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# FEED THE FUTURE - INTEGRATING NUTRITION IN VALUE CHAINS, MALAWI

**GENDER AND VALUE CHAIN ASSESSMENT**

**JUNE 2014**

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Feed the Future

Integrating Nutrition in Value Chains, Malawi

Gender and Value Chain Assessment

June 2014

This document was prepared by Kristy Cook, Cristina Manfre, Judith Kamoto, and Kenan Kalagho (Cultural Practice, LLC).

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## Acronyms

|          |  |
|----------|--|
| ACE      | Agricultural Commodity Exchange  |
| ACM      | Association Management Centre  |
| AI       | Artificial Insemination  |
| AMCs     | Association Management Centres   |
| ASWAp    | Agriculture Sector Wide Approach   |
| AVO      | Assistant Veterinary Officer   |
| BCC      | Behavior Change Communication  |
| BERL     | Bio Energy Resources Ltd.  |
| BMI      | Body Mass Index  |
| CADECOM  | Catholic Development Commission in Malawi                                  |
| CDCS     | Country Development Cooperation Strategy                                   |
| CEDAW    | Convention on the Elimination of all Forms of Discrimination against Women |
| COMPETE  | Competitiveness and Trade Expansion  |
| CREMPA   | Central Region Milk Producers Association                                  |
| DAES     | Department of Agricultural Extension                                       |
| DHS      | Demographic Health Survey  |
| EPA      | Extension Planning Area  |
| FAO      | Food and Agriculture Organization  |
| FHH      | Female-Headed Household  |
| FOF      | Farmer Organization Facilitator  |
| FTF      | Feed the Future Initiative   |
| FtF-INVC | Feed the Future - Integrating Nutrition in Value Chains                    |
| FUM      | Farmers Union of Malawi  |
| GAC      | Group Action Committee   |
| GDP      | Gross Domestic Product   |
| GHI      | Global Health Initiative   |
| GOM      | Government of Malawi   |
| ICF      | Inner City Fund International  |
| ICRISAT  | The International Center for Research in Arid and Semi-Arid Tropics        |
| IITA     | The International Institute for Tropical Agriculture                       |
| ILRI     | International Livestock Research Institute                                 |
| INGIA-VC | Integrating Gender into Agricultural Value Chains                          |
| IPC      | Innovative Productive Center   |
| MBG      | Milk Bulking Groups  |
| MDFA     | Mpoto Dairy Farmers Association  |
| MDHS     | Malawi Demographic Health Survey   |
| MEAS     | Modernizing Extension and Agriculture Services                             |
| MK       | Malawian Kwacha  |
| MMM      | Malawi Milk Marketing  |
| MMPA     | Malawi Milk Producers Association  |
| MoAFS    | Ministry of Agriculture and Food Security                                  |

|         |   |
|---------|---|
| MT/Ha   | Metric tons/hectare                                 |
| NACAL   | National Census on Agriculture and Livestock        |
| NASFAM  | National Smallholder Farmers' Association of Malawi |
| NGO     | Non-governmental organization                       |
| SHMPA   | Shire Highland Milk Producers Association           |
| SME     | Small and Medium Enterprises                        |
| SSA     | Sub-Saharan Africa                                  |
| UNDP    | United Nations Development Program                  |
| USAID   | United States Agency for International Development  |
| VAC     | Village aggregation centers                         |
| WEAI    | Women's Empowerment in Agriculture Index            |
| WID IQC | Women in Development Indefinite Quantity Contract   |
| WRS     | The Warehouse Receipts System                       |
| ZOI     | Zone of influence                                   |

## Executive Summary

### Introduction

Malawi is a low-income country highly dependent on agriculture. The sector supports 90 percent of the population and contributes approximately 30 percent to GDP (GoM 2012b). Most households, including those in urban areas, are engaged in agriculture, and among households in the lowest quintile, 96 percent are engaged in the sector. A slightly higher proportion of female-headed households than male-headed households are engaged in agricultural activities: 87.6 percent versus 84.3 percent (NSO 2012a). Women are estimated to provide 80 percent of the labor for household food production, compared to 20 percent of men. Over half of smallholder farmers in the country have less than one hectare of land.

With limited access to credit, inputs and price information, both men and women face significant constraints to improving agricultural productivity, although women face these constraints more acutely. Women manage only 26 percent of plots, which are also smaller than those managed by men. They have less access to credit and are less able to command labor, relying more on their own labor and that of their children. Men on the other hand hire more labor. Fewer women than men use productivity-enhancing technologies. The differences lead to an estimated gap in productivity of 25 percent between men and women.

Poor nutrition especially of children is a serious problem in Malawi, although there has been some progress over the past decade in addressing child health. For example under-five mortality has declined from 180 deaths per 1,000 live births during the late 1900s to 112 deaths in the period 2005-2010. There has also been an improvement in child nutrition status since 2004. According to the 2010 Demographic and Health Survey, 13 percent of children under age 5 were underweight and 47 percent were stunted, reduced from 15 percent underweight and 53 percent stunting in 2004 (NSO et al. 2011). In the FtF ZOI the prevalence of stunting (below -2SD) among children under 5 is 47.5 percent and the prevalence of severe stunting (below -3SD) is 20.5 percent. The overall prevalence of anemia in children under 5 in the ZOI is 64.3 percent. These levels of undernutrition, particularly stunting, remain unacceptably high with long-term consequences for the country. The high rates of malnutrition are estimated to be the result of poor nutritional behaviors, low diversity of nutritious foods in food supply and impacts of a high disease burden.

### The Gender and Value Chain Assessment of the FtF-INVC Project

The Feed the Future Integrating Nutrition in Value Chains (FtF-INVC) is a three-year USAID-funded project in Malawi that seeks to mitigate these challenges by sustainably reducing rural poverty and improving nutrition outcomes. To achieve these goals, FtF-INVC promotes, supports, and facilitates gender equitable market-driven, agriculture-led, and integrated economic growth approaches. The FtF-INVC Project is managed by DAI, in partnership with Save the Children (SC), Michigan State University (MSU) and is implemented through a number of local partners: the National Association of Smallholder Farmers of Malawi (NASFAM), Farmers Union of Malawi (FUM), Catholic Development Commission (CADECOM), Malawi Milk Producers Association (MMPA), Nkhoma Hospital, and Pakachere Institute of Health and Development Communication.

This gender and value chain assessment is part of the Feed the Future Integrating Nutrition in Value Chains (FtF-INVC) project's activities to promote, support, and facilitate gender equitable approaches to improving agriculture and nutrition outcomes. It has the objective of identifying gender issues that should be addressed in the development of the soybean, groundnuts and dairy value chains, and to understand how gender issues affect the agriculture and nutrition linkage activities. Specifically, each

value chain is analyzed to identify gender-based constraints that limit participation, improved performance, and access to benefits for either men or women. The findings and recommendations emerging from this assessment will guide the monitoring and implementation of FtF-INVC to ensure that both men and women can participate in and benefit from its activities.

### **FtF-INVC Value Chain Findings**

In all three value chains, women participate in most production and processing activities, as do men. There are few differences between this participation, with the most notable relating to men's greater participation in land preparation, and women's greater participation in threshing and winnowing. The most significant difference is in men's and women's perception of the division of labor. Men indicate that men and women participate in all production and processing activities. Women on the other hand indicate a more defined and segregated division of labor, with their participation concentrated in production and processing activities and men's concentrated mostly in marketing. Both men and women report that women are less active in marketing. Women are also less active in leadership positions in all three chains, either as lead farmers or in executive committee positions.

**Soybean and Groundnut Value Chains.** The gender-based constraints in the soybean and groundnut value chains are similar and therefore are discussed together. The design of the FtF-INVC activities does not exclude women from participation in these two value chains. There are few entry requirements: access (not ownership) of land and participation in a club. According to the data from the three implementing partners, women make up at least half of the participants, underscoring that participation in the soybean or groundnut value chain does not appear to have any specific constraints that reduce women's participation. Women will however face more constraints to improving their performance because of greater difficulties in accessing labor and cash to expand production or increase productivity.

Additionally, women face greater constraints marketing produce because of their lack of access to means of transportation and limits on their mobility. Women rely more heavily on vendors who facilitate access to markets by purchasing produce at the farm-gate. Activities to improve marketing (e.g., establishing warehouses, aggregation points, and commodity exchanges) are meant to offer opportunities for all farmers to participate in a more transparent and equitable marketplace. It is not clear at this point whether they have been designed to overcome women's constraints. In addition to challenges in traveling to aggregation points or warehouses, women's lower literacy and numeracy levels could reduce their ability to understand how the commodity exchange works. Finally, there is some evidence that women are being pushed out of marketing activities. In groundnuts specifically, women appear to losing their position in the chain to men as the crop becomes a more lucrative opportunity than tobacco or cotton, crops that until recently have been marketed almost entirely by men.

**The Dairy Value Chain.** In contrast to the soybean and groundnut value chains, women's participation in the dairy value chain is lower. Although few men and women farmers have cows, women are less likely to own them as men, a requirement for participating in the chain. Women make up only 24 percent of milk bulking group (MBG) members. Among them, 90 percent own exotic breeds, while men own roughly about the same number of exotic and Zebu cows. This disparity is likely the result of differences in how men and women acquire livestock. Women tend to acquire livestock via non-market channels, meaning they do not purchase them but instead inherit them or receiving them as gifts or through pass-on schemes. Because there are so few cows in Malawi and the project has high production targets, the FtF-INVC project is recruiting more farmers with Zebu cows, a strategy that will favor men because they are more likely than women to own them. Moreover, the high costs associated with dairy farmers, both for membership into milk bulking groups and for dairy activities, create additional barriers

for women to enter the dairy value chain. Once in the chain, men and women face fewer differences in their ability to improve performance.

The primary benefit to participating in the dairy value chain is access to a regular and monthly source of income. Although cows are milked on a daily basis and farmers deliver the milk to the MBG daily, processors collect the milk only every two to three days and they pay MBGs once a month. In contrast to informal dairy systems, where vendors collect and pay daily, this system creates a lump sum of income for farmers that can be used for larger purchases. A farmer whose cow is producing about 5 liters per day and who is selling of that milk via the MBG, will collect about MK 16,500 per month.

Although several dairy stakeholders reported that one of the key challenges for women in the dairy value chain is access to and control over the dairy income, interviews conducted during this assessment were unable to confirm this assertion. The distribution system may not be biased against women members. However women, both members and non-members, participate overwhelmingly in the day-to-day dairy activities. This means that women, specifically non-members of MBGs, are dedicating a significant amount of time to activities for which they are not directly compensated. In some households, men and women may jointly decide how to use the income, as in the case of the Nathenje farmer whose family decides together how much milk to sell and how to spend the dairy income. In these cases, women's contributions to dairy activities may be rewarded through participation in decision-making in how to spend the dairy income. However where men have sole decision-making over dairy income, women's labor will go unrewarded, potentially reducing their incentives to dedicate time to dairy activities.

**FtF-INVC Nutrition Activities.** Agricultural programs that aim to have direct impacts on nutrition must be designed incorporating a clear impact pathway incorporating gender dimensions of agriculture production, marketing, and processing, as well as intra-household consumption and child care-giving. The FtF-INVC project was designed to have an impact on undernutrition through its activities: The FtF-INVC project has the ambitious target of reducing the malnutrition of 100,000 children under the age of 5 years by mid-2015.

The pathways from agriculture to nutrition are not direct and many of them depend on relationships between men and women in the household, decision-making over household resource use, and women time allocation (Gillespie 2013). The project integrates nutrition through the selection of nutritious value chains, implementing nutrition activities toward behavioral change in the targeted areas, and linking the nutrition and agriculture activities through the implementing partners. FtF-INVC is linking agriculture-oriented farmer clubs with community volunteers grouped to better channel nutrition education while assisting those in care groups to source food when needed. One of the challenges for the project is to better understand the participation of program beneficiaries, particularly women in different age groups, across agriculture and nutrition activities, to ensure that both benefits are accessible to households.

## **Recommendations**

The gender assessment recommendations for the FtF-INVC program are summarized in the following table.

## Summary of Recommendations

| Recommendation  | Description   | Responsibility                               |
|---|---|--|
| <b>General Recommendations</b>                                      |   |  |
| Track progress toward aspirational goals.                           | Many of the implementing partners vocalized a target of 50 percent men and 50 percent women in activities, although specific targets were not set. Partners should be encouraged to continue to strive for these goals.       | Implementing partners                        |
| Involve women in development of and testing of extension materials. | Given the low literacy levels among women efforts need to be made to field test materials with women and integrate the use of audio and visual aids.  | Implementing partners                        |
| Ensure partners disaggregate targets and indicators by sex.         | Ensure partners provide sex-disaggregated data on agriculture-related indicators, including area and production (yields) under groundnuts and soybeans and provide sex-disaggregated targets for relevant indicators.         | FtF-INVC M&E team                            |
| Conduct an annual review of gender-relevant indicator performance.  | To maximize learning from monitoring, the project should assess performance on indicators that have been disaggregated by sex and discuss changes in performance with implementing partners. Guidance is provided in Annex 4. | FtF-INVC M&E team with implementing partners |

## Summary of Recommendations

| <b>Capacity building Recommendations</b>  |  |  |
|---|--|--|
| Support targeted capacity building for implementing partners.                               | While a general training on gender in agriculture may not be necessary or appropriate for implementing partners, thematic workshops could be designed to respond to specific needs.  | FtF-INVC                                     |
| Conduct a landscape of organizations and consultants specialized in gender and agriculture. | The landscape would assess the institutions (and potentially individuals) in Malawi to identify those that are best equipped with knowledge and skills to provide in-country technical assistance to the implementing organizations.   | FtF-INVC                                     |
| <b>Recommendations relevant to all three value chains</b>                                   |  |  |
| Monitor aggregation points and benefit distribution.  | There are some indications women's lack of participation in marketing is reducing their access to benefits (e.g. income). One way of understanding the marketing dynamics and especially in the impact FtF-INVC marketing efforts are having is to monitor the gender dynamics at aggregation points: who is bringing produce, who is receiving income, how did they get there. Guidance is provided in Annex 4.                           | FtF-INVC M&E team with implementing partners |
| Recruit more women lead farmers.  | The number of women lead farmers remains low across all three chains. Being selected as a lead farmer is recognition of improved performance and good standing in the community, and FtF-INVC can coordinators, field officers, and others to encourage the selection of more women into these positions.  | Implementing partners                        |
| Target women for digital financial services to support benefit distribution mechanisms.     | As FtF-INVC examines the opportunities available for tapping into digital financial services, it should ensure that women are targeted specifically for any pilots or initiatives.   | FtF-INVC with implementing partners          |
| Promote intra-household approaches to farming enterprises.                                  | The dual objectives of increasing agricultural productivity and improving nutrition require that the project consider the intra-household dynamics of how decisions are made surrounding consumption and sale of production. Intra-household approach to farming are used to help husbands and wives understand how to better allocate household resources (e.g., labor, income, and crops) to increase the well-being of all its members. | FtF-INVC with implementing partners          |
| <b>Soybean and Groundnut Value Chain Recommendations</b>                                    |  |  |

## Summary of Recommendations

|   |   |  |
|---|---|--|
| Engage women in the process of selecting appropriate processing technologies. | Women are likely to value different qualities of processing technologies than men, for example those that save labor. Tapping both men and women, collectively and separately, for focus groups or design teams can generate more useful technologies for soybean and groundnut processing.   | Implementing partners                        |
| Women's groups for processing.  | One of the ways to ensure that women maintain a position in processing is to work with women's groups and target them to be the recipients of processing technologies. These groups can then process crops on a pay-for-service basis.  | Implementing partners                        |
| Compare the seed distribution models.   | FUM and NASFAM are implementing different approaches to input supply: one that focuses on a commercial model, while the other model provides seeds as part of membership. Given women's mobility and cash constraints, it is important to understand how FUM's model can be further developed in a way that does not exclude women. Comparing these two models might illuminate how to build a gender-equitable input delivery model. | FtF-INVC M&E team with implementing partners |
| Improve reliability or and trust in vendors.                                  | Vendors play an important role in marketing women's produce but are not trusted by farmers. Activities could be designed to have ACE vet and certify vendors or help women acquire scales so they can establish small-scale businesses weighing produce.  | FtF INVC with ACE                            |
| <b>Dairy Value Chain Recommendations</b>                                      |   |  |
| Monitor men's and women's participation with Zebu expansion.                  | It will be important to continue to monitor men's and women's participation as the project recruits more farmers with Zebu cows. If men's participation continues to grow at a rate than women's, the project will want to reconsider a more equitable strategy for achieving its milk production targets.  | FtF-INVC M&E team with implementing partners |
| Monitor women's and children's labor input into dairy activities.             | Dairy activities are labor intensive and tend to be carried out more often by women and children. As milk production and other activities increase, it is important to assess whether these changes have significant impacts on women's and children's time use and labor input.  | FtF-INVC M&E team with implementing partners |

