



Operational Research on Integrating Nutrition in Farmer Field Schools (FFS)

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This study has been facilitated by Self Help Africa (SHA) Malawi with financial support from the European Union under the 'Better Extension Training Transforming Economic Returns (BETTER) project.

ABSTRACT

Self Help Africa (SHA) Malawi is implementing the 'Better Extension Training Transforming Economic Returns (BETTER) program which is part of the KULIMA (Kutukula Ulimi Malawi) program, financed by the European Union. The BETTER project is a five-year (2018-2022) project being implemented in ten (10) districts of Malawi (Chitipa, Karonga, Mzimba, Nkhatabay, Nkhotakota, Salima, Kasungu, Thyolo and Mulanje) by a consortium of four partner organizations namely Self-Help Africa (Lead Agency), Plan International Malawi, Action Aid Malawi, and Evangelical Association of Malawi. The overall objective of the project is to increase resilience, food, nutrition, and income security of 402,000 smallholder farmers through 13, 400 Farmer Field Schools (FFS). The program uses Farmer Field School (FFS) approach and is currently in its fourth year of implementation.

The KULIMA –BETTER program promotes nutrition-sensitive agriculture, to ensure that the project yields maximum benefits on nutrition outcomes. This is done by integrating nutrition education in all the value chain activities in the farmer field schools to ensure that FFS participants receive adequate knowledge to link their food production with improved nutrition practices, while also promoting their ability to consume a diversified diet.

This operational research comprehensively reviewed the various elements of nutrition component(s) embedded within the KULIMA BETTER Farmer Field Schools. It has captured and documented the effectiveness of the approach and propositions to improve the integration.

Methodology and Context: The team used mixed and cross-sectional approaches to collect qualitative and quantitative data for the operational research. Participatory research approaches were used to gauge and explain (as well as make recommendations) on the overall functionality, effectiveness, efficacy, short and long- term nutritional benefits of the FFS. Data was collected through household surveys, key informant interviews, and gender -disaggregated Focus Group

Discussions (FGDs). The sample size for the research were 225 FFS participants and 76 non-FFS participants. This operational research was done in a regional represented sample of three out of the ten BETTER programme districts; Karonga, Thyolo and Salima districts (with FGDs involving FFS participants only in Kasungu and Mzimba South). **Matched Case Control** was used, whereby data was collected, analyzed, and interpreted for those in the FFS (case) and then compared to those not participating in the FFS (control).

Findings: Table below provides an outline of key findings for the operational research (Detailed Findings are presented in section 7.0).

Farmer Field Schools and Nutrition Integration

- ✚ Overall, the most discussed topics during FFS sessions across the study districts included: cropping systems (72.8 %), six food groups (59.6 %), irrigation systems (51.8 %), and conservation agriculture (40.4%).
- ✚ Results from interviews with the FFS participants (N=225), indicated 88.9 % (n=200) reported learning nutrition topics in their FFS and 11.1 % (n=25) reported not to have learned any nutrition topic(s) in their FFS. Most (91.4 %) of those that have not yet received training/capacity building on nutrition topics in their FFS are in cohort 3 (recently joined FFS in the 2020/21 growing season).
- ✚ The most common nutrition topics covered in FFS include information on the following: the six food groups (89.3 %), water, hygiene and sanitation (39.3 %), integrated homestead farming (28.4 %), and food processing (24.9 %).
- ✚ Across the three districts, all nutrition topics are facilitated by Master Trainers (MTs), and Community Based Facilitators (CBFs) who are normally more knowledgeable and versed in agricultural topics as compared to nutrition content.
- ✚ There was limited involvement of other key nutrition stakeholders such as health workers, cluster leaders etc in facilitating training on nutrition topics.
- ✚ There was limited integration of value addition activities to reduce food loss and strengthen farmers marketing and income, and ultimately food and nutrition security. Some FFS groups

(mostly in Salima) have embarked on juice making from locally available fruits such as baobab which was a positive outcome.

- ✚ There is variation in frequency and timing of training on nutrition topics/sessions within FFS. This is largely a result of different competing interests and expertise of CBFs/MTs as well as there not being a uniform FFS curriculum.
- ✚ Socialization process and engrained divide (irrespective of district) between women and men has made most males in rural areas not be oriented/interested in aspects such as food preparation and this delineates their interest in this aspect at FFS level as well. In turn, their interest has delved and vested more into ventures such as juice making etc for its economic benefits.

Impact of FFS on nutrition

- ✚ Participation in FFS is associated with a threefold increase in receiving skills on nutrition related topics such as formulating a meal plan, knowing a seasonal food availability calendar etc.
- ✚ Participation in FFS was associated with high adoption of nutritional and WASH practices at household levels as compared to non-FFS participants. FFS participants were more likely than non-FFS participants to have a backyard garden, to own livestock and to have fruit trees around their homes.
- ✚ There is no statistical difference in knowledge of causes and effects of malnutrition between FFS and non- FFS participants ($\chi^2 = 0.138$, $p=0.48$).
- ✚ FFS participants were 3 times more likely to meet their minimum dietary diversity requirement than non-FFS participants (OR =3.592, $p<0.001$).
- ✚ For women of reproductive age, Karonga has the highest dietary score of 6.57 (with 3-11 food groups), Salima has a score of 6.30 (with 3-11 food groups) and Thyolo has the lowest at 5.79 (with 2-9 food groups).
- ✚ Across the districts, the most frequently consumed food groups are grains, tubers and cereals, dark green leafy vegetables, vitamin A rich fruits and other vegetables, whilst the least consumed food groups are dairy, other fruits, eggs and local meat.

- ✚ Increased availability of homestead gardens and improved post-harvest management practices (such as use of PICS bags) learned via FFS have scaled-up access to food amongst FFS participants compared with non-FFS participants.
- ✚ Participation in FFS did not have a significant effect on food availability at household level rather yields volume, household incomes (to enable purchase) and family size were.
- ✚ Utilization of food varied between FFS participants and non-participants. FFS participants were able to preserve some food items such as vegetables and fruits as compared to non-FFS participants.
- ✚ There is significant increase in joint decision making (by females and males) on access and control of backyard gardens, consumption (what to be eaten) and use of proceeds from sale of crops/livestock among FFS participants (63.1 %) than non-FFS participants (36.9 %).
- ✚ FFS participants cite improved varieties (54.2%), post -harvest handling (32.2 %), and improved management of pests and diseases (18.7 %) that they have acquired via FFS as key practices to improve nutritional outcomes.

Recommendations: Based on findings and results of this operational research, the following recommendations are made:

Improve the training and capacity of MTs and CBFs to integrate nutrition in FFS

- Develop a uniform nutrition curriculum that specifies the timing, frequency and flow of nutrition topics in farmer field schools (FFS's). This curriculum will ensure that facilitators know which nutrition topics should start first in the FFs calendar/work plan, such as the nutrition problem tree analysis and seasonal food availability calendar. These topics help understand the nutrition problems within a community and the factors that may impact on this. Following this each FFS should formulate a nutrition action plan which will inform the type of nutrition activities for the FFs moving forward. The aim of this participatory approach is to assist communities to become more self-reliant, with the capacity to analyze their own food and nutrition situation, identify their needs, plan activities to address these needs, secure funding/resources, and technical expertise, and implement and manage the activities.
- Integration of nutrition within the FFs should not be taken as a once off activity rather as a process, and thus in addition to teaching nutrition concepts separately, facilitators should integrate some nutrition topics with other topics, for example, if discussing about livestock production include nutritional benefits of livestock etc.

- There is need to develop farmer user friendly IEC materials (i.e., graphic and in local language) that can be used for training on nutrition topics in FFs.
- Limited positive impact without good human resources – Facilitators are key to effective nutrition integration in FFSs (vis a-vis their technical and communication skills, personal characteristics, and sensitivity). Special training (e.g. special focused training, long-term support/coaching, or part of a regular/refresher training) for community-based facilitators and extension staff is crucial to helping them develop their nutrition related capacities .

Scale nutritional benefits derived from FFS

- Develop a Social Behavioral Change Communication (SBCC) strategy and include it as one of the topics in the FFS sessions.
- ✚ Strengthen the integration of value addition in farmer field schools through promotion of low-cost food processing and/or preservation methods especially for perishable nutritious foods such as fruits and vegetables as an income generating initiative which is an important measure to reduce food loss, boost incomes and strengthen food security and nutrition. Strengthening income generating activities can attract more men to join in nutrition activities as it was found that men were more inclined to be more interested in interventions that generated income. The training could also help FFS groups to establish new, small-scale food processing businesses, which would also ensure sustainability of groups beyond project lifespan.
- More involvement by men and community leaders will be key for effectiveness and sustainability of FFS nutrition interventions and its success. To address the social and cultural barriers limiting optimal nutrition outcomes such as dietary diversity, the project should engage men and community leaders in nutrition education, to ensure that their respective roles and responsibilities in household/community nutrition are recognized and harnessed.

Improved design, implementation and M&E for integration of nutrition in FFS

- For future programmes on integration of nutrition into FFS, collaborate with Area Nutrition Coordination Committees (ANCC) and Health Facilities as key stakeholders in the design, planning and implementation of FFS to leverage and optimize on skills on nutrition sensitive agriculture.
- For future programmes on integration of nutrition into FFS, to ensure optimal adoption of nutrition practices at household level, the Farmer field school approach should be complemented with a “family approach” whereby facilitators conducts sessions on gender and nutrition with FFs members together with their spouses.
- Strengthen collaboration and linkages between the FFS groups to other existing groups at community level such as care groups to leverage technical support and resources, where joint planning of activities could link to joint implementation of activities, e.g., cooking demonstrations targeting both FFs members and care groups.
- Future FFs programs should articulate a clear theory of change to define envisioned success of nutrition integration in FFS, as well as have project nutrition indicators that are reflective of project context. For instance, use of indicators such as the Minimum Dietary

Diversity for Women (MDD-W) provide much insight into the more vulnerable members of a household than food consumption score.

1.0 BACKGROUND AND CONTEXT

Self Help Africa (SHA) is an international NGO with the vision of an economically thriving and resilient rural Africa. It's sectors of expertise include the following; Food and Nutrition Security; Sustainable Rural Livelihoods: Access to Finance; Farming as a Business; Value Chain Development; Climate Resilience; Natural Resource Management; Water and Sanitation and Policy Influencing. SHA has been operating in Malawi since 1994, delivering enterprising solutions that help the rural poor to improve their food and livelihood security and support economic development.

SHA Malawi is implementing 'Better Extension Training Transforming Economic Returns (BETTER) program which is part of the KULIMA (Kutukula Ulimi Malawi) program, financed by the European Union. The BETTER project is a five-year (2018-2022) project being implemented in ten (10) districts of Malawi (Chitipa, Karonga, Mzimba, Nkhatabay, Nkhotakota, Salima, Kasungu, Thyolo and Mulanje) by a consortium of five partner organizations namely Self-Help Africa (Lead Agency), Plan International Malawi, Action Aid Malawi, and Evangelical Association of Malawi. The overall objective of the project is to increase resilience, food, nutrition, and income security of 402,000 smallholder farmers through 13, 400 Farmer Field Schools (FFS). The program is using Farmer Field School (FFS) approach and is currently in its fourth year of implementation.

The KULIMA –BETTER program promotes nutrition-sensitive agriculture, to ensure that the project yields maximum benefits on nutrition outcomes. This is done by integrating nutrition education in all the value chain activities in the farmer field schools to ensure that FFS participants receive adequate knowledge to link their food production with improved nutrition practices, while also promoting their ability to consume a diversified diet.

