd stage - Probability of selecting participants (f2ij)	Overall Probability of selection (fij)	Sampling weight (W_prob)	Weight for Non-Response (W_nonresponse)	Final Sample Weight (SAM_WT)
MANGOCHI	CHILIPA	ABINA	PRODUCER	74	10	11	30	28,186	0.079	0.135	0.011	93.953	0.909	85.410
ZOMBA	CHIKOWI	CHIMBALANGA	PRODUCER	56	10	10	30	28,186	0.060	0.179	0.011	93.953	1.000	93.950
MANGOCHI	CHIUNDA	CHIMESYA	PRODUCER	42	10	10	30	28,186	0.045	0.238	0.011	93.953	1.000	93.950
ZOMBA	NKAPITA	CHISUTU	PRODUCER	83	10	13	30	28,186	0.088	0.120	0.011	93.953	0.769	72.270
ZOMBA	MALEMIA	CHOPI	PRODUCER	284	10	32	30	28,186	0.302	0.035	0.011	93.953	0.313	29.360

District	TA	GVH/CLUSTER	Frame	Cluster Universe	Planned Sample	Total Interviews	clustered selected	Total No of participants in all clusters (N)	1st stage - Probability of selecting cluster (f1i)	2nd stage - Probability of selecting participants (f2ij)	Overall Probability of selection (fij)	Sampling weight (W_prob)	Weight for Non-Response (W_nonresponse)	Final Sample Weight (SAM_WT)
ZOMBA	MALEMIA	GH MTWICHE	PRODUCER	344	10	31	30	28,186	0.366	0.029	0.011	93.953	0.323	30.310
MANGOCHI	NAMABVI	KADANGO	PRODUCER	19	10	11	30	28,186	0.020	0.526	0.011	93.953	0.909	85.410
MANGOCHI	NANKUMBA	KAMPHANDE	PRODUCER	90	10	10	30	28,186	0.096	0.111	0.011	93.953	1.000	93.950
ZOMBA	MALEMIA	KAPYEPYE	PRODUCER	43	10	14	30	28,186	0.046	0.233	0.011	93.953	0.714	67.110
ZOMBA	CHIKOWI	KASELEMA	PRODUCER	201	10	11	30	28,186	0.214	0.050	0.011	93.953	0.909	85.410
ZOMBA	MBIZA	LIKHOMO MLIYA	PRODUCER	349	10	10	30	28,186	0.371	0.029	0.011	93.953	1.000	93.950
ZOMBA	MALEMIA	MACHINJIRI	PRODUCER	151	10	13	30	28,186	0.161	0.066	0.011	93.953	0.769	72.270
ZOMBA	MALEMIA	MASAMBUKA	PRODUCER	57	10	16	30	28,186	0.061	0.175	0.011	93.953	0.625	58.720
ZOMBA	MLUMBE	MATUMBI	PRODUCER	68	10	9	30	28,186	0.072	0.147	0.011	93.953	1.111	104.390
ZOMBA	MWAMBO	MBALU	PRODUCER	125	10	40	30	28,186	0.133	0.080	0.011	93.953	0.250	23.490
ZOMBA	MALEMIA	MPESANI	PRODUCER	204	10	34	30	28,186	0.217	0.049	0.011	93.953	0.294	27.630
MANGOCHI	CHIUNDA	MPONDA	PRODUCER	327	10	10	30	28,186	0.348	0.031	0.011	93.953	1.000	93.950
MANGOCHI	JALASI	MTANGA	PRODUCER	103	10	10	30	28,186	0.110	0.097	0.011	93.953	1.000	93.950
ZOMBA	MALEMIA	MTOGOLO	PRODUCER	293	10	36	30	28,186	0.312	0.034	0.011	93.953	0.278	26.100
ZOMBA	MBIZA	MUHILILI	PRODUCER	110	10	10	30	28,186	0.117	0.091	0.011	93.953	1.000	93.950
ZOMBA	NGWELERO	NAMAKHUWA	PRODUCER	131	10	10	30	28,186	0.139	0.076	0.011	93.953	1.000	93.950
MANGOCHI	CHILIPA	NASULUMA	PRODUCER	202	10	10	30	28,186	0.215	0.050	0.011	93.953	1.000	93.950
ZOMBA	MLUMBE	NAWANI	PRODUCER	54	10	10	30	28,186	0.057	0.185	0.011	93.953	1.000	93.950
ZOMBA	NGWELERO	NGWELERO	PRODUCER	218	10	10	30	28,186	0.232	0.046	0.011	93.953	1.000	93.950

