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FEED THE FUTURE TANZANIA MBOGA NA MATUNDA FINAL EVALUATION

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ACRONYMS

Acronym	Description
ACT	Agricultural Council of Tanzania
AMCOS	Agricultural Marketing Cooperative Society
ANSAF	Agricultural Non-State Actors Forum
AY	Advancing Youth
CATI	Computer Assisted Telephone Interviewing
CDCS	Country Development Cooperation Strategy
CDO	Community Development Officer
CHW	Community Health Worker
CL	Confidence Level
CLA	Collaborating, Learning, and Adapting
COVID-19	Coronavirus Disease 2019
CSO	Civil Society Organization
CSV	Climate Smart Village
DAICO	District Agricultural Irrigation and Cooperatives Officer
DC	District Council
DCF	District Council Fund
DNuO	District Nutrition Officer
EG	Economic Growth
FFD	Farmer Field Day
FI	Financial Institution
FTF	Feed the Future
FTFT	Feed the Future Tanzania
FY	Fiscal Year
GAPs	Good Agricultural Practices
GEO	Government Extension Officer
GI	Group Interview
GOT	Government of Tanzania
GUC	Grants Under Contract
ha	Hectare
HVC	Horticulture Value Chain
IP	Implementing Partner
IRDO	Integrated Rural Development Organization
kg	Kilogram
KII	Key Informant Interview
LF	Lead Farmer
LGA	Local Government Authority
LOP	Life of the Project
M&E	Monitoring and Evaluation
MDD-W	Minimum Dietary Diversity for Women
MEL	Monitoring, Evaluation, and Learning
MFI	Microfinance Institution
MIICO	Mbozi, Ileje, and Isangati Consortium
MnM	Mboga na Matunda
MOA	Ministry of Agriculture
MOH	Ministry of Health
MOU	Memorandum of Understanding

Acronym	Description
MSMEs	Micro, Small, and Medium Enterprises
NGO	Non-Governmental Organization
NRC	Nutrition Rich Crop
OFSP	Orange Fleshed Sweet Potatoes
PMP	Performance Management Plan
PO-RALG	President's Office-Regional Administration and Local Government
SACCO	Savings and Credit Cooperative Society
SAGCOT	Southern Agricultural Growth Corridor of Tanzania
SHF	Smallholder Farmer
SIDO	Small Industries Development Organization
SMEs	Small and Medium Enterprises
TAHA	Tanzania Horticulture Association
TAHEA	Tanzania Home Economics Association
TPSF	Tanzania Private Sector Foundation
TZS	Tanzanian Shilling
USAID	United States Agency for International Development
USG	United States Government
VBA	Village-Based Agent
VICOBA	Village Community Banking
ZOI	Zone of Influence

EXECUTIVE SUMMARY

EVALUATION PURPOSE AND EVALUATION QUESTIONS

The purpose of this end-of-project evaluation is to assess the extent to which the Mboga na Matunda (MnM) intervention has developed the horticulture subsector and increased smallholder farmer (SHF) productivity through the adoption of improved agricultural technologies. MnM shares practices with producers in commercial horticulture and the production of nutrient-rich crops to achieve two core aims: 1) to improve the nutrition of Tanzanians, particularly mothers and their children, and 2) to strengthen the local value chain through improved production and market access. The project uses a market-facilitated approach that focuses on strengthening local actors' access to domestic and international markets. The program aims to increase the competitiveness of the sector by providing improved technologies for ensuring higher standards of products and services. After the first year of the project, MnM changed strategy and trained extension officers and lead farmers as trainers who could cascade technical assistance to local farmers and producers. Training and demonstrations were used together to explore what worked best in the Zone of Influence (ZOI) and to share these best practices more widely among farmers and producers.

Theory of Change: The logic for MnM activities is that, by introducing improved horticulture production practices, producers will be able to have higher productivity and have adequate nutritious foods for their families' well-being. Nutritionally valuable foods can contribute to better livelihoods. If an increased supply of these products improves access to markets and creates opportunities for commercial sales, this will increase financial capability to further improve and invest in their households. Activity along the value chain increases the capacity of all stakeholders in the horticulture sector, improving livelihoods and increasing household resilience against shocks, such as weather events, pandemics, or market failures.

Users and Uses: This evaluation report is designed to inform different groups of users. For the United States Agency for International Development Tanzania (USAID/Tanzania), it will help to inform the strategy and future design of activities that may continue to use a market-facilitative approach and increase the productive involvement of women and youth as part of the 2020-2025 Country Development and Cooperation Strategy (CDCS). The evaluation will also help to inform future horticulture investments and approaches supported by USAID. This evaluation could potentially assist the Government of Tanzania (GOT) in the preparation of its next strategic plan (2022-2032) for horticulture.

Summary of Evaluation Questions:

1. To what extent were MnM's interventions aimed at improving knowledge and accessibility of technology, practices, and market-based approach successful at achieving the objectives of the activity? How has this impacted the livelihoods of youth aged 15-35?
2. How did the activity's engagement with the GOT's enhanced extension system contribute to the sustainability of results and interventions?
3. How did the activity's approach to making finance more accessible support performance? How sustainable were/are these interventions? How did the coronavirus disease 2019 (COVID-19) interruptions to businesses and value chains affect performance and sustainability?
4. To what extent did the MnM program affect nutrition outcomes and the health of women and children?
5. How effectively has MnM collaborated with other USAID teams and other agriculture and economic growth (EG) activities to add value across their interventions?

6. What was the effectiveness of partnerships with the private sector including access to products and services?

PROJECT BACKGROUND

Horticulture is a priority sector for the GOT's diversification strategy to transition from traditional agricultural products to higher-value horticulture products for improved livelihoods, resilience, and dietary diversity. The economic returns to horticulture for SHFs can exceed that of traditional agriculture. Tanzania has 44 million hectares (ha) of arable land and 29 million ha of irrigable lands suitable for horticulture to supply an increasing demand for fruits and vegetables.¹ Horticulture offers a way to improve the nutritional status of many Tanzanian people and, as a sector, has the potential to offer employment and increased incomes. In addition, horticulture can be practiced on smaller areas of land with greater intensity of production.

Despite the sector's opportunities, Tanzania faces challenges in taking advantage of them. Current production levels are low. Infrastructure is inadequate to preserve fresh fruits and vegetables to reach distant markets, and women and youth do not have the necessary skills to improve their economic status through horticultural activities. There are also increasing costs for improving production and quality to meet international standards. That said, the Tanzanian horticultural sector can support food security in the country and greater East Africa, offering healthy financial returns for producers who meet product quality standards.

DESIGN AND METHODOLOGY

Evaluation Design

The evaluation team used a mixed-methods approach including surveys of farmers/beneficiaries, small and medium enterprises (SMEs), and Government Extension Officers (GEOs); key informant interviews (KIIs), document review of performance monitoring, and secondary data, to answer the evaluation questions. KII guides were tailored to specific stakeholder groups. The desk review included a review of annual and quarterly reports, other program documents, and existing literature on horticulture, livelihoods, and nutrition in Tanzania. The evaluation team reviewed performance data from the baseline at the start of the program in August 2017 to the end of 2021. Data and indicators from the Feed the Future (FTF) baseline in 2018 which were adapted in their performance management plan were used for trend analysis of the program's performance through the end of 2021.

Data Collection and Analysis

Due to the COVID-19 safety protocol at USAID, data collection activities were conducted remotely/telephonically. Surveys used Computer Assisted Telephone Interviewing (CATI) while KIIs used Zoom conference calls. A few exceptions were made for KIIs with GOT stakeholders who were interviewed through face-to-face meetings in Dodoma and Zanzibar.

A total of 34 KIIs were conducted across six regions involving 36 KII participants (13 females and 23 males). This included interviews with the MnM Implementing Partners (IPs), the USAID/Tanzania Mission, other USAID IPs, civil society organizations (CSOs), SMEs, and the GOT including Central Government stakeholders at the Ministry Level and a sub-sample of the 150 GEOs who worked closely with MnM in providing technical assistance at the district level. The interviews were transcribed and entered into Dedoose, a computer-assisted software program for qualitative content analysis. The evaluation team used the software to code the KIIs to identify salient themes and organize them by stakeholder groups for triangulation with quantitative performance and survey data.

Telephone surveys were conducted with 1,631 farmers/producers, 733 SMEs (distributors, transporters, buyers and resellers, processors) and 284 GEOs. The quantitative survey questionnaires were

¹ [TIC | Agriculture](#).

programmed into Data for Development's ARCGIS-enabled Survey123 platform for administration. The survey data were prepared and analyzed using STATA and entered into Excel software for tabulation and cross-tabulation of data, by gender and age of respondents.

Limitations of the data

The main challenge faced by the evaluation team proved to be the quality of the contact database. This resulted in significant shortfalls in responses in Morogoro, Songwe, and Zanzibar (both Pemba and Unguja). A marked proportion of sampled survey respondents could not be reached and others had to be excluded as they indicated that they did not participate in the program. This led to a much higher respondent replacement rate (75 percent replacement rate for the farmer survey, 44 percent for the SME survey, and 44 percent for the GEO survey) and a longer data collection effort (seven weeks) than originally anticipated.

To mitigate the effects on statistical significance, the evaluation team went to great lengths to reach the highest response possible through extensive replacement of the sample while matching respondent demographics. Despite these efforts, given the data quality, after exhausting all potential replacements, the SME survey did not reach the 90 percent CL threshold for Morogoro, Songwe, and Zanzibar (both Unguja and Pemba). Mitigation strategies did help to achieve the 90 percent CL target for the farmer and GEO surveys, however.

Table 1: Respondents Reached and Replacement Rates Across Surveys

	Number of Respondents (n)			Percent of Respondents (%)		
	Female	Male	Total	Female	Male	Total
Farmer survey						
Primary	124	291	415	25.4	25.5	25.4
Replacement	365	851	1216	74.6	74.5	74.6
Total	489	1,142	1,631	100	100	100
SME survey						
Primary	157	251	408	59.7	53.4	55.7
Replacement	106	219	325	40.3	46.6	44.3
Total	263	470	733	100	100	100
GEO survey						
Primary	50	108	158	49.5	59.0	55.6
Replacement	51	75	126	50.5	41.0	44.4
Total	101	183	284	100	100	100

Source: MnM evaluation, 2022

There were more men than women among the beneficiary population surveyed (45.1 percent were female vs 54.9 percent male). Women and particularly young women had less access to phones than their male counterparts (in both the SME and farmers Surveys). While the team tried to mitigate this through gender and location-matched replacement when participants were not reachable, the surveys ultimately closed with significantly more male respondents than females. For example, in the farmers' survey, 69.7 percent (1,147) were male vs 30.3 percent (498) female. Overall, a 90 percent confidence level and 5 percent margin of error were preserved in the aggregate and by simple disaggregation by gender. However, we were not able to disaggregate both by location and gender without increasing the margin of error above the threshold.

A third challenge relates to the measurement of production and productivity due to the wide range of methods used to measure the weight of produce. A significant number of farmers also failed to provide records of their crop production and cultivated areas. This was especially challenging for the period before joining MnM which may also have been compounded by recall problems.

KEY FINDINGS

Production, Productivity, and Profitability

MnM prepared for implementation by conducting a baseline survey in August 2017 of horticultural participants from the predecessor project, Tanzania Agricultural Productivity Program (TAPP) to assess the agro-ecological conditions in Morogoro, Iringa, Mbeya, Songwe, and all of Zanzibar, the ZOI. The information was used to identify suitable entry points for interventions. A later FTF baseline conducted in 2018 added further information and indicators for measuring program results. These early efforts in evidenced-based implementation helped to adapt and align the program with FTF objectives.

MnM identified agricultural technologies based on their cost and likelihood of adoption. These basic, intermediate, and advanced packages² were designed to improve productivity, gross profit margins, and to ensure the inclusion of women and youth participants. Despite these efforts, gender imbalances persisted in the adoption of technologies with a statistically significantly higher percentage of male adopters of the full package of technologies (71 percent) versus females (60 percent).³ This may have more to do with persistent inequality in the availability of resources and decision-making power in households or business expenditures than the program.

MnM trained GEOs and lead farmers to serve as focal points for training fellow farmers and influencing the adoption of improved technologies. According to MnM annual and quarterly reports, MnM's use of demonstration plots was an effective way of extending training through live examples of practices and results on crops; it was also a good way of training larger groups of farmers at one time. Seventy-five (75) percent of surveyed GEOs used demonstration plots for sharing farming techniques. Sixty-eight (68) percent of farmers participated in these plots according to farmers surveyed. Of those that participated, 79.6 percent rated the skills and information they gained as good or very good.

The MnM activity developed a Boot Camp training program, consisting of intensive short training courses on vegetable and fruit production, for GEOs and extension officers from private companies. According to KILs, GEOs who received training from MnM were more informed about new technologies that can advance the horticulture value chain (HVC). The MnM activity extension model of training helped GEOs build the skills and technical competence to serve as subject matter specialists at regional and district level.

MnM also played a major role in building capacity on market-led approaches. This has informed farmers of the market requirements, and the importance of producing based on market demand. The approach has resulted in market linkages that promote the timely delivery of products. Furthermore, it has helped to overcome challenges related to post-harvest loss and unsold products since everything is produced based on market information on demand.

Monitoring, evaluation, and learning (MEL) reports show increasing sales of horticulture products since the implementation of the MnM program. The exception was a slight decline in sales during the immediate period following the start of the COVID-19 pandemic, due to border closures in 2020.

Women and Youth

MnM has promoted gender and youth participation in the HVC in terms of production, marketing, and access to productive economic resources. The program has worked in collaboration with Advancing Youth (AY) to engage women and youth in the horticulture sector. According to the listing information

² The basic package contains technologies that have low or no cost, do not require specialized knowledge, and that are easily available in most villages. Examples include proper site selection, plant spacing, weed control, crop destruction (uprooting) after harvest, and crop rotation. Intermediate and advanced training includes drip irrigation, raised beds, use of hybrid seeds, applying fertilizers, application of herbicides, pesticides, food safety and quality standards, grading and sorting, and value addition techniques.

³ The differences in the technology adoption rates between male and female are statistically significant. There are 11 more males per 100 in the full package adopters (71 percent) compared to the number of women per 100 (60 percent) in this category; and there are 13 more women per 100 in the basic package adopters (34 percent) compared to the number of men per 100 (21 percent).

received on the beneficiary population, the program effectively included gender mainstreaming (reaching a 45.1 percent female farmer population); however, the program was not designed specifically for women and youth empowerment.

Qualitative findings from the evaluation indicate that youth are interested in horticulture across all the regions, particularly in Mbeya, Iringa, and Zanzibar. However, there is national concern over the aging population involved in production while youth are more interested in distribution, marketing, and sale of produce. There is still a need for youth engagement to produce a broader awareness of the opportunities in farming/production of horticultural products, particularly high-value crops (e.g., avocados).

Small and Medium Size Enterprises

MnM has expanded to reach more SMEs over the life of the project. According to SMEs surveyed by MnM, local input suppliers increased from 402 to 538 between 2020 and 2021. Traders marketing SHF products increased 147 percent. Small-scale processors supported by MnM increased by 54 percent, reflecting an expansion of programs reach to the private sector over time.⁴

Sustainability

In 2019, MnM adapted its approach to focus on building the capacity of public and private extension service providers to enable them to provide quality services to smallholder farmers. This helped to scale up efforts across the ZOI and encourage local government ownership of technical assistance activities to improve sustainability of the program. The MnM activity signed Memoranda of Understanding (MOUs) with targeted District Councils (DCs) and organized meetings that involved District-level officials to discuss implementation progress. In some DCs, the leadership was well informed about MnM and this initiated dialogues on policies that positively supported HVCs and provided an enabling environment for horticulture sector growth. However, there was low awareness of the MnM program among national and regional GOT respondents and limited collaboration and information sharing between the MnM activity and the national government. MnM used various communication methods—including meetings, field visits, phone calls, radio, leaflets, flyers and posters, agricultural shows, and workshops—to disseminate knowledge, raise awareness, and share information. The activity also used social media to connect GEOs and farmers to share knowledge and information on emerging issues. GEOs indicated the most effective way to communicate with farmers was through radio and phone.

Finance

The MnM activity supported farmers and SMEs to improve their business skills and linked them to financial institutions (FIs). Seven FIs participated in the MnM activity and provided financial services to SMEs, individual farmers, Savings and Credit Cooperative Societies (SACCOS), and farmer groups. MnM partners, in collaboration with FIs, trained farmers and SMEs on financial literacy, loan management, business planning and operations, simple gross margin analysis, and other business skills before lending to them. Farmers who received loans were linked to GEOs and private extension service providers. GEOs provided services to identify loan needs, assist with loan applications, assess the capacity of loan repayment and technologies required, and follow up with farmers.

Beneficiaries of the MnM activity accessed finance through formal and informal lenders to invest in the horticulture sector. The MnM approach enabled microfinance institutions (MFIs) to expand the loan portfolio to SHFs, small businesses, and transporters, as well as fruit and vegetable street vendors in the HVC. The MFIs used grants received from MnM to give loans to SHFs and local agro-dealers. Loans were issued through farmers' groups which allowed individual farmers to receive loans as a group, mitigating common challenges meeting loan criteria as individuals. By the end of 2019, MnM-supported clients had accessed \$14.6 million in financing to support their enterprises and livelihoods.

⁴ MnM Annual Reports 2020 and 2021.

The MnM activity made concerted efforts to increase access to finance for youth via lending for horticulture production and businesses. The GEOs have helped youth groups to process and prepare documents required to enable them to secure and use loans from the GOT-supported District Council Fund (DCF) to cultivate vegetables and fruits. However, youth producers and SMEs' access to capital remains limited as the majority rely on loans from family and friends for financing their businesses. Youth struggle to meet loan criteria as they lack significant credit history, business history, and collateral. Just 6.5 percent of youth farmers report having accessed bank loans for horticultural activities. The greater farmer population is marginally better with 7.5 percent of surveyed farmers accessing bank loans.

COVID-19, Supply Chain, and Other Macro-Economic Effects on MnM and Horticulture

The COVID-19 pandemic and subsequent supply chain issues created problems for implementers and stakeholders in the horticulture sector. The negative impacts of COVID-19 were evident throughout the food system. USAID/Tanzania showed flexibility to assist management of MnM's activities on both budgetary and management issues. MnM and its partners agreed on necessary guidelines for engaging stakeholders such as meetings and training with fewer participants in each session and requiring participants to wear masks. Partners reported higher implementation costs due to the protective gear, and the need for an increased number of visits to reach the number of participants. In general, implementation was able to proceed effectively without significant disruption due to these adaptations and health safety measures.

The lasting economic effects stemming from the pandemic include higher-priced inputs and shortages of inputs needed to meet domestic demand. As the availability of needed inputs becomes more constrained and costly, long-term effects could impact soil quality, crop yields, and, ultimately, shortages and higher prices of horticultural goods. Other countries in East Africa are already experiencing food shortages in the wake of the Ukraine War. Tanzania's horticultural sector holds promise for its own food security even as staple import commodities (such as wheat and cooking oil) have become costly and scarce; however, Tanzania's role in supporting the region is limited due to challenges in meeting regional and international food safety and quality standards.

Nutrition

According to MnM performance data, dietary diversity among women of reproductive age improved over the course of the program, increasing from 65 percent in 2019 to 87 percent in 2021.⁵ MnM supported this improvement through nutrition campaigns and promoting the production of nutrition-rich crops (NRCs) such as orange-fleshed sweet potatoes (OFSP). This included support to Community Health Workers (CHWs) to provide nutrition education through village health days, farmer field days (FFDs), and regular visits to farmers' plots. Since 2020, women of reproductive age have consumed at least four of the 7 possible food groups⁶ over a 24-hour recall period, indicating a minimally adequate diverse diet.⁷ Also, the percentage of farmers who eat at least three meals per day increased from 49 percent before MnM to 86.4 percent by the end of Fiscal Year (FY) 2021.⁸ MnM baseline findings reported that farmers reserved an average of 20 kilograms (kg) of all NRCs per household for home consumption, equivalent to just over 6 percent of their total volume of production.

The MnM nutrition program engaged public, private, and community partners to improve health and nutrition. Through a market-facilitated approach, the private sector-trained producers and the community

⁵ From MnM Annual surveys, MnM performance data 2019 to 2021: EG.3.3-10: Percentage of female participants of USG nutrition-sensitive agriculture activities consuming a diet of minimum diversity [IM-level].

⁶ Carbohydrates, Proteins, Fats, Minerals, Vitamins, Fiber and Water (including but not limited to Grains/Cereals, Dairy, Legumes, Vegetables, Fruits, Proteins/meat, Oils etc).

⁷ Performance Data for dietary diversity; "Mean number of food groups consumed by women of reproductive age."

⁸ Final Evaluation, Farmers Survey.

on nutrition and nutrition-sensitive agriculture. According to KIs with private sector participants, this increased awareness of the importance of consuming nutritious foods has contributed to improved dietary diversity and consumption.

Collaboration with Other USAID IPs, Government, and Others

MnM collaborated with several other USAID/Tanzania activities in the Southern Agricultural Growth Corridor of Tanzania (SAGCOT) development corridor including SAGCOT Center, Iringa Hub, Tanzania Horticulture Association (TAHA), Lishe Endelevu, and AY. These collaborations and consultations added value to the project, creating synergies across interventions and enhanced coordination with the private sector.

At the national level, MnM engaged the President's Office-Regional Administration and Local Government (PO-RALG), Ministry of Agriculture (MOA), and the Ministry of Health (MOH) Nutrition Department at the initiation of the project but was less engaged later during the implementation. At that stage, MnM focused more on the participation of Local Government Authorities (LGAs). The MOA is responsible for the implementation of the National Horticulture Strategy implemented by the LGAs, but the interviewed respondents at the Ministry did not receive reports about MnM's activities. However, the EG office reported that MnM reporting to the MOA was captured through the Agricultural Sector Development Programme II (ASDP II) reporting which included a number of EG/FTF activities progress briefs. Since the national government prepares the sector plans and allocates funding for each ministry, enhanced engagement and succession planning with the PO-RALG, MOA, and Department of Nutrition about MnM activities is needed.

Private Sector Partnerships

MOU partnership agreements were signed with 24 private sector entities during the life of the activity including agro-dealers, input suppliers, processors, distributors, nutrition partners, buyers, traders, and FIs. The private sector partnerships helped to increase MnM's reach in the ZOI, achieve its objectives, and improve sustainability in the horticulture sector. MnM helped to develop the capacity of businesses and agro-dealers, providing training in accounting, marketing, and other technical skills. The private sector partners provided an array of products and services to producers and businesses throughout the HVC. MnM partners realized the importance of working with GEOs in ensuring sustainability and creating a critical mass for offering training, as well as selling partner products and technologies. The majority of these partners have offices across regions in the ZOI.

As of the close of FY 2021, private sector partners exceeded the target for three indicators: the number of agro-dealers trained (116 percent of target); the value of FI loans (\$2.29 million versus a target of \$1.94 million); and the number of in-kind loans by input partners (149 percent of target). Three indicators did not reach their targets: the number of loans disbursed by financial partners (5,067 versus a target of 5,555); the number of farmers trained (96 percent of target); and number of demo plots established (98 percent of target).

CONCLUSIONS

Smallholder Farmers' Production and Productivity and Technology Uptake

MnM contributed to the development of the horticulture industry in the ZOI. The horticulture subsector has been recognized as an opportunity for income-generating investments that help SHFs move out of poverty and improve their nutritional status. The horticulture industry is on a good growth trajectory in domestic markets with sufficient demand. However, farmers face challenges in accessing international markets and meeting international standards. The capacity-building efforts on good agricultural practices (GAPs) have significantly intensified productivity through agricultural technologies, such as hybrid seeds, seedling trays and improved health of seedlings, and irrigation. Agro-dealers and GEO counterparts have shared knowledge with producers in best post-harvest practices such as sorting and grading of their

products to supply niche markets. The broad majority of farmers receiving basic technology training were able to adopt those practices on their farms. Eighty-six (86) percent of farmers adopted basic post-harvest technologies with 82 percent who adopted basic post-planting technologies. The higher costs of intermediate and advanced technologies such as hybrid seed, irrigation, greenhouses, and application of chemicals resulted in only a small percentage (4 percent) of producers adopting the full package of technologies despite farmers being trained in them. Technology adoption revealed some gender imbalances as the majority of producers adopting “advanced” technologies were men; there were also lower levels of technology adoption for women overall.

Gender and Youth

More youth and women have realized the HVC’s potential through participation in MnM, which effectively implemented gender mainstreaming and strove for gender parity in its programming. Agriculture is an increasingly older and male-dominant sector. MnM realized this and introduced and supported emerging businesses in supportive services that offer opportunities to young horticulture producers. For example, the production of nursery seedlings is a popular enterprise among youth in the SAGCOT in the Mainland. As consumers increase their demand for horticulture, this indirectly improves opportunities for women and youth. Despite this, there is a need for a broader targeted approach for women and youth empowerment in the sector.

Micro, Small, and Medium Enterprises (MSMEs)

MnM has engaged a variety of MSMEs through GEO activities at the district level. This included: buyers (engaged by 45 percent of the GEOs), local agro-dealers (33 percent), private sector extension service providers (7 percent), and input suppliers (5 percent). MSMEs benefited from training, capacity building, and innovation tech funds. There are opportunities for Tanzanian horticultural goods in the export market as well. However, access to the larger international market will require improved standards and practices of sorting and grading and food safety according to the Food and Agriculture Organization of the United Nations (FAO). Partners are very satisfied with the MnM interventions to improve the volume of trade for horticulture produce. The activity reached over 100,000 farmers and helped link 22,621 of them to local markets.

Extension

MnM’s implementation of a market-led approach coupled with training using the boot camp model has been effective in imparting hands-on skills that led to improved competency, increased outreach to SHFs and higher productivity, better quality products, and profitability. The integration of private sector SMEs like input suppliers, FIs, and traders enabled MnM to scale up its interventions. Participation of women and youth in MnM activities was also enhanced through engagement with extension officers. Youth MSMEs and farmers have engaged with traders in providing services like distribution of inputs, aggregation, sorting, and transportation of produce to nearby markets, while a high proportion of women are engaged in the production and marketing of horticulture produce in local markets. The involvement of LGAs and GEOs has been crucial for institutionalizing practices at the local level; however, engagement at the central government level is needed for greater ownership of the program, higher-level institutionalization, and budget allocation for these activities to be sustained by the GOT.

Finance

SHF and SMEs have limited access to finance. Over 80 percent of SHFs use capital or borrow from family or friends. A small proportion borrow from MFIs like SACCOS, Agricultural Marketing Cooperative Society (AMCOS), and Village Community Banking (VICOBA); however, a very low proportion have access to commercial banking system due to collateral requirements and high interest rates. Tripartite agreements between input suppliers, agro-dealers, and banks/FIs helped to increase access to pre-financed inputs that increased investment in HVC. Despite these efforts, access to finance is still limited for the majority of beneficiaries, this is particularly acute for women and young women who have less access to financing than their male counterparts.

COVID-19 and Other Shocks to the Food System

COVID-19 had impacts throughout the HVC and affected MnM's outputs. In addition to COVID-19, ongoing supply chain shortages, rising global food prices, and the cost of basic farm inputs of nitrogen-based fertilizer and agrochemicals derived from petroleum have compounded the pandemic's effects. As the availability of needed inputs becomes more constrained and costly, long-term effects could be seen in soil quality, crop yields, and, ultimately, shortages and higher prices of horticultural goods.

Nutrition

MnM has helped to change beneficiaries' attitudes on nutrition which is evidenced by the increased uptake of nutritious foods and improved dietary diversity among women of reproductive age and children under five. Among the farmer population at large, the number of meals per day has increased. Partnerships in nutrition has increased the MnM nutrition grantees' capacity and the sustainability of their work. Engagement of women and youth through GEOs increased the number of farmers producing NRCs.

Collaboration and Coordination

MnM has worked hard to establish collaboration with a large number of organizations in the public and private sectors, and civil society and non-governmental organizations. These partnerships have strengthened MnM's outreach to stakeholders, steering them to MnM core training activities in production, marketing, business, and community health. Input suppliers were the partners with the most success.

IPs said that their relationships were good, which helped to address issues in implementation early before they became a problem. For example, when MnM felt that women and youth participation was lagging, AY's work helped to direct more women and youth into MnM's horticultural training, boot camps, and judging panels. Youth from the farmers' survey indicated they appreciated these short trainings.

MnM had several active partners who provided important complementary efforts and impacts. For example, subgrantee TAHA conducted studies and policy analysis which contributed to policies that have improved market access and trade in horticulture products in Tanzania.

The issue of marginalization of women and youth requires coordination and cooperation among IPs and other supporting groups. MnM works closely with various groups to address these challenges providing capacity building to projects like Rikolto – Mbozi, Ileje, and Isangati Consortium (MIICO), a project implemented by Rikolto in conjunction with Mbozi ADP, Integrated Rural Development Organization (IRDO), and Isangati Agricultural Development Organization. They have agreed to collaborate with MnM to successfully engage women and youth in the HVC.

Partnerships

The creation of private sector partnerships by MnM is a strong component of the activities and may contribute to sustainability after MnM closes. Private sector partnerships helped to increase MnM's reach in the ZOI, achieve its objectives, and improve sustainability in the horticulture sector. MnM helped to develop the capacity of these partners. In turn, partners provided an array of products and services to

producers and businesses throughout the HVC. MnM partners said they have been able to realize the importance of working with GEOs in ensuring sustainability and creating critical mass for offering training as well as selling partner products and technologies.

RECOMMENDATIONS

SMALLHOLDER FARMERS' PRODUCTION, PRODUCTIVITY AND PROFITABILITY

Recommendation 1: To address the issue of low adoption of advanced technologies (e.g., chemical application, etc.) and to foster improved resilience to shocks, USAID/Tanzania or the follow-on activity should consider technical assistance and support for the use of locally available, financially and environmentally sustainable technologies for fertilizer, pest control, and irrigation. USAID/Tanzania also should support the GOT to promote and scale-up climate-smart villages (CSVs). These CSVs would be established using participatory appreciative inquiry methods that promote the inclusion of women and youth in decision-making. CSVs exist in Tanzania and can be used as models. CSVs could be encouraged to use climate-smart practices and sustainable alternative on farm technologies.

YOUTH AND GENDER

Recommendation 2: USAID/Tanzania should further engage CSOs to effectively mobilize and engage youth in the horticulture industry. Projects such as AY strongly support MnM in making youth aware of the importance of establishing market linkages and encouraging youth to become entrepreneurs. There should be recognition that the needs of youth extend over longer periods with individual mentoring by experienced MSMEs and producers to enhance learning and access to business networks. Other technical assistance activities can provide training on particular horticulture growth needs such as improved grading and quality standards, food product processing, and marketing.

This should include exchange visits between emerging commercial horticulture areas (ECHAs) in the ZOI to more advanced commercial horticulture areas (ACHAs). These exchange visits would link businesses, especially for producers and firms operating in the HVC.

SMALL AND MEDIUM-SIZE ENTERPRISES

Recommendation 3: USAID/TZ should advocate for the GOT and regional authorities to reduce the road stoppages on major transport corridors for agricultural products. USAID/Tanzania, through organizations like TAHA, can work with the SAGCOT Center to address these problems on internal corridors and at export gateways. The GOT can set conditions for travel with no stops between major urban hubs in the ZOI.

Recommendation 4: USAID/Tanzania should fund regional research institutes at universities in the ZOI to support product development for processed fruits and vegetables. This should include aspects of quality control and food safety. Further support could be provided to university and agriculture vocation schools to develop entrepreneur centers for business incubators targeting women and youth and training hubs for young entrepreneurs in food product processing and marketing.

Recommendation 5: USAID/Tanzania should advance export market development by conducting market studies to establish opportunities for horticulture exports to East Africa, and other international markets. USAID technical support should further enhance the ability of farmers and food distributors to meet international standards for expanding access to export markets.

EXTENSION

Recommendation 6: USAID/Tanzania should continue promoting a market-led approach that engages and supports the agricultural extension and its efforts to share horticultural practices with farmers and enhances the quality of products and link farmers to markets.

Recommendation 7: USAID-supported programs, like MnM, should engage the central government from the beginning of implementation and regularly share progress reports. This would help to align program activities with national strategies; and programs' contributions towards achieving national goals would be more effectively captured in GOT reports. Greater central government engagement in implementation, planning, and succession planning will ensure ownership and improve financial and institutional sustainability of these activities.

FINANCE

Recommendation 8: USAID should work with the GOT and with FIs to reduce the cost of loans to farmers in the horticulture sector. Alternative solutions need to be explored to provide loans that have reasonable terms and conditions and that are lower than the prohibitively high-interest rates available from those offered at commercial banks. This could include working with national banks, FINCA, SACCOs, and/or MFIs to provide credit guarantees and support the process of acquiring loans to support horticulture farmers. Supporting access to finance through savings groups or VICOBA for farmers to meet conditions and loan terms in groups should be continued. USAID/Tanzania and the GOT should investigate capacity development incentives for tripartite financing arrangements involving FIs, input suppliers/agro-dealers, and farmers to profitably serve SMEs. This will increase local access to finance and the introduction of appropriate agro-inputs to farmers and processing, technologies that can be effectively marketed.

COVID-19 AND OTHER SHOCKS TO THE FOOD SYSTEM

Recommendation 9: Continue to implement flexible contract mechanisms for follow-on projects to address future shocks in global food prices, rising input prices, and environmental shocks from droughts and flood. Flexible contracting should include expected deliverables, time frame to be completed, and budgeting, as it did for MnM and partners because of COVID-19.

Recommendation 10: USAID/Tanzania should work with the GOT, other international organizations, non-governmental organizations (NGOs), and the private sector to prevent disruptions to the food system seen during the pandemic or other shocks to the food system. This will require close coordination with neighboring countries to ensure that borders remain open and trade flows are not disrupted for agricultural commodities. This, combined with efforts to elevate food standards and safety, will allow Tanzania to play a role, not only in its own food security but also in addressing acute food shortages in the region and the rest of the continent.

NUTRITION

Recommendation 11: USAID/Tanzania should continue efforts to encourage production of NRCs (e.g., OFSP) and provide training for better health outcomes at home, in markets, and with processing companies. These products are easy to grow—unlike tomatoes and other high-cost fruits and vegetables.

Recommendation 12: Promote the reduction of losses through increased food preservation through solar drying of fruits and vegetables. These foods can be targeted at pregnant women and children under five years of age to improve dietary diversity and overall nutrition. Support entrepreneurs using the market-facilitation approach; and engage public, private, and community partners.

COOPERATION AND COORDINATION AMONG IMPLEMENTING PARTNERS

Recommendation 13: In the follow-on project, USAID/Tanzania should support the implementation of the Collaborating, Learning, and Adapting (CLA) Framework. This framework involves active planning and processes; supports the smooth flow of key information to help IPs become nimbler, knowledge-driven, and responsive to the evolving root challenges that programs and projects face; and scales up success stories to promote sustainability.

Recommendation 14: USAID/Tanzania should continue to provide timely information sharing with the national administration as it develops its new horticulture strategy and to work closely with national government agencies including the PO-RALG, MOA, and MOH to address budgetary issues for planning and investments in the horticulture industry. This consultation will help improve the coordination of information sharing from the national to regional- to district-level governments and raise the visibility of USAID's horticulture investments with the GOT and other implementing agencies.

PARTNERSHIPS

Recommendation 15: USAID/Tanzania can foster strong linkages with private sector industry organizations (e.g., TAHA) and incentivize them to use a market facilitation approach that addresses constraints in the supply chain and builds capacity to realize the impacts of the partnerships. Sub-contracts can be used to address immediate challenges caused by global shocks. Longer-term policy directives are important, but priority should be given to immediate issues like transport capacity for horticultural products.

I. EVALUATION PURPOSE & EVALUATION QUESTIONS

I.1 EVALUATION PURPOSE

This evaluation was conducted to understand Mboga na Matunda's (MnM) end of activity performance in relation to the activity's specific objectives as well as the challenges and constraints impinging on implementation, including the operating environment amid coronavirus disease 2019 (COVID-19) interruptions. The evaluation covers the period of activities from February 2017 to June 2022. Its purpose is to identify potential adaptations for ongoing programming and future horticulture designs following the market systems approach. It will also be used to capture the effects on youth beneficiaries' livelihoods, access to markets, and other changes to inform design under the 2020-2025 United States Agency for International Development Tanzania (USAID/TZ) Country Development Cooperation Strategy (CDCS).

The primary audience for the evaluation is the USAID Economic Growth (EG) team, the broader Mission, and its Implementing Partners (IPs). It is expected that the evaluation will also be used by other donors/development partners who may be designing and/or exploring interventions in horticulture activities in Tanzania. This evaluation will also be informative to USAID's private sector engagement team as it will evaluate aspects of MnM that worked closely with Tanzania's private sector, and, in some instances, helped private sector growth in Tanzania. The report may also be useful to the Government of Tanzania (GOT) Ministry of Agriculture (MOA) in revising its horticulture development strategy and future horticulture programming in the Southern Agricultural Growth Corridor of Tanzania (SAGCOT) and other parts of the country.

I.2 EVALUATION QUESTIONS

Within this context, the evaluation answered the following questions:

1. To what extent were MnM's interventions aimed at improving knowledge and accessibility of technology, practices, and market-based approach successful at achieving the objectives of the activity? How has this impacted the livelihoods of youth aged 15-35? Will improved input supply businesses, agro-dealers, and lead farmers services be sustainable?
2. How did the activity's engagement with the GOT's enhanced extension system contribute to the sustainability of results and interventions? How, if at all, have practices from the program been institutionalized in the GOT extension system? How has this enhanced small and medium enterprises (SMEs) in the agriculture sector?
3. How did the activity's approach to making finance more accessible support performance? How sustainable were/are these interventions? How did COVID-19 interruptions to businesses and value chains affect performance and sustainability? What approaches need to be adjusted moving forward to adapt to ongoing challenges?
4. To what extent did the MnM program effect nutrition outcomes and the health of women and children? How have attitudes on nutrition and uptake of nutritious foods changed as a result of the program? How can private sector nutrition intervention be enhanced? How will the MnM nutrition grantees work and capacity gained be sustainable?
5. How effectively has MnM collaborated with other USAID teams and other agriculture and economic growth activities to add value across their interventions? What areas of collaboration or coordination need to be strengthened?
6. What was the effectiveness of Partnerships with different private sectors including access to products and services?⁹

⁹ The full list of questions and sub-questions are found in Annex I.

2. PROJECT BACKGROUND

2.1 PROBLEM STATEMENT FOR HORTICULTURE CONTEXT

With roughly 70 percent of Tanzania's population working as smallholder farmers (SHFs), development of the agricultural sector is critical to improve opportunity and income generation for the largest segment of the population. However, SHFs face a number of challenges to achieve this success. Particularly vulnerable groups include women and youth, who face challenges in accessing productive land, finance to purchase improved inputs, and domestic and regional markets. These challenges limit their ability to make decisions and advance economically and socially. Women and youth also face challenges in adequate nutrition for their households which requires greater inclusion of horticulture products in the diets of both mothers and their children.

SHFs face several challenges. The horticulture market systems are disorganized and inefficient; and there is low productivity among SHFs, with limited production and product diversification. Access to information is limited as well with public sector agricultural extension support unable to effectively transfer basic business skills or improved technologies to farmers.¹⁰

Food systems in Tanzania are under stress. Thirty-one (31) percent of the under-five population are stunted and 3.5 percent of children under five suffer wasting.¹¹ There are also micronutrient deficiencies. Conversely, a growing section of the population struggles with obesity and related cardiovascular and degenerative diseases. There is a need for applied action in support of multi-sectoral, community-based strategies linking rural producers and urban consumers, subsistence and market economies, and traditional and modern food systems. Diversifying horticulture crops offers an opportunity for improved dietary diversity to enable positive health and nutrition outcomes.¹²

2.2 DEVELOPMENT HYPOTHESIS

The MnM strategy is to assist SHFs through the introduction of production-increasing technologies in horticulture and support the growth in consumer demand for labor intensive horticulture products. Horticulture is a sector of the economy with a higher employment multiplier which will reduce poverty faster and improve household nutrition. Horticulture offers SHFs the opportunity to intensively cultivate small parcels of land, which results in increases in labor and land productivity and in higher employment. Horticulture products offer opportunities for value addition and increases in short-term income for producers faster than grain crops.¹³

The logic for MnM activities is that, by introducing improved production horticulture practices, producers will be able to have adequate nutritious foods for their families' well-being. Nutritionally valuable foods can contribute to better livelihoods. If increased supply of these products creates opportunities for commercial sales, increasing money to further improve and invest in their households, improves access to markets, and increases the capacity of all stakeholders in the horticulture sector, then livelihoods will be improved and households will be resilient against shocks, such as weather events, pandemics, or market failures.

2.3 PURPOSE AND APPROACH

The purpose of the Feed the Future Tanzania (FTFT) MnM activity is to make the horticulture subsector more competitive and inclusive while improving the nutritional status of Tanzanians by:

- Scaling improved technologies and practices that lead to increased productivity of smallholders, including large numbers of women and youth, in targeted commodities.
- Scaling market system models able to reach large numbers of direct and indirect beneficiaries,

¹⁰ FTF Fact Sheet Nov 2020.

¹¹ 2021 Global Nutrition Report

¹² Timothy Johns et al. (2006). "Linking biodiversity, diet and health in policy and practices," Proceedings of Nutrition Society, pp. 182-189.

including vulnerable populations, while increasing trade for targeted commodities.

- Strengthening the overall capacity of the horticulture industry.¹⁴

To foster the sustainable competitiveness of the horticulture sector, MnM works with over 2,500 micro, small, and medium enterprises (MSMEs), over 200 Government Extension Officers (GEOs), and 22 local partners to increase SHF productivity and profitability throughout the horticulture sector market system.¹⁵

MnM uses a market systems approach to deliver good agricultural practices (GAPs), improved business skills, basic technologies, and nutrition education to over 700,000 beneficiaries. Interventions encourage the adoption of innovations at the farm level, and efficient business models at the market level, to create a broad-based distribution of benefits. In addition, MnM uses socially inclusive strategies to increase and benefit women and youth participation in the horticulture subsector; it includes strategies that facilitate easy access to land, financial services, and market information to generate income for rural households and diversify production of nutritious crops.¹⁶

¹⁴ MnM Fact Sheet, November 2020

¹⁵ FTFT-MnM. (2020). FTFT.

¹⁶ MnM. (2020). FTF Fact Sheet. November.

3. EVALUATION METHODS AND LIMITATIONS

Due to the breadth of the project and the number of beneficiaries, the evaluation team used a mixed-methods approach, including surveys, key informant interviews (KIs), review of performance monitoring and secondary data, and document review, to answer the evaluation questions. The team designed KI guides tailored to specific stakeholder groups and three survey questionnaires (for farmers/beneficiaries, SMEs, and GEOs). Due to COVID-19 safety protocol, the evaluation team conducted data collection activities remotely, with a few exceptions. Surveys were conducted using Computer-Assisted Telephone Interviewing (CATI) while KIs were conducted via Zoom conference calls. The team conducted in-person KIs with Government stakeholders in Dodoma and Zanzibar. When traveling to these two locations, the evaluation team also took the opportunity to interview farmers and SMEs.

3.1 DESK REVIEW AND REVIEW OF PROGRAM PERFORMANCE DATA

The desk review included a review of annual and quarterly reports, other program documents, and existing literature on horticulture, livelihoods, and nutrition in Tanzania. This informed the evaluation team's understanding the performance of the program and the context and environmental factors contributing to livelihood and market access in Tanzania. MnM had its baseline at start-up in 2017 but with the USAID transition to the Global Food Security Strategy (GFSS) in 2018, with some indicator changes, a supplementary MnM baseline was necessary in 2018. The team reviewed a total of 34 documents including the 2018 baseline, monitoring and evaluation (M&E) plan, annual reports, the program M&E plan, newsletters, fact sheets, and other program documents available on the Development Experience Clearinghouse (DEC). The evaluation team also received performance data going back to the start of the program in 2017 to the end of Fiscal Year (FY) 2021 which have been used to present trend analysis and visualizations of the program's performance.

3.2 KEY INFORMANT INTERVIEWS AND/OR GROUP INTERVIEWS

The evaluation team conducted a total of 34 KIs both at the national and district levels across the six regions/activity sites interviewing a total of 36 KI participants (13 females and 23 males). This included interviews with the MnM IPs, the USAID/Tanzania Mission, other USAID IPs, civil society organizations (CSOs), SMEs, and the GOT, including Central Government stakeholders at the Ministry level and a sub-sample of GEOs who have worked closely with the program at the district level to provide community technical assistance and other services. Table 2 provides a summary of KIs and group interviews (GIs) conducted across activity sites and stakeholder groups.

Table 2: Number of KIs Conducted by Region and Stakeholder Group

	National	Morogoro	Mbeya	Iringa	Songwe	Zanzibar	Total
USAID Staff	2						2
GOT and Revolutionary Government of Zanzibar (RGOZ) Officials	3					1	4
MnM Activity Staff	1						1
MnM Partners	2						2
GEOs (Regional and District)		3	1	1	2	1	8
Input Partners		1	1	2			4
Nutrition Partners			1	1			2
Distributors (Agro-dealers)			1			1	2
Processors (rural and urban Districts)		1	1	1		1	4
Local Financial Institutions	1		1	1			3

	National	Morogoro	Mbeya	Iringa	Songwe	Zanzibar	Total
Buyers/Traders	1					1	2

Source: MnM Evaluation Team, 2022

3.3 SURVEYS

The evaluation team conducted CATI surveys with stakeholders across the horticulture value chain (HVC) including farmers/producers, MSMEs (distributors, transporters, buyers and resellers, processors, and other SMEs), and GEOs. The survey questionnaires were semi-structured, including both pre-coded/closed-ended questions and open-ended questions. The surveys gathered information on participants' demographics, income sources and asset ownership, extension training and technologies learned through MnM and adoption rates, access to financial services, employment, crops cultivated, and yields, COVID-19 impacts on business and household food security, and recommendations for future programming.

All survey instruments were programmed into Data for Development's ARCGIS-enabled Survey123 platform for administration in all six activity sites. The survey interview time in telephonic mode ranged between 1 hour to 1.5 hours. Data for Development trained a team of 32 enumerators (seven male and 25 female) with a sub-contracted firm to support the data collection activity. The surveys commenced on February 17, 2022 and continued through April 14, 2022. A total of 1,631 farmers, 733 MSMEs, and 284 GEOs responded to the Survey.

3.3.1 Sample Design, Sample Size Calculation, and Respondents Reached

The sampling of farmers and SMEs used a stratified random sampling strategy across the six target regions/sites in Mainland and Zanzibar, while the GEO Survey was based on a random sample of officers out of the total population of GEO participants. The initial sample was designed to achieve a 95 percent Confidence Level (CL) and 5 percent margin of error across the sites for all surveys. This target was reached for all sites for the GEO survey but not for the farmer and SME surveys due to issues with the quality of the contact database. The evaluation team thus revised the targets for the latter two surveys to a 90 percent CL and 5 percent margin of error per site/strata (see Table 3 and Table 4 below). Since the interviews were telephonic, the evaluation team selected respondents only from MnM participants with contact information.

i. Farmers/Beneficiaries

The initial sample of 2,246 (95 percent CL, 5 percent margin of error) was revised downward due to challenges with the contact information such as invalid contact information, numbers not being reachable, and wrong telephone numbers, etc. The evaluation team was able to reach 1,631 respondents for all activity sites, for a 90 percent CL and 5 percent margin of error for results by strata) and 2 percent for aggregated results (Table 3).

Table 3: Stratified Sample of Farmers/Producers and Achieved

Region/Site	All Beneficiaries	Sampled Beneficiaries, 95% CL	Revised Target, 90% CL	Achieved Responses (n)	Margin of Error for the Achieved Sample, % ¹⁷
Iringa	66,802	382	270	265	5.06
Mbeya	35,108	380	269	266	5.05
Morogoro	25,124	379	268	261	5.08
Njombe		N/A	N/A	4	N/A
Songwe	15,243	375	266	285	4.84
Other Region (Outside ZOI)*	N/A	N/A	N/A	25	N/A
Mainland Total	142,277	1,516	1,073	1,106	2.47
Pemba	4,863	357	257	259	4.99
Unguja	12,115	373	265	266	5.0

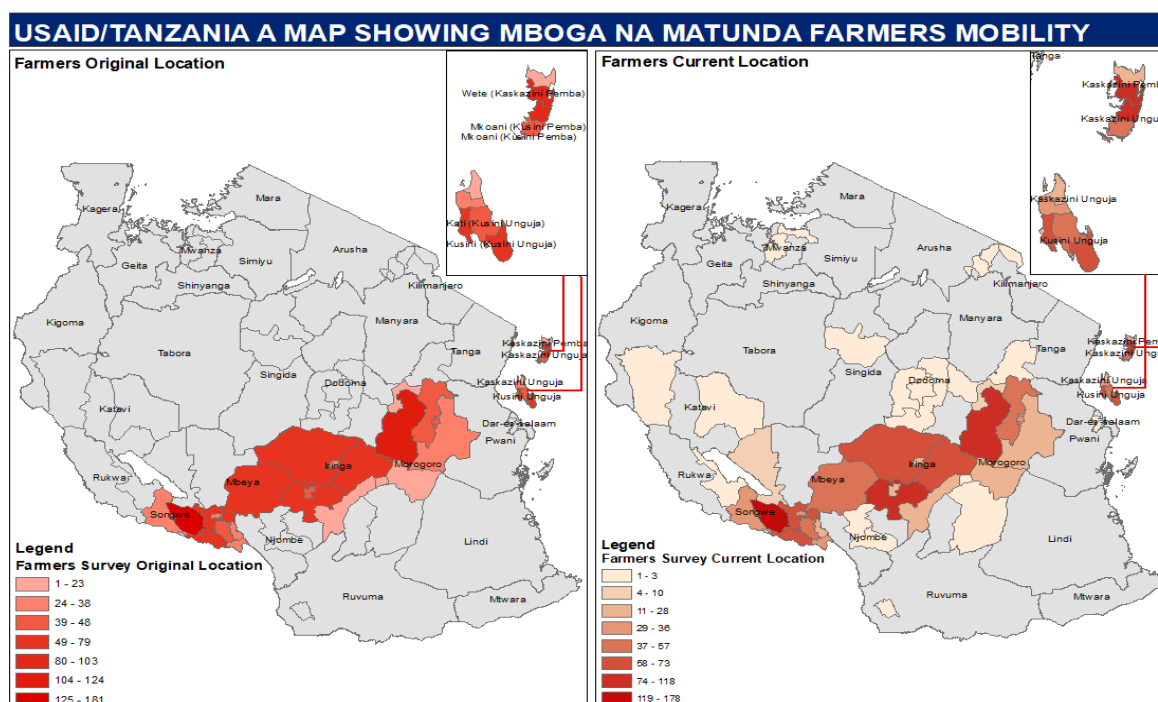
¹⁷ Assumes a population proportion of 50 percent.

Region/Site	All Beneficiaries	Sampled Beneficiaries, 95% CL	Revised Target, 90% CL	Achieved Responses (n)	Margin of Error for the Achieved Sample, % ¹⁷
Zanzibar Total	16,978	730	522	525	3.54
All farmers	159,255	2,246	1,595	1,631	2.03

*Participants were living outside the MnM Zone of Influence (ZOI) regions: Arusha (3); Dar es Salaam (2); Dodoma (7); Katavi (3); Kilimanjaro (2); Mwanza (2); Rukwa (2); Ruvuma (1); Singida (1); Tanga (2).

During the survey, the team found that some of the respondents had relocated away from their initial Zone of Influence (ZOI) districts and/or regions. In total, 296 farmer survey respondents (18 percent) no longer lived in the same districts, based on participant information provided by MnM, while 25 (1.5 percent) were living outside the MnM ZOI regions.

Figure 1: Map for Farmers Location vs. Sampled Farmers



ii. SMEs/Producers

The evaluation team's initial target was to reach 1,210 respondents out of the total 3,252 MSMEs across the activity sites, using stratification by site/region. Similar to the farmer/beneficiary survey, the sample sizes were revised downwards to achieve a 90 percent CL and 5 percent margin of error due to invalid or unreachable contacts in the list provided to the evaluation team. In total, the farmer survey achieved 733 responses for a 90 percent CL and 5 percent margin of error (Iringa and Mbeya). Significant shortfalls in responses were experienced in Morogoro, Songwe, and Zanzibar (both Pemba and Unguja). Table 4 and Figure 2 below show the stratified sample of SMEs and achieved responses.