DMT Consult supported SHA Malawi in undertaking this operational research on integrating nutrition in farmer field schools (embedded with a gender lens) in the BETTER districts. This operational research was done in a regional represented sample of three out of the ten BETTER

programme districts ¹in Karonga, Thyolo and Salima districts (with FGDs with FFS participants only in Kasungu and Mzimba South).

2.0 PURPOSE AND OBJECTIVES OF THE OPERATIONAL RESEARCH

This operational research comprehensively reviewed the various elements of nutrition component(s) embedded within the KULIMA BETTER Farmer Field Schools to capture and document the effectiveness of the approach.

The **objectives** of the operational research included (but were not limited) to:

- ✚ Identifying best practices, weaknesses, challenges, and opportunities focusing on the different elements of the training to Community Based Facilitator (CBF) and FFS level.
- ✚ Gauging and ascertaining the effectiveness of the nutrition interventions in FFS and their level of attribution and contribution in improving knowledge, attitude, and practice (dietary diversity) of FFS beneficiaries and their households in the Malawian context.
- ✚ Assessing FFS nutrition interventions in terms of quantity/frequency, quality, timing, context, and appropriateness.
- ✚ Highlighting perceptions of the FFS nutrition interventions (in terms of addressing some of the nutrition challenges in their communities in relation to crop and dietary diversity).
- ✚ Making recommendations (using findings and results) in the design of similar interventions/ projects.

¹ Chitipa, Karonga, Mzimba North, Mzimba South, Nkhata-bay, Kasungu, Salima, Nkhotakota, Chiradzulu, and Thyolo

3.0 CONTEXTUAL FRAMEWORK

The FFS approach is based on discovery and experiential learning principles and was developed as an alternative to the conventional top-down Training and Visit extension approach, applied extensively in the past. The basis of FFS is a group of farmers with a common interest who together engage in a season long study program, usually with weekly meetings. FFS provides an environment through which farmers can learn new agricultural and management skills in a practical manner and investigate and overcome a wider range of problems. Farmers learn about production problems and ways to address them through their own observation, discussion, and participation in practical learning-by-doing field exercises.

The FFS groups decide on their main topic of study, often a crop or livestock-based enterprise, and set up simple experiments at a field-learning site. Aside from the main learning topic, the group curriculum can also address other topics of interest and importance to farmers such as gender, conflict resolution, and business skills. It is among these so-called “special topics” that human nutrition can sometimes be included. Groups are also encouraged to engage in income-generating activities. The FFS approach is now a widely applied approach in Malawi.

The curriculum of FFS commonly includes gender and gender-based violence, human health, HIV and AIDs, and income generating activities as life skills topics. It is in this context that the topic of human nutrition has been emphasized as a key area of learning. The practical, hands-on and experimental nature of FFS complement practical nutrition strategies, which aim to increase the diversity of food consumed, preparation standards, and food storage in households.

In FFS learning sessions, traditional extension topics such as cropping and pest management are being used as an entry point to discuss related issues, including health and nutrition. For example, when learning about diversity in crop production, direct action can be taken by facilitators to stimulate discussions among beneficiaries about the nutritional value of particular crops, preparation, and cooking techniques for maximum nutrient retention. By continuously drawing this link between agricultural and other human spheres, nutrition education gets interwoven and integrated into agricultural extension.

4.0 KEY RESEARCH QUESTIONS AND FOCUS

For this operational research, the key research questions were (but not limited to the following)

- ✚ Are the various methods of training of FFS members in nutrition sufficient to lead to improved knowledge or not?
- ✚ Have the various nutrition trainings contributed to changes in “Access”, “Availability” and “Utilization” of more diverse foods within the HH’s of FFS participants compared to non-FFS participants?
- ✚ What are some of the good practices in the integration for nutrition within the FFS approach?
- ✚ Are the nutrition interventions causing any harm/unintended consequences (gender/climate change)?

5.0 APPROACH AND METHODOLOGY FOR THE OPERATIONAL RESEARCH

5.1 APPROACH

The team used **mixed** and **cross-sectional approaches** to collect **qualitative and quantitative data** for the operational research. Participatory research approaches were used to gauge and explain (as well as make recommendations) on the overall functionality, effectiveness, efficacy, short and long- term nutritional benefits of the FFS.

Tools developed for this operational research were aligned with the *2018 Nutrition International tool for Measuring Integration of Nutrition in Agriculture Programmes for rural based farmers.*, FAO's **Minimum Dietary Diversity Score for women of reproductive age (W-DDS)** was applied where applicable.

More broadly, **Matched Case Control** was used, whereby data was collected, analyzed, and interpreted for those in the FFS (case) and then compared to those not participating in the FFS (control). **Purposive** sampling has been used for this operational research.

5.2 METHODOLOGY FOR THE OPERATIONAL RESEARCH

5.2.1 Primary and Secondary Literature Review

Primary literature review focused on the documents provided in table 1 below and further literature reviewed is listed in Annex 4 (Bibliography).

Table 1: Primary and Secondary Literature Review

Document	Author(s)	Year
Baseline survey report for the BETTER Programme	Kamanga et al	2018
Gender Analysis Report for the BETTER Programme	Baloyi D et al	2018
Standard Operating Procedures (SOPs) on Nutrition and Gender	SHA Malawi and partners	2018
Using Farmer Field Schools for improved nutrition outcomes in the KULIMA-BETTER Project	SHA Malawi and partners	2019

5.2.2 Training of Enumerators for the operational research

DMT Consult collaborated with SHA Malawi in engaging eight (8) enumerators that have prior experience in similar assignments. The enumerators were trained for two (2) days at SHA Malawi conference room to acquaint them with the tools for this assignment, data quality control measures, data management protocol and daily enumeration scheduling.

5.2.3 Data Collection

For this operational research, data was collected through a) Household surveys, b) focus group discussions, and c) key informant interviews. These have been described below:

a) Household Surveys

Using cross-sectional questionnaires developed and agreed upon with SHA Malawi, DMT Consult conducted household surveys in the sampled Farmer Field Schools. The respondents for the

Household Surveys were a total of 225 FFS participants (without proxy) and 76 non-FFS participants. Tool for the Household survey is in Annex 1.

b) Focus Group Discussions (FGDs)

These were done for Farmer Field Schools participants only using an FGD guide in Annex 2 and were gender disaggregated (females were on their same group so too with males). A total of 18 Focus Group Discussions were done with females only and 10 were done with males. Number of FGD participants in each district is presented in table 2 below:

Table 2: Focus Group Discussions

District	No. Female Participants	FFS No. Participants	Male	Total
Salima	65	11		76
Thyolo	36	52		58
Kasungu	33	28		61
Karonga	56	51		107
Mzimba	42	0		42
TOTAL	232	142		374

c) Key Informant Interviews (KIIs)

These were done with a total of 44 key informants to solicit information on current trends (best practices and gaps) in integrating nutrition in Farmer Field Schools. They focused on BETTER project implementation strategies, outcomes, and knowledge management dynamics in the integration of nutrition in FFS.

Of the 44 key informants, 34 were Master Trainers and Community Based Facilitators (CBFs), 4 were BETTER Programme Implementing Partners and 6 were Agriculture Extension Development Officers (AEDOs) and Food and Nutrition Officers (FNOs).

5.2.4 Data Analysis

Quantitative data was entered and analyzed in SPSS where frequencies and means of variables were generated. Comparison analyses were run between FFS participants and non -participants using binary regression and chi-square correlations. For data entered in regression models, odd ratios are presented for ease of understanding. ANOVA and t-tests were run to compare dietary diversity of women who are FFS participants and those that are not. All qualitative data was entered in MS excel and analyzed using directed content analysis and data organization by using QSR NVivo (QSR International Pty Ltd, 1999-2007).

5.2.5 Ethical Considerations

Informed consent was sought during interviews with respondents. An Information Sheet was read to the respondents about the operational research purpose and process. Respondents were advised to withdraw from the interview at any point when they do not feel like continuing taking part.

All data has been kept confidential. Individual respondents have been given unique identifiers. The database containing information about the research participants is password-protected and only accessed by the research team and SHA Malawi staff.

5.2.6 Enumeration Areas

The enumeration unit for this operational research was an Extension Planning Areas (EPA) and data for the operational research were collected in the following areas (EPAs) as presented in table 3 below.

Table 3: Enumeration Areas for the Operational Research

District	Enumeration Areas (EPAs)
Salima	Chiluwa, Chipoka, Chinguluwe, Tembwe, Katelera, Matenje
Thyolo	Matapwata, Thyolo central, Dwale, Masambanjati, Thekerani, Khonjeni
Karonga	Nyungwe, Lupembe, Vinthukutu, Mpata, Kaporo South, Kaporo North
Mzimba	Champhira, Chikangawa
Kasungu	Mtunthama, Mkanakhothi

5.2.7 Timing of the study

This study took place in December 2021, within the lean period (November -March) in Malawi. This period is characterized by low available incomes (among respondents) due to investment on farm inputs. Low incomes during this period of the year may result in reduced purchasing power of some food groups compared to other periods of the year

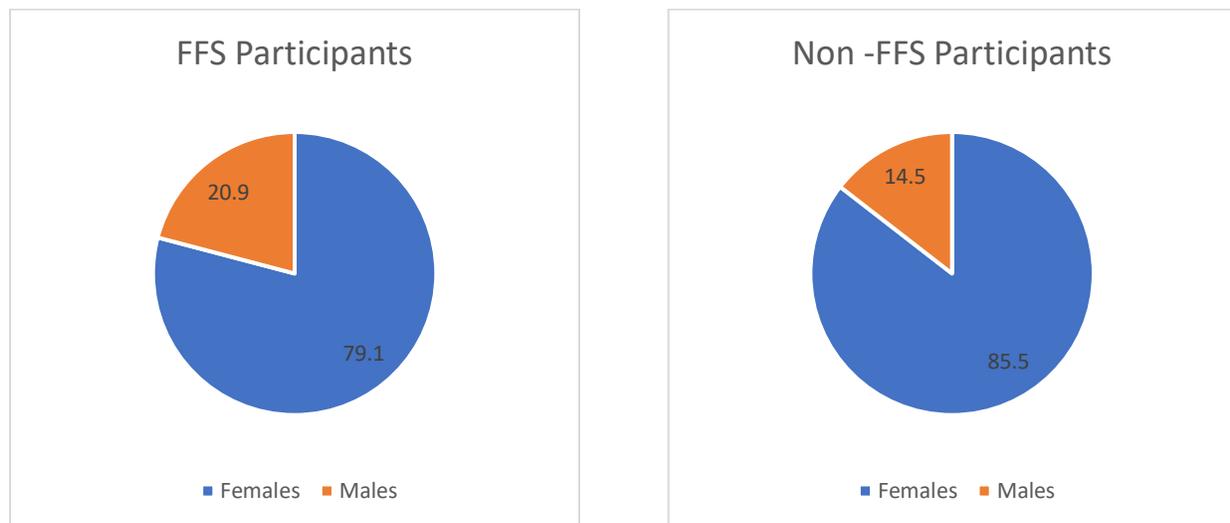
6.0 SOCIO-DEMOGRAPHIC CHARACTERISTICS OF RESPONDENTS

In this section we present the socio-demographic characteristics of respondents for this operational research. These are presented and described below:

a) Sex of Respondents

Of the 225 FFS participants, 79.1 % were females (n= 178) and 20.9 % were males (n=47). For the 76 non-participants, 85.5 % (n= 65) were Female and 14.5 % (n= 11) were males. This is presented in Figure 1a and 1b below:

Fig 1a and 1b: Sex of Respondents (FFS Participants & Non- FFS participants)

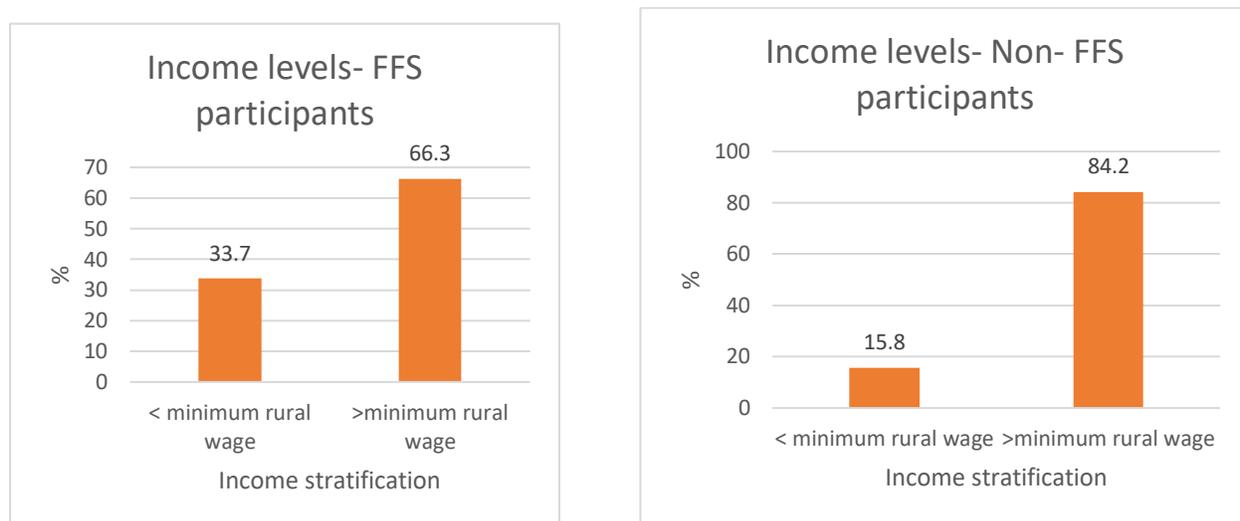


The data aligns with UN Women (2019) statistics that women contribute to an estimated 80% of agricultural production.

b) Income Levels of Respondents

Amongst FFS (N=225) participants, 33.7 % (n= 72) reported to earn less than the government prescribed rural minimum daily wage (Mwk 1,923.08)² and 66.3 % (n= 153) reported to earn more than the rural minimum daily wage. For non- FFS (N=76) participants, 15.8 % earn less than the rural daily minimum wage whilst 84.2 % earn more than the daily rural minimum wage.

Figure 2a and 2b income levels of respondents (FFS and Non-FFS participants)



Thyolo has the highest number of FFS participants in the lowest wealth quantile (those earning less than the minimum rural wage). Correlates between income (of FFS participants and non - FFS participants) and nutrition is further presented in 7.2.

The major sources of income for both FFS and non-FFS Participants are agriculture (69.7%), small-scale businesses (20.8 %), skilled jobs (6.1 %) and other sources (4.4%). High dependency on agriculture signifies that most of the respondents have seasonal incomes. This too has impact on nutrition.

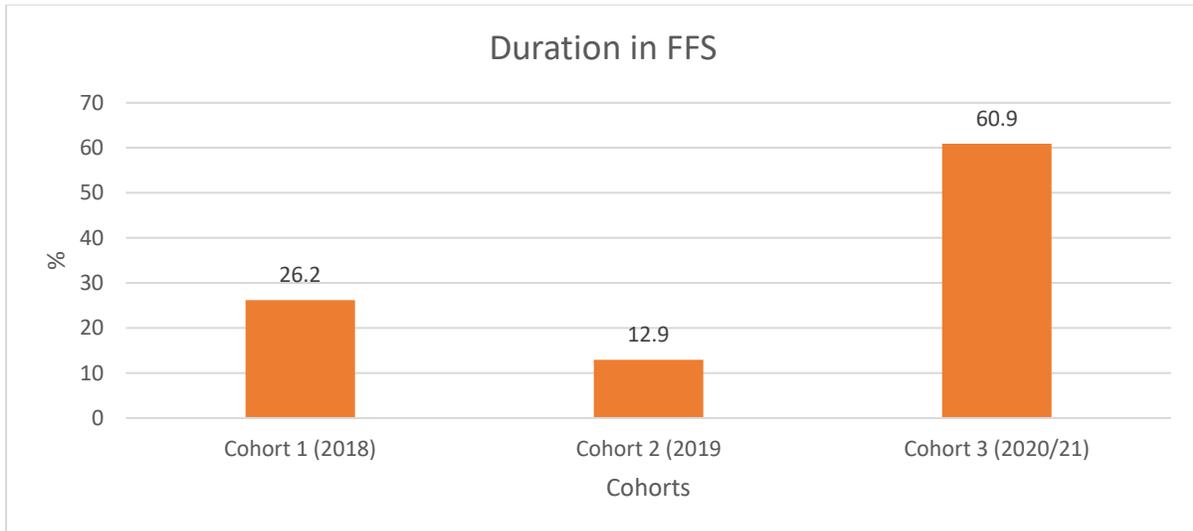
c) Duration in FFS

BETTER programme has implemented FFS in three cohorts. Cohort 1 (these joined in 2018), Cohort 2 (these joined 2019), and Cohort 3 (these joined in the 2020/21 growing seasons).

In the FFS (N=225) participants; 26.2% of participants (n=59) joined in 2018 (first cohort), 12.9 % of the participants (n= 29) joined in 2019 (second cohort), and 60.9 % of the participants joined in 2020/21 growing season (third cohort). This is presented in figure 3 on the next page.

² Minimum wage - Malawi - WageIndicator.org

Figure 3: Duration in FFS among participants

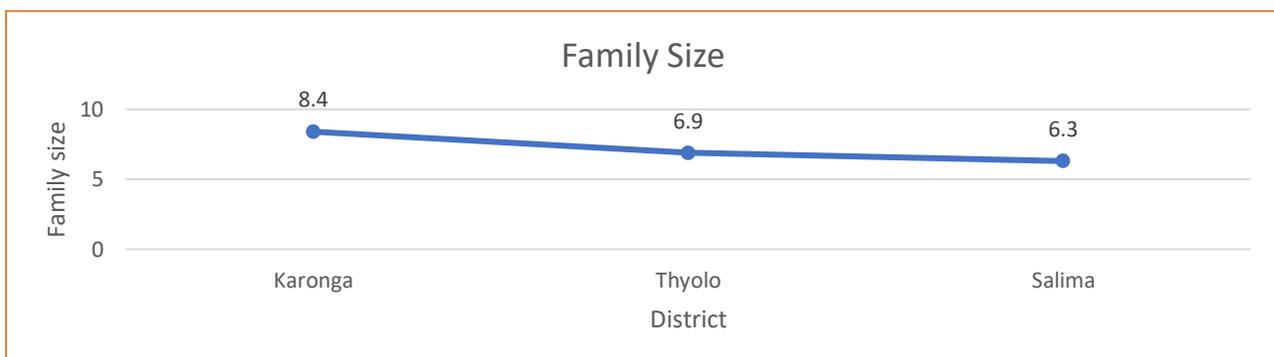


Those that joined cohort three (95 joined in 2020 and 42 joined in 2021). Duration of being FFS is an important variable as it denotes the frequency, magnitude of topics learned in the FFS and how participants have used the knowledge over time. High number of cohort 3 respondents may be a bias in the study as the information was recent or they have not yet fully utilized what they have learned thus far. This was homogenous across the three study districts.

d) Family Size

The average family size for the study was \bar{x} = 7.2 per household. Karonga had relatively high (\bar{x} =8.4), Thyolo (\bar{x} = 6.9), and Salima had the lowest (6.3) as presented in Figure 4 below:

Figure 4: Average Family Size in the study districts



Family size, as discussed later in the report, has an inverse impact on variables such as food availability and ability to diversify diets (Rafiq Hauda Chaudhry, 2003).

e) Socio-cultural aspects of the study districts

The study districts have different socio-economic and cultural fabrics. Karonga has a patriarchal cultural fabric whereby women live in the villages of their husband once married and families invest more in male children than females and female siblings are expected to take care of males. Men do pay bride price (*lobola*) in the form of cattle (or the cash equivalent of it). Children belong to the man. Polygamy is a common feat and that explains to a greater extent the relatively higher family size in Karonga as compared to other districts (See d above). The Ngonde, Tumbuka and Nyakyusha are the dominant tribes in the district. The major religion in the district is Christianity.

Thyolo has a matriarchal set-up whereby, once married, a husband lives in the village of the wife, and senior males known as “*eni mbumba*” of the wife have much control of children upbringing. The major tribes in Thyolo are the Lhomwe’s, mangánja’s, yao’s, ngoni’s, khokholi (mixture of yao and Lhomwe’s). A dominant feature in Thyolo, is initiation rites (for both girls and boys once they have reached puberty stage) and these are followed by huge feasts on ‘graduation’ from initiation camps and gifts to the initiators “*anankungwi*” and gatekeepers.

On the other hand, Salima has a mixture of matrilineal and patrilineal tenets. The major tribes in Salima are Chewa and Yao with relatively equal proportion of Christians and Muslims alike. The other adjunct districts for this operational research Mzimba (patriarchal) and Kasungu (matriarchal). In Mzimba, the major tribe is Ngoni and in Kasungu, the major tribe is Chewa.

7.0 FINDINGS AND RESULTS

In this section, we present and discuss findings and results of this operational research. These have been grouped into the following key areas.

- ✚ **FFS and Nutrition integration**
- ✚ **Impact of FFS on nutrition**

7.1 FFS AND NUTRITION INTEGRATION

KEY FINDINGS

- ✚ Overall, most discussed topics during FFS sessions across the study districts are cropping systems (72.8 %), six food groups (59.6 %), irrigation systems (51.8 %), and conservation agriculture (40.4%).
- ✚ Across all the three study districts of those in FFS (N=225), 88.9 % (n=200) reported to having learned nutrition topics in their FFS and 11.1 % (n=25) reported not to have learned any nutrition topic(s) in their FFS. Most (91.4 %) of those that have not yet learned nutrition topics in their FFS are in cohort 3 (joined in the 2020/21 growing season).
- ✚ Most common nutrition topics covered in FFS include six food groups (89.3 %), water hygiene and sanitation (39.3 %), integrated homestead farming (28.4 %), and food processing (24.9 %).
- ✚ In all the three districts, all nutrition topics are facilitated by Master Trainers (MTs), and Community Based Facilitators (CBFs) who are more knowledgeable and versed in agricultural topics. There is limited involvement of other key nutrition stakeholders such as health workers, cluster leaders etc. Involvement of these extensionists, can also foster improvements in the depth of content and quality of nutrition topics.
- ✚ Some FFS groups (mostly in Salima) have embarked on juice making from locally available fruits such as baobab and this ought to be explored and possibly replicated in other FFS across the districts.
- ✚ Across the districts, there is variation in frequency and timing of nutrition topics/sessions within FFS. This is largely a result of different interests and expertise of CBFs/MTs as well as not having a uniform curriculum.
- ✚ Socialization divide (irrespective of district) between women and male has made most males in rural areas not be oriented in aspects such as food preparation and this delineates their interest in this aspect at FFS level as well. In turn their interest has delved more into aspects such as juice making etc

7.1.1 FFS organization and nutrition

a) composition and context of FFS

Farmer Field Schools (FFS) consist of groups of farmers who get together to study a particular topic. The topics covered can vary from conservation agriculture, organic agriculture, animal husbandry, and soil husbandry, to income generating activities such as handicrafts as well as of recent times some FFS have also included components of nutrition and Village Savings and Loan (VSL).