A26 Maternal and Child Health

District	TA	GVH/CLUSTER	Frame	Cluster Universe	Planned Sample	Total Interviews	clustered selected	Total No of participants in all clusters (N)	1st stage - Probability of selecting cluster (f1i)	2nd stage - Probability of selecting participants (f2ij)	Overall Probability of selection (fij)	Sampling weight (W_prob)	Weight for Non-Response (W_nonresponse)	Final Sample Weight (SAM_WT)
MANGOCHI	CHILIPA	ABINA	Nutrition	82	10	9	30	62,265	0.0395	0.1220	0.0048	207.55	1.11	230.610
MANGOCHI	CHILIPA	BAMUSI	Nutrition	159	10	8	30	62,265	0.0766	0.0629	0.0048	207.55	1.25	259.440
MANGOCHI	CHILIPA	CHINGWALU	Nutrition	59	10	13	30	62,265	0.0284	0.1695	0.0048	207.55	0.77	159.650
MANGOCHI	CHILIPA	CHOCHO	Nutrition	199	10	11	30	62,265	0.0959	0.0503	0.0048	207.55	0.91	188.680
MANGOCHI	CHILIPA	IPILU	Nutrition	149	10	10	30	62,265	0.0718	0.0671	0.0048	207.55	1.00	207.550
MANGOCHI	CHILIPA	NASULUMA	Nutrition	93	10	10	30	62,265	0.0448	0.1075	0.0048	207.55	1.00	207.550
MANGOCHI	CHIUNDA	CHIMESYA	Nutrition	395	10	12	30	62,265	0.1903	0.0253	0.0048	207.55	0.83	172.960
MANGOCHI	CHIUNDA	CHIUNDA	Nutrition	660	10	10	30	62,265	0.3180	0.0152	0.0048	207.55	1.00	207.550
MANGOCHI	CHIUNDA	KWISINJE	Nutrition	301	10	10	30	62,265	0.1450	0.0332	0.0048	207.55	1.00	207.550
MANGOCHI	CHIUNDA	MACHEMBA	Nutrition	225	10	10	30	62,265	0.1084	0.0444	0.0048	207.55	1.00	207.550
MANGOCHI	CHIUNDA	MPONDA	Nutrition	138	10	10	30	62,265	0.0665	0.0725	0.0048	207.55	1.00	207.550
MANGOCHI	NAMABVI	CHIPONDA	Nutrition	506	10	10	30	62,265	0.2438	0.0198	0.0048	207.55	1.00	207.550
MANGOCHI	NAMABVI	FOWO	Nutrition	649	10	11	30	62,265	0.3127	0.0154	0.0048	207.55	0.91	188.680
MANGOCHI	NAMABVI	KADANGO	Nutrition	445	10	10	30	62,265	0.2144	0.0225	0.0048	207.55	1.00	207.550
MANGOCHI	CHILIPA	MSONTHE	Nutrition	296	10	9	30	62,265	0.1426	0.0338	0.0048	207.55	1.11	230.610
ZOMBA	CHIKOWI	KASELEMA	Nutrition	320	10	9	30	62,265	0.1542	0.0313	0.0048	207.55	1.11	230.610
ZOMBA	CHIKOWI	PONGWE	Nutrition	111	10	9	30	62,265	0.0535	0.0901	0.0048	207.55	1.11	230.610
ZOMBA	KUNTUMANJI	NAMADINGO	Nutrition	405	10	10	30	62,265	0.1951	0.0247	0.0048	207.55	1.00	207.550
ZOMBA	KUNTUMANJI	NAMASALIMA	Nutrition	783	10	11	30	62,265	0.3773	0.0128	0.0048	207.55	0.91	188.680
ZOMBA	MALEMIA	CHOPI	Nutrition	523	10	10	30	62,265	0.2520	0.0191	0.0048	207.55	1.00	207.550
ZOMBA	MALEMIA	GH MTWICHE	Nutrition	344	10	11	30	62,265	0.1657	0.0291	0.0048	207.55	0.91	188.680
ZOMBA	MALEMIA	MACHINJIRI	Nutrition	236	10	10	30	62,265	0.1137	0.0424	0.0048	207.55	1.00	207.550
ZOMBA	MALEMIA	MASAMBUKA	Nutrition	349	10	10	30	62,265	0.1682	0.0287	0.0048	207.55	1.00	207.550
ZOMBA	MALEMIA	MPESANI	Nutrition	297	10	10	30	62,265	0.1431	0.0337	0.0048	207.55	1.00	207.550
ZOMBA	MALEMIA	MTOGOLO	Nutrition	761	10	10	30	62,265	0.3667	0.0131	0.0048	207.55	1.00	207.550

