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# FOOD SYSTEMS ASSESSMENT

**MALAWI**

**Mangochi District and Mchinji District**

**Diagnostics Report and Market System Assessment**



QUANTUM INTERNATIONAL  
CONSULTING GROUP



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# ABOUT THIS REPORT

This report presents the findings of a sub-national Food System Assessment in Malawi focusing on Mangochi and Mchinji districts, commissioned by Welthungerhilfe (WHH) with support from Concern Worldwide. The assessment applies a Market System Development (MSD) approach to examine local food system behavior, structures, and patterns shaping food system activities and outputs, and how these factors currently influence system performance toward sustainable healthy diets. It outlines key

leverage points in shortlisted food markets and prototype actions to strengthen system functionality, resilience, and inclusivity in Mangochi and Mchinji districts. The findings aim to bridge national-level food system transformation goals with practical, district-level opportunities, fostering collective action that drives sub-national change with positive spillover effects across interconnected systems.

## SPECIFIC OBJECTIVES AND GUIDING QUESTIONS

**The objective of the food system assessment is two-fold:**

1. To catalyse collective action on food system leverage points across system actors (including the private sector, academia, national and international Non-Governmental Organisations (NGOs), and donors in coordination with the responsible national and local government agencies) toward sustainability and resilience of the local food system, and
2. To inform future actions, interventions, and programs that contribute to food system transformation in the selected geographical scope.

**The assessment was designed to guide practitioners in the selected districts on the following key questions:**

1. What are the main food system challenges existing in Mangochi and Mchinji districts to foster sustainable healthy diets for all?
2. What potential changes are needed to encourage the production, processing, packaging, storage, distribution, marketing and retailing, and consumption of diverse foods to achieve sustainable healthy diets for all?
3. What factors are influencing consumer food choices with a focus on (1) smallholder farmers and their families; (2) nutritionally vulnerable and marginalized population groups in Mangochi and Mchinji districts; differentiating by age, gender, income, ethnic group, and geography) and, which shifts in diet could potentially have the greatest positive impact on both nutrition and sustainable livelihoods?
4. Which agri-food value chains have the highest potential to lever positive change toward sustainable and resilient food systems to always achieve sustainable and healthy diets for all?
5. Who are the actors in the food system and which factors do they influence?
6. Who has the skills and capacities to engage in collective action toward an improvement of system performance?
7. Which rules and norms as well as supporting functions can lever transformational change in Mangochi and Mchinji districts?

# STRUCTURE OF THE REPORT

**THE ASSESSMENT IS DIVIDED INTO THREE SECTIONS, WITH EACH ONE ZOOMING INTO A SPECIFIC ASPECT OF THE SUBJECT.**

- Outlines the system transformative ambition that guides the assessment.
- Provides a diagnostic analysis of current food system performance in both districts, highlighting strengths, outputs, and systemic constraints.



- Identifies and profiles the target populations for system transformation.
- Integrates perspectives from these groups into the analysis, ensuring that interventions are people-centered and equity-focused.

- Applies Market Systems Development (MSD) principles to select priority markets, services, and transactions relevant to food system transformation.
- Assesses these markets to identify leverage points and propose intervention models that can catalyze sustainable, systemic change.

# INTRODUCTION

Malawi's food system plays a central role in shaping the country's economic performance, public health, and social well-being. Agriculture remains the backbone of the economy, employing the majority of the population and contributing significantly to GDP and export earnings. Yet, despite its importance, the food system faces persistent challenges, including low productivity, limited diversification, climate vulnerability, post-harvest losses, and restricted market access. Dietary patterns remain heavily dependent on maize and other staple crops, resulting in limited dietary diversity and ongoing concerns over micronutrient deficiencies, stunting, and other forms of malnutrition.

Malawi's food systems are at a pivotal moment, with growing recognition that achieving safe, healthy, and sustainable diets requires targeted transformation at the local level. While national strategies set the direction, it is within districts and communities to foster system transformative change toward sustainable and resilient food systems.

The Government of Malawi, in alignment with the Malawi 2063 Vision and the National Multi-Sector Nutrition Policy, has committed to advancing sustainable, healthy diets through integrated food system transformation. This approach moves beyond agricultural productivity alone, placing equal emphasis on improving market functionality, enhancing value addition, promoting inclusive participation, and safeguarding environmental resources. The Market Systems Development (MSD) approach provides a useful framework in this context, focusing on identifying root causes of system underperformance, addressing incentives and rules that shape behavior, and leveraging partnerships to catalyze lasting, scalable change.

Within this national agenda, Mangochi and Mchinji districts hold strategic importance in Malawi's efforts to transform local food systems and advance access to safe, healthy diets. As key agricultural hubs with diverse production potential, dynamic market linkages, and distinct socio-economic contexts, these districts provide both opportunities and challenges for achieving sustainable nutrition outcomes. Mangochi, located in Malawi's Southern Region along the shores of Lake Malawi, is a key producer of fish, legumes, fruits, and horticultural crops, with potential

to expand both domestic and cross-border trade. However, it also faces significant food safety risks, market infrastructure gaps, and seasonal fluctuations in food availability. Mchinji, in the Central Region bordering Zambia, serves as a major grain production zone and trade corridor, offering opportunities for enhancing staple food availability while integrating more nutrient-rich crops into local markets, yet it grapples with price volatility, post-harvest handling challenges, and barriers to market inclusivity, especially for small-holder farmers and women entrepreneurs. Together, these districts offer diverse but interconnected contexts that can serve as testing grounds for innovative, scalable food system solutions.

This Food System Assessment, commissioned by Welthungerhilfe (WHH) in coordination with Concern Worldwide, applies the MSD approach to analyze the structures, behaviors, and relationships that shape how food is produced, traded, and consumed in Mangochi and Mchinji.

The assessment's findings aim to align district-level opportunities with Malawi's broader transformation agenda, facilitating a process of collective action among public, private, and community actors. By generating locally grounded insights, the report seeks to contribute to a food system where productivity, profitability, and nutrition outcomes are mutually reinforcing—ultimately enabling Mangochi and Mchinji to act as catalysts for broader sub-national and national change toward safe, healthy, and sustainable diets.

Unfolding the potentials in Mangochi and Mchinji toward improved nutrition and livelihoods therefore requires more than isolated interventions—it demands a systemic approach that addresses market inefficiencies, strengthens institutional support, and reshapes incentives toward sustainable production, equitable market participation, and healthier consumption patterns. By applying the Market Systems Development (MSD) approach, this assessment seeks to identify leverage points in selected markets—relevant for the local food system—where targeted actions can trigger positive, scalable, and lasting changes in the local food system, ultimately contributing to Malawi's national goals for food security, nutrition, and inclusive economic growth.

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# SECTION 1

# TRANSFORMATION TO WHAT END?

To nourish sustainable and resilient food systems that provide safe and healthy diets for all at all times.

To affirm the agency and economic empowerment of all people and support them in exerting their right to food.

To unfold partnerships and coordination across system actors to foster collective leadership for systemic transformation.





**TRANSFORMATION  
TO WHAT END?**

## SECTION 1: DIAGNOSTICS REPORT | MANGOCHI AND MCHINJI DISTRICTS, MALAWI

This diagnostics report provides a data-driven, district level overview of system performances and outcomes. The findings inform the levers for change outlined in Section “Transformation through which levers?” of this report.

# 1. DIAGNOSTICS REPORT: TECHNICAL APPROACH AND METHODOLOGY

The assessment for the diagnostics report used a participatory/consultative approach to ensure that all stakeholders are closely involved. A mixed-methods approach was employed whereby both qualitative and quantitative data were collected. Qualitative data were collected through Key Informant Interviews (KIIs), Focus Group Discussions (FGD), and observation

(spot-checks). Checklists were developed to guide the interviews. Separate checklists were developed for specific stakeholders to ensure that data relevant to their roles in the food system were thoroughly collected. Quantitative data was collected using an individual (household) questionnaire. The survey was programmed in the KOBO Toolbox.

## 1.1 Data Collection

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Both primary and secondary data were collected in the study.

### 1.1.1 DESK REVIEW

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Secondary sources of information related to food systems transformation were reviewed. This desk review helped to inform the design of data collection tools. The following documents are some of the documents that were reviewed:

- Outcomes Synthesis Report of the National and District Food Systems Dialogue for Malawi
- National Pathways for Food Systems Transformation in Support of the 2030 Agenda for Malawi
- Welthungerhilfe’s Food System Framework

- Achieving Sustainable Food Systems in a Global Crisis: MALAWI – Ceres 2030 Deep Dives into the Nexus of Food Systems, Climate Change, and Diets
- Resilience and Food Security in a Food Systems Context
- Food Systems Profile – Malawi: Catalyzing The Sustainable and Inclusive Transformation of Food Systems
- Faith and Food in rural Malawi: an investigation into sociocultural determinants of household food security

### 1.1.2 KEY INFORMANT INTERVIEWS

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KIIs were conducted with officers or representatives of the following in the 2 districts:

- District Agri-business officer
- District Disaster Risk Management Officer
- Chief Agriculture Officer
- District Environmental Officer
- District Nutrition Officer
- District Agro-processing Officer
- Agriculture Extension Development Coordinators/ Officers (AEDCs/AEDOs)
- Area/Village Disaster Management Committee
- Village Natural Resource Management Committee
- Agriculture Inputs Suppliers -Agro-dealers

### 1.1.3 FOCUS GROUP DISCUSSIONS

Six FGDs were conducted (3 in each district) with smallholder farmers in groups averaging 10 members.

A summary of the FGDs' characteristics is presented in the table below.

Table 1: Summary of FGD Participants

District	No. of FGDs conducted	FGD Number	No. of Participants	Number of Male Participants	Number of Female Participants	Number of youth Participants (18 to 35 years)
Mchinji	3	FGD 1	8	4	4	1
		FGD 2	11	6	5	2
		FGD 3	10	4	6	2
Mangochi	3	FGD 1	10	6	4	1
		FGD 2	10	3	7	3
		FGD 3	11	5	6	2

### 1.1.4 HOUSEHOLD SURVEY

A household survey was conducted to collect data from households across two districts. The sample size was determined using data from the recently completed farmer registration exercise, carried out by the Ministry of Agriculture in collaboration with the Lilongwe University of Agriculture and Natural Resources (LUANAR). The registration exercise reported a total of 129,027 registered farmers in

Mchinji and 250,563 in Mangochi. To calculate the sample size, we applied Kothari's (2004) formula at a 95% confidence interval with a 5% margin of error. As recommended by Edriss (2013), when no prior estimate of the population proportion (p) is available, a value of 0.5 is used to achieve the optimal sample size

The formula is applied as follows:

$$\text{Sample Size (n)} = \frac{N \times Z^2 \times p \times (1-p)}{(N-1) \times e^2 + Z^2 \times p(1-p)}$$

**Where:**

- N – Population of the beneficiaries.
- n – Is the sample size of the population to be included in the study
- Z – Is the confidence level (% of the population to be assessed);
- e – Is the level of error accepted; and
- p – Is the proportion in % of the population that will be incorporated in the evaluation.

**Using the formula**

$$\begin{aligned} N &= 379590 \\ &= \frac{379590 \times 1.962^2 \times 0.5(1-0.5)}{(379590-1) \times 0.052^2 + 1.962^2 \times 0.5(1-0.5)} \end{aligned}$$

The resulting sample size was approximately 350 households. The sample was then proportionately distributed across the two districts, resulting in 128 households for Mchinji and 222 households for Mangochi. However, during the actual survey, a total of 360 households were interviewed, with 133 households from Mchinji and 227 households from Mangochi. Respondents were selected using simple random sampling to ensure unbiased representation.

## 1.2 Data Analysis

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All statistical analyses of the quantitative data were conducted using SPSS and Microsoft Excel. For the qualitative data, Content Analysis was performed

using NVIVO software. This process involved identifying and developing key themes and sub-themes from the data.