## Summary of Recommendations

|   |  |  |
|---|--|--|
| <p>Seek opportunities to increase income-generating opportunities for women.</p>  | <p>Women’s income-generating opportunities in the dairy value chain are largely restricted to their position as dairy farmers. FtF-INVC could make greater efforts to recruit more women AI technicians, making the positions more attractive or amenable to women or equip women or women’s groups with the skills to enter as input suppliers, for example small-scale producers of dairy mash or salt blocks.</p>             | <p>MMPA</p>                                |
| <p><b>Nutrition Recommendations</b></p>   |  |  |
| <p>Build leadership skills among women in care groups.</p>  | <p>Women who are participating in care groups are the most vulnerable women in many of these communities. Yet, as these women grow older they will likely become candidates for joining clubs, and becoming association leaders and lead farmers. Integrating leadership skill-building into care groups could improve their ability to negotiate with husbands and prime them for taking on additional roles in the future.</p> | <p>FtF-INVC and Nkhoma Hospital</p>        |
| <p>Ensure both men and women receive information on aflatoxin management and health impacts.</p>                          | <p>Most of the critical points for controlling aflatoxin are <i>post-harvest</i>. Women are responsible for processing groundnuts at the household level and are also responsible for child feeding, therefore reaching women with aflatoxin information is critical.</p>  | <p>FtF-INVC with implementing partners</p> |
| <p>Continue to promote men as “Father Leader Volunteers”.</p>   | <p>FtF-INVC is engaging more men as “Father Leader Volunteers” in the care group model to play direct role in improving household-level nutrition. Men’s understanding of the importance of actions such as dietary diversity for young children is critical to ensure access for foods such as animal-based products for babies and young children.</p>   | <p>FtF-INVC and Nkhoma Hospital</p>        |
| <p>Link income-earning processing of value chain products in agricultural activities for women to care group members.</p> | <p>Women are responsible for food preparation and child feeding at the household level. As farmer associations promote product development for sale and home consumption, such as dried soy or soymilk, and care groups promote new recipes, small business development, particularly by women, can be promoted.</p>   | <p>FtF-INVC implementing partners</p>      |

## Summary of Recommendations

|   |  |   |
|---|--|---|
| <p>Monitor overlap of participation by men and women in care groups and in farmer association activities.</p> | <p>The project should monitor the extent to which men and women who are participating in the FtF-INVC agriculture activities are the same men and women who are involved in care groups. In particular, whether women who receive nutrition support are also members in the associations, or reside in households with men or other women who are members. This will provide a better measurement of the synergy of the messaging. Qualitative analysis could provide additional insights for the planned impact evaluation.</p> | <p>FtF-INVC M&amp;E team with implementing partners</p> |
|---|--|---|

## Introduction

### Overview of FtF-INVC Project and objectives of the assessment

The Feed the Future Integrating Nutrition in Value Chains (FtF-INVC) is a three-year USAID-funded project in Malawi that seeks to sustainably reduce rural poverty and improve nutrition outcomes. To achieve these goals, FtF-INVC promotes, supports, and facilitates gender equitable market-driven, agriculture-led, and integrated economic growth approaches. The FtF-INVC Project is managed by DAI, in partnership with Save the Children (SC), Michigan State University (MSU) and is implemented through local partners.

The project is accomplishing its goals by addressing five (5) inter-related components that form the core of the project. These components are: (a) Advancing value chain competitiveness; (b) Improving agricultural productivity; (c) Improving community capacity to prevent under-nutrition; (d) Promoting innovation; and (e) Developing local systems capacity. The project is working towards improving value chain competitiveness for soybeans, groundnuts and dairy. It is also promoting key nutrition behaviors at individual and household level mainly targeting pregnant women and lactating mothers. The project targets asset-poor smallholders and its geographic scope is defined as the seven districts of Malawi with highest potential for increasing legume and dairy production, also those districts in USAID's Zone of Influence (ZOI): Mchinji, Lilongwe, Dedza, Ntcheu, Balaka, Machinga and Mangochi

This gender and value chain assessment is part of the project's activities to promote, support, and facilitate gender equitable approaches to improving agriculture and nutrition outcomes. It has the objective of identifying gender issues that should be addressed in the development of the soybean, groundnuts and dairy value chains, and to understand how gender issues affect the agriculture and nutrition linkage activities. The findings and recommendations emerging from this assessment will guide the monitoring and implementation of FtF-INVC to ensure that both men and women can participate in and benefit from its activities.

*Box 1 What is a gender-based constraint?*

### Gender and value chain analysis methodology

A gender and value chain analysis examines the different levels and categories of men's and women's participation, performance, and access to benefits in value chain activities. It uses a gender-sensitive methodology that combines both quantitative and qualitative data collection and analysis methods. While there is no single framework for conducting a gender and value chain analysis, this assessment applied USAID's "Promoting Gender Equitable Opportunities in Agricultural Value Chains" method, known as the Integrating Gender Issues into Agricultural Value Chains (INGIA-VC) approach (Rubin, Manfre, and Nichols Barrett 2009).

**The INGIA-VC methodology.** The INGIA-VC approach uses mixed methods and the Gender

Gender-based constraints are limitations or restrictions that are based on some aspect of a gender role or responsibility. For example, the production of a group of farmers, both men and women, may be limited by their small size plots and they are all cash poor. This is a **general constraint**. Women in this area, however, face greater difficulties in obtaining additional land because they do not inherit family land equally to their brothers and as women they are legally restricted from signing for a loan. These are **gender-based constraints** because they are linked to laws or practices that are different for men and women.

Source: Rubin, Manfre, and Nichols Barrett 2009

Dimensions Framework<sup>1</sup> to examine **gender-based constraints**<sup>2</sup> (Box 1) related to three key aspects of value chains:

1. Barrier to entry and/or requirements for men's and women's **participation** in the value chains.
2. Differences in men's and women's ability to maintain or improve their position in the value chain, referred to as **performance**.
3. Differences in men's and women's ability to access and control the **benefits** derived from value chain participation.

**INGIA-VC Applied to the INVC Project.** Both qualitative and quantitative methods of data collection and analysis were used to understand men's and women's current levels of participation and activities in the soybean, groundnut and dairy value chains; outline gender-based constraints that reduce women's or men's participation, performance or access to benefits in the chains; and identify appropriate action to remove those constraints.

This assessment drew on a number of sources of information. Relevant background data on gender issues in Malawi were drawn from project and mission documents and an extensive review of development literature. Existing data from project baseline surveys, monitoring and evaluation systems, and other quantitative surveys were reviewed. The quantitative data, including the Integrated Household Surveys and the FTF Zone of Influence (ZOI) Baseline Survey, particularly the Women's Empowerment in Agriculture Index (WEAI),<sup>3</sup> were used, in part, to examine the participation of men and women at different levels of the targeted value chains, and to provide a reference to assess the generalizability of the qualitative work.

A four-person team conducted qualitative research in Malawi between April 1-16, 2014 with both men and women actors at different levels of the targeted value chains (Box 2). A non-random sample of informants was selected from six out of seven of the districts in which FtF-INVC is active.<sup>4</sup> Sites were selected so that remote and more connected areas were surveyed. The team conducted over 150 interviews of farmers, association leaders, buyers/transporters, and project and implementing partner staff in six of the seven project provinces: Mchinji, Mangochi, Balaka, Machinga, Lilongwe, and Dedza districts.

*Box 2 The Team*

- **Kristy Cook**, Team Lead, Senior Technical Advisor, Cultural Practice, LLC
- **Cristina Manfre**, Gender and Value Chain Specialist, Senior Associate, Cultural Practice, LLC
- **Judith Kamoto**, Gender, Agriculture, and NRM Specialist, Consultant, Cultural Practice, LLC
- **Kenan Kalagho**, Gender and Agriculture Specialist, Consultant, Cultural Practice, LLC

All interviews were with project beneficiaries and were most likely those who had responded well to project activities. There was a bias towards interviewing lead farmers and executive committee members, in part because project beneficiary rosters revealed that in the cases of the soybean and

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<sup>1</sup> The Gender Dimensions Framework draws on the principles of the other gender analysis frameworks but has been refined specifically for use with USAID programs and projects in large part by Deborah Rubin and Deborah Caro of Cultural Practice LLC under USAID contracts (the WID IQC and the Health Policy Initiative).

<sup>2</sup> A list of terms is provided in the [Glossary](#).

<sup>3</sup> [www.feedthefuture.gov](http://www.feedthefuture.gov)

<sup>4</sup> Ntcheu district was not included in the qualitative research. It has the smallest number of beneficiaries and is partially covered by the interviews conducted in and around Balaka.

groundnut value chains, there was less concern over constraints to women's participation.<sup>5</sup> A focus on Lead Farmers and executive committee members allowed for a better appreciation of how to improve one's position in the value chain.

Interviews were conducted with men and women beneficiaries, but not men and women from the same households. Over 60 women farmers (including lead farmers) were interviewed individually or in groups and over 50 men farmers were interviewed either individually or in groups. Men and women were separated for both the group interviews and the individual interviews. An additional 13 women and 12 men executive committee members from clubs, GACs, and associations were interviewed, as well as smaller number of buyers and transporters. Key informant interviews with project staff and staff members of USAID were also conducted, as well as with staff from each of the FtF-INVC implementing partners.<sup>6</sup> A full list of respondents is included in Annex 1 and Annex 2 includes the list of attendees from farmer group interviews.

## How this report is structured

### *Gender issues in agriculture in Malawi*

The assessment begins with an overview of key gender issues in Malawi and in the agricultural sector. It describes the policy environment relevant to the rights of men and women, and the current socio-economic characteristics which condition their options and choices. In particular, the section describes three key dimensions of gender analysis that are important determinants of gender issues in value chains:

- Laws, policies, and institutions;
- Access to productive resources; and
- Practices and participation.

The section draws from a number of sources including the Demographic and Health Survey (DHS) and the Women's Empowerment in Agriculture Index (WEAI) to draw attention to the greatest constraints facing men and women who participate in the agriculture sector.

### *A gendered perspective on soybean, groundnut, and dairy value chains*

These sections describe each of the targeted value chains including key actors, and highlight the division of labor between men and women in tasks related to production, processing, and marketing. The description of men's and women's roles and responsibilities are the result of group interview discussions held with farmers about the tasks involved in each chain and who is involved in undertaking each of the activities.

### *Key findings on men's and women's participation, performance, and benefits*

The chapters on key findings on men's and women's participation, performance, and benefits contain in-depth gender analysis of each commodity. Each chapter in turn examines (1) the factors that facilitate or impede men's or women's participation in the chain, (2) the factors that facilitate or impede men's or women's opportunities to upgrade performance in the chain or move into leadership positions, and (3) how the benefits are accrued to participating (and non-participating) members of the value chain.

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<sup>5</sup> The exception here is the dairy value chain where women's participation is much lower. These constraints are examined later in the assessment.

<sup>6</sup> These include the National Smallholder Farmer Association of Malawi (NASFAM), the Farmers Union of Malawi (FUM), the Catholic Development Commission of Malawi (CADECOM), and Malawi Milk Producers' Association (MMPA).

### *Conclusion and Recommendations*

The assessment ends with overall conclusions and a set of recommendations for FtF-INVC. The recommendations identify strategies to overcome the gender-based constraints identified through the analysis as well as opportunities for where focused attention would improve outcomes for women.

## Gender issues in agriculture in Malawi

### Overview of gender issues in Malawi

With a population now close to 16 million, Malawi was one of the countries in Sub-Saharan Africa (SSA) hardest hit by the HIV/AIDS with prevalence at 10.6% of population aged 15-49 years, and still ranks only 170 out of 187 countries on the Human Development Index (UNDP 2013). Although progress has been made, with increases in life expectancy and in the mean years of schooling, relative to other countries in the region, it has been slow. Half of women ages 15 and above are illiterate, compared to 72 percent of men (World Bank n.d.). Gender-based violence still affects 28 percent of women despite efforts at the national level to reduce the incidence of violence (NSO et al. 2011). And while declining, 50 percent of the population still lives below the national poverty line. Female-headed households make up 28 percent of the population and are typically poorer than their male counterparts (NSO et al. 2011).

Malawi is a low-income country highly dependent on agriculture. The sector supports 90 percent of the population and contributes approximately 30 percent to GDP (GoM 2012b). Agriculture is the country's main foreign exchange earner, with tobacco contributing 53 percent of the export commodities, and additional contributions from sugar, tea, and cotton. Most households, including those in urban areas, are engaged in agriculture, and among households in the lowest quintile, 96 percent are engaged in the sector. A slightly higher proportion of female-headed households than male-headed households are engaged in agricultural activities: 87.6 percent versus 84.3 percent (NSO 2012).

Over half of smallholder farmers in the country have less than one hectare of land. With limited access to credit, inputs and price information, both men and women face significant constraints to improving agricultural productivity, although there still exist domains where women face greater constraints than men.

When Malawi attained independence from the British Government in 1964, she inherited most of the women programs that were implemented by the colonial government. These programs were implemented in the ministries of agriculture, education and community development. The focus was on training women through the farm home economics program in cookery, sewing and childcare. Much has changed since these early beginnings and today, the Government of Malawi (GoM) has, like many other countries, made efforts to create the institutional and legal architecture to support gender equality and women.

The principles of gender equality are enshrined in the Constitution of Malawi and the Bill of Rights. In 1979, Malawi signed onto the Convention on the Elimination of all Forms of Discrimination against Women (CEDAW) and established the National Commission for Women in Development in 1984. This has since been reorganized into the Ministry of Gender, Children, and Community Development aimed at promoting social economic empowerment and protection of women and children using community and welfare approaches. In 2000, the GoM issued the first National Gender Policy, which was followed by a program for the period 2000-2005 and one for 2004-2009. Over the years, efforts have been made to address a number of imbalances and threats to women's empowerment, for example gender-based violence (Prevention of Domestic Violence Act No. 5 of 2006 and the implementation of the National Response to Gender-based Violence) and access to land (Law Commission on Gender and the Law, 2001 and 2004). In 2013, the Gender Equality Act was passed and many are citing the "50:50" Campaigns, aimed at increasing women's participation in politics and decision-making.

### Agriculture and gender issues in Malawi

Malawi is a low income country highly dependent on agriculture. The sector supports 90 percent of the population and contributes approximately 30 percent to GDP (GoM 2012b). It is the country's main

foreign exchange earner, with tobacco contributing 53 percent of the export commodities, and additional contributions from sugar, tea, and cotton. Most households, including urban households, are engaged in agriculture, and among households in the lowest quintile, 96 percent are engaged in the sector. A slightly higher proportion of female-headed households than male-headed households are engaged in agricultural activities: 87.6 percent versus 84.3 percent (NSO 2012).

Over half of smallholder farmers in the country have less than one hectare of land. With limited access to credit, inputs and price information, both men and women face significant constraints to improving agricultural productivity.

The Women's Empowerment in Agriculture Index provides some indicators of where those constraints are the greatest (Box 3). In Malawi the percentage of agricultural women in the FtF Zone of Influence (ZOI) who are estimated by this definition to be empowered was 51.79 percent. A more disaggregated examination of empowerment across the five domains of the WEAI provides the following insights (Feed the Future FEEDBACK 2013):

*Box 3 The Women's Empowerment in Agriculture Index*

The WEAI is a tool that measures the empowerment, agency and inclusion of women in the agricultural sector. Empowerment is measured within five domains, including decision-making over production, access to resources, control over income, leadership roles, and allocation over time. Specific survey questions relating to each of the five domains are asked of the adult women in each household. The responses are scored to determine if women reach a specified level (80 percent was selected as the minimum aggregate combined level across the five domains).

- More Malawian women in the ZOI are disempowered in terms of having ever accessed credit than in any other component of the five domains.
- A greater proportion of women are disempowered in the area of leadership than other areas, particularly in confidence in speaking in public, but also in representation in groups.
- A high percentage (17%) of disempowered women also indicate that they do not have input on purchasing, selling, or transferring household assets.

Few of the Malawi WEAI results are unexpected, and they are consistent, as the remaining discussion in this section will reveal, with other analyses of gender issues in the country.

Gender features prominently within sector and sub-sector policies, and growth strategies, indicating the country has the institutional framework in place to support and implement programs to address inequalities. The Malawi Growth and Development Strategy II (2011-2016) promotes gender mainstreaming and women's empowerment as does the Agriculture Sector Wide Approach (ASWAp) a harmonized framework for agricultural development in Malawi. Gender equity and empowerment are key support services that cut across both strategies.

As an indication of the importance of these issues, for the period 2012-2017 the MoAFS also developed the Agricultural Sector Gender, HIV and AIDS strategy. The ultimate objective of the strategy is to ensure that as stakeholders implement the ASWAp, gender, HIV, and AIDS issues in the agriculture sector are placed at the center of planning, implementation, monitoring, and evaluation. The goal is, "to contribute to sustainable and equitable food, nutrition and income security at national, community and household level through the empowerment of women and other vulnerable gender categories. The purpose of the strategy is to promote gender equality, prevent the spread of HIV and mitigate the impacts of AIDS in order to increase agricultural productivity in line with ASWAp priorities" (GoM, 2012a: 13).

## Land and Inheritance Policies

Land in Malawi is classified by the Malawi National Land Policy into three categories: government land, public land, and customary land. Government land comprises land that is acquired and owned privately by the government for specified national use, i.e. government buildings, schools, hospitals. It also involves land that the government has leased to individuals, companies or institutions, for which ground rent is paid. Public land comprises land that Village headpersons, Chiefs and public officials hold on behalf of the people of Malawi. They in turn grant leaseholds and permission to use this land to the people. Private land comprises all land exclusively held, occupied, or owned under freehold tenure (possession). Freehold land can be bought and sold by all individuals, regardless of nationality, marital status or gender.