District	TA	GVH/CLUSTER	Frame	Cluster Universe	Planned Sample	Total Interviews	clustered selected	Total No of participants in all clusters (N)	1st stage - Probability of selecting cluster (f1i)	2nd stage - Probability of selecting participants (f2ij)	Overall Probability of selection (fij)	Sampling weight (W_prob)	Weight for Non-Response (W_nonresponse)	Final Sample Weight (SAM_WT)
ZOMBA	MLUMBE	MATUMBI	Nutrition	276	10	8	30	62,265	0.1330	0.0362	0.0048	207.55	1.25	259.440
ZOMBA	MLUMBE	NAWANI	Nutrition	297	10	10	30	62,265	0.1431	0.0337	0.0048	207.55	1.00	207.550
ZOMBA	MWAMBO	MBALU	Nutrition	1312	10	10	30	62,265	0.6321	0.0076	0.0048	207.55	1.00	207.550
ZOMBA	NKAPITA	CHISUTU	Nutrition	164	10	10	30	62,265	0.0790	0.0610	0.0048	207.55	1.00	207.550
MANGOCHI	NAMABVI	KUBULI	Nutrition	698	10	10	30	62,265	0.3363	0.0143	0.0048	207.55	1.00	207.550

A26 Off-Farm Livelihood

District	TA	GVH/CLUSTER	Frame	Cluster Universe	Planned Sample	Total Interviews	clustered selected	Total No of participants in all clusters (N)	1st stage - Probability of selecting cluster (f1i)	2nd stage - Probability of selecting participants (f2ij)	Overall Probability of selection (fij)	Sampling weight (W_prob)	Weight for Non-Response (W_nonresponse)	Final Sample Weight (SAM_WT)
MANGOCHI	CHILIPA	MSONTHE	LIVELIHOOD	27	10	10	15	4796	0.084445	0.37037	0.031276	31.97333	1	31.970
MANGOCHI	CHILIPA	NASULUMA	LIVELIHOOD	20	10	7	15	4796	0.062552	0.5	0.031276	31.97333	1.428571	45.680
MANGOCHI	CHIUNDA	MPONDA	LIVELIHOOD	24	10	10	15	4796	0.075063	0.416667	0.031276	31.97333	1	31.970
MANGOCHI	CHOWE	MASE	LIVELIHOOD	20	10	13	15	4796	0.062552	0.5	0.031276	31.97333	0.769231	24.590
MANGOCHI	CHOWE	NKATA	LIVELIHOOD	22	10	6	15	4796	0.068807	0.454545	0.031276	31.97333	1.666667	53.290
MANGOCHI	JALASI	KAMWEPE	LIVELIHOOD	21	10	10	15	4796	0.06568	0.47619	0.031276	31.97333	1	31.970
MANGOCHI	JALASI	KWIPUTI	LIVELIHOOD	27	10	14	15	4796	0.084445	0.37037	0.031276	31.97333	0.714286	22.840
ZOMBA	KUNTUMANJI	KUMBWANI	LIVELIHOOD	15	10	10	15	4796	0.046914	0.666667	0.031276	31.97333	1	31.970
ZOMBA	KUNTUMANJI	NAMASALIMA	LIVELIHOOD	18	10	8	15	4796	0.056297	0.555556	0.031276	31.97333	1.25	39.970
ZOMBA	MBIZA	LIKHOMO MLIYA	LIVELIHOOD	16	10	9	15	4796	0.050042	0.625	0.031276	31.97333	1.111111	35.530
MANGOCHI	CHOWE	CHINDAMBA	LIVELIHOOD	25	10	9	15	4796	0.07819	0.4	0.031276	31.97333	1.111111	35.530
MANGOCHI	NAMABVI	FOWO	LIVELIHOOD	27	10	8	15	4796	0.084445	0.37037	0.031276	31.97333	1.25	39.970
ZOMBA	MALEMIA	GH MTWICHE	LIVELIHOOD	30	10	12	15	4796	0.093828	0.333333	0.031276	31.97333	0.833333	26.640