Figure 2: Map for SME Location vs. Sampled SMEs

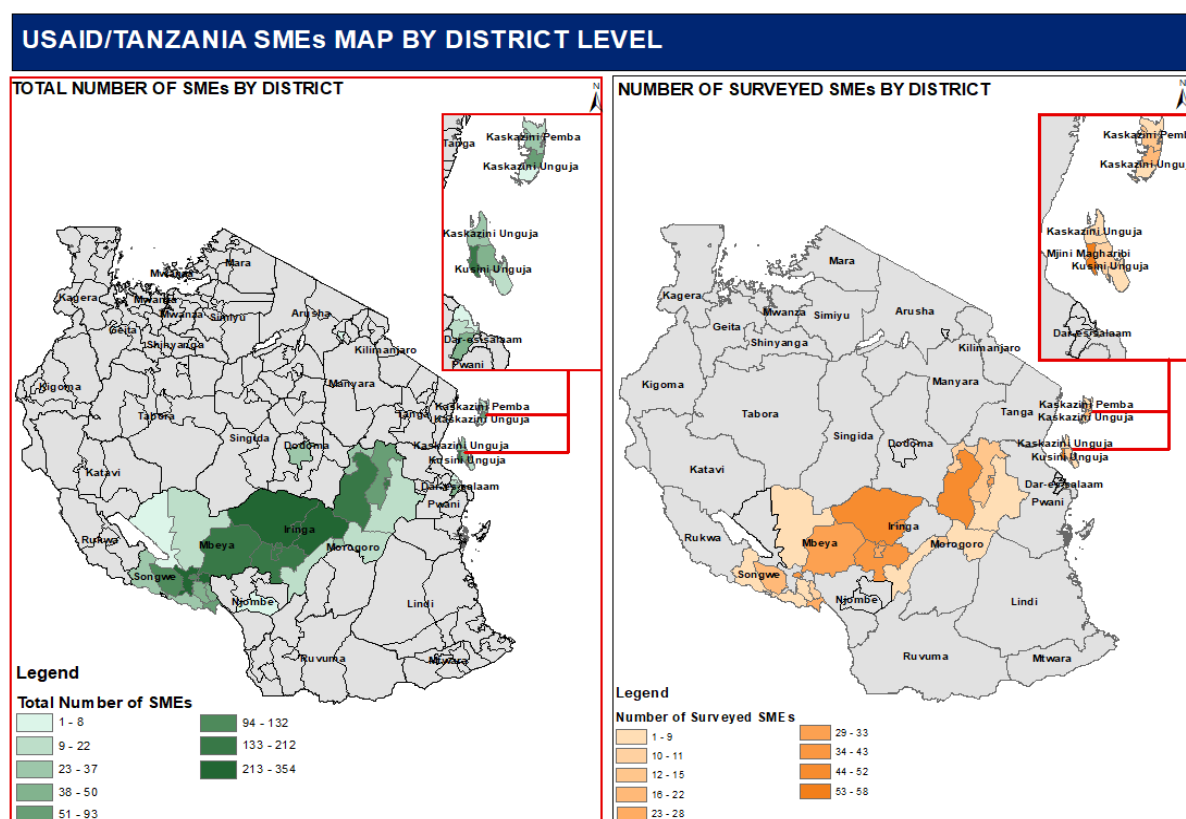
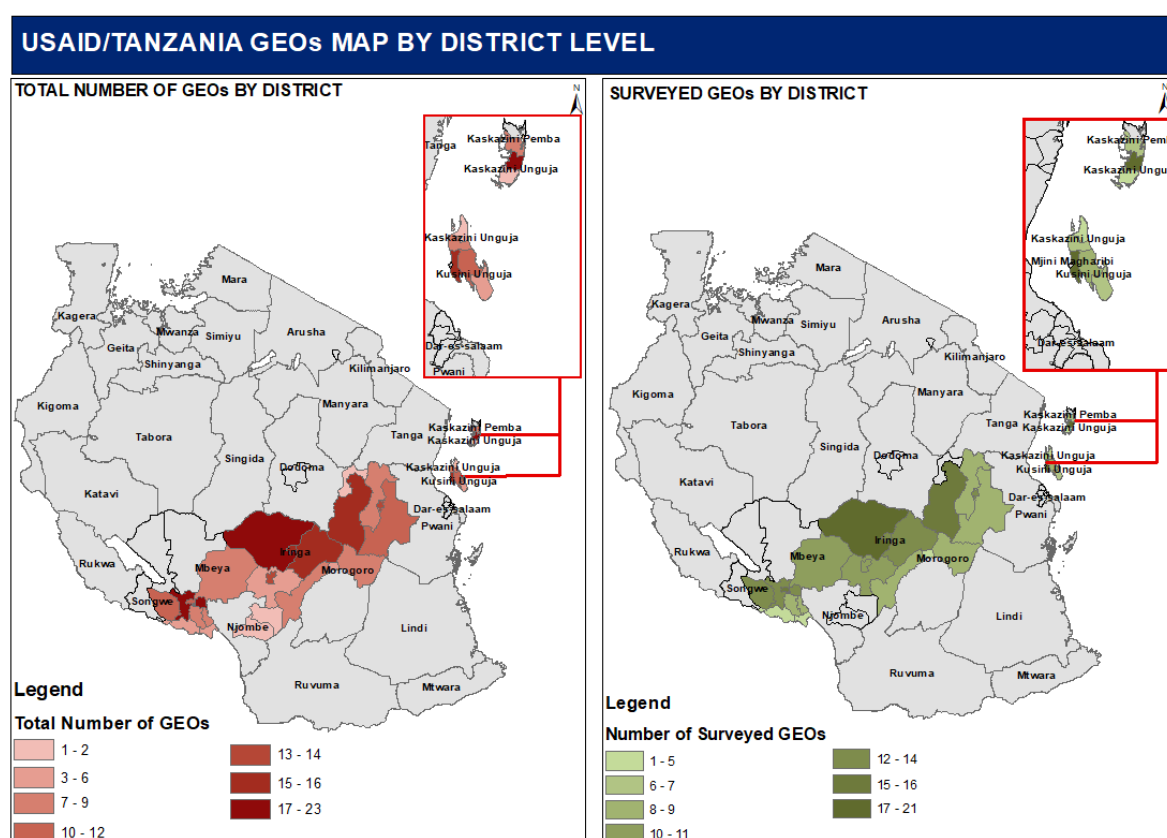


Table 4: Stratified Sample of SMEs and Achieved Responses

Region/Site	Total SMEs	Sampled SMEs, 95% CL	Revised Target, 90%CL	Achieved Responses (n)	Margin of Error for Achieved Sample, %
Iringa	1,239	294	223	226	4.96
Mbeya	709	250	197	196	5.02
Morogoro	522	222	179	130	6.28
Songwe	212	137	120	31	13.72
Mainland Total	2,682	903	719	583	3.02
Pemba	140	103	93	46	10
Unguja	430	204	167	104	7.05
Zanzibar Total	570	307	260	150	5.79
All SMEs	3,252	1,210	979	733	2.68

Source: MnM Evaluation, 2022

Figure 3: Map for GEOs' Location vs. Sampled GEOs



Source: MnM Evaluation, 2022

iii. Government Extension Officers

The evaluation team conducted CATI surveys with the aim of collecting 280 GEO surveys, out of 1,024 overall GEOs who received training of some kind from MnM. The team sampled 280 participants for a 95 percent CL and a 5 percent margin of error. Selection of participants for the interviews from the MnM regions was done through a simple random sampling approach. Table 5 and Figure 1 show the target number of respondents and total reached across MnM activity sites.

Table 5: Simple Random Sample of GEOs and Achieved Responses

Region/Location	Number of Participants	Sampled	Achieved Response, (n)	Achieved Responses, % of Target
Iringa	271	70	69	98.6
Mbeya	217	62	61	98.4
Morogoro	230	58	60	103.4
Njombe	7	3	0	0.0
Songwe	43	16	17	106.3
Zanzibar – Unguja	157	32	41	128.1
Zanzibar – Pemba	99	39	34	87.2
Regions outside MnM ZOI*	N/A	N/A	2	N/A
Grand Total	1,024	280	284	101.4

*Participant was residing outside MnM ZOI at the time of the survey (Shinyanga and Dodoma).

Source: MnM Evaluation, 2022

3.3.2 Respondent Replacement Protocol

Where selected respondents could not be reached, the evaluation team used a replacement protocol to obtain an alternative respondent to fill the quota. Replacements could be made for such reasons as the contact information being invalid, respondent refusing, respondent not being reachable after three

attempts within a 48-hour period, selected respondents indicating they did not participate in the program, or respondents choosing to discontinue the survey prematurely. To avoid selection bias, evaluation team made replacements with gender matched participants from within the same regions and districts. Where candidates meeting the gender quota were not available in the district after exhaustion of contact lists, replacements were permitted for the same gender quota in the same region. (The Replacement Protocol is included in Annex 3.4)

3.3.3 Qualitative and Quantitative Analysis

Survey Analysis: The evaluation team analyzed the data using descriptive statistics through tabulations and cross-tabulations to disaggregate results by gender, location, and age group. The team used quantitative methods to examine relationships between variables, mainly for gender and age group (isolating youth), on various questions covered by the survey. In some instances, the team used inferential statistics such as chi square to analyze statistical differences between male and female (e.g., for technology adoption and other variables). To formulate findings, the evaluation team triangulated quantitative results across surveys with those from the other two surveys and with qualitative results from KIs/GIs.

Qualitative Analysis: The evaluation team conducted qualitative content analysis using a code frame and analytic software. Qualitative Analysis was structured around themes related to the six evaluation questions and program objectives. The team mapped these themes to key excerpts in the text from KI transcripts and documents and triangulated them across sources and with quantitative data from the surveys and performance monitoring data obtained from the program.

The evaluation team analyzed interviews using Dedoose software and a structured coding frame to capture recurring themes, examples, and key quotes. Exports of content by theme were used to capture the most salient themes, their stakeholder groups, and other demographics.

3.4 EVALUATION LIMITATIONS

The quality of the contacts database proved to be the main challenge that the team faced in administration of the surveys. A significant proportion of sampled respondents could not be reached due to invalid contact information, and others had to be excluded as they indicated that they did not participate in the program (or due to lack of recall or recognition of the activity). This led to substantial use of backup respondents and much higher respondent replacement rates than anticipated: 75 percent replacement rate for the farmer survey, 44 percent for the SME survey, and 44 percent for the GEO survey. This had significant implications on the timeline as survey data collection (7 weeks) lasted much longer than initially planned. To mitigate the effects on statistical significance, the evaluation team went to great lengths to reach the highest response possible through extensive replacement of the sample while matching respondent demographics. Despite these efforts, given the data quality, after exhausting all potential replacements the SME survey did not reach the 90 percent CL threshold for Morogoro, Songwe, and Zanzibar (both Unguja and Pemba). Mitigation strategies did help to achieve the 90 percent CL target for the farmer and GEO surveys, however.

Table 6: Respondents Reached and Replacement Rates Across Surveys

	Number of Respondents (n)			Percent of Respondents (%)		
	Female	Male	Total	Female	Male	Total
Farmer survey						
Primary	124	291	415	25.4	25.5	25.4
Replacement	365	851	1216	74.6	74.5	74.6
Total	489	1,142	1,631	100	100	100
SME survey						
Primary	157	251	408	59.7	53.4	55.7
Replacement	106	219	325	40.3	46.6	44.3
Total	263	470	733	100	100	100
GEO survey						
Primary	50	108	158	49.5	59.0	55.6
Replacement	51	75	126	50.5	41.0	44.4
Total	101	183	284	100	100	100

Source: MnM evaluation, 2022

There were more men than women among the beneficiary population surveyed (45.1 percent female vs. 54.9 percent male). Women, and particularly young women, had less access to phones than their male counterparts (in both the SME and farmer surveys). While the team tried to mitigate this through gender and location matched replacement when participants were not reachable, the surveys ultimately closed with significantly more male than female respondents. For example, in the farmer survey 69.7 percent (1,147) were male vs. 30.3 percent (498) female. Overall, a 90 percent ci and 5 percent margin of error were preserved in the aggregate and by simple disaggregation by gender; however, the evaluation team was not able to disaggregate both by location and gender without increasing the margin of error above the threshold.

4. FINDINGS

4.1 PRODUCTION AND PROFITABILITY¹⁸

4.1.1 To what extent were MnM's interventions aimed at improving technology and practices and market-based approach successful at achieving the objectives of the activity?

Design and implementation of interventions to achieve impact

MnM prepared and implemented a sound methodology at the beginning of the project. They conducted a survey of the different agro-ecological conditions in Morogoro, Iringa, Mbeya, Songwe, and Zanzibar (see Annex 3.4) to identify entry points for interventions. Because the growing conditions were the same throughout Zanzibar, the MnM team focused on farmer clusters there. These initial efforts to gather and process the data with staff and other specialists in the region effectively achieved the objectives of the activity.

"In subsequent years, the expansion areas were determined based on where the horticulture sector was showing higher growth rates, and larger groups of farmer engagement. So, expansion areas were just growing organically as the project expanded its interventions." (KII03, IP)

Technological packages for selected areas to achieve higher production and profits

MnM identified technologies based on cost, likelihood of adoption, and whether they would result in higher productivity and higher gross margins. The MnM approach created three levels of adoption: basic, intermediate, and advanced. The basic package contains low or no cost technologies, that do not require specialized knowledge, and that are easily available in most villages. Examples include proper site selection considerations, plant spacing, raised beds, weed control (by hand), crop destruction (uprooting) after harvest, and crop rotation. The intermediate package contains the basic package technologies, plus some higher-level technologies such as hybrid seeds, seedling trays, and trellising twine. The advanced package adds soluble fertilizers and drip irrigation to the intermediate package. Producers who adopted fewer technologies than the basic package were not considered to be at a level that would achieve increased yields and gross profits. Using the sales and purchase of horticulture produce by MSMEs, MnM calculated the number of producers applying technology. MnM estimated 874,463 producers applied technologies. There were 112,336 direct MnM beneficiaries and 762,147 indirect farmers. The data for women and youth adopting technologies was disaggregated from the direct beneficiaries and then applied to the indirect beneficiaries to estimate the number applying different packages.

Table 7: MnM Stakeholders Who Adopted Different Levels of Good Agricultural Practices

Year	Less than the Basic Package [I]	Basic	Intermediate	Advanced
2018-2019	48%	46%	3%	3%
2019-2020	38%	48%	10%	4%
2020-2021	10%	24%	62%	4%

Source: MnM Data from Annual Reports

MnM identified agricultural technologies based on their cost and likelihood of adoption. These basic, intermediate, and advanced packages¹⁹ were designed to improve productivity and gross profit margins and to ensure the inclusion of women and youth participants. There were significant shifts in technology adoption over the life of the project. The number of SHFs who employed less than the

¹⁸ This Section 4.1 refers to Question 1 in the Statement of Work (SOW).

¹⁹ The basic package contains all those technologies that have low or no cost, do not require specialized knowledge, and that are easily available in most villages. Examples include proper site selection, plant spacing, raised beds, weed control, crop destruction (uprooting) after harvest, and crop rotation. Intermediate and advanced training includes drip irrigation, raised beds, use of hybrid seeds, applying fertilizers, application of herbicides, pesticides, food safety and quality standards, grading and sorting, and value addition techniques.

basic package declined from 48 percent in FY 2018 to 10 percent in FY 2020. By FY 2021, 62 percent of SHFs were implementing the intermediate package (Table 8). The number of advanced farmers did not change during the three-year period, most likely due to the cost of the technologies and/or a lack of access to financing.

Table 8: Adoption of Basic, Intermediate, and Advanced Packages by Gender and Youth

	All Farmers	Women	Men	Youth
Less than Basic	8,367			
Basic	27,368	8,478 (31%)	18,892 (69%)	7,008 (26%)
Intermediate	69,579	40,441 (58%)	29,138 (42%)	42,526 (61%)
Advanced	4,472	88 (2%)	4,386 (98%)	167 (4%)
Total	109,786 (101,419 adopters)	49,007 (48%)	52,416 (52%)	49,701 (49%)

Source: Data provided by the IP.

Despite efforts to include women and youth in training, gender imbalances persisted in the adoption of technologies. There was a significant gender difference in technology adoption with a statistically significantly higher percent of male adopters of the full package of technologies (71 percent) versus female adopters (60 percent).²⁰ More women and youth adopted the intermediate package (see Table 8 and Annex 6). This may be related to the persistent inequality in the availability of resources to women and their lack of decision-making power in household or business spending.

Adding to this picture, evidence suggests that those who adopted more advanced technologies experienced higher crop yields and sales. Average yield per hectare (ha) increased by 100 percent for producers with the intermediate package and by over 126 percent for the advanced producers. Value of sales for intermediate producers increased 77 percent compared to basic producers; however, advanced producers sales increased 285 percent to \$9,015/ha. Once producers reach a critical threshold of production, they are able to invest higher amounts in their farm operations. Once they see the yields from the use of advanced technologies such as fertilizers, they are convinced of higher gross margins and are willing to make the investment, ultimately leading to a higher return on investment.²¹

Table 9: Yield, Sales, and Investment Per Hectare Based on Adoption of Different Packages

Technology Packages	Average Yield (kg/ha)	Average Sales/Ha (USD)	Average Investment/Ha (USD)
Basic package	12,649	2,340	679
Intermediate package	24,584	4,014	1,163
Advanced package	28,593	9,015	1,700

Source: Data provided from IP (n=4,454 SHFs).

MnM provided training in horticultural best practices and techniques to farmers, GEOs, and SMEs with the aim of improving farmer productivity and profitability and improving the HVC. Specific training for farmers/producers included the use of agricultural seedling trays for producing seedlings. Annex 6 presents the list of technologies trained versus technology adopted by percentages of farmers.

MnM also promoted technologies such as drip irrigation (Annex 6). Adoption was low (less than 50 percent of farmers) due to high installation and material costs. Adoption of drip irrigation was significantly lower for women than men, perhaps due to their limited access to capital. MnM promoted fertilizer through field training and demonstration plots under extension officers and agronomists. Farmers saw the benefits of fertilizer but adoption has been slow due to cost issues. Other training

²⁰ The differences in the technology adoption rates between male and female are statistically significant. There are 11 more males per 100 in the full package adopters (71 percent) compared to the number of women per 100 (60 percent) in this category; and there are 13 more women per 100 in the basic package adopters (34 percent) compared to the number of men per 100 (21 percent).

²¹ Email correspondence from IPs.

packages included improved hybrid seeds, production of orange fleshed sweet potatoes (OFSP), collaborating with agro-dealers, and proper use of agrochemicals that increased productivity by approximately 90 percent (KII03, MnM staff; KII06, Input Partner; KII31, GEO). Agricultural officers followed up on farmer training. MnM promoted new and improved hybrid tomato and watermelon seeds and new production methods (KII30, GEO). MnM staff reflected on adoption of technologies.

“Yes, we have what we call ‘lead farmers’ who are respected within their community. They have a high level of knowledge in horticulture and experience in farming different crops and they also keep their doors open for their fellow farmers to go to their plots and they have been training their fellow farmers what they have learn through MnM. So, I would say we do have very strong village leaders in practically every village we work with who will continue show casing technologies and collaborate with their fellow farmers to keep the knowledge they have learnt and the practices that have been adopted. I believe that once they learned these practices once you go back the farm even no longer being assisted you find that the farmers continue to practice what they have learnt, so we are confident that there is a strong sustainability aspect.” (KII03, MnM staff)

Besides agricultural training, MnM capacitated farmers with horticultural crop processing, such as processing OFSP into flour, juices, and crisps, to prolong shelf life via enhanced value addition. In addition, MnM trained farmers in business management (Annex 6) to enable them to conduct horticulture as a business that can impact community livelihoods.

Along with business training, MnM provided marketing information, and techniques to help farmers meet marketing standards. The market-led approach included sorting, grading, and the use of plastic pallets to improve market presentation. MnM also taught farmers to use staking and trellising to improve the productivity and quality of their products. This was evident among tomato producers where these practices were necessary for ensuring optimal productivity.

“An example is when we first went to teach farmers on staking tomatoes. Few farmers showed up but now many farmers are practicing staking because they understand staking and trellising in tomatoes and are harvesting increased output. Farmers now know the better type of soil for tomato growing unlike before which was a strange thing, but MnM project has really helped and extension officers to amplify their competency.” (KII11, Input Distributer)

MnM used boot camps in capacitating GEOs to enhance their service provision to their clients. GEOs who have received MnM training are more informed of new technologies that can advance agriculture and the HVC. Qualitative information (KII38, GEO) indicates how GEOs have been transformed by MnM training.

“For those that have been given the ability, I’m 100 percent sure that they have the ability to do so. And even in our WhatsApp groups, they share different knowledge concerning fruits and vegetables. So, you clearly see that they are into more action compared to others.” (KII15, GEO)

Additionally, a GEO from Ileje District noted that “Experts also taught us how to detect the changes in the color of leaves. This year we plan to have horticulture demos after seeing what our colleagues have done in the field and we plan to incorporate this into our budget. We’ve done this because we acknowledge the changes brought upon by the project and we meet other farmers who are in the project.” (KII15, GEO)

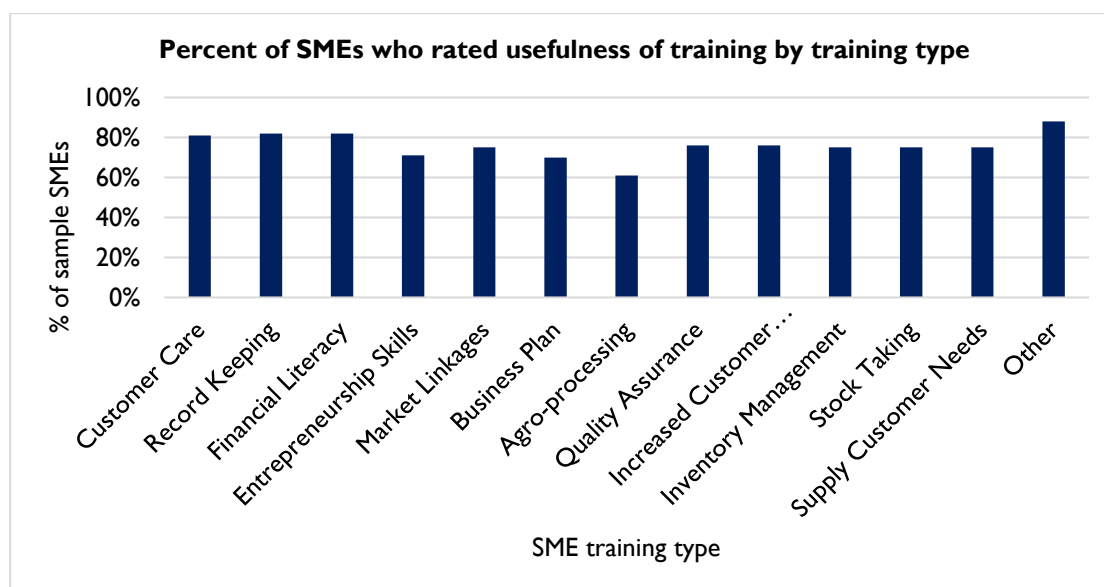
Training of SMEs

Training of SMEs included agro-processing skills for value addition, entrepreneurial skills, record keeping, market linkage, and increasing customer networks. Other training packages for SMEs are shown in Figure 4. The majority of respondents (more than 75 percent) rated the training package provided to SMEs as very useful as these were tailored to their needs and have helped to improve business operation compared to the situation before the intervention. This finding is also supported by qualitative KIIs with SMEs. As a food processor stated:

“I received training while MnM visited me; there was one officer who helped me on how to make the best products by adhering to correct measurements because I used to do it without [the] correct measurements needed to prevent the products getting spoiled. So, after I received the training, I am now able to make products that will last for a year without getting spoiled. Also, I did not keep my

records very well so MnM staff advised and gave me instructions and I got [a] record keeping system that is not too bad or too good but at least it gives me guidance.” (K1118, Food Processor)

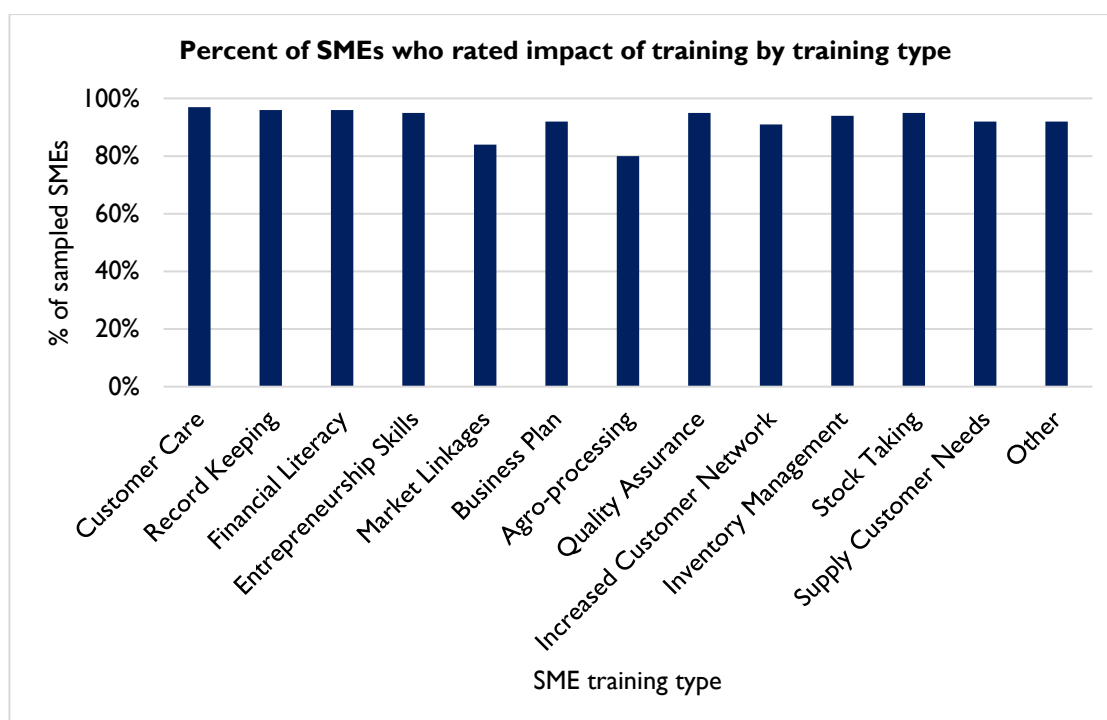
Figure 4: Rated Usefulness of Training



Source: MnM Farmer Survey

Training conducted by MnM has equally helped SMEs by equipping them with business skills. This has led some SMEs to apply practices and investments which have served to increase customers and expand the scale of their operations. Over 80 percent of SMEs interviewed on the impact of training have indicated that the training substantially impacted their business. However, procurement cost for agro-processing technologies is the challenge that slows down the rate of adoption for most SMEs. Agro-processing received a lower proportion of very useful ratings. This lower relevance is likely a result of the substantial amount of financial capital required to set up agro-processing compared to other technologies/practices that have lower start-up costs; thus agro-processing is a more difficult investment to make.

Figure 5: Training for SMEs Rated as Substantially Impactful to Business



Source: MnM Farmer Survey

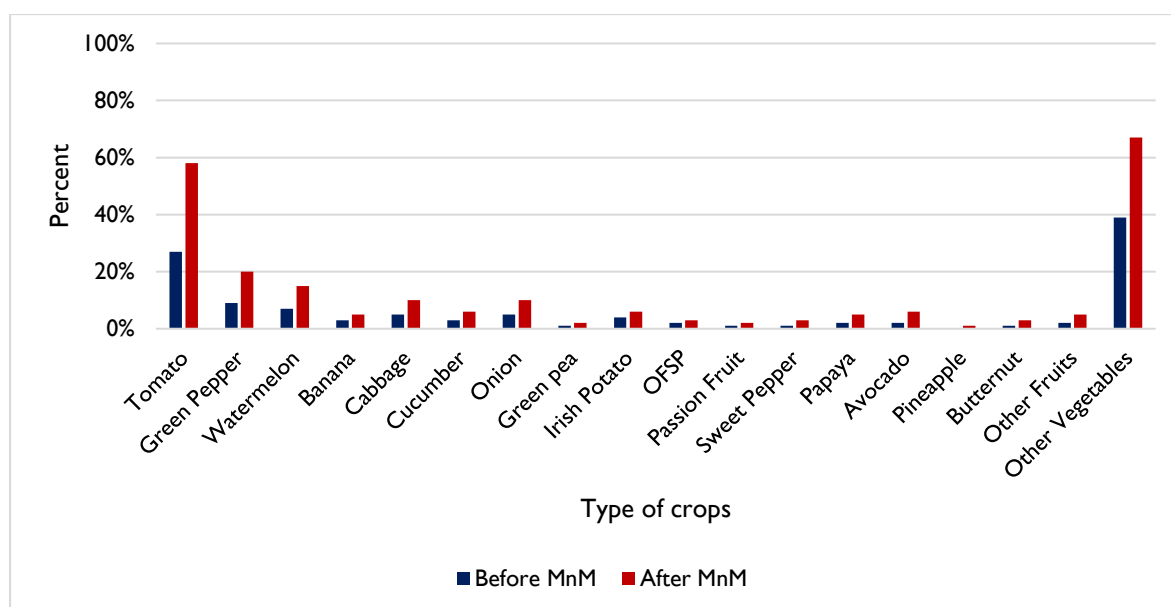
MnM introduced seedling trays to reduce the loss of seeds and seedlings. This has enabled seedlings to be potted with a minimum of root damage. Seedling trays have also made sowing, handling, and planting seeds extremely easy. Based on KII findings (KII38, GEO), the seedlings produced through trays have better quality because their roots are not disturbed during transplanting. Hybrid seeds enhanced productivity per unit area per crop type. Investments in these technologies have rewarded farmers with greater profits. Terraces are more effective compared to previous practices of watering big nurseries which led to destruction of crops due to stepping on them; as an alternative, investment in narrow nurseries, which are easy to water, was more effective. Most farmers have opted to use furrow irrigation, especially those who cannot afford to install drip irrigation. Farmers have also adopted raised beds, which are a lower cost option for growing produce.

Effectiveness of MnM Promoted Technologies and Practices

MnM interventions have greatly impacted the horticulture subsector in the ZOI. A comparison from baseline to end-line indicates significant changes in production, productivity, and agricultural practices. Interventions through promotion of GAPs, adoption, and capacity building have significantly amplified production per unit area of land.

There has been an increase in the type of horticultural crops grown as compared before and after MnM interventions. Figure 6 presents different types of crops—such as tomatoes, green pepper, watermelon, onion, cabbage, Irish potatoes, and avocado—whose current production has intensified when compared to before the MnM program.

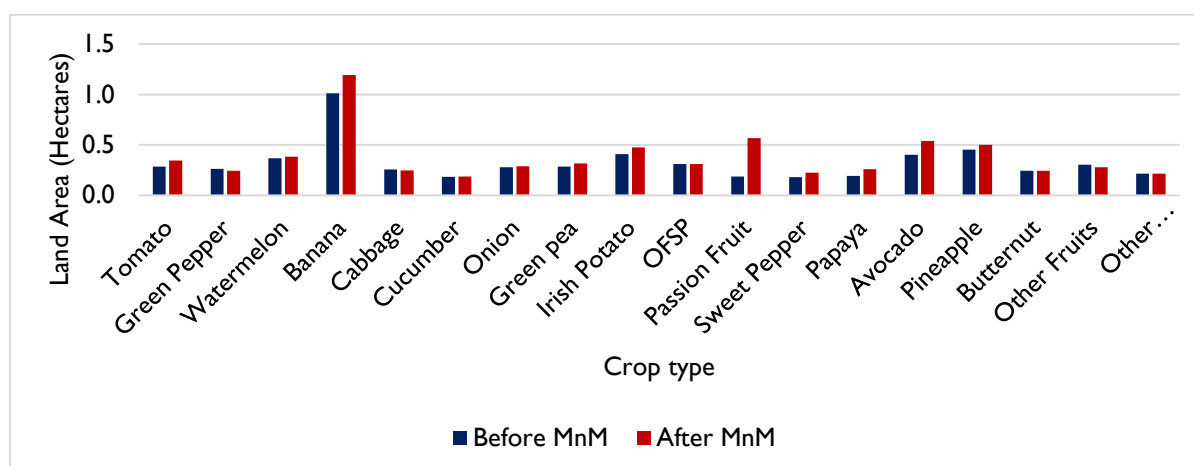
Figure 6: Percentages of Producers Growing Horticulture Crops Before and After MnM Program



Source: MnM Farmer Survey

Similarly, the number of areas used for cultivating horticultural crops (both fruits and vegetables) has increased especially for crops such as banana, passion fruit, avocado, pineapple, Irish potatoes, and tomatoes (see Figure 7).

Figure 7: Area Cultivated for Different Fruit and Vegetables Before and After

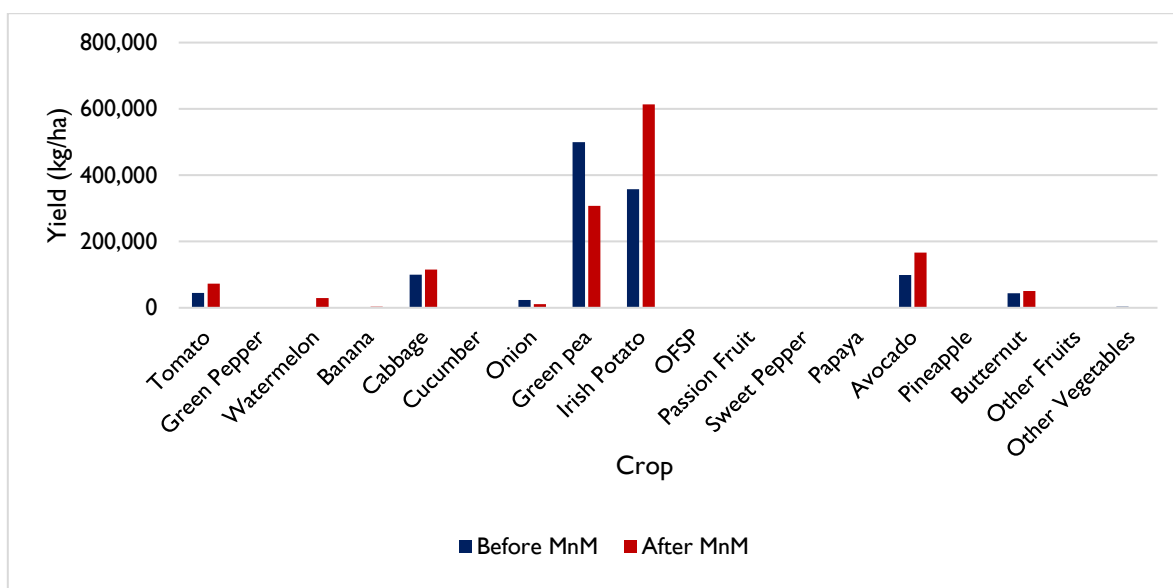


Source: MnM Farmer Survey

There has been a marked increase in yield of horticultural crops from the time of intervention to the time of project phase out. Farmer survey findings (Figure 8b) indicate cabbages, watermelon, cucumbers, butternut, papaya, avocado, other fruits, other vegetables, and tomatoes as the crops leading in yields (in kilograms per hectare) when compared to yields before the MnM program intervention. Although productivity levels have improved, they are still low on average (per hectare) compared to expected average yields per hectare for the various crops.²²

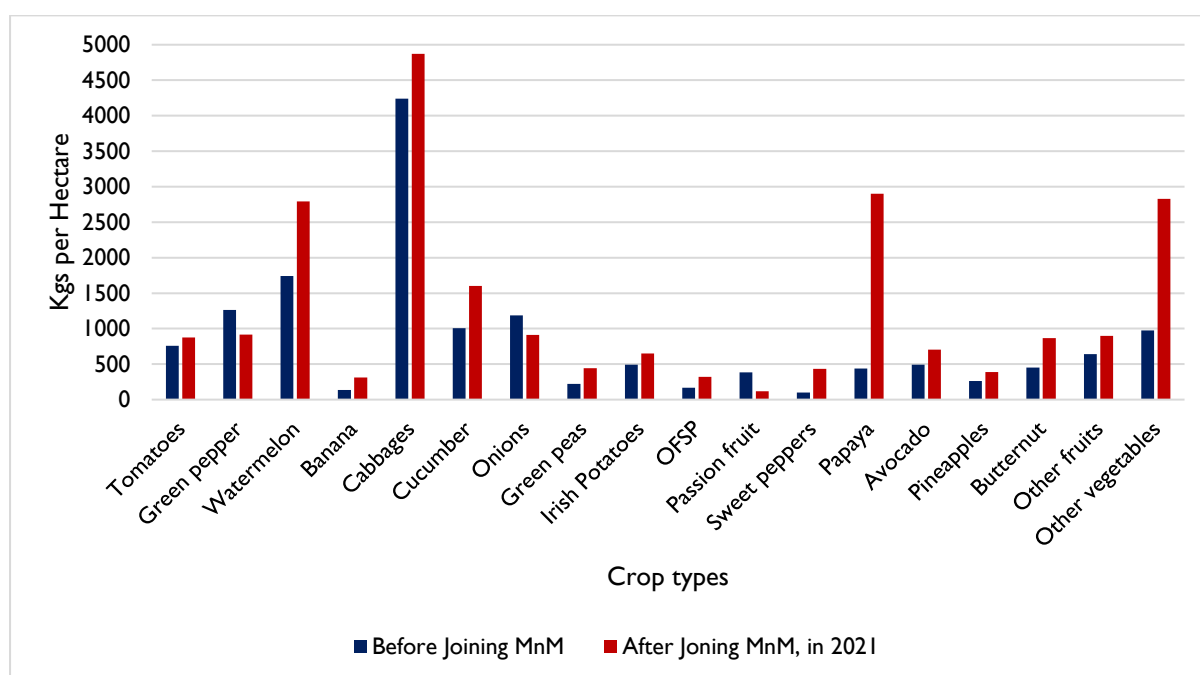
²² One challenge to note with measurement is that a significant number of farmers do not have good records of their production and area under cultivation. This is especially acute for the period before joining MnM, which is compounded by difficulty of recall.

Figure 8a: Total Crop Yields Before and After MnM Program Intervention, All Participating Farmers with Production Records



Source: MnM Farmer Survey

Figure 8b: Change in Productivity by Crop, Yield in Kilograms Per Acre Before Joining MnM and in 2021



Source: MnM Farmer Survey

All farmers who cultivated horticultural crops adopted one or more of the technologies promoted by MnM. Adoption of agricultural technologies has boosted crop yield increases and household incomes and has altered the way agriculture is conducted in particular. A respondent in Mbeya said,

“Initially we were not aware of horticulture production, but through this project now even me who is an accountant, I’m very much aware of horticulture issues. In the terms of Human Resource Skills, I have improved my skills significantly, and in terms of our portfolio, we have continued to invest in horticulture. In terms of membership growth, we’ve also continuously seen growing because our members were planting horticultural products informally but now it is done commercially.” (KII24, FI)

“We reached the MnM target in the district, personally am grateful for that. Our first target was 30,000 people through MnM project and so far, we have reached 21,000-22,000 people. In this project we have invested in two components, the first is production which has increased tremendously because now farmers produce vegetables and fruits in large quantities. Secondly, we have invested in adding value to our produce after harvesting.” (KII36, GEO)

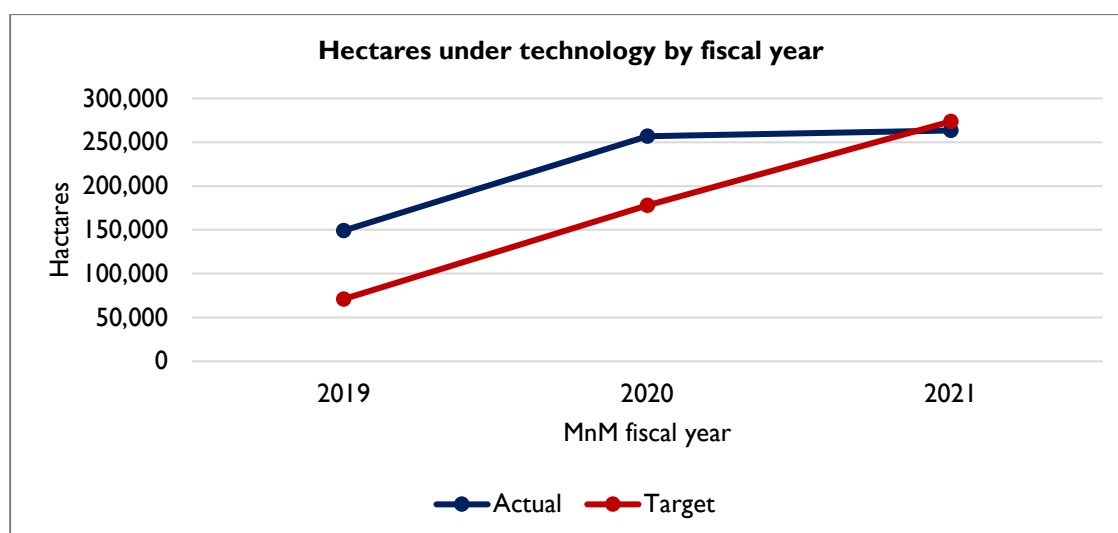
Before MnM less than 5 percent of farmers reported using seedling trays and starter solution. Feed the Future (FTF)-MnM has enhanced agricultural productivity and profitability using seedling trays for producing more durable seedlings. Irrigation technologies such as furrow and drip irrigation reduced farmers’ labor burden. Hybrid seeds and production of nutritional crops also improved production. Other agricultural technologies promoted by MnM project included raised beds and the use of pesticides—time of application and methods for safe application of chemicals, including pest management.

The practices and technologies promoted by MnM that have been effective in improving productivity include the use of improved seeds (improved hybrid varieties), production of seedlings using plastic trays, and irrigation (especially furrow irrigation) particularly for farmers close to water sources such as rivers. Farmers with intermediate or advanced training are applying the use of hybrid varieties which help to improve yields and higher quality crops. The use of trellising, particularly among tomato farmers, has also received more attention as this has significantly increased productivity through production of multiple fruits. Before the use of trellising, insects and, during the rainy season, rotting damaged most of the tomatoes (KII03, MnM Staff). Drip and furrow irrigation has helped to ensure horticultural production throughout the year, thereby reducing shortage and importation from neighboring countries. The establishment of nurseries and the use of seedling trays has enabled the production of quality and healthy seedlings; once transplanted on the farm, they have reduced disease infestations like nematodes, which are common under conventional practice (KII03, MnM staff).

Farmers and traders have started applying post-harvest practices such as use of plastic pallets for carrying and marketing horticultural produce. This is more durable than locally-made “tengas” (bamboo baskets). One horticultural trader stated, “...previously when I was carrying 200 wooden pallets, I could incur a loss of ten wooden pallets damaged during transportation to the markets; however, with the use of plastic pallets, the loss has decreased to only one pallet; something which has motivated me to continue using plastic pallets.” (KII with Horticultural trader, Dodoma)

Further transforming the horticulture subsection in the ZOI, MnM partnered with eight input companies (including, among others, Balton for irrigation and Syngenta for improved seeds), which distributed inputs to farmers through agro-dealers in strategic locations. The input companies recorded increased sales of inputs in the Southern Highlands. Adoption rates of technologies increased from 60 percent to 90 percent. Per its Performance Management Plan (PMP), MnM has met its target of training 950,000 farmers (PMP-I). Of those trained, approximately 875,000 have applied technologies; and MnM grouped producers into the three adoption categories (basic, intermediate, or advanced). Technologies have been applied on 775,000 ha, about 86 percent of the target. MnM performance indicators reveal a marked increase in the number of hectares under improved management practices or technologies. Furthermore, there has been an increase in number of hectares from 2019 to 2021, as compared to the targeted numbers. Farmers who are intended beneficiaries have embraced the adoption of improved agricultural technologies above the target (see Figure 9).

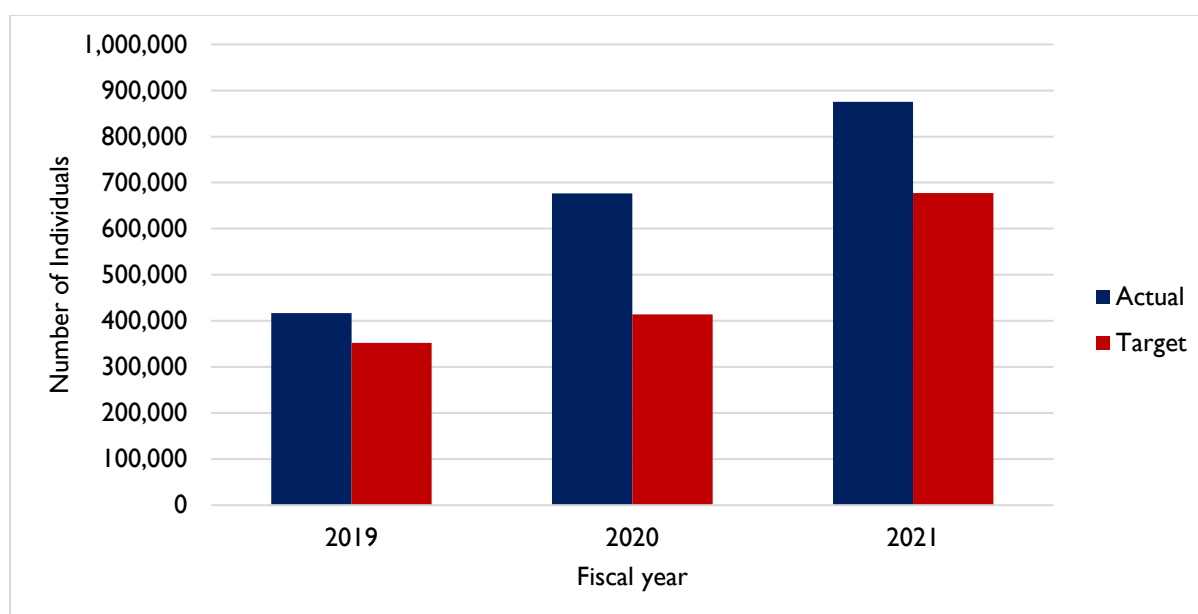
Figure 9: Number of Hectares Under Improved Management Practices or Technologies with USG Assistance [IM-level]



Source: MnM PMP Data

The increase in adoption of improved agricultural technologies is also evident in the increased number of individuals in the agriculture system who have applied improved management practices or technologies promoted by the MnM project over the course of the activity. The number of farmers has been increasing—cumulatively above target from over 400,000 individuals in the initial year of MnM intervention to nearly 900,000 by the end of 2021 (see Figure 10).

Figure 10: Number of Individuals in the Agriculture System Who Have Applied Improved Management Practices or Technologies with USG Assistance (cumulative)



Source: MnM PMP Data

Qualitative survey findings vary regarding the increase in numbers of individuals who have applied improved management practices and technologies with United States Government (USG) assistance. For example, users of hybrid seeds and seedling trays among tomato farmers have largely increased as substantiated by KII07 and KII03.

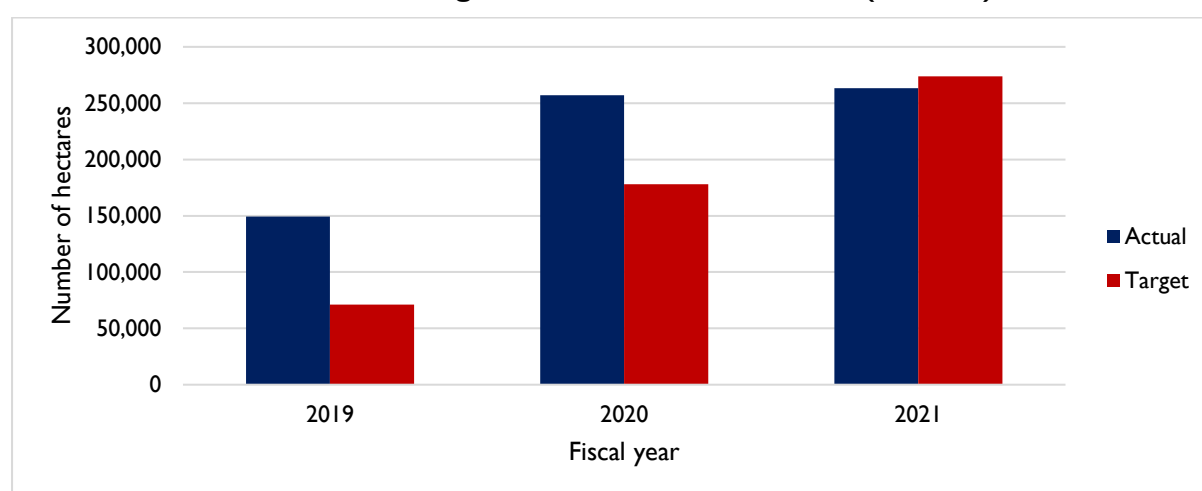
Many farmers have adopted GAPs such as row planting at the recommended spacing. Where adopted, inputs such as fertilizer have increased yields (KII41) and drip irrigation has allowed all year production.

A KII with input supplier indicates that number of farmers purchasing agricultural inputs have increased tremendously as compared to before MnM interventions. One agrovet in Mbeya noted:

“An example is when we first went to teach farmers on staking in tomatoes fields, few farmers showed up but now many farmers are practicing staking because they understand staking and trellising in tomatoes and are harvesting larger output. Farmers now know the type of soil to use for tomato growing unlike before which sounded as a strange thing but MnM project has really helped and extension officers to amplify their competency.” (KII15, Input Distributor)

Furthermore, number of hectares under improved management practices or technologies that promote improved climate risk reduction and/or natural resources management with USG assistance (IM-level) has recorded increases in 2019 and 2020 above target; in 2021 it increased but did not meet the target by a slight margin (see Figure 11).

Figure 11: Number of Hectares Under Improved Management Practices or Technologies That Promote Improved Climate Risk Reduction and/or Natural Resources Management with USG Assistance (IM-level)



Source: MnM PMP Data

Cost of production

In terms of cost of production, farmers may not have reduced cost of production in all areas. The cost of production increased somewhat due to the cost of adopting technologies, but this increased productivity (by 45 percent) yielding higher gross margins for farmers and thus making up for higher input costs. Farmers are taught about hitting market windows for timing harvest and obtaining favorable prices of their crops. Irrigation and greenhouses allow for producers to stretch production into favorable market windows. According to MnM staff, farmers invested 20 percent more using these methods, but are getting 40 percent more return on investment (KII03, MnM Staff).

Despite availability of inputs, the capacity of farmers to buy has increased due to the increase in income from horticultural crops. Farmers' income has increased by 31 percent from \$895/farmer in 2017 to \$1,171/farmer in FY 2020. This has likely increased farmers' purchasing power and thus they are investing more in technologies. Technology packages gained more emphasis in 2019-2020, as a result the project witnessed more acceptance in 2020.

The use of improved seeds increases productivity per unit area but has implications on the cost of production. One of the input distributors from Mbeya observed the use of improved seed and cost implications.

“We have told them the importance of the hybrid seeds, though they are expensive...their produce and income returns are substantial. We have also collaborated with them in the demonstration plots where we go and guide them and we can see that they have understood and have even bought these hybrid seeds.” (KII15, Input Distributor)

Proper use of Agrochemicals

Based on the MnM training package extended to farmers, agrochemical training received notable attention, likely owing to its impact on human and plant health. Such training has helped farmers to refrain from improper use of agrochemicals that pose health risks.

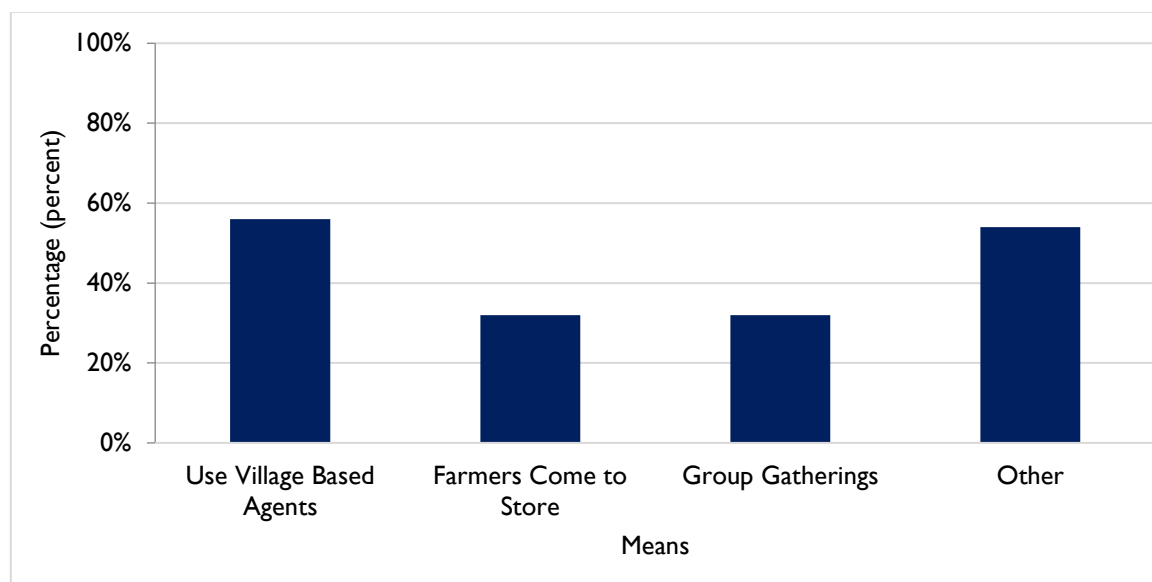
“I was guiding the farmers on the use of pesticides, herbicides and insecticides, these farmers have memorized the names on the bottles and the name of the businesses. We have worked in the Mboga na Matunda project to make the farmers understand.” (KII15, Input Distributer)

Survey data for SMEs reveal that 98 percent of interviewed SMEs have reported offering advice to their clients (farmers) on the use of agrochemicals. This positively impacts health risks that may result from improper use of agrochemicals. As an input supplier observed:

“Through field days, I could go there and introduce myself and extension officers had already introduced me during Nane Nane farmers’ exhibition so farmers already knew me. I could explain to them the products I have in the shop and their quality and they would work hard to know the good seeds, pesticides, herbicides and I could go but some other day when I get the opportunity, I would go back and visit farmers. The project has really helped and personally I have received a lot of gifts from the farmers in recognition of quality inputs from my shop, I have received fruits.” (KII with Input Supplier)

In the SME survey findings, respondents most commonly cited use of Village-Based Agents (VBAs, aka experienced farmers) as the means of advising farmers on the proper use of agrochemicals. Other options used included farmers coming directly to the agro-dealer store seeking advice, group gatherings, and other possible ways that sensitized farmers to observe proper use of chemicals (see Figure 12). MnM invested time in advising farmers on proper application of agro-chemicals to ensure farmers avoid excessive use and improve their use of these chemicals as they also pose health risks to farmers and consumers of products.

Figure 12: Percent of Sampled Farmers by Means of Extending Agrochemical Use



Source: MnM SME Survey

Results of the Market-Based Approach

MnM has played a major role in building capacity on marketing advice through the market-led approach because, initially, farmers were less informed about the desired market requirements. The implementation of the market-led approach has helped to overcome market challenges for farmers. One MnM partner reflected on the implementation of the approach:

“What I can say about market-led approach is that farmers in southern highlands have different financial capacity and resources like land, proximity to market etc. so we developed what we called

three different development packages basically intermediate and [full] packages and we also identified over 20 market lead crops, some crops require small amount of money to be able to start up the operations and some crops are expensive and these are for farmers with more resources we realized that we are walking with the broad range of farmers so by developing three different development packages and identify more than 20 crops we were able to go from about 56 percent of farmers adopting improved technology and now we have 90 percent of farmers adopting improved technologies.” (KII03, MnM Staff)

The market-led approach provided several benefits. It has informed farmers of the market requirements and provided timely information to improve production and market access. The approach has also helped farmers and buyers to develop market linkages that enable timely delivery of appropriate products. It has been facilitated by technologies which have helped farmers overcome challenges related to post harvest loss and unsold products; and this approach allowed farmers to produce crops according to demand. One of the GEOs in Zanzibar, while commenting on the performance of the market-led approach, had the following reflection:

“That was a good approach; farmers have benefited by knowing what is in demand at the market. They now know when to take their produce to the market and they are assured of their produce market and can get maximum profit. Unlike in the past when they would take their produce to the market without knowing who would buy it and sometimes and they suffered losses. Nowadays farmers call their agents to know when they can sell their produce so that they get a decent price.” (KII41, GEO, Zanzibar)

Farmers are assured of high profits from the horticulture business because of the readily available markets and by observing market standards. Following the MnM training on marketing, farmers are satisfied and there is an increase in the size of operation and extension of farms (land size). Also, the use of plastic pallets (crop packaging trays) has enabled farmers to attract more affluent customers and curb horticulture crops weighing standards challenges which has resulted in increased returns (KII06, Input Partner).

Through the market-led approach farmers and traders in crops along the HVC are now practicing sorting and grading of their produce to benefit niche markets. Farmers in Zanzibar, for example, are strongly participating in grading, especially due to the growing tourism industry. However, the challenge remains, including the export market, as the current situation is dominated by the local market. Exports have growth prospects and better pricing opportunities and hence there is a need to rethink ways to tap into export markets.