Private land also includes customary land which is managed by a recognized Traditional Authority. It can be allocated exclusively to a particular community, corporation, institution, family, clan, or individual. In Malawi, 69 percent of land is held under the customary law of each ethnic group (GoM 2001) and therefore falls under a different set of ownership, inheritance, and property rights. Strictly speaking, rights to customary land are regarded as held by communities as a whole. Local chiefs exercise trusteeship over land on behalf of the people in the area. Village heads are entrusted with the management of the land within their territory and make decisions regarding land allocation to community members. Every indigenous inhabitant, by virtue of membership in a community, is entitled to access to a piece of land (Takane 2007).

In 2002, the National Land Policy recognized the failure to protect and uphold the rights of women to land, citing customary practices, prejudice, and lack of effective representation as the reasons for discrimination against women (FAO n.d.). Yet, there have been few attempts to successfully alter the policy in ways that could enhance women's access to land. Access to land remains guided by customary rules and practices emanating from matrilineality and patrilineality norms (Box 4).

### Box 4 A note on matrilineal and patrilineal societies

Under patrilineality, an individual is considered to belong to the same descent group as his or her father, and residence is patrilocal (or virilocal): upon marriage, a woman would leave her village and reside in her husband's village. In patrilineal societies, a married woman is regarded as a member of the husband's family. She is expected to leave her house, land, any matrimonial property and her children and return to her family in the case of a divorce.

Under matrilineality, an individual is considered to belong to the same descent group as her or his mother and marriages are matrilineal (or uxorilocal). In matrilineal societies, the *mwini mbumba* is the maternal uncle, the legal guardian of the children and the custodian of land owned by his clan. When women marry, their husbands control their land and assets. Upon divorce, husbands take the assets, which they brought into the marriage and leave the land, but take the harvest.

Under both the patrilineal and matrilineal systems in Malawi, men primarily make decisions pertaining to customary land and property rights are vested in men. Despite perceptions that women are better off in matrilineal communities, research confirms that women in both matrilineal and patrilineal systems have few or no independent rights to land or property due to the mixture of traditional customs and market economics (Takane 2007; Ngwira et al. 2002). Moreover, increased sales of customary land are further alienating the rights of women to land (Takane 2007).

### Participation and practices

Agriculture remains the most important activity for men and women across Malawi, and especially in rural areas. Over 85 percent of the population lives in rural areas (FAO 2011). Women are estimated to provide 80 percent of the labor for household food production, compared to 20 percent of men. Additionally they provide 71 percent of the casual labor on tobacco and tea

estates (FAO n.d.). The sector is slightly more important for women than for men, because men have more off-farm employment opportunities (Mathiassen et al. 2007).

## Crop and livestock production

For the most part, men and women grow similar crops on their plots although differences exist in the varieties they may grow, the amount of land they dedicate to certain crops, and the destination of those crops. Differences exist in who grows tobacco, Malawi's main commodity and an important cash crop, which men are far more likely to grow than women (NSO 2012). Women are more likely to intercrop and more likely to grow more than one crop than men (NSO 2012). Women are more likely to grow crops that will be consumed in the household, such as local varieties of maize and sorghum. Both men and women grow soybeans and groundnuts, crops that can either be sold or consumed. The difference in the type of crops grown by men and women is influenced both by how the products will be used (sold to the market or consumed in the home) and whether or not they have access to the necessary inputs, including labor, to undertake the activities. Crops that require the purchase of seed, fertilizer, or other inputs will be more difficult for women plot managers who have less access to cash. For example, men are more likely to grow hybrid varieties of maize than women because of the additional fertilizer requirements.

In terms of livestock production, 61 percent of male-headed households in Malawi, compared to 48 percent of female-headed households, own or keep livestock or poultry (NSO 2010). Men's ownership and control of customary land affects women's participation in livestock production. Access to land for fodder production in zero-grazing systems is a significant constraint for women farmers, particularly the poor.

## Processing and marketing

Beyond production, women are less able to reach agricultural markets due to lack of transport, technology and price negotiation skills. Transport is a binding constraint for women and difficult to overcome. Women ride bicycles, but cultural and practical constraints inhibit this transport means to facilitate significant agricultural product marketing. Public transport is limited and expensive. With almost no electricity in rural areas, and limited resources such as water, the use of improved processing technologies is also constrained.

## Time use and mobility

While both men and women dedicate a significant amount of time to agricultural activities, women spread their time across a wider range of activities, including both productive and domestic activities. Domestic activities refer to tasks such as collecting water and firewood, cooking and cleaning. It also refers to activities related to caring for children and other family members, although the data that follows, taken from the Integrated Household Survey does not include these activities in their definition of domestic activities. The estimates of time use in non-productive activities therefore are likely lower than in reality. According to the IHS3, 30 percent of women spent more than 30 hours per week to productive work whereas 52 percent of men do the same. The higher percentage of men dedicating significant time to productive activities is the result of the division of labor in domestic activities. The majority of men (88 percent) do not dedicate any time to domestic activities, whereas more than half of women spend between 11 and 40 hours per week. Because men spend little time on domestic activities, they have more time to spend on productive activities, whereas women must split their time between productive and domestic activities. In addition to women, young women and girls are disproportionately responsible for domestic activities. While 42 percent of girls between 12 and 14 spend between one and 13 hours on domestic activities, 59 percent of boys spend no time on domestic activities.

## Access to productive resources

### Land

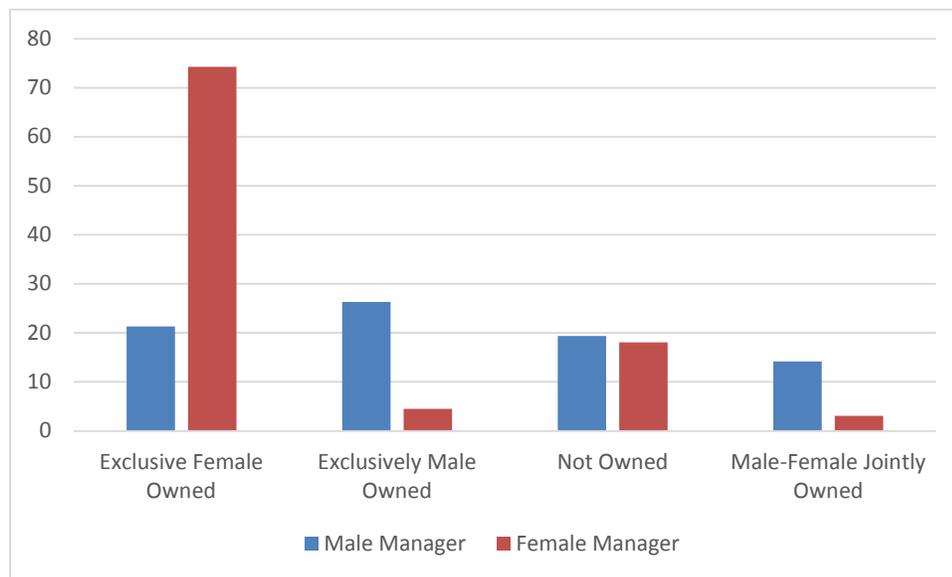
Smallholder farmers cultivate 90 percent of Malawi's arable land. An average landholding is 1.2 hectares per household, but over a third of households have plots of less than 0.7 hectares. Women are

disadvantaged compared to men both in access to and control over land, as well as in land size. In Malawi, the FAO Gender and Land Rights database reports that women make up 32 percent of individual land holders (FAO 2011). According to the most recent Integrated Household Survey (2010/2011), plots managed by women are smaller than those managed by men: 1.2 acres compared to 2.2 acres for men. Female-headed households' landholdings average only 0.80 hectares. (USAID/Malawi 2013).

For both men and women, land is acquired most often through inheritance or bride price, a result of the customary practices around inheritance and marriage described earlier. However more men than women have the ability to rent land and women are more likely to be granted access to land by local leaders than men.

While many smallholder farmers own and manage the plots they have acquired, this is not always the case. Women and men will manage plots that are owned by other people. Using data from the Third Integrated Household Survey, the World Bank estimates that of 16,372 plots, women manage 26 percent (O'Sullivan et al. 2014).<sup>7</sup> Figure 1 shows the ownership of plots disaggregated by the sex of the plot manager. Women manage plots that are almost exclusively owned by women (74 percent) and otherwise manage plots that are not owned. Men manage plots that are owned exclusively by men, not owned, jointly owned, and also plots that are exclusively owned by women. The implication here is that men have control over more land than women, irrespective of ownership.

Figure 1 Plot Ownership by Sex of Plot Manager



Source: NSO 2012

### Credit

According to the Third Integrated Household Survey (2010/2011), only about 14 percent of households attempted to get a loan and interact with the credit market (NSO 2012). With so few households active in the credit market, there are likely constraints that both men and women face in using credit to invest or expand agricultural enterprises. Few sex-disaggregated statistics exist to quantify the gap between men and women farmers' access to credit. Data from the Malawi Gender and Development Index

<sup>7</sup> The Third Integrated Household Survey covers 12,271 households.

(2008) indicates that more men than women farmers got credit, but the percentage of men who got credit was only 4 percent (Ngwira 2010). Rural Malawian women are more likely to be credit constrained than men due to their poor access to information and marketing structures and lack of viable collateral (Fleetschner and Kenney 2011). Women’s relative lack of access to credit compared to men reduces opportunities for improving household-level outcomes, especially those associated with the nutrition: studies from Malawi and elsewhere demonstrate that women’s access to credit, more so than men’s, improves girls’ nutrition (Fleetschner and Kenney 2011).

### Labor

With little or no mechanization, access to and efficient use of labor is critical to improving agricultural productivity. Households are the main supplier of this labor, although both men and women plot managers use hired labor. For women, access to household labor is more of a constraint than it is for men. In maize, Takane (2008) estimates that women use 10 percent less labor than men with the majority of that labor coming from children. Figure 2 shows that both men and women plot managers use hired labor in roughly the same proportions. Moreover, they both draw significantly on women’s labor. Most significant however is that Figure 2 indicates that women plot managers do not use as much of men’s labor as men plot managers, suggesting that either there are no adult men in the household or that women have less command over men’s labor.

Figure 2 Type of Labor Input Used by Sex of Plot Manager



Source: NSO 2012

### Inputs and technology

Given the small plots on which smallholder farmers in Malawi grow their crops, access to productivity-enhancing technologies, including improved seed and fertilizer, is a critical component to overall growth in the sector. For women in particular, whose ability to expand land size is more constrained than men’s, access to inputs is potentially the only way for them to achieve gains in productivity.

Neither men nor women have easy access to inputs and agricultural implements. In the 2006/2007 agricultural season, 4 percent of male-headed households received inputs on credit, compared to 2 percent of their female counterparts (NSO 2010). Some 56 percent of women farmers and 45 percent of men farmers applied inorganic fertilizer; and 11 percent of men compared to 5 percent of women

bought pesticides (NSO 2010). More women than men lack appropriate skills and technology for value addition that would facilitate better commodity prices.

While the differences in access are not very large, according to a recent World Bank report (O'Sullivan et al. 2014) they lead to a 25 percent gap in the gross value of output between plots managed by women and those managed by men, with women producing less. The majority of this gap is estimated to come from differences in use of agricultural inputs (e.g., seeds, fertilizer, and extension), suggesting that improving women's access to inputs would significantly increase the value of overall output.

### Extension and Advisory Services

Extension plays an important role in dissemination of information and technologies to farmers. Since 2000 the MoAFS has been promoting pluralistic demand driven agricultural services to increase the number of services providers and allow farmers to demand services from those that they prefer. Despite adopting this pluralistic stance, the Department of Agricultural Extension (DAES) remains the largest provider of extension in the country, and the only provider that has nationwide coverage (Simpson et al. 2012). With 90 percent of the population engaged in agriculture however the coverage DAES can provide remains low, with only 2,000 field staff, of which 21 percent are women, to deliver services and a staff to farmer ratio of 1:2500 (AEAS n.d.; personal communication with researcher at DAES).

Both men and women have difficulty accessing extension and advisory services. It is estimated that 14 percent of women, and 18 percent of men access extension services (GoM 2012a). During the 2006/07 season 86 percent of female-headed households and 80 percent of male-headed households did not take part in any agricultural extension activities. In the majority of cases (48 percent of FHH), it was indicated that the extension worker was available but did not visit the farmers; 37 percent reported that the extension worker was not available; and 15 percent reported that the extension worker was available, but the farmers were busy with other things (NSO 2010).

### Agriculture, gender and nutrition

Poor nutrition especially of children is a serious problem in Malawi, although there has been some progress over the past decade in addressing child health. For example under-five mortality has declined from 180 deaths per 1,000 live births during the late 1900s to 112 deaths in the period 2005-2010. There has also been an improvement in child nutrition status since 2004. According to the 2010 Demographic and Health Survey, 13 percent of children under age 5 were underweight and 47 percent were stunted, reduced from 15 percent underweight and 53 percent stunting in 2004 (NSO et al. 2011). In the FtF ZOI the prevalence of stunting (below -2SD) among children under 5 is 47.5 percent and the prevalence of severe stunting (below -3SD) is 20.5 percent. The overall prevalence of anemia in children under 5 in the ZOI is 64.3 percent. These levels of undernutrition, particularly stunting, remain unacceptably high with long-term consequences for the country.

The Feed the Future Strategy (Feed the Future 2011) highlighted several factors as driving these still high rates of malnutrition:

- Poor nutritional behaviors (e.g., sub-optimal child feeding practices, inadequate knowledge of appropriate food choices),
- Low diversity of nutritious foods in the available food supply and the
- Impacts of a high disease burden (e.g., HIV infection rates of 12 percent nationally, high prevalence of malaria).

### The pathway from agriculture to nutrition

There is a very low correlation between wealth and nutritional status (except in the highest income quintiles) in Malawi which highlights the need for a comprehensive approach with an emphasis on social and behavioral change and systems-wide interventions, including changing knowledge, attitudes, and practices surrounding food production, preparation and consumption, feeding behavior (e.g., frequency of feeding and active feeding), and disease prevention and treatment (Feed the Future 2011).

A recent focus on the potential and need for agricultural programs to more directly contribute to nutrition outcomes has produced a consensus on key pathways for this to take place. Agriculture contributes to nutrition through multiple pathways: As a source of food; a source of income; through food prices; women's social status and empowerment; women's time; and, women's own health and nutritional status (Meeker and Haddad 2013). The role of women is critical in the transmission of agriculture investments into nutrition outcomes. They make daily food production and consumption decisions for their families and are much more likely than men to spend additional income on food and healthcare. Increasing women's income, particularly where men and women in households do not jointly prioritize child's health, is likely to have a proportionally greater impact on children's health and nutrition than comparable increases in men's income.

Women's health is critical for herself and her children. A woman who has poor nutritional status has a greater risk of adverse pregnancy outcomes as well as giving birth to a baby who is underweight. The prevalence of underweight women in the FtF ZOI is 9.6 percent.<sup>8</sup> Alarming, obesity is becoming a greater problem than underweight for adult women in Malawi. In the Malawi ZOI, the combined prevalence of overweight and obese (BMI > 25) women in households is 16.9 percent. Anemia levels are high varying from 35-40 percent with higher rates among younger women (MDHS 2010).

Agricultural programs that aim to have direct impacts on nutrition must be designed incorporating a clear impact pathway incorporating gender dimensions of agriculture production, marketing, and processing, as well as intra-household consumption and child care-giving. Agricultural projects are increasingly adding components that directly address these important components of nutrition.

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<sup>8</sup> Statistics relating the FTF ZOI come from Mabiso et al. 2014.

## A gendered perspective on soybean, groundnut, and dairy value chains

The FtF-INVC project works with three value chains: soybeans, groundnuts and dairy. Soybeans and groundnuts are both leguminous plants requiring similar production methods, and bearing similar, though not identical, characteristics for smallholder households. The two crops, grown for home consumption or for sale, are consumed as “relish” alongside the primary staple, *nsima*, a thick maize porridge. Both legumes are known in Malawi for their nutritional value for children. Dairy is a small industry in Malawi and the number of stakeholders in the value chain is less than in the other value chains. Dairy is a challenging value chain for smallholders as the requirements for participation and performance are more difficult to meet.

The FtF-INVC project works with four smallholder farmers associations in Malawi, each of which focuses on one or more of the three value chains. The four associations working with men and women farmers are:

- National Association of Smallholder Farmers of Malawi (NASFAM), for both groundnut and soybean
- Farmers Union of Malawi (FUM), for both groundnut and soybean
- Catholic Development Commission (CADECOM), for groundnut
- Malawi Milk Producers Association (MMPA), for dairy.

The following sections describe the three value chains and the key stakeholders. All three value chains have been studied and mapped in other sources, so following a brief summary, the focus is primarily on the roles and responsibilities of men and women smallholder farmers and the related gender issues of other stakeholders.