## 1.3 Verification Processes

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A multi-stakeholder workshop was conducted in Mangochi. The workshop brought together a diverse group of stakeholders, including district agriculture officers, district agribusiness officers, district nutrition officers, agro-dealers, and nutrition officers, among others. The workshop was organized with the following objectives:

- a. To validate the interim assessment results on the current status of the local food system and its outputs.
- b. To facilitate a discussion on the potential of the maize, poultry, fisheries, groundnuts, beekeeping (honey), and mango – value chains that were identified through a detailed market analysis - to drive food system transformation in the district.
- c. To facilitate a comprehensive analysis of the maize, poultry, fisheries, groundnuts, beekeeping (honey) and mango value chains in Mangochi district, while promoting an exchange of insights on the food system activities and outcomes.
- d. To collaboratively identify challenges and explore opportunities for growth within these value chains.
- e. To foster partnerships among stakeholders, encouraging coordinated actions towards sustainable food systems by bringing together diverse perspectives and visions for change.
- f. To develop actionable strategies, impact pathways, and interventions aimed at strengthening the targeted value chains, ensuring they are inclusive and resilient.
- g. To identify and prioritize actions to address food system challenges at the district level, focusing on short- and medium-term solutions

## 2. ASSESSMENT RESULTS AND DISCUSSION

### 2.1 Household Demographic Characteristics

The consultants adopted a household member listing approach, collecting socio-demographic data for every household member rather than focusing solely on the household head or a single respondent. This method provides a comprehensive view of household composition, reducing biases associated with data limited to the household head. It allows for detailed insights into age, gender, education, and employment, facilitating more accurate analyses of dependency ratios, family structures, and intra-household inequalities.

Additionally, this approach enhances policy targeting, highlights vulnerable groups, and ensures the availability of gender- and age-disaggregated data. By capturing the diverse characteristics of all members, it offers a richer dataset for understanding social dynamics and designing effective interventions.

The table below presents household size, age, and education statistics among the household members in the two districts.

Table 2: Household Size, Age, and Education Statistics

	Mangochi	Mchinji
<b>Average household size</b>	4 members	4 members
<b>Percentage of female household members</b>	51.8%	55.8%
<b>Percentage of male household members</b>	48.2%	44.2%
<b>Overall average age of household members</b>	23 years	25 years
<b>Average age (male members)</b>	24 years	23 years
<b>Average age (female members)</b>	23 years	25 years
<b>Percentage of household members under 5 years old</b>	14.1%	9.5%
<b>Percentage of child members (above 5 and below 18)</b>	29%	28.6%
<b>Percentage of youth members (18–35 years)</b>	33%	34.4%
<b>Percentage of adult members (above 35 and not more than 60 years old)</b>	20.3%	24.7%
<b>Percentage of elderly members (above 60 years)</b>	3.4%	2.8%
<b>Percentage of individuals who completed junior primary school</b>	35.2%	22%
<b>Percentage of individuals who completed senior primary school</b>	21.6%	27%
<b>Percentage of individuals who completed junior secondary school</b>	7.8%	18.7%
<b>Percentage of individuals who completed senior secondary school</b>	10%	20.8%
<b>Percentage of individuals who reached university</b>	0.5%	0.7%
<b>Percentage of individuals who attended adult literacy education</b>	0.3%	0.9%
<b>Percentage of individuals who are in nursery school</b>	6.5%	4.4%

Both districts report an average household size of 4 members, aligning closely with the 4.5 average reported for Mchinji and Mangochi in the 5th Integrated Household Survey (IHS5) conducted by the National Statistical Office in 2020. Despite this similarity, the data reveals significant differences in key demographic and educational indicators between

the two districts. Mchinji has a higher percentage of female household members (55.8%) compared to Mangochi (51.8%). These findings align with the sex ratios reported in the 2018 Malawi Population and Housing Census, which were 90.4 for Mangochi and 97.1 for Mchinji. The sex ratio, a demographic measure indicating the number of males per 100 females,

highlights gender imbalances within a population. A ratio below 100 signifies more females than males, which is consistent with the census data and the current survey findings, confirming that both districts have a higher proportion of females.

Mchinji's adult population (24.7%) surpasses Mangochi's (20.3%), suggesting an older age structure, reflected in the overall average age of 25 years compared to 23 years in Mangochi. However, Mangochi has a significantly higher percentage of children under 5 years old (14.1%) compared to Mchinji (9.5%). Educational outcomes also show significant disparities. Mchinji outperforms Mangochi in higher levels of education, with 20.8% completing senior secondary school and 18.7% completing junior secondary school, compared to Mangochi's 10% and 7.8%, respectively. Conversely, Mangochi has a higher percentage of individuals completing junior primary school (35.2%)

compared to Mchinji (22%). Attendance in nursery school is slightly higher in Mangochi (6.5%) than in Mchinji (4.4%), while adult literacy education attendance remains low in both districts, with 0.9% in Mchinji and 0.3% in Mangochi.

In Mchinji, the majority of household heads were monogamously married (61.5%), while 13% were in polygamous marriages, 13% were divorced, and 11.5% were widowed. Farming was the primary occupation for 93% of household members over 35 years. Similarly, in Mangochi, most household heads were monogamously married (60.6%), though a larger proportion (20%) were in polygamous marriages. Additionally, 12.8% were divorced, and 6.2% were widowed. Farming remained the dominant occupation for 86% of household members over 35 years, with 2.2% primarily engaged in fishing.

## 2.2 Crop Production

The main crops grown in Mchinji are maize, soybean, and groundnuts, with a notable increase in rice production due to targeted interventions by Concern Worldwide and its implementing partner CICOD, which provided rice production training to local farmers. Additionally, approximately 15% of farmers in the district cultivate sunflowers, primarily for oil processing. In Mangochi, maize, groundnuts, and soybeans

are also the primary crops. However, soybean and groundnut cultivation are more prevalent in Mchinji, with 91% and 70% of smallholder farmers, respectively, compared to 25.8% and 53.3% in Mangochi. The table below highlights the types of crops grown in order of significance, ranked from most to least commonly cultivated.

Table 3: Proportion of Smallholder Farmers Cultivating Specific Crops

District	Main crops grown	Percentage of smallholder farmers growing the crop
Mchinji	Maize	99.2%
	Soybean	91.0%
	Groundnuts	70.7%
	Sunflower	15.0%
	Beans	9.0%
	Rice	7.5%
	Sweet potato	5.3%
	Other (cotton, tobacco)	5.3%
	Irish potato	2.3%
	Pigeon peas	0.8%
	Chillies	0.8%

District	Main crops grown	Percentage of smallholder farmers growing the crop
Mangochi	Maize	97.8%
	Groundnuts	53.3%
	Soybean	25.8%
	Other (cotton, tobacco)	7.1%
	Cassava	5.8%
	Pigeon peas	4.0%
	Cowpeas	3.1%
	Sweet potato	2.2%
	Sorghum	1.3%
	Tomato	1.3%
	Millet	0.9%
	Rice	0.9%
	Sesame	0.9%
	Chickpeas	0.4%

Landholding size remains a significant challenge for crop production, particularly in Mangochi, where the average arable landholding per household is 2.8 acres compared to 4.2 acres in Mchinji. This limitation becomes more apparent when analyzing crop production data for maize, soybean, and groundnuts, the three common crops grown in both districts. In Mchinji, the average land area allocated to maize production per household is 3.3 acres, yielding an average of 1,185 kg of maize (approximately 24, 50-kg bags) per household. In contrast, households in Mangochi allocate an average of 1.5 acres to maize, producing an average of 462 kg (about 9, 50-kg bags)

per household. For soybean, Mchinji households cultivate an average of 1.5 acres, producing 397 kg per household, while in Mangochi, the average cultivation area is 0.9 acres with a yield of 188 kg per household. Similarly, for groundnuts, households in Mchinji allocate an average of 1.25 acres, producing 239 kg per household, whereas those in Mangochi allocate 1.1 acres, yielding 232 kg per household. These figures highlight the impact of limited land availability on crop production, particularly in Mangochi, where smaller land sizes correlate with lower production levels across all crops. The table below summarizes the production data:

Table 4: Average Crop Production per Household

District	Crop	Area planted – acres (average per household)	Production – Kg (average per household)
Mchinji	Maize	3.3 acres	1185 kg
	Soybean	1.5 acres	397 kg
	Groundnuts	1.25 acres	239 kg
Mangochi	Maize	1.5 acres	462 kg
	Soybean	0.9 acres	188 kg
	Groundnuts	1.1 acres	232 kg

The study extended its analysis by comparing the production figures obtained from the survey with national estimates. For this comparison, the 2023/2024 Agriculture Production Estimates (APES) third-round data were used. Since APES reports aggregate production in metric tonnes (MT) and total production area for each crop at the national level—without specifying the total number of farmers cultivating each crop—the consultants utilized average production per hectare as the standard metric. Additionally, as the survey sample included only smallholder farmers who primarily practiced rainfed agriculture, the consultants focused specifically on the APES estimates for rainfed smallholder production and hectareage. The findings, summarized in the table below, indicate that smallholder production for maize, soybean, and groundnuts in Mchinji is comparable to the national averages. National maize and groundnut production are only 0.3 tonnes per hectare higher, while soybean production is just 0.1 tonnes per hectare higher. Conversely, the national average maize production in Mangochi is 50% lower

than the survey’s national average. Similarly, soybean and groundnut production in Mangochi are 0.3 and 0.4 tonnes per hectare lower, respectively, than the national averages.

To further investigate underlying issues, the consultants compared Mangochi’s production estimates with the overall averages for the Machinga Agriculture Development Division (MADD), which encompasses Mangochi, Zomba, Machinga, and Balaka districts. The results revealed that average maize production per hectare in MADD is 1.2 tonnes, compared to 0.9 tonnes from the survey data for Mangochi. Soybean production in MADD averages 0.4 tonnes per hectare, slightly lower than Mangochi’s 0.5 tonnes per hectare from the survey. Groundnut production is consistent, with both MADD and the survey reporting 0.6 tonnes per hectare. These results highlight that while Mangochi’s production is lower than Mchinji’s, it aligns with the averages for other districts within MADD, suggesting region-specific production patterns.

Table 5: Comparison of District and National Production

District	Crop	Total Production Area (Ha) from survey sample	Total Production (MT) survey	Average Production – MT/Ha (survey)	Total production area (Ha) national	Total Production (MT) national	Average Production – MT/Ha (national)
Mchinji	Maize	175.6	256.8	1.5	1,533,660	2,715,601	1.8
	Soybean	71.2	48.1	0.7	280,304	218,376	0.8
	Groundnuts	47.2	35.1	0.7	435,809	455,350	1.0
Mangochi	Maize	134.4	116.2	0.9	1,533,660	2,715,601	1.8
	Soybean	20.4	10.9	0.5	280,304	218,376	0.8
	Groundnuts	52.8	32.5	0.6	435,809	455,350	1.0

The challenge of small landholding sizes underscores the need for intensifying agricultural production. In Mchinji, 97% of smallholder farmers reported applying fertilizer to their crops, compared to 76.2% in Mangochi. Among farmers in Mchinji, 96% used UREA fertilizer, 88% applied NPK fertilizer, and 60.5% utilized organic fertilizer. In Mangochi, 60.5% applied UREA, 57.6% applied NPK fertilizer, and 69.2% used organic fertilizer. 74.4% of those who applied organic fertilizer in Mchinji applied Mbeya fertilizer, 5.1% applied Gokashi fertilizer, and 28.2% applied own-made organic fertilizer while in Mangochi, 16.8% applied Mbeya, 9.2% applied Gokashi, and 74.8% applied own-made organic fertilizer. The government’s Affordable Inputs Program (AIP) has historically

been a significant source of fertilizer for smallholder farmers, but the program’s beneficiary numbers have been declining. Currently, only 21.6% of smallholder farmers in Mangochi benefit from the AIP, compared to 55.6% in Mchinji. The fact that 23.8% of farmers in Mangochi do not use any fertilizer is particularly concerning, given the dual challenges of deteriorating soil health across the country and limited landholding sizes, which make production expansion nearly impossible. According to a study by the Partnership for Economic Policy<sup>1</sup>, most of Africa’s past agricultural growth has come from the expansion of cultivated areas. However, with little room left for further expansion, the study emphasizes the need to increase agricultural productivity through intensified use of inputs

1 Productivity impact of integrating soil-fertility-management interventions in input subsidy programs: Evidence from a randomized control trial in Malawi

like fertilizer and improved seeds. Our data highlights this point: households in Mangochi that did not apply fertilizer produced an average of 281 kg of maize per season, compared to 582 kg per household among those who used fertilizer.