District	TA	GVH/CLUSTER	Frame	Cluster Universe	Planned Sample	Total Interviews	clustered selected	Total No of participants in all clusters (N)	1st stage - Probability of selecting cluster (f1i)	2nd stage - Probability of selecting participants (f2ij)	Overall Probability of selection (fij)	Sampling weight (W_prob)	Weight for Non-Response (W_nonresponse)	Final Sample Weight (SAM_WT)
ZOMBA	NGWELERO	NAMAKHUWA	LIVELIHOOD	20	10	9	15	4796	0.062552	0.5	0.031276	31.97333	1.111111	35.530
ZOMBA	NGWELERO	NGWELERO	LIVELIHOOD	29	10	10	15	4796	0.090701	0.344828	0.031276	31.97333	1	31.970

A26 Overall Sample Weight

District	TA	GVH/CLUSTER	Frame	Cluster Universe	Planned Sample	Total Interviews	clustered selected	Total No of participants in all clusters (N)	1st stage - Probability of selecting cluster (f1i)	2nd stage - Probability of selecting participants (f2ij)	Overall Probability of selection (fij)	Sampling weight (W_prob)	Weight for Non-Response (W_nonresponse)	Final Sample Weight (SAM_WT)
MANGOCHI	CHILIPA	ABINA	ALL	156	20	20	48	95247	0.08	0.13	0.01	99.22	1.00	99.22
MANGOCHI	CHILIPA	BAMUSI	ALL	159	10	8	48	95247	0.08	0.06	0.01	198.43	1.25	248.04
ZOMBA	CHIKOWI	CHIMBALANGA	ALL	56	10	10	48	95247	0.03	0.18	0.01	198.43	1.00	198.43
MANGOCHI	CHIUNDA	CHIMESYA	ALL	437	20	22	48	95247	0.22	0.05	0.01	99.22	0.91	90.20
MANGOCHI	CHOWE	CHINDAMBA	ALL	25	10	9	48	95247	0.01	0.40	0.01	198.43	1.11	220.48
MANGOCHI	CHILIPA	CHINGWALU	ALL	146	20	22	48	95247	0.07	0.14	0.01	99.22	0.91	90.20
MANGOCHI	NAMABVI	CHIPONDA	ALL	680	20	20	48	95247	0.34	0.03	0.01	99.22	1.00	99.22
ZOMBA	NKAPITA	CHISUTU	ALL	247	20	23	48	95247	0.12	0.08	0.01	99.22	0.87	86.27
MANGOCHI	CHIUNDA	CHIUNDA	ALL	804	20	20	48	95247	0.41	0.02	0.01	99.22	1.00	99.22
MANGOCHI	CHILIPA	CHOCHO	ALL	199	10	11	48	95247	0.10	0.05	0.01	198.43	0.91	180.39
ZOMBA	MALEMIA	CHOPI	ALL	807	41	42	48	95247	0.41	0.05	0.02	48.40	0.98	47.25
MANGOCHI	NAMABVI	FOWO	ALL	676	20	19	48	95247	0.34	0.03	0.01	99.22	1.05	104.44
ZOMBA	MALEMIA	GH MTWICHE	ALL	718	49	54	48	95247	0.36	0.07	0.02	40.50	0.91	36.75
MANGOCHI	CHILIPA	IPILU	ALL	149	10	10	48	95247	0.08	0.07	0.01	198.43	1.00	198.43
MANGOCHI	NAMABVI	KADANGO	ALL	464	10	10	48	95247	0.23	0.02	0.01	198.43	1.00	198.43
MANGOCHI	NAMABVI	KUBULI	ALL	698	20	23	48	95247	0.35	0.03	0.01	99.22	0.87	86.27
MANGOCHI	NANKUMBA	KAMPHANDE	ALL	90	10	10	48	95247	0.05	0.11	0.01	198.43	1.00	198.43