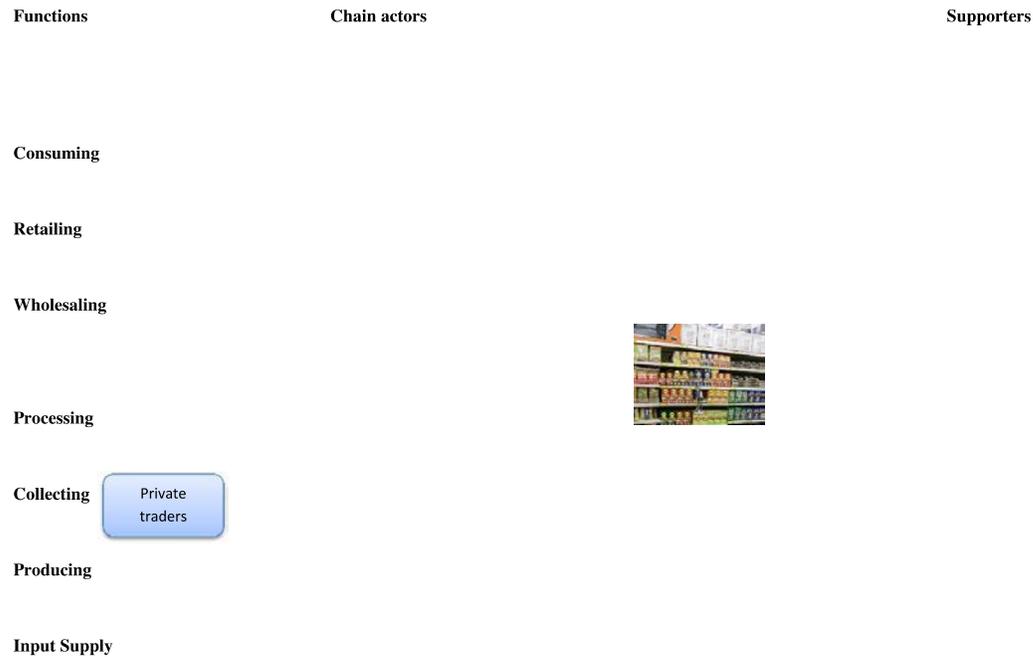
### Soybean Value Chain

There are several analyses of the soybean value chain in Malawi (USAID 2009; Kalagho n.d.; Technoserve 2011). This section gives an overview of the soybean value chain in Malawi drawing from these sources and others, in the districts where the FtF-INVC project implements its activities. It also provides a gender analysis of the value chain within the context of the project, including soybean production, processing, and marketing. Although no statistics on the numbers or percentage of Malawian farmers growing soybeans could be confirmed, the total volume traded and other sources indicate that soybeans are widely produced. Malawi produces 8 percent of the Southern Africa region’s soybeans (73,000 MT) and is the fourth largest producer increasing by 55 percent from 2000 to 2010. This increase is ascribed to the government input subsidy program, Farm Input Supply Program (FISP) (Technoserve 2011). The same source estimated that 75,000 hectares were under soybeans in 2010, and that 95 percent of production was by smallholder farmers with only 5 percent by commercial producers. Soybean yields are estimated to be quite low at 1.2 MT/Ha compared to other countries in the region and globally (Zambia 2.6 MT/Ha, Zimbabwe 1.8 MT/Ha, Argentina 3.4 MT/Ha).

Market demand has led to an increase in production for soybean and soybean by-products such as soybean, soy pieces, edible oils, feed for livestock and others. The demand to make all these products has raised market prices, making it more attractive to farmers. Most soybean is processed into confined animal feed, poultry feed, and some is processed into commercial infant and baby formula (e.g. by RAB Processors). The World Food Program and NGOs use soy in supplemental feeding programs such as school lunch programs, hospitals, orphanages and refugee relief programs (Tinsley 2009).

The soybean consists of more than 40 percent protein, 30 percent carbohydrates and excellent amounts of dietary fiber, vitamins and minerals but also contains 20 percent oil, which makes soybean the most important crop for producing edible oils.

Figure 3: Soybean Value Chain



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Source: Kalagho n.d.

### Value Chain Actors

The primary soybean value chain actors are men and women smallholder producers, seed and input suppliers, local and export traders, and processors. As described above, 95 percent of soybean production comes from **small-scale farmers**. The FtF-INVC project aims to increase the competitiveness of the soybean value chain and increase productivity working primarily through **farmer associations**. Men and women are organized into groups for training and service delivery. Groups range from 10 to 30 members depending on the organization. These farmer groups, usually known as clubs, are then grouped into a secondary level (e.g., Group Action Committees) from which an Executive Committee is elected. And most organizations also have a tertiary level of organization (usually termed associations) represented by another Executive Committee, drawn from the members of the executive committees at the secondary level. Men and women are involved in different proportions in various activities and at different levels.

NASFAM is the main FtF-INVC partner interfacing with soybean producers in Mangochi, Machinga, Ntcheu and Balaka, and divides EPAs in Mchinji and Lilongwe with FUM who is also working in Dedza. The primary soybean interventions by the project are:

- Provision of quality certified seed and inoculant (NASFAM)

- Extension advice on improved management of soybean production through Farmer-to-Farmer or Lead Farmer extension models (NASFAM and FUM)
- Training on cooperative marketing (aggregation) and the functioning of warehouse receipts services and the use of commodity exchanges (by and through ACE; NASFAM and FUM)
- Price information and buying options

Other than NASFAM (through INVC project support) the Ministry of Agriculture also has **extension** agents who advise on soybean. The FtF-INVC project incorporates government extension staff into trainings to ensure consistency in messaging and sustainability of extension knowledge. However, the ratio of government extension workers to farmers is extremely low.

Soybean seed and inoculant are both imported by **agricultural input dealers**, such as SeedCo. Local varieties are also available. The International Institute for Tropical Agriculture (IITA), with FtF funding, has developed a new and higher-performing soybean variety called “Tikolore.” Soybean grown from Tikolore seeds mature more quickly, yield more beans, are resistant to “soybean rust” and can be stored for longer periods of time compared to other soybean varieties. Furthermore, given the small size of the bean, it requires less cooking time. Tikolore was officially released in Malawi in 2011. FtF-INVC has supported the bulking of breeder and foundation seed of Tikolore. Unfortunately IITA relied on one multiplier for the 2013/14 season and disappointing multiplication of the breeder seed resulted in much lower production of foundation seed than planned. The deficit derailed plans for winter multiplication that would have turned the foundation seed into substantial quantities of certified seed for sale and distribution in the 2013/2014 production year (FtF-INVC 2013).

NASFAM supplied seed for the 2013/14 season on a payback system of 2:1, and is supposed to become the seed supplier for its farmer members through the establishment of a revolving seed fund. There are considerable challenges with the establishment of the revolving fund, ranging from default by farmers to quality of seed, storage costs and locations. The project is working with the organization to resolve these issues. If Tikolore is not used, then inoculant must be applied by farmers starting with the new seed. NASFAM is also a source of inoculants, purchasing soy rhizobium inoculants from U.S. and E.U.

Procurement of soybeans can be from **smallscale traders** or from **large processors**. Most large processors such as RAB, Global Trading, Farmers’ World, Export Trading Group and Export Marketing, operate either through permanently established outlet stores scattered through the country, such as RAB’s Kulima Gold Depots that sell various commodities to the community and then purchase goods from the farmers, or via temporary buying centers established by renting facilities during the buying season and then disappearing between buying seasons (Agar and Chalmers forthcoming).

Oil processing can utilize different legumes, most commonly soybean, cotton seed and sunflower in Malawi. Soybean is relatively more difficult to process than cotton and especially sunflower, so it tends to require more specialized equipment, such as exists at Sunseed and BERL in Lilongwe. As a result, most processing takes place in Blantyre/Limbe and Lilongwe. One oil processing plant was identified in Mangochi, but this plant mainly buys sunflower, and not soybean or groundnut even when it runs out of sunflower (Agar and Chalmers forthcoming). Soybean processing plants in Malawi, and within the region, are estimated to be operating far below capacity (Malawi at 65 percent and as low as 20 percent in Zimbabwe), suggesting that there is considerable room for growth in production (Technoserve 2011).

### Women’s and Men’s Roles and Responsibilities

Men and women both participate in the production of the soybean crop, but play different roles. In households with both adult men and women, women are more involved in production of soybean for home consumption, but as production increases and more is sold, men become more involved (Table 1).

### *Production*

In the FtF-INVC project sites, both men and women are targeted as beneficiaries and organized into clubs. Clubs range from 10 to 30 members across FUM, NASFAM and CADECOM. Both men and women belong to these clubs. Interviews were conducted with 14 men and 25 women soybean producers from NASFAM production groups in Mangochi, Machinga and Balaka Districts (See Annexes 1 and 2). No FUM soybean producers were interviewed.

The basic services provided by NASFAM to its members through FtF-INVC funding were certified seed, extension advice and a market for the product. Farmers reported receiving between 10-15 Kgs of soybean seed, usually with inoculant. If an individual had less land, they received less seed, and amongst the women interviewed there were individuals who received only 10 Kgs. The extension advice reported by men and women association members was consistent. NASFAM reporting data indicates that more women than men were trained.

For married couples who grow soybean, most men indicated that they were the primary decision makers and decided what to grow on family land.

Both men and women indicated that soybean production has lower labor demands than other crops, primarily because it does not require fertilizers, and the double row planting technique (promoted by INVC project) reduces the need for intensive weeding. Most respondents said that the most onerous task for soybeans was planting due to the precision required for seed spacing.

Men and women identified many of the same but some different tasks for soybean production and marketing (Table 1). And the identification of whether men or women were primarily involved in an activity also differed. Generally men indicated that they were involved to some degree in most activities with only one exception, winnowing. In contrast, women said that they performed most tasks by themselves except for sourcing seed, preparing land, and transporting and marketing the soybeans. The difference in perception of the gender division of labor for soybeans is striking. Although husbands and wives from the same households were not interviewed, the men and women interviewed were usually from the same or nearby villages. It is possible that the men selected were primarily responsible for soybeans in their respective households, and likewise the women were primarily responsible for soybeans in their respective households, but in this case, women assist considerably on men's soybean plots, whereas women get little help from their husbands on their plots. Either interpretation of the interviews indicates that men and women frequently have very different labor division in soybean production.

### *Processing*

Men and women both describe processing of soybean to include threshing, winnowing and grading. Winnowing was clearly defined as a woman's task and most men indicated that they were not able to perform the task, mostly because it was just not something men would do. One male respondent said that men *could* do it, but would have to do it behind a wall or somewhere else they would not be seen. Some women stated that men would not harvest the soybeans because it was itchy and irritated their skin. In individual interviews, most men and women indicated that grading was a difficult task that was usually performed by women.

### *Marketing*

Both men and women indicated limited access to market information and a lack of marketing opportunities. Some listen to radios or hear about prices through the farmer associations, but many cited neighbors, vendors or NASFAM as their only sources of soybean prices. . While both men and women expressed difficulty with marketing, they both indicated that men are much more responsible for soybean marketing than women. Men have greater mobility and access to means of transportation, i.e., bicycles. Markets can be as much as 35 kilometers from the village, as in Ulongwe (Balaka District)

and Chafumbwa (Dedza District), making it difficult for women to find the time because of household chores or the means of transportation to reach the markets. Women who marketed the produce themselves, for example, women who head their own households, explained that they had to hire transporters to take the produce to the market and that they would follow behind on a different bicycle.

The difficulties in transporting produce to the market is one of the reasons both men and women sell to vendors. The local buyers buy soybean from the farm gate or from the village, absorbing transportation costs. Despite dissatisfaction with the prices offered by the vendors and complaints that they cheat farmers, they remain one of the only options for both men and women farmers. And for women in particular, vendors provide a convenient market outlet that accommodates mobility and time constraints. Although women, like men, complain of prices, women's greater reliance on the accessibility of vendors is perceived by men as women's inability to negotiate well for market prices. This perception exists, despite the fact that few men or women farmers are negotiating prices.

The advent of collective marketing options via the farmer associations may provide additional market options for both men and women farmers.

Table 1 Men and Women Soybean Activities, Ulongwe EPA, Balaka District

| Soybean Farming Activity   | Men's Responses |       | Women's Responses |       |
|--|-----------------|-------|-------------------|-------|
|  | Men             | Women | Men               | Women |
| Seed sourcing from NASFAM  | --              | --    | XXX*              |       |
| Land clearing  | XX              | XX    | XX                |       |
| Land preparation   | XX*             | XX    | *                 | XXX   |
| Planting   | XX*             | XX*   |                   | XXX   |
| Weeding  | XX*             | XX*   | --                | --    |
| Banking  | XX*             | XX*   |                   | XXX   |
| Constructing a raised platform for temporarily keeping soy           | XXX*            |       | --                | --    |
| Weeding  | --              | --    |                   | XXX   |
| Harvesting   | XX*             | XX    |                   | XXX   |
| Harvesting and carrying the soybeans home                            | XX*             | XX*   | --                | --    |
| Carrying the soybeans from a raised platform to a drying area        | XX              | X     | --                | --    |
| Drying   |                 |       |                   | XXX   |
| Threshing  | XXX             |       |                   | XXX   |
| Winnowing  |                 | XXX   |                   | XXX   |
| Packing soybean in bags  | XX              | XX    | --                | --    |
| Grading  | XX*             | XX*   |                   | XXX   |
| Making decision on what to keep or what to sell                      | XXX             |       | --                | --    |
| Transport  | XX*             | XX*   | XX                | XX    |
| Marketing (vendors for women's responses)                            | XX              | XX    | XX                | XX    |
| Negotiating prices   |                 |       | X                 | XX    |
| Who receives the money (budget)                                      | XXX             |       | X                 | XX    |
| Discussing/making decision on the use of money realized from soybean | XX              | XX    | --                | --    |

1/ \* hired labor

2/ "X" – some labor; "XX" – most labor; "XXX" – all labor

3/ " – " activity was not identified by respondent

Source: Group interviews with NASFAM men and women farmers and members of Ulongwe EPA

## Groundnut Value Chain

Groundnuts have been grown in Malawi for at least a century. The main growing areas are the plains areas of Lilongwe, Kasungu, Mchinji, and Mzimba, and some parts of Salima, Balaka, Ntchisis, Dowa, and Thyolo. For the FtF-INVC project, Lilongwe, Mchinji, parts of Balaka, Ntcheu and Dedza are relevant for groundnuts. Groundnut was the third most common crop grown on household plots (15.6 percent) according to the Integrated Household Survey, 2010-11, following maize (66.9 percent) and closely ranked with pigeon peas (16.4 percent).

Until the mid-1980s groundnuts were a major export crop for the country. Food safety restrictions in Europe led to a decline in demand for Malawian nuts, which did not meet maximum aflatoxin standards (4 parts per billion). Exports continue to some markets without such stringent requirements, especially regionally. And a partnership between NAFSAM and a FairTrade organization, Twin Trading Ltd., has resurrected the European export market through concerted work on aflatoxin-reducing measures by smallholders. A small group of farmers (4,000), many of which are women, have been able to better manage production and post-harvest handling to reduce aflatoxin to acceptable export levels, but premiums are small and producers are somewhat discouraged at not seeing them grow as expected (Reference). Reducing aflatoxin levels in smallscale groundnut production in Malawi is a long-term endeavor. Local and regional export markets hold greater potential for smallholders. FtF-INVC is continuing “to support training and extension on aflatoxin risk mitigation by smallholders and throughout the value chain as the current best ethical option in the outreach activities of FtF and its partners” (FtF-INVC 2013).

## Value Chain Actors

The groundnut value chain in Malawi has been analyzed and mapped in detail (Derlagen 2012; Sangole 2010). **Small scale farm households** dominate production of groundnuts. The largest proportion of production (up to 60 percent) remains on the local market. Groundnut seed breeders, producers and certifiers, as well as organizations supplying other inputs including fertilizer, pesticides, and herbicides are upstream in the value chain. Downstream stakeholders include traders, and organizations and companies, such as NASFAM, Rab Processors, and Mulli Brothers, that play multiple roles such as aggregating, processing, wholesaling, retailing and exporting. Several potential stakeholders appear to be absent from the groundnut value chain in Malawi: warehouse providers, service providers and oil processors (Agar and Chalmers forthcoming). The groundnut value chain is depicted in Figure 3.

**Agricultural research centers** remain active in the groundnut chain. The International Center for Research in Arid and Semi-Arid Tropics (ICRISAT) has supported the national agricultural system in groundnut seed breeding. The most popular varieties are CG7 (red in color) and Chalimbana (tan in color). Other varieties promoted by the Ministry of Agriculture include Nsinjiro, Baka, Kakoma (also called JL24), and Chalimbana 2005.

Access to improved groundnut seed is a constraint for small-scale farmers and distribution is conducted at the moment via **input supply dealers and farmer associations**. Easy access to improved seed appears to be a strong factor in the growth of NASFAM farmer clubs, along with the expectations of improved marketing prospects. The FtF-INVC seed distribution model with repayment of double the quantity at harvest time effectively subsidizes the seed. Another subsidy arises because the farmer associations transport the seed to the producer. Both men and women are constrained from sourcing quality groundnut seed, though women are more likely to face the constraint given the challenges they face with transport and generally less cash than men.