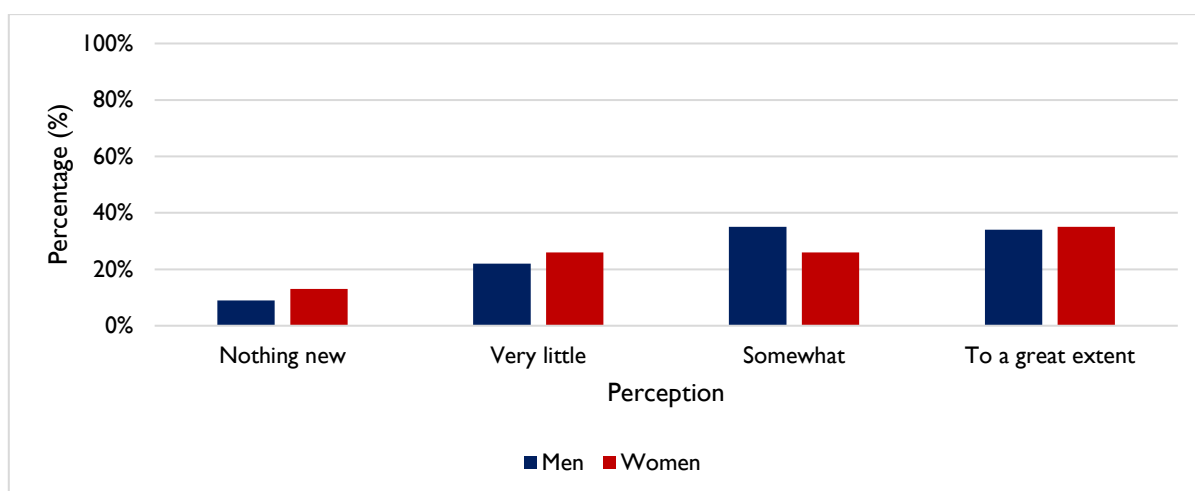
Market linkage and market information

To make the market approach impactful, MnM has facilitated market linkage and market information sharing between producers and traders of horticulture products and with input distributors. At horticulture nodes within the value chain, MnM established some locally-based structures. For example, the program established data aggregators as the main link between the farmers and buyers which has helped farmers and buyers communicate. This mode of communication was not available to many farmers before MnM began (KII03, MnM Staff). A trader on horticulture products from Zanzibar asserted:

“We are directly connected to the farmers because we have direct information of most of the farmers’ farms and they always visit us for a talk at the association whenever they experience a problem. We explain it to them and even call extension officers who visit farmers for practical technical skills, so that they can spread this to others.” (KII13c, SME)

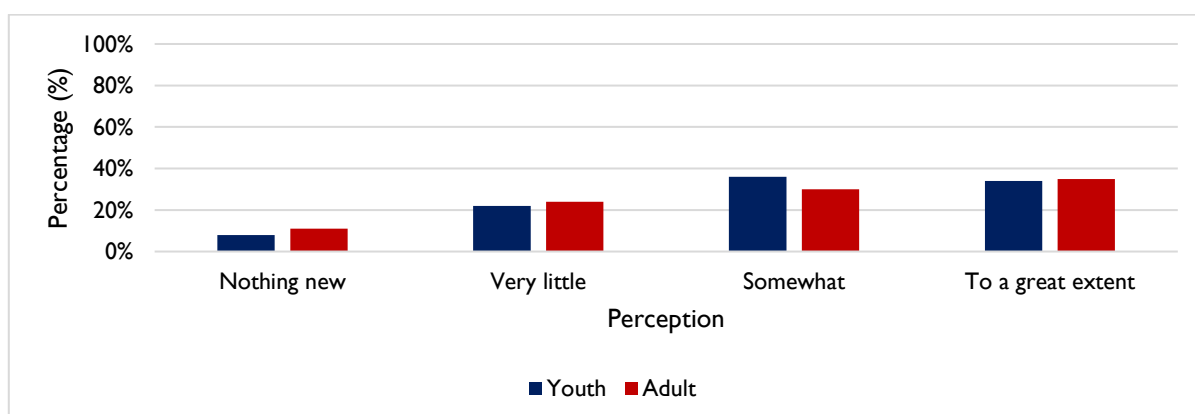
Farmer survey findings show little difference in knowledge gains between youth and older adults, and reveal slight gender differences with a slightly lower percent of women that have gained knowledge on market information as a result of MnM initiatives in the ZOI (see Figure 13 and Figure 14).

Figure 13: Farmers' Perceptions on Knowledge Gained on Market Information Disaggregated by Gender



Source: MnM SME Survey

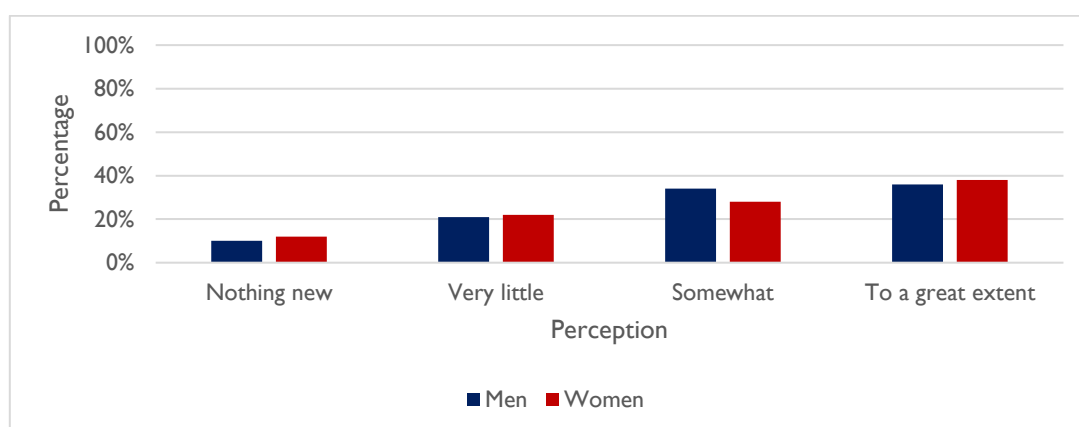
Figure 14: Gained New Knowledge: Marketing and Linkage with Buyer, by Age



Source: MnM SME Survey

Overall, the majority of farmers have indicated that they are not satisfied with marketing and linkages with buyers. Findings indicate very little difference in satisfaction between youth and older adults on this (Figure 15).

Figure 15: Farmers' Satisfaction on Marketing and Linkage by Age



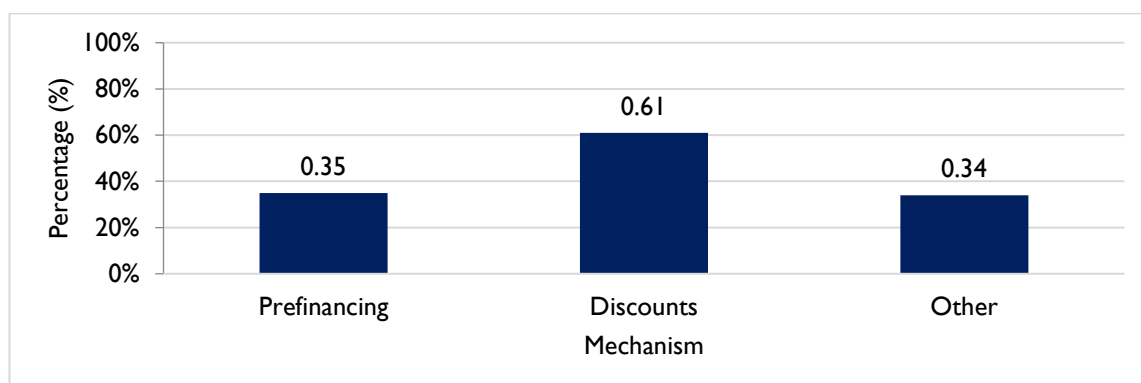
Source: MnM SME Survey

A GEO reported,

“I think what farmers have benefits...the market. For now, production has increased and secondly there is this issue of connecting farmers/producers with the market. I remember one farmer sold onions through the MnM program because they connected him in the market. So, they connected producers to the market but also, I think production has increased. So, the MnM project has helped farmers to acquire markets to sell their products.” (KII36, GEO)

Based on MSMEs’ efforts, suppliers have generated good relationships with their customers through discounts (61 percent) and pre-financing (35 percent) as reported in Figure 16.

Figure 16: Means Used by SMEs in Building Supplier-Customer Relationship



Source: MnM SME Survey

Sales of Inputs – Seeds

During implementation of the program, FTFT-MnM partnered with eight input companies (including Balton, Syngenta, etc., which distributed inputs to farmers through local agro-dealers which have been the focal point. In FY 2021, assisted firms generated a total of \$120,249,017 in sales of goods and services. The average value of sales per firm decreased by 23 percent relative to FY 2020 but maintained a 10 percent improvement over baseline. The ability of firms to maintain gains above baseline, despite the impacts of COVID-19, is evidence of the resilience of MnM’s private sector clients and indicates the potential for long-term sustainability of services provided to rural farmers in the ZOI.

Together, MnM, partners and GEOs have worked to link farmers to improved markets while promoting the adoption of both formal and informal market standards, for the benefit of farmers and buyers alike. This year 39,944 farmers (31 percent females and 46 percent youth) met market standards in their sales to buyers. This accounts for 36 percent of farmers selling according to market standards, compared to 34 percent in FY 2020. Zanzibar is leading with 45 percent of farmers selling according to market standards, followed by Mbeya and Morogoro with 43 percent each, Songwe with 41 percent, and Iringa with 23 percent.²³

In FY 2021, input suppliers sold 74.8 tons of seeds for targeted crops, resulting in an estimated 234,696 ha under improved seed practices, cultivated by 754,904 SHFs. On average, farmers spent \$27.61 per SHF on seeds in FY 2021, compared to \$18.41 per farmer during the baseline period.²⁴

SME survey findings reveal that, once inputs have been supplied by agro-dealers, the most used way to deliver inputs to farmers is by farmers coming to the store directly to purchase inputs (94 percent), followed by use of VBAs. The input companies recorded increased sales of inputs in the Southern Highlands; and seed companies penetrated the market in the ZOI (KII03, MnM Staff). To ensure effective results happen, MnM staff worked closely with input suppliers in setting up demonstration

²³ MnM Annual Report, 2021.

²⁴ MnM Annual Report, 2021.

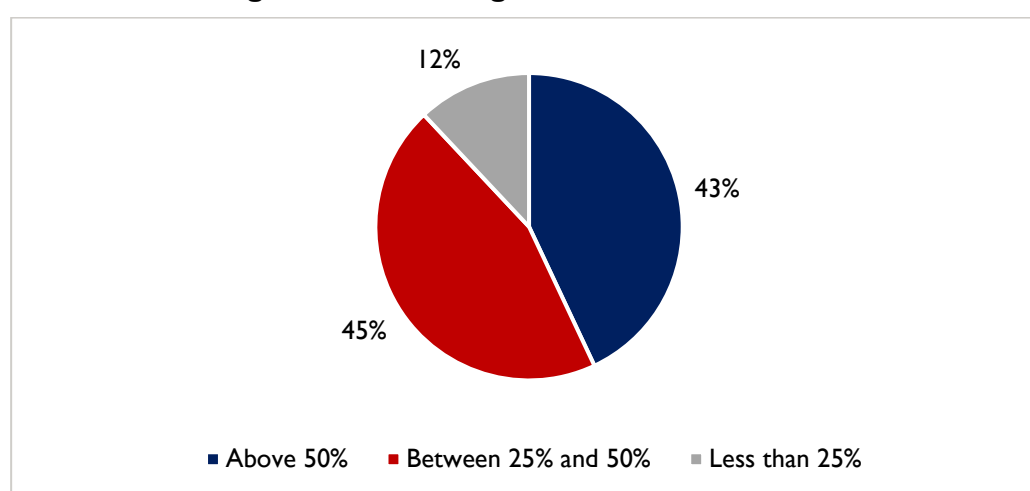
plots and giving suppliers an opportunity to prove that their technologies are working well at the farmer level.

Demand for inputs has increased following sensitization of farmers on the importance of using new agricultural technologies that increase yields. A substantial number of farmers are buying improved inputs such hybrid seeds and agrochemicals and are conducting horticulture farming as a business since they have realized increased returns from the use of improved agro-inputs. One input distributor from Iringa had this to say when reflecting on input sales:

“Before MnM program I had very few customers coming [to] my store so [I] was idle most of the time [I] could sleep in the shop but now I am busy throughout the day, sometimes I can stand from morning till 6pm because customers in need of my products are many.” (KII 15, Input Distributer)

SME survey findings reveal an increase in the number of agro-input customers. Of the farmers surveyed, 43 percent saw an increase of over 50 percent in their customer base; another 45 percent saw more moderate increases between 25 and 50 percent in customers. Just 12 percent saw increases less than 25 percent or saw no change.

Figure 17: Percentage Increase in Customers

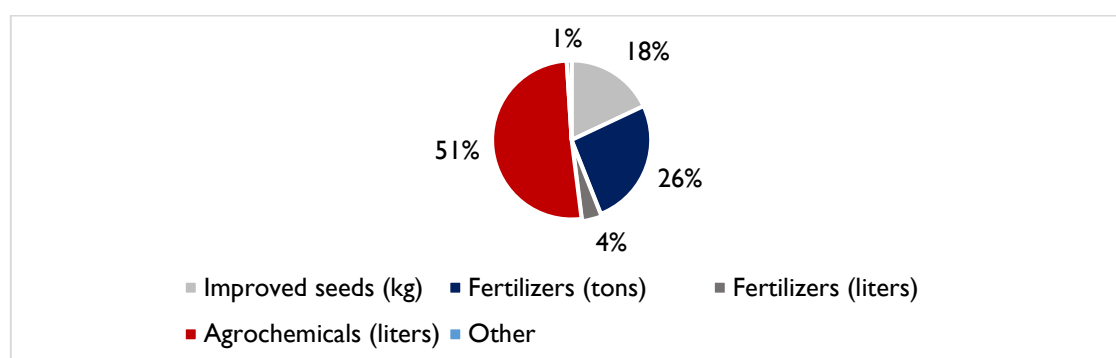


Source: MnM SME Survey

SME survey findings further indicate that SMEs have recorded a growing volume of inputs traded following an increased number of farmers buying agricultural inputs as a result of MnM training and sensitization interventions. SME survey results indicate increased volume traded of improved seeds (kg), fertilizer (tons and liters), and agrochemicals (liters) unlike before MnM intervention in the ZOI.

The inputs reported to be most profitable according to SMEs included agro-chemicals, fertilizers, and seed.

Figure 18: Inputs Indicated as the Most Profitable to SMEs

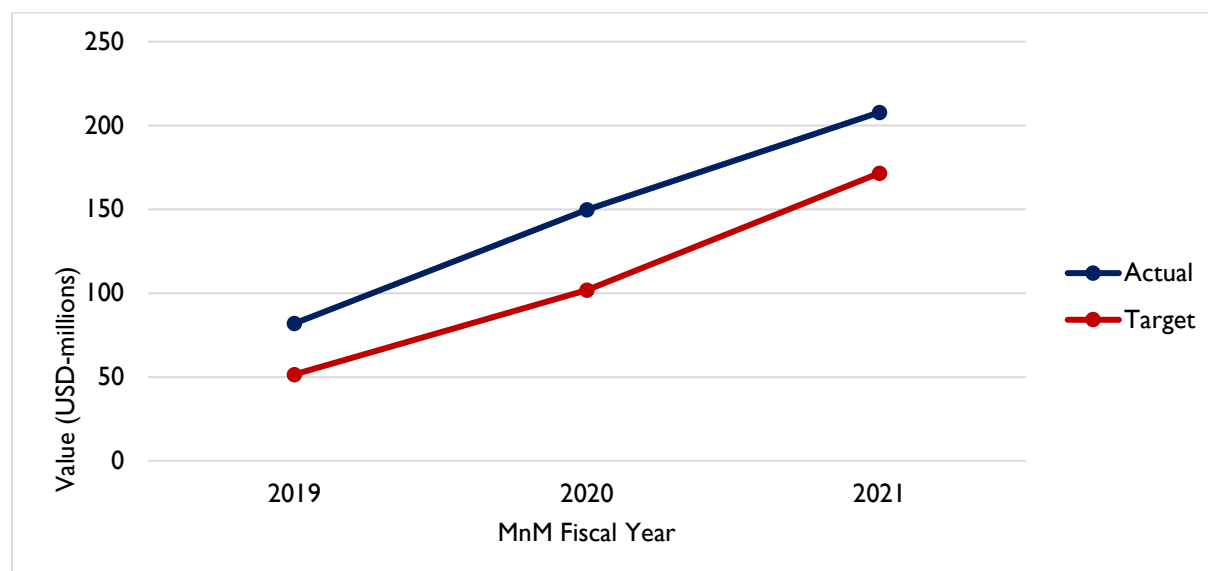


Source: MnM SME Survey

Sales of Horticulture Products

Monitoring, evaluation, and learning (MEL) reports of the MnM project showed sales of horticulture products have been increasing year over year from 2019 to the end of 2021. The crop with the biggest sale value (see MnM Quarterly Report #15) was OFSP followed by passion fruit, okra, and papaya. A total of 281 farmers grew nutrient-rich crops (NRCs) and made sales of TZS 300,537,400 (approximately \$129,710). Similarly, performance indicator data reveal that value of annual sales from horticulture has been increasing from 2019 to 2021 as portrayed in Figure 19.

Figure 19: Value of Annual Sales of Farms and Firms Receiving USG Assistance



Source: MnM PMP Data

The majority of sales have been completed by MSMEs. Although sales per firm did not increase significantly, MnM worked with more MSMEs than expected in FY 2021. MnM's target was to work with 858 MSMEs, and the project reached 1,186 MSMEs, which contributed to the overall value of sales achieved.

Markets for horticulture products

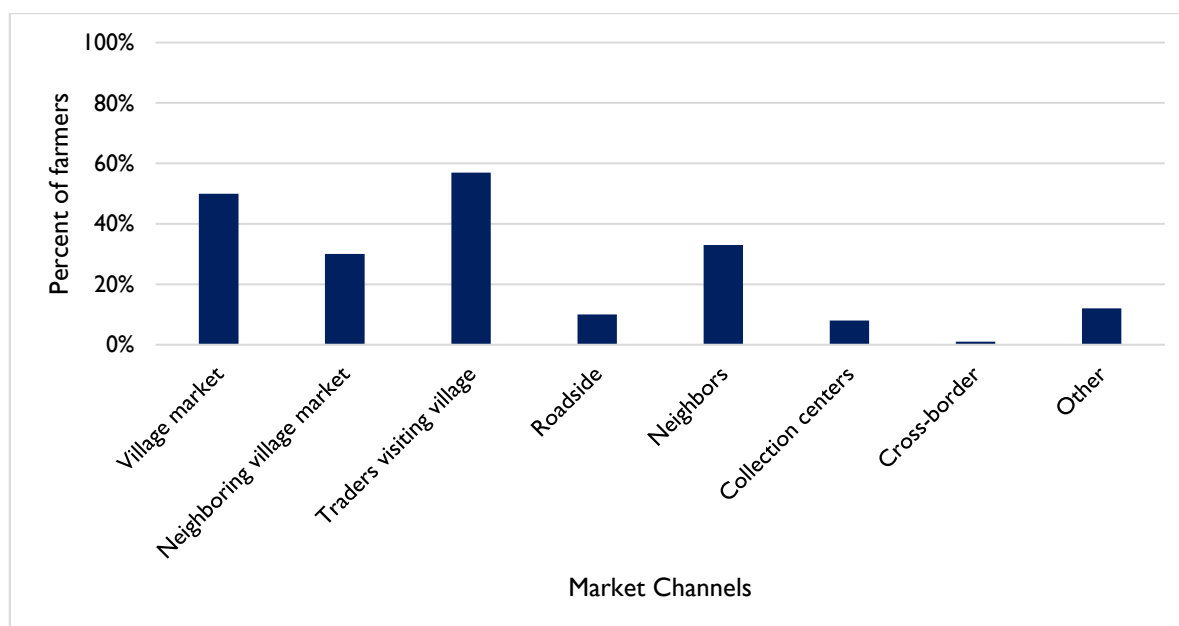
Each region in the ZOI has specific market characteristics which have targeted MnM market development efforts. In Zanzibar, the market segment important to producers is focused on the 200 tourist hotels. MnM works with local market agents to sign contracts between producers and hotels. For the Iringa, Morogoro, and Dodoma markets the focus is on sales to government officials. The supply is not enough to meet demand in these areas. Producers in Songwe and Mbeya are linked to Malawi, Zambia, and the Democratic Republic of the Congo where there is consistent year-round demand for horticulture products. According to the IP, selling is not a serious problem. The Tanzania Horticulture Association (TAHA) conducted market studies on collection centers in the Southern Zone and found that only five of 30 market centers were functioning. In another study, TAHA assessed the number of road stoppages and charges to ship produce from the ZOI to Dar es Salaam. Another market study for the Southern Zone found demand was mostly for domestic markets. Yet, another market study of demand in neighboring countries shows demand exceeds supply for Tanzanian products.²⁵ As one IP put it, "Selling does not seem a problem!" (IP interview). Additional studies looked at the cross-border trade with Zambia and Malawi and road stoppages and cess charges to ship to Dar es Salaam (IP interview).

Farmer survey findings show an increase in the number of market channels that farmers report to use for horticultural crops. Figure 20 shows the percent that use different market channels for selling

²⁵ TAHA Market Survey.

horticulture products. The market channels most used by farmers include traders, village markets (as well as neighboring village markets), and neighbors.

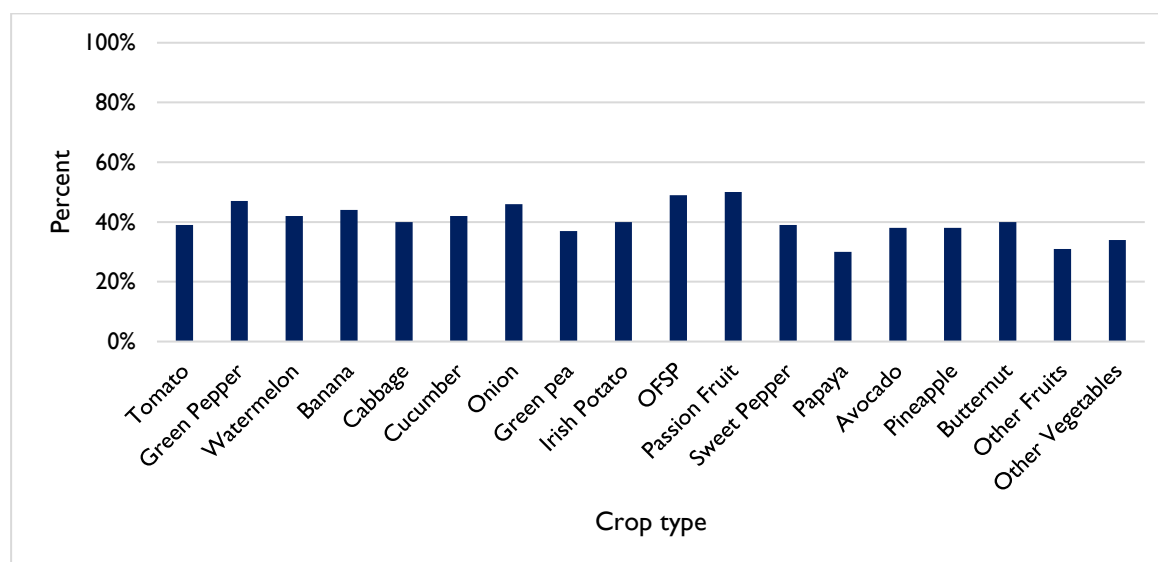
Figure 20: Market Channels for Fruits and Vegetables



Source: MnM Evaluation Farmer Survey Data

By opening farmers to external traders/buyers, farmers have been able to make significant sales for their products. Figure 21 shows percentages of farmers responding to an increase in sales for different horticulture products.

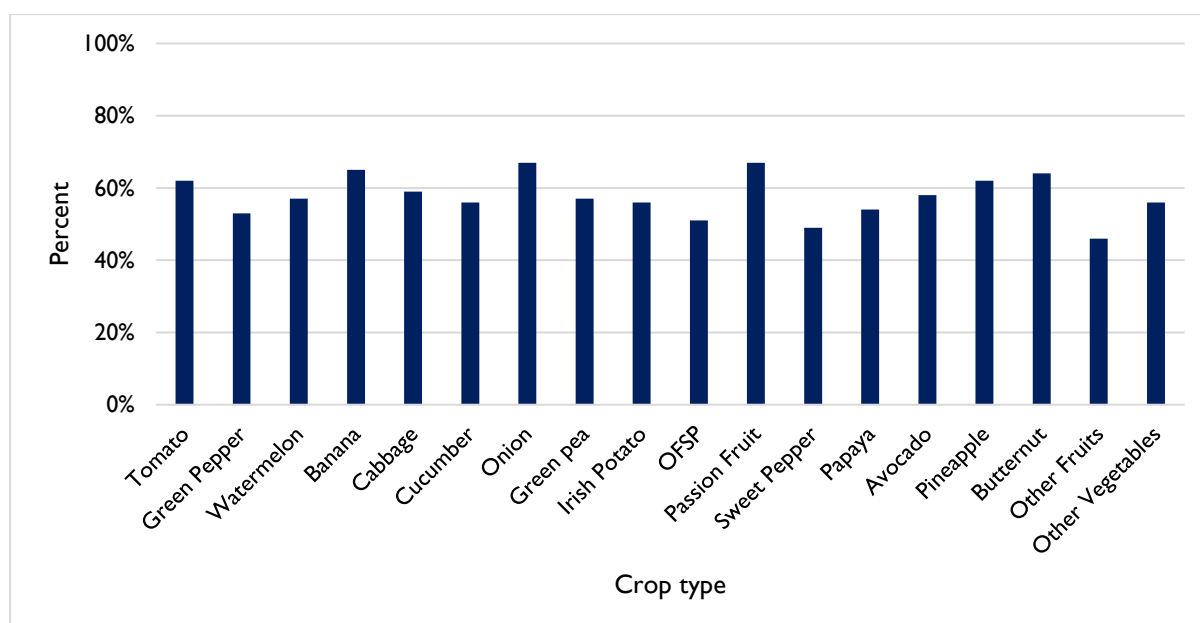
Figure 21: Percentages of Farmers Able to Make Sales to New Markets



Source: MnM SME Survey

Survey findings (Figure 22) also indicate that there has been an increase in market prices for different horticulture products. Linking farmers with different buyers has helped farmers increase their collective bargaining and protect themselves from exploitation by middlemen and unfair trade. Farmers surveyed reported tomato, onion, bananas, passion fruit, and butternut to have increased by 60 percent or more.

Figure 22: Percentage of Farmers Reporting an Increase in Market Prices for Horticulture Crops



Source: MnM Farmer Survey

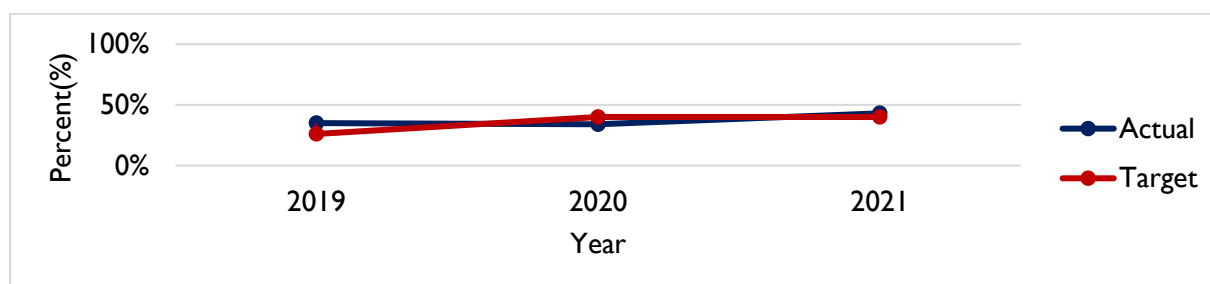
4.1.2 How This Has Impacted the Livelihoods of Youth Aged 15-35

MnM has been playing a major role in promoting gender and youth participation in the HVC in terms of production, marketing, and access to productive economic resources and was effective in engaging women and youth. USAID/Tanzania's Advancing Youth (AY) activity identified young people who wanted to learn horticultural skills and referred them to MnM, which trained them and then linked them to financial institutions (FIs). Youth like short duration activities in the sector which provide quick money/turnover (KII03). To encourage youth participation, MnM initially persuaded youth by speaking to them through the media and providing educational programs on TV and radio to try to inspire more youth and women to join MnM activities.

Qualitative findings from the evaluation indicate that youth are particularly interested in horticulture and poultry across all the regions but particularly in Mbeya, Iringa, and Zanzibar. However, there is national concern over the aging population involved in production while youth are more interested in distribution, marketing, and sale of produce. There is a need to listen to youth, understand their needs, and work with them to communicate about available opportunities across the sector.

With regards to youth aged 15 to 29, the number of youths accessing productive economic resources has fluctuated when actual numbers are compared against the target (see Figure 21).

Figure 23: YOUTH-3. Percentage of Participants in USG-Assisted Programs Designed to Increase Access to Productive Economic Resources Who Are Youth



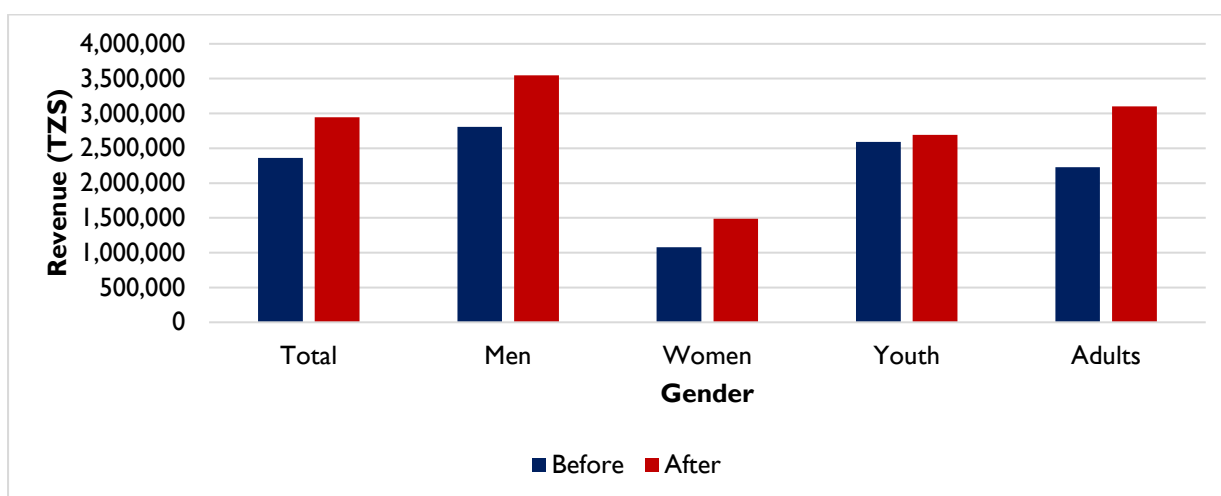
Source: MnM PMP Data

Performance indicator data further show that for youth under 36 years of age there is a substantial increase in access to productive economic resources as compared to youth

between 15 to 29 years of age. The increase in number has exceeded MnM's target for the three-year duration of the program as reported in Figure 23. "Continued sensitization and engagement of women and youth through GEOs has increased the number of farmers producing NRCs. During the quarter, 46 percent of farmers producing NRCs were women. Trainings focused on opportunities, marketing, and costs of production of NRCs have attracted more numbers of women and youth."²⁶

The farmer survey also revealed increased revenue from fruit and vegetable sales for different groups of farmers under the MnM program (see Figure 24). Men appear to get more revenue in TZS, followed by adults, youth, and, lastly, women. However, when compared to the period before MnM interventions, revenue among women increased considerably. More sensitization needs to be done to greatly increase number of women participating in horticultural crops cultivation and sales.

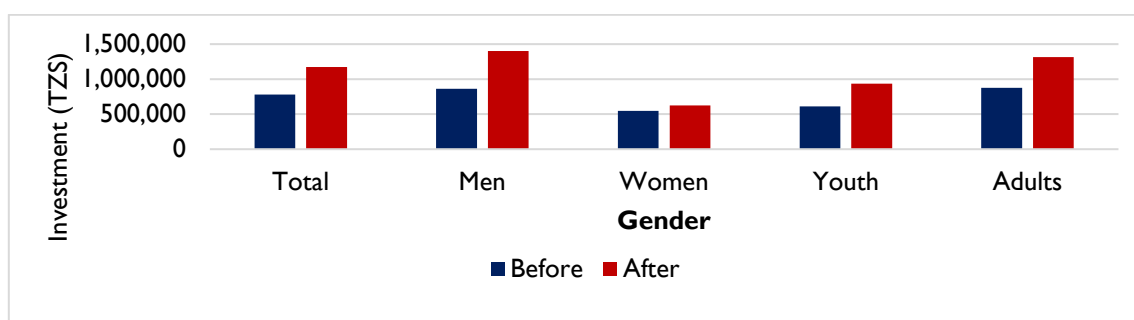
Figure 24: Annual Per Capita Revenue from Fruits and Vegetables Before and After MnM (TZS)



Source: MnM SME Survey

Farmer survey findings suggest all groups—men, women, youth, and adults—have increased their investment in horticulture technologies since receiving MnM interventions. There are gender and age differences in the amount of money invested; men invested more than women, and older adults more than youth (see Figure 25). Investments in marketing show marked differences as well; men and older adults invested significantly more in marketing than women and youth (see Figure 26). These differences may relate to the challenges women and youth face with access to capital and unequal decision-making power on expenditure.

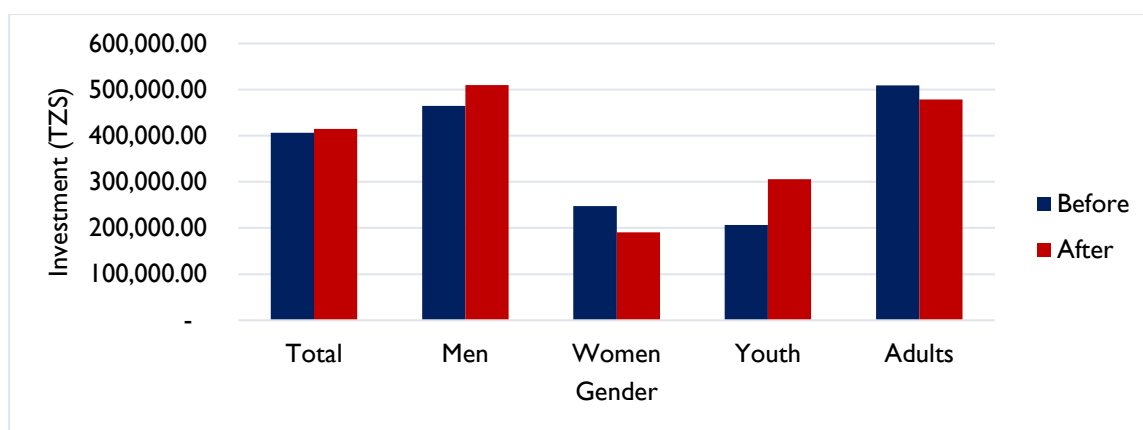
Figure 25: Investment in Horticulture Technologies Before and After MnM (TZS)



Source: MnM SME Survey

²⁶ MnM, 2021, Annual Report 2021, p. 61.

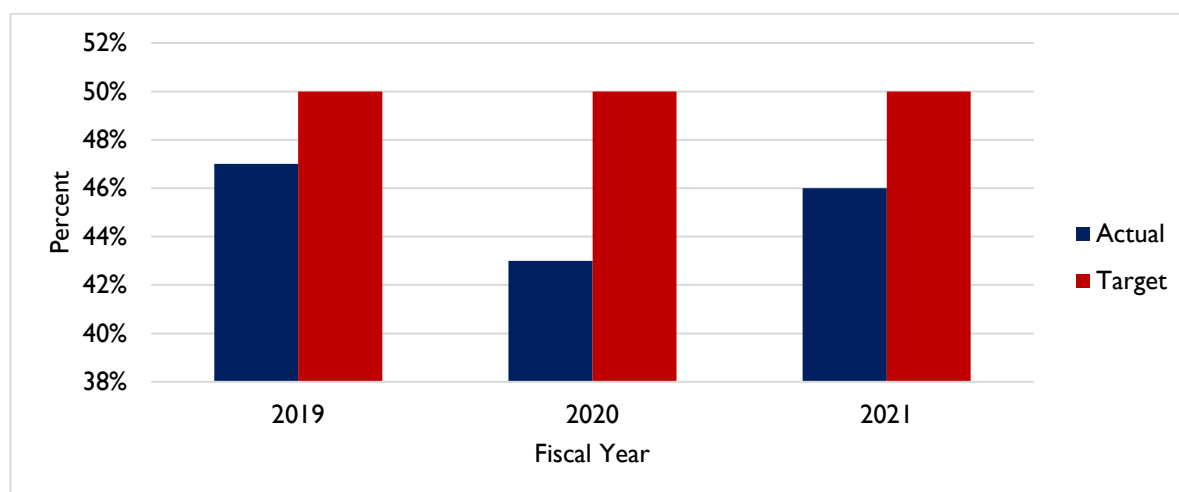
Figure 26: Investment in Marketing Before and After MnM (TZS)



Source: MnM SME Survey

Generally, percentages of participants that are female in USG-assisted programs designed to increase access to productive economic resources decreased during 2020 (during the immediate response to the pandemic), but largely recovered by 2021. On the whole, MnM did not reach annual targets for this performance indicator over the three years observed (as shown in Figure 27).

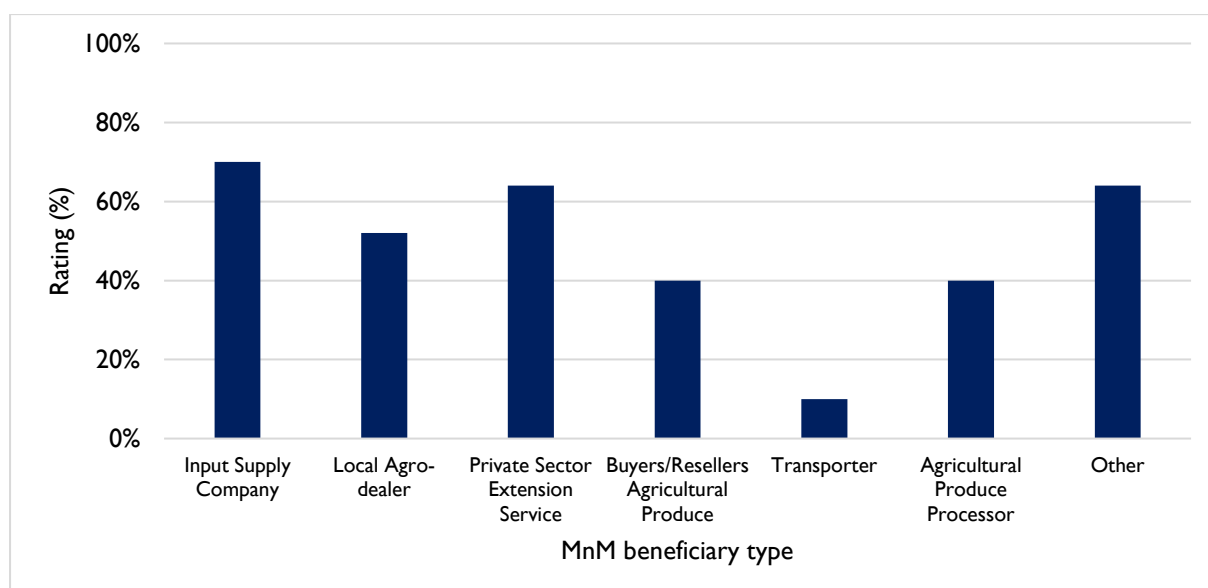
Figure 27: Percentage of Participants Who Are Female in USG-Assisted Programs Designed to Increase Access to Productive Economic Resources



Source: MnM PMP Data

A large proportion of stakeholders believe MnM activities will be sustained. Among SMEs, particularly input suppliers and private sector extension service providers, the majority rate the program as sustainable (see Figure 28). Qualitative information gathered through the KIIs in Morogoro revealed that in areas lacking input suppliers, agro-dealers have opened stores to supply inputs to meet demand from farmers. In addition, some input suppliers such as Balton and Sygenta are operating demonstration plots to promote their products to farmers, especially among tomato and onion producers.

Figure 28: MnM Sustainability Rating by MnM Beneficiary/Stakeholder Categories



Source: MnM SME Survey

Market development efforts

The market for producers of horticulture products was perceived to be doing well according to the IPs interviewed. However, there are times when there are gluts in the market because of the harvest season. Market flows vary throughout the ZOI. In Zanzibar, the market for perishable fruits and vegetables depends on the tourist hotels. In Iringa, Morogoro, and Dodoma the target markets are more directed at local markets and wholesalers from Dar es Salaam and cities. In the Southern Highlands, in Songwe and Mbeya regions, there is consistent demand from export markets in Malawi, Zambia, and the Democratic Republic of Congo. MnM has worked with TAHA to collect market information on these markets and share it with producers, traders, and processors.

4.1.3 Will Improved Input Supply Businesses, Agro-Dealers, and Lead Farmers Services Be Sustainable?

Locations of SMEs, types, and numbers surveyed

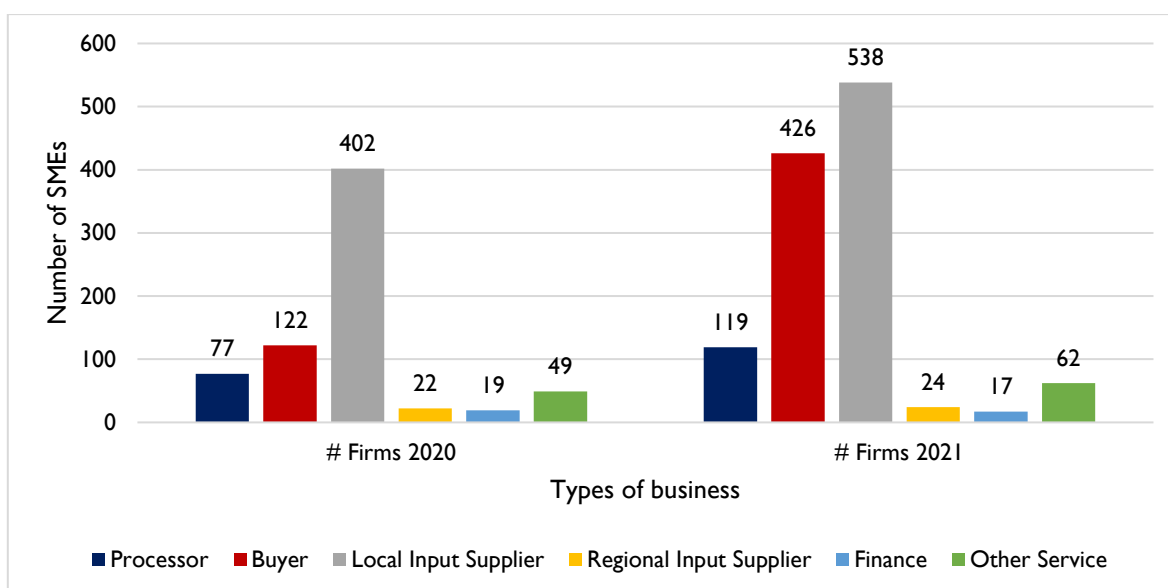
MnM and its partners worked with 1,186 MSMEs in FY 2021, as compared with 691 in FY 2020, a 72 percent increase. MSMEs assisted by MnM and its partners are linked with SHFs to improve access to high-quality inputs and markets for horticultural produce.²⁷ Most SMEs are located in the Iringa region (38 percent) where horticulture production is highest in the ZOI. Iringa region has the highest number of producers with individual plots (41 percent) of producers; 50 percent of these producers are in Kilolo and Iringa DC districts.²⁸

The number of SMEs increased over the 2020 to 2021 period of the program, with the biggest changes occurring in the number of buyers, processors, and input suppliers. Buyers of SHF products increased from 122 in 2020 to 426 in 2021, by 147 percent. The number of processors increased by 54 percent and input suppliers increased by 34 percent over the same period.

²⁷ FTFT-MNM. (2021). Annual Report, p. 24.

²⁸ Data supplied by staff of the MnM IP on April 4, 2022.

Figure 29: Number of SMEs by Type of Businesses, 2020 and 2021

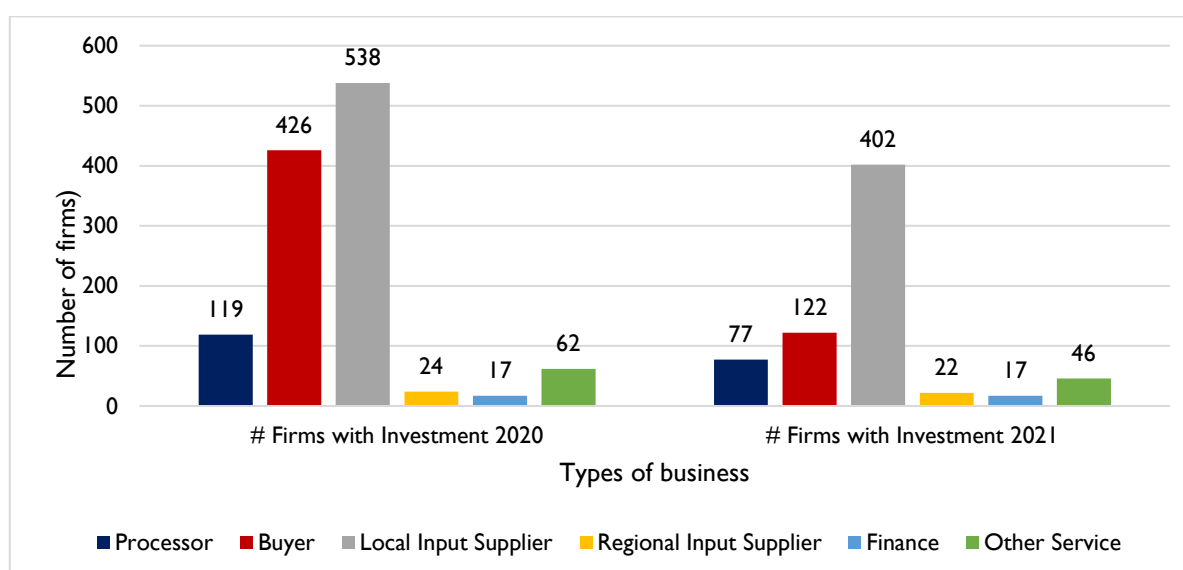


Source: MnM SME Survey

Investments made by SMEs

The period between FY 2020 to FY 2021 is characterized by decreasing investment by SMEs. The number of firms making investments fell for each category of SMEs except for FIs which remained flat. This may be related to uncertainties for businesses during the period following the pandemic.

Figure 30: SMEs Reporting Investments in Their Business in FY 2020 and FY 2021

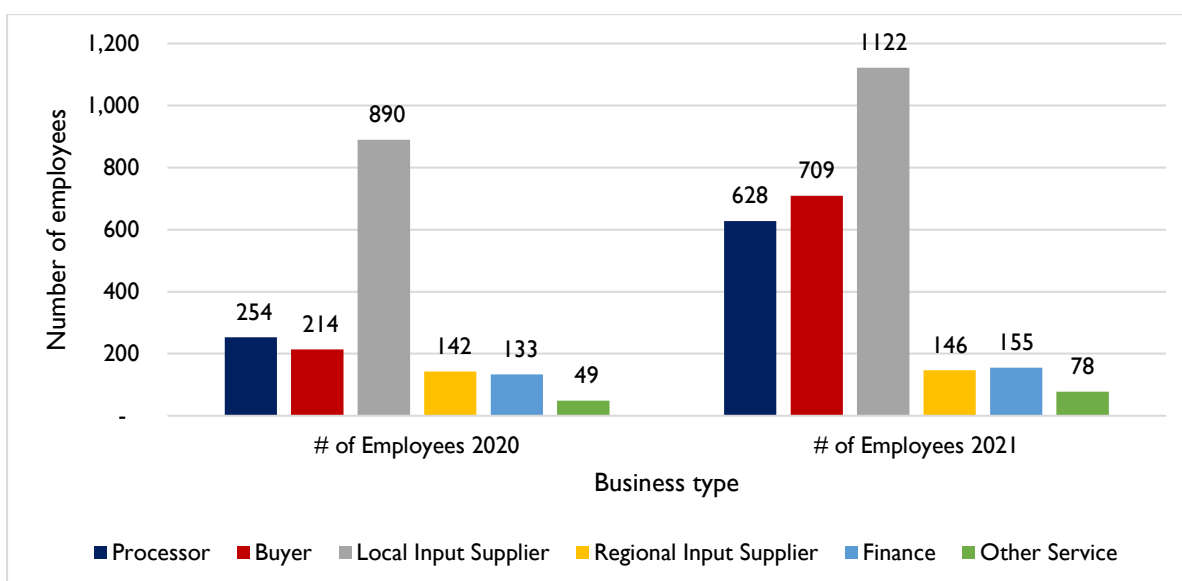


Source: Data provided by MnM staff from annual surveys of SMEs.

Employment by SMEs

Despite uncertainties during the period following the pandemic, employment increased among SMEs in the horticultural sector alongside the growing number of firms. The largest number of employees engaged by SMEs varied with the labor intensity of their work. Local input suppliers had the highest number of employees to supply a large number of farmers. The rate of increase was 26 percent between FY 2020 and FY 2021. Buyers and processors showed the highest increases in employment, which coincided with their increasing numbers. The buyers of produce increased employment by 230 percent while processors reported an increase of 147 percent (see Figure 31).

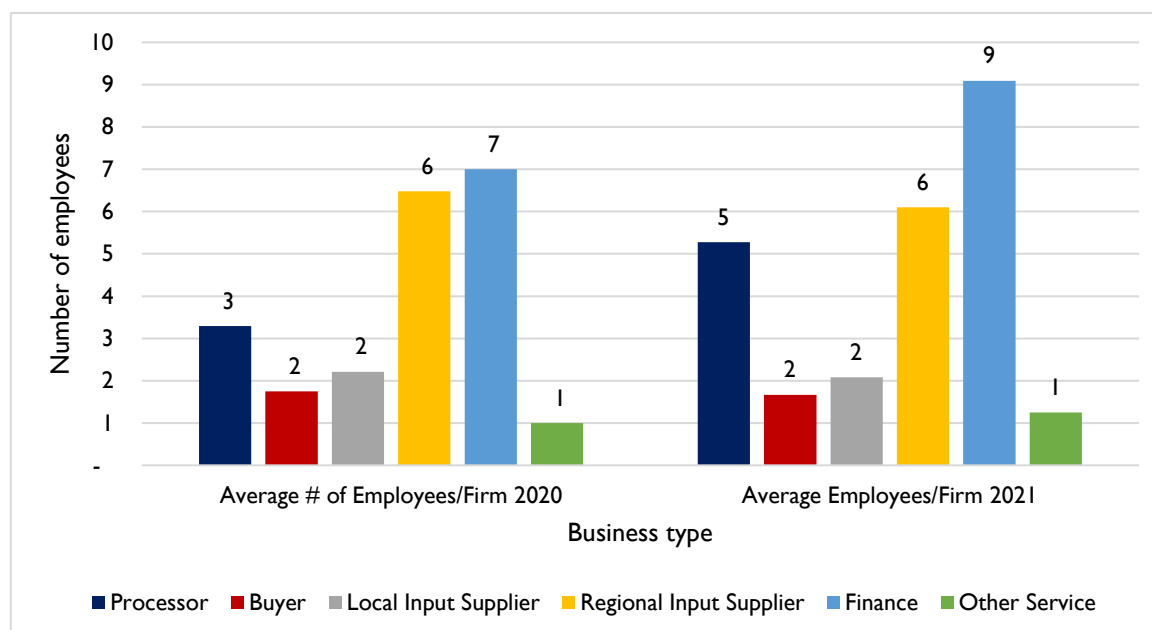
Figure 31: SMEs Reporting Employment Numbers for Their Businesses in FY 2020 and FY 2021



Source: MnM SME Survey

The average number of employees per SME increased for processors (from three to five employees) and for FIs (from seven to nine employees). This slight growth in average number of employees is a positive indicator of some hiring improvements between 2020 and 2021 (see Figure 32).

Figure 32: Average Number of Employees per SME



Source: MnM SME Survey

Input supply businesses

MnM partnered with eight input companies and collaborated with over 10 others to provide capacity-building training to 538 local agro-dealers and 24 regional input suppliers. These businesses were better able to stock high-quality seeds and agricultural inputs. Input supply businesses have their networks of agro-dealers who supply input products to producers and producer groups. In FY 2021, input suppliers sold 74.8 tons of seeds for targeted crops, resulting in an estimated 234,696 ha under improved seed practices, cultivated by 754,904 SHFs. On average, SHFs spent \$27.61 per farmer on

seeds in FY 2021, compared to \$18.41 per farmer during the baseline period. Input companies have seen sales increase by 300 percent. Input suppliers also provide loans to assist their agro-dealers. The number of agro-dealers receiving loans increased in FY 2021 as compared to FY 2020. Agro-dealers providing high-quality seeds, fertilizers, pesticides, and other agricultural inputs to farmers and small businesses, generated \$78.2 million in sales.²⁹

Agro-dealers

MnM improved market linkages and built capacity in business management and better access to agro-dealers. SHF producer clusters helped to link producers to agro-dealers to facilitate sale of inputs. The number of agro-dealers keeping records increased in 2021 which can be attributed to the increased number of trainings MnM provided during the year. The number of agro-dealers providing extension services also increased significantly.³⁰ Agro-dealers appreciated the capacity building to ensure they can access products from larger input suppliers. The survey results found that agro-dealers are increasingly eager to participate in follow-on activities supporting agriculture.

Buyers and distributors

Buyers and distributors connected directly with farmers, farmers groups, and data aggregators (DAs) to purchase fruits and vegetables. The focus is on linking buyers and distributors to farmers and aggregators to facilitate access to quality produce. Buyers and distributors expressed a need for more training in business and marketing skills as well as a need for access to financial services for operating loans. In KIIs, they reported making fewer investments in 2021 compared to 2020.

Processors

MnM supported processors with training and tech funds for their businesses. Processors hired both full-time and seasonal labor. Many of these employees are women and youth (see Text Box 1). In KIIs, processors reported a significant increase in processing activities, especially processing OFSP into flour, juice, bread, crisps, hamburgers, and porridge. Other horticultural crops promoted for processing included mangos for mango pickle, pumpkin seeds, soya (organic soya that is different from organic beans), hibiscus/rosella leaves, spices (e.g., garlic), and other products that are not related to vegetables fruits such as nutritional powder (KII17 Processor and KII18, Food Processor).