FFS provide opportunities for learning by doing. It teaches basic agricultural and management skills that make farmers experts in their own farms. FFS is a forum where farmers and trainers debate observations, experiences, and present new information from outside the community.³

To roll out 13, 400 Farmer Field Schools (FFS) in all the 10 districts, BETTER programme started by training Master Trainers (MTs) and then these trained Community Based Facilitators (CBFs) who are the ones that facilitate the sessions with farmers. BETTER intends to reach out to 402, 000 farmers.

“We were trained in 2018 at Mpanje school (Salima District) for 21 days. We were trained by FAO and Evangelical Association of Malawi (EAM) through the BETTER programme. In total we were 30 Community Based Facilitators. “CBF, Mlatho FFS, Matenje EPA, Traditional Authority (TA) Khombedza, Salima District.

The Master Trainers are generally government extension workers at Extension Planning Area (EPA) level who trains and supports CBFS. The CBFs are in the category of lead farmers and these lead sessions with farmers in their groups. One FFS have about 30 farmers.



The KULIMA –BETTER project is working to address the multiple causes of malnutrition through nutrition-sensitive agriculture approach which seeks to optimize the contribution of Agriculture led activities towards improved nutrition. Specifically, the project deliberately ensures that throughout all the FFS activities, participants can link crop/enterprise choice and diversification to nutrition needs through better understanding of improved dietary practices which will in turn lead to increased consumption of a greater diversity of foods within the targeted districts.

b) Training of CBFs

The MTs and CBFs were trained on a variety of agricultural and nutrition topics to enable them to organize and facilitate FFS sessions. Ideally, these were meant to be supported by stakeholders such as Health Surveillance Assistants (HSAs), School Health and Nutrition (SHN) coordinators etc. in conducting nutrition sessions with FFS participants. However, across the districts this collaboration has been limited.

Further, nutrition interventions were meant to be rolled out in the FFS informed by the **nutrition action plan** that is developed by Farmer Field Schools (FFS) following a participatory malnutrition problem analysis at community level which enhances understanding of the root causes of malnutrition and interventions to address this. However, some of the CBFs and participants in the FFS reported not having gone through it.

7.1.2 Common FFS topics

FFS participants reported that most discussed topics are cropping systems (72.8 %), six food groups (59.6 %), irrigation systems (51.8 %), and conservation agriculture (40.4%). Common topics as reported by farmers are presented in table 4 below:

Table 4: Common FFS topics

Topic (N=225)	N	%
Compost and manure production	53	23.5
Irrigation systems	41	51.8
Conservation agriculture	91	40.4
Gender issues	21	9.4
Pest and disease control	61	27.2
Harvesting methods	18	8.0
Cropping systems	163	72.4
Improved storage	24	10.8
Food processing	36	16.1
Six Food Groups	133	58.6
Village Savings and Loans (VSL) concept	72	32.1

The topics to FFS participants are imparted mostly via participatory and exploratory approaches by CBFs and in some cases MTs. These topics are taught at an average of 4 times a month (once a week).

“We train members (FFS participants) in new methods of farming we have been taught according to changes in weather patterns. For example, on what crops to be grown, ways of pest and disease control and on nutritional topics.” CBF, Salima District.

The FFS approach is hands-on and premised on the Agri- Ecological System Analysis (AESAs) strategy (in which treatment and control crops are measured of their heights, leaf length, width,

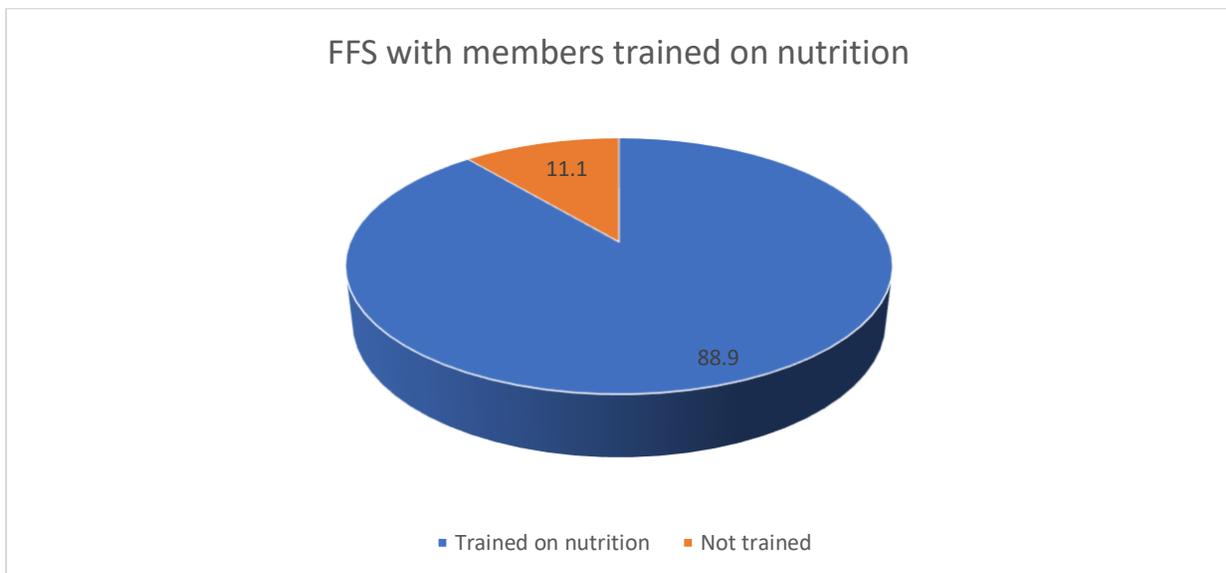
stem appearance, etc.) which then helps in comparing the results and validating them. Thereafter, the best results are then informed to the farmers or adopted by the farmers⁴.

7.1.3 **Nutrition topics in FFS**

a) FFS trained on nutrition topics

Across all the three districts of those in FFS (N=225), 88.9 % (n=200) reported to having learned nutrition topics in the FFS and 11.1 % (n=25) reported not to have learned any nutrition topic(s) in their FFS as presented in Figure 5 below

Figure 5: FFS with members trained on nutrition topics



There was variation on the number of FFS that have discussed nutrition topics with most (88.4%) that have not yet discussed nutrition topics (11.1 %) being those that are in cohort 3 (joined in 2020/2021 growing season).

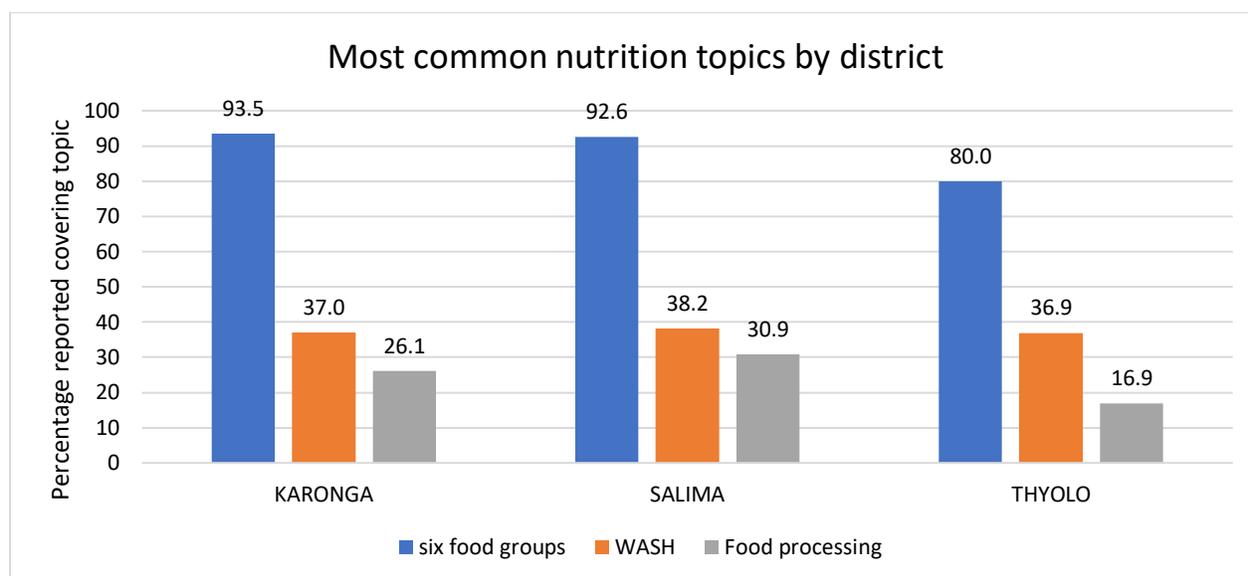
⁴ [aeacover_v2.indd \(nafri.org.la\)](#)

Overall, most common nutrition topics covered in FFS include six food groups (89.3%), water hygiene and sanitation (37.3%), integrated homestead farming (28.4 %), and food processing (24.9 %). These are presented in table 5 below. **Table 5: Common nutrition topics**

Nutrition topic (N=225)	N	%
Causes of malnutrition	29	12.9
Nutrition sensitive agriculture	17	7.6
Gender	12	5.3
Six food groups	201	89.3
Nutrition value chains	14	6.2
Integrated Homestead Farming	64	28.4
Food processing	56	24.9
Cooking demonstrations	53	23.6
Meal planning	40	17.8
Water hygiene and sanitation (WASH)	84	37.3

The trend was similar across the districts where most respondents cited six food groups as the most discussed topic in their FFS, seconded by WASH, and food processing as presented in Figure 6 below:

Figure 6: Most common nutrition topics per district



The nutrition topics covered in FFs were the same across the districts. However, participants in Thekerani EPA in Thyolo district were 17 times ($p < 0.001$) less likely to discuss six food groups at FFS meetings. This was also because of MTs being veterinary and agriculture experts and focussing much on agricultural topics and when nutrition topics are tackled, the emphasis is on food groups and their importance. This underscores the importance of FFS collaborating with other stakeholders to ensure comprehensive coverage of nutrition skills and knowledge to the participants.

“Community Based Facilitators (CBFs) might not tackle all nutritional topics, they need other resource persons” District FNO, Salima.

The nutrition topics are imparted to participants by CBFs and in some cases MTs via discussions, cooking lessons (though demonstrations have been limited) and interaction with other FFS groups. Some groups have also learned skills in making juices (such as baobab juices etc.) from different crops and fruits. Ideally, the sessions were meant to be further implemented with the support of other extension workers such as HSAs, SHN, etc. but that is not the case in all the FFS.