A major barrier to fertilizer application is the rising cost of inorganic fertilizer, which has made it increasingly unaffordable for many smallholder farmers. A policy brief by the Mwapata Institute<sup>2</sup> reported that retail prices for common fertilizer varieties in August 2021 had risen by 60–75% compared to the same period the previous year. At the time of this study, inorganic fertilizer prices were above MK 100,000 per 50 kg bag. This sharp price undermines efforts to increase fertilizer use, particularly through the Affordable Inputs Program (AIP). The study also highlighted the urgent need to promote alternatives and complements to chemical fertilizers, such as proven organic fertilizers, manure, compost, maize-legume intercropping, and timely weeding, to improve soil fertility and sustain agricultural productivity.

Encouragingly, a significant proportion of smallholder farmers in both districts are utilizing organic fertilizers, which provide a cost-effective and sustainable alternative to inorganic options. Organic fertilizers enhance soil health by improving structure, increasing water retention, and promoting microbial activity. Additionally, their natural composition minimizes environmental pollution and mitigates soil acidification. However, a key constraint identified during the Multi-Stakeholder Dialogue (MSD) in Mangochi is the limited capacity among farmers and stakeholders to produce organic manure, which affects its availability. Organizations such as WHH and Concern Worldwide can help address this challenge by collaborating with district agricultural offices (AEDCs/AEDOs) to train farmers in organic manure production. Such initiatives would promote sustainable farming practices, tackle soil fertility issues, and reduce reliance on costly inorganic fertilizers.

In addition to the challenges of small landholding sizes and the inability of some smallholder farmers to afford fertilizer, the use of hybrid and climate-resilient seeds is a crucial factor in intensifying crop production. Hybrid and climate-resilient seeds have gained increasing importance due to their ability to withstand the impacts of climate change and environmental degradation. These seeds are specifically designed to be more resilient to extreme weather events, such as droughts, floods, and temperature fluctuations, which are becoming more frequent due to climate

change. Hybrid seeds also offer enhanced resistance to pests and diseases, thereby reducing the need for chemical pesticides. Furthermore, they generally yield higher harvests, making them essential for ensuring food security in areas where environmental degradation has depleted soil fertility. By adopting hybrid climate-sensitive seeds, farmers can maintain stable and sustainable agricultural production, even in difficult environmental conditions. In the 2023/24 agriculture season, 79.9% of smallholder farmers in Mchinji used hybrid seeds, compared to only 47.1% in Mangochi. Several factors contribute to the low adoption of climate-resilient hybrid seeds in Mangochi. Firstly, farmers in Mangochi generally have lower income levels compared to those in Mchinji, limiting their ability to afford these improved seeds. A detailed analysis of income disparities is provided in Section 3.11.3. Secondly, due to these low income levels, most agricultural input suppliers (agro-dealers) in Mangochi operate seasonally and are not permanently based in remote areas, further restricting the availability and accessibility of improved seeds. Lastly, a significant proportion of farmers in Mangochi engage in farming primarily for subsistence and are less inclined to view it as an investment, unlike their counterparts in Mchinji, who largely approach farming as a business.

Not all farmers in Mchinji exclusively planted hybrid seeds, indicating that many continue to rely on a combination of hybrid and local or recycled varieties. Among the 79.7% of farmers in Mchinji who used hybrid seeds, 21.1% planted a mix of hybrid and recycled/local seeds. Similarly, in Mangochi, among the 47.1% of farmers used hybrid seeds, 5.7% planted a mix of both hybrid and recycled/local seeds. Meanwhile, 21.3% of farmers in Mchinji and 52.9% in Mangochi planted only recycled or local seed varieties. Agro-dealers are the primary source of hybrid seeds for smallholder farmers in both districts, followed by the Affordable Inputs Program (AIP). In terms of pesticide use, 26.3% of farmers in Mchinji applied pesticides, compared to just 5.3% in Mangochi. These figures highlight significant differences in the adoption of hybrid seeds and pesticides between the districts, emphasizing the need to expand access to resilient seed varieties and promote their benefits.

To gain a comprehensive understanding, smallholder farmers were asked to rank the most significant challenges they face in crop production. Interestingly, farmers in both districts identified climate change as the top challenge, followed by the lack of or unaffordability of inputs, and then pests and diseases. The table below provides a summary of these findings.

<sup>2</sup> The Inorganic Fertilizer Price Surge in 2021: Key Drivers and Policy Options

Table 6: Key Challenges Affecting Crop Production

Ranking	District	
	Mangochi	Mchinji
Top ranked challenge	Climate change	Climate change
2nd ranked challenge	Lack of inputs	Lack of inputs
3rd ranked challenge	Pests and diseases	Pests and diseases
4th ranked challenge	Inadequate extension	Inadequate extension
5th ranked challenge	Soil degradation	Soil degradation
6th ranked challenge	Post-harvest losses	Post-harvest losses

Chapter 3.10 provides a detailed analysis of how climate change impacts crop production. A key factor limiting agricultural productivity is the lack of inputs, as evidenced by the stark difference in average maize production: households that applied fertilizer yielded 582 kg per household compared to only 281 kg for those that did not. Maize, a staple crop, is also highly vulnerable to pests and diseases such as Fall Armyworm, Maize Stem Borer, Maize Streak Virus, and common rust, all of which significantly reduce yields. Furthermore, inadequate agricultural extension services exacerbate the problem, with a current

farmer-to-extension worker ratio of 2,500–3,000:1, far exceeding the recommended ratio of 750:1. This leaves many farmers underserved and lacking crucial extension messages. Agricultural land degradation—manifesting as soil erosion, nutrient loss, and widespread soil degradation—affects an estimated 80% of Malawi’s total land area, as highlighted by the Agricultural Land Resources Management Policy (ALRMP). Finally, the issue of post-harvest losses and their impact on crop production is analyzed in detail in Chapter 3.7 of this report.

## 2.3 Fruit Production

Fruit production is closely linked to crop production in both districts. Mangoes are the most commonly grown fruit in both Mchinji and Mangochi. In Mchinji, papayas and oranges rank as the second and third most common fruits, while in Mangochi, it is guavas and papayas. Mangoes are generally low-input crops,

with most farmers relying on annual rainfall to sustain their trees and ensure production. The two primary local varieties are Dodo/Boloma and Kalisere, while improved varieties include Anderson, Kent, Tommy Atkins, Haden, and Erwin.

Table 7: Proportion of Smallholder Farmers Engaged in the Cultivation of Specific Fruits

District	Fruit	Percentage growing the fruit
Mchinji	Mango	70.0%
	Papaya	37.8%
	Orange	31.1%
	Other	20.0%
	Guava	17.8%
	Lemon	10.0%
	Avocado	7.8%
	Tangerine	2.2%

District	Fruit	Percentage growing the fruit
Mangochi	Mango	83.3%
	Guava	19.6%
	Papaya	17.4%
	Other	13.0%
	Tangerine	2.9%
	Orange	2.2%
	Lemon	1.4%
	Avocado	0%

## 2.4 Livestock and Fisheries Production

In Mchinji, chickens are the most common livestock, owned by 88.1% of households, with an average of 11 chickens per household. Goats (52.4%) and pigs (41.3%) follow, with average holdings of 4 and 5, respectively. In Mangochi, chickens also dominate, owned by 79% of households, averaging 8 chickens per household. Goats rank second (66.7%, 4 per household), followed by pigeons, which, although owned by only 6.8% of households, have the highest

average holding at 17 per household. Mchinji exhibits greater diversity in livestock ownership, including cattle (10.3%, 7 per household) and rabbits (4%, 6 per household). Less common poultry varieties, such as guinea fowl (2.4%) and ducks (1.6%), are also present. In contrast, Mangochi has a narrower range of livestock, but pigeon ownership is notable for its high average holding despite being limited to a small percentage of households (6.8%).

Table 8: Livestock Holding

District	Main livestock grown	Percentage owning the livestock	Average livestock holding per household
Mchinji	Chicken	88.1%	11
	Goat	52.4%	4
	Pigs	41.3%	5
	Cattle	10.3%	7
	Rabbit	4.0%	6
	Pigeon	3.2%	8
	Guinea fowl	2.4%	3
	Ducks	1.6%	3
Mangochi	Chicken	79.0%	8
	Goat	66.7%	4
	Pigeon	6.8%	17
	Ducks	3.1%	3
	Sheep	2.5%	6
	Pigs	0.6%	5
	Rabbit	0.6%	6

The primary source of livestock feed in both districts is fresh forage, such as pasture and grazing, utilized by 81.7% of households in Mchinji and 78.6% in Mangochi. Crop residues are the second most common feed source, used by 50% of households in Mchinji and 51.6% in Mangochi. Hay is used by 11.9% of households in Mchinji and 14.5% in Mangochi, while silage is more commonly used in Mchinji (17.5%) compared to Mangochi (2.5%). Additionally, only 2.5% of households in Mchinji rely on processed feed. These results show a reliance on natural and locally available resources in feeding livestock. The dominance of fresh forage in both districts shows a reliance on natural grazing lands, while the use of crop residues shows an effective use of agricultural by-products in livestock feeding. Silage is significantly more common in Mchinji (17.5%) than in Mangochi (2.5%). This disparity could reflect differences in awareness, access to silage-making techniques, or the availability of suitable crops for silage production.

Among those who own livestock, manure management is more practiced in Mchinji (87.2% of

smallholder farmers) as compared to Mangochi (59.5%). Composting is the most common manure management technique in both districts practiced by 84.8% in Mchinji and 71.4% in Mangochi.

In terms of fisheries, Lake Malawi, Lake Malombe, and the upper Shire River are the primary fishing water bodies in Mangochi, while the Bua River serves as the main fishing site in Mchinji. According to the Food and Agriculture Organization (FAO)'s Malawi Fishery and Aquaculture Country Profile, the fishery sector employs approximately 153,000 fishers nationwide, alongside 15,000 fish farmers managing a total of 10,007 fish ponds across all districts. In Mangochi, there were an estimated 15,329 fishers in 2015, as reported by Mbalaka et al. (2018)<sup>3</sup>. Approximately 8% of smallholder households in Mangochi's implementation area engage in fisheries, compared to just 2.3% in Mchinji. Aquaculture remains uncommon in both regions, with only 2.6% of households practicing it in Mangochi and 2.3% in Mchinji.

## 2.5 Market Access

When asked if they sold some of their 2023/2024 produce, 66.4% of smallholder farmers in Mchinji and 26.9% of smallholder farmers in Mangochi confirmed. As regards the main buyers available in the two districts, in Mchinji, the most common buyers are middlemen, accounting for 64.7% of transactions, followed by sales at local markets (33.8%) and direct-to-consumer sales (14.3%). Registered traders and processing companies are moderately significant buyers in Mchinji, representing 25.6% and 11.3%, respectively. In Mangochi, middlemen also dominate

as the primary buyers, albeit at a slightly lower 57.5%, with local markets being the second most common avenue (28.8%). Sales to registered traders, processing companies, and direct-to-consumer markets are less frequent in Mangochi compared to Mchinji, at only 4.0%, 3.5%, and 4.0%, respectively. Overall, middlemen and local markets are crucial for smallholder farmers in both districts, but Mchinji exhibits more diversified buyer engagement. The table below summarizes the results.

Table 9: Main Buyers of Produce

Type of buyer	Mchinji	Mangochi
Registered traders	25.6%	4.0%
Processing companies	11.3%	3.5%
Farmer associations / cooperatives	4.5%	0.9%
Seed companies	1.5%	0%
Auction holdings	0.8%	0.9%
Local market	33.8%	28.8%
Middle-men	64.7%	57.5%
Direct to consumers	14.3%	4.0%
Other	3.8%	18.1%

3 Assessment of artisanal Chambo fisheries in Mangochi district: International Journal of Fisheries and Aquatic Studies 2018; 6(3): 96-102

Given the dominance of middlemen in both districts, the study engaged District Agribusiness Officers to better understand the roles of middlemen and the challenges farmers face in working with them. Middlemen play a crucial role in market access for agriculture, offering both opportunities and challenges for smallholder farmers. One of their key functions is facilitating market linkages by connecting smallholder farmers to larger markets, including urban centers and export channels, which are often inaccessible to farmers due to limited transportation and logistical resources. Middlemen also aggregate and bulk produce from multiple small-scale farmers, creating quantities large enough to attract buyers such as wholesalers, processors, and exporters. By purchasing produce directly from farms and paying in cash, middlemen provide immediate liquidity, which is especially beneficial for farmers with urgent financial needs. Additionally, their quick purchase of produce helps reduce post-harvest losses caused by inadequate storage or delays in selling.