Text Box 1: Greenplus Beverages Improved (KII17)

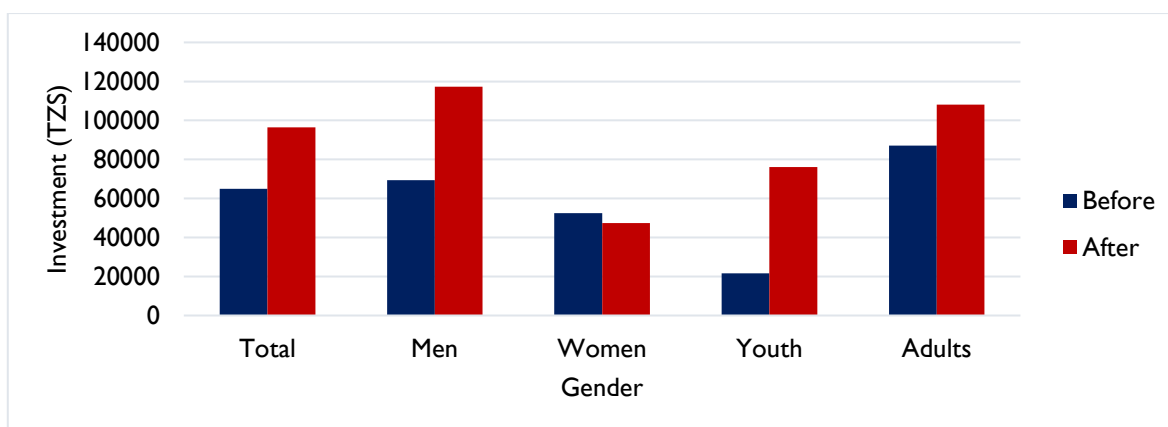
The owner of a food processing company gave a positive review about the advice and assistance provided by MnM's advisors. His company staff received training and the company purchased new equipment and adopted improved practices. He worked with Farm Africa on new varieties of strawberries and blackberries for wine production. Production increased from 40 liters per year at the start of MnM to the current productive level of 6,000 liters per year with the help of kits and measurement tools. Women producers supply the products, and he employs youth to market the finished products. He has introduced orange and mango juices which have been popular with consumers during COVID-19 because of the high vitamin C content. He believes a new product using beetroot, currently under development, will be attractive to pregnant and lactating mothers, and he plans link to health clinics to sell his products. With MnM's assistance, his company obtained a business license and all necessary certificates. He hopes to expand to online marketing (KII17, Food Processor).

The increase in investments can be substantiated (KII22, FI) by increment of money invested in processing and value addition among different gender groups (see Figure 33). There have been marked increases in amounts of money invested by men, youth, and adults in processing and value addition when compared to the period before MnM program interventions (Figure 37). For women, there is a slight decline in investment typically due to lack of financial resources and lack of access to processing technologies (KII31, GEO).

Figure 33: Investment in Processing and Value Addition Before and After (TZS)

²⁹ MnM, 2021, Annual Report for 2021, p. 24 and p. 54.

³⁰ MnM, 2021, Annual Report for 2021, p. 24 and p. 54.



Source: MnM SME Survey

However, the survey found that most of the processors working with MnM are small-scale processors, which are more dependent on MnM for support. These firms have not been as effective in creating markets for horticulture SHFs. Identification of the type and level of MSMEs to work with going forward is critical as well as ensuring the necessary resources required for business successes.³¹

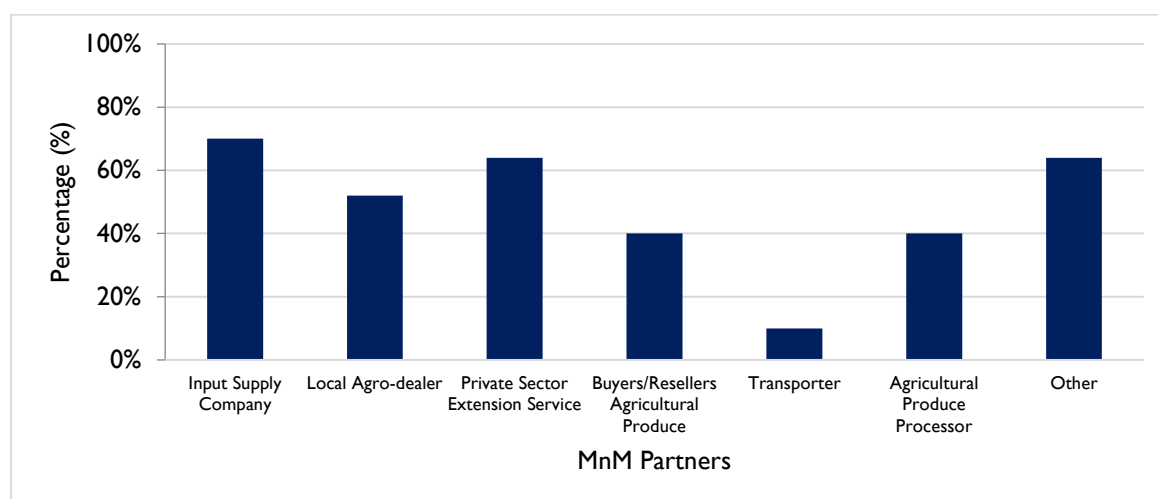
Transporters

MnM reported that working with transporters has been difficult as many move around and provide services to many businesses. Therefore, although they have been linked to buyers and farmers to transport horticulture produce, most transporters did not want to be interviewed during the MSME surveys. Some said that they did not receive significant support from the activity.

4.3.2 Sustainability

Stakeholders responded positively when asked about the sustainability of MnM activities, although the reaction varied by type of business or activity. Private sector input supply and private sector extension services rated sustainability above 60 percent. Ratings from other businesses fell below 60 percent with transporters, who said in KIs they had not benefited from the project, lowest.

Figure 34: MnM Sustainability



Source: MnM SME Survey

4.2 EXTENSION³²

³¹ MnM. (2021). Quarterly Report #18, July 1-September 31, 2021, p. 13.

³² This section address Question 2 on extension, how did the activity's engagement with the GOT's enhanced extension system contribute to the sustainability of results and interventions? How, if at all, have practices from the program been institutionalized in the GOT extension system? How has this enhanced SMEs in the agriculture sector?

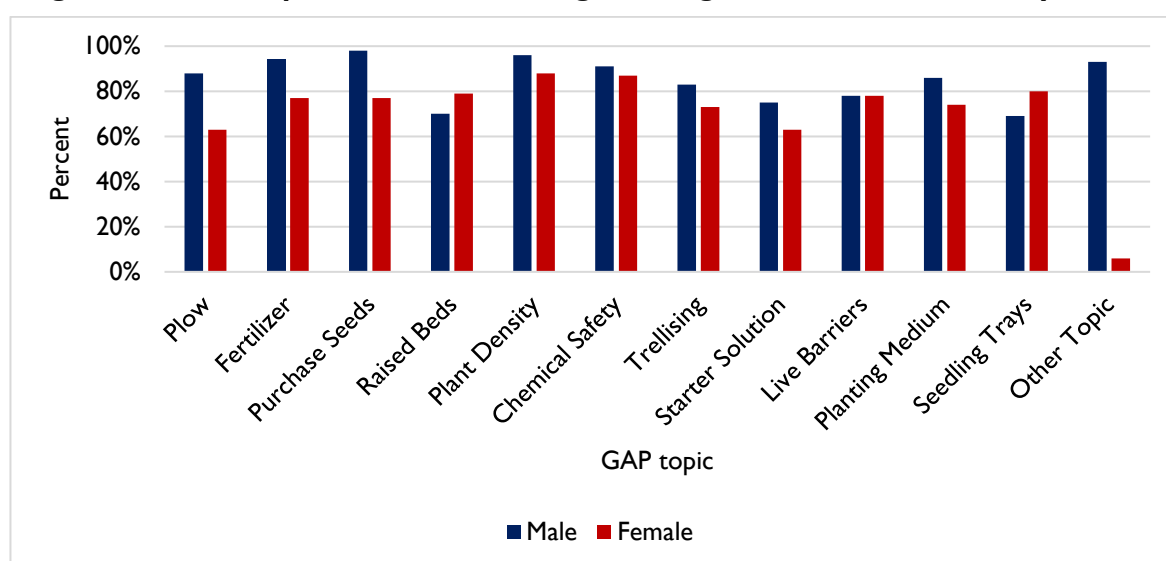
4.2.1 The MnM Activity's Engagement with the GOT's Extension System

Extension services in Tanzania are mainly provided by the Local Government Authorities (LGAs), which are supported technically by the central government at the national level. Non-governmental organizations (NGOs) and the private sector also provide extension services for specific interventions in crop production, including the HVC. However, the capacity of extension services provision is limited due to inadequate number of extension officers and limited budget, transport facilities, and tools and equipment. MnM initially provided extension services directly using its own agronomists and market specialists because they found that the private and public extension services did not have adequate knowledge on horticulture production to support farmers. GEOs and private extension service providers also lacked basic business skills and had poor communication skills. The use of MnM staff alone limited how quickly the program reached the set target of more than 700,000 farmers (KII03, MnM staff). In 2019, MnM focused more on building the capacity of public and private extension service providers to enable them to provide quality services to SHFs. MnM signed Memoranda of Understanding (MOUs) with District Councils (DCs) to detail the terms of the collaboration between the Government and the program. The MOUs stipulated the expected deliverables, which were reviewed periodically (KII36, GEO).

4.2.2 Training of GEOs and Nutrition/Community Development Officers

MnM trained GEOs and extension officers from private companies using a boot camp training model to provide practical knowledge and skills about vegetable and fruit production (KII03, MnM staff). The training also included Lead Farmers (LFs) from various areas. The main topics covered during boot camp training included plowing, fertilizer application, purchase of improved seeds, raised beds, planting density, agrochemical safety, trellising, use of starter solution, live barriers, and use of planting medium and seedling trays as shown in Figure 35.

Figure 35: GAP Topics Addressed During Training and Rated Usefulness by Gender



Source: MnM GEO Survey

Other covered topics included the use of drip irrigation kits (14 out of 21 respondents), use of biological control, nursery establishment using nursery house, soil testing, post-harvest handling, market linkages, and utilization of NRCs. Male GEOs rated trainings on plowing, purchasing seeds, plant density, and trellising more highly. More female GEOs gave high ratings for trainings on raised beds and use of seedling trays technologies.³³

After MnM adapted its approach to supporting the extension system through capacity development, its performance improved. According to MnM staff, in the last two years of project implementation

³³ Respondents were asked to rate the usefulness of a technology.

outreach increased and GEOs and private extension officers trained more SHFs, *“there was...heavy lifting by GEOs in reaching farmers compared to the first two years where a small team of agronomists from MnM staff was going directly to farmers.”* (KII03, MnM staff)

MnM also theoretically and practically trained Community Development Officers (CDOs), nutritionists, Community Health Workers (CHWs), and GEOs in how to prepare NRCs of fruits and vegetables to improve dietary diversification, especially for children, pregnant women, and lactating mothers. MnM subcontracted the Tanzania Home Economics Association (TAHEA) and Integrated Rural Development Organization (IRDO) to conduct training on nutrition. The CDOs recruited and trained community volunteers who, in turn, trained farmers on nutrition, health aspects, and utilization of fruits and vegetables using cooking demonstrations (KII10, Nutrition Partner).

MnM also provided GEOs with fuel and work gear/tools to enhance the provision of extension services to farmers. In the Kilolo district, for example, they established eco-friendly libraries in schools (KII36, GEO). GEOs established demo plots and organized various campaigns to promote horticultural production in the ZOI (KII36, GEO; KII03, MnM Staff). Input suppliers indicated GEOs assisted them in connecting with farmers and used the extension networks to provide inputs to farming areas (KII06, Input Supplier).

4.2.3 Communication Preferences

MnM used various communication methods including meetings, field visits, phone calls, radio, written documents (e.g., leaflets, fliers, and posters), agricultural shows, and workshops to disseminate knowledge, raise awareness, and share information (KII36, GEO; KII09, Input Partner; KII10, Nutrition Partner). Social media tools, such as WhatsApp, connected GEOs and farmers, enabling them to share knowledge and information, including providing feedback in case of emerging issues like occurrence of pests and diseases.

Survey responses show that GEOs mostly used phone calls to communicate with farmers regardless of gender and age. However, GEOs also used text messages and social media tools like WhatsApp. Respondents also mentioned the M-Kilimo App, introduced by the MOA (see Annex 6). The Pambazuko community radio station in Ifakara gave free airtime every Tuesday at 8.00pm which was used to share information about farming, proper use of inputs, and harvesting; farmers could call in to ask questions and get responses from experts. The DC is in the process of establishing its own radio station to enable GEOs to reach more farmers with agricultural messages (KII38, GEO).

“Radio broadcasts were also used to create awareness about upcoming events like World Health Day, World Food Days and World Breastfeeding Day during which we would carry out cooking demonstration...” (KII11, Nutrition partner)

MnM created WhatsApp groups at the DC-level (in Ileje, Busokelo, and Kilolo), which GEOs used to share information with their District Agricultural Officers and interested district councilors. In this platform, group members would submit questions and get answers from subject matter specialists.

“I communicate with my officers via WhatsApp group if they encounter a challenge which they are not capable of address it. This proves to be very effective in information sharing and problem solving.” (KII30, GEO)

4.2.4 Demo Plots

MnM used demonstration plots so farmers and GEOs could “learn by doing” and understand different technologies that can be applied to fruit and vegetable production. From the GEO survey, about 75 percent of GEOs established demo plots in collaboration with LFs; and through these efforts they have reached more farmers. The GEOs organized farmer field days (FFDs) around demo plots inviting farmers and other key players in the HVC, like inputs dealers, to come to engage with farmers and promote new technologies. Buyers and traders also came to explain the market demands and standards for different crops. Other GEOs also used demo plots to train fellow officers from other areas (KII03, MnM Staff; KII10, Nutrition Partner; KII36, GEO).

MnM also carried out cooking demonstrations for improved recipes of the nutrition rich foods to promote utilization of food types that were not common in the communities or that were prepared in ways that lost required nutrients. Before cooking demonstrations, training was done on dietary diversification focusing on the importance of the various food groups families are supposed to get daily. MnM also conducted cooking demonstrations to promote fruits and vegetables that were newly introduced in the community. During the sessions, trainers also discussed the key nutrients found in different vegetables and fruits, preservation and processing methods, and the need to change eating behaviors. The sessions included the importance of home gardens for easy access to vegetables and fruits as well.

“Lead farmers established demo plots, and when other farmers see that these lead farmers are successful, they were willing to learn by doing and went to practice in [their] own farms.” (KII41, GEO)

“The demo plots were very famous and very effective in displaying technologies. For example, use of raised beds especially for crops like tomatoes, interval of the administration of the chemicals and monitoring of the pests and diseases was highly accepted and adopted by farmers.” (KII09, Input Partner)

4.2.5 Challenges Facing GEOs

Boot camps provided training venues for GEOs and LFs. However, some respondents believed that boot camp training should be organized separately for GEOs and LFs because of the intensity of knowledge provided in a very short time. Some of the value chains, e.g., tomatoes, are capital intensive, limiting the number of farmers able to invest after training. One GEO noted that farmers who have been trained in boot camp should be provided with a start-up pack to enable them to put what they were taught into practice (KII29, GOT official).

Most GEOs do not have transportation to enable them to visit and supervise farmers. During the program, GEOs used project motorcycles and cars for farm visits and the project provided fuel for those who had their own motorcycles. Once the MnM phases out, GEOs will not have transportation/support to conduct farm visits. Districts are supposed to allocate 20 percent of the collected revenue from agricultural activities to put back into the sector. However, even when they collect enough, allocation of funds to agriculture activities is very limited and the funds are not always available on time.

“We do plan for agriculture activity, but planning is one thing and disbursement is another issue. When funds are available something else comes up and is given priority then we reallocate funds.” (KII29, GOT official)

DC staff took little ownership of the project despite signing of MOUs. The district officials did not take responsibility for the activity, as they often waited for MnM staff to come for monitoring visits to accompany them to the field, instead of the officials acting as the host (KII02, USAID Official).

GEOs trained producers on irrigation systems. However, irrigation systems do not always provide equal access to available technologies. While some farmers use pumps, others use watering cans to carry water to their crops. The promoted drip irrigation system is very expensive for farmers to adopt. Many farmers cannot afford to drill wells for crops and other uses. Also, due to climate change, water availability is becoming a challenge in some areas. (KII38, GEO).

4.2.6 Successes in Extension Service

MnM worked with DCs to explain the purpose of MnM's activities, and then requested the DCs sign MOUs on each partner's roles and responsibilities. Some DCs have pledged to provide resources to their extension agents.

"The MOUs stipulated partners' roles and responsibilities and actions to be taken when one party is not delivering to the expectation of the MOU agreements." (KII03, MnM Staff)

MnM increased the outreach to SHFs tremendously through engagement of GEOs. MnM trained over 150 GEOs and 70 private sector extension officers. Each GEO reached an average of 3,378 farmers and in each growing season MnM reached about 1,649 (Annex 6). This enabled MnM to reach 169,867 farmers directly.³⁴ GEO collaboration with private sector partners and MnM-provided grant support (vehicles and funds for salaries) helped SMEs to provide timely inputs and extension services to farmers (KII07).

4.3 CASCADE OF TECHNICAL ASSISTANCE TO THE DISTRICT AND COMMUNITY LEVELS

The MnM activity trained GEOs at the local level to improve their skills and competencies alongside subject matter specialists at the regional, district, and national levels. Ideally cascading of technical assistance is expected from the District Agricultural, Irrigation, and Cooperatives Officers (DAICOs) down to extension officers in the field. In some of the districts, DAICOs established WhatsApp groups in which the trained GEOs could share information and progress about MnM implementation to enable other extension officers to learn from them (KII34, GEO). However, MnM trained most GEOs at the ward level directly, with little cascading from higher-level government specialists. While this has little consequence in the short run, it does pose a possible challenge to the sustainability of technical assistance. This may also affect budget allocation by district and regional authorities, who are decision makers but are less informed about the importance of these extension activities. Adding to this, MnM's information sharing to inform the national and regional government about the progress of its activities was limited and irregular, which may also have sustainability implications for planning and budgeting of these activities moving forward.

4.4 INSTITUTIONALIZATION OF MNM ACTIVITY IN THE GOT EXTENSION SYSTEM

The collaboration between MnM and the LGAs was formalized through MOUs with targeted DCs. MnM organized meetings that involved district-level officials to discuss implementation progress. In some DCs, the leadership was well informed about MnM; this initiated dialogues at different times to ensure that policies supported the MnM value chains and provided an enabling environment for the growth of the horticultural sector. For example, in Ileje, road improvement by Tanzania Rural and Urban Roads Agency (TARURA) was done in production areas to ensure that inputs like fertilizers reached the target areas and to enable timely transportation of horticultural produce to markets. The close involvement of the Ileje DC also influenced the decisions to remove the barriers in the collection of levies charged to traders and intervene in the business of selling fake seeds to farmers, among others, which affected production and trading of vegetables and fruits in the district (KII 30, GEO).

However, engagement at the central government level with sector ministries like the MOA, Ministry of Health (MOH), and President's Office-Regional Administration and Local Government (PO-RALG) was limited. The relationship which was sought at the beginning of the implementation of the MnM activity did not continue and the national-level officials interviewed did not know much about MnM. This resulted in limited institutionalization of the MnM activity at the central government level. Future interventions should ensure that activities are incorporated and institutionalized in government systems (GOT officials KII26, KII27, KII28, and KII29).

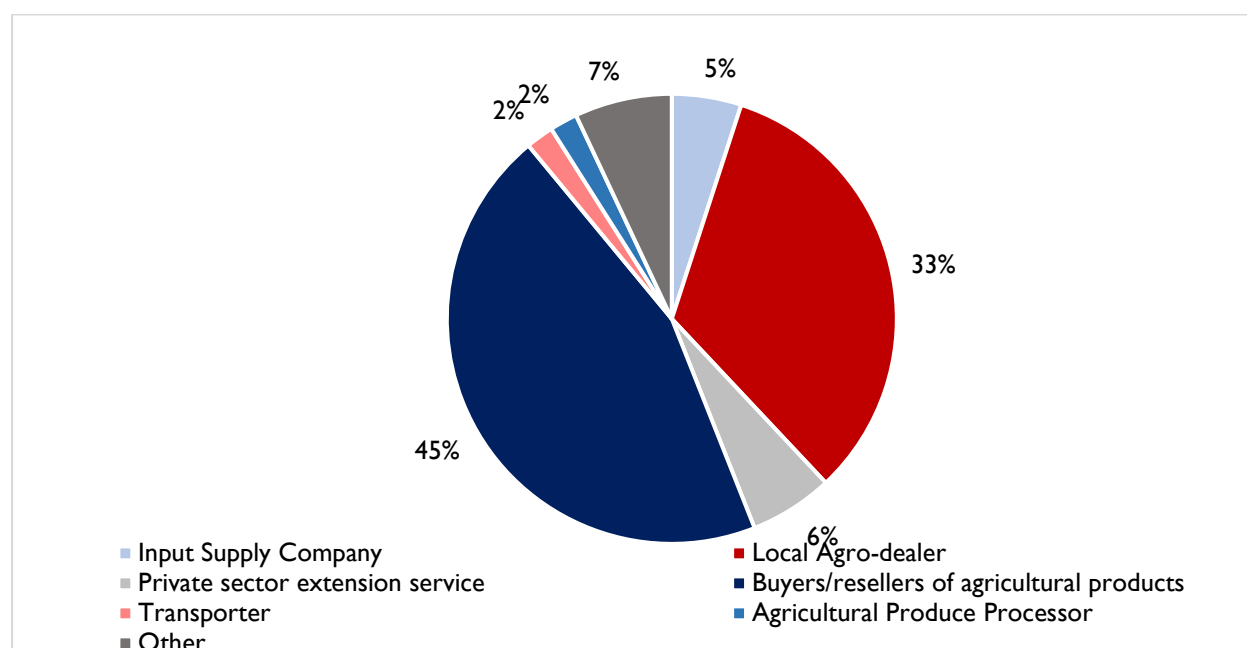
³⁴ MnM Report on Smallholder Achievements, 2021.

“... Government leaders need to be informed and involved in programs like MnM activity to see the benefits and influence them to prioritize MnM interventions and allocate funds.” (KII 26, GOT Official)

4.5 COMPETITIVENESS OF THE SMES IN THE HORTICULTURE VALUE CHAIN

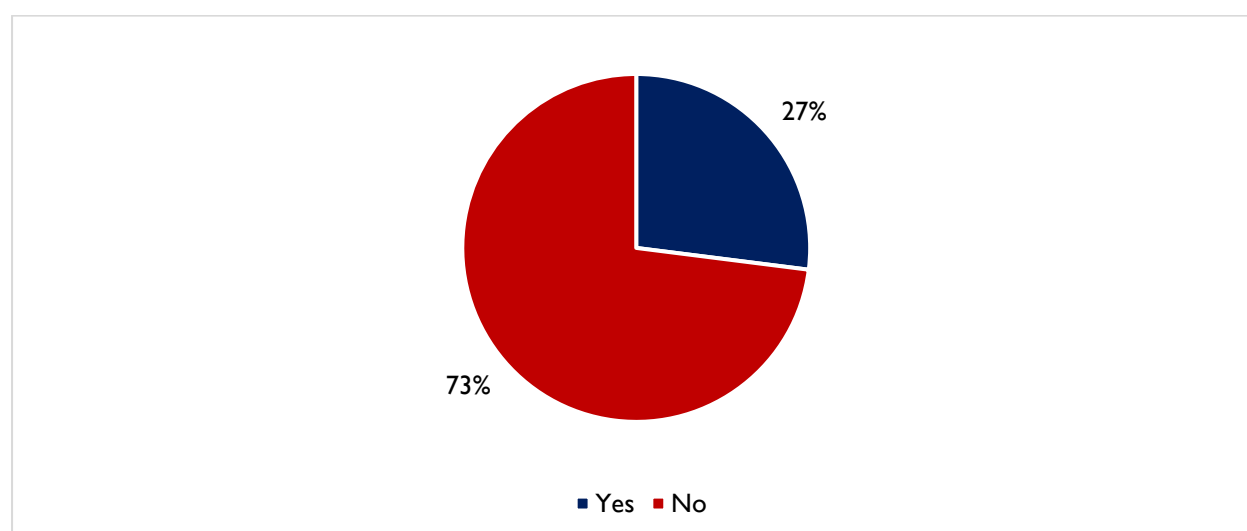
As seen in Figure 34, buyers/resellers of agricultural products (45 percent) and local agro-dealers (33 percent) comprise the highest proportion interviewed SMEs. Buyers/resellers and local agro-dealers invariably acknowledged that the partnership built by the MnM activity has supported them and enabled them to link with more farmers; as a result, they increased their volume of sales and grew their businesses. Twenty-seven (27) percent of SME survey respondents acknowledged receiving grants (Figure 37), that enabled them to expand their capital to reach more farmers and created a market to the agro-dealers.

Figure 36: Business Types Engaged in MnM Activity



Source: MnM GEO Survey, 2022

Figure 37: Percentage of MSMEs Received Grants from MnM Activity



Source: MnM GEO Survey, 2022

GEOs also supported SMEs in disseminating information about availability of improved inputs like hybrid seeds, agro-chemicals, fertilizers, and farming equipment, especially when new products came on the market. The GEOs, who in most cases did not have budgets for setting up demo plots, collaborated with input companies to set up and manage demo plots and organize FFDs to train farmers and increase their awareness of new products (i.e., hybrid seeds) and markets for their products.

Furthermore, MnM connected traders and processors with producers who could provide raw materials and goods for their markets/factories. Processors have also been able to access improved technologies that increased the quality of their products (KII19, Processor).

“...We have collaborated well with the extension officers who have linked us with farmers that increased the number of customers and market shares and reduced cost of delivery...” (KII15, Input distributor)

Sustainability of Results from an Enhanced Extension System

The market-led approach implemented by the MnM activity has helped HVC actors to benefit from and strengthen linkages between farmers, input suppliers, extension service providers, traders, and FIs that will continue beyond project life (GEOs KII30, KII36, KII38).

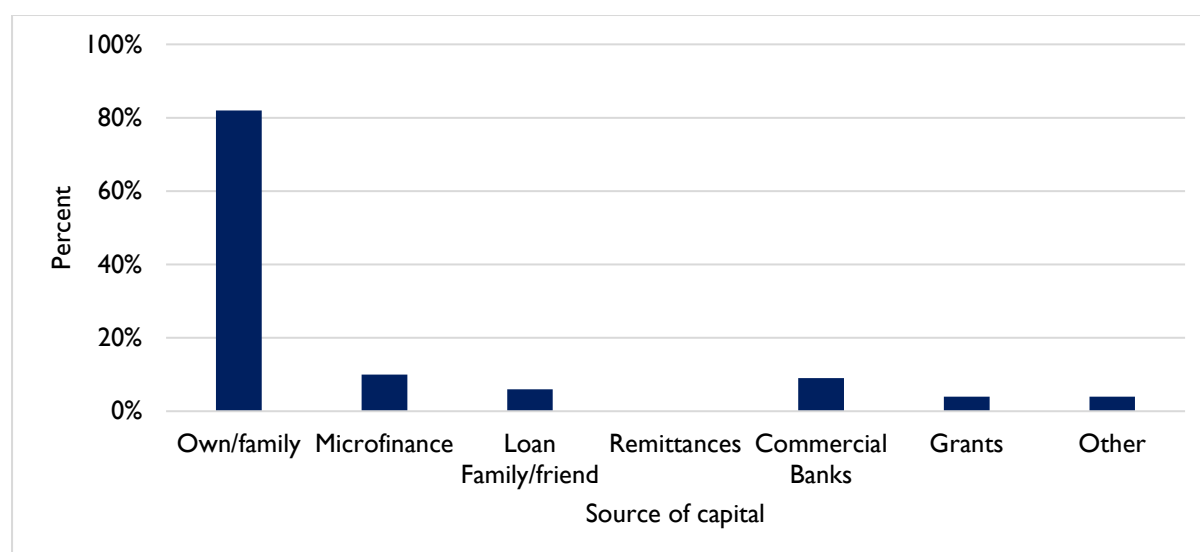
GEO survey results show that 87 percent say they will continue to promote MnM technologies in their areas, while 13 percent of GEO respondents said they are unlikely to do so. Reasons provided for why MnM’s activities will not be sustained after the program include limited budgets, limited access to inputs and technologies, lack of transport, and the cost to procure technologies.

4.6 FINANCE³⁵

4.6.1 Access to Finance

Access to finance from commercial banks is still low, and more than 80 percent of MSME respondents said that they invest using own or family capital (Figure 36). A few SMEs interviewed indicated that they borrowed from microfinance institutions (MFIs) such as the Rungwe Smallholders Tea Growers Association (RSTGA) and Mufindi Community Bank (MUCOBA) (10 percent) and commercial banks like NMB (9 percent). Others borrowed from CRDB, Tanzania Commercial Bank (TCB, formerly TBP Bank), and Equity Bank; and 18 percent indicated that they did not borrow at all.

Figure 38: Source of Capital for SMEs Participating in the MnM Activity



Source: MnM GEO Survey, 2022

³⁵ The section addresses Question 3.

MnM enabled MFIs receiving grants to expand the loan portfolio to SHFs, small businesses, and transporters, as well as fruit and vegetable street vendors in the HVC. By the end of 2019, beneficiaries supported by MnM had accessed \$14.6 million in financing to support their enterprises.³⁶ Loans were issued through farmers groups as a guarantee and individual farmers would get their loans within the groups (KII22 & KII25, FIs).

MnM also provided input suppliers' companies with finance/grants to enable them to increase supplies and improve distribution of inputs to farmers through local agro-dealers (KII09, Input Suppliers; KII16, Input Distributors). In addition, MnM enabled MFIs to demonstrate the potential for scaling up sustainable business models in agriculture finance.

"...agro-dealers will give the inputs to groups of farmers because it's easy to manage groups than individual farmers.... Farmers will pay those loans to these agro-dealers and the processors. We are also getting big number of groups that have received loans from the bank and that shows that really MnM is working on connecting these farmers..." (KII02, USAID Official)

At the local government level, some farmers accessed finance from a district fund which comes from the 10 percent of total revenue collection at DCs providing loans to youth, women, and disadvantaged people. Some MnM beneficiaries utilized the funds for commercial production of fruits and vegetables (KII34, GEO).

"...Loans were given to businessmen in our associations who do business within the Kibandamaiti market. We signed contracts and had good terms and conditions...and we will be able to repay..." (KII13c, MSME Buyer-Trader).

4.6.2 Training and Loan Instruments

In collaboration with FIs, MnM partners trained farmers and agro-dealers on financial literacy, loan management, business planning and operations, simple gross margin analysis, and other business skills before extending loans to farmers and SMEs. MnM linked farmers who received loans to GEOs and private extension service providers to identify loan needs, loan processing, assess the capacity of loans repayment and technologies required, and follow up. GEOs assisted in providing technical knowledge to farmers to ensure that they use GAPs to enable them to utilize inputs and other technologies efficiently to increase productivity and to buyers to ensure access to markets (KII22, FI). GEOs also assisted in strengthening and consolidating groups to enhance social cohesion for loan security (KII25, FI).

In most cases, farmers/groups were required to open bank accounts and deposit at least one-third of the value of the loans requested. Loan duration and interest rates varied depending on the value chain supported; loans mostly ranged from six to 12 months and interest rates ranged between 18-24 percent per annum. MnM also trained MFI loan officers to increase their capacity to manage the loans and ensure sustainability. The MnM staff regularly visited partners to monitor performance (KII25, FI).

4.6.3 Financial Inclusion for Women and Youth

MnM made concerted efforts to increase participation of women and youth in lending for horticulture production and businesses. Youth engagement along the HVC has been higher than anticipated given its quick returns and low requirement for capital. The GEOs have helped youth groups to process and prepare the documents required to enable them to get loans from the District Council Fund (DCF). A good example was from Busokelo District where DAICO reported that youth in the district received loans for vegetable production after receiving training from the MnM activity. They also educated youth who cultivated vegetables and fruits to ensure that they use the loans for the intended purpose only.

"...we are very successful in linking youth to the district fund where 10 percent of collected revenue was allocated to youth, women, and people with different disabilities.... The loans are of zero interest and the government was interested to support youth and women to grow businesses. We've also

³⁶ Quarterly Report #18, 2021.

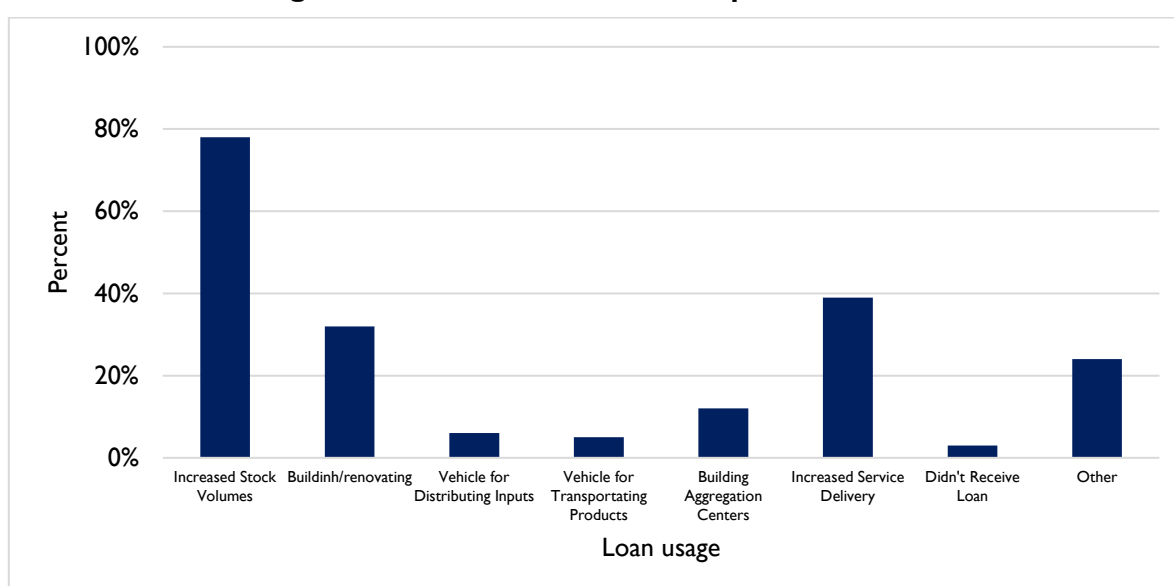
secured funding through some of the grantees and partners we've working with... (KII04, MnM Partner).

Youth groups have also accessed loans from traders to provide services to horticulture farmers, e.g., supply/distribution of inputs and spraying services to farmers, aggregation, sorting, and transportation of horticultural produce to the nearby markets using motorbikes (KII04, MnM Partner; KII30, GEO).

MnM used three different tech funds to support beneficiaries' adoption of technologies through small grants. One of these funds³⁷ was used to support women and youth engagement and provided start-up funds for them to engage in the horticulture sector in different parts of the value chain, e.g., seedling nurseries, processing, and others (KII 03, MnM Staff).

Most SMEs indicated that they used loans to increase stocks (78 percent), increase service delivery (39 percent), renovate business buildings (32 percent), build aggregation centers (12 percent), and buy vehicles to transport goods (5 percent) (see Figure 39).

Figure 39: The Use of Loans to Improve Business



Source: MnM SME Survey, 2022

4.6.4 Challenges to Making Finance More Accessible

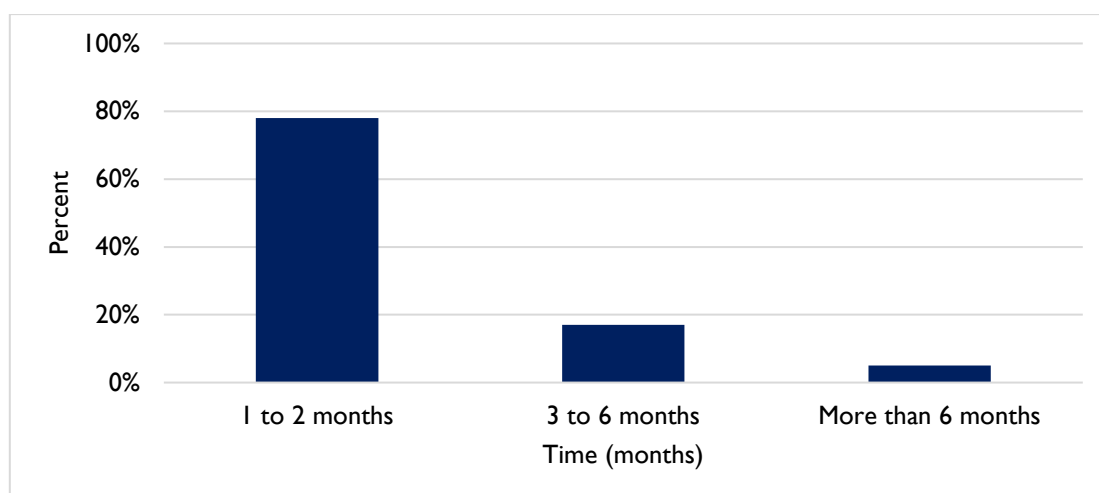
Some of the challenges for HVC actors in relation to access to finance are as follows:

- **Stringent borrowing terms and conditions set by FIs:** Most borrowers lack collateral (e.g., title deeds) and are unable to pay the high interest rates required by banks which limited farmers, including youth and women, and some SMEs from accessing financing (KII04, MnM Partner).
- **Long time frame for processing loans:** In total, 78 percent of interviewed SMEs indicated that it took between one to two months to process loans; 17 percent indicated that it took three to six months and 5 percent stated took more than six months.

“... We helped farmers to apply for loans. Since that time up to now, more than a year, no one from the two villages has received a loan. There are a few that did get loans in a nearby district. I’m not sure what criteria they use to give out Loans and what could be improved to enable them to get loans...” (KII33, GEO)

³⁷ Tech Fund 2

Figure 40: Time Used to Process Loans



Source: MnM SME Survey, 2022

- **Cultural and religious barriers** also hindered access finance in some cases.
“We first went with MnM extension officers to influence farmers to take loans, but they refused because our religion does not allow pay the interest rates. But later when they felt the need, farmers agreed and take loans, and some of them have already paid back the loans in full while others are about to finish the repayment ...” (K1141, GEO)
- **Banks preferred to provide loans to large scale farmers** than SHFs because of high administrative costs (K1131, GEO).

4.6.5 Suggestions for Improvements in Financial Lending

- **Promote blended financial models:** Use venture capital for SME businesses to make them grow fast.
“... we need to stop focusing on small micro businesses and support the fast-growing SMEs to enable them to employ more youth. By targeting women and youths SMEs we will elevate their businesses from micro to medium scale SMEs....” (K1104, MnM Partner)
- **Use Green Card:** This innovation helped the Savings and Credit Cooperative Societies (SACCOS) in Rungwe to increase their loan portfolio and improved tracking of loans issued to farmers through agro-dealers.
“The borrower was required to buy the Green Card and was given specific identity that linked them to input distributors or traders. The card was used to access inputs needed for production, and our vision in future the card will also be used to link farmers to the market. It will also help the service provider to keep the records...that is one thing they never had before...” (K1124, FI)

4.6.6 Sustainability of Financial Interventions

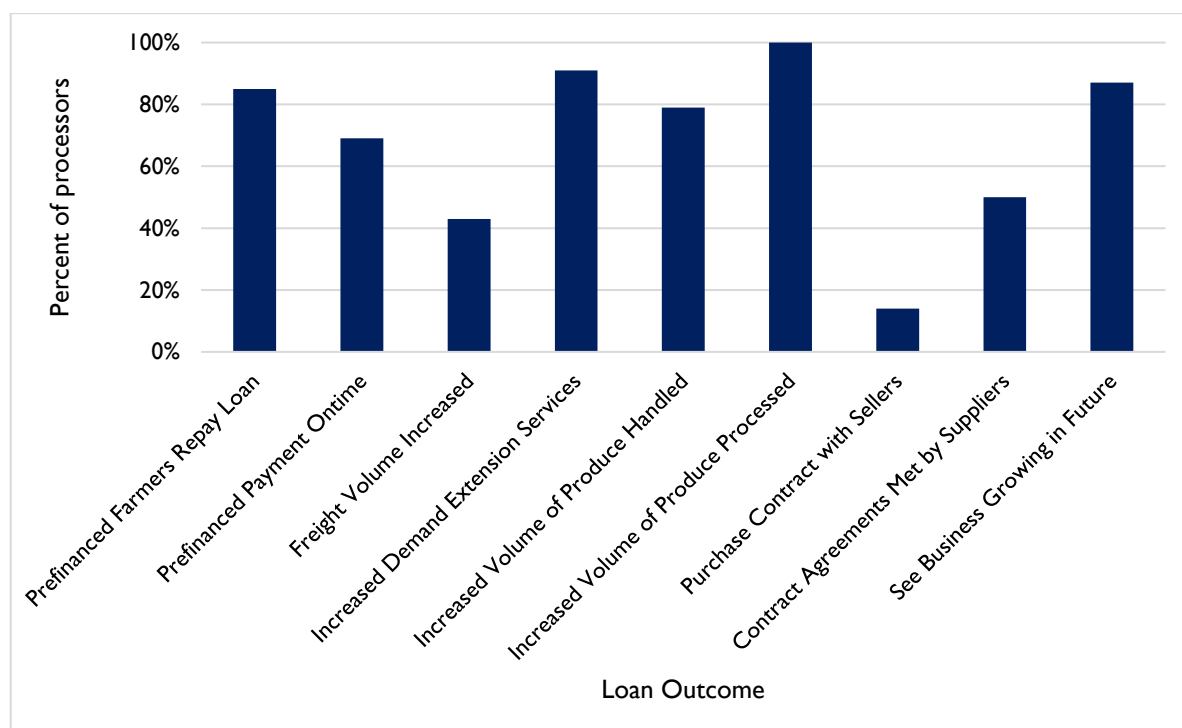
MFI that received MnM grants established revolving funds that enabled them to continue lending to farmers and SMEs in the horticulture sector. Some of the interviewed MFIs indicated that they have been able to continue providing loans to individual farmers and farmer groups more than twice and loan repayment is high, almost 100 percent (K1122).

“... since we started in 2018 till today, we have been able to provide loans worth TZS 1,162,761,500 billion and the repayment is TZS 1,073,001,820 billion (92.3 percent) ...” (K1125, FI)

Access to finance has positive outcomes for farmers and SMEs. Figure 41 shows that 85 percent of SMEs were able to pre-finance farmers with inputs. In addition, 100 percent of processors have increased volumes processed and 91 percent increased services to farmers, and 87 percent of SMEs felt confident the business would continue growing.

“... we have not only provided loans, but we also linked them to the markets; some signed market contracts to supply hotels, which is a stable market, so there is sustainability for many years to come...” (KII22, FI)

Figure 4I: Outcomes of Financial Support to SMEs



Source: MnM SME Survey, 2022

4.7 COVID-19 AND OTHER INTERRUPTIONS TO BUSINESSES AND VALUE CHAIN PERFORMANCE AND SUSTAINABILITY³⁸

The COVID-19 pandemic created problems for implementors and stakeholders throughout the HVC—affecting everything from input supplies to consumer demand which placed constraints on producers, distributors, and processors. This included shortages of inputs (both domestic and imported) needed to achieve the expected MnM production and sales targets. In addition, the pandemic also impacted the final markets for horticulture products. According to the AY director, “MnM would have had greater impacts if not because of the COVID-19 pandemic.” (KII04, IP)

4.7.1 Effects of COVID-19 on Stakeholders in the Horticulture Value Chain

Effect on Input Suppliers

The COVID-19 pandemic and the related global and national response caused market disruptions for the input supplies, e.g., seed, fertilizer, etc. Imports of agricultural inputs from Europe and elsewhere were also in short supply in Tanzania nationally because of supply shortages and lack of transport availability. A ripple effect was felt on the availability of seeds, agro-chemicals/pesticides, fertilizers, and equipment throughout the ZOI. With the decline in both sales and cash flows to purchase inputs, the necessary inputs to implement new technologies suffered. Fertilizer was a particular problem as private sector firms were unable to provide timely deliveries.

Before COVID-19, domestic input suppliers would purchase and inventory larger quantities for the whole year. After COVID-19, sources of quality inputs from overseas declined because some overseas companies stopped producing these goods due to plant closures. Importers had to pay in advance for products, so cash flow became an increasing problem as firms waited to receive products from overseas suppliers.

³⁸ This question is part of Question 3 in the Scope of Work.

“This year, the economic impacts of the COVID-19 pandemic resulted in reduced sales of seeds in many regions, including Morogoro, Mbeya, and Songwe. We also saw some firms succeed in increasing their sales to farmers despite the impacts of the pandemic. Many of these high performing firms were concentrated in Iringa.” (KII03, IP)³⁹

Input suppliers had to change their business approach and shift to smaller orders of inputs, reducing the level of products and moving to a close just-in-time business model. Cash flow challenges caused this shift (IP, KII01). In spite of the effects of COVID-19, the private sector input suppliers recorded \$1.06 million in sales in the ZOI in 2021, up from \$760,000 in 2019-2020.⁴⁰ Further, the private sector has generated \$260 million in sales since MnM’s inception. Farmers demonstrated a level of resilience in spite of the economic hardships.⁴¹ When the input supply chain experienced problems, MnM collaborated with TAHA to facilitate alternative transport to arrange air shipments of low volume items such as improved seeds. One input dealer noted that MnM needs to look at initiatives in import substitution of high value inputs and alternative crop production methods to ensure production is sustained (KII09, Input Dealer).

Effect on Producers

Producers faced problems from two directions: procurement of their inputs and market outlets which cause problems for producers to adapt. *“There were higher costs of production, and market prices for products were dropping.”* A GEO went on to report:

“Yes, there were some effects for sure, but also those producers who had high levels of production were able to sell their products. The downside is that people weren’t able to engage themselves directly with the project during the pandemic. The ones who grew vegetables were in a better position to make a living.” (KII30, GEO)

Despite the economic impacts of COVID-19, there were positive indicators. For example, farmers increased average crop yields over the baseline for key target crops.⁴² MnM clients generated \$149 million which was 147 percent of the target for FY 2020.⁴³ Some producers lost money and exited from the commercial sale of horticulture products; however, the average value of sales was 30 percent higher for participating producers than at the time of the baseline report (\$1,171 versus \$895). Despite the continuing effects of COVID-19, in FY 2021 MnM clients generated \$207.9 million in sales, which was 121 percent of the target for FY 2021. This was an increase of \$58.9 million or a 40 percent increase over the value of sales in FY 2020. Producers who remained in horticulture were more resilient and able to meet adverse market conditions.

Effect on Training

COVID-19 affected training programs because trainers were unable to reach large numbers of stakeholders due to government restrictions on producer gatherings. Training which did occur was limited to 10 people and the trainers had to wear protective equipment. Partners said it was necessary to make more field visits, which took more time and therefore increased costs. A representative of the NGO in Mbeya said this about nutrition training:

“...it affected our ability to meet activity targets and it also increased our implementation expenses for purchasing protective equipment. Participants became discouraged by the lack of cooking demonstrations and lost interest in the project and dropped out. Consequently, partners reduced the number of specialist visits to stakeholders.” (KII10, Nutrition Partner)

The restrictions placed on trainers resulted in reduced participant interest because, while they were ready to participate in cooking demonstrations, these could not take place. Some participants dropped

³⁹ See Annex 6 on location of SME in Chapter 3 and Figure 3 in the MnM Annual Report, FY 2021, p. 25.

⁴⁰ Annual Report, p. 4. Quarterly Report, #15.

⁴¹ Annual Report. 2019-2020, p. 5.

⁴² Annual Report p. 22.

⁴³ Annual Report 2021. Quarterly Report, #14.

out completely. COVID-19 significantly curbed some activities; the speed of the work slowed and implementation expenses increased (KII10 Nutrition Partner).

In this context, FFDs served as an important means for gathering stakeholders. While observing biosafety measures to prevent the spread of COVID-19, MnM input partners still carried out 15 FFDs. On average, each FFD was attended by 70 SHFs and other stakeholders including agro-dealers, GEOs, and village leaders.⁴⁴

Effect on Financial Lending

COVID-19 also disrupted financial lending. Respondents from FIs said they had to increase their costs for staff to spend time on collection of loans that fell in arrears. Staff had to visit large numbers of businesses which had delayed payments (KII24, FIs). Producers and businesses faced declining liquidity to service loans and were not in the habit of saving money for difficult times, such as a pandemic (KII25 and KII24, FIs). Lenders were forced to learn more about horticulture practices and build the skills of their staff to better manage loans.

Interviewed FIs found that brokers and distributors of horticulture faced problems paying their loans. (KII16, Input Distributor). There was a general decline in cash flow which impacted the brokers' and distributors' ability to purchase products. Availability of transport became a problem for shipping products. Transport companies wanted payment in advance because of decline in their cash flow. The tourist industry declined in Zanzibar and hotels' demand for fresh fruits and vegetables fell dramatically. Producers tried to sell their products in the local market; however, products targeted for hotels had limited local demand.

Effect on Processors

Processors found themselves squeezed, unable to have consistent supplies of fresh fruits and vegetables directly from producers or from brokers. It was difficult to be assured that their contracts for delivery would be honored by producers. Contracts were not enforceable so there were no assurances on supplies (KII18, Processor).

4.7.2 COVID-19 Effects on the Horticulture Value Chain

Similarly, COVID-19 also impacted the stakeholders throughout the HVC. From the end-market perspective, the pandemic severely impacted demand for fruits and vegetables at tourist locations, like Zanzibar, where tourist numbers declined, and producers had to sell at lower prices (KII03, MnM Staff). The domestic market became saturated with products targeted to the tourist trade. Producers faced periods of product surplus and produce had to be sold for below cost or simply destroyed to avoid the cost of transportation. The export markets in Kenya, Malawi, and Zambia were closed because of COVID-19 restrictions on cross-border trade.

On average, investments by agricultural enterprises declined in FY 2020, due to the economic impacts of the COVID-19 pandemic. The total amount invested dropped by 58 percent in 2020 compared to FY 2019. In FY 2021, private sector firms and producer groups invested a total of \$44.8 million in agricultural enterprises. In FY 2021, smallholder producers invested \$28 million in agriculture as a business; however, this still was above the FY 2021 target (123 percent of target). To date, MnM clients have invested \$176.6 million in the agricultural sector.⁴⁵

4.7.3 Sustainability

MnM focused on creating market linkages using a market-facilitated approach; this reduced the potential negative effects of COVID-19 on the horticulture subsector. By increasing the capacity of

⁴⁴ Annual Report FY 2021, p. 32.

⁴⁵ Annual Report FY 2021, p. 5.

stakeholders, the actors could better address the challenges presented by COVID-19. In particular, women and youth were empowered to better address these challenges.⁴⁶

“If not because of COVID, there would have been greater impacts by Mboga na Matunda activities. There were challenges because of COVID and addressing these challenges could’ve been done better and definitely this shock in some extent was not accounted for it.” (KII04, MnM Partner)

4.7.4 What Approaches Need to Be Adjusted Moving Forward to Adapt to Ongoing Challenges?

A financial lender said, *“In the future, I think I need to put aside some money in case of any emergency to be able to deal with challenges to make sure workers are taken care of.”* (KII25, FI). Stakeholders need to prepare a risk management plan for horticulture because of the present uncertainties, whether market, climate, or insects. Stakeholders need to be reminded to save money.

One MnM partner noted:

“...it is necessary to frequently review the contracts with USAID based on circumstances and life changes that happen. If we entered a contract in 2017 with an agreement of certain months then comes something like COVID, this change from abroad and others tell you that you are supposed to accomplish this or that without looking at the factors that are out of your reach. So, they should just review frequently and discuss...how they are doing.” (KII22, FI)

Some FIs mentioned that they have to learn more about the horticulture industry to enable them to design programs that can better link stakeholders together in the loan process. More and more timely dialogue is needed among the MnM partners, to enable adjustments in the project activities. Using Collaborating, Learning, and Adapting (CLA) practices is important to ensure partners make quick adjustments. It is also important to assess the situation and review contracts frequently during this period (KII, FI). The use of CLA encourages partners to think as a group to adapt to problems and then get good buy-in (KII01 and KII02, USAID).

“Yeah so, it would be nice if I can talk about the training though we had a...we had a meeting when this COVID become something very serious, so we decided to call all our activities on the ground of our projects and ask them that they need to think on how they can still work during the pandemic period and most of them adapted very well, I should say all of them and MnM, they changed their approach from doing like physical training to online training or having a fewer number of trainees in the class.” (KII02, USAID)

Use of appropriate communication modalities

Respondents indicated better methods of communication are needed to keep producers informed so that, when events are canceled and travel is restricted, they are informed quickly. Respondents highlighted WhatsApp as a way for MnM staff, GEOs, and LFs to communicate. This can involve virtual FFDs to train MnM stakeholders (KII06, Input Dealer). With technology, programs can link producers through Star Link and other information technology (IT) tools to reach communities for training purposes (KII06, Input Supplier). More targeted communications, such as those done with vaccination programs, are needed in the horticulture sector (KII10, NGO).

Businesses like input supply dealers will have to change their business model as well, including how products are ordered and paid for, just-in-time delivery for quicker turnover of products and better cash flow management, and not carrying large inventories. For example, companies learned to make more orders per year—now ordering six to seven times per year in smaller amounts (KII, IP). The GOT engaged in the fertilizer market in 2018-2019 which caused market supply problems with shortages of fertilizers. Private input dealers will need to adjust how they sell. The current rise in

⁴⁶ Some of this resilience may also be circumstantial in that Tanzania did not intervene to a high extent through extended lock downs, etc. which may have made it less susceptible to economic shocks than its neighboring countries which imposed more severe lockdowns and experienced more dramatic affects to their agricultural economies (e.g., Kenya). See Agrilinks newsletter May 2022; Maredia and Hill, Michigan State, [“Surprising Impacts of COVID-19 in Urban and Rural Africa: Data from Five Countries”](#).

fertilizer price will require ways to reduce fertilizer applications to be more specific, and not by broadcasting. For high value products like seeds, small importers can use air shipments; ordering 3-4 kg can cost \$10,000 by air but has quicker delivery and turnover (KII, IP). One processor mentioned exploring online marketing of his products to consumers (KII18, Processor).

For training, one USAID staff noted:

“...it could be more effective to do these virtual trainings because of budget consideration but also they were proving to be more effective than the physical training. However, it is important to assess different methods and capacity of trainees to pick up on the information. but you know, we have different capacities on understanding things so...back to the trainees, I think they could say how easy they think is to understand the online trainings if there are very few in the class or...compared to when it was being done before that but we have been...we have had downfall in terms of numbers that are being reported but later on it picked up and now it seems like a normal thing, we are back to getting the same numbers we used to before.” (KII02, USAID)

4.8 NUTRITION⁴⁷

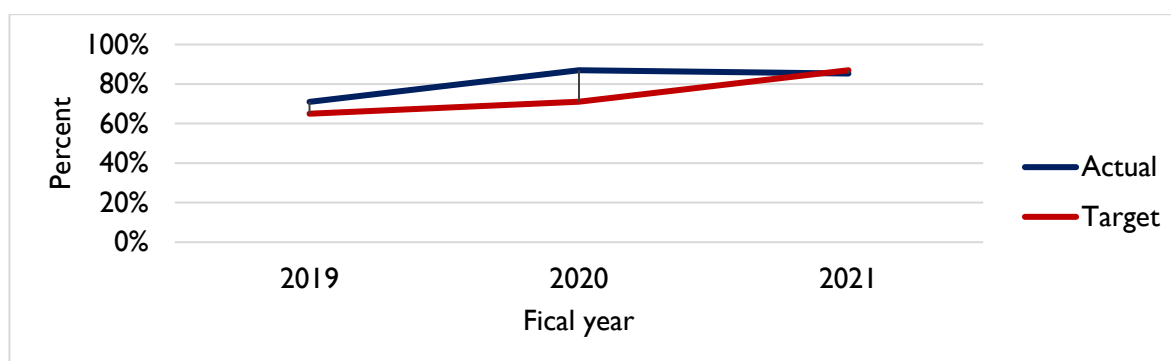
4.8.1 To What Extent Did the MnM Program Result in Nutrition Outcomes and the Health of Women and Children?