The project's implementing partners have faced considerable challenges in accessing quality groundnut seed. The passback system of repaying seed at a rate of 2:1 has been challenged by poor quality seed repayment leading to a potential shortfall in the next season

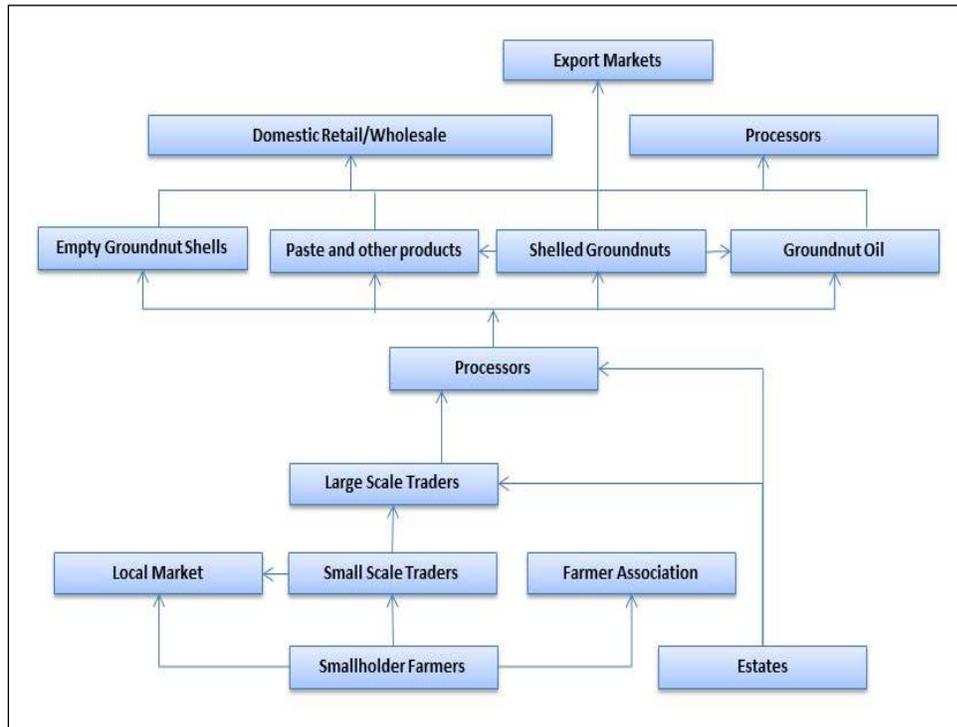
The two most common seed varieties in Malawi are Chlimbana and CG7. Most CG7 (a high oil variety) is grown as a cash crop because of its good yield characteristics and consistent processor market demand. Smallholder farmers tend to retain the larger-seed Chalimbana variety for home storage, use, and local sale because of household and local market preference. It has lower oil content so groundnut flour can be stored longer without going rancid and many farmers are more familiar with it because they have experience growing it. The FtF-INVC groundnut farmers who are being reached by NASFAM and FUM are using minimal inputs on groundnuts. Some male farmers in Mchinji indicated that they purchased herbicides, but these were being used on larger plots where a greater proportion was meant for sale.

**Traders** (called vendors by farmers) buy groundnut, as well as other highly traded crops in their locality, depending on whether the trader has a market for the produce. The traders will then either sell to larger traders in the same area, or will sell to a processor, national trader or exporter in Lilongwe or Blantyre/Limbe. Traders do not specialize in groundnuts with the exception of some in Mchinji where the crop is grown more extensively for sale. All traders operate similarly, building stock to an economic amount to transport (20-30 mt) and then selling as quickly as possible, using the margin to build stock back up. Farmers feel vendors cheat them, citing tampering with the scales as the most common strategy used by vendors, although there are considerable "games" played by both sides (Agar and Chalmers forthcoming).

To turn the capital over as many times in the season as possible, some traders establish buying points in high potential rural areas to attract farmers. Agar and Chalmers (forthcoming) report on a trader with two outlets in the same location, who explained that he had one in the market place but added a second so that he caught farmers as they come into town tired with a heavy load ready to sell at the first place. Some traders claim they build trust by being fairer with the scales. Cheating on scales by traders is common, as is farmers wetting produce, hiding poor quality and adding other matter to make up the weight (Agar and Chalmers forthcoming). In some cases, traders suggested that electronic scales gave them an advantage, as they were tamper proof. The FtF-INVC project's efforts to aggregate produce into commercial volumes will facilitate greater use of the WRS and ACE trading capacity. Given challenges with aflatoxin, shelled groundnuts are unlikely to become a significant product for the commodity exchange in the short or medium term.

There are large-scale **oil processing companies** in the urban areas, but no SME processors of groundnut were identified by Agar and Chalmers (forthcoming), although the authors note that groundnut is however processed into flour and cooked for retail sale at a micro-enterprise scale. None of these micro-processors were encountered during this assessment. Groundnut can be pressed for oil, but due to strong demand for whole groundnut and relative high costs of processing, groundnut oil is not competitive relative to other oils. Oil processing using a proper filtration method is one means to reduce aflatoxin in groundnut products.

Figure 4 Groundnut Value Chain



Source: Agar and Chalmers Forthcoming.

### Women’s and Men’s Roles and Responsibilities

Groundnut is a labor-intensive crop entailing numerous production, harvesting, and post-harvesting tasks. Even though women are involved in many of the production activities, the crop is grown, processed and marketed by men as well. Interviews in Mchinji District indicated that men are managing groundnut plots for cash sale and were willing to move out of tobacco if groundnuts offered better returns. Both men and women clearly stated that women used to manage groundnuts, but now that they grow for sale, men are more responsible.

Men and women perceive their participation and performance in the groundnut value chain quite differently (Table 2). Men and women were consistent in their assessments of gendered time allocation across transportation, marketing and decision-making: These are largely tasks that men perform. But there were differences in perceptions of other activities such as on the negotiation of what to sell and what to keep. Men indicated that negotiation took place earlier and both took part, whereas women indicated that men were the ones who made the decisions.

Men indicated that they participated equally with women in most tasks related to groundnut production. When men listed tasks related to groundnut production, they added “supervision” activities such as checking for diseases or weeds. Women, on the other hand, expressed the opinion that they were responsible for providing most if not all labor for many production activities.

Men indicated that they hired labor for more tasks than women, which is also consistent with information from the group interviews suggesting men manage larger groundnut plots than women. Both men and women agreed that women perform most of the harvesting and post-harvesting tasks such as digging out plants, removing pods from the plants, and the onerous work of shelling. Both men and women agreed that men had full responsibility for transporting and marketing groundnuts. In the area

where these interviews took place, Mchinji, groundnuts has been transformed into the equivalent of a cash crop, and men have more responsibility for the sales and control over income. Likewise, men and women agreed that men made the decisions on spending money earned from groundnuts.

Table 2 Men and Women Groundnut Activities, Mkanda EPA, Mchinji District

| Task  | Men's Responses |                 | Women's Responses |                  |
|---|-----------------|-----------------|-------------------|------------------|
|   | Men             | Women           | Men               | Women            |
| <b>Groundnut Farming Activity</b>             |                 |                 |                   |                  |
| Land clearing                                 | X*              | X*              | X*                | XX*              |
| Ridging                                       | X*              | X*              | X                 | XX               |
| Seed sourcing                                 | XXX             | (widows)        |                   | XXX              |
| Planting                                      | X*              | X*              |                   | XXX              |
| herbicide                                     | X (sprays)      | X (draws water) | --                | --               |
| Weeding                                       | X               | X               | X                 | XX               |
| Banking (re-ridging)                          | X*              | X*              | X                 | XX               |
| Check for disease                             | XX              | X               | --                | --               |
| Check for weeds                               | XX              | X               | --                | --               |
| Check maturity                                | X               | XX              | --                | --               |
| Harvesting and digging out plants             | X*              | X*              |                   | XXX <sup>©</sup> |
| Drying using Mandela C.                       | X               | X               | --                | --               |
| Check dryness                                 | X               | XX              | --                | --               |
| Remove pods                                   | X               | XX*             |                   | XXX <sup>©</sup> |
| Negotiating what to sell and what to keep/use | --              | --              |                   | XXX              |
| Carrying GN home                              | XXX*            |                 | XXX               |                  |
| Storing in sacks or granaries                 | X               | X               | --                | --               |
| Shelling                                      | X               | XX*             |                   | XXX <sup>©</sup> |
| Grading                                       | X               | X               |                   | XXX              |
| Bulking or bagging                            | --              | --              | XXX               |                  |
| Searching for markets                         | XXX             |                 | --                | --               |
| Carrying to markets                           | XXX             |                 | XXX               |                  |
| Selling                                       | XXX             |                 | XXX               |                  |
| Negotiating what to sell and what to keep/us  | X               | X               | --                | --               |
| Receiving payment                             | --              | --              | XXX               |                  |
| Decision making on money use                  | XXX             |                 | XXX               |                  |

1/ \* hired labor, <sup>©</sup> where children are involved

2/ "X" – some labor; "XX" – most labor; "XXX" – all labor

3/ "–" – activity was not identified by respondent

Source: Group interviews with men and women groundnut farmers and members of Mkanda EPA

## Dairy Value Chain

The livestock industry contributes roughly 11 percent to GDP and about 40 percent of the value of total agricultural products. Roughly 1.4 million farm families own one or more various types of livestock, but only about 15 percent of all livestock owners are commercial. The dairy sector specifically is small and weak, with uncoordinated actors and lots of unmet capacity. Estimates from 2010/11 total the number of dairy cattle, including pure and crosses, at 50,339, and total cattle at 1.1 million. Overall the proportion of households that own cattle is small relative to other livestock like chickens and goats. According to the National Census of Agriculture and Livestock 2006/07, only 6 percent of households owned at least one head of cattle (NSO 2010). Across all livestock categories, male headed households were more likely to own major types of livestock than female-headed households.

On the demand side, consumption of milk and dairy products in Malawi is extremely low. Consumption is estimated at between 4 and 6 kg/capita/year (Tebug 2012 in Akaichi and Revoredo-Giha 2012). This is far below milk consumption in other parts of Africa, which across Africa is estimated at 15 kg/capita/year estimated (Sindani 2012, Akaichi and Revoredo-Giha 2012). Costs of milk production in Malawi are high and without import protection would not be able to compete with powdered milk from more efficient global producers.

While investments in developing a commercial dairy industry began in the 1960s with the introduction of exotic breeds, this was just the beginning of various attempts to establish an active formal dairy industry. The Malawi Milk Marketing Project (MMM), set up to lead the industry, established three processing plants (Blantyre (1969), Lilongwe (1973), and, Mzuzu (1974)) and organized farmers in Milk Bulking Groups (MBGs) to help aggregate the supply of milk for processors. Over the 1980s and 1990s reorganization of MMM into the Malawi Dairy Industry and privatization of the processing plants (1997) aimed to improve the multiplication of livestock, commercialize the sector, and expand the processing and distribution of milk and related products. Eventually two additional processing companies entered the market (Lilongwe Dairies and Suncrest Creameries). The total number of processing companies in the country remains in flux because of the challenges with operating in the sector.

Over the years, various stakeholders, for example Heifer International, Land O'Lakes, and the Small Scale Livestock Production Project, have attempted to expand the number of dairy cows. This has been done largely through "pass-off" programs, but the number of dairy farmers and dairying cows remains low. In 2013, President Joyce Banda introduced the "One Dairy Cow per Family" project to reduce poverty by handing out cows to poor households, but fewer cows than anticipated have been bought and distributed. Other expansion efforts include improving Artificial Insemination (AI) service delivery and increasing the production of milk through improved practices.

Despite these investments, dairy industry stakeholders continue to face difficulties in creating and sustaining a commercially viable value chain. The sector is largely made up of smallholder dairy farmers with one or two cows that produce at low levels. Low production means that across the chain producers, MBGs, and processors are operating at well below their capacity. The milk collection system is weak, a result of poor transportation linkages between the farm, via the MBG, to the processors. Electricity is a problem for MBGs and processors alike making it difficult to reduce spoilage.

## Value Chain Actors

At the production level, the sector is largely made up of **smallholder dairy farmers**. There are a few commercial-scale dairy farmers with approximately 10 pure or cross-bred cows, and there is some production by processors (Agar and Chalmers forthcoming). Smallholder dairy farmers have pure, cross-

bred, and Zebu cows which are mostly producing milk at levels far below their potential.<sup>9</sup> Among the FtF-INVC beneficiaries, men make up more than 75 percent of the smallholder dairy farmers.

The largest actor, in terms of number of services and functions provided, is the **MBG**. This farmer-owned organization plays an important role in facilitating access to inputs and services for the farmer, and providing aggregation for the processors. For farmers, MBGs provides links to **AI services**, including access to the technicians themselves, as well as refrigeration services. One Nathenje farmer explained that when he buys semen from CREMPA he is able to refrigerate it at the MBG until he is ready to have the AI technician service the cow. Via the MBG, farmers also access training, veterinary services, animal supplements and other drugs, and feed. **Agro-vets** do exist but few keep a ready supply of animal health products for cattle because of the low demand (Agar and Chalmers forthcoming).

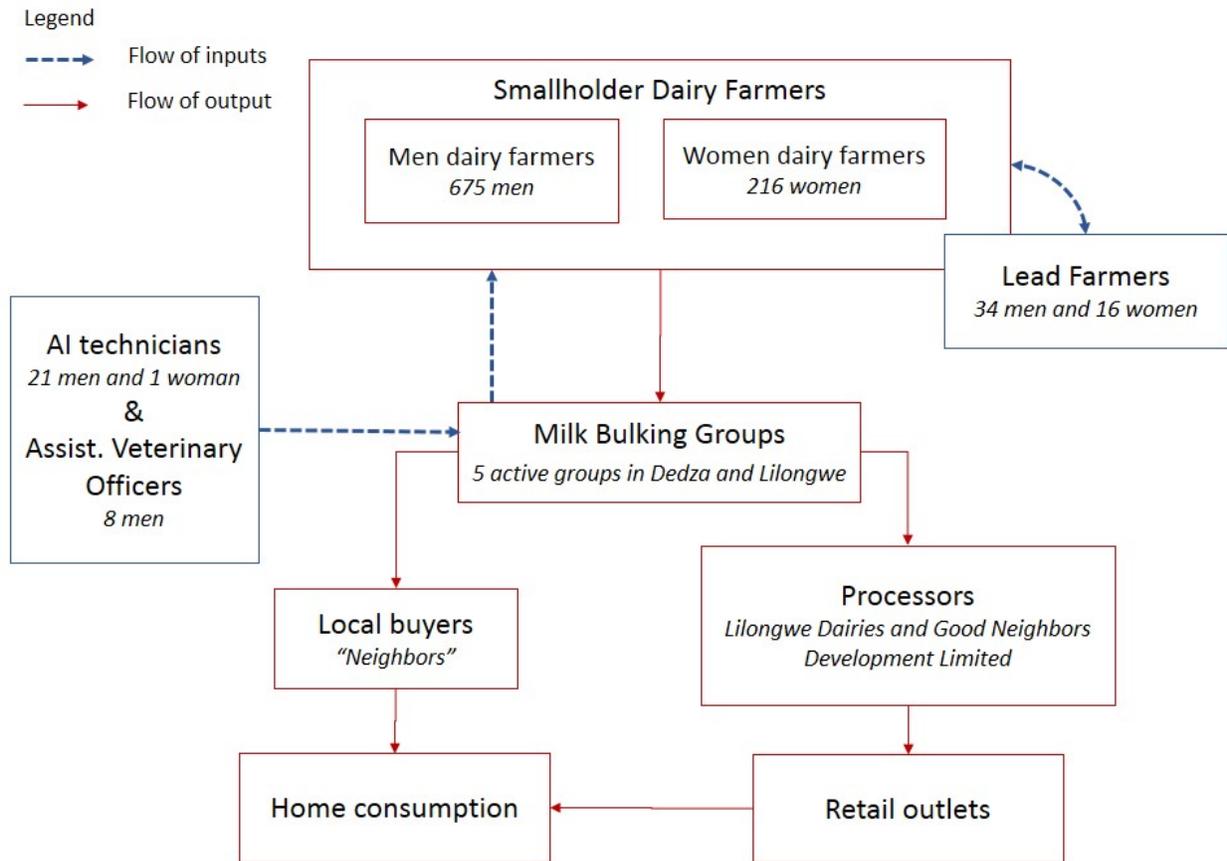
MBGs aggregate the milk of its members to deliver to **processors**. The MGB has a physical collection point where milk is cooled (if the MBG has electricity) and collected every two to three days by the processor. At the moment, FtF-INVC is working with five MBGs but anticipates that it will expand this to 10. There are currently two processors working with the FtF-INVC MBGs: Lilongwe Dairies and Good Neighbors Development Limited. Processors are paying MK 110 per liter, a price that depending on the MBG can be lower or higher than direct sales to consumers. MBGs encourage their members to sell only through the MBG, although the MBG sells both to the processor as well as to **local consumers**. Within the FtF ZOI, the majority of MBGs are located in Dedza and Lilongwe Rural. In other FtF ZOI districts there are a few commercial farmers, but no organization of any smallholder dairy farmers (Agar and Chalmers forthcoming).

Figure 4 provides an illustration of the FtF-INVC dairy value chain.

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<sup>9</sup> One interviewee noted that Zebu cows, for example, are producing 4 liters per day, with two milkings, but in Nathenje farmers have been able to get about 10-25 liters per day from cross breeds.

Figure 5 Dairy Value Chain with FtF-INVC Beneficiaries



Source: Consultants' research

### Women's and Men's Roles and Responsibilities

There is very little literature on gender roles and responsibilities in the dairy sector in Malawi. Much of the literature about livestock in eastern and southern Africa focuses on other countries, for example Kenya, Ethiopia, Rwanda, Mozambique, and Zambia. The lack of research on gender relations in the sector makes it difficult to triangulate and confirm the findings from the assessment. Where possible, the following description of men's and women's responsibilities in dairy activities is complemented by additional literature from other regions.