However, their involvement is not without challenges. One major issue is the low prices they offer farmers, often exploiting farmers' lack of market information to pay amounts that do not reflect the true value of the produce, leaving farmers with minimal profits. With better knowledge of market prices and demand, middlemen hold a significant advantage over farmers, further exacerbating this inequality. Unethical practices, such as manipulating weighing scales or applying unfair grading standards, are also common, reducing the earnings farmers receive. Furthermore, middlemen capitalize on seasonal price fluctuations, buying produce at low prices during harvest and selling at much higher prices during lean periods, leaving farmers unable to benefit from these price differences.

In conclusion, middlemen play a dual role in Mangochi and Mchinji's food systems, offering both benefits and challenges. On the positive side, they provide vital services such as market linkages and immediate cash payments, which are crucial for smallholder farmers with limited resources. However, their exploitative practices, including offering low prices and leveraging market asymmetries, often undermine producers' livelihoods and hinder their economic progress. To address these issues, targeted interventions are needed, such as fostering farmer cooperatives, improving access to market information, and investing in infrastructure to enable direct market access. Building a more inclusive and equitable food system in Mangochi and Mchinji will require strategies that retain the benefits middlemen provide while mitigating their negative impacts.

As regards distance travelled to access market, on average, smallholder farmers in both districts travel a distance of 4 km to access the nearest market. In Mangochi, the average time taken to reach the market is 31 minutes while in Mchinji the average time

taken is around 21 minutes. The difference is mainly due to poorer road networks in Mangochi. As regards sources of market information, in Mchinji, the most common source is through market visits, utilized by 57.9% of farmers, followed closely by radio (51.1%) and traders (38.3%). Mobile phones also play a significant role in Mchinji, with 30.8% of farmers relying on this method, while only 3.8% use other sources. In contrast, farmers in Mangochi primarily depend on traders for market information (47.3%), followed by radio (45.1%) and market visits (38.5%). Mobile phone usage for accessing market information is considerably lower in Mangochi, at just 6.2%, but reliance on other sources is slightly higher (7.1%). This indicates that while both districts rely heavily on interpersonal and traditional media sources, Mchinji farmers benefit more from technology-based tools such as mobile phones, whereas traders play a more prominent role in Mangochi. On whether they are satisfied with the information they get on market prices, 44.4% and 48.9% of farmers in Mchinji and Mangochi respectively indicated that they are not satisfied. As to whether they know the price of their produce in alternative markets, 70.7% of smallholder farmers in Mchinji indicated that they know while 60.4% of smallholder farmers in Mangochi indicated that they knew the prices of their produce in alternative markets.

In Mchinji, bicycles are the most commonly used mode of transport, accounting for 63.2%, followed by oxcarts at 37.6%. Headloads are used by 18.0% of farmers, while vehicles and other means account for 5.3% and 3.8%, respectively. In contrast, Mangochi farmers rely heavily on headloads (44.2%) and bicycles (51.8%) as primary transport methods, with limited use of oxcarts (9.3%) and vehicles (3.5%). The „other“ category is notably higher in Mangochi (15.5%) compared to Mchinji (3.8%), suggesting a reliance on alternative or informal transport methods. These differences reflect varying levels of access to transport infrastructure and resources in the two districts, with Mchinji showing greater use of intermediate means like oxcarts. As regards transportation challenges, high transport costs are the most prevalent issue, affecting 76.3% of farmers in Mchinji and 64.6% in Mangochi, indicating a widespread financial barrier to market access. Poor road conditions are another major challenge, impacting 49.6% of farmers in Mchinji and slightly more (54.0%) in Mangochi, reflecting infrastructure deficiencies that hinder efficient transportation. A lack of transport is reported by 22.9% of farmers in Mchinji and a higher 29.6% in Mangochi, suggesting a greater struggle in Mangochi with access to vehicles or transport services. Additionally, other unspecified challenges are more commonly cited in Mangochi (16.8%) than in Mchinji (6.9%), hinting at region-specific or less common issues not captured in the primary categories. Overall, while both districts face overlapping challenges, Mangochi appears to experience a broader range of transport difficulties. As regards the main challenges faced when accessing a market, low prices are the most significant challenge

in both districts, affecting 91.7% of farmers in Mchinji and 81.4% in Mangochi. In Mangochi, a slightly higher percentage of farmers (38.9%) report a lack of buyers compared to Mchinji (34.8%). Poor infrastructure, including inadequate roads and facilities, is another notable barrier, affecting 25.8% of farmers in Mchinji and 29.2% in Mangochi. High market fees appear to be a minor issue in both districts, impacting only 2.3% of farmers in Mchinji and 3.1% in Mangochi. However, Mangochi has a significantly higher proportion of farmers (17.7%) citing „other“ challenges which

normally constitute tampered weighing scales used by some buyers. Overall, both districts struggle with price-related and structural challenges, but Mangochi appears to face additional, diverse obstacles. The assessment also investigated whether smallholder farmers had contracts or formal agreements with buyers. 29.3% of smallholder farmers in Mchinji and 10.1% in Mangochi had formal agreements. Of these, 24.1% in Mchinji and 6.2% in Mangochi reported satisfaction with the terms of the agreements.

## 2.6 Food Security

Measuring food and nutrition security is essential in a food systems assessment as it provides critical insights into the availability, accessibility, utilization, and stability of food within a community. This process helps identify vulnerable populations and guides targeted interventions to address hunger, malnutrition, and dietary quality. Additionally, it ensures a holistic evaluation of food systems, considering not only food production but also equitable distribution and consumption. This comprehensive approach ultimately supports sustainable development and improved health outcomes. In our assessment, the consultants used the Months of Adequate Household Food Provisioning (MAHFP) tool to measure food security at the household level. The tool focuses on ensuring

households have sufficient food throughout the year, capturing both periods of food scarcity and adequacy. By emphasizing seasonality and household-level food access, MAHFP provides a clear understanding of food security dynamics over time.

The MAHFP results show that 48.9% of respondents in Mchinji and 91.6% in Mangochi reported experiencing months in the past 12 months when they were unable to meet their households' basic food needs. The table below illustrates the specific months during which households faced food insufficiency, along with the corresponding percentages of households affected.

Table 10: Months of Insufficient Food

Mchinji		Mangochi	
Months of food insufficiency (most to least severe)	Percentage of households having insufficient food	Months of food insufficiency (most to least severe)	Percentage of households having insufficient food
January	53.8%	October	58.7%
February	52.3%	September	56.7%
September	27.7%	August	44.2%
October	26.2%	February	43.8%
March	20.0%	January	39.9%
December	20.0%	July	29.3%
November	16.9%	March	27.4%
August	15.4%	June	26.0%
July	6.2%	November	25.5%
April	3.1%	December	22.1%
June	3.1%	May	16.3%
May	1.5%	April	15.9%

The analysis of household food insufficiency in Mchinji reveals clear seasonal patterns in food insecurity. The highest levels of food insufficiency were recorded in January (53.8%) and February (52.3%), reflecting significant challenges during these months. These figures suggest that early in the year, households face the greatest difficulty accessing sufficient food, likely due to depleted food stocks or limited income. Moderate food insufficiency occurred in September (27.7%) and October (26.2%), which may be attributed to seasonal agricultural cycles or post-harvest food shortages. In contrast, food insufficiency was notably lower in March (20.0%), December (20.0%), November (16.9%), and August (15.4%), likely corresponding to harvest periods or improved access to food. The lowest levels of food insufficiency were observed in July (6.2%), April (3.1%), June (3.1%), and May (1.5%), suggesting these months are marked by relative food security.

In Mangochi, food insufficiency also follows distinct seasonal trends, with particular periods of heightened vulnerability. The highest levels of food insufficiency were observed in October (58.7%) and September (56.7%), indicating these months are the most critical for food insecurity, likely due to post-harvest challenges or disruptions in food availability and access. August (44.2%) and February (43.8%) also saw high levels, pointing to additional stress during these months. Moderate levels of food insufficiency were reported in January (39.9%), July (29.3%), and March (27.4%), suggesting transitional periods when food access remains constrained. Lower levels of insufficiency were noted in June (26.0%), November (25.5%), and December (22.1%), indicating some recovery in food availability or improved purchasing power. The months with the least food insufficiency were May (16.3%) and April (15.9%), likely linked to improved agricultural production or reduced economic pressures.

Among the 48.9% of households in Mchinji reporting months of food insufficiency, 24.8% identified prolonged dry spells as the primary cause, while 12% attributed it to insufficient funds. Additionally, 2.3% mentioned crop destruction by pests, 0.8% cited limited

working assets, tools, or seeds, and 9% reported other factors such as low yields that could not sustain them throughout the year, emergencies like funerals that disrupted food consumption patterns, medical emergencies requiring the sale of food to cover medical bills, and poor food budgeting. In Mangochi, 91.6% of households reported experiencing food insufficiency, with 60.8% citing prolonged dry spells as the main reason. A further 26% pointed to lack of money, 2.6% reported flooding as the cause of crop destruction, 0.4% mentioned pests, and another 0.4% cited limited or no land for cultivation. Additionally, 1.3% of households listed other reasons, including those mentioned above. The flooding in Mangochi was caused by flash floods that occurred in April 2024.

The assessment went further to establish the coping mechanisms used by households for food insufficiency. In Mchinji, the most common coping mechanism is relying on less expensive food, with 43.3% of households adopting this strategy. Other frequent methods include piecework („ganyu“) (40.0%) and reducing the number of meals (20.0%). Additionally, 15.8% of households borrow food from friends or relatives, and 5.0% purchase food on credit. Smaller percentages rely on limiting portion sizes (8.3%), gathering wild food (0.8%), sending children to eat with neighbors (0.8%), or skipping entire days without eating (0.8%). In Mangochi, the most common coping mechanisms are similar but with notable differences. Relying on less expensive food is the most prevalent strategy, used by 65.2% of households. A significant number also reduce the number of meals eaten (44.6%) and do piecework („ganyu“) (37.1%). Limiting portion sizes (22.3%) and gathering wild food or hunting (5.8%) are also common. Borrowing food (3.1%) and purchasing on credit (1.8%) are less frequent. Some households in Mangochi skip entire days without eating (1.8%), but none report sending children to eat with neighbors. In summary, while both districts rely on less expensive food and piecework, Mangochi shows a higher reliance on reducing meal frequency, while Mchinji has a greater tendency to borrow food and purchase on credit. The table below summarises the results:

Table 11: Coping Mechanisms

Mchinji		Mangochi	
Coping mechanisms	Percentage of households utilizing the coping mechanism	Coping mechanisms	Percentage of households utilizing the coping mechanism
Rely on less expensive food	43.3%	Rely on less expensive food	65.2%
Other (do piecework "ganyu")	40.0%	Reduce number of meals eaten in a day	44.6%
Reduce number of meals eaten in a day	20.0%	Other (do piecework "ganyu")	37.1%
Borrow food from a friend or relative	15.8%	Limit portion size at mealtimes	22.3%
Limit portion size at mealtimes	8.3%	Gather wild food, hunt, or harvest immature food	5.8%
Purchase food on credit	5.0%	Borrow food from a friend or relative	3.1%
Gather wild food, hunt, or harvest immature food	0.8%	Purchase food on credit	1.8%
Send children to eat with neighbours	0.8%	Skip entire days without eating	1.8%
Skip entire days without eating	0.8%	Send children to eat with neighbours	0%

The MAHFP further establishes whether households' access to food this year (2023/2024) is better, the

same, or worse than the previous year (2022/2023). The table below presents the findings:

Table 12: Changes in the Food Security Situation

Mchinji		Mangochi	
Situation Rating	Percentage assigning the rating	Situation Rating	Percentage assigning the rating
Much better	14.3%	Much better	3.1%
A bit better	25.6%	A bit better	5.3%
Same	15%	Same	16.7%
Much worse	45.1%	Much worse	74.4%
Cannot say	0%	Cannot say	0.4%

The data suggests that in both districts, a majority of households perceive their access to food as having worsened. Mchinji reports a slightly more diverse range of responses, with a combined 39.9%

of households feeling their situation has improved („much better“ or „a bit better“), whereas Mangochi has a much higher proportion of households (74.4%) indicating their access to food has significantly

worsened. This could reflect regional differences in food security, possibly influenced by factors such as local agricultural conditions, income levels, or climate-related challenges. The data highlights the urgency of

addressing food insecurity, particularly in Mangochi, where a large majority feel their food access has significantly deteriorated.