MnM Sub-Purpose I focuses on scaling nutrition-sensitive smallholder productivity improvements while integrating large numbers of women and youth. Both qualitative and document review findings demonstrate an increasing number of women of reproductive age with access to a diverse diet and increased number of food groups consumed.

“...so there is impact especially on OFSP. I see a lot of people especially women right now are growing sweet potatoes but at the same time making sure they are eating in a balanced way...”

PMP Results in Figure 40 show that, women with access to a diverse diet increased from 65 percent in 2019 to 87 percent in 2021. Improvement in diet diversity was achieved with the contributions of MnM awareness activities such as nutrition campaigns and promoting production of NRCs, like OFSP. Further, Figure 43 shows that the mean number of food groups consumed by MnM-supported women of reproductive age has remained stable over the last two years (2020-2021). Since 2020, women have consumed at least five of the 10 possible food groups over a 24-hour recall period during MnM surveys, indicating that they have minimally adequate diverse diet, according to Minimum Dietary Diversity for Women (MDD-W) standards. Likewise, the percentage of farmers who eat at least three meals per day has increased from 49 percent before MnM to 87 percent by the end of FY 2021 (Figure 44) indicating that MnM is contributing to increased food availability and utilization in beneficiary households.

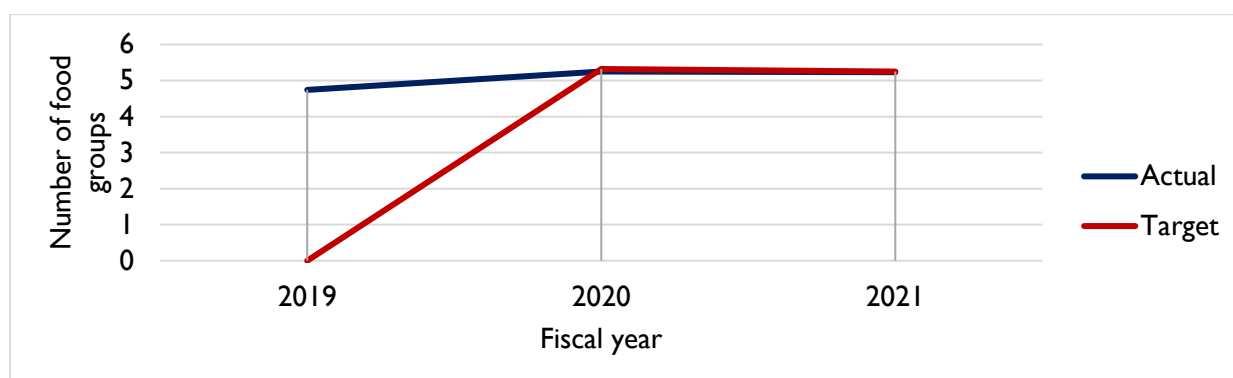
Figure 42: Percentage of Female Participants of USG Nutrition-Sensitive Agriculture Activities Consuming a Diet of Minimum Diversity



Source: MnM PMP Data

⁴⁷ To what extent did the MnM program affect nutrition outcomes and the health of women and children? How have attitudes on nutrition and uptake of nutritious foods changed as a result of the program? How can private sector nutrition intervention be enhanced? How will the MnM nutrition grantees work and capacity gained be sustainable?

Figure 43: Women's Dietary Diversity: Mean Number of Food Groups Consumed by Women of Reproductive Age



Source: MnM PMP Data. Continued sensitization and engagement of women and youth through GEOs has increased the number of farmers (including women of reproductive age) producing and consuming NRCs, indicating an adoption of nutrition messages for the benefit of maternal and child health. MnM engagement activities focused on creating opportunities, marketing linkages, and managing costs of production of NRCs. Women and youth were engaged in larger numbers as well. For example, the MnM FY 2021 annual report indicated that 46 percent of farmers producing NRC were women, a finding which was also echoed by various stakeholders during KIIs. Although this finding is encouraging, more work needs to be done.

“...they (MnM) show how to prepare vegetables, how important it is for women and children to eat those vegetables, but I should say that this is just a small part of what M&M is doing and maybe in the future, this should be something that should be given a [bigger] priority than now.” (KII, Private Partner)

4.8.2 How Have Attitudes on Nutrition and Uptake of Nutritious Foods Changed as a Result of the Program?

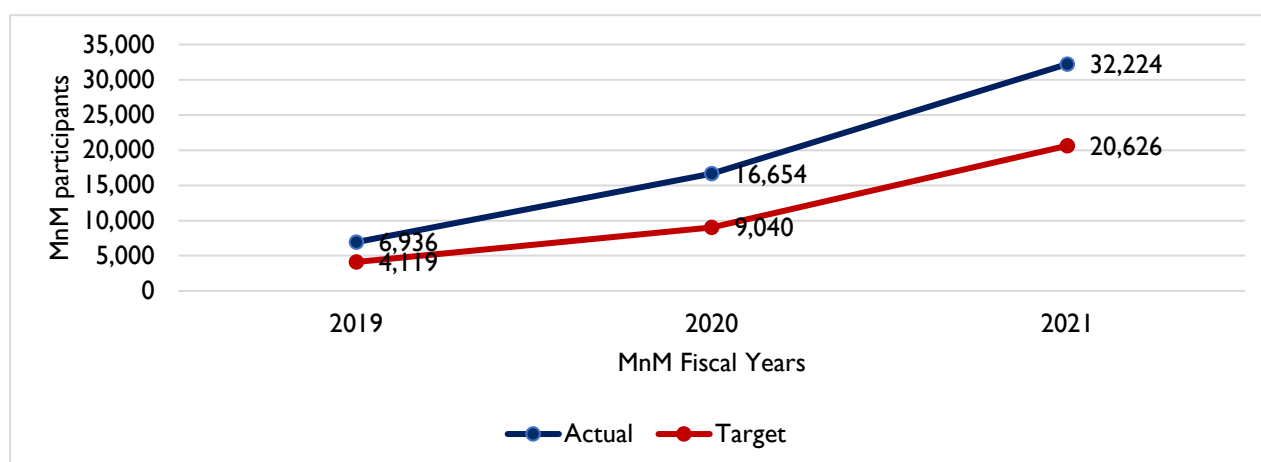
Before MnM, family members, women of reproductive age, and youth consumed a diet of minimum diversity with less nutrient-rich food. Likewise, MnM baseline findings reported that farmers reserved an average of 20 kg per household of all NRCs for home consumption, equivalent to just over 6 percent of the total volume of production. In addition, farmers perceived NRCs to have less commercial value. Producers responded to MnM interventions to improve their nutritional status and on the business side, MnM supported the introduction of NRCs with entrepreneurs being given equipment for processing OFSP and other products.

“They (entrepreneurs) were able to process NRCs and make flour, chips and other products. Right now, when you go to some supermarkets in town you will find OFSP chips, flour and other products.” (KII, GEOs)

In 2021, MnM reported a total of 32,224 (20,626 target) clients receiving direct assistance from MnM and partners to cultivate NRCs for commercial purposes (Figure 43). In addition, through the program's nutrition strategy, dietary diversity continued to improve among client households; 87 percent of female clients were consuming a diet of minimum diversity, against a target of 71 percent for FY 2020 (MnM Annual Report), which was also confirmed by KII participants.

“People have erased the perception that eating green vegetables is a form of poverty, they know about balanced diet. In the past days, a meal will include only one type of vegetable but now people use two types of vegetables, proteins and vitamin rich vegetables.”

Figure 44: Number of Participants of USG Activities Cultivating Nutrient-Rich Value Chain Commodities for Commercial Purposes



Source: MnM PMP Data

Findings show that MnM’s promotion approaches and nutrition trainings contributed to these upward trends in cultivation of nutrient-rich foods for household consumption.

Promotion of NRCs

KII participants confirmed that the promotion of NRCs and their consumption through approaches such as cooking demonstrations, TV programs, school gardening programs, and demo plots have changed beneficiaries’ perceptions on the uptake of nutritious crops and ultimately improved health conditions of the households, especially for under five children.

“Especially on the kids that are five years old and under, very improved...They (households) eat vegetables. Also, it even built the eating culture of the children.” (KII, Respondent Group)

Although partners stated that it was hard for them to visit each household to see adaptation of NRCs they have promoted, they confirmed that the promotion of NRCs helped to introduce new crops to the community that were not grown before.

“It is true that there are some products that were not known at all for example, there is a vegetable called Orange Fleshed Sweet Potato that was not known at all but after training and explaining to the farmers it has picked up and preferred more than the commonly known crops...”

The MOH also hailed the importance of promotion of nutritious foods in schools since children can influence the household and community to produce NRCs.

“...they (children) influence even in vegetables gardening especially when they’ve been taught to farm at schools how to start a home garden. The one which is done in boxes, bags, small cans...”

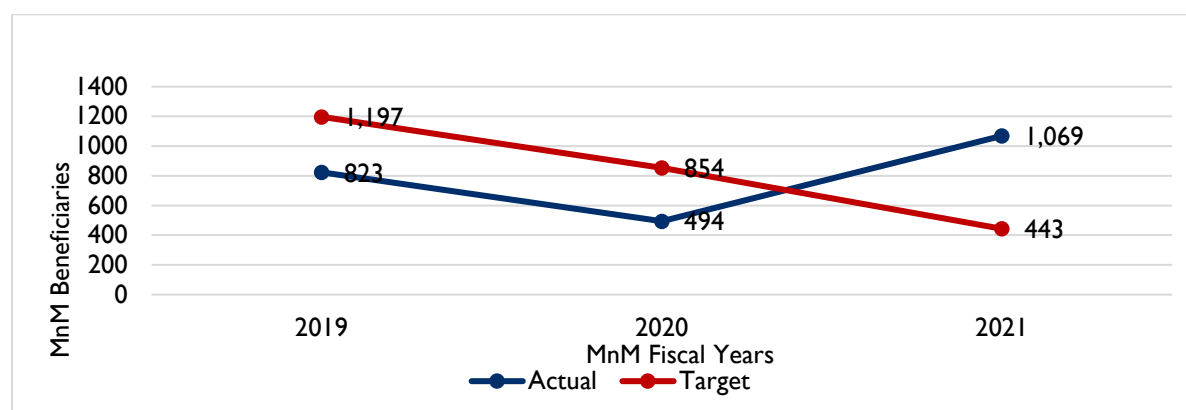
In addition, MnM’s collaboration with media to promote improved nutrition and women/youth participation in the HVC continued to engage additional stakeholders, as the established media programs attracted new presenters. In 2021, a total of 29 hours of aired programs were provided to MnM for free by Highland FM in Mbeya (13), MYCN radio in Zanzibar (3), SUA FM (5) in Morogoro, and Furaha FM in Iringa (8). During the sessions, the listeners sent SMS messages and called to ask questions that were answered directly by the specialists on air.

Nutrition trainings

Under the supervision of District Nutrition Officers (DNOs) and other NGOs, CHWs continued to provide nutrition education to their communities through various mechanisms such as Village Health Days, FFDs, and regular visits to farmers’ plots. While experiencing the drop in 2020 due to the COVID-19 work from home policy, Figure 44 shows that MnM and its partners trained 1,069 individuals (76 percent female, 61 percent youth) on nutrition-related professional training.

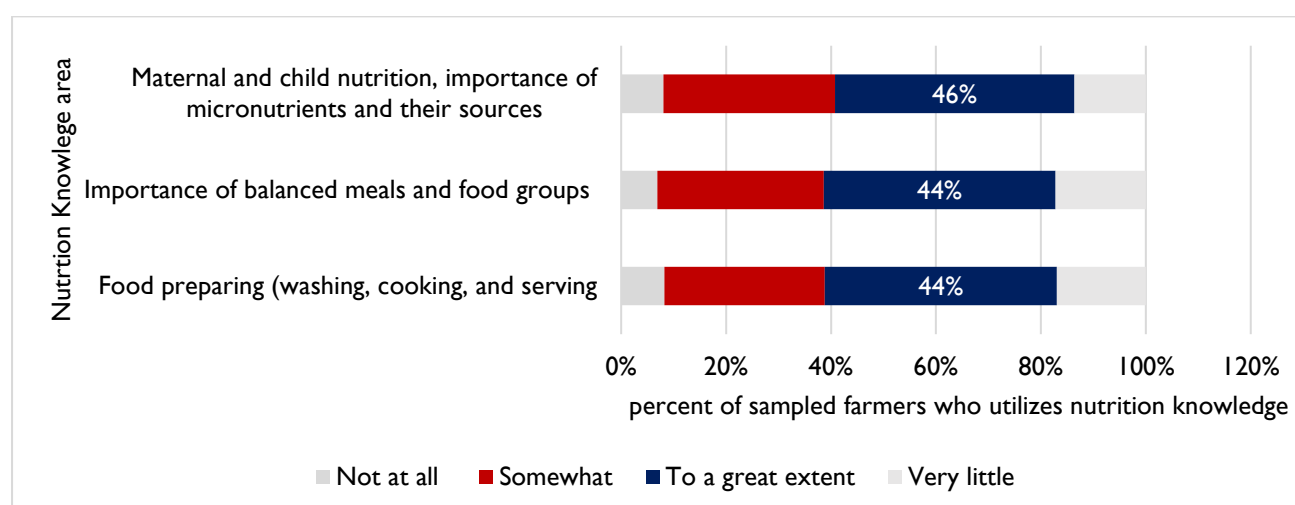
Village Health Days were held at the end of each month which provided an opportunity for the CHWs to conduct trainings. As a result, the Village Executive Officers are now capable of reporting on to the National Multisectoral Nutrition Action Plan (NMNAP) platform, the national platform to monitor nutrition intervention in Tanzania. Both the GEOs and DNUOs confirmed the improved nutrition status in health facilities as a result of CHW trainings to community members. Likewise, 44 percent of farmers confirmed they used training related to nutrition to a great extent (Figure 46).

Figure 45: Number of Individuals Receiving Nutrition-Related Professional Training Through USG-Supported Programs



Source: MnM PMP Data

Figure 46: Extent of Farmers' Utilization of Nutrition Knowledge Gained



Source: Farmer Survey, 2022

In addition, MnM and through its partners trained a total of 495 Nutrition Trainer of Trainers (TOTs) (including 93 youths) on GAPs for NRCs and nutritious food groups, balanced diet, water and sanitation, and processing and cooking demonstrations using locally available foods. As a result of the trainings, the GEOs were able to conduct nutrition trainings for farmers without the participation of a nutritionist.

4.8.3 How Can Private Sector Nutrition Interventions Be Enhanced?

The MnM nutrition program engaged public, private, and community partners in improving household health and nutrition. Through a market-facilitation approach, the private sector has been involved in training producers and the community on nutrition and nutrition-sensitive agriculture. This has increased awareness among community members to consume nutritious foods. For example, KII data confirmed that the MnM nutrition program through the private sector has provided education to households on diet diversification, food preservation, nutrition counseling, promotion of NRCs, and

cooking demonstrations to stimulate marketing demand and incorporate vegetables into the diet. Among these, the nutrition counseling session and preservation method were the most effective.

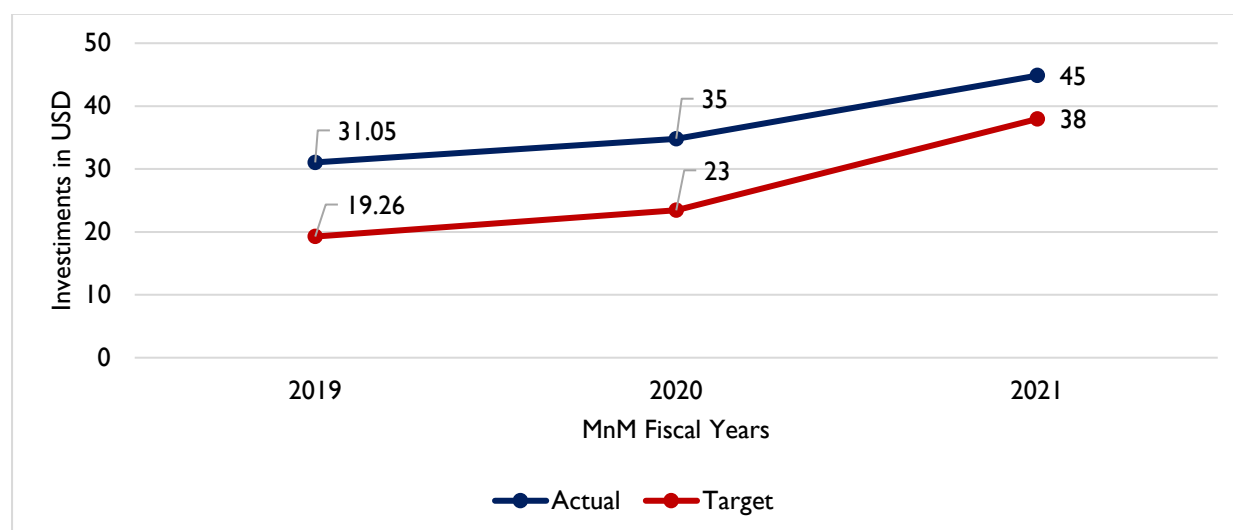
“...the counseling sessions gave us good results and people exceeded the targets we had set because our target was to reach 9,000 people, but we went beyond and reached 10,000 people.” (KII, MnM Nutrition Subgrantee)

“We used to do [the] counseling issue session to the beneficiaries concerning key nutrients and behaviors, we also did cooking sessions on how to prepare foods, focusing on five-course meals they are meant to get daily but also, we did the whole issues of preservation, processing that food and the gardens they had prepared in the environment around their houses.” (KII, MnM Nutrition Subgrantee)

The value of USG commitments and private sector investment to support food security and nutrition has increased by 45 percent over the baseline (see Figure 46). However, the document review and KIIs confirmed that the number of private sector entities involved in NRC production has been small with only three companies processing OPSP in Zanzibar, Mbeya, and Iringa. Further efforts are needed to engage more companies to support food security and nutrition interventions. Other partners such as NAFKA and INADES have collaborated with the GOT and MnM to support MnM’s work on the ground, especially in food processing and fortification of staples; this collaboration has proved to be successful as noted by KII participants.

“...they (private sector) have collaborated with MnM and Government to provide education about the nutrition-rich foods...as I said before that a lot has changed and many people are involved in nutrition awareness activity and facilitation about nutritional issues, meal preparations and people are responding very well and eating healthy foods. Most pregnant women eat healthy foods and rest well and there are bylaws that prohibit pregnant women to work in night clubs/pub.” (KII, MnM Nutrition Partner)

Figure 47: Value of New USG Commitments and Private Sector Investment Leveraged by the USG to Support Food Security and Nutrition [IM-level]



Source: MnM PMP Data

Private companies have been able to mobilize people to change their perceptions on nutrition. Yet, nutrition partners reached through KIIs suggested that the private sector should focus on improving the perceptions and positively impact traditional community customs that lead people to avoid consuming certain kinds of foods. The presence of public-private platforms to discuss private sector nutrition issues was well recognized by respondents, but community involvement in those fora was mentioned to be an area that need further enhancements.

“Yes, because we have various platforms where the private and the public sectors, they all meet and from the private sector perspective they come up with various issues they channel them through the private sector’s platforms like Tanzania Private Sector Foundation and then they will engage directly with the public, even the public they are having some department which are promoting the nutrition in the health of women and children.” (KII, Agro-dealer)

“...Yes, and sometimes citizens trust their government more or they are afraid if they do something with the private sector, they (private sector) will be shut down. But if we have one voice and it is being represented in those forums, we can succeed, I think you understand.” (KII, Agro-dealer)

4.8.4 How Will the MnM Nutrition Grantees’ Work and Capacity Gained Be Sustainable?

The MOA emphasized the importance of the private sector to continue engaging GEOs in their nutrition interventions. The Ministry has confirmed MnM’s engagement of GEOs in its nutrition interventions has created sustainability. Private sector stakeholders, such as TAHEA, INADES, and NAFKA, collaborated with the GOT to help with storage or adding value to nutrition products.

“Yes, there are stakeholders that have been collaborating with us in storage and adding value to the crops. We collaborated with NAFKA who were dealing with staple food program, and they were doing fortification in maize flour, since that’s our main food source. There are various stakeholders that have been collaborating with the government to provide training on how to add value (fortification) to the crops to promote good nutrition to consumers.” (KII, GEO)

With MnM support, KII respondents noted that schools can have their own gardens, which is the best most sustainable approach and investment for children. Even when grown, a child will leave school having the skills to plant a garden.

“...When he (student) goes home, you tell him to also plant vegetables. Even just two small buckets of amaranth, it is also...nutrition...” (KII, GEO)

Per the MnM FY 2021 annual report, there is demand from other MnM collaborators, such as CRS, DCs, and Lishe Endelevu, for MnM to train the individuals they work with and the community in general. This contributed to MnM training a large number of CHWs for sustainability, as these health workers reside in the communities and will continue to do so.

The community has gained an understanding of how local foods can be made more nutritiously with no additional cost to the family through MnM-supported CHWs. During food demonstrations, MnM trained farmers on preparation of foods, including preparation of vegetables to prevent nutrient loss, and preparation of complementary meals using OFSP, animal food, and other locally available foods; complementary food preparation using locally available foodstuffs; water and sanitation training including general hygiene, hand washing, and food hygiene; and food groups, balanced meals, and meal frequency.

However, some capacity-building institutions like the Small Industries Development Organization (SIDO) were not fully involved in the promotion of nutrition sector. SIDO provides services aimed at facilitating the establishment of small-scale industries that focus on adding value to produce.

“For capacity building, they should mostly base [it] on the farmers group and SIDO. SIDO usually does capacity building in the preservation and processing.” (KII, GEO)

MnM grantees discussed the Tanzania Private Sector Foundation (TPSF) and its platform for connecting the GOT (including the Tanzania Food and Nutrition Center) and the private sector, as the main vehicle for sustaining private sector nutrition activities after the program. The platform has the license to collaborate directly with the GOT which makes it easier for grantees to have nutrition issues addressed by the government.

“...from the private sector perspective, we have the private sector’s platforms like [the] Tanzania Private Sector Foundation which engages directly with the public, even the public they are having some department which are promoting the nutrition in the health of women and children, so I trust this is something that will grow a better sustainable future.” (KII, Agro-dealer)

MnM supported and worked with entrepreneurs, who were given equipment to process OFSP and other NRCs. They were able to process and make flour, chips, and other products. Since processing NRCs adds value, it has a monetary motivation for entrepreneurs which drives sustainability.

“...Right now, when you go to some supermarkets in town you will find OFSP chips, flour and other products made by various entrepreneurs.” (KII, Agro-dealer)

MnM trained partners on how to process and package their products which attracted customers. Partners confirmed that they will continue to implement knowledge gained from MnM as a way to keep their customers.

“It will be sustainable, I believe that when a person is educated about something, they will work on it without stopping unless they did not understand, but for those who understood they won’t stop working on it because once they do, they will lose customers. Most customers want good products with good quality, for instance people like my flour because their children have gained weight and it’s because I did put correct measurements as needed. So, if you don’t do it correctly, most customers won’t come back and that’s why I believe it will be sustainable.” (KII, Agro-dealer)

4.9 COLLABORATION WITH OTHER USAID TEAMS AND AGRICULTURE AND ECONOMIC GROWTH ACTIVITIES⁴⁸

4.9.1 How Effectively Has MnM Collaborated with Other USAID Teams and Other Agriculture and Economic Growth Activities to Add Value Across Their Interventions?

Consultative meetings and outreach efforts

MnM collaborated with a number of other USAID/Tanzania activities in the SAGCOT development corridor. These collaborations and consultations added value to MnM investments by understanding coordination mechanisms for the private sector. MnM consulted with the Agricultural Sector Development Program II (ASDP2); MOA in Dodoma, 2019; Private Sector Apex Bodies; the Agricultural Council of Tanzania (ACT); Agriculture Non-State Actors Forum (ANSAF); and TPSF to understand the dialogues and coordination mechanisms which are organized by the private sector stakeholders on issues related to horticulture. MnM also held consultative discussions with the policy and planning directorate in Zanzibar to understand the coordination and dialogue mechanisms for the agriculture sector in Zanzibar; with regional agriculture advisors in the ZOI to understand the coordination and dialogue structures for the agriculture sector in these regions; and with SAGCOT Center Ltd. in Iringa to understand the Policy Network Meeting which discussed potential areas for interventions and platforms for the FTFT activity.

Work among implementing partners

In KIIs with USAID/Tanzania, staff reported positive collaboration exists with MnM’s IP. To work on implementation issues, IP staff met regularly with USAID/Tanzania and other organizations, such as the SAGCOT Center, Iringa Hub, TAHA, Lishe Endelevu, and AY. These collaborative efforts added value to better implement MnM activities. The engagement of women and youth benefited from AY partnership, in particular. AY has unique skills in providing access to women and youth and motivating groups to join other MnM stakeholders and was able to steer large increases in women and youth participation.

National Government Administration (NGAs)

At the national level, MnM engaged with the central ministries such as the MOA and PO-RALG at the initiation of the project. However, during the implementation phase, MnM was less engaged but focused on LGA participation instead. KIIs with national representatives found there is a steady flow of information among the PO-RALG, MOA, and the implementation of the national horticulture strategy being implemented by the LGAs, but the departments were not getting feedback about MnM’s activities. In the KII with PO-RALG, *“I cannot talk of impacts of MnM as I am not aware of the MnM*

⁴⁸ How effectively has MnM collaborated with other USAID teams and other agriculture and economic growth activities to add value across their interventions? What areas of collaboration or coordination need to be strengthened?

programs, and I don't know whether there is such a program implemented." A similar response from the MOA representative reported information about other IP activities such as AY and TAHEA, but not MnM activities (KII, MOA Official, Dodoma). According to an interview with a USAID representative, the normal turnover rate of national staff, which was exacerbated because of COVID-19 restrictions, affected information flows to key people in the national government about MnM activities.

In the interview with the MOH, the representative had not heard about MnM but had information about the USAID-funded Lishe Endelevu and worked closely with the implementing staff. They received regular invitations to visit the field activities. The representative said:

"For example, if you ask me about Lishe Endelevu, I know where it is located and what it does. If the minister comes, he will call me and ask about the funds, I can explain. If you are not informed, you are not informed, you won't be able to explain to the government." (KII 27, MOH)

This calls the sustainability of the MnM activities into question. The MOH respondent went on to add, "Since the engagement with the national government was low, do not expect there will be sustainability of the activities."

More programs coordination with the National level agencies/ministries need to be considered for future programming.

Local Government Authorities

MnM has established coordination mechanisms with LGAs through meetings and discussions with the regional and district administrative officers, and agriculture officers. This has resulted in close coordination in the field with the GEOs.⁴⁹ In an interview, the IP partner noted:

"We went to different councils asking for collaboration, and a good thing is most of them were interested. A few were not and some were a bit negative and didn't want to collaborate. But after they started to see something happening, they came back to us demanding an agreement to participate." (KII, IP)

MnM worked with LGAs and their local extension agents to identify groups of farmers and establish farmer clusters in the ZOI. Groups of producers improved the efficient delivery of extension services and inputs and could be linked to buyers. MnM's work with the LGAs was instrumental in achieving these improvements in the value chain.

Collaboration with other organizations

In FY 2021, MnM received increased demand from other collaborators to train the individuals they work with, e.g., CRS, DCs, and Lishe Endelevu. This contributed to a large number of CHWs being trained.

4.9.2 Areas for Strengthening Collaboration and Cooperation

Among Implementing Partners

An area to strengthen would be the communication and collaboration among IPs. This would be done in M&E and data collection, updating client database for tracking and follow-up with participants on a regular basis. This would be integrated into the data quality assessment (DQA).

National Government Administrations

Interviews with the national agencies—the PO-RALG, MOA, and MOH—indicate MnM needs to improve its efforts to reach out at the national level. The national government prepares the sector plans for each of the ministries and these plans and funding levels are set at this level. Areas of improvement would be for continuous engagement with PO-RALG, the MOA, and the Department of Nutrition about MnM activities in each of the regions in the ZOI.

Local Government Authorities

⁴⁹ USAID/Tanzania, Feed the Future Mboga na Matunda, Quarterly Report No. 2, p. 13.

The engagement with the LGAs and DCs is important for support for field activities. Some DCs were more proactive with MnM while others were slower to respond or did not respond at all. This could partly reflect the need for more support from the national departments, the PO-RALG, MOA, and MOH. With nudging from the national and regional offices, more DCs might have signed MOUs; signed between LGAs and MnM, MOUs were effective in getting LGAs to pledge support for MnM's activities.

In the GEO survey, extension agents (89 percent) overwhelmingly said that they had good collaboration with the MnM project. In a follow-on question, 86 percent of GEO agents said they want more collaboration to occur in the future (see Figure 51). The areas for collaboration include training in purchase of seed, fertilizer applications, plowing, plant diversity, and chemical safety. Overwhelmingly, GEOs said that phone and radio were the best means of communication and collaboration.

Policy changes

MnM had a number of active partners which provided important complementary efforts leading to improvements in the HVC; for example, TAHA provided policy analysis. The studies addressed constraints in the HVC and were used to inform government agencies on their policies and the estimated costs to the supply chain.

Women and Youth initiatives

The marginalization and invisibility of women and youth are daunting challenges. They require consistent coordination and cooperation among IPs and other supporting groups to address complex issues on empowerment. MnM works closely with a number of groups to address these challenges. The Rikolto – Mbozi, Ileje, and Isangati Consortium (MIICO), a project implemented by Rikolto in conjunction with Mbozi ADP, IRDO, and Isangati Agricultural Development Organization, have agreed to collaborate with MnM to engage women and youth in the HVC. MnM's objective is to create groups of women and youth and expose them to the necessary skills to succeed as leaders and entrepreneurs. These groups can learn by sharing lessons learned in establishing and building businesses.⁵⁰

4.10 EFFECTIVENESS OF PARTNERSHIPS⁵¹

4.10.1 Effectiveness of Partnerships with Private Sector and Non-Profits

MnM's partnerships with for-profit and non-profit organizations throughout the ZOI were critically important. MnM signed partnership agreements with 24 entities during the life of the project (LOP) (see Table 10). The partnerships help to achieve the objective to foster sustainable competitiveness of the horticulture sector. MnM's partners provided an array of products and services to producers and businesses throughout the value chain. The majority of these partners have offices in the ZOI area. Both the for- and non-profit organizations will continue to provide those activities that support their business model. Private firms are driven by the financial bottom-line decisions which incentivize them to continue profitable activities.

Table 10: MnM Partnerships Implemented in the ZOI October 2017 to February 2022

Activity	Number (no.)	For Profit (no.)	Non-Profit (no.)	Average Life of Contract (months)
Input Suppliers	8	8	0	35
FIs	8	6	2	31
Processors	2	2		42
Buyer-Exporter	2	2		35
Nutrition	3		3	34
Extension	1		1	24
Total	24	20	4	34

Source: MnM Evaluation, 2022

⁵⁰ FTFT-MNN, 2021, Annual Report, p. 61.

⁵¹ This section addresses question "Effectiveness of Partnerships with different private sectors including access to products and services?"

MnM engaged with these partners and provided capacity building to carry out their tasks and meet the contracted deliverables. The average life of a performance contract was 34 months, which is an adequate time to see results. IP staff rated the performance of each entity as good, fair, or poor in regard to expectations. Out of the 24 SMEs, 19 had good ratings, four had fair ratings, and one had a poor rating.

The importance of each partnership is the reach it provides to MnM in the ZOI and its complementing specialties. In return, these partners strengthened their business model and practices. Partners signed MOUs and prepared written performance objectives. MnM increased the capacity of businesses with training in accounting, marketing, and technical skills. It also invested significant amounts of time and resources with the smaller-size partners to build the capacity of new and existing partners on best practices in managing USAID funds. This involved minimizing invoice errors, good invoicing, minimizing invoice queries, reminders on proper documentation, and following USAID rules, regulations, and other policies guiding the awards. MnM held refresher training for partners' staff including finance officers, field staff who initiate documentation, and management.⁵²

4.10.2 Preparation, Sharing, and Reflection in Monthly Reports to Partners

As a routine process, the MnM MEL team continued producing monthly activity reports as well as zonal and partnership reports to enable IPs to gauge progress and learn about activity implementation. The reports have been shared widely with activity and partner staff. Through management and during Monday morning meetings in each zone, the MEL team facilitated review and reflection of the monthly reports to identify strengths and areas of improvement in implementation of the activity. Issues identified during these reflection meetings were incorporated into the daily activity implementation program.⁵³

Collaboration is essential for an effective activity and it helps partners to create strategic competencies, lower operational costs, and reach areas that they would otherwise not be able to reach. MnM's partners indicated they have been able to realize the importance of working with GEOs in ensuring sustainability and creating critical mass for offering training, as well as selling partner products and technologies.⁵⁴

MnM continues to scale up its activities and reach larger number of beneficiaries through increased collaboration between SHFs, private sector companies, and GEOs. Input partners continue to focus their efforts to increase their presence in the ZOI. The activity is currently in a "crowding in" phase, in which more actors—spurred organically—are engaging in the HVC, which results in higher crop volumes and more sales transactions.⁵⁵

MnM directed more resources to build the capacity of partners to continue implementing activities after FTFT-MnN activities phase out. Working with partners provided opportunities for demo products (inputs and outputs). Respondents mentioned the Southern Highlands as having fewer input providers than regions in the North of the country; due to this shortage, MnM worked on expanding the network of suppliers operating in the ZOI.

⁵² MnM, 2021, p. 56.

⁵³ MnM, 2021, Annual Report, p. 69.

⁵⁴ MnM, 2021, Annual Report, p. 58.

⁵⁵ MnM-FTFT, 2021, Annual Report FY 2021, p. 31.

4.10.3 Partner Fund Progress on LOP Targets and Administrative Actions

Looking at the LOP targets for partnerships, by the end of FY 2021, MnM partners had trained 93,468 unique farmers, equating to 96 percent of the LOP target.⁵⁶ MnM directed more resources to building the capacity of partners to continue implementing activities after the program phases out. MnM partners expended a total of \$222,855 this quarter and, to date, the activity has expended \$4,337,513, representing over 90 percent of the total approved Grants Under Contract (GUC) budget. In addition, grantees committed a total of \$144,086 this quarter towards partnerships. To date, they have invested \$3,560,668 in contributions.⁵⁷

4.10.4 Partnerships by Activity

Input suppliers

MnM has invested considerable resources since the beginning of the activity in 2017, to promote access, distribution, and the application of agricultural inputs by SHFs. This has triggered growing demand by SHFs. Currently, input companies, whether under a formal partnership with MnM or through simple collaboration efforts, are experiencing growth in their sales in the ZOI as an increasing number of farmers utilize their products for increased productivity and profitability.⁵⁸ MnM also works with input companies not under the partnership portfolio to expand access for their inputs in the ZOI. Firms such as Africasia, Rijk Zwaan, Baker Brothers, and Corteva continued to increase the products portfolio in Mbeya by introducing new products and establishing demo plots with MnM and GEOs.

Financial institutions

FIs received two fair ratings and one poor rating. This reflects the difficulties that SHFs had in accessing financing. Financial institutions consider agricultural activities as risky, so few FIs are ready to lend. MnM anticipated the addition of a new finance partner, but the partnership was not finalized in 2021 as expected.⁵⁹

Partnership to improve nutrition

The partnerships established by MnM were effective in reaching communities in support of nutrition and health. MnM's nutrition partners, TAHEA and IRDO, trained 1,305 people and facilitated the establishment of NRC demo plots and nurseries. Client farmers who benefit from partner implementation also appreciate support received by community volunteers who conduct cooking demonstrations in health facilities and the broader community and encourage the production of NRCs.

Partnership with buyers/exporters

MnM has built the capacity of over 62 wholesalers and 364 retailers and linked them to smallholder suppliers with the help of data aggregators.

Partnership with processors
MnM built the capacity of 119 processors, 62 wholesalers, and 364 retailers with the help of a consultant to link to smallholder suppliers of horticultural produce. MnM had contracts with two of these processors to purchase of products from SHFs and to develop and market to consumers.

⁵⁶ MnM, 2021, Annual Report, p. 57.

⁵⁷ MnM, 2021, Annual Report, p. 56.

⁵⁸ MnM-FTFT, Annual Report, p. 31.

⁵⁹ FTFT Annual Report, 2021, p. 9.

4.10.5 Partnership Performance

Partners report progress on PMP indicators for the LOP. As of the close of FY 2021 partners exceeded three of the target deliverables: number of agro-dealers trained (116 percent), value of loans disbursed by FI partners (115 percent), and number of in-kind loans by input partners (149 percent). Partners met or will likely meet the number of farmers trained (unique) (96 percent); number of demo plots established (98 percent); number of agro-dealer companies linked (90 percent), and number of loans disbursed by financial partners (91 percent). The partners will fall behind in value of sales by partners (81 percent) and value of loans not repaid (82 percent). MnM's overall record is very good given the negative impact from COVID-19. Without the pandemic, MnM would very likely have met or exceeded all targets.⁶⁰

⁶⁰ PMP data from annual reports.

5. CONCLUSIONS

Smallholder Farmers' Production and Productivity and Technology Uptake

MnM contributed to the development of the horticulture industry in the ZOI. The horticulture subsector has been recognized as an opportunity for income generating investments that help SHFs to move out of poverty and improve their nutritional status. The horticulture industry is on a good growth trajectory in domestic markets. However, farmers face challenges in accessing international markets and meeting international standards. The capacity-building efforts on GAPs have significantly intensified productivity through agricultural technologies, such as hybrid seeds, seedling trays and improved health of seedlings, and irrigation. Agro-dealers and GEO counterparts have shared knowledge with producers in best post-harvest practices such as sorting and grading of their products to supply niche markets. The broad majority of farmers receiving basic technology training were able to adopt those practices on their farms. Eighty-six (86) percent of farmers adopted basic post-harvest technologies with 82 percent who adopted basic post-planting technologies. The higher costs of intermediate and advanced technologies such as hybrid seed, irrigation, greenhouses, and application of chemicals resulted in only 4 percent of producers adopting the full package of technologies. Although farmers were trained in these technologies there are some barriers to application due to the capital intensity of the more advanced technologies (e.g., use of pesticides). Technology adoption revealed some gender imbalances as the majority of producers adopting "advanced" technologies were men; there were lower levels of technology adoption for women overall.

Gender and Youth

More youth and women have realized the HVC's potential through participation in MnM. MnM effectively implemented gender mainstreaming and strove for gender parity in its programming. Agriculture is an increasingly older and male dominant sector. Because of this, concerted efforts are needed to attract women and youth. MnM realized this and introduced and supported emerging businesses in services that offer opportunities to young horticulture producers. For example, nursery seedling production is a popular enterprise among youth in SAGCOT. As consumers increase their demand for horticulture, this indirectly improves opportunities for women and youth. Despite this, a broader targeted approach for gender and youth empowerment in the sector is still needed.

Micro, Small, and Medium Enterprises (MSMEs)

MnM has engaged a variety of MSMEs through GEOs' activities at the district level. The types of MSMEs GEOs reported to engage included: buyers (engaged by 45 percent of the GEOs), local agro-dealers (33 percent), private sector extension service providers (7 percent), and input suppliers (5 percent). MSMEs benefited from training, capacity building, and innovation tech funds. There is sufficient market demand for horticulture products locally; although, gluts still occur during the harvest season. There are opportunities for Tanzanian horticultural goods in the export market as well. However, access to the larger international market will require improved standards and practices of sorting and grading and food safety according to the Food and Agriculture Organization of the United Nations (FAO). Partners are very satisfied with the MnM interventions to improve the volume of trade for horticulture produce. The activity reached over 100,000 farmers and helped link 22,621 of them to local markets. However, food quality standards are not high enough to enable greater access to export markets.

Extension

MnM's implementation of a market-led approach coupled with training using the boot camp model was done through the engagement of GEOs, lead farmers, and private service providers who then disseminated technical assistance at the district level to farmers/producers. This has been effective in developing skills that led to improved competency, increased outreach to SHFs and higher productivity, better quality products, and profitability. The integration of private sector SMEs like input suppliers, FIs, and traders enabled MnM to scale-up its interventions. Youth MSMEs and farmers have engaged with traders in providing services like distribution of inputs, aggregation, sorting, and transportation of produce to the nearby markets, while a high proportion of women engaged in

production and marketing of horticulture produce in local markets. The involvement of LGA and GEOs has been crucial for institutionalizing practices at the local level; however, engagement at the central government level is needed for greater ownership of the program, higher level institutionalization, and budget allocation for these activities to be sustained by the GOT.

Finance

SHF access to finance from commercial banks is still low because of collateral requirement and high interest rates. The overwhelming majority of farmers and SMEs have received loans from friends and family but have little access to formal financing. Farmers and SMEs who do have access to loans find it easier to borrow from MFIs like SACCOS, Agricultural Marketing Cooperative Society (AMCOS), and Village Community Banking (VICOBA). Tripartite agreement between input suppliers, agro-dealers, and banks/FIs helped to increase access to pre-financed inputs that increased investment in the HVC. FIs report high repayment for loans, contributed to by the financial training provided to beneficiaries by MnM. Despite these efforts, access to finance is still limited for the majority of beneficiaries, this is particularly acute for women and young women who have less access to financing than their male counterparts.

COVID-19 and Other Shocks to the Food System

COVID-19 had impacts throughout the HVC and affected MnM's outputs. In addition to COVID-19, ongoing supply chain shortages, rising global food prices, and the costs of basic farm inputs of nitrogen-based fertilizer and agro-chemicals derived from petroleum have compounded the pandemic's effects. As the availability of needed inputs becomes more constrained and costly, long-term effects could be seen in soil quality, crop yields, and, ultimately, shortages and higher prices of horticultural goods. Other countries in East Africa are already experiencing food shortages; while Tanzania's horticultural sector holds promise for its own food security, its role in supporting the region is limited due to challenges meeting regional and international food safety and quality standards.

Nutrition

MnM has helped to change beneficiaries' attitudes on nutrition which is evidenced by the increased uptake of nutritious foods and improved dietary diversity among women of reproductive age and under five children. Among the farmer population at large, the number of meals per day has increased. Partnerships in nutrition facilitated the sustainability of MnM nutrition grantees' work, and capacity gained. Engagement of women and youth through GEOs increased the number of farmers producing NRCs.

Collaboration and Coordination

MnM has worked hard to establish collaboration with a large number of organizations in the public and private sectors and civil society and NGOs. These partnerships have strengthened MnM's outreach to stakeholders, steering them to MnM core training activities in production, marketing, business, and community health. The partners having the most success were input suppliers.

IPs said that their relationships were good, which helped to address implementation issues early before they became a problem. For example, when MnM felt that women and youth participation was lagging, AY's work helped to direct more women and youth into MnM's horticultural training, boot camps, and judging panels. Youth from the farmers survey indicated they appreciated these short trainings.

MnM had a number of active partners which provided important complementary efforts and impacts. For example, subgrantee TAHA conducted policy analysis and studies which have contributed to policies that have improved market access and trade in horticulture products in Tanzania.

The marginalization and invisibility of women and youth are daunting challenges. These issues require consistent coordination and cooperation among IPs and other supporting groups. MnM works closely with a number of groups to address these challenges providing capacity building to projects like MIICO, a project implemented by Rikolto in conjunction with Mbozi ADP, IRDO, and Isangati Agricultural Development Organization. They have agreed to collaborate with MnM to successfully engage women and youth in the HVC.

Partnerships

The creation of private sector partnerships by MnM is a strong component of the activities and may contribute to sustainability after MnM closes. Private sector partnerships helped to increase MnM's reach in the ZOI, achieve its objectives, and improve sustainability in the horticulture sector. MnM helped to develop the capacity of these partners. In turn, partners provided an array of products and services to producers and businesses throughout the HVC. MnM partners said they have been able to realize the importance of working with geos in ensuring sustainability and creating critical mass for offering training, as well as selling partner products and technologies.

6. RECOMMENDATION

6.1 SMALLHOLDER FARMERS' PRODUCTIVITY AND PROFITABILITY—AND TECHNOLOGY UPTAKE

Recommendation 1: To address the issue of low adoption of advanced technologies (e.g., chemical application, etc.) and foster improved resilience to shocks, USAID/Tanzania or the follow-on activity should consider technical assistance and support for use of locally available, financially and environmentally sustainable technologies for fertilizer, pest control, and irrigation. USAID/Tanzania also should help the GOT to promote and scale up climate smart villages (CSVs). These CSVs would be established using participatory appreciative inquiry methods that promote inclusion of women and youth in decision-making. CSVs that exist in Tanzania can be used as models.⁶¹

6.2 YOUTH AND GENDER

Recommendation 2: USAID/Tanzania should further engage CSOs to effectively mobilize and engage youth in the horticulture industry. Projects such as AY strongly support MnM in making youth aware of the importance of establishing market linkages and promote youth to become entrepreneurs. USAID should recognize that the needs of youth extend over longer periods with individual mentoring by experienced MSMEs and producers to enhance learning and access to business networks. Other technical assistance activities can provide training on particular horticulture growth needs such as improved grading and quality standards, food product processing, and marketing.

This should include exchange visits between emerging commercial horticulture areas (ECHAs) in the ZOI to more advanced commercial horticulture areas (ACHAs). These exchange visits would link businesses, especially for producers and firms operating in the HVC.

6.3 SMALL AND MEDIUM-SIZE ENTERPRISES

Recommendation 3: USAID/Tanzania should advocate for the GOT and regional authorities to reduce the road stoppages on major transport corridors for agricultural products. USAID/Tanzania, through an organization like TAHA, can work with the SAGCOT Center to address these problems on internal corridors and at export gateways. The GOT can set conditions for travel with no stops between major urban hubs in the ZOI.

Recommendation 4: USAID/Tanzania should fund regional research institutes at universities in the ZOI to support product development for processed fruit and vegetables. This should include aspects of quality control and food safety. Further support could be provided to university and agriculture vocation schools to develop entrepreneur centers for business incubators targeting women and youth and training hubs for young entrepreneurs in food product processing and marketing.

Recommendation 5: USAID/Tanzania should advance export market development by conducting market studies to establish opportunities for horticulture exports to East Africa, and other international markets. USAID technical support should further enhance the ability of farmers and food distributors to meet international standards for expanding access to export markets.

6.4 EXTENSION

Recommendation 6: USAID/Tanzania should continue promoting a market-led approach that engages and supports the agricultural extension and its efforts to share horticultural practices with farmers and enhances the quality of produce and link farmers to markets.

Recommendation 7: USAID-supported programs, like MnM, should engage the central government from beginning of implementation and regularly share progress reports. This would help to align program activities with national strategies and programs' contributions towards achieving national goals would be captured in GOT reports. Greater central government engagement in implementation,

⁶¹ CSVs include Agro-ecological zones in Tanga-Usambara Mountains, Muheza Tanga (EU) and Igunga Tabora (Heifer Intl).

planning, and succession planning will ensure ownership and improved financial and institutional sustainability of these activities.

6.5 FINANCE

Recommendation 8: USAID should work with the GOT and with FIs to reduce the cost of loans to farmers in the horticulture sector. Alternative solutions need to be explored to provide loans that have reasonable terms and conditions and that are lower than the prohibitively high interest rates available from those offered at commercial banks. This could include working with national banks, FINCA, SACCOs, and/or MFIs to provide credit guarantees and support the process for acquiring loans to support horticulture farmers. Supporting access to finance through savings groups or VICOBA for farmers to meet conditions and loan terms in groups should be continued. USAID/Tanzania and the GOT should investigate developing capacity incentives for tripartite financing arrangements involving FIs, input suppliers/agro-dealers, and farmers to profitably serve SMEs. This will increase local access to finance and introduction of appropriate agro-inputs to farmers and processing technologies that can be effectively marketed.

6.6 COVID-19 AND OTHER SHOCKS TO THE FOOD SYSTEM

Recommendation 9: Continue to implement flexible contract mechanisms for follow-on projects to address future shocks, global food prices, rising input prices, and environmental shocks from droughts and flood. Flexible contracting should include expected deliverables, the time frame to be completed, and budgeting, as it did for MnM and partners because of COVID-19.

Recommendation 10: USAID/Tanzania will need to work closely with the GOT, other international organizations, NGOs, and the private sector to prevent disruptions to the food system seen during the pandemic or other shock to the food system. This will require close coordination with neighboring countries to ensure that borders remain open and trade flows are not disrupted for agricultural commodities. This combined with efforts to elevate food standards and safety will allow Tanzania to play a role, not only in its own food security, but also in addressing the acute food shortage in the East Africa Region and the rest of the continent.

6.7 NUTRITION

Recommendation 11: USAID/Tanzania should continue efforts to encourage production of NRCs (e.g., OFSP) and provide training for better health outcomes in the home, in markets, and with processing companies. These products are easy to grow—unlike tomatoes and other high-cost fruits and vegetables.

Recommendation 12: Promote the reduction of losses through increased food preservation through solar drying of fruits and vegetables. These foods can be targeted to pregnant women and children under five years of age to improve dietary diversity and overall nutrition. Support entrepreneurs using the market-facilitation approach and engage public, private, and community partners.

6.8 COOPERATION AND COORDINATION AMONG IMPLEMENTING PARTNERS

Recommendation 13: In the follow-on project, USAID/Tanzania should support implementation of the CLA Framework, which involves intentional planning and processes and support the smooth flow of key information to help IPs become nimbler, knowledge-driven, and responsive to the evolving root challenges that programs and projects face and scales up success stories, to promote sustainability.

Recommendation 14: USAID/Tanzania should continue to provide timely information sharing with the national administration as it develops its new horticulture strategy and work closely with national government agencies of the PO-RALG, MOA, and MOH to address budgetary issues for planning and investments in the horticulture industry. This consultation will help to better coordinate information sharing from the national- to regional- to district-level governments and raise the visibility of USAID's horticulture investments with the GOT and other implementing agencies.

6.9 PARTNERSHIPS

Recommendation 15: USAID/Tanzania can foster strong linkages with private sector industry organizations (e.g., TAHA) and incentivize them to use a market facilitation approach that addresses constraints in the supply chain and builds capacity to realize impacts of the partnerships. Sub-contracts can be used to address immediate challenges caused by global shocks. Longer-term policy directives are important, but priority should be given to immediate issues like transport capacity for horticultural products.

7. ANNEXES

ANNEX I: SCOPE OF WORK

End of Award Performance Evaluation of the Mboga na Matunda Activity Scope of Work

Activity Name	Mboga na Matunda (MnM)
Implementer	Fintrac, Inc.
Agreement Number	AID-621-C-17-00001
Total Estimated Ceiling of the Evaluated Project/Activity (TEC)	\$24.9m
Life of Activity	January 2017 to June 2022
Active Geographic Regions	Zanzibar, SAGCOT (Morogoro, Iringa, Mbeya, Songwe)
Development Objective(s) (DOs)	Empowerment, productivity, and engagement of Tanzanians aged 15 to 35 increased
USAID Office	Economic Growth
AOR	Judith Kitivo, Janeth Said (alternate)

The purpose of the Feed the Future Tanzania Mboga na Matunda activity is to make the horticulture subsector more competitive and inclusive while improving the nutritional status of Tanzanians. The activity uses a market systems approach to deliver good agricultural practices, improved business skills, basic technologies, and nutrition education to over 700,000 beneficiaries. Interventions encourage the adoption of innovations at the farm level, and efficient business models at the market level, to create a broad-based distribution of benefits.

In addition, the activity uses socially inclusive strategies to increase and benefit women and youth participation in the horticulture subsector. Strategies facilitate easy access to land, financial services, and market information which in turn generate income for rural households and diversify production of nutritious crops.

To foster the sustainable competitiveness of the horticulture sector, the Mboga na Matunda activity works with over 3,500 micro, small and medium enterprises, over 900 government extension officers, and 20 local partners; to increase smallholder farmer productivity, and profitability throughout the horticulture sector market system. The activity has three objectives (often referred to as sub-purposes in USAID or activity documents):

1. **Objective 1:** Expanding improved technologies and practices that lead to increased productivity of smallholder farmers, including large numbers of women and youth, in targeted commodities.
2. **Objective 2:** Expanding market system models able to reach large numbers of direct and indirect beneficiaries, including vulnerable populations, while increasing trade for targeted commodities.
3. **Objective 3:** Strengthening the overall capacity of the horticulture industry.

Statement of Purpose: This evaluation is being conducted in order to understand MnM's end of activity performance in relation to the activity's specific objectives, the challenges and constraints impinging on implementation if any, and potential needs for adaptations in ongoing programming or future horticulture designs following the market systems approach, and at the midst of COVID-19 interruptions.

Uses and Users of Evaluation: This evaluation will inform USAID's ongoing horticulture and nutrition work, as well as future designs that support Tanzania's horticulture industry and programming. The evaluation report may also benefit other donors who may be designing similar activities but also to the GOT Ministry of Agriculture in revising its horticulture development strategy and further programming in the SAGCOT regions.

The primary audience for the evaluation is the USAID EG team, and broader mission and the IP. It is expected that the evaluation will also benefit other donors who may be designing and/or exploring interventions in horticulture activities in Tanzania. This evaluation will also be informative to USAID's private sector engagement team as it will evaluate aspects of MnM that worked closely with Tanzania's private sector, and in some instances, helped grow the private sector in Tanzania. The report may also be useful to the GOT Ministry of Agriculture in revising its horticulture development strategy and future horticulture programming in respective Local Government Authorities (LGAs) within and beyond the SAGCOT regions.

Key Stakeholders:

1. Tanzania Horticulture Association
2. Input Supply Companies grantees
3. Financial Institutions grantees
4. Nutrition Partner's grantees
5. Private sector extension service grantees
6. Non-partners (non-grantees) worked closely with MnM
7. GOT-LGAs Extension Officers partnered with MnM and Lead farmers
8. Agro-dealers and Lead farmers
9. Horticulture value chain beneficiaries representatives prioritizing women and youth (including select farmers, transporters, buyers and resellers, processors, exporters, etc.