In general, women play an important role in the day-to-day management of livestock (Kristjanson et al. 2010). This is true regardless of whether they are the owner of the cow or the recognized member in the milk producer association. The activities for which women are most commonly responsible include feeding, milking, and cleaning. There is some variation in the participation of women in marketing and managing animal health; men in Ethiopia, Kenya, and Nigeria for example are more involved in those tasks (Ayode et al. 2009; Yisekhak 2008; Njuki et al. 2004). However because women's tasks require daily interaction with the animals, they are in a better position to detect changes in the animal's health.

At the production level in Malawi, both men and women report that they participate in dairy activities (Table 3). Men's list of dairy activities begins with tasks that are conducted prior to receiving a cow. These activities, especially those related to the construction and preparation of a stall for the cow, are

the responsibility of men. Men indicate that women are involved when it comes to the preparation of feed, an activity that they are also involved in when households receive a cow. Women did not report the activities prior to receiving a cow because the facilitator oriented the discussion around the daily activities of cow management. However because the activities that men outline are related to activities that are generally done by men, it is likely that women would not have indicated a different division of labor.

Once households have a cow, men and women outline a similar set of tasks. The differences that exist are related to the level of detail around the daily activities of feeding and watering, and tasks related to animal health. For example, women are more specific about how frequently cows are cleaned, fed, and given water to drink. The main differences however in the men's and women's responses relate to the distribution of labor. As with the soybean and groundnut value chains, men's and women's responses largely differ in how they assign the intensity of their participation in different tasks.

Women report that they are primarily responsible for the daily management of cows: they draw and warm the water for cleaning, clean, feed the cow, give the cow water, and check for infections. Women report that men are involved in few activities and even so, they indicated that these were activities where women were more involved than men. This might suggest that women perceive men as only helping with those activities as opposed to men being responsible for them. As with other value chains, men's participation increases when the activity is related to transportation and income.

Men on the other hand report that they are involved in all dairy activities, with the exception of collecting water, exclusively a woman's job. Men's perception that they contribute to all dairy activities is not inconsistent with men's responses about their participation in other value chains. Men consistently reported that they are active in all tasks. Once again, this may indicate a high degree of shared labor in the dairy enterprise or that men assume a supervisory role even when they are not directly responsible for the tasks. While both men and women concur that men are involved in transportation and income-related activities, men's responses indicate that they perceive themselves to be more involved than women.

Beyond the farm level, and among FtF-INVC beneficiaries, men perform more of the functions of the chain:<sup>10</sup>

- Among the MMPA field officers two are men and one is a woman.
- Among the eight Assistant veterinary officers (AVOs), all of them are men.
- Of the 22 AI technicians, there is only one woman.
- There is a greater proportion of men lead farmers (68 percent) than women lead farmers (32 percent).

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<sup>10</sup> For this assessment, greater emphasis was placed on understanding men's and women's participation at the farm level and with the actors directly engaging with the farmer (e.g., the MBG, AI technicians, Lead Farmers, etc.) than at other points in the chain because of the focus of INVC activities.

Table 3 Natherenje Milk Bulking Group (MMPA, Lilongwe EPA)

| Dairy Farming Activity                                  | Men's Responses |       | Women's Responses |       |
|---|-----------------|-------|-------------------|-------|
|   | Men             | Women | Men               | Women |
| Search for poles for construction of a dairy stall      | XX              | X     | --                | --    |
| Buying nails for construction                           | XXX             |       | --                | --    |
| Cutting grass for construction                          | X               | XX    | --                | --    |
| Buying a paper  | XXX             |       | --                | --    |
| Deciding which place to construct a dairy stall         | X               | X     | --                | --    |
| Constructing a dairy stall                              | XXX             |       | --                | --    |
| Planting pasture for the dairy cow                      | X               | X     | --                | --    |
| Making Hay for the dairy cow                            | X               | X     | --                | --    |
| Construct a drinking place for a dairy animal           | XXX             |       | --                | --    |
| Digging a pit for manure storage                        | XXX             | X     | --                | --    |
| Receiving a cow   | X               | X     | --                | --    |
| Prepare fire for heating water to clean udder and teats | X               | X     |                   | XXX   |
| Sweeping the stall                                      | X               | X     |                   | XXX   |
| Mopping the stall                                       | X               | X     |                   |       |
| Feed cow dairy mash and grass                           | --              | --    |                   | XXX   |
| Draw water  |                 | XXX   |                   | XXX   |
| Give water to cow                                       | --              | --    |                   | XXX   |
| Warming the water for use                               | X               | X     | --                | --    |
| Cleaning the dairy cow teats (and udder)                | X               | X     | X                 | XXX   |
| Checking for infections                                 | X               | X     |                   | XXX   |
| Feeding the cow (feed and water)                        | X               | X     | --                | --    |
| Fetching for the dairy feed                             | X               | X     | --                | --    |
| Milk cow  | X               | X     | X                 | XXX   |
| Sieve the milk  | X               | X     | --                | XXX   |
| Store milk in container for transportation              | --              | --    | X                 | XX    |
| Transport milk to MBG                                   | XX              | X     | X                 | X     |
| Go to valley garden to cut grass                        | --              | --    | X                 | XX    |
| Bring grass home and cut it into pieces                 | --              | --    |                   | XXX   |
| Repeat cleaning, feeding, and water for cow             | --              | --    | (X)               | XXX   |
| Invite extension agent for help                         | --              | --    | X                 | X     |
| Make hay/silage into bales                              | --              | --    |                   | XXX   |
| Check if cow is in heat                                 | --              | --    |                   | XXX   |
| Receiving money from the milk sales                     | XX              | X     | XX                | XXX   |
| Decision making on the use of money                     | XX              | X     | XXX               | XXX   |

1/ \* hired labor 2/ "X" – some labor; "XX" – most labor; "XXX" – all labor 3/ " – " activity was not identified by respondent  
 Source: Group interviews with men and women farmers and members of Natherenje MBG.

## FtF-INVC nutrition objectives and partnerships

The FtF-INVC project was designed to have an impact on undernutrition through its activities. The project integrates nutrition through the selection of nutritious value chains, implementing nutrition activities toward behavioral change in the targeted areas, and linking the nutrition and agriculture activities through the implementing partners. The pathways from agriculture to nutrition are not direct and many of them depend on relationships between men and women in the household, decision-making over household resource use, and women time allocation (Gillespie 2013).

The FtF-INVC project has the ambitious target of reducing the malnutrition of 100,000 children under the age of 5 years by mid-2015. The project is delivering nutrition interventions using an integrated approach. INVC is linking agriculture-oriented farmer clubs with the Care Group Model to better channel nutrition education while assisting those in care groups to source food when needed. A care group Model is a health and nutrition strategy in which community volunteers work together in a group and provide health and nutrition support to households to effect improved health and nutrition behavior.

Key nutrition-related messages are delivered through the care group. The messages are aimed at:

- Improving key nutrition-related behavior (essential nutrition actions) within households.
- Increasing access to and consumption of diverse and quality foods among target populations through improved production, purchase, storage, and preparation of nutritious foods.
- Increasing access to and utilization of key nutrition-related services among target populations, including community nutrition assessment/surveillance, bi-directional referral with clinic services, and support for vulnerable populations to access appropriate care at the community or clinic level.

Nutrition messages will also be delivered through radio programs and jingles, theatre performances and posters incorporating messages on nutrition. These tools will be produced and disseminated to the targeted communities by one of the FtF-INVC technical service providers, Pakachere Institute of Health and Development Communication. Additionally Nkhoma Hospital also serves as a technical service provider on nutrition, utilizing the community-based care group structures, as well as the Government of Malawi's community-based health service providers at community health centers.

At the same time, given the linkage between nutrition and agriculture, the project is leveraging other project components (e.g., increased production, marketing and consumption of high protein foods like soybeans, groundnuts, and dairy) with outcomes for improving competitiveness of these value chains. FtF-INVC implementing partners, NASFAM and FUM, are the geographic co-partners leading the farmer group initiatives. The care group structures are being formed with representation from the gender and social committees with the GAC and cluster level committees in NASFAM and FUM, respectively. The integration of nutrition and agriculture will operate in five of the 7 FtF-INVC districts (FtF-INVC 2014).

FtF-INVC is also engaging more men as "Father Leader Volunteers" in the care group model to play direct role in improving household-level nutrition. Promotional campaigns were developed to sensitize male and female producers and consumers to the importance of household nutrition decision-making. The campaign materials are partly based on results from analyzing male involvement as promoters and care group volunteers and their roles in household food and meal decisions that affect women's and children's nutrient access and utilization. The promotional campaigns encourage men to assume an active role in supporting improved farming practices by women and better nutrition for their families. Although the focus in this analysis is on the three value chains promoted through project activities, the link to nutrition is fundamental to outcomes and will be discussed under each relevant value chain.

## Key findings on men’s and women’s participation, performance, and benefits

### Soybean and Groundnut Value Chains

#### Participation

To participate in either the soybean or groundnut value chains, farmers must have access to land, seed, and labor for production activities. Because one of the ways that farmers gain access to seed is via clubs, membership into these organizations is also important for participation in these value chains.

**Eligibility requirements to participate in FtF-INVC soybean and groundnut activities do not pose significant constraints for women.** For FUM and NASFAM, there is no minimum amount of land required to participate in a club, although it makes sense for farmers to allocate at least one (1) acre for the production of either crop given the amount of seed farmers receive. In contrast, CADECOM-initiated clubs require access to one (1) acre to join the club. It is important to note that the land requirement is not about ownership or titling, but access, facilitating the participation of both men and women farmers.

Although there are differences across matrilineal and patrilineal areas, there is limited evidence that women’s access to land is favored in one over the other. For example, in Balaka, a male respondent indicated that he made all the cropping decisions although the land was inherited through the wife. Nonetheless, there are cases where women residing near their family are able to exercise greater control over land. In Ntiya, one woman living next to her father’s house had chosen to farm her plots separately from those of her husband.

**Neither women nor men cite membership fees as constraints to participation in clubs.** Club membership fees are relatively low. Fees varied from MK150 to MK300 per year (Balaka Mpilisi MK300, Ntiya Nyamwera MK200, Nyambi, Mangochi MK250) depending on club and association. When clubs join the associations, the fee structure changes and membership rates increase. Both men and women pay the same fees. When asked, women did not indicate that either the club or association fees were onerous or constituted a hardship, but the team did not interview women who had not joined or had dropped out.

The requirements of land and membership fees do not seem to be significant constraints for women’s participation. Table 2 shows the number and percentage of women participating in the soybean and groundnut value chains by implementing organization. The percentage of women involved in productivity training and receiving seeds from NASFAM was particularly high (61 percent). The variation in women’s participation for FUM was much narrower: the lowest was 37 percent women in Thawale EPA and the highest representation was 72 percent women in Mayani EPA. In CADECOM areas, Chafumbwa EPA had the lowest representation of women (45-47 percent) and Golomoti the highest at 75 percent.

Table 2 Farmer Association Membership for Soybean and Groundnut (Number and % Women)

|                  | NASFAM | FUM    | CADECOM   |
|------------------|--------|--------|-----------|
| Total Membership | 14,750 | 22,744 | 14,400 1/ |
| Percent Women    | 61     | 50     | 61        |

1/ CADECOM has 25,000 on its roster but worked directly with 14,400 for this FY2014.

Source: FtF-INVC 2013

Although men and women farmer beneficiary numbers are positive, there appear to be some constraints to achieving parity among lead farmers. Data was not available for all implementing partners, but among NASFAM’s lead farmers (called Farmer to Farmers), women made up on average only 25 percent of

those trained, with the percentage varying from 11 percent in Lilongwe South to 37 percent in Lilongwe North.

### Performance

Women and men in households with sufficient land to allocate to soybean and groundnut production, can join associations and participate in the value chain. Improving performance in the value chain is not as easily achieved. There are several pathways to improving performance in the soybean and groundnut value chains, some of which are more challenging for women than men. Improving performance can be achieved by i) increasing production through expanding land, increasing access to labor, and upgrading management skills, or ii) by securing new positions in the chain such as becoming a Lead Farmer or entering into trade, and finally, by iii) accessing better markets.

**Women's ability to increase production is largely constrained by limited access to labor and cash.** Tables 1 and 2 show not only that men tend to hire more labor than women for both groundnut and soybean, but that women in both crops rely more heavily on their own labor as well as that of their children. This is largely because women are less able to command the labor of spouses and have less cash with which to hire labor. The improved management techniques promoted by the FtF-INVC program implementers require some additional labor, skills or supervision. Both men and women farmers indicated that the planting process was challenging because of the precision and extra time required for measurement and proper spacing. These requirements did not seem to constitute a barrier to participation, but the demands will increase if men or women farmers expand production by increasing acreage under soybean or groundnut product. Expanding production of either crops will likely increase women's need for hired labor or labor-saving technologies that can improve their productivity.

In both soybean and groundnut, the current model being implemented by NASFAM and CADECOM (only soybean) does not present constraints for women with respect to accessing improved inputs, mainly seed. Since membership in clubs facilitates access to seed, the only constraint is the general availability of seed which will affect both men and women. By comparison however, the FUM model encourages farmers to purchase inputs. This could present challenges to women who have less access to income with which to purchase seed and face greater constraints on their time and mobility.

**Women's lack of mobility and lower literacy and numeracy reduce their ability to access markets for soybeans and groundnuts.** A major constraint, expressed repeatedly throughout interviews with both men and women farmers, was the availability of good prices and reliable markets. Despite the small size of Malawi, the high cost of fuel and poor road network keep transportation costs high, increasing costs for traders and reducing farmers' margins.

In the current system, the most prominent market outlet for rural agricultural producers is the village-to-village "vendors." Women are more dependent on vendors than men due to the considerable constraints on their mobility. Given women's responsibility for domestic activities and limited access to means of transportation, the vendors play a key role in facilitating access to markets for women by buying at farm gate.

The shift to linking farmers to more reliable marketing outlets, like ACE warehouses is unlikely to directly address women's mobility constraints unless aggregation centers or warehouses are located close to women farmers. Furthermore farmers with higher levels of literacy and numeracy, mostly men, will have an advantage in being able to understand and use mechanisms such as ACE. Women's relative disadvantage in education may decrease their ability to engage in this process. During the first quarter of FY 2014, the FtF-INVC project recorded that 78 producer farmers and small traders (22 women and 56 men) used ACE-provided financial services.

**Constraints on women’s access to markets reduce their ability to secure and improve their position in the soybean and groundnut value chains.** In areas where groundnut and soybeans become serious contenders as cash crops, competing with cotton or tobacco, it is possible that women will participate more as laborers and receive fewer direct benefits as individuals rather than as household members. This is because men may begin to switch out of less profitable crops (e.g., cotton and tobacco), replacing these crops with groundnut or soybean, and taking over women’s production. Interviews with both men and women Mchinji confirm that these shifts are already occurring (Table 2). Men groundnut farmers said, “Before FUM, women would take care of the groundnuts. On a small-scale, we leave it for the women, but on a large-scale is where the men are sole decision-makers.” Women explained that since the fall in tobacco prices, men were now taking over the marketing of their groundnuts, taking the harvest to the market and not divulging the amount received from its sale.

**Women are less likely to move into leadership positions in the farmer associations.** Although women’s membership is high in the FtF-INVC project initiatives, there are fewer women in leadership positions in the farmer associations for which data was available. Women interviewed for the assessment indicated that though time was a constraint for them, they “make it work” to remain as lead farmers or executive committee members. It was not clear that women with children were more constrained than those with older or no children in assuming these positions. Even women with children indicated that they would find childcare if they assumed a leadership position. This indicates significant interest and willingness to assume more important roles in the associations and would likely strengthen women’s position in the value chain. NASFAM and FUM both have a policy of at least 30 percent women on committees, but currently none of the FtF-INVC partner organizations maintain full listings by sex of the composition of executive committee membership at either GAC or Association level.

**Men are more likely to enter and operate in the soybean and groundnut value chains as traders.** Both men and women agreed almost unanimously in the interviews that it was men’s responsibility and role to transport and market soybeans and groundnuts. Almost no rural public or private transport restricts transport for both men and women to walking or riding bicycles. Socio-cultural and safety concerns restrict the use of these means for women. Currently among the rural traders working with ACE, only 30 percent are women and in a recent FtF-INVC broker training, four women and ten men were certified to operate as brokers. A woman trade agent with ACE commented that initially she faced difficulty when working with farmers, particularly men. She commented that the men farmers did not listen to her because she was a woman.

A recent study on Small and Medium Enterprises (SMEs) states that in Malawi women represent only 25 percent of small and medium agricultural enterprises (other than production). According to the study it was a challenge for the field research team to identify female-owned SMEs. “Only four out of 67 SMEs interviewed in the [FtF] districts were primarily owned by women, though a few had husband and wife co-ownership or another arrangement with the wife involved, but short of co-ownership” (Agar and Chalmers forthcoming: 20). During interviews with women farmers, only one woman producer indicated having started a small business trading pigeon peas. She was financing her trading business from income from Lilongwe property rentals and sales of other products. This woman was looking for finance that did not involve group lending as she had had poor experiences with defaulters.