## 2.7 Nutrition Security

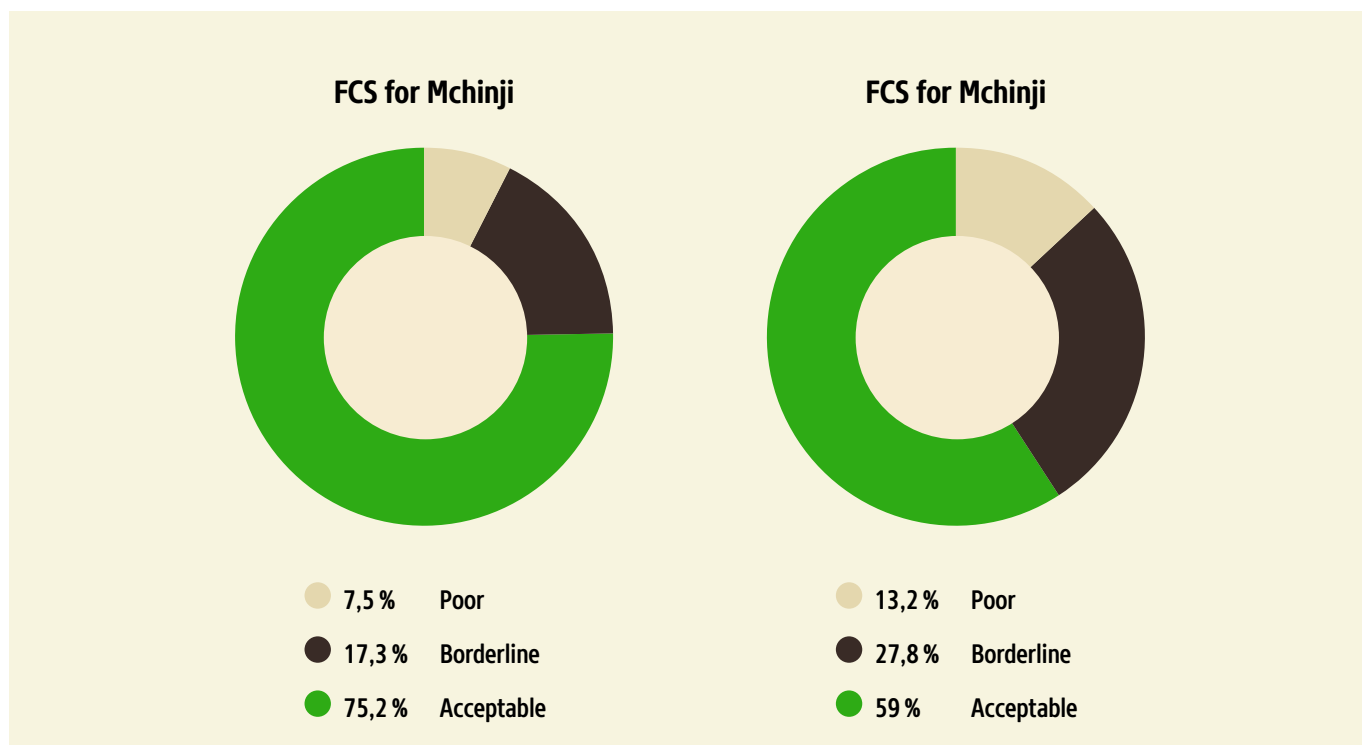
Nutrition security was assessed using the Food Consumption Score (FCS). The FCS is a composite indicator used to assess the quality and diversity of a household's diet. It is based on the frequency and diversity of food items consumed over a period of 7 days. Foods are categorized into different groups, with more nutritious items such as protein-rich foods given higher weight. The FCS helps measure both the quantity and nutritional adequacy of food consumed by a household, providing valuable insights into food security and dietary diversity. A lower FCS typically indicates poor nutrition and potential food insecurity, while a higher score suggests better dietary diversity and food access. The pie charts below present the FCS for Mchinji and Mangochi districts.

The FCS data for Mchinji and Mangochi provides insights into the nutrition security of households in both districts. In Mchinji, a high percentage of households (75.2%) fall under the acceptable food consumption category, indicating that the majority of households have access to a diverse and nutritionally adequate diet. A smaller proportion, 17.3%, falls into the borderline category, suggesting some households may experience occasional dietary gaps, but still

manage to maintain basic food security. Only 7.5% of households are classified as poor, indicating that a relatively small number of households face severe food insecurity, with limited access to nutritious food. In Mangochi, while the percentage of households with acceptable food consumption is still significant (59%), it is notably lower than in Mchinji, reflecting a higher level of food insecurity. A larger proportion of households in Mangochi (27.8%) fall into the borderline category, and 13.2% are classified as having poor food consumption. This suggests that a considerable number of households in Mangochi are struggling to maintain an adequate and balanced diet, with many relying on lower-quality food or facing periods of food insufficiency.

Overall, Mchinji appears to have better nutrition security, with a higher percentage of households enjoying an adequate diet, while Mangochi shows greater vulnerability to food insecurity, with a higher percentage of households experiencing borderline or poor food consumption. This highlights the need for targeted interventions in Mangochi to improve access to diverse, nutritious food and support households at risk of food insecurity.

Figure 1: Food Consumption Score



## 2.8 Post-Harvest Losses

Post-harvest losses significantly undermine food and nutrition security by reducing the quantity and quality of available food, particularly in regions reliant on smallholder farming. These losses, caused by poor storage, inadequate transportation, and pest infestations, decrease the food supply, leading to scarcity and higher prices. Nutritional quality is also compromised when perishable crops deteriorate, reducing access to essential nutrients. This not only threatens household food availability but also exacerbates malnutrition, particularly among vulnerable populations like children and pregnant women. Addressing post-harvest losses is therefore critical for ensuring stable, affordable, and nutritious food supplies.

80.7% of the smallholder farmers in Mchinji reported experiencing post-harvest losses while 64.3% of smallholder farmers in Mangochi reported experiencing post-harvest losses. The majority of smallholder farmers (57.9% in Mangochi and 49.7% in Mchinji) reported experiencing losses of not more than 10% of their entire produce, while 33.6% and 22.1% of smallholder farmers in Mchinji and Mangochi respectively reported losing between 11 and 20%. 7.5% in Mchinji and 15.2% in Mangochi lose between 21% and 30% of their produce while the rest lose more than 30% of their produce. Smallholder farmers were further asked to rank the main causes of post-harvest losses. The table below summarizes the four top-ranked causes of post-harvest losses in each of the two districts.

Table 13: Causes of Post-Harvest Losses

Ranking	District	
	Mangochi	Mchinji
Top ranked challenge	Poor handling during transportation	Pests and diseases
2nd ranked challenge	Pests and diseases	Poor handling during transportation
3rd ranked challenge	Poor storage facilities	Poor storage facilities
4th ranked challenge	Inadequate storage facilities	Climate shocks like excessive heat, cyclones, floods etc.

Smallholder farmers in Mchinji and Mangochi are employing various strategies to minimize post-harvest losses, focusing on improving storage and handling. The majority adopt improved storage techniques (84.8% in Mchinji and 83.6% in Mangochi) to preserve crop quality and prevent spoilage. Proper packaging is also widely practiced, with higher adoption in Mangochi (71.6%) compared to Mchinji (65.9%), enhancing protection during transportation

and storage. Timely harvesting is another critical strategy, practiced by 52.3% in Mchinji and 46.2% in Mangochi, to ensure crops are harvested at optimal maturity. Some farmers resort to immediate sale or consumption (12.9% in Mchinji and 7.1% in Mangochi) to avoid losses from extended storage. These strategies collectively help reduce post-harvest losses and maintain food security.

## 2.9 Coping Strategy Index

The Coping Strategy Index (CSI) was employed to evaluate how households respond to insufficient food access. This tool assigns scores to various coping strategies based on their frequency and perceived severity. Higher CSI scores indicate a greater reliance on coping mechanisms, reflecting higher levels of food insecurity. Low-severity strategies include actions such as reducing portion sizes or consuming less preferred foods, whereas high-severity strategies involve more drastic measures like borrowing money

for food, selling productive assets, or skipping meals for entire days.

The interpretation of CSI scores is categorized as follows:

- **0–19: Low coping or minimal stress**  
Households within this range are managing well without resorting to significant negative coping strategies.
- **20–39: Moderate coping**  
This range indicates the use of some coping

strategies, though they may not yet compromise the household's future resilience.

- **40–59: High coping**

Households in this category frequently employ negative coping strategies, signifying stress that may impact their long-term well-being.

- **60 and above: Severe coping**

Scores in this range suggest reliance on extreme strategies, reflecting acute distress and vulnerability.

The table below summarizes the results.

Table 14: Coping Strategy Index

District	CSI score rating			
	low	moderate	high	severe
Mangochi	55.1%	26.4%	8.8%	9.7%
Mchinji	80.5%	15.8%	3.8%	0%

The CSI results reveal notable differences in food security and coping mechanisms between Mangochi and Mchinji districts. In Mchinji, the majority of households (80.5%) fall under the low CSI score category, indicating better food security and minimal reliance on coping strategies. Only 15.8% of households have a moderate CSI score, while 3.8% fall into the high CSI score category. Importantly, no households (0%) reported a severe CSI score, reflecting overall lower vulnerability to food insecurity in the district.

In contrast, Mangochi shows a higher reliance on coping strategies, with only 55.1% of households in the low CSI score category. A significant proportion of households (26.4%) have a moderate CSI score, while 8.8% fall under the high CSI score category, and 9.7% report a severe CSI score. These findings highlight greater food insecurity and vulnerability in Mangochi compared to Mchinji, suggesting a need for more targeted interventions in Mangochi to enhance food security and resilience.

## 2.10 Factors Affecting Food Choices

The study also sought to establish the factors that affect food choices in both districts. The results are the same in both districts as income levels were singled as the top-most factor that affects food choices, followed by food prices, seasonality, market access, and climate and weather. Income levels play the most significant role in determining food choices, as households with lower incomes often have limited access to a variety of foods, forcing them to prioritize basic, inexpensive staples like maize. Food prices are the next major factor, as fluctuations in the cost of key food items can restrict access to nutritious foods, particularly during periods of scarcity. Seasonality also affects food choices, with people relying heavily on seasonal crops, which may not always meet nutritional needs, especially during the lean months when fresh produce is less available. Market access is another critical factor, as communities with limited access to markets are less able to purchase diverse foods, leading to reliance on locally grown crops and home-based food sources. Lastly, climate and weather significantly influence food availability and the types of foods that can be grown, with extreme

weather events like droughts or floods reducing crop yields and further limiting food options. Together, these factors shape the food security landscape in two districts, often leading to suboptimal diets and nutritional challenges.

The food basket of Mangochi reflects a reliance on locally available staples and diverse food sources. Maize, prepared as nsima, is the primary staple and is often paired with vegetables such as bonongwe (amaranth), pumpkin leaves, okra, and eggplants. Protein sources include usipa (small dried fish), fresh fish from Lake Malawi, and meats such as chicken and goat. Rice, grown in the fertile areas surrounding the lake, serves as another key carbohydrate. Additional staples like cassava, sweet potatoes, and legumes, including beans and pigeon peas, further enrich the diet. Seasonal fruits such as mangoes, bananas, and guavas add variety, reflecting the region's agricultural and fishing practices, shaped by its tropical climate and proximity to Lake Malawi. Similarly, Mchinji's food basket centers around maize, consumed as nsima, as the main staple. Cassava and sweet potatoes are also

widely consumed. The district is known for its production of legumes like groundnuts and soya beans, which provide essential protein. Vegetables such as pumpkin leaves, tomatoes, and mustard greens are commonly grown and included in meals. Protein sources also feature goat, chicken, beef, and pork, with livestock

farming contributing milk and eggs that enhance dietary diversity. Seasonal fruits, including mangoes, guavas, and papayas, are a significant part of the diet, showcasing the district's strong agricultural base and varied food production.

## 2.11 Climatic / Livelihood Shocks and Resilience

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Climatic shocks, such as droughts and floods have significant impacts on food systems, disrupting production, distribution, and access to food. These shocks can lead to reduced crop yields, livestock losses, and damage to infrastructure, exacerbating food insecurity, especially in vulnerable communities. Prolonged dry spells can deplete water resources and diminish agricultural productivity, while floods can destroy crops and contaminate food supplies. Additionally, climatic shocks often increase food prices and reduce household incomes, further limiting access to nutritious food.