Evaluation Questions:

Within this context, the evaluation will seek to answer the following questions:

1. To what extent was MnM's interventions aimed at improving technology and practices and market-based approach successful at achieving the objectives of the activity? How has this impacted the livelihoods of youth aged **15-35**. Will improved inputs supply businesses, agro-dealers, and lead farmers services be sustainable? **(Source: Baseline and Monitoring/Performance data-FTF MS, DIS and Survey-youth beneficiary and beneficiary representatives-Phone)**
2. How did the activity's engagement with the Government of Tanzania's enhanced extension system contribute to the sustainability of results and interventions? How if at all have practices from the program been institutionalized in the GoT extension system? How has this enhanced SMEs in the agriculture sector? **(Survey of agriculture extension-GoT – Phone survey or KIIs)**
3. How did the activity's approach to making finance more accessible support performance? How sustainable were/are these interventions? **(Survey of SMEs)**
4. How did COVID-19 interruptions to businesses and value chains affect performance and sustainability? What approaches need to be adjusted moving forward to adapt to ongoing challenges? **(KII with Implementers and Survey – SMEs)**
5. To what extent did the MnM program effect nutrition outcomes and the health of women and children? To what extent has the program managed to improve supply of nutritious foods? How have attitudes on nutrition and uptake of nutritious foods changed as a result of the program? **(Survey- representatives of beneficiaries/producers, women with children etc.)** How can private sector nutrition intervention be enhanced? **(Survey – beneficiary SMEs)** How will the MnM nutrition grantees work and capacity gained be sustainable? **(KIIs with CSOs and Private sector)**
6. How effectively has MnM collaborated with other USAID teams and other agriculture and economic growth activities to add value across their interventions? What areas of collaboration or coordination need to be strengthened? **(GoT KIIs)**

Timeline and Deliverables: This award will enter close-down phase in Q2, FY 2022. To maximize opportunities and data collection, this evaluation should begin, workload permitting, in Q1, FY 2022.

The EG office would like a draft report by February 28, 2022. This will allow for timely and robust engagement with USAID and the IP. Deliverables include:

1. Final report responding to the evaluation questions and inclusive of any recommendations.
2. Presentation and accompanying slide deck of key findings and recommendations.

Potential Methods/Approaches:

- A survey of MnM beneficiaries – both individuals and organizations
- Virtual key informant interviews (KIs) with GoT national and regional and LGAs stakeholders
- Virtual group interviews/FGDs with Working Group members, Development Partners and private sector entities worked with MnM and potential non-MnM partners.
- Review of monitoring/performance data including from previous assessments
- Review of documentation of results and impacts, program documents, etc.

ANNEX 2: EVALUATION DESIGN AND METHODS



USAID
FROM THE AMERICAN PEOPLE

USAID/Tanzania Data for Development Project ASSESSMENT DESIGN AND WORK PLAN MBOGA NA MATUNDA FINAL EVALUATION

Prepared by Data for Development

Contract No. AID-OAA-I-15-00024/AID-621-TO-17-00005

October 2021 and Revised December 2021

This document was produced for review by the United States Agency for International Development Tanzania Mission (USAID/Tanzania).

DESIGN AND WORK PLAN

Mboga na Matunda Final Evaluation

USAID/Tanzania Data for Development Project

Submission Date: October 2021

Revision submitted December 2021

Contract Number: AID-OAA-I-15-00024/AID-621-TO-17-00005

Activity Start Date and End Date: October 2021 – March 2022

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DISCLAIMER

The author's views expressed in this publication do not necessarily reflect the views of the United States Agency for International Development or the United States Government.

ACRONYMS

Acronym	Description
COR	Contract Office Representative
CSO	Civil Society Organization
DEC	Development Experience Clearinghouse
DIS	Development Information Solution
DP	Development Partner
EG	Economic Growth
FTF	Feed the Future
GOT	Government of Tanzania
GIS	Geographical Information System
IP	Implementing Partner
IRB	Institutional Review Board
KII	Key Informant Interview
LGA	Local Government Authorities
LoE	Level of Effort
M&E	Monitoring and Evaluation
MnM	Mboga na Matunda
MS	Monitoring System
PO-RALG	Presidents Office Regional Administration & Local Government
PPE	Personal Protective Equipment
SAGCOT	Southern Agriculture Growth Corridor of Tanzania
SFTP	Secure File Transfer Protocol
SMEs	Small and Medium Enterprises
TAHA	Tanzania Horticulture Association
USAID	United States Agency for International Development

I. BACKGROUND AND INTRODUCTION

Smallholder horticulture farmers in Tanzania face a number of challenges. Access to domestic and regional markets remains limited by constraints like disorganized and inefficient horticulture market systems. Low productivity among smallholder farmers limits production and product diversification, and public sector agricultural extension support cannot effectively transfer basic business skills or improved technologies to farmers. Women and youth face even tougher challenges: access to land, finance and to high quality agricultural inputs is more limited for women and youth.⁶²

The purpose of the Feed the Future Tanzania Mboga na Matunda activity is to make the horticulture subsector more competitive and inclusive while improving the nutritional status of Tanzanians. The activity uses a market systems approach to deliver good agricultural practices, improved business skills, basic technologies, and nutrition education to over 800,000 beneficiaries. Interventions encourage the adoption of innovations at the farm level, and efficient business models at the market level, to create a broad-based distribution of benefits.

In addition, the activity uses socially inclusive strategies to increase and benefit women and youth participation in the horticulture subsector. Strategies facilitate easy access to land, financial services, and market information which in turn generate income for rural households and diversify production of nutritious crops.

To foster the sustainable competitiveness of the horticulture sector, the Mboga na Matunda activity works with over 3,500 micro, small, and medium enterprises, over 900 government extension officers, and 20 local partners; to increase smallholder farmer productivity, and profitability throughout the horticulture sector market system. The activity has three objectives (often referred to as sub-purposes in USAID or activity documents):

- **Objective 1:** Expanding improved technologies and practices that lead to increased productivity of smallholder farmers, including large numbers of women and youth, in targeted commodities.
- **Objective 2:** Expanding market system models able to reach large numbers of direct and indirect beneficiaries, including vulnerable populations, while increasing trade for targeted commodities.
- **Objective 3:** Strengthening the overall capacity of the horticulture industry.

2. EVALUATION PURPOSE

This evaluation is being conducted in order to understand MnM's end of activity performance in relation to the activity's specific objectives, the challenges and constraints impinging on implementation if any, and potential needs for adaptations in ongoing programming or future horticulture designs following the market systems approach, and at the midst of COVID-19 interruptions. It is also designed to capture the effects on youth beneficiaries livelihood and other changes to inform design under the 2020-2025 USAID/Tanzania CDCS.

⁶² FTF Mboga na Matunda Fact Sheet, 2020.

3. EVALUATION QUESTIONS

Within this context, the evaluation will seek to answer the following questions:

1. To what extent was MnM's interventions aimed at improving knowledge and accessibility of technology, practices, and market-based approach successful at achieving the objectives of the activity? How has this impacted the livelihoods of youth aged 15-35? Will improved inputs supply businesses, agro-dealers, and lead farmers services be sustainable?
2. How did the activity's engagement with the Government of Tanzania's (GOT) enhanced extension system contribute to the sustainability of results and interventions? How, if at all, have practices from the program been institutionalized in the GOT extension system? How has this enhanced SMEs in the agriculture sector?
3. How did the activity's approach to making finance more accessible support performance? How sustainable were/are these interventions? How did COVID-19 interruptions to businesses and value chains affect performance and sustainability? What approaches need to be adjusted moving forward to adapt to ongoing challenges?
4. To what extent did the MnM program effect nutrition outcomes and the health of women and children? How have attitudes on nutrition and uptake of nutritious foods changed as a result of the program? How can private sector nutrition intervention be enhanced? How will the MnM nutrition grantees work and capacity gained be sustainable?
5. How effectively has MnM collaborated with other USAID teams and other agriculture and economic growth activities to add value across their interventions? What areas of collaboration or coordination need to be strengthened?
6. Effectiveness of Partnerships with different private sectors including access to products and services?

4. USES AND USERS OF THE ASSESSMENT

The primary audience for the evaluation is the USAID EG team, and broader Mission and the IP. Beyond the evaluation of overall implementation, the evaluation will be used to inform future design under the current Mission CDCS. It is expected that the evaluation will also benefit other donors who may be designing and/or exploring interventions in horticulture activities in Tanzania. This evaluation will also be informative to USAID's private sector engagement team as it will evaluate aspects of MnM that worked closely with Tanzania's private sector, and in some instances, helped grow the private sector in Tanzania. The report may also be useful to the GOT Ministry of Agriculture in revising its horticulture development strategy and future horticulture programming in respective Local Government Authorities (LGAs) within and beyond the SAGCOT regions.

5. KEY STAKEHOLDERS

Key Stakeholders:

1. Tanzania Horticulture Association
2. Input Supply Companies grantees
3. Financial Institutions' grantees
4. Nutrition Partner's grantees
5. Private sector extension service grantees
6. Non-partners (non-grantees) worked closely with MnM
7. GOT-LGAs Extension Officers partnered with MnM and Lead farmers

8. Agro-dealers and Lead farmers
9. Horticulture value chain beneficiaries representatives prioritizing women and youth (including select farmers, transporters, buyers and resellers, processors, exporters, etc.)

6. ASSESSMENT METHODOLOGY⁶³

Due to the breadth of the project and the number of beneficiaries, the approach will use a mix of methods including surveys and key informant interviews (KIIs) in order to assess the performance of the program across objectives and activity areas and to answer the sector focused evaluation questions for future design. Due to the breadth of the project and the number of beneficiaries, the approach will use a mix of methods including surveys and KIIs in order to assess the performance of the program across objectives and activity areas and to answer the sector focused evaluation questions for future design.

Due to COVID safety protocol at USAID, data collection activities for the evaluation will be conducted remotely. Surveys which will be enumerated telephonically and KIIs which will be done via Zoom conference call. If participants express that there are significant accessibility barriers to them or their organization from virtual meetings, in-person interviews using social distancing and PPE will be requested.

The proposed approaches for the various assessment questions are summarized in Table I. This will include:

- € **Desk review and review of program performance data** will include review of annual and quarterly reports, other program documents, and existing literature on horticulture, livelihood, and nutrition in Tanzania. The desk review will assist in understanding the performance of the program and the surrounding context and environmental factors contributing to livelihood and market access in Tanzania. So far, the team has received the baseline assessment report done prior to the program, the 2018 baseline done following the redesign of its M&E plan, annual reports, the program M&E plan, newsletters, fact sheets and other program description available on the DEC. A full checklist of documentation for the review will provide further detail on documents received from the IP or USAID Mission. Other documents will be included on a rolling basis from recommendations of KII participants and documents encountered through internet research by the evaluation team.
 - The team is expecting to receive performance data going back to the start of the program in 2017 to the end of FY 2021. This will be reviewed and will be used for trend analysis and visualization across indicators. Review of baseline data and performance indicators will also be made in order to inform primary source instruments, particularly the beneficiary survey.
- € **Key Informant Interviews and/or Group Interviews (KIIs and GIs)** will be conducted at the national and district levels and with subgrantees across the six regions/sites. This includes with MnM, other USAID EG IPs, CSOs, government, and some of the over 100 GOT extension officers who have worked closely with the program at the district level in providing community technical assistance and other services (others will be reached through a small telephonic survey tool).

⁶³ Face-to-face KIIs and FGDs will take place following USAID/Tanzania Mission approval for such events.

Table 2: Estimated KIIs per Region

Interviewees	National: Dar/ Dodoma	Morogoro	Mbeya	Iringa	Songwe	Zanzibar Unguja	Zanzibar Pemba	Total
USAID, MnM staff, and Partners at Activity level	1-2							6
• USAID Staff – (COR, EG Staff)								
• FTF Mboga na Matunda Activity Staff (Fintrac Inc. CoP and I Technical team)	2							
• FTF MnM Partners (IPs Including FTF AY, etc. and TAHA)	2							
Development Partners collaborating with MnM at HQ Level	2							2
GOT Officials at Regional level)		I	I	I	I	I	I	4-6
MnM Subgrantees (random selected from Cluster by each activity category and region)								
Input Partners (random selected per region, representing each activity category)		I		I		I		3
Nutritional Partners (3 Selected from the list of subgrantees; Incl. 2 in mainland and 1 in Zanzibar)			I	I		I		3
Distributors (Agro-dealers) Main Dealer - Balton Tz - National Level and Distributors at Regional Level	I	I	I	I			I	5
Processors (representing Rural and Urban Districts in each region)		I	I	I	I	I	0	5
Local Financial Institutions (3 out of 5 working with MnM)	3							3
Extension Officers - Regional and District Level (GI)		I	I	I	I	I	I	6
TOTAL								<40

Surveys

A survey of beneficiaries will be conducted with value chain beneficiaries including farmers/producers, distributors, transporters, buyers and resellers, processors, and other SMEs using a stratified sampling approach to account for the number in each of the six target sites/regions proportionate to population size for each activity region/site. in all six program sites including: Zanzibar (Unguja and Pemba), and four Mainland SAGCOT regions (Morogoro, Iringa, Mbeya, and Songwe). Participants will be reached through a telephonic survey enumerated using D4D's GIS enabled Survey 123 platform. Participants are selected

- **Sample:** The following is a stratified proportionate sampling approach across the six target regions/sites in Mainland and Zanzibar. The sample is proportionate to the beneficiary population size per region. Drawing on the total beneficiary population of 159,255 across the six sites, 2,246 farmers were sampled to target a 95 percent confidence level and a 5 percent margin of

error per region/site in each region in mainland and Pemba and Unguja in Zanzibar (see details in the table below). This will depend on the response upon completion of the survey. Oversampling X 2 (4,492) and using a replacement protocol for unreachable participants will ensure we reach the number detailed in the sampling frame below.

Table 3: Stratified Sample of Farmer Beneficiaries

Region/Site	All Beneficiaries	Sampled Beneficiaries
IRINGA	66,802	382
MBEYA	35,108	380
MOROGORO	25,124	379
SONGWE	15,243	375
Pemba	4,863	357
Unguja	12,115	373
Total	159,255	2,246

- The beneficiary survey sample will also survey 3,252 SMEs reached over the course of the program. Using stratification by site/region, **2,113** SMEs will be surveyed by region (see below).

REGION	Total SMEs	Sampled SMEs
IRINGA	1,239	294
MBEYA	709	250
MOROGORO	522	222
SONGWE	212	137
	Mainland	903
Pemba	140	103
Unguja	430	204
	Zanzibar	307
	Total SMEs	2,113

A survey of the over 1,024 extension officers trained in the course of the program will be reached through a telephonic survey enumerated using D4D's Survey 123 platform.

- The survey will attempt to reach a random sample of roughly **280 of 1,024** extension officers overall who received training of some kind in order to reach a 90-95 percent confidence level and a 5 percent margin of error depending on the response rate upon completion of the survey. We are also conducting 6-12 KIs with some of the 154 extension officers who worked closely with MnM at district level.

TOTAL Survey Participants = 4,639

Table 1: Approaches and Methods

Assessment Question	Source/Stakeholder	Data Collection Method	Planned Analysis
EQ1: To what extent were MnM's interventions aimed at improving technology and practices and market-based approach successful at achieving the objectives of the activity? How has this impacted the livelihoods of youth aged 15-35 (may be 18-35 due to IRB sensitivities with interviewing children)? Will improved inputs supply businesses, agro-dealers, and lead farmers services be sustainable?	Baseline and Monitoring/Performance data- FTF MS, DIS and Survey - beneficiaries.	- Klls -Beneficiary survey -Systematic review of literature and media	-Coding of themes across Klls using Dedoose software. -Identification of themes across literature and media -Descriptive statistics disaggregated by age, gender, etc. -GIS and beneficiary/SME activity and livelihood activity mapping
EQ2: How did the activity's engagement with the GOT's extension system contribute to the sustainability of results and interventions? How if at all have extension officers been able to cascade technical assistance to the district and community levels? How if at all have practices from the program been institutionalized in the GOT extension system? How has this enhanced SMEs in the agriculture sector? (Survey of agriculture extension-GOT)	- Extension officers -125 who worked closely with MnM at the district level. -900 extension officers that received MnM training -Beneficiaries and SMEs - GOT national, regional and district level GOT	-Klls with 125 extension officers who worked closely with MnM at the district level. -Klls with GOT national, regional, and district level GOT -Survey of all 900 extension officers that received MnM training -Survey of Beneficiaries and SMEs (responses from those who received technical assistance from extension)	-Coding of themes across Klls using Dedoose software. -Descriptive statistics disaggregated by age, gender, etc.
EQ3: How did the activity's approach to making finance more accessible support performance? How sustainable were/are these interventions?	Survey of beneficiaries; responses from SMEs	-Survey of beneficiaries; responses from SMEs	-Descriptive statistics. Specific analysis of responses from SMEs across regions. -GIS -SME activity mapping
EQ4: How did COVID-19 interruptions to businesses and value chains affect performance and sustainability? What approaches need to be adjusted moving forward to adapt to ongoing challenges?	-Implementing partners -CSO subgrantees -SMEs -Beneficiaries	-Kll with Implementers -Survey- SMEs and beneficiaries	-Coding of themes across Klls using Dedoose software. -Descriptive statistics disaggregated by age, gender etc.
EQ5: To what extent did the MnM program effect nutrition outcomes and the health of women and children? How have attitudes on nutrition and uptake of nutritious foods changed as a result of the program? How can private sector nutrition intervention be enhanced? How will the MnM nutrition grantees work and capacity gained be sustainable?	-Survey- beneficiaries -Beneficiary SMEs -Women with children -CSOs and Private sector involved in nutrition activities.	-Survey- beneficiaries/producers -Survey- beneficiary SMEs -Survey- beneficiary responses on consumption from women with children (and/or children under 5) -Klls with CSOs and Private sector involved in nutrition activities.	-Coding of themes across Klls using Dedoose software. -Descriptive statistics disaggregated by age, gender etc. -Specific analysis of subset of surveyed beneficiaries (women with children)
EQ6: How effectively has MnM collaborated with other USAID teams and other agriculture and	-GOT Klls	-GOT Klls	-Coding of themes across Klls using Dedoose software.

Assessment Question	Source/Stakeholder	Data Collection Method	Planned Analysis
economic growth activities to add value across their interventions? What areas of collaboration or coordination need to be strengthened?	-KIs with USAID EG IPs (AY, NAFKA, etc.) -KIs with CSO grantees -Other DPs (UNICEF, etc.)?	-KIs with USAID EG IPs (AY, NAFKA, etc.) -KIs with CSO grantees	

6.1 Qualitative Analysis

Qualitative analysis for the KIs and document review will be structured around themes related to the six evaluation questions and program objectives. These themes will be mapped to key excerpts in the text from KI transcripts and documents and will be triangulated across sources for analysis and reporting of findings.

Interviews will be analyzed using Dedoose software and will be triangulated with other data sources obtained for this assessment. Grounded coding will be conducted using a coding frame which will be tagged to excerpts in the translated interview transcripts to capture recurring themes, examples and key quotes. Exports of content by theme will be used to capture the most salient themes, their stakeholder groups and location/region to provide more rigorous detail using this qualitative approach.

6.2 Consent and Protection of Privacy

The Evaluation Team plans to fully comply with all human protection requirements for this assessment. NORC's organizational procedures require that all data collection projects are submitted to NORC's Institutional Review Board (IRB). NORC's IRB has extensive experience performing ethical reviews of domestic and international studies.

In addition, clearance through NBS IRB in Mainland and the Second VP and OCGS in Zanzibar will be pursued to provide approval for the surveys conducted under this evaluation.

Informed consent is an integral part of the IRB review. The Evaluation Team will devise consent scripts and procedures that fit the various data collection modes proposed for this study—namely surveys, and KIs. These consent scripts will be written in clear and understandable language and outline the funding and purpose of the study, the data collection parameters (duration, voluntary nature, process), any potential risks and benefits of participation, the confidentiality of the data provided, and the points of contact to reach for questions. Verbal consent will be obtained for all phone and online KIs and surveys.

Data Security: In terms of data confidentiality and security, the use of encrypted computer storage will be mandated to store notes, recordings, and survey primary data. Furthermore, all primary data transfers between sites and team members will take place via Data for Development's internal SharePoint folders and/or secure file transfer protocol (SFTP). Once transferred, the data will be stored on secure servers.

7. TIMELINE AND DELIVERABLES

Key deliverables and estimated timeline:

- Draft and Final Workplan and Design – October-November 2021
- Approval of the design and team – December 2021
- Instrument development and programming – December 2021
- IRB with NORC and NBS (+OCGS and Office of the 2nd VP) – December 2021
- IRB Approval December-January (December for NORC; January for NBS)
- Data collection – January 2022-February
- Analysis – February-March 2022
- Draft report – End of March 2022
- Draft Report Review Complete – April 2022
- Final report – End of April 2022
- Presentation and workshop. April 2022 – TBD based on Mission request.

8. PROPOSED STAFFING

Data for Development has selected an experienced team to conduct the evaluation. This includes:

- **Team Lead, Greg Sullivan** will serve as the team lead responsible for all draft and final deliverables. Sullivan is an Agriculture Expert with extensive experience working in the developing countries context undertaking evaluations of horticulture/agriculture and nutrition programs. He has worked extensively throughout East Africa including Tanzania and Uganda evaluating and designing agriculture and economic growth programs.
- **Subject Matter Expert, Mary Shetto**, subject matter expert for support on desk review, data collection, analysis, and report writing, is an expert with significant experience in horticulture/agriculture and nutrition programs in Tanzania and the East Africa Region.
- **Subject Matter Expert, Michael Kadigi**, subject matter expert for support on desk review, data collection, analysis, and report writing, is an expert with significant experience in horticulture/agriculture and nutrition programs in Tanzania and the East Africa Region.
- **Jake Laden**, Data for Development's Senior Advisor and Evaluation and Assessments Component lead, will lead the design and work-planning for the assessment, will recruit the team, and provide overall supervision and quality assurance for the field work, analysis and report writing.
- **David Hughes** is Data for Development's Chief of Party. He is an Agriculture and Economic Growth Specialist and will be responsible for oversight of all project processes and deliverables shared with the Mission.
- **Bahati Tenga and Gerald Usika**, Data for Development Evaluation Specialists who will be the activity managers handling day to day management for the evaluation. They will provide full-time technical support in the evaluation including document review, data collection, and analysis.
- **NORC analyst –TBD** will provide qualitative analysis support for the Dedoose platform and quantitative analysis.
- **NORC and ME&A HQ Offices** will provide review, operational and technical support, and editing and branding on final deliverables.

Table 6 below presents the estimated level of effort (LOE) for the Assessment Team members.

Table 6: Estimated LOE per Team Member

Task	STTA Expat – Team Lead, Greg Sullivan	D4D Sr Evaluation Advisor Jacob Laden	D4D Activity Mangers-Bahati Tenga and Gerald Usika	STTA SME – Tanzania, Mary Shetto	STTA SME – Tanzania, Michael Kadigi
Work planning (assessment design remote or in-country)	5 days	5 days	1 days	1 days	1 days
Instrument Development	6 days	2 days	4 days	4 days	4 days
Desk review	7 days	2 days	7 days	7 days	7 days
Data collection and transcription of KIIs/GIIs	5 days	2 days	17 days	17 days	17 days
Data analysis and analytic memos ⁶⁴	10 days	3 days	10 days	10 days	10 days
Draft report preparation, review and debrief to USAID	11 days	2-3 days	2 days	4 days	4 days
Final report after USAID comments	6 days	2 days	1 day	2 day	2 day
TOTAL LOE: 242 STTA LOE: 140 (+20 Analysis)	50 days	18 days	42X2= 84 days	45 days	45 days

*A local firm for survey support and enumeration as well as transcription and translation services will be required.

Roughly **1,160** days of LOE are estimated for fielding the two surveys (4,639 surveys/four per enumerator per day = 1,160 days).

Additionally, we will need 40 days of LOE for the roughly 40 KIIs that require translation and transcription.

Total subcontractor/survey firm LOE = 1,200.

Annex of instruments not included at this time; instruments are in progress and will be submitted separately.

⁶⁴ Twenty (20) days of LOE will be needed for support for the analysis of the surveys and KIIs.

ANNEX 3: SURVEY DATA COLLECTION INSTRUMENTS

Annex 3.1: Farmers/Producer Survey

Survey Control Information Page

C1. Date and time interview was started:

Data: _____

Time: _____

C2. Enumerator's name

Select from list: _____

C3. Enumerator's ID

Select from list: _____

C4. Name of respondent

Text: _____

C5. Respondent's ID

Text: _____

C6. Respondent's gender

0. Male

1. Female

C7. Respondent's Telephone Number

Integer: _____

C8. Is the respondent 18 years or older?

1. Yes

2. No [Exit Survey]

Introduction and Consent Form

This survey is available in Kiswahili and English. You can switch language on the top of the page.

Introduction

USAID has asked us to conduct the End of project Evaluation of the Feed the Future *Mboga na Matunda* (MnM) Activity. *Mboga na Matunda* activity is implemented in Tanzania by Fintrac Inc. in collaboration with the Government of Tanzania. The activity commenced in November 2017 and is expected to close out in March 2022.

This evaluation is conducted in order to understand MnM's performance in relation to the activity's specific objectives, the challenges and constraints impinging on implementation if any, and potential needs for adaptations in future horticulture activities designs under the 2020-2025 USAID/Tanzania CDCS following the market systems approach, and amidst of COVID-19 interruptions. It will also capture the effects on youth beneficiaries' livelihoods and other changes.

You have been suggested as a key person to inform this evaluation based on your involvement in and/or collaboration in the *Mboga na Matunda* Activity and we would appreciate getting your perspective/views.

The interview will take about 45 minutes to 1 hour.

Confidentiality

The information or examples you provide during this interview will not be attributed to you personally or to your organization without your prior consent to be quoted. Your privacy will be protected. We will not include your name or any information in our reports that would make it possible to identify you without your consent. We also ask that what we discuss today remains here with us.

Right to Ask Questions and Report Concerns

You have the right to ask questions about this assessment and to have those questions answered by us.

If you face difficulties in completing the assessment and/or need clarifications, please reach out to Gerald Usika, the Activity Manager for this evaluation, by e-mail: gusika@engl.com or phone: 0745 808 704.

If you have concerns, please send them to D4D Chief of Party, David Hughes, by e-mail: dhughes@engl.com, or phone: 0769 367 589.

Right to Refuse or Withdraw

The decision to participate in this study is entirely up to you. You may refuse to complete the survey, and you have the right stop taking it at any point. You will not be penalized if you choose to withdraw your participation.

There are no known risks or direct benefits for you from participating in this assessment.

Consent to Participate in Interview

1. Do you agree to participate in this interview today?
 1. Yes
 2. No [Exit Survey]
2. We would like to record this conversation to be able to cross check in the future during analysis. May I record?
 0. Yes
 1. No

Survey Questions

Group I: Participant's Location Information

3. In which Mboga na Matunda Activity Region do you live in Tanzania?
Dropdown list, select one _____
4. In which district of the respective region
Dropdown list, select one _____
5. (a). In which ward of the respective district
Dropdown list, select one _____
(b). In which village do you live

Group II: Personal Profile of Participant

Please complete the following details

6. What is your current age in years?
Integer: _____
7. In which year did you join Mboga na Matunda Program [Select one]
 1. 2017
 2. 2018
 3. 2019
 4. 2020
 5. 2021
 6. 9998. Can't remember

Q7_nw1. Were you participating in the Mboga na Matunda program during the last year (2021)?

- a) Yes
- b) No

Q7_nw2. When did you stop participating (year)?

- a) 2017
- b) 2018
- c) 2019
- d) 2020
- e) 2021
- f) 9998. Can't remember

Q7_nw3. How long did you participate in the program (months)?

Integer: _____

Q7_nw4. Why did you stop being a member of MnM?

Text: _____

Q7_nw5. Have you been a horticulture producer during 2021?

- a) Yes
- b) No [Don't ask any questions establishing before and after joining MnM information]

Q7_nw6. Why did you stop being a horticulture producer?

Text: _____

8. Are you the head of your household? [Select one]
 - Yes
 - 0. No [Ask Question 11]

9. What is the highest level of education that you have attained? *[Select one]*
1. No formal education
 2. Primary
 3. Ordinary Secondary
 4. High School
 5. Vocational Education
 6. College Certificate
 7. College Diploma
 8. University (Bachelor's Degree or above)
 9. Other (specify)

10. What is your marital status? *[Select one]*
1. Single
 2. Married
 3. Divorced
 4. Separated
 5. Widow or Widower

11. Do you make most decisions about farm activities in your household?
2. Yes *[Skip to Q14]*
 1. No

12. Who makes the decisions, if not you?
- Open ended: _____

13. What is the gender of the main decision maker?
2. Male
 3. Female

Group III: Household Members Information

14. Including you, how many people live in your household all the time?
- Integer: _____

15. How many of them are children five years and below in age?
- Integer: _____

16. How many of them are children of age 6 years to 14 years?
- Integer: _____

17. How many in your household are youth and adults of age 15 to 35 years (male and female)?
- Integer: _____

18. How many of them are adults of 36 years and above?
- Integer: _____

Group IV: Principal Income Sources and Economic Status

19. What are the sources of income for your household? *[Select all that apply]*
1. Farming (crop cultivation) *[If 'Yes', ask Q26 & Q34]*
 2. Animal husbandry/livestock *[If 'Yes', ask Q26]*
 3. Crafts person
 4. Formal Employment
 5. Casual Labor
 6. Remittances/Family Support
 7. Trading

8. Other Income Source (Please specify)
20. Do you own or rent the land you are using for agriculture?
 1. Owned by self (all of it) *[Don't select with any other option]*
 2. Part rented, part owned
 3. Rented
 4. Borrowed
 5. Community
 6. Owned by family
 7. Other (Please specify)
21. [If 1 or 2 in Q20] How much land do you own? (in acres)
 Numeric: _____
22. How much land are you cultivating or using for animal keeping? (in acres)
 Numeric: _____

Group V: Farm Assets and Participation in Horticulture

23. Which of the following farm implement/equipment or infrastructure did your household own in the last year? *[Select all that apply]*
 1. Hand hoe/Hoes
 2. Slasher
 3. Axe
 4. Power tiller
 5. Ox plough
 6. Tractor
 7. Generator
 8. Motor pump
 9. Storage house
 10. Livestock house
 11. Drip irrigation infrastructure
 12. Garden fence
 13. Garbage disposal pit
 14. Fumigation pump
 15. Protective gear for fumigation
 16. Cart for transporting goods
 17. Bicycle for transporting goods
 18. Smartphone (capable of downloading and viewing market information)
 19. A mobile phone that is not a smart phone
 20. Motorcycle for transporting goods
24. Were you producing or receiving income from horticultural activities before your participation in Mboga na Matunda program?
 1. Yes *[Ask Question 26]*
 2. No
25. What horticultural crops do you grow for commercial sale? *[Select all that apply]*
 1. Tomatoes
 2. Green pepper
 3. Watermelon
 4. Banana
 5. Cabbages
 6. Cucumber
 7. Onions

8. Green peas
9. Irish potatoes
10. Orange Fleshed Sweet Potatoes (OFSP)
11. Passion fruit
12. Sweet peppers
13. Papaya
14. Avocado
15. Pineapples
16. Butternut
17. Other fruits (Specify: select one that is most important)
18. Other Vegetables (Specify: select one that is most important)

Q25_nw1. What crops were you growing before you joined Mboga na Matunda program?

- Tomatoes
- Green pepper
- Watermelon
- Banana
- Cabbages
- Cucumber
- Onions
- Green peas
- Irish potatoes
- Orange Fleshed Sweet Potatoes (OFSP)
- Passion fruit
- Sweet peppers
- Papaya
- Avocado
- Pineapples
- Butternut
- Other fruits (Specify: select one that is most important)
- Other Vegetables (Specify: select one that is most important)

Group VI: Area cultivated before and After Joining MnM

26. How much land did you cultivate for vegetable and/or fruit crops in the 12 months period (year) before you joined MnM? (Acres) [If Q24 = "Yes", ask based on selected list in Q25]

Crop	Area (Acres)
1. Tomatoes	
2. Green pepper	
3. Watermelon	
4. Banana	
5. Cabbages	
6. Cucumber	
7. Onions	
8. Green peas	
9. Irish potatoes	
10. Orange fleshed sweet potatoes (OFSP)	
11. Passion fruit	
12. Sweet peppers	
13. Papaya	
14. Avocado	

Crop	Area (Acres)
15. Pineapples	
16. Butternut	
17. Other fruits: ({other_fruit_crops})	
18. Other vegetables: ({other_vegetable_crops})	

27. How much land do you cultivate for these vegetable and/or fruit crops at the moment? [Ask based on list of selected crops in Q25]

Crop	Area (Acres)
1. Tomatoes	
2. Green pepper	
3. Watermelon	
4. Banana	
5. Cabbages	
6. Cucumber	
7. Onions	
8. Green peas	
9. Irish potatoes	
10. Orange fleshed sweet potatoes (OFSP)	
11. Passion fruit	
12. Sweet peppers	
13. Papaya	
14. Avocado	
15. Pineapples	
16. Butternut	
17. Other fruits: ({other_fruit_crops})	
18. Other vegetables: ({other_vegetable_crops})	

Group VII: Crops Supported by Mboga na Matunda

28. Which of the crops you grow did Mboga na Matunda program support you with? [Ask based on list of selected crops in Q25]

Crop	Yes	No
• Tomatoes		
• Green pepper		
• Watermelon		
• Banana		
• Cabbages		
• Cucumber		
• Onions		
• Green peas		
• Irish potatoes		
• Orange fleshed sweet potatoes (OFSP)		
• Passion fruit		
• Sweet peppers		
• Papaya		
• Avocado		

Crop	Yes	No
• Pineapples		
• Butternut		
• Other fruits: ({other_fruit_crops})		
• Other vegetables: ({other_vegetable_crops})		

Group VIII: Year you Received Support for Crop from Mboga na Matunda

29. In which years did you receive support, training, or advice from Mboga na Matunda for this crop for the first time?

Crop	2017	2018	2019	2020	2021	Can't Remember
1. Tomatoes						
2. Green pepper						
3. Watermelon						
4. Banana						
5. Cabbages						
6. Cucumber						
7. Onions						
8. Green peas						
9. Irish potatoes						
10. Orange fleshed sweet potatoes (OFSP)						
11. Passion fruit						
12. Sweet peppers						
13. Papaya						
14. Avocado						
15. Pineapples						
16. Butternut						
17. Other fruits: ({other_fruit_crops})						
18. Other vegetables: ({other_vegetable_crops})						

Group IX: Measurement Units for Crop Yield

30. What specific unit do you use to measure your crop yield and sales? [asked by crop for each crop grown. See list of Options. Select one for each crop. If "Kilogram" or "Ton" skip to Q32]

1. Kilogram
2. Ton
3. Sado
4. Pail (large)
5. Pail (small)
6. Debe
7. Tenga
8. Bag
9. Bunch
10. Piece
11. Heap
12. Basket
13. Ox-cart
14. Basin
15. Crate

16. Bowl
17. Tuber
18. Other (please specify)

Group X: Unit of Measurement to Kilograms

31. How many kilograms is the unit of measurement equivalent to? *[Read crop name to respondent. Ask the respondent to help you estimate equivalent number of kgs in the Unit provided. Asked by Crop grown]*

1. 0.25 kg (1/4 kg)
2. 0.5 kg (1/2 kg)
3. 1 kilogram
4. 2 kilograms
5. 5 kilograms
6. 10 kilograms
7. 15 kilograms
8. 20 kilograms
9. 25 kilograms
10. 50 kilograms
11. 100 kilograms
12. 120 kilograms
13. Other (Please specify)

Group XI: Crop Yield Before and After Joining Feed the Future Mboga na Matunda

32. How much of each of the of the following horticultural (fruits and vegetables) crops did you harvest during the year before you joined MnM? *[Use the specified measure to estimate. If the respondent said they measure in Kg. please report the Kg. If they said it is bags, please report number of bags]*

Crop	Yield (number of Units)
1. Tomatoes	
2. Green pepper	
3. Watermelon	
4. Banana	
5. Cabbages	
6. Cucumber	
7. Onions	
8. Green peas	
9. Irish potatoes	
10. Orange fleshed sweet potatoes (OFSP)	
11. Passion fruit	
12. Sweet peppers	
13. Papaya	
14. Avocado	
15. Pineapples	
16. Butternut	
17. Other fruits: (\$other_fruit_crops)	
18. Other vegetables:(\$other_vegetable_crops)	

33. How much of each of the of the following horticultural (fruits and vegetables) crops did you harvest after MnM? (Estimate for your last cropping season in 2021) *[Estimate for last season in 2021. Use the specified measure to estimate. If the respondent said they measure in Kg. please report the Kg. If they said it is bags, please report number of bags]*

Crop	Yield (number of Units)
1. Tomatoes	
2. Green pepper	
3. Watermelon	
4. Banana	
5. Cabbages	
6. Cucumber	
7. Onions	
8. Green peas	
9. Irish potatoes	
10. Orange fleshed sweet potatoes (OFSP)	
11. Passion fruit	
12. Sweet peppers	
13. Papaya	
14. Avocado	
15. Pineapples	
16. Butternut	
17. Other fruits: (\$\{other_fruit_crops\})	
18. Other vegetables:(\$\{other_vegetable_crops\})	

Group XII: Training Participation

34. Did you receive any training from the Feed the Future Mboga na Matunda Program?
- Yes
 - No *[Skip to Q45]*
35. Which among the following training did you receive? *[Read to the respondent and select all that apply]*
- Networking with agro-dealers for inputs (seed, chemicals, etc.)
 - Marketing and linkage with buyers
 - How to access market information
 - Agribusiness (business skills) such as business plan preparation *[Ask Q39, Q43]*
 - Linkage to financial institutions, credit access and use
 - Training on Good Agricultural Practices (GAPs) and technology such as fruit nursery preparations, Integrated Pest Management Practices, proper application of chemicals etc.) *[Ask Q36, Q37, Q40, Q41]*
 - Food preparing (washing, cooking, and serving)
 - Importance of balanced meals and food groups
 - Maternal and child nutrition and importance of micronutrients and their sources
 - Post-harvest and storage practices and technologies *[Ask Q38, Q42]*
 - Other training (specify)

Group XIII: Good Agricultural Practices (GAPs) and technologies you learned or received

Pre-Plant & Transplant Practices and Technologies that you learned

36. Which of the following pre-planting practices and transplant technologies did you learn or receive?
[Read to the respondent and record response. Ask if selected Q35(6)]

Technology	Yes	No
1. Certified improved seeds (high yield Open Pollinated (OPV) varieties)		
2. Hybrid seeds		
3. Seedling trays		
4. Commercial sterile planting media		
5. Vine replication for Orange Fleshed Sweet Potatoes		
6. Liming		
7. Fruit crops grafting		
8. Live barrier for wind break		
9. Plastic mulching		
10. Raised beds		
11. Ploughing		
12. Greenhouse technology		

Post-Plant & Harvest Practices and Technologies That You Learned

37. Which of the following post-planting and harvest practices and technologies did you learn or receive? *[Read to the respondent and record response. Ask if selected Q35(6)]*

Technology	Yes	No
1. Drainages		
2. Proper irrigation practices		
3. Drip Irrigation		
4. Overhead irrigation (e.g., sprinklers)		
5. Planting density		
6. Starter solution		
7. Soluble fertilizers (for drip irrigation)/fertigation		
8. Pruning		
9. Plant spacing marker		
10. Spraying		
11. Crop elimination		
12. Roots induction stress		
13. Fertilizer Application (any type)		
14. Soil tests and correct fertilizer program		
15. Integrated Pest Management Practices		
16. Chemical safety		
17. Shade cloth		
18. Stakes and trellising twine		
19. Proper Disposal of used chemicals and their packaging		

Post-Harvest Practices for Vegetables and Fruits That You Learned

38. Which of the following Post Harvest Practices for vegetables and fruits did you learn or receive?
[Read to the respondent and record response. Ask if selected Q35(10)]

Technology	Yes	No
1. Crop destruction after harvest		
2. Crop evaluation		
3. Sorting and grading by quality standards		
4. Appropriate packing/package and filling of horticulture produce to increase appearance and shelf life		
5. Storage of horticulture produce		
6. Transportation of horticulture products		
7. Food/crop processing such as application of food additives, to increase appearance and shelf life		

Business Management Practices That You Learned

39. Which of the following business management practices did you learn or receive? [Ask if selected Q35(4)]

Practice	Yes	No
1. Record keeping		
2. Financial Management		
3. Business Plan		
4. Collecting Market information from sellers of inputs and buyers of your products		

Group XIV: Adoption of Good Agricultural Practices and Technology

Pre-Plant & Transplant Practices and Technologies That You Have Adopted

40. Which of these pre-planting practices and transplant technologies that you learned have you been able to adopt? [Ask for technologies learned in Q36]

Technology	Yes	No
1. Certified improved seeds (high yield Open Pollinated (OPV) varieties)		
2. Hybrid seeds		
3. Seedling trays		
4. Commercial sterile planting media		
5. Vine replication for Orange Fleshed Sweet Potatoes		
6. Liming		
7. Fruit crops grafting		
8. Live barrier for wind break		
9. Plastic mulching		
10. Raised beds		
11. Ploughing		
12. Greenhouse technology		

Post-Plant & Harvest Technologies Adopted

41. Which of the following post-planting and harvest practices and technologies you learned have you adopted? [Ask for technologies learned in Q37]

Technology	Yes	No
1. Drainages		
2. Proper irrigation practices		
3. Drip Irrigation		
4. Overhead irrigation (e.g., sprinklers)		
5. Planting density		
6. Starter solution		
7. Soluble fertilizers (for drip irrigation)/ fertigation		
8. Pruning		
9. Plant spacing marker		
10. Spraying		
11. Crop elimination		
12. Roots induction stress		
13. Fertilizer Application (any type)		
14. Soil tests and correct fertilizer program		
15. Integrated Pest Management Practices		
16. Chemical safety		
17. Shade cloth		
18. Stakes and trellising twine		
19. Proper Disposal of used chemicals and their packaging		

Post-Harvest Practices for Vegetables and Fruits adopted

42. Which of the following post-harvest practices and technologies have you adopted? [Ask for technologies learned in Q38]

Technology	Yes	No
1. Crop destruction after harvest		
2. Crop evaluation		
3. Sorting and grading by quality standards		
4. Appropriate packing/packaging and filling of horticulture produce to increase appearance and shelf life		
5. Storage of horticulture produce		
6. Transportation of horticulture products		
7. Food/crop processing such as application of food additives, to increase appearance and shelf life		

Adopted Business Management Practices

43. Which of the following Business Management Practices have you adopted? [Ask for practices learned in Q39]

Practice	Yes	No
1. Record keeping		
2. Financial Management		

Practice	Yes	No
3. Business Plan		
4. Collecting Market information from sellers of inputs and buyers of your products		

Specific Post Harvest Technologies Adopted

44. Which specific Post Harvest practices and technologies among the following have you adopted?

Q44(a). Packaging technology: What packing technology did you adopt?

1. Plastic bags
2. Wooden Crates
3. Plastic Crates
4. Loose packing
5. Other (please specify)

Q44(b). Storage technology: What storage technology did you adopt to store your horticultural produce?

1. Cold room
2. Dry room
3. Shaded area
4. Other (Specify)

Group XV: Chemical Contamination Protection Practices

45. What practices among these are you implementing to protect yourself and your farm against contamination from chemicals, pesticides, and soil erosion?

Practice	Yes	No
0. Disposal pit to dispose of used containers		
1. Burning of leftovers		
2. Terraces and contours		
3. Proper Pesticides Application Procedures		
4. Proper Pesticide Mixing and Loading Procedures		
5. Using Conservation Drainage Practices		
6. Implementing Conservation Tillage		
7. Planting Field Buffers		
8. Selecting Appropriate Pesticides		
9. Integrated pest management (IPM) cultural methods to reduce pesticide use		

Group XVI: Markets and Sales

Places you Normally Sell your Product

46. Where do you normally sell your products to? *[Select all that apply]*

1. In the village market (including Open Market/Market Day/Gulio day/Mart)
2. In the neighbouring village market (including Open Market/Market Day/Gulio day/Mart)
3. To traders who visit the village
4. On the roadside
5. To neighbours
6. Collection centers
7. Cross border
8. Other (specify)

Sales to new markets

47. Have you been able to make sales of these crops to new markets - local in your region, regional within Tanzania, and across borders? [Ask for crops grown]

Crop	Yes	No
Tomatoes		
Green pepper		
Watermelon		
Banana		
Cabbages		
Cucumber		
Onions		
Green peas		
Irish potatoes		
Orange fleshed sweet potatoes (OFSP)		
Passion fruit		
Sweet peppers		
Papaya		
Avocado		
Pineapples		
Butternut		
Other fruits: (\$ {other_fruit_crops})		
Other vegetables: (\$ {other_vegetable_crops})		

Group XVII: Revenue, Investment and Production Cost [Asked to those participating in horticulture in 2021 only]

48. How much revenue did you get from sale of vegetables and/or fruits in the 12 months period (year) before you joined Mboga na Matunda?

Integer: _____

49. How much revenue did you get from sale of vegetables and fruits in the year 2021?

Integer: _____

50. How much money did you invest in horticulture technologies, equipment and inputs, for vegetables and/or fruit production before you joined Mboga na Matunda?

Integer: _____

51. How much money did you invest in horticulture technologies, equipment, and inputs for vegetables and/or fruit production after you joined Mboga na Matunda?

Integer: _____

52. Please estimate the total amount of investment in marketing (in Tanzanian shillings) during the year before you joined Mboga na Matunda?

Integer: _____

53. Please estimate the total amount of investment in marketing (in Tanzanian shillings) after you joined Mboga na Matunda program?

Integer: _____

54. Please estimate the total amount of investment in processing and value addition (in Tanzanian shillings) during the year before you joined Mboga na Matunda?
Integer: _____
55. Please estimate the total amount of investment in processing and value addition (in Tanzanian shillings) since the start of your involvement with Mboga na Matunda?
Integer: _____
56. Has the cost of production (operating cost) of your horticultural crops, per production season, increased, decreased, or stayed the same?
1. Decreased
 2. Remained the same
 3. Increased

Group XVIII: Crop Share in Consumption and Sales

57. How much is the contribution (percentage) of the horticultural crops you grow to your home consumption?
Numeric (%): _____
58. What percent of the crops you grow are directly sold to local, regional, or cross border markets?
Numeric (%): _____
59. What percent of the crops you grow do you sell to brokers, distributor, processor??
Numeric (%): _____

Group XIX: New Knowledge Gained from Extension Training

New Knowledge Gained from Extension Training

60. To what extent would you say you gained new knowledge or skills from the training from the training you attended? *[Ask on pulled list of topics selected in Q35]*

Training	Nothing new	Very little	Somewhat	To a great extent	Don't Know -9995
1. Networking with agro-dealers for inputs (seed, chemicals, etc.)					
2. Marketing and linkage with buyers					
3. How to access market information					
4. Agribusiness (business skills) such as business plan preparation					
5. Linkage to financial institutions, credit access and use					
6. Training on Good Agricultural Practices (GAPs) and technology such as fruit nursery preparations, Integrated Pest Management Practices, proper application of chemicals etc.)					
7. Food preparing (washing, cooking, and serving)					
8. Importance of balanced meals and food groups					
9. Maternal and child nutrition and importance of micronutrients and their sources					
10. Post-harvest and storage practices and technologies					

Utilization of Extension Training

61. To what extent did you utilize the new knowledge and skills from your training in your activities? *[Ask on pulled list of topics selected in Q35]*

Training	Not at all	Very little	Somewhat	To a great extent
a. Networking with agro-dealers for inputs (seed, chemicals, etc.)				
b. Marketing and linkage with buyers				
c. How to access market information				
d. Agribusiness (business skills) such as business plan preparation				
e. Linkage to financial institutions, credit access and use				
f. Training on Good Agricultural Practices (GAPs) and technology such as fruit nursery preparations, Integrated Pest Management Practices, proper application of chemicals, etc.)				
g. Food preparing (washing, cooking, and serving)				
h. Importance of balanced meals and food groups				
i. Maternal and child nutrition and importance of micronutrients and their sources				
j. Post-harvest and storage practices and technologies				

Extension Services

62. How often do you get in contact with the extension officers?
1. Weekly
 2. Once every two weeks
 3. Monthly
 4. Never [Skip to Q82]
 5. Other (specify)
63. How important did you find the information received from the extension officers in overcoming production challenges you have been facing?
1. Not at important
 2. Slightly important
 3. Moderately important
 4. Very important
 5. Extremely important
64. Did the extension support you received enable you to implement any changes on your farm?
1. Yes
 0. No
65. Do you believe you will continue to practice what you learned after the Mboga na Matunda Program ends?
1. Yes
 2. No
 3. Don't know (9995)
66. On average, how do you rate the adoption of good agricultural practices and technologies by other farmers in your area?
- Slow
 - Moderate
 - Fast
 - Don't know (9995)

Assessment of Information and Experience from Demo Plots Participation

67. Did you participate in a demonstration plot with other farmers?
1. Yes
 2. No
68. How would you rate the information and skills gained from your participation in demonstration plots?
- Very poor
 - Poor
 - Fair
 - Good
 - Very good

Sustainability of MnM Entities

Q68_nw. How would you rate the likelihood of the sustainability of the following MnM entities supported by the project?

	Not likely	Somewhat likely	Likely	Very likely	Unsure	Don't Know - 9995
Q68_nw_a. Input supply businesses						
Q68_nw_b. Agro-dealers						
Q68_nw_c. Lead farmers						

Continuous Learning

69. What other sources of information, apart from the extension officer, do you use to learn about agriculture? [Select multiple]

1. Family members
2. Neighbors
3. Demo plots
4. Agro-dealers
5. Field days
6. Market agents
7. Processors
8. Radio broadcasts
9. Other (please specify)

Group XX: On-farm Technologies and Practices and Labor Burden

Effect of Adoption of pre-planting and transplant practices on labor burden

70. How has your adoption of these pre-planting practices and transplant technologies affected on-farm labor burden? [Pulled list of selected technologies from Q40]

	Reduce labor burden -3	No effect on labor burden -2	Increase labor burden -1
1. Certified improved seeds (high yield Open Pollinated (OPV) varieties)			
2. Hybrid seeds			
3. Seedling trays			
4. Commercial sterile planting media			
5. Vine replication for Orange Fleshed Sweet Potatoes			
6. Liming			
7. Fruit crops grafting			
8. Live barrier for wind break			
9. Plastic mulching			
10. Raised beds			
11. Ploughing			

	Reduce labor burden -3	No effect on labor burden -2	Increase labor burden - 1
12. Greenhouse technology			

Effect of Adoption of Post-Plant & Harvest practices on labor burden

71. How has your adoption of these Post-Plant & Harvest practices and technologies affected on-farm labor burden? *[Pulled list of selected technologies from Q41]*

	Reduce labor burden -3	No effect on labor burden -2	Increase labor burden - 1
1. Drainages			
2. Proper irrigation practices			
3. Drip Irrigation			
4. Overhead irrigation (e.g., sprinklers)			
5. Planting density			
6. Starter solution			
7. Soluble fertilizers (for drip irrigation)/fertigation			
8. Pruning			
9. Plant spacing marker			
10. Spraying			
11. Crop elimination			
12. Roots induction stress			
13. Fertilizer Application (any type)			
14. Soil tests and correct fertilizer program			
15. Integrated Pest Management Practices			
16. Chemical safety			
17. Shade cloth			
18. Stakes and trellising twine			
19. Proper Disposal of used chemicals and their packaging			

Effect of Adoption of Post-Harvest Practices on labor burden

72. How has your adoption of these post-harvest practices technologies affected on-farm labor burden? *[Pulled list of selected technologies from Q42]*

	Reduce labor burden -3	No effect on labor burden -2	Increase labor burden - 1
1. Crop destruction after harvest			
2. Crop evaluation			
3. Sorting and grading by standards			
4. Appropriate packing/packaging and filling of horticulture produce to increase appearance and shelf life			
5. Storage of horticulture produce			
6. Transportation of horticulture products			
7. Food/crop processing such as application of food additives, to increase appearance and shelf life			

Effect of Adoption of Business Management Practices on labor burden

73. How has your adoption of these business management practices affected on-farm labor burden? *[Pulled list of selected technologies from Q43]*

	Reduce labor burden -3	No effect on labor burden -2	Increase labor burden - 1
1. Record keeping			
2. Financial Management			
3. Business Plan			
4. Collecting Market information from sellers of inputs and buyers of your products			

Group XXI: On-farm Technologies and Practices and Production Cost

Effect of Adoption of pre-planting and transplant practices on production costs

74. Q74. How has your adoption of these pre-planting practices and transplant technologies affected your production costs on-farm? *[Pulled list from Q40]*

	Reduce production costs - 3	No effect on production cost -2	Increase production costs -1
0. Certified improved seeds (high yield Open Pollinated (OPV) varieties)			
1. Hybrid seeds			
2. Seedling trays			
3. Commercial sterile planting media			
4. Vine replication for Orange Fleshed Sweet Potatoes			
5. Liming			
6. Fruit crops grafting			

	Reduce production costs - 3	No effect on production cost -2	Increase production costs -1
7. Live barrier for wind break			
8. Plastic mulching			
9. Raised beds			
10. Ploughing			
11. Greenhouse technology			

Effect of Adoption of Post-Plant & Harvest practices Production Cost

75. How has your adoption of these Post-Plant & Harvest practices and technologies affected on-farm labor burden? [Pulled list from Q41]

	Reduce production costs - 3	No effect on production cost -2	Increase production costs -1
• Drainages			
• Proper irrigation practices			
• Drip Irrigation			
• Overhead irrigation (e.g. sprinklers)			
• Planting density			
• Starter solution			
• Soluble fertilizers (for drip irrigation)/ fertigation			
• Pruning			
• Plant spacing marker			
• Spraying			
• Crop elimination			
• Roots induction stress			
• Fertilizer Application (any type)			
• Soil tests and correct fertilizer program			
• Integrated Pest Management Practices			
• Chemical safety			
• Shade cloth			
• Stakes and trellising twine			
• Proper Disposal of used chemicals and their packaging			

Effect of Adoption of Post-Harvest Practices on Production Costs

76. How has your adoption of these post-harvest practices technologies affected your production costs?
[Pulled list from Q42]

	Reduce production costs - 3	No effect on production cost -2	Increase production costs -1
1. Crop destruction after harvest			
2. Crop evaluation			
3. Sorting and grading by quality standards			
4. Appropriate packing/packaging and filling of horticulture produce to increase appearance and shelf life			
5. Storage of horticulture produce			
6. Transportation of horticulture products			
7. Food/crop processing such as application of food additives, to increase appearance and shelf life			

Effect of Adoption of Business Management Practices on Production Cost

77. How has your adoption of these business management practices affected your production costs?
[Pulled list from Q3]

	Reduce production costs - 3	No effect on production cost -2	Increase production costs -1
1. Record keeping			
2. Financial Management			
3. Business Plan			
4. Collecting Market information from sellers of inputs and buyers of your products			

Group XXII: Results/Outcomes from Mboga na Matunda Program

Recruitment of Casual and Full Time Labor

78. Q78. In 2021 did you hire and pay for short-term or full-time casual labor to assist with production, harvesting, transporting, or post-harvest processing activities?

1. Yes [Ask Q79-Q81]
2. No

79. Q79. How many did you hire in 2021? Number of Women:

Numeric: _____

80. Q80. How many did you hire in 2021? Number of Men:

Numeric: _____

81. How many of those you hired were youth, 15-35 years of age? Number of youth:

Numeric: _____

82. How many did you hire as short-term or full-time casual labor to assist with production, harvesting, transporting or post-harvest processing activities before joining Mboga na Matunda?