**Options for processing soybeans and groundnut remains challenging for both men and women farmers and entrepreneurs.** Both men and women farmers interviewed were eager to improve their performance in the value chain through creating value added products. Oil expellers were mentioned by groundnut group participants, and soybean farmers were eager to learn how to make soy milk and other products. Determining cost-effective and competitive technologies and ensuring gender-equitable participation and returns will be challenging. Soymilk production is fuel-intensive and likely to be costly to produce. The project is including small-scale fuel-efficient stoves as part of their outreach.

This assessment does not evaluate these technologies, but there are several lessons learned in relation to the gender distribution of costs and benefits to be considered.

### Benefits

Men and women farmers benefit in different ways from participating and improving their performance in the soybean and groundnut value chains. The FtF-INVC project is providing opportunities for these benefits to broaden, expand, and deepen. There are at least three types of benefits that are accessible to farmers: social capital, income, and nutrition. These benefits are not however evenly distributed across different stakeholders in the value chain nor do the benefits accrue evenly by sex of the stakeholder.

**Social capital/status.** Social capital, “the norms and networks that enable people to act collectively”, has been shown to be a benefit for rural households, although maintaining social capital entails some costs (Woolcock and Narayan 2000). For Malawian farmers, joining associations as members and leaders can augment their social capital by increasing their contacts, creating friendships and other relationships. These contacts can lead to increased information and knowledge, create social safety nets, and may improve access to more tangible goods such as inputs. Membership in associations is one measurement of social capital, and leadership positions in associations are correlated with higher social capital (Woolcock and Narayan 2000).

The WEAI data provides some insight into women’s membership in associations in Malawi, but unfortunately does not break out the data on men in the sample. According to the WEAI analysis, over 20 percent of women who are identified as “not empowered” do not achieve an “adequacy” level in association membership (Feed the Future FEEDBACK 2013). The team only interviewed association members, but none of these men or women identified specific constraints to membership.

**Income.** Malawi small scale men and women farmers are motivated to increase soybean and groundnut production by the incentive of increased sales. However, as value chains are upgraded through improved technologies or new processing techniques, intra-household decision-making and income control changes. Farmers must make decisions about how much of a staple food crop should be kept for home consumption and how much can be sold for cash. Members in farm households (i.e. husbands and wives) may cooperate, coordinate or conflict over the generation and use of income. Recently more evidence is becoming available on the importance of this dynamic in agricultural smallholder households and its impact on development outcomes (Doss 2013).

Many male respondents interviewed for the assessment indicated they controlled the income received from the sales of the soybean or groundnuts. Some indicated that they would discuss the allocation of the income with their spouses. Farmers in Machinga had received up to MK 80,000 (US\$200), a significant sum for these households. Men and women who received sums this large indicated they spent the money on iron sheets for houses and for school fees. Households who sold smaller amounts to vendors reported that the money was spent on household goods such as salt and soap, or sometimes clothes. In Ntiya in Mangochi District, some men reported giving their income to wives to keep because it was not safe when they traveled for work. In other areas, men indicated they made the decisions on what to use the money for because they were ‘household heads’.

**Consumption and Nutrition.** Increased household consumption can be a significant benefit of increased production, although there is not necessarily a direct or proportional relationship between the two. Both men and women farmers interviewed for this study indicated that production of groundnuts and soybeans was used for three purposes: Retention or repayment of seed, household consumption, and sale. Amounts for seed repayment within the project activities were fixed at double the amount received (between 20 and 24 kilograms). No respondent indicated that they were growing soybeans or groundnuts completely for home consumption. As prices for staple food crops become

more attractive, the amount of food retained for home consumption can change. As discussed above there is not a direct relationship between production and consumption: this relationship is considerably influenced by intra-household decision-making. The interviews indicated that there is considerable negotiation between men and women in households over the division of production for sale, seed and consumption.

One of the key advantages of the FtF-INVC Project is that increased production will be accompanied by nutrition information through various sources to encourage households to retain and consume groundnuts and soybeans (and dairy).

**Soybeans.** The responses from the interviews indicate that at the household level, soybean is used most frequently for porridge for children and adults, however there was evidence of the awareness of the potential to use soybeans for other products such as soymilk. In an interview in Ntiya, a woman indicated that at some point she had limited maize and she mixed it with soybean for flour for the commonly prepared *nsima*. The majority of interviewees cited improved nutrition as a benefit of production of soybeans. However, these interviews did not provide evidence on how households determined the *quantity* to be allocated across consumption and sales.

**Groundnuts.** Groundnuts form a traditional part of Malawian household diets, mixed into relish and eaten as a snack either boiled or roasted. Groundnuts provide important nutrients to relatively undiversified diets. Interviewees consistently indicated that they kept some groundnuts for home consumption, however, they also stated that if market prices improved they would increase sales.

## Dairy value chain

### Participation

Entering the dairy value chain is challenging for both men and women smallholder farmers. The entry requirements are high and difficult to meet, not least because the value chain is thin with weak linkages. To be an active dairy farmer one must have a cow, belong to a MBG, and have sufficient access to cash and labor to support dairy activities.<sup>11</sup> Given these costly requirements, it is not surprising that more men than women are participating as formal MBG members in the dairy value chain.

**Few men and women farmers have cows, but women are less likely to own them than men.** In contrast to the lower entry barriers that facilitate both men and women's entry to the soybean and groundnut chains, gaining access to a cow, the minimum requirement to engage in a dairy enterprise, is a significant challenge in Malawi. As previously mentioned, the number of livestock in the country as whole is quite limited, and there are only a few ways of expanding dairy populations and herd size. Farmers who do not have cows have the option of participating in a pass-on scheme and waiting for their turn to receive a calf, or can purchase a cow, a not insignificant investment for smallholder farmers.<sup>12</sup>

Women tend to acquire livestock via non-market channels, either inheriting them or receiving them as gifts or through a pass-on scheme (Kristjanson et al. 2010). Their limited access to and control over cash places them at a disadvantage to purchasing an animal independently. Women are likely to own different breeds of cows, both exotic and local, because of the ways in which they acquire the animals.

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<sup>11</sup> Individuals can also be inactive participants in the value chain. These are members of MBGs who have completed or are in the midst of completing their eligibility requirements to receive a cow through a pass-on scheme. Among the Nathenje MBG members who participated in the group interviews the majority of them had yet to receive a cow. Yet in order to be eligible to receive a cow, farmers must be part of an MBG and construct a stall and appropriate watering trough for the cow.

<sup>12</sup> A farmer from Nathenje, in 2007, paid MK 50,000 for a Friesian.

Evidence from countries in East Africa indicates that female-headed households are more likely than male-headed households to own local breeds. The East African Dairy Development project found this in Kenya, where 63 percent of male-headed households had exotic cattle compared to 49 percent of female-headed households; and in Rwanda, where 45 percent of male-headed households compared to 32 percent of female-headed households owned exotic breeds (Kristjanson et al. 2010).

There is however limited sex-disaggregated data in Malawi to confirm if this pattern is the same. And the FtF-INVC project data presents a slightly different picture. Among the 891 MMPA beneficiaries, the majority of women, 90 percent, have Jersey or Holstein cows (Table 4). One possible explanation of this is that given how few cows there are in the entire country, women are more likely to become dairy farmers through participation in a pass-on scheme where they are given a calf of an exotic species (e.g., Jersey or Holstein). If this is the case, and there are few women dairy farmers who have inherited or been given local breeds as gifts, then it is likely that FtF-INVC's strategy to upgrade Zebu cows to reach the increased milk production target by recruiting more farmers with Zebu cows in catchment areas is likely to favor men.

*Table 4 Distribution of cows among men and women farmers by type and MBG*

| MBG          | Dairy (Jersey, Holstein) |            | Zebu       |           |
|--------------|--------------------------|------------|------------|-----------|
|              | Men                      | Women      | Men        | Women     |
| Lumbadzi     | 50                       | 71         | 41         | 1         |
| Machite      | 131                      | 41         | 125        | 3         |
| Magomero     | 76                       | 51         | 41         | 4         |
| Nathenje     | 21                       | 9          | 129        | 10        |
| Nkhweza      | 35                       | 22         | 26         | 4         |
| <b>Total</b> | <b>313</b>               | <b>194</b> | <b>362</b> | <b>22</b> |

*Source: MMPA M&E Officer*

**High membership and annual fees to join MBGs place women with less access to cash at a disadvantage.** To be a formal participant in the dairy value chain, smallholder farmers must also be members of a MBG. Being a member of a MBG facilitates farmer access to veterinary and AI services, training and information, and in some cases to buyers (e.g., processors). The fees associated to join a MBG are significantly different, and higher, than those associated with becoming a member of soybean or groundnut club. To join the Nathenje MBG, farmers must pay a one-time registration fee of MK 5,000 and then annually pay MK 2,000 whether or not you have a cow. Additional fees include MK 40 per month for emergency activities and MK 1,200 annually for electricity. To join the Machite MBG, farmers pay a one-time registration fee of MK 3,500. Farmers then pay MK 1,000 annually to the MBG and pay MK 700 to the zone if you have a cow, otherwise the farmer pays only MK 500. One woman reported that in addition, to join an MBG one must have a stall for the cow, access to a piece of pasture, and savings or cash in the amount of MK 10,000.

The annual costs for being a member of an MBG, between MK 1,500 and MK 3,200, are much higher than those required to join soybean and groundnut clubs, which also may contribute to the difference in women's participation across the three chains.

**The high labor requirements for dairy activities require access to household and hired labor.** Dairying activities are labor-intensive. In contrast to crop production where there are periods of

high and low labor requirements, dairy cows require daily investments of time to milk, and provide feed and water. Men, women, and children are often involved in different tasks related to dairy activities. To undertake these activities, households must have access to sufficient labor or to the cash to hire labor, reported at MK 4,000 per month by a woman dairy farmer in Machite. Women have less access to labor than men do, and are less able to command the labor of men in their household. As a result, women dairy farmers are likely to rely more heavily on their own and on their children's labor, as well as hired labor to carry out dairy activities.

Altogether the asset requirements, including livestock, labor, and cash, are sufficiently high to explain, in part, fewer women FtF-INVC beneficiaries in the dairy value chain.

**The requirements to become an AI technician reduce the number of women who are eligible to be employed in these positions.** FtF-INVC's principal means to improve herd genetic characteristics is to strengthen the AI services available to dairy farmers via the MBGs. The project is upgrading the skills of existing technicians and also recruiting new AI technicians so that all MBGs will have access to at least one technician. As of April 2014 the project was working with 22 technicians of which 21 were men. The disparity between men and women in this position is due to both the minimum requirements for becoming a technician and perceptions around who should be doing this work.

To become an AI technician, one must have a Junior Certificate of Education completed; a good command of English, because courses are taught in English; and, be from the area where the MBG is located. The combination of requirements, particularly that you must have a good command of English and be from the local area, make it difficult for women to meet the criteria. One woman, from Machite, was working as an AI technician but recently had to stop because her husband did not want her working as a technician. Although MMPA has made efforts to recruit more women AI technicians, it is a well-paid and skilled position that is largely perceived as men's work.

### Performance

For the sector to continue to develop and expand, farmers will need to improve the quality and quantity of milk they are producing and the actors in the dairy value chain will need to strengthen their links to each other. FtF-INVC project activities work on improving the quality and quantity of milk through improved management practices and animal nutrition. Efforts are being made to facilitate links between farmers and vets, input suppliers, and AI technicians, as well as improving the coordination of value chain actors at other levels of the chain. MBGs are also being targeted for business management training.

For farmers, maintaining and improving their position in the chain will depend upon their ability to participate in and apply the knowledge gained from training to lower their production costs, for example of dairy mash. Some farmers will also be able to improve their position by expanding their herd size using the AI services being promoted and strengthened by the project.

### **Both men and women are accessing training and knowledge on improved practices.**

Members of MBGs gain knowledge on improved practices via training sponsored directly by FtF-INVC and through access to Lead Farmers. To date, 732 MBG members have received training of which 27 percent are women. MMPA encourages that only the member of the MBG attend the training and be responsible for taking care of the cow, but project data reveals that there are more women attending training than there are women members of MBGs. This is not necessarily a negative development. According to women in the group interview, women are responsible for many of the daily dairy tasks. Furthermore individual interviews with women and men suggested that there is significant co-

management of dairy cows suggesting that including more than one member of the household in training could improve adoption of improved practices.<sup>13</sup>

**Fewer women are moving into leadership positions in MBGs.** As with the soybean and groundnut value chains, successful farmers have the opportunity to move into leadership roles in the value chain either as Lead Farmers or executive committee members of the MBG.

Farmers selected to be Lead Farmers receive more training than other MBG members and are responsible for disseminating information to their peers. The position is voluntary but as de facto extension workers, Lead Farmers are considered to be knowledgeable resources for information on improved feed, animal health, and nutrition. At the moment, an estimated 32 percent of lead farmers are women, a higher proportion than their participation as members of MBGs.

However, within the leadership of the two MBGs, men held the majority of formal positions. In the executive committee for the Natenje MBG, three of the 10 members were women with one of them holding the position of Treasurer. Among the 10 executive committee members for the Machite MBG, four are women and none of them hold formal positions. The Chair, Vice Chair, Secretary, Vice Secretary, and Treasurer are all men. Both men and women of the Machite MBG expressed constraints to women assuming leadership positions in the executive committee. Men characterized the difficulty in moving women into leadership position within the MBG as a result of women's time constraints associated with caring for the home and children. Women on the other hand expressed that men had a tendency to belittle the women, suggesting that men did not think women had the capacity to lead. In most interviews, women did not cite time as a constraint for moving into leadership positions. Most said explained that if they were required to be away from the home or invest more time in certain activities that they found help.

## Benefits

Participation in the dairy value chain affords farmers a number of benefits including access to increased income, to more milk for household consumption, and to manure that can be used for fertilizer for crop activities. The assessment found no significant gender-based constraints related to benefits existing currently within the value chain but as the MBGs solidify their contractual relationships with processors and commercial activities expand, this may change.

**Access to income.** The primary benefit to participating in the dairy value chain is access to a regular and monthly source of income. Although cows are milked on a daily basis and farmers deliver the milk to the MBG daily, processors collect the milk only every two to three days and they pay MBGs once a month. Processors, like Lilongwe Dairies pay MK 110 per liter of milk. This is slightly lower than what Natenje farmers would receive by selling to vendors and neighbors (between MK 150 and MK 170 per liter), but a higher price than what Machite farmers would receive (MK 100 per liter). Payments from processors are made in cash or by check to the MBG which then distributes cash to members based on the amount of milk deposited. In contrast to informal dairy systems, where vendors collect and pay daily, this system creates a lump sum of income for farmers that can be used for larger purchases. A farmer whose cow is producing about 5 liters per day and who is selling of that milk via the MBG, will collect about MK 16,500 per month. Farmers reported that this lump sum allows them to use dairy income to pay for school fees, purchase fertilizer, household utensils, and food, hire labor for other farming activities, and pay for medical emergencies. Both men and women reported similar uses for the dairy income.

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<sup>13</sup> In Mozambique, Land O' Lakes found that expanding training to two adults in dairy households improved the care of cow and at the same time improved the perception of women's knowledge and skills in dairy activities (Johnson et al. 2013).

Although several dairy stakeholders reported that one of the key challenges for women in the dairy value chain is access to and control over the dairy income, interviews conducted during this assessment were unable to confirm this assertion. Executive committee members explain that when the processor pays the MBG, they then notify members that they should come to pick up their cash. Only members are allowed to pick up the income from the MBG. As described, this system should mitigate non-members from appropriating income owed to members of the MBG, although in practice the system may not operate so strictly. Furthermore because the delivery of milk happens separately from the distribution of income, one doesn't have to deliver the milk to collect the income. Responses from men and women members of MBGs during group interviews about who collects the income appear to support a distribution mechanism that favors neither men nor women (Table 3). The participants in the group interviews were all members of the MBGs, meaning that they would be the individual in their household eligible for receiving the income. In that case it is not surprising that in the group of men MBG members, they indicated more men collect the income, while in the group of women MBG members, they indicated more women collect the income.

While the distribution system may not be biased against women members, women, both members and non-members, participate overwhelmingly in the day-to-day dairy activities. This means that women, specifically non-members of MBGs, are dedicating a significant amount of time to activities for which they are not directly compensated. In some households, men and women may jointly decide how to use the income, as in the case of the Nathenje farmer whose family decides together how much milk to sell and how to spend the dairy income. In these cases, women's contributions to dairy activities may be rewarded through participation in decision-making in how to spend the dairy income. However where men have sole decision-making over dairy income, women's labor will go unrewarded, potentially reducing their incentives to dedicate time to dairy activities.

**Improved nutrition.** With increased production, dairy households could also decide to consume more milk, thus improving their consumption, particularly by children, of animal protein. Both men and women farmers reported that they keep between one to two liters of milk a day for household consumption however there was no indication that consumption levels were changing.

### **Agriculture and nutrition activity linkages**

Groundnuts are more widely grown than soybeans, but with somewhat different agronomic requirements there is not complete overlap in production areas. Interviews conducted during fieldwork and other sources<sup>14</sup> suggested there might be substitution in production where there is overlap. It is also possible that there is some substitution in consumption as both have similar uses, although no empirical evidence is available yet to verify this hypothesis.