Over the past few years, both Mangochi and Mchinji have faced several climatic shocks. According to the State of Climate Change in 2023 Report by the Department of Climate Change and Meteorological Services, extreme weather events were particularly evident between November and December 2022. During this period, the highest recorded 24-hour rainfall was 126 mm. Severe weather conditions, including storms, heavy rains, floods, strong winds, hailstorms, and lightning, impacted over 9,321 households (approximately 41,944 people) across more than 20 districts, including Mangochi, Mchinji, Balaka, and Chikwawa. These events caused significant damage to homes, roads, schools, and hospitals, and crops. From January to March 2023, Malawi experienced unprecedented rainfall, especially during the impact of Cyclone Freddy. Many weather stations reported record-breaking rainfall within a three-day period, far exceeding monthly averages and, in some cases, even annual totals. This intense rainfall led to devastating floods, landslides, and mudslides across southern districts, including Mangochi. The accompanying image illustrates a camp established for flood victims in Mangochi following Cyclone Freddy. The cyclone caused widespread socio-economic disruptions, including losses in agriculture due to the destruction of maturing crops, damage to transportation infrastructure with roads and bridges washed away, and a surge in waterborne diseases, which strained the healthcare system.

The report further highlights that climate change has increased the frequency of extreme temperatures. During the summer of 2023, meteorological stations in Mangochi recorded consistently high to very high temperatures. Heat stress associated with these elevated temperatures poses significant health

risks, particularly to vulnerable populations. Notably, Mangochi experienced 29 „very hot days,“ defined as days with maximum temperatures exceeding 37°C, underscoring the severity of the warming trend.

The State of Climate Change Report for 2022 highlights that Malawi faced numerous weather and climatic extremes during the year, including heavy rains, dry spells, droughts, flooding, heatwaves, tropical cyclones, and strong winds. Extreme rainfall and flooding were particularly notable during Tropical Storms Ana and Gombe. Tropical Storm Ana had its strongest impact on Malawi from January 22 to 26, 2022, setting new 24-hour rainfall records at several southern Malawi stations, with some locations recording as much as 350 mm. Intense Tropical Cyclone Gombe influenced Malawi's weather from March 11 to 14, 2022. While the rainfall from Tropical Storm Ana exceeded that of Cyclone Gombe in both spatial extent and maximum recorded 24-hour values, both events caused widespread damage.

In October 2022, lakeshore districts such as Mangochi, Karonga, and Salima, along with parts of the central region like Kasungu and the Lower Shire Valley (including Ngabu), experienced maximum temperatures above 36°C. November 2022 brought continued hot weather across much of the country. Lakeshore districts (Mangochi, Karonga, Salima, Nkhatabay, and Nkhotakota) and the Lower Shire recorded hot to very hot conditions, with temperatures frequently exceeding 36.5°C. Notably, Mangochi experienced 12 „very hot days,“ with maximum temperatures surpassing 37.3°C.

The extreme weather and climate events of 2022 had profound social and economic impacts on individuals, communities, and various sectors in both Mangochi and Mchinji. A warning issued by the Department of Disaster Management Affairs (DoDMA) on January 24, 2022, identified Mangochi as one of the districts at the highest risk from Tropical Storm Ana. A subsequent disaster assessment report by DoDMA, released on January 31, 2022, revealed that 3,604 households in Mangochi and 152 households in Mchinji were affected by the storm, with one death recorded in Mangochi. The table below provides a summary of the households impacted by Tropical Storm Ana in the two districts.

Table 15: Summary of Affected Households, Population, Camps, and Casualties

District	Affected Households (HH)	Affected Population	No. of Camps	Number of HHs in Camps	Deaths	Number of people missing	Number of people injured
Mchinji	152	745	-	-	-	-	2
Mangochi	3,604	17,660	2	179	1	-	5
<b>Total</b>	<b>3,756</b>	<b>18,405</b>	<b>2</b>	<b>179</b>	<b>1</b>	<b>-</b>	<b>5</b>

According to the District Disaster Risk Management Officers (DRMO) in both districts, these extreme climatic events are exacerbated by deforestation and poor land management practices. Climate change has significantly affected natural resources in Mangochi. Many rivers, such as Manyenje, Mua, and Pangati, now dry up shortly after the rainy season, severely impacting fish populations and overall biodiversity. The National Agriculture Policy (2024) Fish availability in Lake Malawi has also declined. The National Agriculture Policy (2024) highlights that the availability of the mix of species of wild caught fish from Malawi’s lakes, rivers and floodplains has dwindled over the years due to unsustainable fishing practices and natural resource degradation. Flooding has rendered many arable lands uncultivable by covering them with sandy soils. Additionally, forests and vegetation cover, including Nakulukutiche and Chitimbe forests, have been completely destroyed. Similarly, in Mchinji, formerly perennial rivers like Lunthwe and Namilolo now becoming seasonal. Other rivers, such as Bua, Mthombozi, and Dambolo, only have partial water flow throughout the year, resulting in drastically reduced fish production. Forests such as Tsekwe, Kaphirikamwana, and Dambe have been completely destroyed, and soil fertility has declined due to erosion caused by water and wind.

The drying up of rivers in both districts significantly disrupts the food system by reducing fish populations, impacting fishing as a source of livelihood and nutrition. The loss of water also affects biodiversity, reducing the availability of wild foods and natural resources that support subsistence and income. Additionally, the reduced water supply forces households to adopt unsustainable coping mechanisms, such as over-reliance on rain-fed agriculture, further destabilizing the food system.

To address these challenges, several interventions are being implemented in both districts. In Mangochi,

measures include planting early-maturing crop varieties, drought-resistant crops like cassava and sweet potatoes, and using soil conservation techniques such as marker ridges and contour bands. In Mchinji, interventions focus on promoting terracing and contour bands to mitigate soil erosion and preserve agricultural productivity.

Both Mangochi and Mchinji have District Disaster Contingency Plans, which serve as strategic frameworks to prepare for, respond to, and mitigate the impacts of potential disasters within their respective districts. These plans are critical for ensuring timely, coordinated, and effective responses to emergencies such as floods, droughts, epidemics, storms, and other hazards. The plans are updated annually following the weather forecasts issued by the Department of Climate Change and Meteorological Services. This process involves collaboration with cluster leads from key sectors such as agriculture, education, and health. However, despite the existence of these plans, their operationalization faces significant challenges due to resource constraints. While the plans outline the resources required to respond effectively to forecasted disasters, these resources are often insufficient when disasters strike. This gap was highlighted in the aftermath of Cyclone Freddy. According to the Department of Disaster Management Affairs (DoDMA), the national emergency plan, which consolidates district plans, required MK 147.8 billion for implementation. However, only MK 37.3 billion was available at the time, leaving a shortfall of MK 110.6 billion. This funding gap underscores the urgent need for enhanced resource mobilization to ensure effective disaster response and recovery.

The assessment also examined the main negative effects of these climatic shocks on households, which are summarized in the table below.

Table 16: Effects of Climate/Livelihood Shocks

Mangochi		Mchinji	
Climatic change effect	Percentage reporting	Climatic change effect	Percentage reporting
Crop damage	83.3%	Crop damage	68.3%
Loss / damage of shelter / housing	50.0%	Loss / damage of shelter / housing	46.0%
Livestock disease / morality	9.3%	Reduced availability of safe drinking water	20.6%
Reduced availability of safe drinking water	4.9%	Livestock disease / morality	7.9%
Health effects (e.g. malnutrition) / human disease	0.6%	Business failure	6.3%
Conflict / Violence	0.6%	Injury	4.8%
Injury	0.6%	Health effects (e.g. malnutrition) / human disease	3.2%

The data highlights the significant negative effects of climate change on households in Mchinji and Mangochi districts, with notable differences in the type and prevalence of impacts. In both districts, crop damage is the most commonly reported effect, affecting 83.3% of households in Mangochi and 68.3% in Mchinji, underscoring the vulnerability of agriculture to climate-related shocks. Loss or damage to shelter/housing is the second most reported effect, impacting 50.0% of households in Mangochi and 46.0% in Mchinji, likely due to extreme weather events like storms or floods.

In Mangochi, livestock disease/mortality (9.3%) and reduced availability of safe drinking water (4.9%) are other notable concerns, though they are reported at much lower rates. In contrast, Mchinji households report reduced availability of safe drinking water

(20.6%) as a more prominent issue, followed by livestock disease/mortality (7.9%). Other less frequently reported impacts include health effects, business failures, and injuries, with Mangochi reporting minimal rates for these effects.

Overall, the data reveals that climate change disproportionately affects key livelihood assets, such as crops, housing, and water access, with Mangochi experiencing slightly higher levels of impact. This calls for targeted interventions to strengthen resilience and adaptive capacity in both districts.

## 2.12 Resilience to Climatic Shocks

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Building farmers' resilience to climate change is crucial for ensuring food security and sustainable livelihoods. As climate change leads to unpredictable weather patterns, such as droughts, floods, and changing growing seasons, farmers need the ability to adapt to these challenges. Strengthening resilience through access to climate-smart agricultural practices, drought-resistant crops, improved irrigation systems, and better soil management can help farmers maintain productivity despite climatic shocks. Additionally,

increasing farmers' knowledge of climate risks and response strategies enables them to make informed decisions that protect their incomes and food sources, ultimately contributing to the long-term sustainability of agriculture and rural communities. The consultants analyzed farmers' resilience by assessing the anticipatory, adaptive, and absorptive capacities of the smallholder farmers in the two districts.

### 2.12.1 ANTICIPATORY CAPACITY

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Anticipatory capacity involves the ability to foresee and prepare for future risks or shocks, such as climate events, by planning and taking proactive measures. A key aspect in the anticipatory of a community is the presence of an Early Warning System (EWS). An EWS includes a range of tools and components designed to monitor, predict, and provide alerts for natural hazards and other potential risks. These systems aim to reduce vulnerability by enabling timely responses and mitigating negative impacts. Key tools used in an EWS include meteorological tools such as weather stations, rain gauges, and radar systems as well as hydrological tools such as river line gauges, and seismic sensors for detecting and monitoring earthquake activity. Another key component of an EWS is communication tools which can include mobile alerts and messaging systems, radio and Television (TV) broadcasts, and public warning sirens.

In Mchinji, 52.6% of smallholder farmers reported awareness of Early Warning Systems (EWS) in their areas, compared to 41.9% in Mangochi. The District Disaster Risk Management Officer (DRMO) for Mangochi highlighted that the main EWS meteorological tools in the district include Stevenson screens, windsocks, wind vanes, and rain gauges, located within selected Extension Planning Areas. However, the DRMO for Mchinji noted that only rain gauges, stationed in two Traditional Authorities, are available as meteorological tools, indicating limited capacity for monitoring.

Both districts rely on agriculture extension officers to disseminate early warning information to

communities. While this manual approach is crucial, it is hindered by challenges such as poor road networks, long distances, and limited resources, making it both inefficient and less effective. Promoting technology-based dissemination methods, such as SMS mobile alerts, radio, TV broadcasts, and community-based radio stations, could significantly enhance the reach and impact of early warning information.

Although over 93% of smallholder farmers in both districts have previously received early warning information via radio, and 16.7% in Mchinji reported receiving alerts via SMS, the messages were primarily national-level warnings and lacked district-specific details. To enable tailored and timely responses, it is essential to prioritize the dissemination of district-specific early warning information. The use of community radio stations can prove very effective in this regard.

In conclusion, the level of anticipatory capacity in both Mchinji and Mangochi is moderate but requires significant improvement to enhance the resilience of smallholder farmers against climatic shocks. The availability of meteorological tools is limited, particularly in Mchinji, where only rain gauges are used. Dissemination of early warning information primarily relies on manual methods, such as agriculture extension officers, which are hindered by logistical challenges. To enhance anticipatory capacity, both districts must prioritize the adoption of technology-based dissemination methods, including mobile alerts, radio, and community-based broadcasting, and expand access to localized, actionable early warning information.

### 2.12.2 ADAPTIVE CAPACITY

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Adaptive capacity refers to the ability of individuals, communities, or ecosystems to adjust and respond effectively to the impacts of climate change. It involves modifying practices, structures, and behaviors to mitigate risks, exploit potential opportunities, and cope with climate-related shocks and stressors.