“We have learned of food groups and examples of foods that we should be eating to have balanced diets.” FGD, Mpata Karonga

b) Use of nutrition knowledge and skills acquired from FFS

After learning these nutrition skills, most FFS participants use the knowledge and skills in their homes and some share it with other family members, church members, and neighbours. Notable changes in the households are mostly in diversity of staple foods as well as food fortification using locally available resources (These are described in detail in section 7.2 below).

However, there are some challenges that FFS participants mentioned regarding the use of nutrition skills and knowledge acquired via the FFS and drivers for these include among other things low production levels, low incomes to buy other food items, low adoption of improved nutrition habits and practices, and timing of nutrition sessions.

“Nutrition lessons should be discussed after harvest so that we can easily have materials for demonstrations.” FGD Mkuyu FFS, Salima District.

d) Participation of men

In rural Malawi, regardless of geography, men and women are socialized differently. From a tender age, girls are socialized to take care of their siblings and household. This entails they are trained and expected to undertake most of household roles such as preparing meals, cleaning dishes, fetching water etc. On the other hand, boys are socialized in aspects involving income generation, decision making and expected to be strong, assertive, and resilient.

These differences result in a divide in terms of undertaking tasks such as meal preparations on the part of men. Ross (2011) highlighted that in Africa, households with adult female members, females are 28 times more likely to prepare meals, clean dishes as compared to males. This cascade to the FFS, where (based on the socialization notion), males will not fully participate in aspects such as cooking demonstrations etc. but much more interested in aspects such as juice making and others.

“Sometimes some of the meals for demonstration involves pounding of groundnuts for nsinjiro (seasoning) and this is not what most of us men are used to do.” FGD Mkanakhoti, Kasungu District.

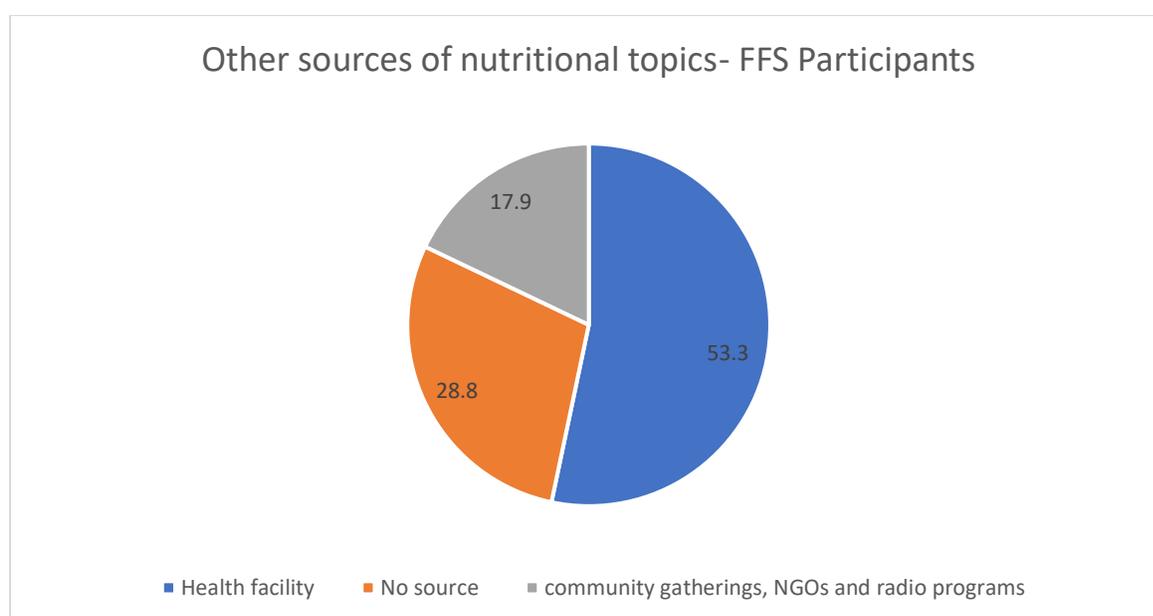
Whilst the study revealed relatively similar interests in the nutritional topics during FFS sessions, it was observed during FGDs with men that they (men)were/are more interested in topics that do

not involve food preparation such as making of juices, integrated homestead farming (IHF), livestock rearing etc.

7.1.4 **Other sources of nutritional information**

Apart from FFS, almost half of the participants (53.3 %) reported having obtained additional nutrition information from health facilities, 28.8 % do not have any other source (s) of information, and 17.9 % reported obtaining via community gatherings, NGOs and radio programs as presented in Figure 6 below.

Figure 6: Other sources of nutritional information



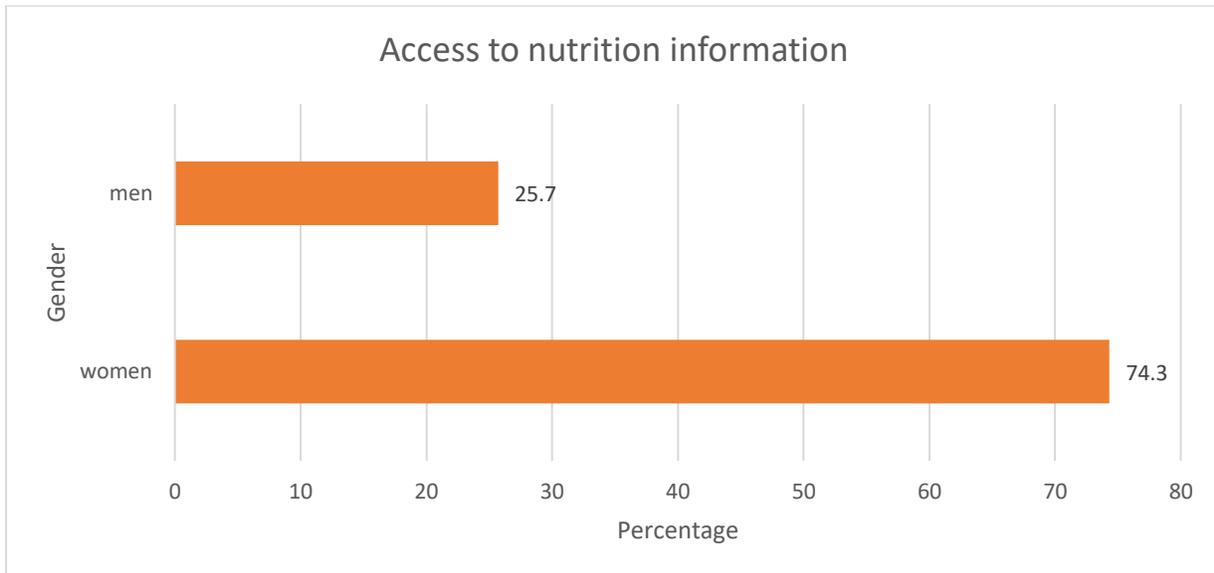
Given that 53.3 % of FFS participants also obtain nutritional topics from health centers, the findings pinpoint to the need for collaboration with health facilities in the conduct of nutrition topics within FFS (See more on recommendations in section 8) and the fact that 28.8 % do not have other sources of nutritional information apart from what they learn at their FFS entails the great need for FFS to provide Information Education, and Communication (IEC) materials as per outlined in the Multi-Sector Nutrition Education and Communication Strategy (NECS II) (2021-2025)⁵to enable greater uptake and utilization of knowledge and skills acquired.

Across the districts, women (74.3 %) have greater access to other sources of nutritional information as compared to men (25.7%). This difference between women and men in accessing of nutrition information is one of the causes of low utilization of nutrition knowledge and practices at household level.

⁵ [2021-multi-sector-nutrition-education-communication-strategy-necs-ii.pdf \(afikepomalawi.org\)](https://afikepomalawi.org/2021-multi-sector-nutrition-education-communication-strategy-necs-ii.pdf)

“When we go to antenatal clinics, they inform us more of different groups and what we should be eating to have healthy bodies.” FGD, Katelera, Salima District.

Figure 7: Access to nutrition information



7.1.5 Frequency and timing of nutrition interventions in FFS

Most FFS participants discuss nutrition topics once or twice a month whilst others have designed days for nutrition related topics.

“We meet each and every Sunday at 2:00 pm and after each topic we make a summary of what we have learnt” FGD, Ngalawe FFS, Chikangawa EPA, TA Kapingo Sibande, Mzimba South.

“We learn (nutrition topics) twice a month; we learn through our CBF and MTs.” FGD, Nkuyu FFS, TA Kambwili, Salima District

The variation in frequency and timing of nutrition topics is largely a result of different interests and expertise of CBFs as well as not having a uniform curriculum. These differences in frequency and timing of nutrition topics in FFS can make it difficult to compare the impact in the short and long term.

7.1.5 Delivery of nutrition topics in FFS

CBFs deliver the topics mostly via an informative approach, and most of the CBFs have been successful in imparting information such as on food groups etc. CBFs were also expected to collaborate with other extension workers for support on other nutrition analytical tools to enable exploratory approach to aspects such as malnutrition problem tree, meal planning, seasonal food availability calendar (Discussed further in subsequent sections).

The malnutrition problem tree is a participatory analytical tool that helps FFS participants to get to know causes of malnutrition in their area/households and use this as a benchmark for discussions in the FFS.

In 4 FGDs, participants mentioned that discussing a malnutrition problem tree forms a strong base for addressing malnutrition in their area.

7.2 IMPACT OF FFS ON NUTRITION

KEY FINDINGS

- ✚ Participation in FFS is associated with a threefold increase in receiving skills on nutrition related topics such as formulating a meal plan, knowing a seasonal food availability calendar etc.
- ✚ Participation in FFS was associated with high adoption of nutritional and WASH practices at household levels as compared to non-FFS participants. FFS participants were more likely than non-FFS participants to have a backyard garden, to own livestock and to have fruit trees around their homes.
- ✚ There is no statistical difference in knowledge of causes and effects of malnutrition between FFS and non- FFS participants ($X^2 = 0.138, p=0.48$).
- ✚ FFS participants were 3 times more likely to meet their minimum dietary diversity requirement than non-FFS participants (OR =3.592, $p<0.001$).
- ✚ For women of reproductive age, Karonga has the highest dietary score of 6.57 (with 3-11 food groups), Salima has a score of 6.30 (with 3-11 food groups) and Thyolo has the lowest at 5.79 (with 2-9 food groups)
- ✚ Increased availability of homestead gardens and improved post-harvest management practices (such as use of PICS bags) learned via FFs have scaled-up access to food amongst FFS participants than non-FFS participants
- ✚ Participation in FFS did not have a significant effect on food availability at household level rather yields volume, household incomes (to enable purchase) and family size were.
- ✚ Across the districts, the most frequently consumed food groups are grains, tubers, cereals, dark green leafy vegetables, vitamin A rich fruits and other vegetables, whilst the least consumed food groups are dairy, other fruits, eggs and local meat.

- ✚ Utilization of food varied between FFS participants and non-participants. FFS participants were able to preserve some food items such as vegetables and fruits as compared to non- FFS participants.
- ✚ There is significant increase in joint decision making (by females and males) on access and control of backyard gardens, consumption (what to be eaten) and use of proceeds from sale of crops/livestock among FFS participants (63.1 %) than non-FFS participants (36.9 %).
- ✚ FFS participants cite improved varieties (54.2%), post -harvest handling (32.2 %), and improved management of pests and diseases (18.7 %) that they have acquired via FFS as key practices to improve nutritional outcomes.