District	TA	GVH/CLUSTER	Frame	Cluster Universe	Planned Sample	Total Interviews	clustered selected	Total No of participants in all clusters (N)	1st stage - Probability of selecting cluster (f1i)	2nd stage - Probability of selecting participants (f2ij)	Overall Probability of selection (fij)	Sampling weight (W_prob)	Weight for Non-Response (W_nonresponse)	Final Sample Weight (SAM_WT)
MANGOCHI	JALASI	KAMWEPE	ALL	21	10	10	48	95247	0.01	0.48	0.01	198.43	1.00	198.43
ZOMBA	MALEMIA	KAPYEPYE	ALL	43	23	14	48	95247	0.02	0.53	0.01	86.27	1.64	141.74
ZOMBA	CHIKOWI	KASELEMA	ALL	521	20	20	48	95247	0.26	0.04	0.01	99.22	1.00	99.22
MANGOCHI	NAMABVI	KUBULI	ALL	698	10	10	48	95247	0.35	0.01	0.01	198.43	1.00	198.43
ZOMBA	KUNTUMANJI	KUMBWANI	ALL	15	10	10	48	95247	0.01	0.67	0.01	198.43	1.00	198.43
MANGOCHI	JALASI	KWIPUTI	ALL	27	10	15	48	95247	0.01	0.37	0.01	198.43	0.67	132.29
MANGOCHI	CHIUNDA	KWISINJE	ALL	301	10	10	48	95247	0.15	0.03	0.01	198.43	1.00	198.43
ZOMBA	MBIZA	LIKHOMO MLIYA	ALL	365	20	19	48	95247	0.18	0.05	0.01	99.22	1.05	104.44
MANGOCHI	CHIUNDA	MACHEMBA	ALL	225	10	10	48	95247	0.11	0.04	0.01	198.43	1.00	198.43
ZOMBA	MALEMIA	MACHINJIRI	ALL	387	24	23	48	95247	0.20	0.06	0.01	82.68	1.04	86.27
MANGOCHI	JALASI	MALEKANO	ALL	184	10	10	48	95247	0.09	0.05	0.01	198.43	1.00	198.43
ZOMBA	MALEMIA	MASAMBUKA	ALL	406	25	26	48	95247	0.20	0.06	0.01	79.37	0.96	76.32
MANGOCHI	CHOWE	MASE	ALL	20	10	13	48	95247	0.01	0.50	0.01	198.43	0.77	152.64
ZOMBA	MLUMBE	MATUMBI	ALL	344	20	17	48	95247	0.17	0.06	0.01	99.22	1.18	116.72
ZOMBA	MWAMBO	MBALU	ALL	1437	50	50	48	95247	0.72	0.03	0.03	39.69	1.00	39.69
ZOMBA	MALEMIA	MPESENI	ALL	501	46	44	48	95247	0.25	0.09	0.02	43.14	1.05	45.10
MANGOCHI	CHIUNDA	MPONDA	ALL	489	30	30	48	95247	0.25	0.06	0.02	66.14	1.00	66.14
MANGOCHI	CHILIPA	MSONTHE	ALL	27	10	19	48	95247	0.01	0.37	0.01	198.43	0.53	104.44
MANGOCHI	JALASI	MTANGA	ALL	103	10	10	48	95247	0.05	0.10	0.01	198.43	1.00	198.43
ZOMBA	MALEMIA	MTOGOLO	ALL	1054	48	46	48	95247	0.53	0.05	0.02	41.34	1.04	43.14
ZOMBA	MBIZA	MUHILILI	ALL	110	10	10	48	95247	0.06	0.09	0.01	198.43	1.00	198.43
ZOMBA	KUNTUMANJI	NAMADINGO	ALL	420	20	10	48	95247	0.21	0.05	0.01	99.22	2.00	198.43
ZOMBA	NGWELERO	NAMAKHUWA	ALL	151	20	21	48	95247	0.08	0.13	0.01	99.22	0.95	94.49
ZOMBA	KUNTUMANJI	NAMASALIMA	ALL	801	20	21	48	95247	0.40	0.02	0.01	99.22	0.95	94.49
MANGOCHI	CHILIPA	NASULUMA	ALL	315	30	27	48	95247	0.16	0.10	0.02	66.14	1.11	73.49
ZOMBA	MLUMBE	NAWANI	ALL	351	20	20	48	95247	0.18	0.06	0.01	99.22	1.00	99.22