Our assessment of adaptive capacity focused on an examination of the adoption of new technologies and practices that improve resilience to climate change (e.g., irrigation systems, drought-resistant crops, or conservation farming). The table below summarizes the findings.

Table 17: Adoption of Sustainable Agriculture and Land Management Practices

Sustainable Agriculture and Land Management Practice	Proportion of smallholder farmers adopting Sustainable Agriculture Land Management Practices	
	Mchinji	Mangochi
Organic manure-making and application	39.8%	60.2%
Agroforestry	50.0%	50.0%
Using crop residuals for mulching	39.7%	60.3%
Crop Rotation	44.9%	55.1%
Conservation Farming	39.4%	60.6%
Cultivation of drought tolerant crops	34.1%	65.9%
Rain-water harvesting	40.5%	59.5%
Pit planting	21.1%	78.9%
Cover cropping	44.4%	55.6%
Planting early maturing crops	31.7%	68.3%
Integrated Pest and disease management	36.4%	63.6%
Irrigation farming	81.7%	18.3%
Minimum tillage	27.9%	72.1%
Integrated Pest Management	100.0%	0.0%
Contour farming	50.0%	50.0%

The findings highlight the distinct adaptive capacities of smallholder farmers in Mchinji and Mangochi in adopting sustainable agricultural and land management practices. Farmers in Mangochi exhibit a higher overall adoption of climate-resilient and soil conservation practices, reflecting a stronger emphasis on adapting to challenging environmental conditions such as drought. Practices like pit planting (78.9%), cultivation of drought-tolerant crops (65.9%), and minimum tillage (72.1%) have notably higher adoption rates in Mangochi, underscoring their focus on soil moisture retention and resilience against water scarcity.

In contrast, Mchinji demonstrates strength in practices like irrigation farming, with an adoption rate of 81.7%, suggesting better access to water resources or irrigation infrastructure. Additionally, Integrated Pest Management (100%) is universally adopted in Mchinji, possibly due to institutional interventions or

pest-related challenges in the region. Both regions have moderate adoption rates for agroforestry and contour farming (50% each), indicating shared recognition of their long-term benefits for soil conservation and ecosystem stability. However, lower adoption rates in Mchinji for practices like pit planting (21.1%) and planting early maturing crops (31.7%) may indicate either resource limitations or less pressing environmental challenges compared to Mangochi.

In summary, farmers in Mangochi demonstrate a stronger inclination toward climate-adaptive practices, prioritizing soil and water conservation measures. In contrast, Mchinji shows a higher reliance on irrigation and pest management. Overall, both regions exhibit distinct adaptive strategies reflecting localized responses to agricultural challenges.

### 2.12.3 ABSORPTIVE CAPACITY

Absorptive capacity is the ability to absorb shocks without significant harm, maintaining stability in the short term through coping strategies. The key indicators used in this assessment to measure absorptive

capacity are income levels of smallholder farmers and asset accumulation.

Table 18: Income Sources

Income source	Mchinji	Mangochi
Crop sales	81.8%	34.4%
Fish sales	5.3%	11.0%
Livestock sales	53.8%	18.1%
Natural resources sales (charcoal, firewood, timber, etc.)	0.0%	7.9%
Village Savings and Loans	38.6%	15.0%
Formal employment	0.8%	0.9%
Beekeeping	0.8%	0.4%
Horticulture (vegetables)	3.8%	6.6%
Gifts/Remittances	2.3%	0.4%
Pension	0.8%	0.0%
Cash for work programs	9.8%	2.2%
Petty trading/business	22.0%	25.6%
Artisanal skills (weaving, brewing, builder, e.t.c.)	1.5%	7.9%
Casual labor (ganyu)	25.8%	52.9%

The income sources of smallholder farmers in Mchinji and Mangochi reveal notable regional differences. In Mchinji, the primary income source is crop sales (81.8%), indicating a strong reliance on agricultural production, complemented by livestock sales (53.8%) and participation in Village Savings and Loans (38.6%), which provide financial support. Other income-generating activities, such as petty trading (22.0%) and casual labor (25.8%), play a secondary role, while activities like horticulture (3.8%), beekeeping (0.8%), and formal employment (0.8%) contribute minimally. In contrast, Mangochi farmers exhibit a more diversified income profile, with significant reliance on casual labor (52.9%) and petty trading (25.6%), reflecting limited dependence on crop sales (34.4%). Income from natural resource sales (7.9%) and artisanal skills (7.9%) indicate alternative livelihood strategies, while reliance on livestock sales (18.1%) and Village Savings and Loans (15.0%) is comparatively lower. These disparities highlight the differing economic dynamics between the two districts, influenced by environmental and socio-economic factors.

The average annual income was calculated by first summing each household's monthly income from all income-generating activities over the past 12 months. Then, the annual income for all households was aggregated. Finally, the total annual income was divided by the number of respondents to determine the average annual income. The average annual income

per household in Mchinji (MK 589,945) is notably higher than in Mangochi (MK 377,821). In Mangochi, a substantial proportion of smallholder farmers (34.8%) earn MK 150,000 or less annually, while 32.6% fall within the MK 151,000–300,000 income bracket. Only 18.5% earn between MK 301,000 and MK 500,000, 9.25% fall in the MK 501,000–1,000,000 range, and just 4.85% earn more than MK 1,000,000 annually. In contrast, Mchinji shows a more even income distribution, with 18.25% earning MK 150,000 or less and 21.43% in the MK 151,000–300,000 bracket. A notable 22.2% of households earn between MK 301,000 and MK 500,000, another 21.43% fall within the MK 501,000–1,000,000 range, and a significantly higher proportion (16.67%) earn more than MK 1,000,000. These figures highlight greater economic resilience and higher income levels among smallholder farmers in Mchinji compared to Mangochi.

On asset accumulation, the asset holdings of smallholder farmers in Mchinji and Mangochi show clear differences in access to both agricultural tools and household assets, reflecting varying levels of wealth and resource availability. In both districts, land ownership is nearly universal, with 97.7% in Mchinji and 98.7% in Mangochi. Basic tools like hoes are widely owned, with full adoption in Mchinji (100%) and slightly less in Mangochi (96%). However, Mchinji farmers have greater access to advanced agricultural tools and equipment, such as chemical sprayers

(25.6% vs. 5.4%), watering cans (65.4% vs. 31.7%), and wheelbarrows (21.1% vs. 1.8%), as well as transport assets like bicycles (64.7% vs. 46%) and oxcarts (7.5% vs. 0%).

In terms of household assets, Mchinji households generally report higher ownership of items such as mattresses (47.4% vs. 18.8%), beds (37.6% vs. 15.6%), and chairs (47.4% vs. 22.3%), reflecting relatively

higher living standards. Similarly, more Mchinji households own radios (54.9% vs. 32.6%), solar panels (42.9% vs. 28.1%), and cell phones (86.5% vs. 69.2%). High-value assets like cars and televisions are rare but slightly more common in Mchinji. These differences highlight Mchinji's relatively higher asset base, suggesting greater economic capacity and access to resources compared to Mangochi. The table below presents the data.

Table 19: Asset accumulation

Asset	Mchinji	Mangochi
Land	97.7%	98.7%
Hoe	100.0%	96.0%
Treadle pump	1.5%	1.3%
Motorized pump	3.8%	0.4%
Watering cane	65.4%	31.7%
Chemical sprayer	25.6%	5.4%
Shovel / pick	24.1%	23.2%
Sickle	34.6%	18.3%
Bicycle	64.7%	46.0%
Oxcart	7.5%	0%
Axe	54.1%	39.3%
Mattress	47.4%	18.8%
Bed	37.6%	15.6%
Chair	47.4%	22.3%
CD / DVD player	3.8%	0%
Solar panel	42.9%	28.1%
Wheelbarrow	21.1%	1.8%
Cellphone	86.5%	69.2%
Panga knife	72.2%	55.4%
Radio	54.9%	32.6%
Beehive	0.8%	0.4%
Clean cook stove	26.3%	17.9%
Television	6.0%	0.4%
Car	1.5%	0%

In summary, smallholder farmers in Mchinji exhibit higher levels of absorptive capacity as evidenced by higher levels of income but also higher accumulation of agricultural and household assets.

### 3. FOOD SYSTEM CHALLENGES

Following a detailed analysis, the assessment has identified following main food system challenges:

- a. Limited consumption of diverse and nutritious food** – The analysis revealed that 7.5% of households in Mchinji and 13.2% in Mangochi had a poor Food Consumption Score (FCS), indicating inadequate access to and consumption of diverse foods. Additionally, 17.3% of households in Mchinji and 27.8% in Mangochi had a borderline FCS, making them highly vulnerable to falling into the poor FCS category with even minor livelihood shocks. While staple foods are consistently consumed daily in both districts (7 days per week), the consumption of protein-rich and nutrient-dense foods such as meat, fish, milk, and beans is limited to only 2 to 3 days per week on average. Notably, bean consumption is slightly lower in Mangochi, averaging 2 days per week compared to 3 days in Mchinji. These findings underscore significant challenges related to food access, dietary diversity, and resilience, particularly in Mangochi, where households exhibit greater vulnerability to food insecurity and nutritional deficiencies.
- b. Low productivity and production of diversified and nutritious food** – Crop and livestock diversification remain limited in both Mangochi and Mchinji, though the situation is notably more severe in Mangochi. From our sample, in Mangochi, 13.2% of smallholder farmers grew only one crop, 46.8% grew two crops, 29.3% grew three crops, and only a small percentage grew more than four crops per season. In contrast, diversification is better in Mchinji, where only 1.2% grew a single crop, 14.7% grew two crops, 45.6% grew three crops, and the rest grow four or more crops per season. Similarly, livestock production is more diversified in Mchinji compared to Mangochi. In Mangochi, 27% of smallholder farmers did not own any of the five key livestock species (goats, cattle, sheep, pigs, and chickens), 38% owned only one type, 32% owned two types, and just 1% owned three types. In Mchinji, 6% of smallholder farmers lacked any livestock, 32% owned one type, 40% owned two types, 18% owned three types, and 4% owned four types. The high proportion of farmers with either no livestock or only one type in both districts highlights a general lack of diversification in livestock production. Moreover, food insecurity is widespread, with 91.6% of households in Mangochi and 48.9% in Mchinji reporting months in the past year when they could not meet their basic food needs. This indicates that current levels of crop and livestock production are insufficient to meet annual household food requirements for a significant portion of the population in both districts.
- c. Climate change and environmental degradation** – Mangochi faces recurring challenges such as stormy rains, flooding, lake swelling, severe winds, and drought or dry spells, while Mchinji experiences similar issues, including stormy rains, severe winds, prolonged dry spells, and droughts. These challenges are intensified by deforestation and poor land management practices. Climate change has exacerbated the degradation of natural resources in both districts, with significant consequences for ecosystems and livelihoods. Many rivers, such as Manyenje, Mua, Pangati, Lunthwe, and Namilolo, now dry up shortly after the rainy season, severely impacting fish populations and overall biodiversity. Others, including Bua, Mthombozi, and Dambolo, maintain only partial water flow throughout the year, drastically reducing fish production. Additionally, forests such as Tsekwe, Kaphirikamwana, and Dambe have been completely destroyed, and soil fertility has declined due to water and wind erosion. The drying up of rivers disrupts the food system by reducing water availability for irrigation and livestock, which in turn lowers crop yields and contributes to food shortages. Diminished fish populations have weakened fishing as a source of livelihood and nutrition, while the loss of water further reduces biodiversity. This decline impacts the availability of wild foods and other natural resources essential for subsistence and income generation, compounding the challenges faced by communities in both districts.
- d. Limited resilience to livelihood/climatic shocks** – smallholder farmers in both districts have low to moderate adaptive, absorptive and anticipatory capacity which makes them more vulnerable to shocks. The average annual income per household in Mchinji is MK 589,945 and in Mangochi it is MK 377,821). While the figures exhibit better economic resilience in Mchinji as compared to Mangochi, they both fall below the \$1 a day minimum poverty threshold set by the World Bank (by conversion Mchinji has an average annual income of \$302 and Mangochi \$193 using \$1=MK 1950). This low income limits the ability to purchase diverse and nutritious foods. In addition, the level of anticipatory capacity in both Mchinji and Mangochi is moderate but requires significant improvement to enhance the resilience of smallholder farmers against climatic shocks. The availability of meteorological tools is limited, particularly in Mchinji, where only rain gauges are used. Dissemination of early warning information primarily relies on manual methods, such as agriculture extension officers, which are hindered by logistical challenges. This puts households at risk of not being able to respond timely to impending shocks or disasters further compromising the food system.