7.2.1 Increased nutritional skills among FFS participants

Of the FFS participants, 96.9 % (n=218) reported and mentioned causes and effects of malnutrition to children, women of child-bearing ages etc. Amongst, non- FFS participants, 94.7 % reported and mentioned causes and effects of malnutrition to children, pregnant and lactating women etc. The study revealed that there is no statistical difference in knowledge of causes and effects of malnutrition between FFS and non- FFS participants ($X^2= 0.138$, $p=0.48$).

Further, the study revealed that apart from the FFS, there were no differences in terms of sources of nutritional information between FFS participants and non-FFS participants ($X^2= 91.695$, $p<0.01$). Refer to section 6.1.4.

The study revealed increased nutritional skills among FFS participants such as ability to develop a meal plan.

*A **meal plan** is a process used to plan what food is to be consumed by the family and in what proportions. Meal plans are useful to ensure food and nutritional security in the home by allowing the family to allocate their available resources and ensure consumption of diverse diets appropriately.*

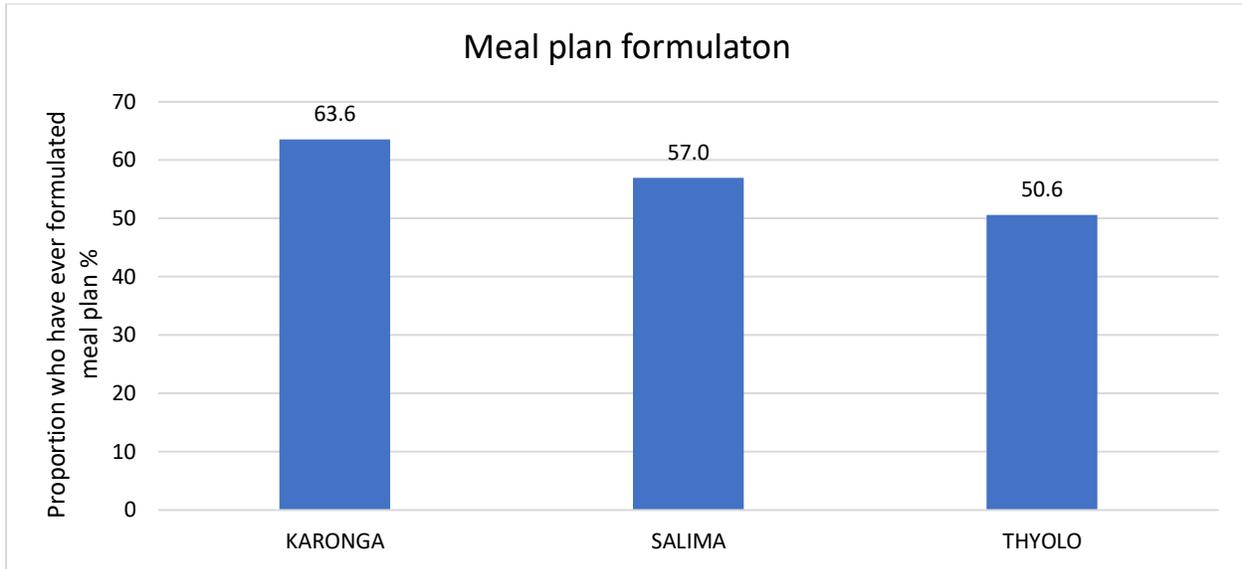
There is a positive relationship between participating in FFS and formulating a meal plan ($x^2= 14.059$, $p \text{ value} < 0.001$). The relationship is such that non-FFS-participants are 60 % less likely to formulate meal plans (OR=0.061, 0.454-0.827). Meal planning is one essential topic that FFS participants learn (CBF Thyolo).

The study further revealed a positive association between participation in FFS and nutrition training ($X^2 =18.424$, $p<0.001$). Participation in FFS is associated with a threefold increase in receiving skills on nutrition related topics such as formulating a meal plan, knowing a seasonal food availability calendar (see 6.3.6).

“We are now able to prepare our meals based on family size and on how to make them balanced.” FGD, Tiyamike FFS, Thyolo District.

Across the districts, Karonga has the highest proportion of FFS participants that have ever formulated a meal plan in their households (63.6 %), Salima has 57.0 % of their households, and Thyolo has the lowest 50.6 % as shown in Figure 7 below

Figure 7: Ability to formulate meal plans among FFS participants



Reasons for formulating a meal plan where to ensure that they achieve food security all year round, avoid food wastage, enable diverse diets, ensure healthy diets and for those that have not formulated meal plans, they cited food and income insecurity and household sizes as key drivers that make them eat whatever is available.

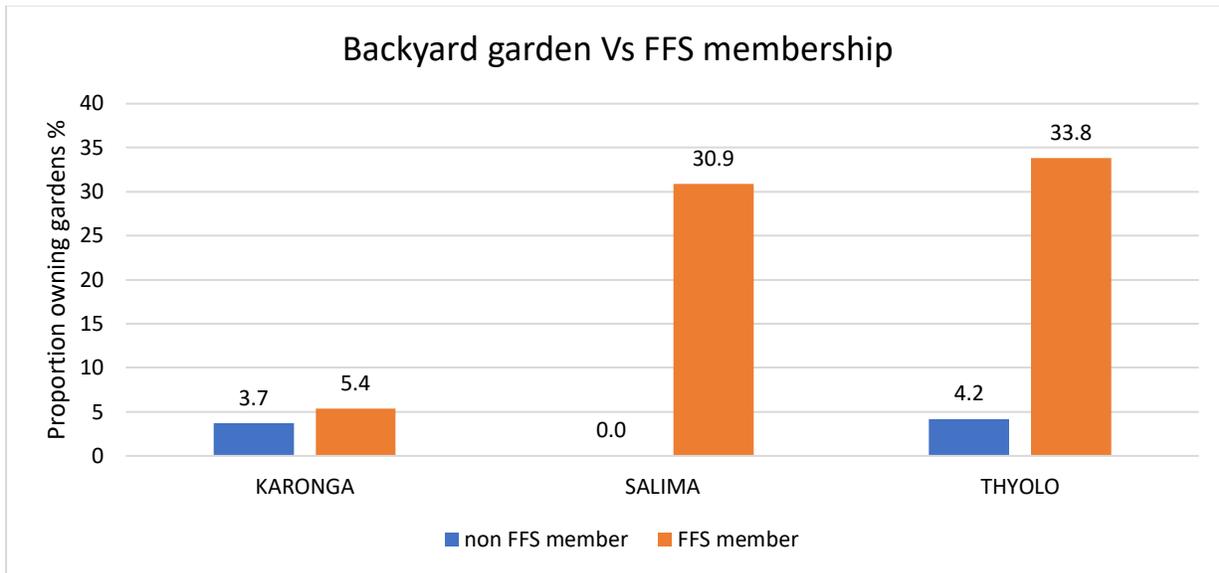
7.2.3 Increased uptake of best nutrition and WASH practices

The study observed that participation in FFS was associated with high adoption of nutritional and WASH practices at household levels as compared to non-FFS participants. FFS participants were more likely than non-FFS participants to have a backyard garden, to own livestock and to have fruit trees around their homes.

FFS participants were also twice as likely to have a rack for drying dishes. Those with backyard gardens have had them for an average of 2 years while those with fruit trees have had them for an average of 9 years. This suggests that backyard gardens have been influenced by the Farmer Field Schools and the same cannot be said for fruit tree planting.

Pertaining to backyard gardens, the study revealed that among FFS participants, Thyolo has 33.8 % of participants with backyard gardens, Salima has 30.4 % of FFS participants with backyard gardens and Karonga has 5.4 % FFS participants with backyard gardens as shown in Figure 8 below.

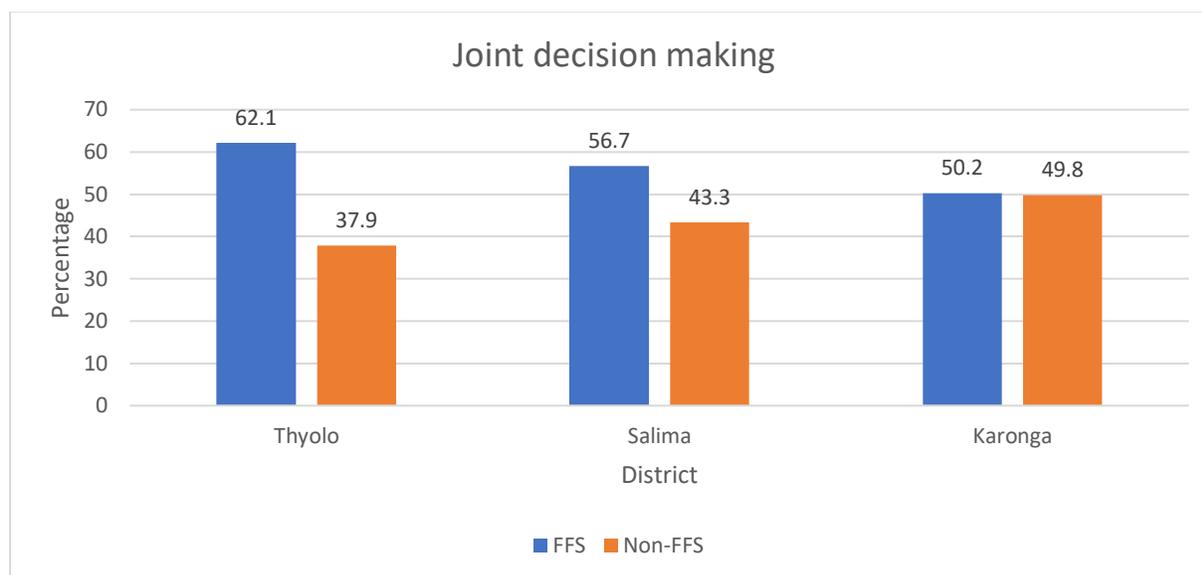
Figure 8: FFS participants with backyard gardens



In Karonga District, the low proportion of FFS participants with backyard gardens are largely attributed to the fact that most people in Karonga traditionally use backyards for raising livestock and if they have these, they may be in another place rather than on their backyard.

“We use the dambo’s (river area) for growing vegetables rather than at the backyard of our houses.” FGD Vinthukutu, Karonga.

Among FFS participants in union, Thyolo has the highest (62.1%) of FFS participants that reported relatively high joint decision making (between females and males) regarding on what to grow in their backyard gardens and how to use proceeds from the same and Karonga has the lowest (50.2 %) as presented in Figure 9.

Figure 9: Joint Decision Making

Overall, FFS participants reported high levels of joint decision-making decision as compared to non-FFS participants. Thyolo has a highest number of couples that participate in FFS together as compared to the other districts, this is another driver to an increase in joint decision-making abilities and in Karonga, most FFS participants do not have backyard gardens coupled with patrilinear cultural tenet it entails that most decisions are made by males/husbands.

The study revealed that FFS participants do have different fruits and livestock that they grow, sell and keep respectively as shown in table 6 below:

Table 6: fruits and livestock kept by FFS participants

District	Fruits	Vegetables	Livestock
Karonga	Banana, Guava, oranges, pawpaw, lemon and American apple	Pumpkin	Goats, cattle, pigs, dairy cows and chickens
Salima	Banana, oranges, guava, peaches, tangerine and jujube	Pumpkin and sweet potato	Goats, cattle, and chickens
Thyolo	Banana, lemon, guava, organs, pawpaw, avocado, peaches, tangerine and custard apple	Mustard and cabbage	Goats, cattle, chickens and milk cows

Up to 87.4 % of FFS participants grow fruits for consumption while only 37.3 % sell the fruits. 30.8 % sell vegetables from their garden while 42.1 % consume the vegetables. 79.8 % sell their livestock and 60.7 % consume livestock products such as eggs, milk, and meat.