The interviews suggested that there is a growing interest and knowledge in the nutritional benefit of the commodities, for example for soybeans beyond the familiar use in porridge. Participants in value chain activities are able to articulate the nutritional benefits of both commodities. NASFAM beneficiaries were eager to receive the upcoming nutrition training to learn how to prepare new products, such as soy milk.

One of the major concerns with groundnut consumption is the prevalence of aflatoxins and the health impact, particularly for young children and immuno-compromised individuals. Relevant information on aflatoxins has been included in both agronomic and nutrition extension messages, but remains an unknown factor in the health of those who consume greater quantities.<sup>15</sup> Aflatoxin levels rise with poor

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<sup>14</sup> Agar and Chalmers forthcoming.

<sup>15</sup> Measurement is complicated because maize is also a source of aflatoxin and given the high consumption levels of greater concern for health.

drying practices, when water is used to soften shells, or when contaminated nuts are mixed with uncontaminated nuts. Most of the critical points for controlling aflatoxin are *post-harvest* (Cuddeford 2014). Reaching women with aflatoxin information is critical because they are the ones processing most of the groundnuts and who are also responsible for child feeding.

When farmers use improved varieties and good management practices, aflatoxin levels may be low at harvest. The best approaches to decreasing aflatoxin and upgrading the industry involve:

- a. Selling unshelled nuts may help women by reducing post-harvest labor but may cut them out of markets because unshelled nuts will be heavier and even more cumbersome to transport. Farmers will not want to sell unshelled nuts unless a premium is paid – they will be unlikely to value the cost of labor equivalent to the price reduction.
- b. Post-harvest methods such as the Mandela Cock, a practice for drying groundnuts in the field in coiled towers, which keeps the shells dry in rain. Hand shellers can displace the need for women to wet nuts for shelling.

NASFAM has shown that it is possible to reduce aflatoxin levels by working with partners such as Twin Trading/ Agri-Nut, FtF-INVC and ICRISAT bringing necessary practices such as extension on production methods and technologies at the farm level, processor-level technologies such as sorting to reduce toxicity levels, and aggregating groundnuts in-shell. However, the Fair Trade market is limited and competitive.

## Conclusions and Recommendations

This gender and value chain assessment had the objective of identifying gender issues in the development of the soybean, groundnuts and dairy value chains, and to understand how gender issues affect the agriculture and nutrition linkage activities. Its purpose is to provide recommendations to FtF-INVC on how to promote, support, and facilitate gender-equitable approaches to market and agriculture development. The following conclusions and recommendations emerging from the analysis aim to guide monitoring and improve implementation of activities to ensure that both men and women can participate in and benefit from its activities.

The assessment found that the FtF-INVC Project is successfully reaching its target population through its programs. That is, both men and women smallholder farmers are participating as members of associations and as trained beneficiaries across the three value chains. The data indicate that the soybean and groundnut programs are reaching more women farmers than dairy overall and in terms of proportion of members.

The FtF-INVC Project is generating increased interest and participation in all three value chains. The assessment provides qualitative evidence of expanded area to soybeans and groundnuts that is supported through monitoring data on an aggregate level. However, the assessment analysis cannot shed light on substitution across crops, and intra-household land allocation remains unclear. The FtF-INVC Project is also contributing to a growing interest in marketing formerly home consumption crops.

The analysis also suggests that there is a growing interest and knowledge in the nutritional benefit of the commodities, for example for soybeans beyond the familiar use in porridge. Participants in value chain activities are able to articulate the nutritional benefits of all three commodities. NASFAM beneficiaries were eager to receive the upcoming nutrition training to learn how to prepare new products.

Both the FtF-INVC project and its implementing partners explicitly recognize that there are gender constraints and issues on a rhetorical level. The institutions are also organizing themselves to better meet women's needs. For example, FUM has a gender specialist and a gender policy, CADECOM has a

national gender policy with women as an explicit target group, and MMPA is developing a gender policy. All four of the implementing partners expressed aspirational targets largely consistent with the country's recent 50-50 policy initiatives although most will have need greater support to help them identify gender-based constraints and strategies to overcome them.

Interviews with men and women farmers revealed that the most significant gender-based constraint relates to markets. While both men and women face many constraints, women are less able to overcome mobility constraints that would allow them to participate more actively in marketing. Men have greater access to the means of transportation, or to cash to hire labor, and are able to command control over the marketing and receipt of income. Other constraints such as access to inputs, information, and labor, are challenges for both men and women farmers. Women however experience them more acutely because they have access to fewer resources and bargaining power in the household to harness in order to overcome them.

The FtF-INVC project has completed the first full growing season with implementing partner activities and is approaching the marketing period for the second growing season. Some activities such as aggregation have not yet commenced, although many farmers have been trained in the principles of collective marketing. As such, men and women farmers are only just beginning to see the impact of the activities on opportunities for marketing, increasing incomes, and improving nutrition. One of the most important findings therefore is that FtF-INVC will need to monitor how men's and women's behaviors in the value chain begin to change as a result of activities. The following set of recommendations represent hypotheses and suggest areas where issues are or may arise. Many point to a learning and monitoring agenda to understand how the development of these value chains will maintain or alter the current gender patterns in the three value chains, while others highlights areas where existing gender disparities require more immediate attention.

## **General recommendations**

**Track progress toward aspirational goals.** The implementing partners expressed the desire to reach equal numbers of men and women in activities, but these were clearly aspirational targets without strategies to support them. Beyond the current set of sex-disaggregated indicators, implementing partners should track also track participation in leadership positions in farmer and nutrition organizations, the latter where men tend to be under-represented. Annex 4 provides additional recommendations.

**Involve women in development of and testing of extension materials.** Across the ZOI, women's literacy is low: the lowest is in Machinga where only 37 percent of women are literate, and the highest is in Balaka where 57 percent of women are literate (FAO 2011). By comparison, across the seven FtF-INVC districts, at least 59 percent of men are literate. As FtF-INVC develops a range of extension materials, including flyers and videos, it should make efforts to field test them with women. The use of visual aids such as video and photos are helpful, as are demonstrations. The move from classroom to a hands-on approach being promoted by the project is already a positive step likely to increase the accessibility of material and information to women.

**Ensure partners disaggregate targets and indicators by sex.** This includes providing sex-disaggregated data on agriculture-related indicators, including area and production (yields) under groundnuts and soybeans and provide sex-disaggregated targets for relevant indicators. Sex-disaggregated targets ensure projects consider program elements align with the objectives.

**Project review of gender-relevant indicator performance.** To maximize learning from monitoring, the project should conduct an annual review of gender-related performance, including an assessment of performance on indicators that have been disaggregated by sex and discussion with implementing

partners on changes in performance along with an exercise in confirming future targets for reaching both men and women across all activities.

## **Capacity Building Recommendations**

### **Support targeted capacity building for implementing partners.**

Each of the four (4) implementing partners is cognizant of the challenges in delivering services to women and of the need to address inequalities between men and women. Nonetheless each partner will need to be prepared for responding to changes in men's and women's participation and access to benefits as production and marketing expands. While a general training on gender in agriculture may not be necessary or appropriate, thematic workshops could be designed to respond to specific needs. For example:

- Addressing gender issues in implementation and monitoring.
- Understanding and designing service and input delivery systems that work for women.
- Building gender-equitable benefit distribution mechanisms.

### **Conduct a landscape of organizations and consultants specialized in gender and agriculture.**

The previous recommendation is about equipping the staff of implementing organizations with the skills to deliver a gender-equitable program. This recommendation aims to assess the landscape of institutions (and potentially individuals) in Malawi to identify those that are best equipped with knowledge and skills to provide in-country technical assistance to the implementing organizations.

## **Recommendations across all three value chains**

### **Monitor aggregation points and benefit distribution.**

The findings revealed that women are not participating as actively in the marketing positions in the chains as much as they are in the production aspects. There are some indications this lack of participation is reducing their access to benefits (e.g. income). Spouses who are transporting and marketing women's produce are not always including women in the decisions around the income gained from the sale of the produce. As the project develops aggregation points closer to farmers it should monitor whether this increases women's participation in marketing. Simple methods can be used to monitor the sex-disaggregation of delivery. More complex will be determining who sells and whether the one who sells will also be the one receiving the proceeds. Annex 4 provides recommendations for monitoring aggregation points.

### **Recruit more women lead farmers.**

Despite the successes in the groundnut and soybean value chain of recruiting women farmers, the number of women lead farmers remains low. In the dairy value chain, men outnumber women as lead farmers as well. Lead farmers are those individuals who are the first to get new information, technology, and training, and they benefit from the perception among community members of being a reliable source of information. Being selected as a lead farmer is recognition of improved performance and good standing in the community. FtF-INVC can integrate messages and encourage INVC Coordinators, field officers, and others to encourage the selection of more women into these positions.

### **Target women for digital financial services to support benefit distribution mechanisms.**

Although mobile phone penetration remains low (11.5 percent of the poorest and 62.5 percent of wealthiest households have access to phones), as incomes rise this is likely to change quickly. Many lead farmers already had phones and were receiving messages from the local agricultural research station. Few were using phones to access market information. For women, the advantage of mobile phones is it allows them to overcome time and mobility constraints. More importantly as mobile money instruments

(and alternative digital financial services like smart cards) begin to proliferate, they provide an avenue for women to receive, send, and control income. As FtF-INVC examines the opportunities available for tapping into digital financial services, it should ensure that women are targeted specifically for any pilots or initiatives.

#### Promote intra-household approaches to farming enterprises.

The dual objectives of increasing agricultural productivity and improving nutrition require that the project consider the intra-household dynamics of how decisions are made surrounding consumption and sale of production. Intra-household approaches to farming are used to help families, and in particular, husbands and wives to understand how to better allocate household resources (e.g., labor, income, and crops) to increase the well-being of all its members. These approaches help family members to agree on priorities particularly between current consumption and current and future investments (e.g., food, school fees, and capital goods).

### **Soybean and Groundnut Value Chain Recommendations**

#### Engage women in the process of selecting appropriate processing technologies.

Women value different qualities of processing technologies than men, for example those that save labor. Tapping both men and women, collectively and separately, for focus groups or design teams can generate more useful technologies for soybean and groundnut processing. A key consideration for identifying appropriate technologies is labor and time saving. For example, soymilk production requires a heating mechanism that may require young girls or women to collect firewood, which is time-consuming and create pressure on this scarce resource. Alternatives, such as improved cookstoves are being considered for food processing and nutrition activities, and could also be promoted for use with soy processing.

#### Women's groups for processing.

One of the ways to ensure that women maintain a position in this component of the value chain is to work with women's groups. The current associations may not be the best partners to manage or distribute processing technologies to women's groups, and other options or organizations might need to be explored. The gender and social subcommittees at the GAC or cluster levels might be one entry point for identifying a group that could manage these.

#### Compare the seed distribution models.

FUM and NASFAM are implementing different approaches to input supply: one that focuses on a commercial model, while the other model provides seeds as part of membership. Given women's mobility and cash constraints, it is important to understand how FUM's model can be further developed in a way that does not exclude women. Comparing these two models might illuminate how to build a gender-equitable input delivery model.

#### Improve reliability of and trust in vendors.

Vendors play an important role in marketing women's produce but are not trusted by farmers. Activities could be designed to have ACE vet and certify vendors or help women acquire scales so they can establish small-scale businesses weighing produce.

### **Dairy Value Chain Recommendations**

#### Monitor men's and women's participation with Zebu expansion.

Given the disproportionately high number of men with Zebu cows currently enrolled in FtF-INVC activities, it will be important to continue to monitor men's and women's participation as the project recruits more farmers with Zebu cows. If men's participation continues to grow at a rate that project women's, the project will want to reconsider a more equitable strategy for achieving its milk production targets.

#### Monitor women's and children's labor input into dairy activities.

Dairy activities are labor intensive and tend to be carried out more often by women and children. As milk production and other activities increase, it is important to assess whether these changes have significant impacts on women's and children's time use and labor input. This could be done through time surveys applied at specific intervals during the year. The increase of women's time in dairy activities may be acceptable, if she is able to provide input into decision-making over the use of dairy income. The impact of an increase of children's time should be assessed separately for girls and boys, and monitored to see if it interferes with other activities, like school attendance.

#### Seek opportunities to increase income-generating opportunities for women.

Women's income-generating opportunities in the dairy value chain are largely restricted to their position as dairy farmers. FtF-INVC could make greater efforts to recruit more women AI technicians, making the positions more attractive or amenable to women or equip women or women's groups with the skills to enter as input suppliers, for example small-scale producers of dairy mash or salt blocks.

### **Nutrition Activity Recommendations**

#### Build leadership skills among women in care groups.

Women who are participating in care groups are the most vulnerable women in many of these communities. Young, pregnant, and with children they have little decision-making power in the household, and are likely both mobility and time constrained. Yet, as these women grow older they will likely become candidates for joining clubs, and becoming association leaders and lead farmers. Integrating leadership skill-building into care groups could improve their ability to negotiate with husbands and prime them for taking on additional roles in the future.

#### Link income-earning processing of value chain products in agricultural activities for women to care group members.

Women are responsible for food preparation and child feeding at the household level. As farmer associations promote product development for sale and home consumption, such as dried soy or soymilk, and care groups promote new recipes, small business development, particularly by women, can be promoted.

#### Monitor overlap of participation by men and women in care groups and in farmer association activities.

The project should monitor the extent to which men and women who are participating in the FtF-INVC agriculture activities are the same men and women who are involved in care groups. In particular, whether women who receive nutrition support are also members in the associations, or reside in households with men or other women who are members. This will provide a better measurement of the synergy of the messaging. Qualitative analysis could provide additional insights for the planned impact evaluation.

#### Ensure both men and women receive information on aflatoxin management and health impacts.

Most of the critical points for controlling aflatoxin are *post-harvest*. Women are responsible for processing groundnuts at the household level and are also responsible for child feeding, therefore reaching women with aflatoxin information is critical to reduce health impacts, and to improve the quality of groundnut production.

## Glossary

|                                |   |
|--------------------------------|---|
| <b>Gender</b>                  | The set of socially constructed roles, behaviors, responsibilities, and attributes a society considers appropriate for girls, boys, men and women. In some countries, additional categories are identified. The concept of gender encompasses economic, social, political, and cultural attributes and opportunities as well as roles and responsibilities. Gender is defined differently around the world and those definitions change over time.  |
| <b>Gender analysis</b>         | Socio-economic methodologies that identify and interpret the consequences of gender differences and relations for achieving development objectives as well as the implications of development interventions for changing relations of power between women and men. It describes the process of collecting sex-disaggregated data and other qualitative and quantitative information on gender issues, including access to and control over assets (tangible and intangible), as well as beliefs, practices, and legal frameworks, and then analyzing that data. An examination of gender disparities, differences, and relationships cannot be isolated from the broader social context. There are many methodologies available for conducting gender analyses. |
| <b>Gender-based constraint</b> | Restrictions on men's or women's access to resources or opportunities that are based on their gender roles or responsibilities. The term encompasses both the measurable inequalities that are reviewed by sex-disaggregated data collection and gender analysis as well as the factors that contribute to a specific condition of gender inequality.   |
| <b>Gender disparity</b>        | Measurable differences in the relative conditions between men and women, especially (but not only) as they relate to the ability to engage in economic or political opportunities, e.g., illiteracy rates, levels of land ownership, or access to finance (see also gender inequality).   |
| <b>Gender equity</b>           | Equity involves fairness in representation, participation, and benefits afforded to men and women. Gender equity strategies are seen as processes used to achieve gender equality. The goal is that both groups have a fair chance of having their needs met and each has equal access to opportunities for realizing their full potential as human beings.   |
| <b>Gender equality</b>         | The ability of men and women to have equal opportunities and life chances. Since gender roles (see above) change over time, development programming can have an impact on gender equality, either supporting it or inhibiting it.   |
| <b>Gender gap</b>              | The measurable difference between men's and women's conditions, e.g., in amount of income, political representation, level of education reached, or ownership of productive assets, among others.   |
| <b>Gender relations</b>        | One type of social relations between men and women which are constructed and reinforced by social institutions. They include the routine ways in which men and women interact with each other in social institutions: in sexual relationships, friendships, workplaces, and different sectors of the economy. Gender relations are socially determined, culturally based, and historically specific. They are mediated by other identities including ethnicity, religion, class, and age. Gender relations are shaped and reinforced by cultural, political, and economic institutions including the household, legal and governance structures, markets, and religion. Gender relations are dynamic and change over time.                                      |
| <b>Gender roles</b>            | Gender roles are the behaviors, tasks, and responsibilities that are considered appropriate for women and men as a result of socio-cultural norms and beliefs. Gender roles are usually learned in childhood. Gender roles change over time, through individual choices or as a result of social and/or political changes emerging from changed opportunities (more education, different economic environment) or times of social upheaval (during disasters, in war, and in post-conflict situations).   |

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|--------------------------|--|
| <b>Sex</b>               | Biological characteristics that distinguish males and females.   |
| <b>Sex-disaggregated</b> | Collection of data by sex into categories of males and females. Sex-disaggregated data collection allows for valid cross-country comparisons, since sex categories are the same from one country to another.   |
| <b>Value chain</b>       | A value chain describes the full sequence of activities (functions) which are required to bring a product or service from conception, through the intermediary of production, transformation, marketing, delivery to final consumers. A value chain can also include the final disposal after use (see also commodity chain, global supply chain, market chain, sub-sector, supply chain). |

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