District	TA	GVH/CLUSTER	Frame	Cluster Universe	Planned Sample	Total Interviews	clustered selected	Total No of participants in all clusters (N)	1st stage - Probability of selecting cluster (f1i)	2nd stage - Probability of selecting participants (f2ij)	Overall Probability of selection (fij)	Sampling weight (W_prob)	Weight for Non-Response (W_nonresponse)	Final Sample Weight (SAM_WT)
ZOMBA	NGWELERO	NGWELERO	ALL	247	20	20	48	95247	0.12	0.08	0.01	99.22	1.00	99.22
MANGOCHI	CHOWE	NKATA	ALL	22	10	6	48	95247	0.01	0.45	0.01	198.43	1.67	330.72
MANGOCHI	JALASI	NOMBO	ALL	48	10	10	48	95247	0.02	0.21	0.01	198.43	1.00	198.43
ZOMBA	CHIKOWI	PONGWE	ALL	111	10	10	48	95247	0.06	0.09	0.01	198.43	1.00	198.43
MANGOCHI	NANKUMBA	SAIDI MATOLA	ALL	38	10	10	48	95247	0.02	0.26	0.01	198.43	1.00	198.43

A3. Indicator matrix between baseline and Current

#	Ind. #	Indicator	Baseline	FY2022	FY023	Targets FY2023	for	Performance Actual vs Target
1	11	BHA PM33: Value of annual sales of producers and firms receiving USG assistance						
		<i>Rice</i> (US\$)	9845.00	40909	15437.43	636225		-620,788
		<i>Soybean</i> (US\$)	3998.27	273313	268811	145,542		123,269.00
		<i>Pigeon pea</i> (US\$)	3660.47	14755	21205	12,163		9,042.00
2	14	BHA PM15: Yield of targeted agricultural commodities among program participants with USG assistance						-
		<i>Rice</i> (MT/Ha)	1.31	0.71	1.77	1.70		0
		<i>Soybean</i> (MT/Ha)	0.31	0.66	0.90	0.5		0.40
		<i>Pigeon pea</i> (MT/Ha)	0.51	0.20	0.53	0.4		0
3	15	Custom 1: Number of producers who bought contextually suitable improved inputs in the last 12 months	0.00	7498	21,462	21,978		- 516.00
4	16	Custom 2: Number of producers who reported quality input was available in local markets in the last 12 months	0.00	5,533	17,240	26,374		- 9,134.00
5		Custom 3: Number of producers accessing labor-saving technologies	0.00	661	5851	3879		1,972.00
6	17	BHA PM9: Number of hectares under improved management practices or technologies with USG assistance	0.00	2431	16911.33	2,327		56,401.60
7	18	BHA PM16: Number of individuals in the agriculture system who have applied improved management practices or technologies with USG assistance	270	7,852	28,042	25,832		2,210.00