7.2.4 Improved Women's Minimum Dietary Diversity (W-MDD)

For women of reproductive age, Karonga has the highest dietary score of 6.57 (with 3-11 food groups), Salima has a score of 6.30 (with 3-11 food groups) and Thyolo has the lowest at 5.79 (with 2-9 food groups) as shown in table 7 below:

Table 7: Women Dietary Diversity Scores FFS participants by district

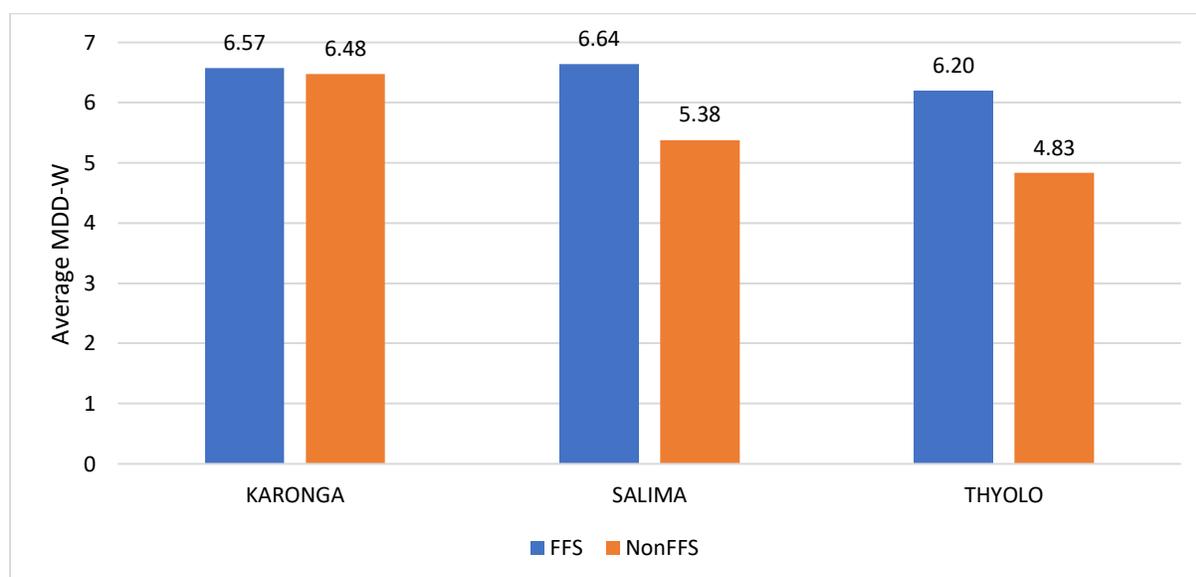
District	Range	Average DD score	SD
Karonga	3-11	6.55	1.558
Salima	3-11	6.30	1.539
Thyolo	2-9	5.79	1.540

One key reason for low diversity scores in Thyolo is low incomes (see section 6) to enable households buy other foods apart from what they grow.

"We learn of different food groups but when you don't have money to buy food such as meat and milk you just eat anything." FGD, Chamama, Kasungu

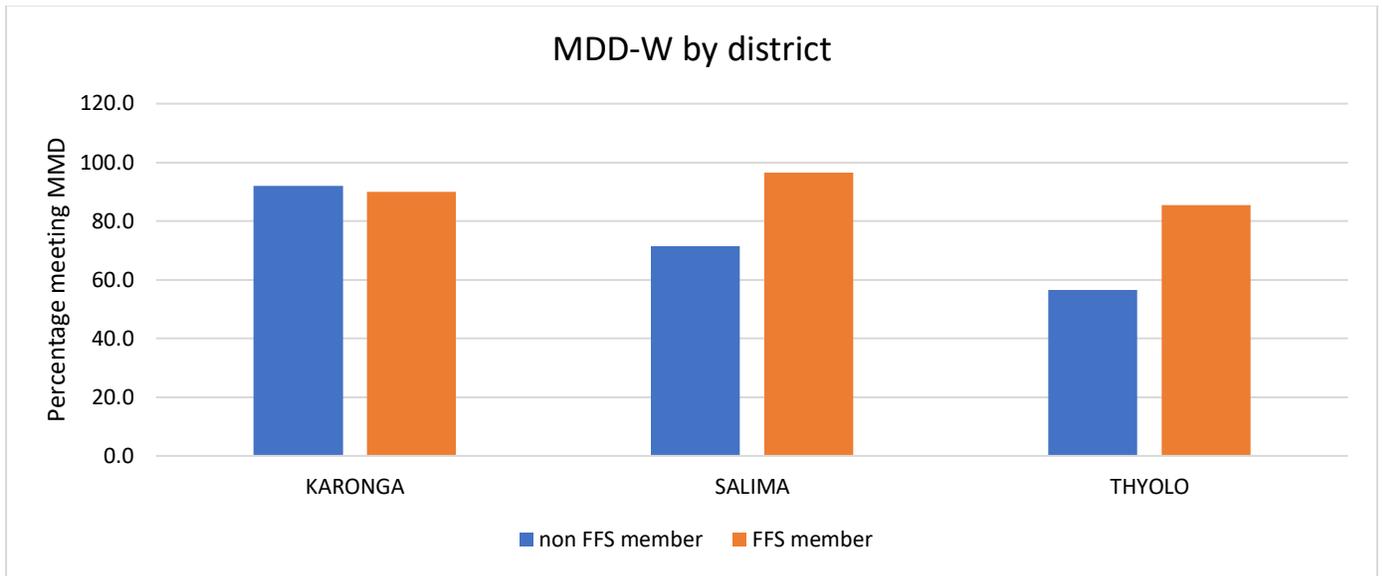
Across the districts, there is a slightly higher dietary diversity among women FFS participants compared to non-participants in Thyolo ($f= 3.369$, $p=0.004$) and Salima ($f=3.283$, $p=0.003$). However, in Karonga there is no significant difference in dietary diversity between participants and nonparticipants (1.254 , $p=0.277$).

Figure 10: Dietary Diversity Scores (DDS) across study districts



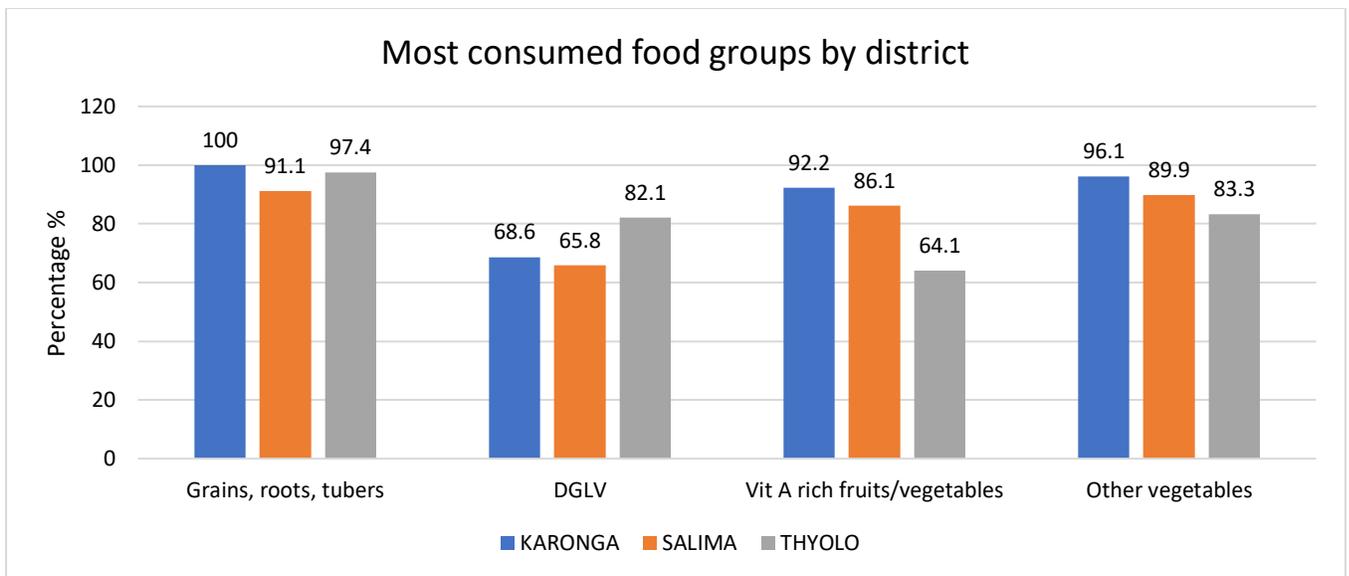
Further, FFS participants were 3 times more likely to meet their minimum dietary diversity requirement than non-FFS participants (OR =3.592, $p<0.001$). This positive association was neither related to cohort ($F=0.988$, $P=0.451$) nor was it related to gender of household head (1.905 , $P=0.052$).

Figure 11: Women meeting Diversity Scores



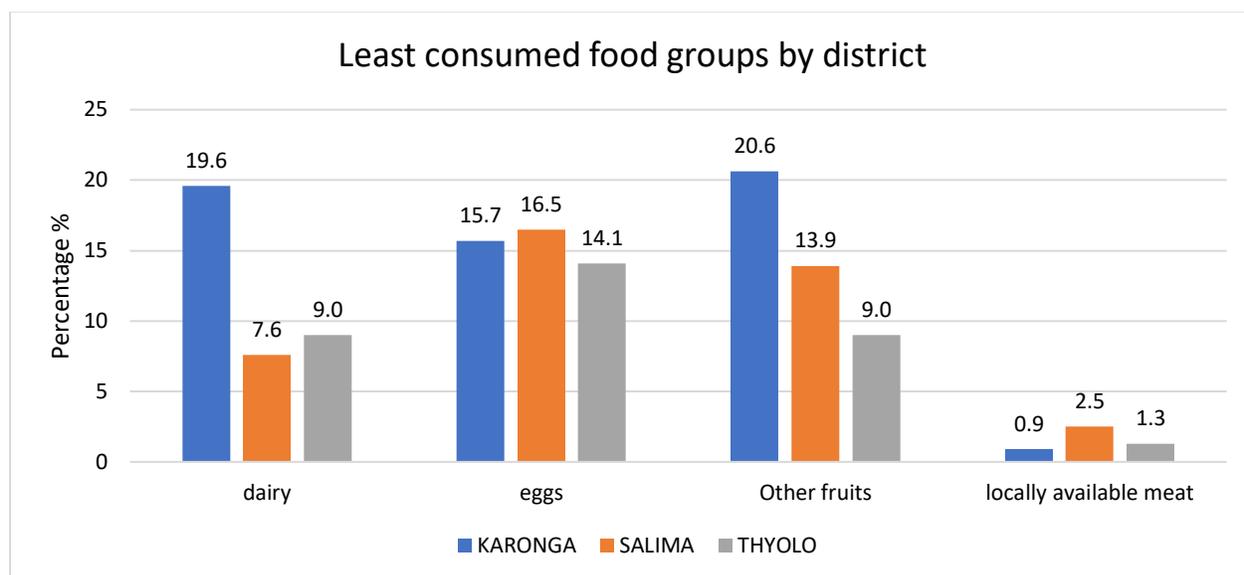
Across the districts, the most frequently consumed food groups are grains, tubers and cereals, dark green leafy vegetables, vitamin A rich fruits and other vegetables as presented in figure 12 below.