Numeric: _____

83. How many of these were women? Number of women

Numeric: _____

84. How many of them were men? Number of men:

Numeric: _____

85. How many of them were youth, 15-35 years? Number of youth:

Numeric: _____

Prices Before and After Joining MnM

86. On average how do you compare the prices you receive for your farm products now vs. prices of these crops before you joined Mboga na Matunda? *[Pulled list of Crops Grown]*

	Decreased	Remained the same	Increased
1. Tomatoes			
2. Green pepper			
3. Watermelon			
4. Banana			
5. Cabbages			
6. Cucumber			
7. Onions			
8. Green peas			
9. Irish potatoes			
10. Orange fleshed sweet potatoes (OFSP)			
11. Passion fruit			
12. Sweet peppers			
13. Papaya			
14. Avocado			
15. Pineapples			

	Decreased	Remained the same	Increased
16. Butternut			
17. Other fruits: ({other_fruit_crops})			
18. Other vegetables: ({other_vegetable_crops})			

Effect of GAP and Standards on Price

87. To what extent would you say the adoption of GAP and adhere to product standards has contributed to the price changes on your products? *[Pulled list of Crops Grown]*

	Not at all	Very little	Somewhat	To a great extent	Don't Know - (5)
1. Tomatoes					
2. Green pepper					
3. Watermelon					
4. Banana					
5. Cabbages					
6. Cucumber					
7. Onions					
8. Green peas					
9. Irish potatoes					
10. Orange fleshed sweet potatoes (OFSP)					
11. Passion fruit					
12. Sweet peppers					
13. Papaya					
14. Avocado					
15. Pineapples					
16. Butternut					
17. Other fruits: ({other_fruit_crops})					
18. Other vegetables: ({other_vegetable_crops})					

Impact on Farming Practices and Output

88. How has the MnM program package impacted your farming activities in the following areas?

	Worsened	No effect	Improved	Don't know - 9995
1. Profitability from fruits and vegetables				
2. Access to markets and/or buyers				

	Worsened	No effect	Improved	Don't know - 9995
3. Selling via collection centers				
4. Use of plastic crates to replace wood				

Impact on Household

89. Has the Mboga na Matunda program package impacted your household wellbeing in term of the following?

	Worsened	No effect	Improved	Don't Know 9995
0. Household Income				
1. Use of fruits and vegetables for improved diets				
2. Maternal and child health and nutrition				
3. Number of youth (men and women, 15 to 35) in family engaged in horticultural value chain				
4. Number of women in family engaged horticultural value chain				
5. Living standard and lifestyle				
6. Savings				

Satisfaction Mboga na Matunda Linkages Efforts

90. How satisfied are you with the results you have obtained from the Mboga na Matunda efforts to: Link you to input suppliers in the horticulture value chain?

1. Very dissatisfied
2. Dissatisfied
3. Neither satisfied nor dissatisfied
4. Satisfied
5. Very satisfied

91. How satisfied are you with the results you have obtained from the Mboga na Matunda efforts to: Link you to output buyers in the horticulture value chain?

1. Very dissatisfied
2. Dissatisfied
3. Neither satisfied nor dissatisfied
4. Satisfied
5. Very satisfied

92. How do you normally access agricultural inputs such as fertilizers, improved seeds, pesticides, fungicides, etc. before and after Mboga na Matunda Program?

1. Purchase directly at agro-dealer store
2. Purchased at agro-dealer shops
3. Purchased at the local market by traders
4. Purchased at the farm/village by middlemen/traders
5. Purchased at the farm by agro-dealer agents

6. Purchased at the farm by groups (ordered by cooperative or organization as pressed order)
 7. Other (please specify)
93. How did the Mboga na Matunda activity affect timeliness in accessing inputs for your production?
1. Not at all
 2. Moderately improved
 3. Very much improved

Support and Link to Finance Institutions

	Yes	No
94. Have you opened bank account as a result of this project?		
95. Have you accessed bank loans to support horticultural project activities?		
96. Q96a. Are you a member of a farmers group or association?		
Q96b. Has your farming group opened bank account as a result of this project?		
97. Have your group accessed bank loans to support horticultural project activities?		
98. Have you received financing to purchase inputs through the Mboga na Matunda project's agro-dealer?		

Lending Services

99. How much time from starting the loan process to obtaining a loan?
Days(numeric): _____
100. Which banks/ financial institutions, or other lenders have extended loans and other agricultural services to you and/or members?
1. Private Commercial bank
 2. Agricultural credit bank (e.g., TADB bank)
 3. Private lenders
 4. Family or Friends
 5. Savings and Credit Cooperative Society (SACCOS)
 6. Village Community Banking (VICOBA)
 7. Other (please specify)
101. Which of these were your greatest barriers to obtaining a loan?
1. Travel time
 2. Existing debt
 3. Credit history
 4. Number of visits to the office
 5. Required paperwork or documentation
 6. Need for collateral
 7. Experienced no barrier
 8. Other (specify)
102. How would you rate the performance of agro-dealers in providing you with quality inputs in a timely manner?
- Very poor
 - Poor
 - Fair
 - Good
 - Very good
 - Don't know (9995)

- I03. How would you describe your level of satisfaction with the outputs of the project on the inclusion of the financial sector participation in the horticulture value chain?
1. Very dissatisfied
 2. Dissatisfied
 3. Neither satisfied nor dissatisfied
 4. Satisfied
 5. Very satisfied
- I04. How would you describe your level of satisfaction with assistance from Mboga na Matunda in obtaining a loan for your horticulture business?
1. Very dissatisfied
 2. Dissatisfied
 3. Neither satisfied nor dissatisfied
 4. Satisfied
 5. Very satisfied

Group XXIII: COVID-19 Interruptions to Businesses

- I05. Did COVID-19 impact your farm, business, association or organization?
1. Yes [Ask Q105_How]
 2. No

Q105_How. How did COVID-19 impact your farm, business, association, or organization?

- I06. Was food availability for your family impacted by COVID-19?
1. Yes [Ask Q106_How]
 2. No

Q106_How. How did COVID-19 impact food availability for your family?

Group XXIV: Other Outcomes/Results at Household Level

Nutrition outcomes associated with Mboga na Matunda program

- I07. Q107. Did your production of horticulture crops provide household food security?
1. Yes
 0. No
 - Don't Know (9995)
- I08. Q108. Have nutrition trainings from Mboga na Matunda program impacted maternal health for women positively?
1. Yes
 0. No
 - Don't Know (9995)
- I09. Q109. Has the number of food/food groups you consume on a daily basis changed as a result of participating in Mboga na Matunda program?
1. Yes
 0. No
 - Don't Know (9995)
- I10. Q110. Number of meals per day for the general household before Mboga na Matunda
Integer: _____
- I11. Q111. How many meals per day are eaten at your household (general household) after joining Mboga na Matunda program?
Integer: _____

Product Quality and Standards

- I12. Q112. Has your use of standards led to increased sales to large volume buyers?
 1. Yes
 0. No
 Don't know (9995)
 Refused to Answer (9999)
- I13. Q113. Have you signed any contracts to deliver products to buyers based on agreed quality standards?
 1. Yes
 0. No
 Refused to Answer (9999)
- I14. Q114. Have your gain in terms of profitability increased as a result of adoption of standards
 1. Yes
 0. No
 Refused to Answer (9999)

Agree or disagree statements

- I15. Q115. To what extent do you agree or disagree with the statements I will read to you:

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
1. Your ability to sustain food production for your family has improved					
2. You are able to better address challenges and potential shocks having made the investments of your time in training?					
3. You are confident that you and your family will be better off in the future					

Household Assets Ownership

- I16. Q116. Does your household currently own any of the following household assets?

	Yes	No
Television		
Car		
Radio		
Solar panel		
Satellite dish		
Electric Iron		
Charcoal iron		
Refrigerator or freezer		
Gas Cooker		
Electric Cooker		

When were the Assets bought?

117. Did you purchase any of these assets before or after you started participation with Mboga na Matunda program? [Pulled list of owned assets]

	Before Mboga na Matunda Program -1	After joining Mboga na Matunda program -2 Ask Question 118
Television		
Motorcycle for transporting goods		
Car		
Radio		
Solar panel		
Satellite dish		
Electric Iron		
Charcoal iron		
Bicycle for transporting goods		
Refrigerator or freezer		
Power tiller		
Drip irrigation infrastructure		
Motor pump		
Fumigation pump		
Protective gear for fumigation		
Cart for transporting goods		
Smartphone (capable of downloading and viewing market information)		
A mobile phone that is not a smart phone		
Gas Cooker		
Electric Cooker		

Asset Bought Due to Participation in Mboga na Matunda?

118. Would you say that you have been able to buy these assets because of your increased income after participating in MnM program? [Pulled list of Assets purchased after joining MnM)

	Yes	No
1. Television		
2. Motorcycle for transporting goods		
3. Car		
4. Radio		
5. Solar panel		
6. Satellite dish		
7. Electric Iron		
8. Charcoal iron		
9. Bicycle for transporting goods		
10. Refrigerator or freezer		
11. Power tiller		
12. Drip irrigation infrastructure		

	Yes	No
13. Motor pump		
14. Fumigation pump		
15. Protective gear for fumigation		
16. Cart for transporting goods		
17. Smartphone (capable of downloading and viewing market information)		
18. A mobile phone that is not a smart phone		
19. Gas Cooker		
20. Electric Cooker		

Group XXV: Completion Date and Time & Note on Replacement Protocol

C9. Date and time interview was completed

Date: _____

Time: _____

C10. Is the respondent from the primary or backup sample or back up?

1. Primary Respondent
2. Replacement Respondent [Ask C11 and C12]

C11. Replaced primary respondent's ID

Text: _____

C12. Why was the respondent replaced?

- Primary respondent is under-age
- Primary respondent refused
- Primary respondent is not reachable
- Primary respondent shows unwillingness
- Pilot
- Other (specify)

*** END***

Annex 3.2: Government Extension Officers Survey

Survey Control Information Page

C1. Date and time interview was started:

Data: _____

Time: _____

C2. Enumerator's name

Select from list: _____

C3. Enumerator's ID

Select from list: _____

C4. Name of respondent

Text: _____

C5. Respondent's ID

Text: _____

C6. Respondent's gender

2. Male

3. Female

C7. Respondent's Telephone Number

Integer: _____

Introduction and Consent Form

This survey is available in Kiswahili and English. You can switch language on the top of the page.

Introduction

USAID has asked us to conduct the end of project Evaluation of the Feed the Future *Mboga na Matunda* (MnM) Activity. *Mboga na Matunda* activity is implemented in Tanzania by Fintrac Inc. in collaboration with the Government of Tanzania. The activity commenced in November 2017 and is expected to close out in March 2022.

This evaluation is conducted in order to understand MnM's performance in relation to the activity's specific objectives, the challenges and constraints impinging on implementation if any, and potential needs for adaptations in future horticulture activities designs under the 2020-2025 USAID/Tanzania CDCS following the market systems approach, and amidst of COVID-19 interruptions. It will also capture the effects on youth beneficiaries' livelihoods and other changes.

You have been suggested as a key person to inform this evaluation based on your involvement in and/or collaboration in the *Mboga na Matunda* Activity and we would appreciate getting your perspective/views.

The interview will take about 45 minutes to 1 hour.

Confidentiality

The information or examples you provide during this interview will not be attributed to you personally or to your organization without your prior consent to be quoted. Your privacy will be protected. We will not include your name or any information in our reports that would make it possible to identify you without your consent. We also ask that what we discuss today remains here with us.

Right to Ask Questions and Report Concerns

You have the right to ask questions about this assessment and to have those questions answered by us.

If you face difficulties in completing the assessment and/or need clarifications, please reach out to Gerald Usika, the Activity Manager for this evaluation, by e-mail: gusika@engl.com or phone: 0745 808 704.

If you have concerns, please send them to D4D Chief of Party, David Hughes, by e-mail: dhughes@engl.com, or phone: 0769 367 589.

Right to Refuse or Withdraw

The decision to participate in this study is entirely up to you. You may refuse to complete the survey, and you have the right stop taking it at any point. You will not be penalized if you choose to withdraw your participation.

There are no known risks or direct benefits for you from participating in this assessment.

Consent to Participate in Interview

1. Do you agree to participate in this interview today?
 - 1) Yes
 - 2) No [Exit Survey]
2. We would like to record this conversation to be able to cross check in the future during analysis. May I record?
 - 1) Yes
 - 2) No

EXTENSION OFFICER CHARACTERISTICS

A. Extension Officers Location

	A1	A12	A13					A2	A3
	In which Mboga na Matunda Activity Region do you live in Tanzania? [PROG: SELECT FROM THE DROPDOWN MENU] 1. Morogoro 2. Iringa 3. Mbeya 4. Njombe 5. Songwe 6. Kaskazini Unguja 7. Kusini Unguja 8. Kaskazini Pemba 9. Kusini Pemba 10. Mjini Magharibi 11. Mkoa mwingine	In which district of [A1] do you live? [PROG: SELECT DISTRICT FROM THE POPULATED LIST]?	In which ward of [A12] do you live? [PROG: SELECT FROM THE LIST]	Please mention another region which is not listed above	Please mention another district which is not listed above	Please mention another ward which is not listed above	Village	What is your Age in Years? [PROG: ENTRE AGE BETWEEN .>=18 AND .<=100]	What is the highest level of education you have attained? [PROG: SELECT FROM THE LIST] 1. No formal education 2. Primary 3. Ordinary Secondary 4. High School 5. Vocational Education 6. College Certificate 7. College Diploma 8. University (Bachelor's Degree or above) 9. Other (please specify)
ID									
1	_____								

	A4	A4a	A4b	A4e
ID	Are you a village, ward, district, regional or Zonal Extension Officer? [SELECT FROM THE LIST] 1. Ward/Shehia ASK A4a 2. Village ASK A4b 3. District 4. Region 5. Zone ASK A4e	[IF A4==1] Which are your areas of operation at the ward level? [PROG: MENTION WARDS YOU ARE WORKING IN]	[IF A4==2] Which are your areas of operation at the village level? [PROG: MENTION VILLAGES YOU ARE WORKING IN]	[IF A4==5] What's the name of the Zone you are working in? [PROG: MENTION THE ZONE YOU ARE WORKING IN]

B. TRAINING

	B1	B2	B3	
ID	Did you attend any training under MnM program to be a trainer of trainers? 1 YESè ASK B2 0 NO	[IF B1== YES] Which topics on Good Agricultural Practices (GAP) did the training address? [PROG: SELECT MULTIPLE] A. Plowing B. Fertilizers C. Purchased seeds D. Raised beds E. Planting density F. Chemical safety G. Trellising H. Starter solution I. Live barriers J. Planting medium K. Seedling trays L. Other PLEASE SPECIFY	How useful, have you found the knowledge and information you received from the extension training, in overcoming production challenges that farmers? [PROG: RATE USEFULNESS USING the SCALE Not Useful at all, Somewhat Useful, Very Useful] FOR EVERY SEELECTED OPTION FROM B2] 1. Plowing 2. Fertilizers 3. Purchased seeds 4. Raised beds 5. Planting density 6. Chemical safety 7. Trellising 8. Starter solution 9. Live barriers 10. Planting medium 11. Seedling trays 12. Other PLEASE SPECIFY	
I	_____			

C. DEMONSTRATION PLOTS

	C1	C2	C3	C4	C5	C6
ID	Did you participate in establishing demo plots for farmers? [PROG: SELECT ONE] 1 YES ASK C2 0 NO	[IF C1==Yes] If Yes, how many demo plots did you help establish since the beginning of your involvement in MnM? [PROG: ENTER THE NUMBER OF DEMO PLOTS ESTABLISHED]	[IF C1==Yes] What was the effect of demo plots for technology transfer of Good Agricultural Practices (GAP) training? [PROG: CHOOSE FROM THE LIST] 1. Poor 2. Fair 3. Good 4. Very Good	[IF C1==Yes] How could use of demo plots be improved? [PROG: SELECT MULTIPLE] 1. More funding for start-up 2. More engagement with private MSMEs on supply of inputs 3. More buyers attending the demo plot 4. Other (Please describe) 5. Other PLEASE SPECIFY	How many farmers are you serving in the area that you are covering? [PROG: ENTER NUMBER OF FARMERS YOU ARE SERVING]	How many farmers' groups are you serving in the villages that you are covering? [PROG: ENTER NUMBER OF FARMERS GROUP YOU ARE SERVING]
I	_____	_ _	_ _	_ _	_ _	

	C7				
ID	How many farmers do you reach for advice in a growing season? [PROG: ENTER NUMBER OF FARMERS YOU SERVE ON AVERAGE IN A GROWING SEASON]				
I	_____	_ _	_ _	_ _	_ _

D. MBOGA NA MATUNDA KEY INTERVENTIONS AND THEIR RELEVANCE

	D1	D2			
	What key interventions were undertaken by the Mboga na Matunda project to enhance livelihoods of small-scale farmers? [PROG: SELECT MULTIPLE] 1. Demonstration plots 2. Field days 3. Exchange visits 4. Access and use of improved inputs 5. Linking local agro-dealers to input supplying companies 6. Training on harvesting and postharvest handling (e.g., packing, using plastic trays, etc.) 7. Support farmers to access finance/loans 8. Training of Youth brigades for spraying services and others 9. Linking farmers to Markets	How relevant were these [D1] interventions when they were conceived?? [PROG: Rate the relevance on a scale of 1 to 5 where 1=Very Irrelevant, 2=Irrelevant, 3=Neutral, 4=Relevant and 5=Very Relevant] 1) Very Irrelevant 2) Irrelevant 3) Neutral 4) Relevant 5) Very Relevant			
ID					
I	_____	_ _	_ _	_ _	_ _

E. EXTENSION OFFICER TRANSPORT TO FARMERS

	E1				
ID	What means of transport do you use to reach the farmers on your daily routine? [PROG: SELECT MULTIPLE] 1) Walking 2) Bicycle 3) Motorcycle 4) Otherè PLEASE SPECIFY				I.
I	_____				

F. GAPs PROMOTION AND ICT METHODS/SUSTAINABILITY IN GAP PROMOTION

	F1	F2	F3	F4	F5
ID	Which technologies did you promote most? [PROG: SELECT ONE AND MATCH WHETHER IT WAS MORE PROMOTED OR LESS PROMOTED] 1. Plowing 2. Fertilizers 3. Purchased seeds 4. Raised beds 5. Planting density 6. Chemical safety 7. Trellising 8. Starter solution 9. Live barriers 10. Planting medium 11. Seedling trays	Do you plan to continue promoting these technologies in other areas that have not been covered by MnM? 2 LIKELY 1 UNLIKELY ASK F3	[IF F2==0] If unlikely, what could be the challenges? [PROG: SELECT MULTIPLE] 1) No budget support from LGAs to buy inputs for demonstrations 2) Limited collaboration with Input supplying companies 3) Limited access to inputs by farmers due to increased costs 4) Limited access to improved technologies after end of project 5) Other PLEASE SPECIFY	Which ICT methods are you using to communicate to farmers? [PROG: SELECT MULTIPLE] 1. Phone calls 2. Text messages 3. Social Media (such as Whatsapp, etc.) 4. Radio Broadcasting 5. TV Broadcasting 6. Emails 7. Other PLEASE SPECIFY	How effective are the ICT methods used to communicate with farmers you have mentioned above? [PROG: SELECT ONE] 2 Very Effective 1 Less Effective
I	_____				

	G1	G2			
	Do you collaborate the Mboga na Matunda project agronomists? 1 YES ASK G2 0 NO	[IF G1 ==1] If yes, what is the extent of collaboration? 2 High collaboration 1 Low collaboration			
ID					
1	_____	_ _	_ _	_ _	_ _

Completion Date and Time & Note on Replacement Protocol

C8. Date and time interview was completed

Date: _____

Time: _____

C9. Is the respondent from the primary or backup sample or back up?

3. Primary Respondent
4. Replacement Respondent [Ask C10 and C11]

C10. Replaced primary respondent's ID

Text: _____

C11. Why was the respondent replaced?

- Primary respondent refused
- Primary respondent is not reachable
- Primary respondent shows unwillingness
- Pilot
- Other (specify)

*** END***

Annex 3.3: Micro, Small, and Medium Enterprises Survey

Survey Control Information Page

C1. Date and time interview was started:

Data: _____

Time: _____

C2. Enumerator's name

Select from list: _____

C3. Enumerator's ID

Select from list: _____

C4. Name of respondent

Text: _____

C5. Respondent's ID

Text: _____

C6. Respondent's gender

4. Male

5. Female

C7. Respondent's Telephone Number

Integer: _____

Introduction and Consent Form

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The interview will take about 45 minutes to 1 hour.

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You have the right to ask questions about this assessment and to have those questions answered by us.

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The decision to participate in this study is entirely up to you. You may refuse to complete the survey, and you have the right stop taking it at any point. You will not be penalized if you choose to withdraw your participation.

There are no known risks or direct benefits for you from participating in this assessment.

Consent to Participate in Interview

- 1) Do you agree to participate in this interview today?
 1. Yes
 0. No [Exit Survey]
- 2) We would like to record this conversation to be able to cross check in the future during analysis. May I record?
 1. Yes
 0. No

A. SMEs CHARACTERISTICS

A. SME Location

	A1	A12	A13	A2	A3
ID	In which Mboga na Matunda Activity Region do you live in Tanzania? [PROG: SELECT FROM THE DROPDOWN MENU] 1. Morogoro 2. Iringa 3. Mbeya 4. Njombe 5. Songwe 6. Kaskazini Unguja 7. Kusini Unguja 8. Kaskazini Pemba 9. Kusini Pemba 10. Mjini Magharibi 11. Mkoa mwingine	In which district of [A1] do you live? [PROG: SELECT DISTRICT FROM THE POPULATED LIST]?	In which ward of [A12] do you live? [PROG: SELECT FROM THE LIST]	What is your Age in Years? [PROG: ENTRE AGE BETWEEN .>=18 AND .<=100]	What's your marital status [PROG: SELECT FROM THE LIST] a) Single b) Married c) Divorced d) Separated e) Widow or Widower
I	_____	_ _	_ _	_ _	_ _

	A4	A5	A6	A7	A8
ID	What is the highest level of education you have attained? [PROG: SELECT FROM THE LIST] 1. No formal education 2. Primary 3. Ordinary Secondary 4. High School 5. Vocational Education 6. College Certificate 7. College Diploma 8. University (Bachelor's Degree or above) 9. Other (please specify)	Has your company received a grant from Fintrac/Mboga na Matunda Activity? 1 YES 0 NO	Which of the following best describes the main type of business (es) you do? [PROG: CHOOSE ONE] 1. Input Supply Company 2. Local Agro-dealer 3. Private sector extension service 4. Buyers and resellers of agricultural produce 5. Transporter [ASK A7] 6. Agricultural Produce Processor 7. Other PLEASE SPECIFY	[IF A6==5] If transporter indicate type [PROG: CHOOSE FROM THE LIST] 1) Use truck to deliver produce to market 2) Use small vans to deliver to aggregation center 3) Motorcycle to deliver to aggregation center 4) Other – PLEASE SPECIFY	When did you start this business? [PROG: PLEASE SELECT THE YEAR YOU STARTED BUSINESS. NOTE THAT THIS DATE CAN NOT BE A FUTURE DATE]

	How has your business changed since you started engagement with the MnM program? [PROG: CHOOSE FROM THE LIST] 1) Grown 2) Dropped 3) Remained the Same

B. TRAINING

	B1	B2	B3	B4
	Did you attend any training conducted by Mboga na Matunda program?" 1 YES è ASK B2 0 NO	[IF B1== Yes] If yes, what did you learn from the training? [PROG: SELECT MORE THAN ONE] 1. Good customer care 2. Record keeping 3. Financial literacy 4. Entrepreneurship skills 5. Market linkages 6. Business plan 7. Agro processing 8. Quality assurance 9. Linked farmers to increased customer's network 10. Inventory management (LIFO and FIFO) and stock arrangement 11. Stock taking 12. Supply according to customer needs 13. Otherè PLEASE SPECIFY	How useful did you find the training(s) you attended? [PROG: SELECT Very Useful Useful and Not Useful for each selection from B2] 1. Good customer care 2. Record keeping 3. Financial literacy 4. Entrepreneurship skills 5. Market linkages 6. Business plan 7. Agro processing 8. Quality assurance 9. Linked farmers to increased customer's network 10. Inventory management (LIFO and FIFO) and stock arrangement 11. Stock taking 12. Supply according to customer needs 13. Otherè PLEASE SPECIFY	How has the training impacted how you run your business? [PROG: SELECT Substantially, Not At All and Not Applicable FOR EACH SELECTED TOPIC FROM B2] 1. Good customer care 2. Record keeping 3. Financial literacy 4. Entrepreneurship skills 5. Market linkages 6. Business plan 7. Agro processing 8. Quality assurance 9. Linked farmers to increased customer's network 10. Inventory management (LIFO and FIFO) and stock arrangement 11. Stock taking 12. Supply according to customer needs 13. Otherè PLEASE SPECIFY
ID				
I	_____	_ _	_ _	_ _

C. ACCESS TO FINANCE

	C1	C2	C3	C4	C5	C6
	What is the source of capital in your business? [PROG: SELECT MULTIPLE] 1. Own/family source 2. Loan from Microfinance institutions ASK C2, C4 3. Loan from family, friend or another individual ASK C2 4. Remittances 5. Loan from Commercial banks ASK C2 6. Grants ASK C2 7. Otherè PLEASE SPECIFY	[IF C1==2 au C1==3 au C1==5 au C1==6] If received loans or grants, can you give some examples of outcomes of use of the loans/grants you received? [PROG: SELECT MULTIPLE] 1. Increased stock volumes 2. Building/renovating shop/store, 3. Bought a vehicle for distributing inputs and service delivery 4. Bought a vehicle to transport products to the market 5. Establish/building aggregation centers 6. Increase service delivery network 7. I have not received loans or grants 8. Other PLEASE SPECIFY	[IF C1==5] Which commercial bank(s) have extended loans to your business in the past five years? [PROG: SELECT MULTIPLE] 1. NMB 2. CRDB 3. Tanzania Agricultural Development Bank (TADB) 4. Tanzania Postal Bank (TPB)/Tanzania Commercial Bank (TCB) 5. Equity Bank 6. MUCOBA PLC Bank 7. I have not received loans 8. Other PLEASE SPECIFY	[IF C1==2] Which microfinance institutions have extended loans to your business in the past five years? [PROG: SELECT MULTIPLE] 6. Mafinga SACCOS 7. Rungwe Smallholder Tea Growers Association SACCOS 8. FINCA 9. I have not received loans 10. Other PLEASE SPECIFY	[IF C1==6] From which organization(s) did you receive the grant? [PROG: SELECT MULTIPLE] 1. MnM Project 2. Tanzania Gatsby Trust 3. I didn't get any grant 4. Other SPECIFY	[IF C1==2 au C1==3 au C1==5] How long, on average, did it take to process your loan? [PROG: SELECT ONE] 1. 1 to 2 months 2. 3 to 6 months 3. More than 6 months
ID						
I	_____	____	____	____	____	

D. NUMBER OF FARMERS SERVED AND VOLUMES OF BUSINESS

	D1	D2	D3	D4	D5
ID	[IF A6==1, or A6==2 or A6==3] How many farmers under MnM program are you serving currently? [PROG: ENTER NUMBER OF FARMERS]	[IF A6==1, or A6==2 or A6==3] Has the number of customers particularly farmers increased since the start of your involvement with MnM? I YES ASK D3 0 NO	[IF D2==Yes] If yes, what is the percentage (estimated) increase? [PROG: CHOOSE ONE] • Less than 25% • Between 25% and 50% • Above 50%	[IF A6==1, or A6==2 or A6==3] How do you distribute your products? [PROG: CHOOSE MULTIPLE] 1. Use of village-based agents 2. Farmers come to purchase at store 3. Other PLEASE SPECIFY	[IF A6==1, or A6==2 or A6==3] Do you give advice to your clients especially farmers on the use of agrochemicals such as pesticides, fungicides, fertilizers, etc.? I YES ASK D6 0 NO
I	_____	_ _	_ _	_ _	_ _

	D6	D7a	D7b	D7c	D7d
ID	[IF D5==1] If yes, how do you do this? 0. Use of village-based agents 1. Farmers come to purchase at store 2. Other SPECIFY	[IF A6==1, or A6==2] For agro-dealers, mention the volume (kg) traded per annum on improved seeds	[IF A6==1, or A6==2] For agro-dealers, mention the volume (tones) traded per annum on fertilizers	[IF A6==1, or A6==2] For agro-dealers, mention the volume (Litres) traded per annum on fertilizers	[IF A6==1, or A6==2] For agro-dealers, mention the volume (Litres) traded per annum on Agrochemicals
I	_____	_ _	_ _	_ _	_ _
	D8	D9	D10	D11	D12

ID	[IF A6==1, or A6==2] Which of the inputs below is bringing the most revenue? [PROG: SELECT ONE] 5) Improved seeds (kg) 6) Fertilizers (tons) 7) Fertilizers (liters) 8) Agrochemicals (liters) 9) Other	[IF A6==1, au A6==2 au A6==3 au A6==4 au A6==6] How do you build supplier-customer relationship? 1) Pre-financing ASK D10 2) Discounts 3) Other	[IF D9==1] Did farmers who were prefinanced able to repay the loan? 1 YES ASK D11 0 NO	[IF D10==1] If yes, was payment on time? 1 YES 0 NO ASK D12	[IF D11==0] If No, what is the percentage of defaulters? [PROG: SELECT ONE ANSWER] 2. Less than 25% 3. Between 25% and 50% 4. Above 50%
I	_____	____	____	____	____

ID	D13	D14	D15	D16	D17
	[IF A6==5] For Transporters, did your freight volume increase? 1 YES ASK D14 0 NO	[IF D13==1] If yes, by how much on average per year since the start of your engagement with MnM? [PROG: ENTER AMOUNT IN TANZANIAN SHILINGS]	[IF A6==3] [For Private sector Extension service providers] Has there been increased demand for extension services offered by your business? 1 YES 0 NO	[IF A6==4] [For Buyers and resellers of produce] Has there been increased volume of produce handled? 1 YES 0 NO	[IF A6==6] [For Processors] Has there been increased volume of produce processed? 1 YES 0 NO
I	_____	____	____	____	____

	D18	D18a	D19	D20	
ID	[IF A6==6] [For processors] Did you have purchase contract with any sellers of produce? 1 YES 0 NO	[IF D118==1] [If yes then ask] Were the agreements in the contracts met by you and your supplier? 1 YES 0 NO D19	[IF D18a==0] If written agreements in the contract were not met, why not? [PROG: SELECT MULTIPLE] 1. Quality was not according to agreement? 2. Volume was not met. 3. Price was not, correct? 4. Other SPECIFY	Do you see your business growing in the future because of the MnM program? 1 YES 0 NO	
I	_____				

E. IMPACTS OF COVID-19 ON VALUE CHAIN STAKEHOLDERS

	E1	E2	E3		
ID	How did COVID-19 impact your business? [PROG: SELECT MULTIPLE] 1) Declined volumes of sales 2) Shortage of goods and services 3) No impact on business 4) Other SPECIFY	How did you cope with the impact of COVID-19? [PROG: SELECT MULTIPLE] 1. Business diversification 2. Reduced stock not to tie capital 3. Adopted online business 4. Reduced the number of staff 5. Other SPECIFY	What skills would you need to adapt to future disruptions to the supply chain? [PROG: SELECT MULTIPLE] 1. Marketing skills 2. Business planning 3. Inventory management (LIFO and FIFO) and stock arrangement 4. Customer need identification 5. Market demand forecast 6. Other SPECIFY		
I	_____				

F. NUTRITION INTERVENTIONS

	F1	F2			
	What actions, among the following, are you taking as a private sector player that can improve nutrition status interventions [PROG: SELECT MULTIPLE] 1. Investment in value addition 2. Introduction of Nutrition Sensitive products? 3. Cooking demonstrations 4. Community group education sessions 5. Adherence to quality standards 6. Investment in cold chain facilities 7. Other SPECIFY	How can private sector nutrition interventions be enhanced in future? [PROG: SELECT MULTIPLE] 1) Training on agro processing 2) Strengthen quality control issues 3) Training on cooperative or group formation in processing 4) Access to financial products to develop nutritional sensitive products 5) Training in marketing, branding and sales of products 6) Improve environment of doing business for perishable products			
ID					
I	_____	_ _	_ _	_ _	_ _

G. SMEs JOB CREATION

G1. Since joining and being supported by MnM activities, have you increased your payroll of employees to meet the needs of the horticulture producers? [IF C1==2 au C1==3 au C1==5 or C1==6]

- YES [ASK G2 – G9]
- 0 NO [GO TO END]

G2. How many women as full-time employees have you hired since the start of the MnM activities?

G3. How many men as full-time employees have you hired since the start of the MnM activities?

G4. How many full-time new employees have you hired since the start of the MnM activities?

G5. How many youths as full-time employees have you hired since the start of the MnM activities?

G6. On average, how many women as part-time and/or seasonal worker have you hired in the last 12 months?

G7. On average how many men as part-time and/or seasonal workers have you hired in the last 12 months?

G8. On average how many part-time and/or seasonal workers have you hired in the last 12 months?

G9. On average, how many youths as part-time and/or seasonal worker have you hired in the last 12 months?

H. BUSINESS SUSTAINABILITY

H1. How would you rate the likelihood of the sustainability of your entity supported by the MnM project? [Put in a scale of 1 to 5 where 1=Not Likely, 2=Somewhat Likely, 3=Likely, 4=Very Likely, na 5=Not sure for each selected option from A6]

Completion Date and Time & Note on Replacement Protocol

C8. Date and time interview was completed

Date: _____

Time: _____

C9. Is the respondent from the primary or backup sample or back up?

- 5. Primary Respondent
- 6. Replacement Respondent [Ask C10 and C11]

C10. Replaced primary respondent's ID

Text: _____

C11. Why was the respondent replaced?

- Primary respondent refused
- Primary respondent is not reachable
- Primary respondent shows unwillingness
- Pilot
- Other (specify)

*** END***

Annex 3.4: Survey Management and Supervision Protocol (Including Guidance for Replacement)

Introduction

This is a telephone assisted electronic survey. As such the Enumerator will use both the phone and an electronic device on which the responses received via the phone are recorded.

Ample time is provided for training and an opportunity is provided for piloting of the survey and rectification before the commencement of the actual survey. The purpose of this is to ensure mastery.

Team collaboration is highly encouraged and will be most appreciated.

Please report any challenges/issues noted during the training and the pilot so they can be rectified before the survey starts.

Enumerators and supervisors are requested to be vigilant in following and assisting each other to follow the guidance provided throughout.

Supervision Guidance

1. The survey is in two languages, English and Kiswahili, but we expect it will be administered in Kiswahili only.
2. Enumerators are to choose the language for survey on starting the link.
3. Each enumerator is assigned his own set of respondents.
 - a. It is expected that the total workload assigned will reflect on the total returns from the enumerator.
4. We expect to collect 3,736 responses from the three surveys being fielded.
5. Each supervisor and his team is assigned a task load from this number.
6. **All surveys are to be completed in real time, there is no offline filling.**
7. The Forms can be filled offline, but the survey cannot be submitted offline.
8. Offline filling is not encouraged however as you may be required to update the survey form before you start. If this is the case, the survey App will give the enumerator a prompt to update.
9. It is therefore encouraged that each enumerator have a good internet connection and that it is working stably before starting the survey on the tablet.
10. The enumerator must also plan to start the survey at a time where there is enough time ahead to enable completion of the survey without rescheduling.
11. Each enumerator task assignment includes basic information about the respondent. This includes the respondent's telephone contact information. Some of this information the enumerator **MUST** fill before the interview starts, and other s/he will collect again from the respondent as part of the survey.
12. Guidance is provided to each Enumerator on how to approach the survey in the **call making Standard Operating Procedure**. Enumerators are advised to follow this to the letter to ensure consistency in methodology.
13. Supervisors are required to make sure they understand all the protocols described in the SOP and can guide the Enumerators where there is such need.
14. Guidance for tracking contacts is **provided** to each **enumerator in the Survey Case Management Form**. This too must be followed to the letter, and supervisors have to see to it
15. Supervisors are expected to keep tabs on all the daily activities and produce a daily summary of experience based on aggregation of information provided by enumerators:
 - a. Supervisor tracking: Aggregate the daily status of contacts made and surveys done by each enumerator based on their case management forms – the individual **Survey Case Management Forms submitted by your team**.
 - b. Ensure that the **Survey Case Management Forms are submitted to you by each enumerator each day, and as information is updated until the case is closed**.

- c. **A case form will be expected for each respondent contacted.**
 - d. **Name the form by respondent ID when submitting them to D4D. For example, case “IR00001” or “MO00055.”**
 - e. **Submit closed forms only to D4D.**
 - f. Supervisors will authorize replacements but must first consult with the IPSOS Survey Manager/Coordinator.
 - i. Process for replacement of non-responsive targets – if four documented contact attempts have been made on different days and at different times of the day without success.
 - ii. Enumerators should ask their supervisor for a replacement contact.
 - iii. A paper trail must exist for the replacement decision (tracked by each supervisor as they authorize them) so we can correctly calculate nonresponse and other measures (Case Management Form).
 - g. The supervisor will be informed about the assigned replacement and send this to the Enumerator by the Survey Manager. The replacement contact will be someone with similar characteristics in the backup list. Replacement must be done as follows:
 - 1. Same gender
 - 2. Same district
16. The same platform that is used for training and pilot is also used for the actual survey.
 17. During training, and pilot we are going to assume that we are using replacements.
 18. The final page should be filled, and select reason for replacement as “Pilot”
 19. The programmed survey will be shared with all teams at the appropriate time to ensure each Enumerator is able to handle the survey, type answers, manage skips, ensure special character answers are captures and/or entered, etc.
 20. Each enumerator is expected to complete the survey to the end to ensure as complete information as possible from each respondent.
 - a. Do not EXIT a survey before it is completed.
 - b. If one should exit a survey midway, be sure the “Save in Drafts.”
 - c. Enumerators should NOT DELETE THE COMPLETED AND SENT SURVEYS FROM THE SENT BOX.
 - d. Enumerators can keep the form in progress in “Drafts.”
 - e. This is important to note since if the Enumerator EXITS the survey without saving to “Drafts” s/he will not be able to access the form again.
 21. If a Respondent chooses to leave the survey, the Enumerator will exit the Survey and keep a copy of it in the drafts.
 - a. It is understood that there may be extenuating circumstances because of which the survey may not be completed.
 - b. Guidance for this will be provided as part of the protocol for reported challenges in the field.
 - c. Incomplete surveys should STAY IN THE Drafts Folder Until the fieldwork ends (Do not Delete).
 - d. The enumerator must document the last question answered on the Survey Case Management Form and the reasons for discontinuation.
 - e. If the survey is completed by less than 75 percent a new respondent may be assigned to the Enumerator.
 22. All tablets must be Password Secured during the Survey to avoid UNAUTHORISED ACCESS TO DATA DURING THE ACTIVITY.
 - a. IPSOS will provide passwords and keep a Copy of the Password for each User.
 - b. Users should not change given passwords without permission from IPSOS.

23. Please note that when a numeric response is required by the survey the Enumerator cannot enter any other type of answer. There are two kinds of special characters that are provided in the instance the respondent does not provide a “value” to be filled while a numeric response is required before the Survey can continue:
 - i. Don’t Know, 9995
 - ii. Don’t remember, 9998
 - iii. Refused to answer, 9999
24. Data Quality Monitoring will be done on daily basis during Week 1; and every two days thereafter. All anomalies will be shared back with the enumerator through the Supervisor. Rectifications are expected to be immediate.
 - a. This includes survey non-response, survey completion rates, trends in the time taken to complete the survey, etc.
25. Enumerators have access to the front end of the survey but not the backend.
 - a. All surveys are in draft mode and Enumerators have the ability to correct the survey after it is SUBMITTED.
 - b. Enumerators are however asked to not make any further changes once a case is CLOSED.
 - c. All surveys that respondents choose to exit before completion should stay in the “Drafts.”
 - i. These will be extracted by IPSOS and submitted to D4D at the end of the fieldwork if deemed to have sufficient information to be considered for admission after consultation with D4D.
26. Perform backchecks will be done on ~10 percent of surveys
 - a. This will be done on a rolling basis starting on the second day (covering Day 1 surveys) and will continue to the end of the survey.
 - b. Supervisors will be assigned random selection of respondents from the data collected to perform back checks on. This assignment shall be communicated through the Survey Manager or Coordinator.
 - c. All replacements will require to be backchecked.
 - d. Supervisors will be required to complete a Back Check entry in the Case Management Form for each survey that is backchecked.
 - e. Up to 2 percent of the backchecks may be done by D4D staff. These will be checks on back-checks.
27. Contact Protocol in Case of Challenges in the field:
 - a. Enumerator will report to supervisor.
 - b. Supervisor will report to Firm Survey Manager.
 - c. Survey Manager will report to Data for Development.
28. Urgent matters should be reported with an URGENT title in the e-mail subject. Turn around is expected to be within 1-2 hours on all matters that are labels URGENT. Matters without URGENT label will be treated as regular and will have at least 6-8 HOURS (Workday) turn around.
29. The following are some issues that are considered urgent:
 - a. Contact telephone is invalid.
 - b. Contact telephone leads to someone who is not eligible for the survey.
 - c. Respondent refuses.
 - d. Device(s) are not working properly.
 - e. Others that the enumerator and supervisor will deem urgent based on their effect on the overall survey performance.
30. To the extent possible, all interviews should start around 8:00 am and the last should close before or by 6:00 pm.
 - a. It is advised that the Enumerator does not make phone calls during hours that are deemed PRAYER times.

- b. Enumerators should also avoid scheduling a call too close to the known times that are deemed prayer times, particularly in Zanzibar.
- c. Experience should guide enumerators in setting interviews ahead of time so there are no interviews going on beyond 6:00 pm.

Replacement of Respondents

1. Replacements are expected to be a rare occurrence
2. The intention is to keep the sample size and sampling parameters to the initial plans as much as possible.
3. Use the call case management form to track the time and attempts.
4. Track respondent from first contact to closing the case (daily) and record in “Case Management Form.”
5. Report issues daily/ immediately.
6. Invalid phone number counted as urgent – add urgent to your e-mail subject.

When to Replace

- Phone number is invalid (does not exist) and attempts to find alternative phone number have failed*.
- Respondent has refused outright to participate. *
- Respondent contact is valid, but after established attempts to reach him/her (after the first call) s/he is still can't be reached.
- Respondent has shown clear unwillingness to participate after several attempts.

How to replace

31. Approval to replace must first be granted by supervisor.
 32. Three follow-up attempts have been made after the first call and you are still having trouble reaching the respondent, then request survey supervisor permission to use a replacement respondent.
 33. Replacement with person of same gender/similar group.
34. Record attempts and issues in the case management form until you've completed the survey with the backup/replacement.
35. Replacement must follow these criteria:
 36. Replace with the same gender.
 37. Replace with respondent from within the same District.
38. When you complete the survey, record replacement information on the last page.

Annex 3.5: KII Guides

KII GUIDE FOR Other IP'S STAFF (COP or Tech Director or M&E Director)

Introduction and Consent Form for KIIs

Introduction

Hello. Thank you for agreeing to speak with us today. My name is _____ (moderator name) and my colleague(s) here is/are _____ (note taker/co-interviewer name). We work for the Data for Development, a USAID-funded project that seeks to improve quality and use of data in decision-making in Tanzania.

USAID has asked us to conduct the end of project evaluation of the Feed the Future *Mboga na Matunda* (MnM) Activity. *Mboga na Matunda* activity is implemented in Tanzania by Fintrac Inc. in collaboration with the Government of Tanzania. The activity commenced in November 2017 and is expected to close out in March 2022.

This performance evaluation is conducted in order to understand MnM's end of activity performance in relation to the activity's specific objectives, the challenges and constraints impinging on implementation if any, and potential needs for adaptations in ongoing programming or future horticulture designs following the market systems approach, and at the midst of COVID-19 interruptions. It is also designed to capture the effects on youth beneficiaries' livelihoods and other changes to inform design under the 2020-2025 USAID/Tanzania CDCS.

You have been suggested as a key person to inform this evaluation based on your involvement in and/or collaboration in the *Mboga na Matunda* Activity and we would appreciate getting your perspective/views.

The interview will take about 45 minutes to 1 hour.

Confidentiality

The information or examples you provide during this interview will not be attributed to you personally or to your organization without your prior consent to be quoted. Your privacy will be protected. We will not include your name or any information in our reports that would make it possible to identify you without your consent. We also ask that what we discuss today remains here with us.

Right to Ask Questions and Report Concerns

You have the right to ask questions about this study and to have those questions answered by us before, during or after the interview. You also have the right to raise any concerns you have and receive a response from us during or after this interview session.

If you have further questions about the study or concerns at a later stage, please send them to D4D Chief of Party, David Hughes, by e-mail: dhughes@engl.com, or phone: 0769 367 589.

Right to Refuse or Withdraw

The decision to participate in this study is entirely yours. You may refuse to take part in this interview, and you are free to decline to respond to any of our questions or stop the interview at any time. You will not be penalized if you choose to not answer any question or to withdraw from this discussion.

Consent to Participate in Interview

Do you agree to participate in this interview today? Yes No

Consent to Recording of the Interview

With your consent, we would also like to record this interview so that we can analyze it accurately along with those of other interviewees.

May I start the recorder?

Yes

No

(Instruction to Interviewer: If Yes, also provide verbal consent on the recording once turned on. Please be sure to not include names of the respondents in the recordings.)

[IF THE RESPONDENT SAYS “YES”, BEGIN INTERVIEW. TURN RECORDER ON ONLY IF CONSENT TO RECORD IS GRANTED]

A. Productivity and Profitability

1. Which types and categories of improved technology and or practices are successfully implemented by MnM program?
2. Are you satisfied with the results of the market-led approach to benefit stakeholders in the horticulture value chain? Why and why not?
3. Were you satisfied with the scaling of activities over the course of the project? Could activities have been scaled differently?
4. What improvement would you like to see in future similar projects?

B. Enhanced extension system and sustainability

5. How did Mboga na Matunda and the Government collaborate in their interventions?
 - a. What structures existed for their collaboration and were new structures needed? What was the arrangement/model used to incorporate government extension workers? What worked well in the engagement and why? What could have been improved and why?
6. How effective were regional extension officers able to cascade technical assistance to the district and community levels?
7. How has MnM activity integrated women and youth and what has been the difference with the other approaches used by USAID in the past?
8. Do you believe the results of MnM will be sustainable? Why? Why not?
 - b. How if at all have practices from the program been institutionalized in the GOT extension system? How has this enhanced SMEs in the agriculture sector?
 - c. Can you give an example where farmers and agribusiness partners successfully continued new practices, business models, and technology uptake after activity support “exits”?
9. What constraints do youth face to make necessary investments, and has MnM and the extension service assisted in facilitating youth with training in obtaining loans and market linkages?

C. COVID-19 Impacts

10. How did COVID-19 interruptions to businesses and value chains affect performance and sustainability of MnM’s project?
11. What adjustments are needed to adapt to ongoing COVID challenges?
12. Moving forward, what do you think USAID can do better to prepare for and address shocks to the agricultural value chain from COVID or other external shocks?

D. Support and Link to Finance Institutions

13. What has been the successes of the project for inclusion of the lending agencies to support the horticulture value chain? What was the most effective activity that had positive outcomes and how? Will the results have sustainable impacts on lending institutions?

E. Nutrition Outcomes

14. Assess the effectiveness of the Nutrition and Social Inclusion (NSI) activities to build capacity of nutrition specialists, government extension and community health workers?
15. Have NSI activities been able to improve nutrition outcomes?
16. How do you think the roles of the public and private sectors can play in nutrition and health of women and children?

F. Adaptive Learning in MnM

17. What learning platforms are most effective at promoting evidence-based policymaking and implementation of horticulture value chains at the national and local levels of government?
18. What is the key enabling environment conditions impeding or incentivizing inclusive private sector investment, farmer technology uptake, youth entrepreneurship, and women's leadership? As a result, what institutional and/or policy reform efforts may be necessary?
19. How has MnM collaborated with other IPs and other agriculture and economic growth activities to add value across their interventions? What areas of collaboration or coordination need to be strengthened?

G. Constraints/barriers

20. Has the Tanzania Horticulture Association (TAHA) been successful in conducting policy and industry analysis to address constraints in the horticulture value chain? What policies and regulations changes have benefited the producers, agro-dealers, and other SMEs?
21. Are there factors that hindered outcomes or intermediate results from being achieved, including contextual dynamics in during the MnM activity? How were these mitigated? Were they any significant pivots or entry point established?
22. Is there any other topic you would like to discuss with us? Please describe.

Thank you very much for taking your time to speak to us. We appreciate it!

KII GUIDE FOR GOVERNMENT OFFICIALS

Regional and District Extension Officers

Introduction and Consent Form for KIIs

Introduction

Hello. Thank you for agreeing to speak with us today. My name is _____ (moderator name) and my colleague(s) here is/are _____ (note taker/co-interviewer name). We work for the Data for Development, a USAID-funded project that seeks to improve quality and use of data in decision-making in Tanzania.

USAID has asked us to conduct the end of project evaluation of the Feed the Future *Mboga na Matunda* (MnM) Activity. *Mboga na Matunda* activity is implemented in Tanzania by Fintrac Inc. in collaboration with the Government of Tanzania. The activity commenced in November 2017 and is expected to close out in March 2022.

This performance evaluation is conducted in order to understand MnM's end of activity performance in relation to the activity's specific objectives, the challenges and constraints impinging on implementation if any, and potential needs for adaptations in ongoing programming or future horticulture designs following the market systems approach, and at the midst of COVID-19 interruptions. It is also designed to capture the effects on youth beneficiaries' livelihoods and other changes to inform design under the 2020-2025 USAID/Tanzania CDCS.

You have been suggested as a key person to inform this evaluation based on your involvement in and/or collaboration in the *Mboga na Matunda* Activity and we would appreciate getting your perspective/views.

The interview will take about 45 minutes to 1 hour.

Confidentiality

The information or examples you provide during this interview will not be attributed to you personally or to your organization without your prior consent to be quoted. Your privacy will be protected. We will not include your name or any information in our reports that would make it possible to identify you without your consent. We also ask that what we discuss today remains here with us.

Right to Ask Questions and Report Concerns

You have the right to ask questions about this study and to have those questions answered by us before, during or after the interview. You also have the right to raise any concerns you have and receive a response from us during or after this interview session.

If you have further questions about the study or concerns at a later stage, please send them to D4D Chief of Party, David Hughes, by e-mail: dhughes@engl.com, or phone: 0769 367 589.

Right to Refuse or Withdraw

The decision to participate in this study is entirely yours. You may refuse to take part in this interview, and you are free to decline to respond to any of our questions or stop the interview at any time. You will not be penalized if you choose to not answer any question or to withdraw from this discussion.

Consent to Participate in Interview

Do you agree to participate in this interview today? Yes No

Consent to Recording of the Interview

With your consent, we would also like to record this interview so that we can analyze it accurately along with those of other interviewees.

May I start the recorder?

Yes

No

(Instruction to Interviewer: If Yes, also provide verbal consent on the recording once turned on. Please be sure to not include names of the respondents in the recordings.)

[IF THE RESPONDENT SAYS “YES”, BEGIN INTERVIEW. TURN RECORDER ON ONLY IF CONSENT TO RECORD IS GRANTED]

A. Productivity and Profitability

1. Which types and categories of improved technology and or practices were implemented by MnM program?
2. Which on-farm technologies and practices are the most cost effective and why?
 - a. Probe the types of technologies and practices used.
3. Who have been your major input suppliers in the project areas? How effective have they been in supplying inputs to farmers in a timely manner?
4. How many farmers are receiving inputs through the project input supplier?
5. Were you satisfied with the results of the market-led approach to benefit stakeholders in the horticulture value chain? Why and why not?
6. What improvements would you like to see in future similar projects?

B. Enhanced extension system, capacity development and sustainability

7. How effective was MnM's horticulture value chain and market-based approach? What was most effective? What could have been more effective?
 - a. What structures existed for the collaboration? What worked well in the engagement and why? What could have been improved/did not work well, and why?
8. What was the most effective information/support that you obtained from MnM?
 - a. Extension services are the main conduit for disseminating information and knowledge on farm technologies. How if at all have MnM extension officers being able to cascade technical assistance to the district and community levels?
9. How has your activities (training and in-field) integrated women and youth inclusion and what has been the difference with the other approaches used in the past?
10. What means do you use to reach the farmers on your daily routine? What challenges do you encounter in obtaining agriculture sector information, especially in horticulture?
11. What is the effectiveness of MnM's support to radio broadcasts to women and youth? Is there evidence they retained and recalled information and put information into practice?
12. Do you believe the results of MnM will be sustainable? Why? Why not?
 - a. How if at all have practices from the program been institutionalized in the GOT extension system? How has this enhanced SMEs in the agriculture sector?
13. What if any evidence is there of farmers and agribusiness partners sustaining new practices, business models, and technology uptake after activity support "exits"?
14. The MnM training on the horticulture value chain changed the way Extension officers at village/ward level work with farmers. How are these changes affecting implementation of your district/regional plans?
15. After the project, do these agents expect that the protocols and trainings received from MnM are firmly embedded in the district's extension plans?
16. Will there be adequate budgets allocated to continue the work done by MnM?

C. COVID-19 Impacts

17. What if any COVID-19 interruptions to businesses and value chains affected performance and sustainability of the horticultural value chain?

D. Support and Link to Finance Institutions

18. Which banks/financial institutions have extended loans and other agricultural services to members? Were there such arrangements before? What has changed with the current arrangement? Has extension officers help producers to obtain loans? If yes, how?
19. What have been the key outcomes of the project for the inclusion of the financial sector participation in the horticulture value chain? Will the results have sustainable impacts on lending institutions? What was the most effective activity that had positive outcomes and how?

E. Nutrition Outcomes

- 20. What if any changes to the horticulture value chain resulting from the MnM project do you see improving nutrition outcomes in Tanzania?
- 21. What role can the private sector play in improving nutrition and health of women and children? What kind of partnerships between the GOT and private sector would assist in improving nutrition and livelihood outcomes?

F. Adaptive Learning in MnM

- 22. What are the key enabling environment conditions impeding or incentivizing inclusive private sector investment, farmer technology uptake, youth entrepreneurship, and women's leadership? As a result, what institutional and/or policy reform efforts may be necessary?
- 23. How has MnM collaborated with other agriculture and economic growth activities to add value across their interventions? What areas of collaboration or coordination need to be strengthened?

G. Constraints/barriers

- 24. Are there factors that hindered outcomes or intermediate results from being achieved, including contextual dynamics during the MnM activity? How were these mitigated? What recommendations for future horticultural value change programs do you have for USAID?
- 25. Is there any other topic you would like to discuss with us? Please describe.

Thank you very much for taking your time to speak to us. We appreciate it!