#	Ind. #	Indicator	Baseline	FY2022	FY023	Targets for FY2023	Performance Actual vs Target
8	23	BHA PM14: Number of farmers who practiced value chain activities with USG assistance	34	7,763	280,42	13,662	14,380.00
10	26	Custom 6: Number of participants who reported awareness of profitable off-farm livelihood options	0.00	690	4791	6,580	- 1,789.00
		Custom 13: Percentage of IGA participants who maintained Books of Account for their businesses in the last 12 months	0.00	17%	52.5%	52%	1%
11	30	Custom (CARE GEVV 4) 10: Percentage of individuals who report confidence in their negotiation and communication skills	0.00	39%	73%	60%	13%
12	33	Custom 11: Percentage of crop and livestock producers who reported improved market engagement in the past 12 months	-	72%	85.8%	75%	11%
14	45	BHA PM06: Percent of female direct beneficiaries of USG nutrition-sensitive agriculture activities consuming a diet of minimum diversity	49.5%	40.8%	67.6%	65%	3%
15	46	Custom 16: Number of HHs able to produce/purchase adequate diverse and nutritious food during the last 12 months	-	21017	46960	15,077	31,883
16	48	Custom 17: Percent of targeted participants who reported adoption of optimal nutrition practices as a result of USG assistance	0%	42%	85.2%	50%	35%
17	49	Custom (CARE GL3) 18: Percentage of women and girls aged 15 years and older subjected to gender-based violence in the last 12 months	11%	31.6%	23.6%	25%	-1%
18	50	Custom 19: Percent of primary caregivers who can identify at least three recommended nutrition practices	18.02%	44.0%	96.8%	60%	37%

#	Ind. #	Indicator	Baseline	FY2022	FY023	Targets for FY2023	Performance Actual vs Target
		BHA PM24: Number of live births receiving at least four antenatal care (ANC) visits during pregnancy	0.00	6102	36472	3386	33,086.00
19	62	BHA PM4: Percent of households with soap and water at a handwashing station on premises	1.4%	36%	57.5%	42%	16%
20	63	BHA PM22: Number of people gaining access to a basic sanitation service as a result of USG assistance	0.00	11,471	464,788	42685	422,103.00
21	65	Custom 23: Percentage of participants who know at least 3 of the 5 critical times to wash hands	34.5%	46%	87%	69%	18%
22	71	Custom 24: Percentage of WRA who used at least one Child health service in the last 12 months	81%	96%	97.7%	83%	15%
23	72	Custom 25: Percentage of WRA who used at least one Maternal health service in the last 12 months	91%	80%	95.0%	92%	3%
24	78	Custom 28: Percentage of participant women reporting improved quality of RMNACH and nutrition services in last 12 months	0.00	11%	23.3%	20%	3%
25	97	Custom 38: Percentage of households who reported having invested more resources (financial, material and human) and/or assets in preparation for future shocks and stresses in the last 12 months	0.00	40%	99.2%	45%	54%
26	98	Custom 39: Percentage of households that planned for their long-term food & other vital needs (health, education, water, etc.)	-	39%	78.7%	65%	14%
28	100	Custom 40: Percentage of women and youth who reported being able to make decision over productive resources and/or assets	0.00	55%	68.2%	58%	10%

#	Ind. #	Indicator	Baseline	FY2022	FY023	Targets FY2023	for	Performance Actual vs Target
29	104	BHA PM11: Number of people using climate information or implementing risk-reducing actions to improve resilience to climate change as supported by USG assistance	0.00	3838	43,717	8,316		35,401.00
30	105	Custom 41: Percentage of participants who reported they could understand EW information they received in the past 12 months	0.0%	42%	72.2%	67%		5%
31	106	Custom 42: Number of people who reported timely receipt of EW information	0.00	3549	42134	11,636		30,498.00
32	109	BHA PM36: Index of social capital at the household level	44.08	51.78	56.93	60		- 3.07
33		RESIL-2: Percent of participants receiving USG assistance who feel their households are able to recover from shocks and stresses [activity/implementing mechanism (IM) level]	-	-	73.9%	-		