Figure 12: Most Frequently Consumed Food Groups



In all the three districts, the least consumed food groups are dairy, other fruits, eggs, and local meat. These are least consumed because in most cases they need to be purchased and low incomes make it difficult for households to access these foods.

Figure 13: Least consumed foods



7.2.5 Food access, availability and utilization

a) Food access

Increased availability of homestead gardens and improved post-harvest management practices (such as use of PICS bags) have scaled-up access to food amongst FFS participants than non-FFS participants. According to MTs and CBFs, production levels among FFs participants has increased largely due to improved seeds, pest and disease management and post-handling, which according to the Agricultural Extension Development Officer (AEDO) for Vinthukutu EPA in Karonga;

“Participation in FFS has increased uptake of new methods that have helped to increase access to food amongst participants.”

b) Food availability

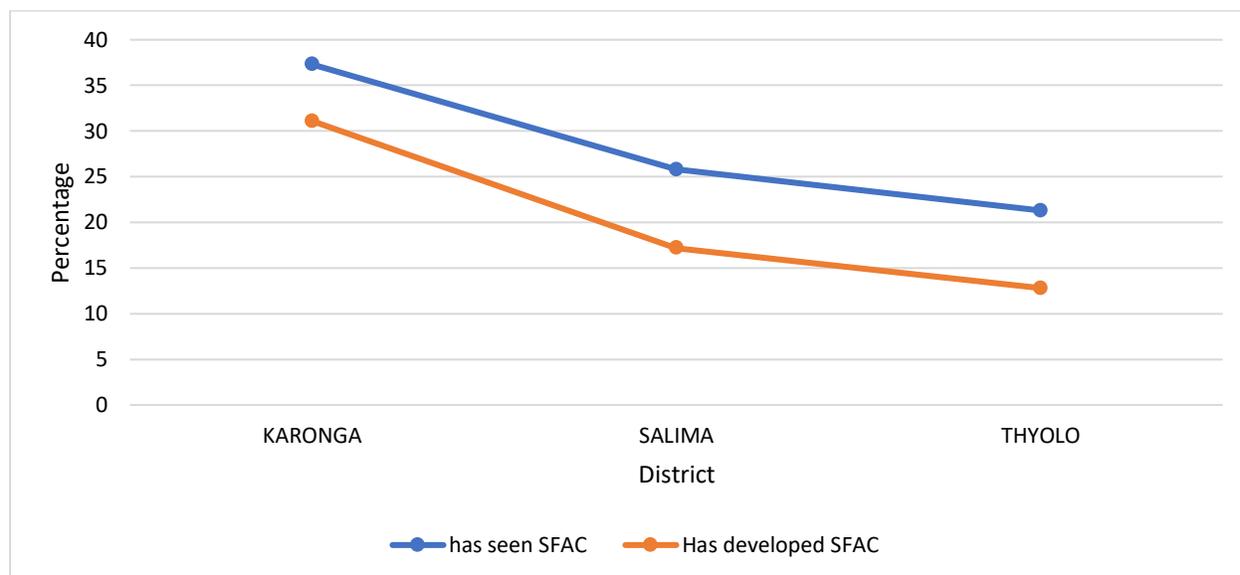
The study revealed that participation in FFS did not have a significant effect on food availability at household level rather yields volume, household incomes (to enable purchase) and family size (there is an indirect relationship between family size and amount of food available). However, participation in FFS was associated with relatively high knowledge of seasonal food availability calendar amongst FFS participants (30.2 %, n= 68) as compared to non-FFS participants (25 %, n=19).

A seasonal food availability calendar outline times of the year when foods from the different food groups will be available to guide community members and household plan balanced diets based on available foods during different times of the year.

There was relatively similar likelihood and odds of FFS participants and non-participants to participate in the development of a Seasonal Food Availability Calendar ($X^2= 0.687$, p value= 0.407) as presented in table 7 and Figure 14 below:

Table 7: Seasonal Food Availability Calendar

Parameter	FFS Participants	Non-FFS participants	X^2	p-value
Seen a Seasonal Food Availability Calendar in your community	68	29	0.687	0.407
Participate in developing the Seasonal Food Availability Calendar	50	14	0.493	0.483



f) Food utilization

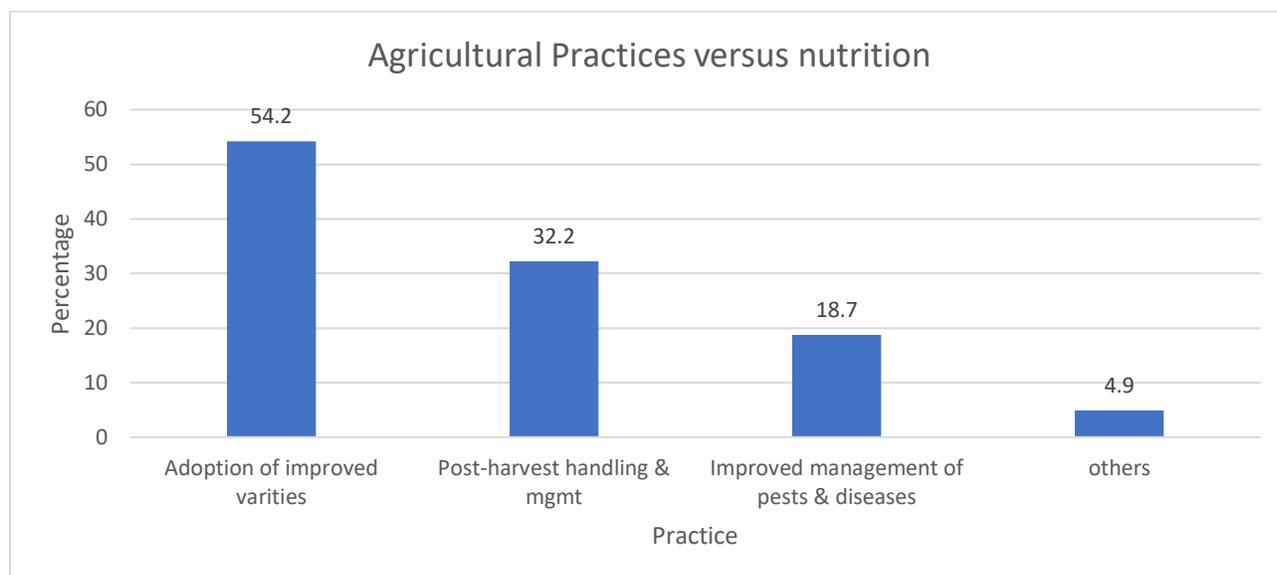
Utilization of food varied between FFS participants and non-participants. FFS participants can preserve some food items such as vegetables and fruits as compared to non-FFS participants. This is largely attributed to a variance in skills between FFS participants and non-participants.

“We even now know to preserve fruits but, in the past, we only knew of preserving vegetables.” FGD Chamama, Kasungu District.

7.2.6 Agricultural Practices that promote nutritional outcomes

When asked of agricultural practices that has helped the FFS participants to have improved nutrition, FFS participants cite improved varieties (54.2%), post-harvest handling (32.2%), and improved management of pests and diseases (18.7%), and others (4.9%) that they have acquired via FFS as key practices to improve nutritional outcomes. This is presented in Figure 15.

Figure 15: Agricultural Practices Improving nutritional outcomes



During FGDs, participants (mostly from Cohort 1) mentioned that there is a relationship between improved agricultural practices derived from FFS to nutrition. Most of the practices have helped them to have higher yields than before- helping them to have food and a surplus to sell thereafter to buy other food groups.

“We are now able to manage pests and diseases better than before. This makes us as able to produce more than before.” FGD, Mzimba

8.0 RECOMMENDATIONS

Based on findings and results of the operational research, the team recommends the following

Strategic Area(s)	Recommendation (s)
<p>Improve the training and capacity of MTs and CBFs to integrate nutrition in FFS</p>	<ul style="list-style-type: none"> <li data-bbox="609 459 1421 661">✚ Integration of nutrition should not be taken as a once off activity rather as a process, and thus in addition to teaching nutrition concepts separately, facilitators should integrate some nutrition topics with other topics, for example, if discussing about livestock production include nutritional benefits of livestock etc. <li data-bbox="609 699 1421 1228">✚ Develop a uniform nutrition curriculum that specifies the timing and frequency and flow of nutrition topics in farmer field schools. This curriculum will ensure that facilitators know which nutrition topics must start first in the FFs training calendar, such as the problem tree analysis and seasonal food availability calendar which establishes the nutrition problems as well as their causes in the community. Following this each FFs should formulate a nutrition action plan which will inform the type of nutrition activities for the FFs moving forward. The aim of this participatory approach is to assist communities to become more self-reliant, with the capacity to analyse their own food and nutrition situation, identify their needs, plan activities to address these needs, secure funding, and technical expertise, and implement and manage the activities. <li data-bbox="609 1241 1421 1623">✚ Limited positive impact without good human resources – Facilitators are key to effective nutrition integration in FFSs (vis a-vis their technical and communication skills, personal characteristics, and sensitivity). Special training (e.g. special focused training, long-term support/coaching, or part of a regular/refresher training) for community-based facilitators and extension staff is crucial to helping them develop their nutrition related capacities. <li data-bbox="609 1644 1421 1780">✚ Link with other key stakeholders such as Health Surveillance Assistant (HSAs) and other health workers as complimentary resource persons. <li data-bbox="609 1801 1421 1898">✚ There is need to develop farmer user friendly IEC materials (i.e., graphic/pictorial and in local language) that can be used for training on nutrition topics in FFs.

<p>Scale -up nutritional benefits derived from FFS</p>	<ul style="list-style-type: none"> ✚ Develop a Social Behavioral Change Communication (SBCC) strategy and include it as one of the topics in the FFS sessions. ✚ Strengthen the integration of value addition in farmer field schools through promotion of low-cost food processing and/or preservation methods especially for perishable nutritious foods such as fruits, vegetables, as an income generating and an important measure to reduce food loss, boost incomes and strengthen food security and nutrition. This income generating activity focus can attract more men in nutrition activities as men were more inclined to activities that generated income. The training could also help ffs groups to establish new, small-scale food processing businesses which would ensure sustainability of FFs groups beyond project life span.
<p>Improved design, implementation and M&E for integration of nutrition in FFS</p>	<ul style="list-style-type: none"> ✚ For future programmes on integration of nutrition into FFS, collaborate with Area Nutrition Coordination Committees (ANCC) and Health Facilities as key stakeholders in the design, planning and implementation of FFS to leverage and optimize on skills on nutrition sensitive agriculture. ✚ To ensure optimal adoption of nutrition practices at household level, the FFS approach should be complemented with a “family approach” whereby facilitators conduct sessions on gender and nutrition with FFS members together with their spouses. Future FFS programs should articulate a clear theory of change to define envisioned success of nutrition integration in FFS, as well as have project nutrition indicators that are reflective of project context. For instance, use of indicators such as the Minimum Dietary Diversity for Women (MDD-W) provide much insight into the more vulnerable members of a household than food consumption score. ✚ Strengthen collaboration and linkages between the FFS groups to other existing groups at community level such as care groups to leverage technical support and resources, where joint planning of activities could link to joint implementation of activities e.g. cooking demonstrations and other training activities targeting both FFS members and care groups.



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