KII GUIDE FOR MnM PARTNER'S STAFF
Financial Institutions staff (CD, PM, Tech Managers, etc.)
Introduction and Consent Form for KIIs

Introduction

Hello. Thank you for agreeing to speak with us today. My name is _____ (moderator name) and my colleague(s) here is/are _____ (note taker/co-interviewer name). We work for the Data for Development, a USAID-funded project that seeks to improve quality and use of data in decision-making in Tanzania.

USAID has asked us to conduct the end of project Evaluation of the Feed the Future *Mboga na Matunda* (MnM) Activity. *Mboga na Matunda* activity is implemented in Tanzania by Fintrac Inc. in collaboration with the Government of Tanzania. The activity commenced in November 2017 and is expected to close out in March 2022.

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You have been suggested as a key person to inform this evaluation based on your involvement in and/or collaboration in the *Mboga na Matunda* Activity and we would appreciate getting your perspective/views.

The interview will take about 45 minutes to 1 hour.

Confidentiality

The information or examples you provide during this interview will not be attributed to you personally or to your organization without your prior consent to be quoted. Your privacy will be protected. We will not include your name or any information in our reports that would make it possible to identify you without your consent. We also ask that what we discuss today remains here with us.

Right to Ask Questions and Report Concerns

You have the right to ask questions about this study and to have those questions answered by us before, during or after the interview. You also have the right to raise any concerns you have and receive a response from us during or after this interview session.

If you have further questions about the study or concerns at a later stage, please send them to D4D Chief of Party, David Hughes, by e-mail: dhughes@engl.com, or phone: 0769 367 589.

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Consent to Participate in Interview

Do you agree to participate in this interview today? Yes No

Consent to Recording of the Interview

With your consent, we would also like to record this interview so that we can analyze it accurately along with those of other interviewees.

May I start the recorder? Yes No

(Instruction to Interviewer: If Yes, also provide verbal consent on the recording once turned on. Please be sure to not include names of the respondents in the recordings.)

[IF THE RESPONDENT SAYS “YES”, BEGIN INTERVIEW. TURN RECORDER ON ONLY IF CONSENT TO RECORD IS GRANTED]

A. Productivity and Profitability

1. Are you satisfied with the results of MnM's market-led approach to lend to women and youth in the horticulture value chain?
2. To what extent has MnM increased fruit and vegetable production to support producers and to become competitive in the horticulture value chain? What activities were most effective? What activities were less effective?
3. What types of interventions were effective to engage women and youth with your financial institution (FI) in the horticulture value chain? What has been the difference from the other approaches used in the past?

B. Enhanced extension system, capacity development and sustainability

4. How do you assess the activities of the extension service to prepare producers and SMEs to be "bank ready" to obtain loans for their activities?
5. How was the relationships for collaboration with MnM and its partners? What worked well in the engagement and why? What could have been improved and why?
6. What was the most effective information/support to your financial institution obtained from MnM? Give ideas: Training of loan officers? Loan application products and forms? Train producers and SME on loan applications?
7. Do you believe the results of MnM to increase profitability for horticulture producers will be sustainable? Why? Why not?

C. COVID-19 Impacts

8. How did COVID-19 affect your ability to lend to horticulture producers and business borrowers?
9. Has your financial institution been able to make necessary adjustments because of COVID? What?
10. What do you think USAID can do better to address shocks like COVID to the agricultural lending?
11. What GOT policies are needed to reduce the risks and uncertainty of pandemic, climate change, and other shocks to the agricultural value chain?

D. Support and Link to Finance Institutions

12. What financial services (microcredit, loans, etc.) did you offer to participants in the MnM program?
13. To what extent have activities been able to expand the financial sectors participation in the horticulture value chain?
14. How effective were these activities implemented by MnM in collaboration with the GOT?
15. Will the MnM activities result in sustainable, positive impacts on your institution? Yes ___ No ___
If yes, what was the most effective activity that had positive outcomes to be sustainable? Training of bank loan officers ___ Bank officers make field visits ___ producers prepare business plans ___
Other _____
16. How many farmers/farmers groups have opened bank accounts as a result of MnM project?
17. How many farmers/farmers groups once they open an account have successfully accessed bank loans to support project activities?
18. How many farmers are receiving improved inputs (seeds, chemicals) through the private input supplier because of your loans?
19. Which lending modalities (loan application, producer interview, visit to the farm by loan agent, etc.) do you use to lend to farmers? What modalities work well?
20. Does your bank staff receive training in lending to MnM horticulture producers and small businesses?
21. What do you require for collateral for securing a loan? Give an example, Sales contract with buyers? Other?

22. Does MnM training package include financial literacy training specifically tailored for women and youth? What percentage of your agricultural producers obtaining loans received MnM training? Did this reduce the rate of defaults on loans?
23. What percentage of farmers have repaid the loans on time? How many farmers defaulted and why? Did women have higher repayment rates than men?

E. Adaptive Learning in MnM

24. What are the impediments to incentivize private sector investments by women and youth? Production knowledge, market networking, market access, financial awareness?
25. What institutional and/or policy reform efforts are necessary to remove these impediments in the future?
26. How has MnM collaborated with other financial institutions agriculture and economic growth activities to add value to lending practices across their interventions? What areas of collaboration or coordination need to be strengthened?
27. How can they improve the policy environment for finance institutions to lend to producers and businesses in the horticulture value chain? Please describe.
28. Are there topics or issues you would like to discuss on the financing horticulture?

Thank you very much for taking your time to speak to us. We appreciate it!

KII GUIDE FOR MnM PARTNER'S STAFF

Input Partners, Nutrition Partners, Distributers (Agro-dealers), Processors (CD, PM, Tech Managers, etc.)

Introduction and Consent Form for KIIs

Introduction

Hello. Thank you for agreeing to speak with us today. My name is _____ (moderator name) and my colleague(s) here is/are _____ (note taker/co-interviewer name). We work for Data for Development, a USAID-funded project that seeks to improve quality and use of data in decision-making in Tanzania.

USAID/Tanzania has asked us to conduct the end of project evaluation of the Feed the Future *Mboga na Matunda* (MnM) Activity. *Mboga na Matunda* activity is implemented in Tanzania by Fintrac Inc. in collaboration with the Government of Tanzania. The activity commenced in November 2017 and is expected to close out in March 2022.

This performance evaluation is conducted in order to understand MnM's end of activity performance in relation to the activity's specific objectives, the challenges and constraints impinging on implementation if any, and potential needs for adaptations in ongoing programming or future horticulture designs following the market systems approach, and at the midst of COVID-19 interruptions. It is also designed to capture the effects on youth beneficiaries' livelihoods and other changes to inform design under the 2020-2025 USAID/Tanzania CDCS.

You have been suggested as a key person to inform this evaluation based on your involvement in and/or collaboration in the *Mboga na Matunda* Activity and we would appreciate getting your perspective/views.

The interview will take about 45 minutes to 1 hour.

Confidentiality

The information or examples you provide during this interview will not be attributed to you personally or to your organization without your prior consent to be quoted. Your privacy will be protected. We will not include your name or any information in our reports that would make it possible to identify you without your consent. We also ask that what we discuss today remains here with us.

Right to Ask Questions and Report Concerns

You have the right to ask questions about this study and to have those questions answered by us before, during or after the interview. You also have the right to raise any concerns you have and receive a response from us during or after this interview session.

If you have further questions about the study or concerns at a later stage, please send them to D4D Chief of Party, David Hughes, by e-mail: dhughes@engl.com, or phone: 0769 367 589.

Right to Refuse or Withdraw

The decision to participate in this study is entirely yours. You may refuse to take part in this interview, and you are free to decline to respond to any of our questions or stop the interview at any time. You will not be penalized if you choose to not answer any question or to withdraw from this discussion.

Consent to Participate in Interview

Do you agree to participate in this interview today? Yes No

Consent to Recording of the Interview

With your consent, we would also like to record this interview so that we can analyze it accurately along with those of other interviewees.

May I start the recorder? Yes No

(Instruction to Interviewer: If Yes, also provide verbal consent on the recording once turned on. Please be sure to not include names of the respondents in the recordings.)

[IF THE RESPONDENT SAYS “YES”, BEGIN INTERVIEW. TURN RECORDER ON ONLY IF CONSENT TO RECORD IS GRANTED]

A. Productivity and Profitability

1. Which types and categories of improved technology and or practices were satisfactorily implemented by MnM program?
2. Which on-farm technologies and practices are the most cost effective and why?
3. Probe the types of technologies and practices used - GAP, etc. Were you satisfied with the results of the market-led approach to benefit stakeholders in the horticulture value chain? Why and why not?
4. What improvements would you like to see in future similar projects?
5. Is there an advantage of a project that facilitates development of the value chain by MnM alongside a market-led approach?

B. Enhanced extension system, capacity development and sustainability

6. How do you collaborate with Mboga na Matunda in their interventions?
 - b. What structures existed for the collaboration? What worked well in the engagement and why? What could have been improved/did not work well, and why?
7. What was the most effective information/support that you obtained from MnM?
 - c. Extension services as the main conduit for disseminating information and knowledge on farm technologies, how if at all have MnM extension officers being able to cascade technical assistance to the district and community levels?
8. How have your activities (training and in-field) integrated women and youth inclusion and what has been the difference with the other approaches used in the past?
9. What means do you use to reach the farmers on your daily routine? What challenges do you encounter with respect to the method you use updating your knowledge and information especially in horticulture?
10. Do you believe the results of MnM will be sustainable? Why? Why not?
 - d. How if at all have practices from the program been institutionalized in the GOT extension system? How has this enhanced SMEs in the agriculture sector?
11. What if any evidence is there of farmers and agribusiness partners sustaining new practices, business models, and technology uptake after activity support “exits”?

C. COVID-19 Impacts

12. For businesses, how did COVID-19 interruptions to businesses and value chains affect performance and sustainability of horticulture value chain? The skip to qtn #14.
13. For Nutrition Providers, how did COVID-19 interruptions to businesses and supply chains affect performance and sustainability of food availability for households?
14. Do you believe that MnM created “a sustainable food system and supply chain” which is resilient to COVID-19?
15. What approaches need to be adjusted moving forward to adapt to ongoing challenges?
16. Moving forward, what do you think USAID/Tanzania can do better to address shocks to the agricultural value chain from COVID-19 or other external shocks?

D. Support and Link to Finance Institutions

17. Which banks/financial institutions have extended loans and other agricultural services to the private sector agro-dealers and SMEs? Were there such arrangements before? What has changed with the current arrangement?
18. What is your opinion on the outputs of the project for better inclusion of women and youth to engage with the financial lenders? Will the results have sustainable impacts on lending institutions?
19. What was the most effective activity that had positive outcomes for women and youth who obtained loans because of MnM? How did this occur?

E. Nutrition Outcomes

20. How would you assess the impacts of MnM project in improving nutrition outcomes in for households? Do you believe the efforts will be sustainable?
21. How effective has MnM been to introduce NSI for nutrition dense products, OFSP, other? Are these products easily accepted in the households for food diversity?
22. How do you think the roles of the public and private sectors can collaborate to better improve nutrition and health of women and children?

F. Adaptive Learning in MnM

23. Did MnM strengthen the capacity of your group to be market facilitators? How?
24. What is the key enabling conditions which impede or incentivize:
inclusive private sector investment and involvement, farmer technology uptake, youth entrepreneurship, and women's leadership?
As a result, what institutional and/or policy reform efforts may be necessary?
25. Did MnM effectively collaborated with you to address challenges in implementing the project? What areas can MnM staff do to improve collaboration or coordination?
26. Did MnM make any significant changes in project activities after consulting with you on finding that changes in project were needed? Was MnM able to mitigate these issues early in the project life because of the monitoring, evaluating and learning (MEL) approach?
27. Is there any other topic you would like to discuss with us? Please describe.

Thank you very much for taking your time to speak to us. We appreciate it!

KII GUIDE FOR MnM STAFF (COP, Tech Director, and M&E Director)

Introduction and Consent Form for KIIs

Introduction

Hello. Thank you for agreeing to speak with us today. My name is _____ (moderator name) and my colleague(s) here is/are _____ (note taker/co-interviewer name). We work for the Data for Development, a USAID-funded project that seeks to improve quality and use of data in decision-making in Tanzania.

USAID/Tanzania has asked us to conduct the End of project Evaluation of the Feed the Future *Mboga na Matunda* (MnM) Activity. *Mboga na Matunda* activity is implemented in Tanzania by Fintrac Inc. in collaboration with the Government of Tanzania. The activity commenced in November 2017 and is expected to close out in March 2022.

This performance evaluation is being conducted in order to understand MnM's end of activity performance in relation to the activity's specific objectives, the challenges and constraints impinging on implementation amid external factors related to COVID-19, and potential needs for adaptations in ongoing programming or future horticulture designs following the market systems approach. It is also designed to capture the effects on youth beneficiaries' livelihoods and other changes to inform design under the 2020-2025 USAID/Tanzania CDCS.

This performance evaluation is being conducted in order to understand MnM's end of activity performance in relation to the activity's specific objectives, the challenges and constraints impinging on implementation amid external factors related to COVID-19, and potential needs for adaptations in ongoing programming or future horticulture designs following the market systems approach. It is also designed to capture the effects on youth beneficiaries' livelihood and other changes to inform design under the 2020-2025 USAID/Tanzania CDCS.

You have been suggested as a key person to inform this evaluation based on your involvement in and/or collaboration in the *Mboga na Matunda* Activity and we would appreciate getting your perspective/views.

The interview will take about 45 minutes to 1 hour.

Confidentiality

The information or examples you provide during this interview will not be attributed to you personally or to your organization without your prior consent to be quoted. Your privacy will be protected. We will not include your name or any information in our reports that would make it possible to identify you without your consent. We also ask that what we discuss today remains here with us.

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You have the right to ask questions about this study and to have those questions answered by us before, during or after the interview. You also have the right to raise any concerns you have and receive a response from us during or after this interview session.

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Consent to Participate in Interview

Do you agree to participate in this interview today? Yes No

Consent to Recording of the Interview

With your consent, we would also like to record this interview so that we can analyze it accurately along with those of other interviewees.

May I start the recorder? Yes No

(Instruction to Interviewer: If Yes, also provide verbal consent on the recording once turned on. Please be sure to not include names of the respondents in the recordings.)

[IF THE RESPONDENT SAYS “YES”, BEGIN INTERVIEW. TURN RECORDER ON ONLY IF CONSENT TO RECORD IS GRANTED]

A. Productivity and Profitability

1. Which types and categories of improved technologies and/or practices were most successfully implemented and why?
2. What were the results of the market-led approach to increase productivity and profitability in in the horticulture value chain?
3. Was the facilitative approach effective to support producers and SMEs through advice and extension over the course of the project life?
4. Did the outputs prove to be scalable to a large number of people and communities? What if any activities could have been expanded geographically or to other beneficiary populations? In what areas?

B. Enhanced extension system and sustainability

5. How would you describe MnM's collaboration with the Government during MnM program implementation?
6. What structures existed for collaboration with the GOT? What worked well in the engagement and why? What could have been improved/did not work well, and why?
7. How effective was MnM in utilizing available applied research results in your extension/outreach program and demo plots?
8. Have you been satisfied that technical information and assistance cascaded to the districts and community levels?
9. How has MnM activity been gender neutral for women and youth in exposure to necessary skills?
10. Do you believe the output results of MnM will be sustainable? Why? Why not?
11. Do you see evidence that the program activities have been institutionalized in the GOT extension system? How has this enhanced the ability of SMEs to operate alongside the GOT extension service in the agriculture sector?
12. What evidence is there of farmers and agribusiness partners sustaining new practices, business models, and technology uptake after activity support ends?

C. COVID-19 Impacts

13. How did COVID-19 effect change in agricultural/horticultural businesses and value chains? Did this affect performance or sustainability of MnM's activities? How, if at all, did MnM adapt and implement policies for risk reduction for COVID-19?
14. What approaches need to be adjusted moving forward to adapt to these ongoing challenges?
15. In the future, what do you think USAID can do better to implement projects to address shocks to the agricultural value chain from COVID or other external shocks?

D. Support and Link to Finance Institutions

16. What is your opinion on how the project included financial institutions (FIs) in the horticulture value chain?
17. What was the most effective activity with positive outcomes for agricultural lending? Why?
18. Will the project have sustainable impacts on lending institutions?

E. Nutrition and Health Outcomes

19. How would you assess the project to improve nutrition and health outcomes for women and youth in Tanzania?
20. What is your assessment of behavioral changes in household production and consumption of nutritious fruits and vegetables by the NSI activities? What else can be done to promote production of Orange Flesh Sweet Potatoes (OFSP) and other nutritious crops?
21. How effective was the project to build capacity of the private sectors and local organizations to collaborate to improve the nutrition and health outcomes and improve the value chain?

F. Adaptive Learning in MnM

22. In your opinion, did Monitoring, Evaluation, and Learning (MEL) improve implementation, as well as provide inputs for future horticulture projects?
23. What learning platforms are most effective at promoting evidence-based policy making and implementation at the national and local levels of government?
24. Has MnM facilitated easing of industry bottlenecks through strategic investments: grants under Contract (Tech Fund 1, 2, 3)? Give examples?
25. How has MnM collaborated with USAID, other IPs and other agriculture and economic growth activities to add value across their interventions? What areas of collaboration or coordination need to be strengthened?
26. What are your recommendations for future USAID market-based value chain programs? What if anything would you like to see designed differently if there is a follow-on activity?
27. Was MEL able to address factors that hindered outcomes or intermediate results from being achieved? How were these mitigated through MEL?
28. What are the key enabling conditions impeding or incentivizing inclusive private sector investments, strengthen community organizations, farmer technology uptake, youth entrepreneurship, and women's leadership?

G. Other Topics or Recommendations

29. Are there any other topics or recommendation you would like to discuss with us? Please describe.

Thank you very much for taking your time to speak to us. We appreciate it!

ANNEX 4: LIST OF THE DOCUMENTS REVIEWED

S/N	Document Name (Open Hyperlink)
1	Baseline Study Report – Aug. 2017
2	Annual Work Plan -FY 2017
3	Gender and Youth Integration Strategy - 2017
4	Knowledge Management and Learning Plan - 2017
5	Monitoring and Evaluation Plan - 2017
6	Subaward Manual - May 2017
7	Quarterly Report #1 – Apr. 1 – Jun. 30, 2017
8	Quarterly Report #2 and Annual Report #1 – Jul. 1 – Sept. 30, 2017
9	Quarterly Report #3 – Oct. 1 – Dec. 31, 2017
10	Annual Work Plan -FY 2018
11	Horticulture collection centers - May 2018
12	Quarterly Report #4 – Jan. 1 – Mar. 31, 2018
13	Quarterly Report #5 – Apr. 1 – Jun. 30, 2018
14	Quarterly Report #6 and Annual Report #2 – Jul. 1 – Sept. 30, 2018
15	MSMEs Baseline 2019
16	Quarterly Report #7 – Oct. 1 – Dec. 31, 2018
17	Quarterly Report #8 – Jan. 1 – Mar. 31, 2019
18	Quarterly Report #9 – Apr. 1 – Jun. 30, 2019
19	Quarterly Report #10 and Annual Report #3 – Jul. 1 – Sept. 30, 2019
20	Annual Work Plan FY 2020
21	Quarterly Report #11 – Oct. 1 – Dec. 31, 2019
22	Quarterly Report #12 – Jan. 1 – Mar. 31, 2020
23	Quarterly Report #13 – Apr. 1 – Jun. 30, 2020
24	Quarterly Report #14 and Annual Report #4- Jul. 1 – Sept. 30, 2020
25	PMP Quarter 4 FY 2020
26	Quarterly Report #15 – Oct. 1 – Dec. 31, 2020
27	Quarterly Report #16 – Jan. 1 – Mar. 31, 2021
28	Quarterly Report #17 – Apr. 1 – Jun. 30, 2021
29	Quarterly Report #18 and Annual Report #5- Jul. 1 – Sept. 30, 2021
30	Overall PMP data of the Lifetime of Project - 2021
31	Monthly Newsletter Dec 2019
32	Horticulture Collection Centers - May 2018
33	SOW and Work Plan
34	MEL Questions for the Instrument Matrix

ANNEX 5: CONFLICT OF INTEREST

Name	MICHAEL KADIGI
Title	CONSULTANT
Organization	SUA
Assessment Position	STTA
Evaluation Award Number <i>(contract or another instrument)</i>	AID-OAA-I-15-00024/AID-621-TO-17-00005
USAID Project(s) Assessed <i>(Include project name(s), implementer name(s) and award number(s), if applicable)</i>	MBOGA NA MATUNDA
I have real or potential conflicts of interest to disclose.	NO
If yes answered above, I disclose the following facts: <i>Real or potential conflicts of interest may include, but are not limited to:</i> 1. Close family member who is an employee of the USAID operating unit managing the project(s) being evaluated or the implementing organization(s) whose project(s) are being evaluated. 2. Financial interest that is direct, or is significant though indirect, in the implementing organization(s) whose projects are being evaluated or in the outcome of the evaluation. 3. Current or previous direct or significant though indirect experience with the project(s) being evaluated, including involvement in the project design or previous iterations of the project. 4. Current or previous work experience or seeking employment with the USAID operating unit managing the evaluation or the implementing organization(s) whose project(s) are being evaluated. 5. Current or previous work experience with an organization that may be seen as an industry competitor with the implementing organization(s) whose project(s) are being evaluated. 6. Preconceived ideas toward individuals, groups, organizations, or objectives of the particular projects and organizations being evaluated that could bias the evaluation.	

I certify (1) that I have completed this disclosure form fully and to the best of my ability and (2) that I will update this disclosure form promptly if relevant circumstances change. If I gain access to proprietary information of other companies, then I agree to protect their information from unauthorized use or disclosure for as long as it remains proprietary and refrain from using the information for any purpose other than that for which it was furnished.

Signature	
Date	22/11/2021

Name	Gerald Usika
Title	Evaluation Specialist
Organization	NORC at the University of Chicago
Assessment Position	Activity Manager
Evaluation Award Number <i>(contract or another instrument)</i>	AID-OAA-I-15-00024/AID-621-TO-17-00005
USAID Project(s) Assessed <i>(Include project name(s), implementer name(s) and award number(s), if applicable)</i>	Mboga na Matunda Final Evaluation
I have real or potential conflicts of interest to disclose.	No
If yes answered above, I disclose the following facts: <i>Real or potential conflicts of interest may include, but are not limited to:</i> <i>1. Close family member who is an employee of the USAID operating unit managing the project(s) being evaluated or the implementing organization(s) whose project(s) are being evaluated.</i> <i>2. Financial interest that is direct, or is significant though indirect, in the implementing organization(s) whose projects are being evaluated or in the outcome of the evaluation.</i> <i>3. Current or previous direct or significant though indirect experience with the project(s) being evaluated, including involvement in the project design or previous iterations of the project.</i> <i>4. Current or previous work experience or seeking employment with the USAID operating unit managing the evaluation or the implementing organization(s) whose project(s) are being evaluated.</i> <i>5. Current or previous work experience with an organization that may be seen as an industry competitor with the implementing organization(s) whose project(s) are being evaluated.</i> <i>6. Preconceived ideas toward individuals, groups, organizations, or objectives of the particular projects and organizations being evaluated that could bias the evaluation.</i>	

Name	Daud Siwalaze
Title	Short Term Technical Assistant
Organization	NORC at the University of Chicago
Assessment Position	Evaluation Specialist
Evaluation Award Number (contract or another instrument)	AID-OAA-I-15-00024/AID-621-TO-17-00005
USAID Project(s) Assessed (Include project name(s), implementer name(s) and award number(s), if applicable)	Mboga na Matunda Final Evaluation
I have real or potential conflicts of interest to disclose.	No
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Signature	
Date	December 10, 2021

Name	Jacob Laden
Title	Sr. Evaluation Advisor
Organization	NORC at the University of Chicago
Assessment Position	Evaluation Advisor
Evaluation Award Number (contract or another instrument)	AID-OAA-I-15-00024/AID-621-TO-17-00005
USAID Project(s) Assessed (Include project name(s), implementer name(s) and award number(s), if applicable)	Mboga na Matunda Final Evaluation
I have real or potential conflicts of interest to disclose.	None
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Signature	
Date	December 10, 2021

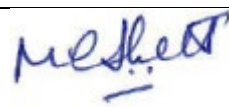
Name	Rose Aiko
Title	Survey Specialist
Organization	NORC at the University of Chicago
Assessment Position	Survey Specialist
Evaluation Award Number (contract or another instrument)	AID-OAA-I-15-00024/AID-621-TO-17-00005
USAID Project(s) Assessed (Include project name(s), implementer name(s) and award number(s), if applicable)	Mboga na Matunda Final Evaluation
I have real or potential conflicts of interest to disclose.	I have no real or potential conflict of Interest
If yes answered above, I disclose the following facts: Real or potential conflicts of interest may include, but are not limited to: 7) Close family member who is an employee of the USAID operating unit managing the project(s) being evaluated or the implementing organization(s) whose project(s) are being evaluated. 8) Financial interest that is direct, or is significant though indirect, in the implementing organization(s) whose projects are being evaluated or in the outcome of the evaluation. 9) Current or previous direct or significant though indirect experience with the project(s) being evaluated, including involvement in the project design or previous iterations of the project. 10) Current or previous work experience or seeking employment with the USAID operating unit managing the evaluation or the implementing organization(s) whose project(s) are being evaluated. 11) Current or previous work experience with an organization that may be seen as an industry competitor with the implementing organization(s) whose project(s) are being evaluated. 12) Preconceived ideas toward individuals, groups, organizations, or objectives of the particular projects and organizations being evaluated that could bias the evaluation.	

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Signature	
Date	December 10, 2021

Name	Mary Christine Shetto
Title	Short Term Technical Assistant
Organization	NORC at the University of Chicago
Assessment Position	Subject Matter Expert
Evaluation Award Number (contract or another instrument)	AID-OAA-I-15-00024/AID-621-TO-17-00005
USAID Project(s) Assessed (Include project name(s), implementer name(s) and award number(s), if applicable)	Mboga na Matunda Final Evaluation
I have real or potential conflicts of interest to disclose.	No
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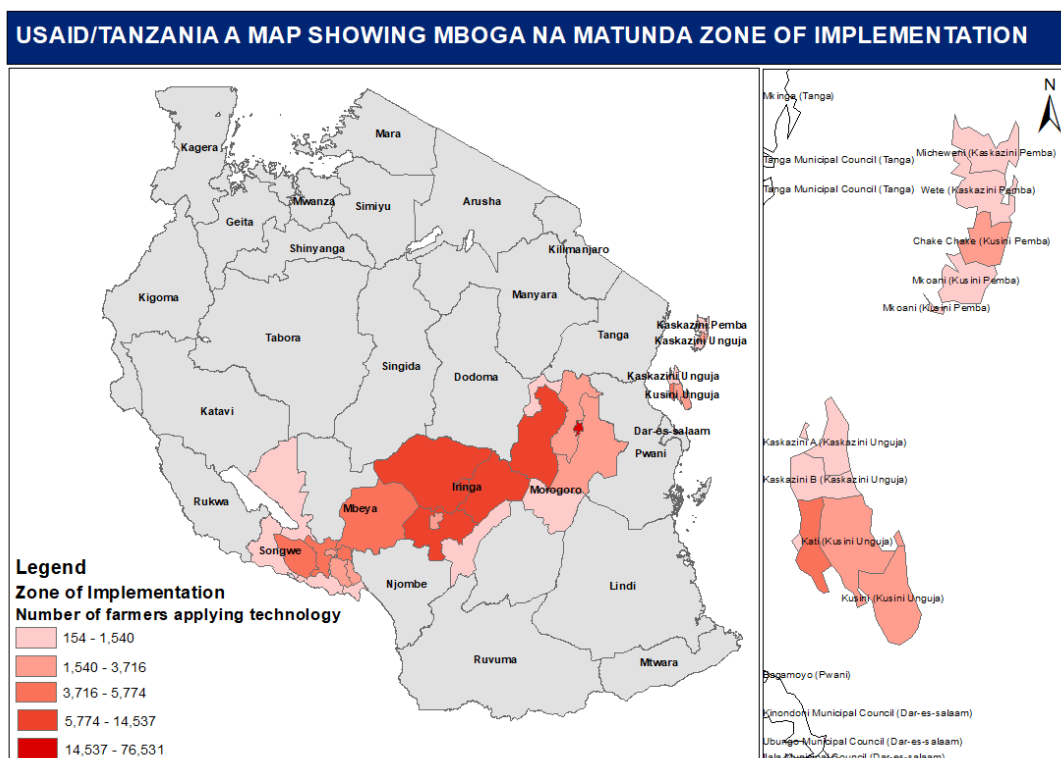
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Signature	
Date	December 10, 2021

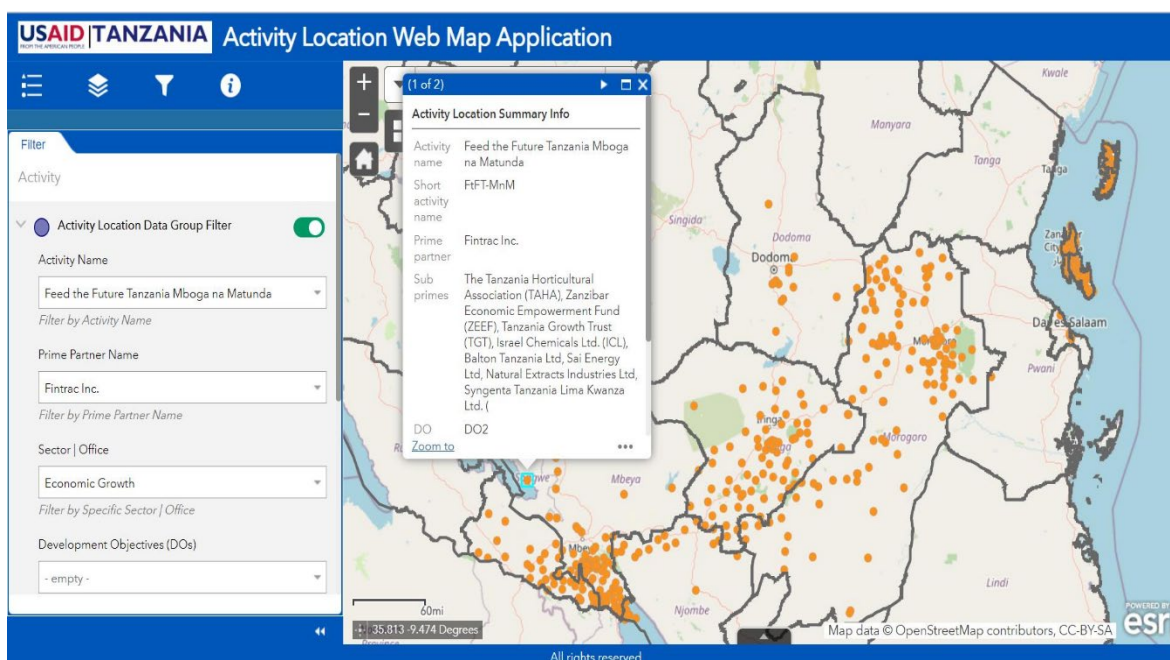
ANNEX 6: TABLES AND FIGURES AND GRAPHICS FROM THE SURVEYS

Chapter 3

Annex Map 1: Mboga na Matunda Zone of Influence



Annex Map 2: Maboga na Matunda Activity Locations

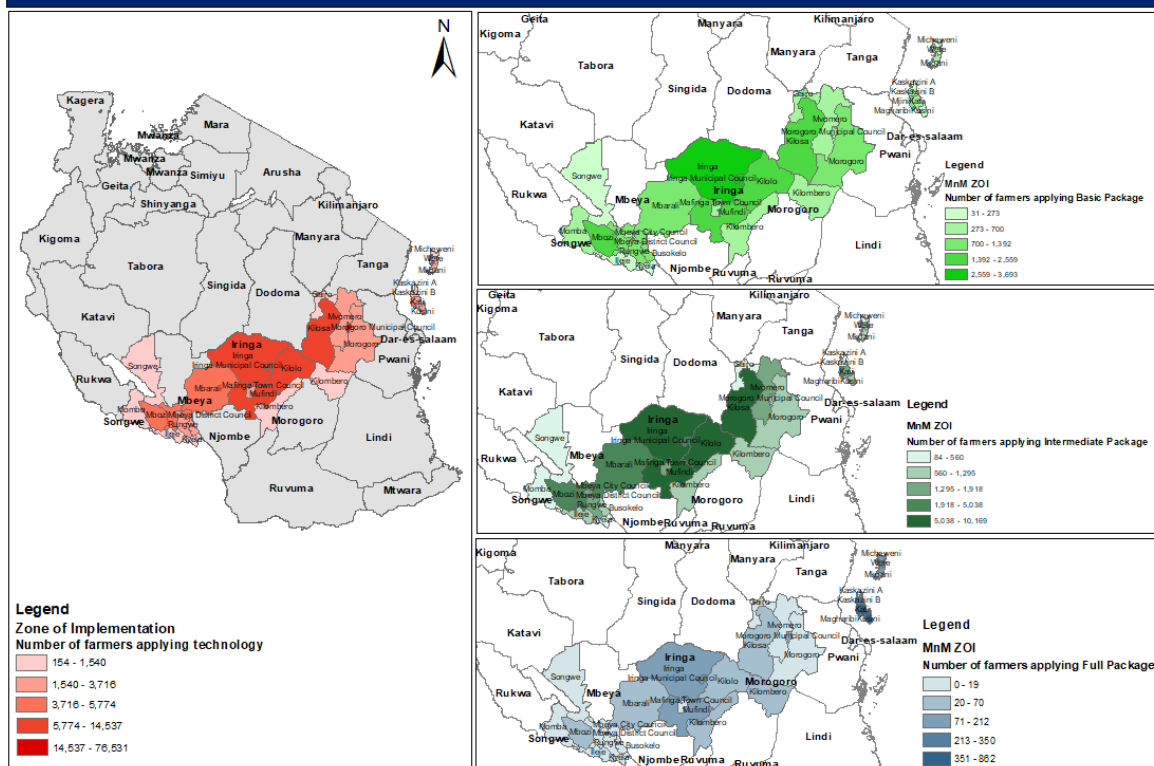


Annex Figure I: Cost and Knowledge Levers for Adopting Technologies and Management Practices

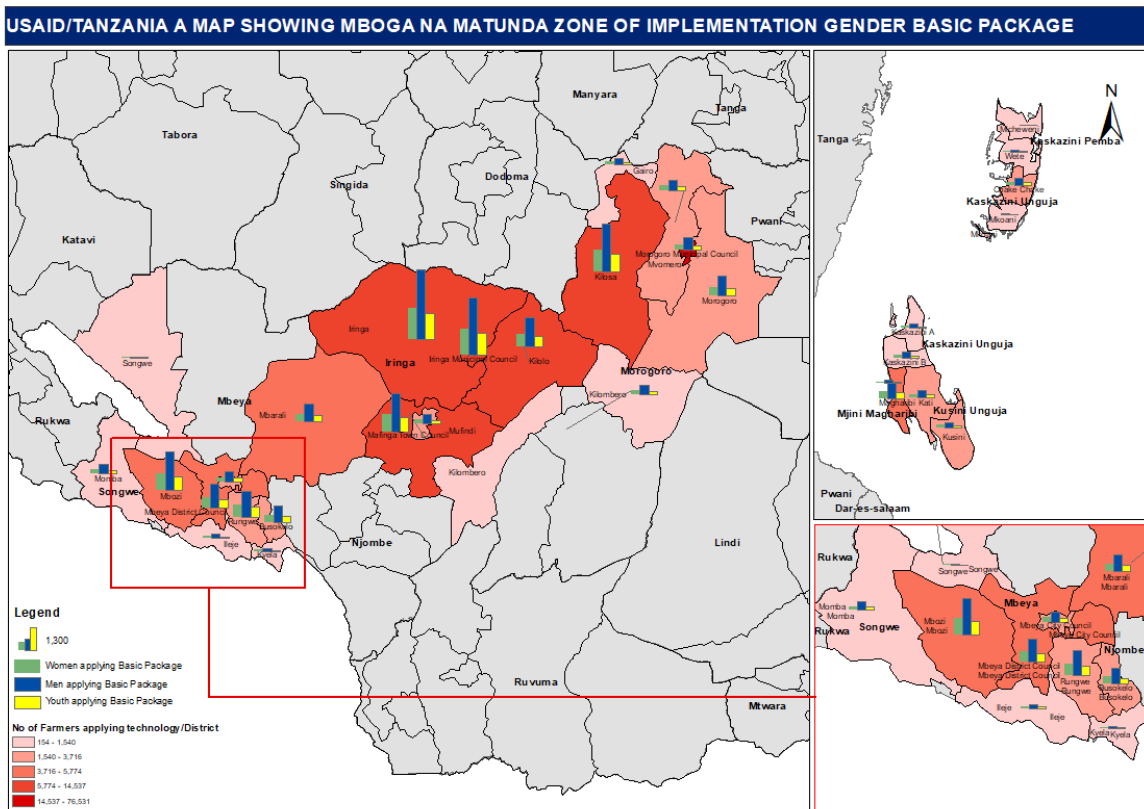


Annex Map 3: Levels of Technologies Applied by Farmers

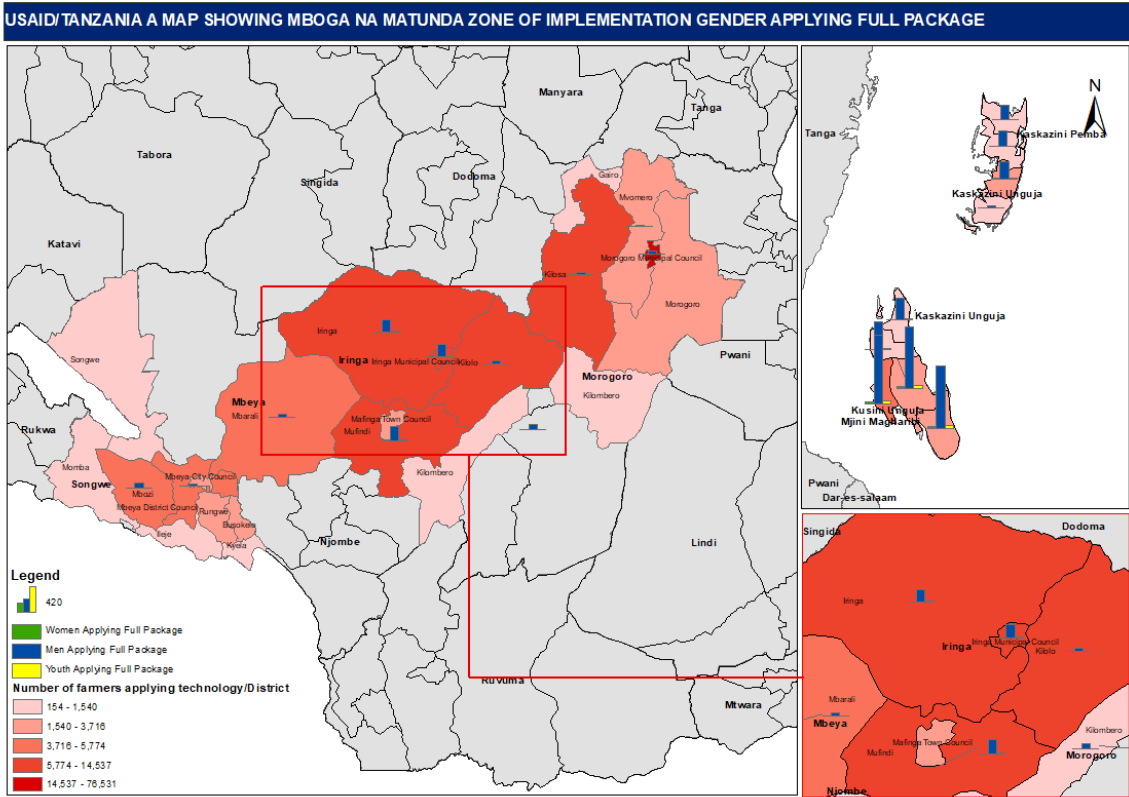
USAID/TANZANIA A MAP SHOWING LEVELS OF TECHNOLOGIES APPLIED BY FARMERS



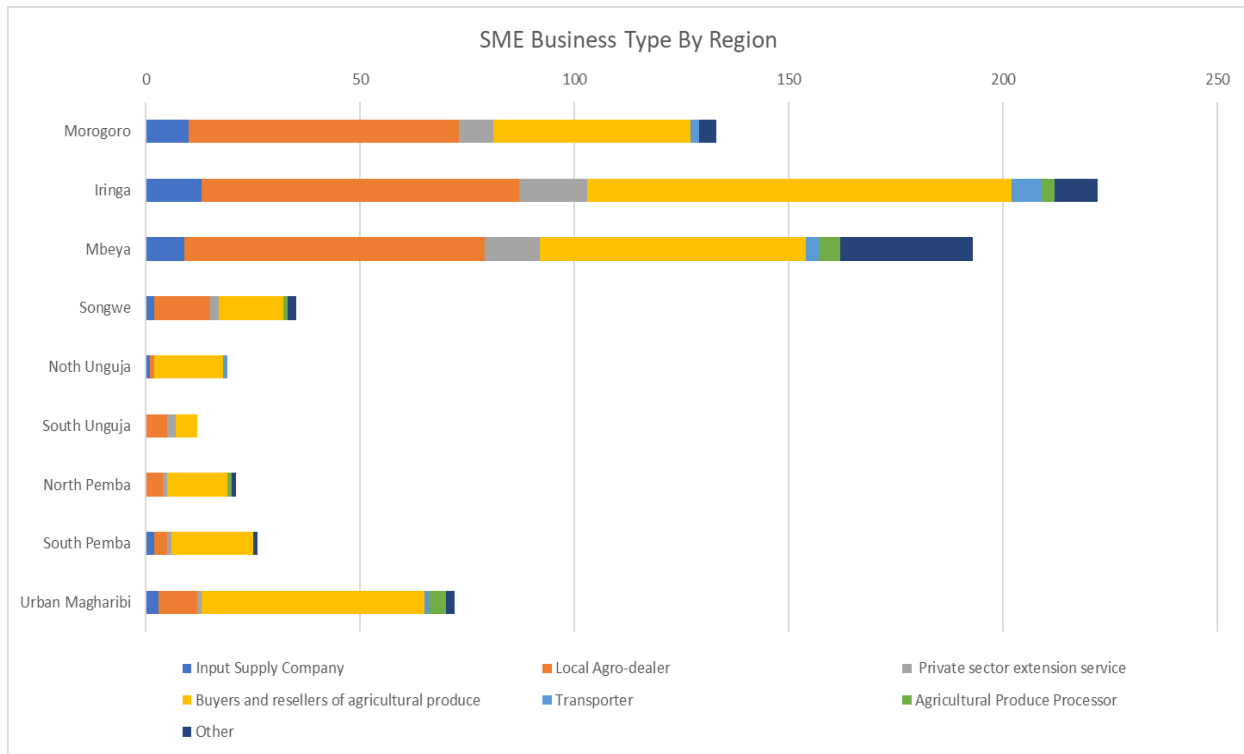
Annex Map 4: Mboga na Matunda Zone of Implementation Gender Basic Package



Annex Map 6: Mboga na Matunda Zone of Implementation Gender Applying Full Package



Annex Figure 2: SME Business Type by Region



Technology packages gained more power and thus investing more on technologies.

Annex Table 1: Producers Who Were Exposed and Then Adopted Improve Production Practices

	Technology Category	Number and percent who received the technology					Number and percent adopting the technology (out of those who received the technology)				
		Number of respondents			Percent of respondents (%)		Number of respondents			Percent of respondents (%)	
		F	M	Total	F	M	F	M	Total	F	M
Drainages	Basic	174	507	681	26%	74%	115	381	496	23.2%	76.8%
Proper irrigation practices	Advanced	233	579	812	29%	71%	187	471	658	28.4%	71.6%
Drip Irrigation	Advanced	173	503	676	26%	74%	76	214	290	26.2%	73.8%
Overhead irrigation (e.g. sprinklers)	Advanced	218	503	721	30%	70%	150	311	461	32.5%	67.5%
Planting density	Intermediate	180	494	674	27%	73%	137	410	547	25.0%	75.0%
Starter solution	Advanced	153	419	572	27%	73%	92	290	382	24.1%	75.9%
Soluble fertilizers (for drip irrigation)/ fertigation	Advanced	135	404	539	25%	75%	66	223	289	22.8%	77.2%
Pruning	Intermediate	176	450	626	28%	72%	135	388	523	25.8%	74.2%
Plant spacing marker	Intermediate	271	684	955	28%	72%	254	647	901	28.2%	71.8%
Spraying	Advanced	264	673	937	28%	72%	247	637	884	27.9%	72.1%
Crop elimination	Intermediate	221	535	756	29%	71%	190	479	669	28.4%	71.6%
Roots induction stress	Advanced	103	338	441	23%	77%	68	251	319	21.3%	78.7%
Fertilizer Application (any type)	Advanced	272	632	904	30%	70%	256	592	848	30.2%	69.8%
Soil tests and correct fertilizer program	Advanced	152	344	496	31%	69%	73	150	223	32.7%	67.3%
Integrated Pest Management Practices	Advanced	166	476	642	26%	74%	134	373	507	26.4%	73.6%
Chemical safety	Advanced	170	478	648	26%	74%	140	397	537	26.1%	73.9%
Shade cloth	Basic	125	311	436	29%	71%	85	189	274	31.0%	69.0%
Stakes and trellising twine	Intermediate	187	528	715	26%	74%	137	453	590	23.2%	76.8%
Proper Disposal of used chemicals and their packaging	Advanced	176	502	678	26%	74%	148	405	553	26.8%	73.2%
Total Respondents (N = Respondents who participated in GAP training)		325	761	1,086							

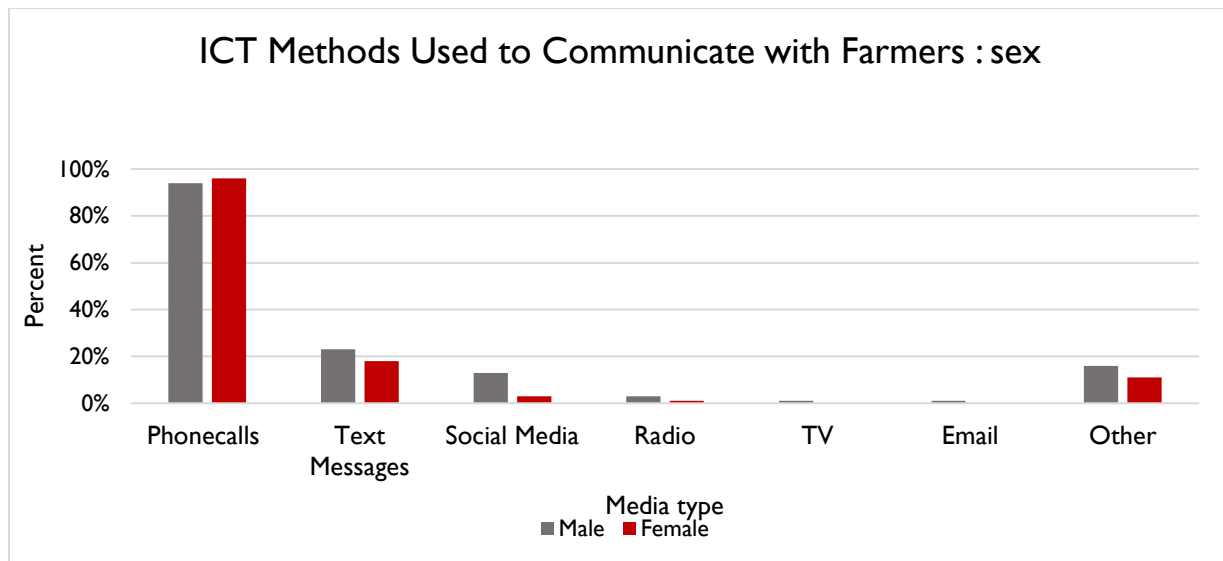
Annex Table 2: Producers Who Received the Best Post-Harvest Practices and Adopted These Practices

	Technology Category	Number and percent who received the technology					Number and percent adopting the technology (out of those who received the technology)				
		Number of respondents			Percent of respondents (%)		Number of respondents			Percent of respondents (%)	
		F	M	Total	F	M	F	M	Total	F	M
Crop destruction after harvest	Basic	169	502	671	25.2%	74.8%	142	436	578	24.6%	75.4%
Crop evaluation	Advanced	193	484	677	28.5%	71.5%	157	406	563	27.9%	72.1%
Sorting and grading by quality standards	Advanced	185	485	670	27.6%	72.4%	154	398	552	27.9%	72.1%
Appropriate packing/packaging and filling of horticulture produce to increase appearance and shelf life	Advanced	156	421	577	27.0%	73.0%	113	304	417	27.1%	72.9%
Storage of horticulture produce	Intermediate	166	459	625	26.6%	73.4%	152	410	562	27.0%	73.0%
Transportation of horticulture products	Intermediate	135	435	570	23.7%	76.3%	152	410	562	27.0%	73.0%
Food/crop processing such as application of food additives, to increase appearance and shelf life	Advanced	125	263	388	32.2%	67.8%	55	109	164	33.5%	66.5%
Total Respondents (N = Respondents who participated in GAP training)		325	761	1,086							

Annex Table 3: Training and Adoption of Best Business Management Practices

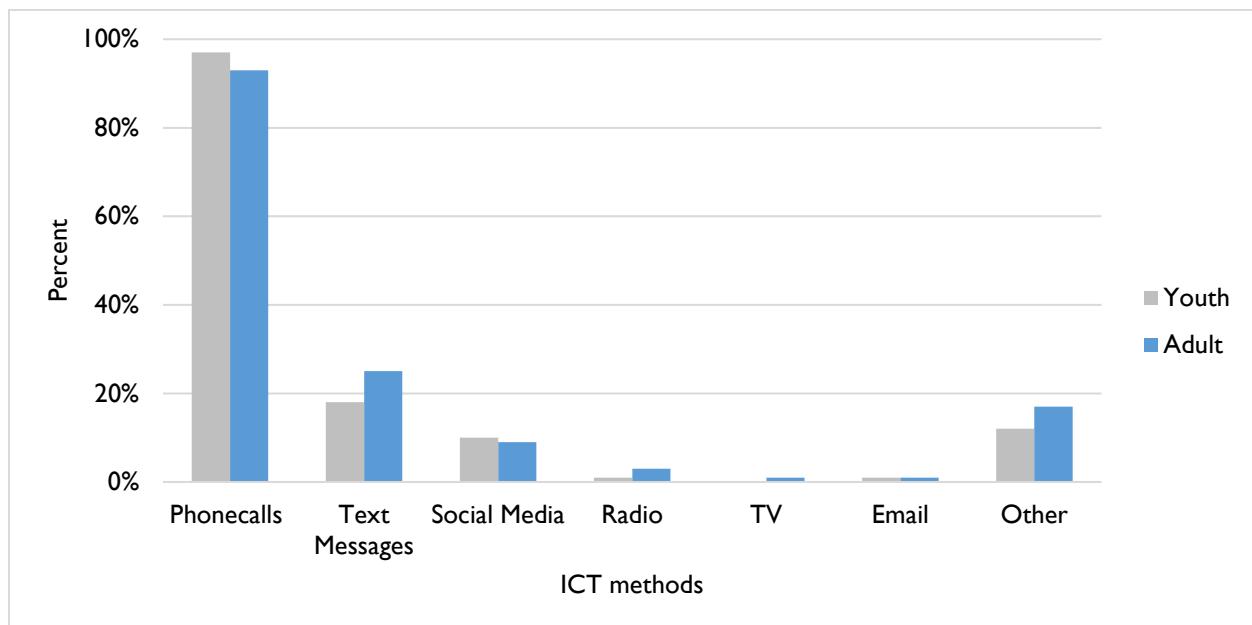
	Number and Percent Who Received the Technology					Number and Percent Adopting the Technology (Out of those who received the technology)				
						Number of Respondents			Percent of Respondents (%)	
	F	M	Total	F	M	F	M	Total	F	M
Record keeping	165	387	552	29.9%	70.1%	132	334	466	28.3%	71.7%
Financial Management	151	345	496	30.4%	69.6%	130	309	439	29.6%	70.4%
Business Plan	147	353	500	29.4%	70.6%	116	280	396	29.3%	70.7%
Collecting Market information from sellers of inputs and buyers of your products	97	284	386	25.1%	73.6%	59	203	262	22.5%	77.5%
Total Respondents (N = Respondents who participated in GAP training)	325	761	1,086							

Annex Figure 3: GEO's Response on ICT Methods Used to Communicate with Farmers by Sex



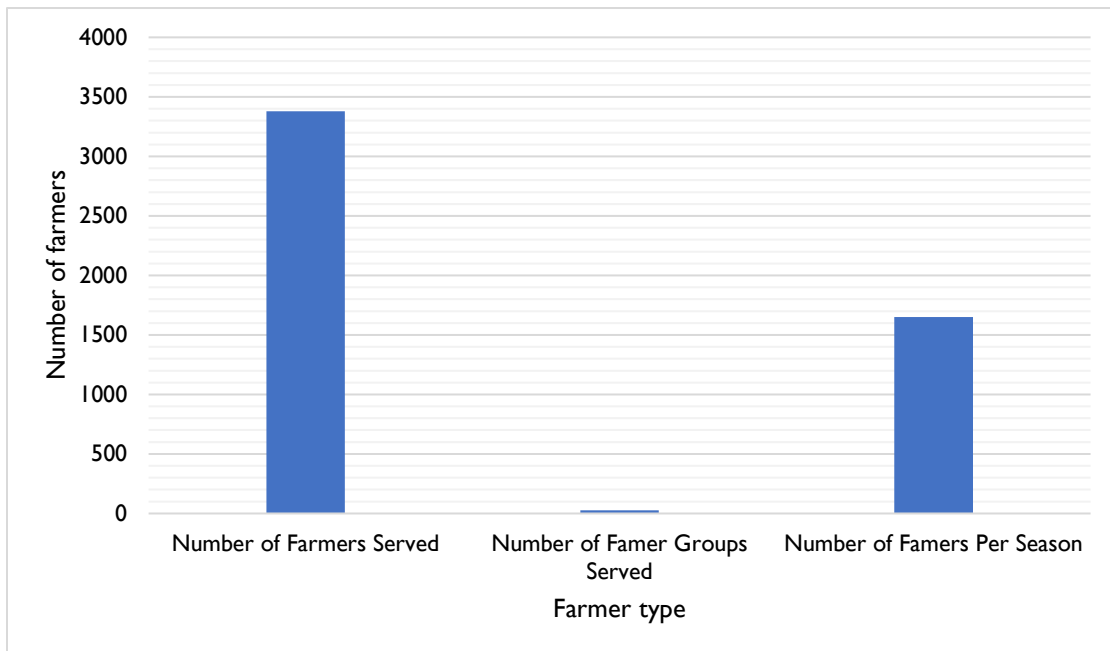
Source: MnM GEO Survey

Annex Figure 1: GEOs Response on ICT Methods Used to Communicate with Farmer by Age



Source: MnM GEO Survey, 2022

Annex Figure 5: Average Number of Farmers Served per GEO and per Season



Source: MnM GEO Survey, 2022