- e. Post-harvest losses** – 80.7% of the smallholder farmers in Mchinji reported experiencing post-harvest losses while 64.3% of smallholder farmers in Mangochi reported experiencing post-harvest losses. The majority of smallholder farmers (57.9% in Mangochi and 49.7% in Mchinji) reported experiencing losses of not more than 10% of their entire produce, while 33.6% and 22.1% of smallholder farmers in Mchinji and Mangochi respectively reported losing between 11 and 20%. 7.5% in Mchinji and 15.2% in Mangochi lose between 21% and 30% of their produce while the rest lose more than 30% of their produce. Poor handling during transportation, pests and diseases, and poor storage facilities rank among the highest causes of post-harvest losses. The post-harvest losses significantly undermine food and nutrition security by reducing the quantity and quality of available food.
- f. Poor market access** – Poor market access further limits the income smallholder farmers can earn from agriculture, which in turn affects their ability

to purchase diverse and nutritious food. Middlemen are the primary buyers in both districts, accounting for 64.7% of transactions in Mchinji and 57.5% in Mangochi. While middlemen offer essential services, such as connecting farmers to larger markets, aggregating produce, providing immediate cash payments, and reducing post-harvest losses, they also create significant challenges. These include offering low prices that exploit farmers' lack of market information, engaging in unethical practices, and capitalizing on seasonal price fluctuations. As a result, many farmers are left with minimal profits, reinforcing inequalities in the agricultural market. Low prices are the most significant challenge, impacting 91.7% of farmers in Mchinji and 81.4% in Mangochi. Additionally, a higher percentage of farmers in Mangochi (38.9%) report a lack of buyers compared to Mchinji (34.8%). Poor infrastructure, such as inadequate roads and facilities, is another key barrier, affecting 25.8% of farmers in Mchinji and 29.2% in Mangochi.

# SECTION 2

# TRANSFORMATION FOR WHOM?

The following persona profiles have been put in focus to identify challenges, but more importantly their desires for change and potential as change agents in transforming the local system.

- Nutritionally vulnerable and marginalized population groups in Mangochi and Mchinji districts
- Smallholder farmers and their families in Mangochi and Mchinji districts
- Rural youth in Mangochi and Mchinji districts



In Mangochi and Mchinji districts, food system challenges significantly impact nutritionally vulnerable groups such as pregnant and lactating women, children under five, smallholder farmers, rural youth, and marginalized communities. Both districts are characterized by a heavy reliance on maize as the staple crop, which limits dietary diversity and increases the risk of micronutrient deficiencies among vulnerable populations. Seasonal food insecurity remains a persistent issue, with many households facing shortages during lean periods that exacerbate malnutrition, particularly among children and pregnant women.



Smallholder farmers in these districts contend with low agricultural productivity, largely due to climate variability, limited access to improved seeds, fertilizers, and irrigation infrastructure. This vulnerability to droughts and floods affects crop yields and overall food availability. Furthermore, poor road infrastructure and insufficient storage facilities hinder farmers' access to markets, leading to significant post-harvest losses and reducing income opportunities. Market inefficiencies, particularly in informal systems, disproportionately restrict women and youth from fully participating in value chains and benefiting economically.



Gender disparities are pronounced, with women often facing limited access to land, credit, and agricultural extension services. Cultural norms and household dynamics further restrict women's decision-making power over food production and resource allocation, which has direct implications for household nutrition outcomes. Food safety and quality concerns persist due to inadequate storage and handling practices, increasing the risk of contamination and foodborne illnesses that disproportionately affect children and pregnant women.



Nutrition awareness and demand for diverse, healthy diets remain low, compounded by traditional dietary practices that sometimes limit the consumption of nutrient-rich foods. Rural youth and marginalized communities face additional socioeconomic challenges, including high unemployment and exclusion from decision-making processes, which restrict their ability to engage productively in the food system.

These localized challenges in Mangochi and Mchinji reflect broader national and global trends.

Despite these challenges, the economic potential of vulnerable groups and smallholder farmers represents a critical leverage point for transformation. Empowering women, youth, and marginalized communities to participate fully in agricultural production, value addition, and market systems can catalyze inclusive economic growth and drive sustainable food system outcomes. By improving access to land, inputs, finance, and



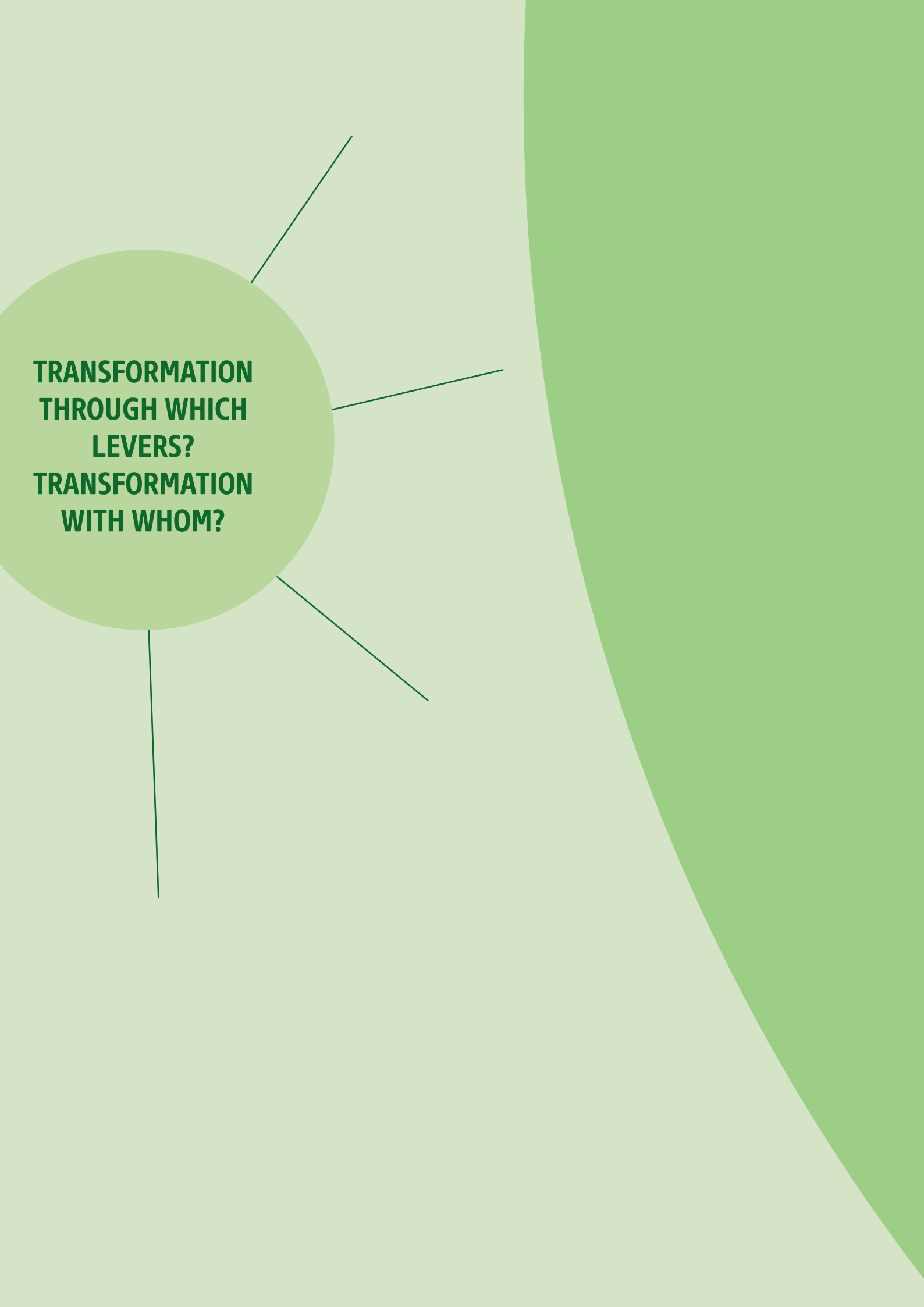
knowledge, these groups can diversify production beyond staples to nutrient-rich crops and small-scale fisheries, enhancing both household nutrition and market supply. Strengthening their role as active market actors through better infrastructure and institutional support can increase incomes, reduce poverty, and stimulate local economies to achieve sustainable livelihoods and improved nutrition. Moreover, fostering entrepreneurship and leadership among rural youth can introduce innovation and resilience, helping communities adapt to climate change and evolving food demands toward safe and healthy diets. In this way, unlocking the economic agency of these groups not only addresses immediate food security and nutrition needs but also builds long-term sustainable livelihoods and equitable development pathways in Mangochi and Mchinji districts with potential ripple of effects on national level.

# SECTION 3

# TRANSFORMATION THROUGH WHICH LEVERS? TRANSFORMATION WITH WHOM?

Zooming into market systems to identify opportunities for systemic change.





**TRANSFORMATION  
THROUGH WHICH  
LEVERS?  
TRANSFORMATION  
WITH WHOM?**

## SECTION 3: DEEP DIVE MARKET SYSTEM ASSESSMENT

This section outlines an in-depth analysis of prioritizes market systems in Mangochi and Mchinji district. It outlines market systems, intervention ideas and and an intervention impact summary to strengthen these market systems.

# 4. MARKET SYSTEMS ASSESSMENT: TECHNICAL APPROACH AND METHODOLOGY

This market systems analysis followed the Food System Analysis which applied a mixed-methods approach. Qualitative and quantitative data were collected. Qualitative data were collected through Key Informant Interviews (KIIs), Focus Group Discussions (FGD) /, guided by an MSD approach. DevLearn, a development consulting firm focusing on MSD and monitoring and evaluation, applied the market systems development (MSD) approach for the analysis and intervention idea generation. A 'systemic approach' starts off by seeking to understand the system as best as possible and attempts to diagnose what the problems are with this system, the 'critical constraints' that prevent the system from operating effectively. It then searches for existing actors in the system who could change their practices and address the critical constraints.

For WHH, the focus was on nutrition and healthy varied diets, while also targeting women and youth in the Mangochi and Mchinji Districts.

The following steps were taken to conduct the assignment.

### Step 1. Long listing and selection of market system:

Based on a literature review, discussions with WHH and Food Systems Analysis team, the team selected 54 different markets across 16 sectors to be analysed.

## 4.1 PRIORITY MARKETS

In selecting the priority markets, information from the literature review, interviews with WHH team, the Food Systems Analysis and other NGOs and programs operating in Mangochi and Mchinji, identified a 'long list' of 54 potential markets that demonstrate potential for self-and waged employment opportunities for communities in Jere LGA, women and IDPs. This 'long

### Step 2. Selection Criteria:

Selection Criteria was devised to facilitate the selection of markets, which considered the Relevance to Target Group, Growth Potential, and Feasibility. Criteria was also weighted given the its importance to WHH Food Systems, for example contribution to healthy diets, opportunities for small-holder farmers, improve food security, more heavily weighted

### Step 3. Shortlisting and Selection of Markets:

WHH and team scored all 54 markets based on the selection criteria. This enabled a prioritisation ranking shortlisting the most relevant markets. A further workshop with all parties enabled the selection of the 6 priority markets.

### Step 4. Analysis and Intervention design:

The team conducted in-depth analysis of the under-performance of the priority markets and wider food system for the target groups, which further identified opportunities to support stakeholders' inclusion in intervention design. The team facilitated a Multistakeholder dialogues to collect inputs for intervention design. This resulted in a long list of interventions ideas, that were further developed into the 12 interventions. Intervention discussions included theory of change, intervention model, facilitation activities and potential partners.

list' was assessed according to an initial assessment of relevance to the target group, availability of commodities in the markets, supply and demand trends, and potential for growth. The long list of markets is Table 20 below.

Table 20: Priority Markets

Sector	Sub-sector	Market
Agriculture	Crops	Staple Grains (Maize, sorghum, millet, rice)
		Legumes (Groundnuts, beans, cowpeas, soya beans, pigeon peas)
		Vegetables (Tomatoes, onions, leafy greens)
		Tubers (Cassava, sweet potato, irish potato, carrot, ginger)
		Fruits (Mangoes, oranges, bananas, avocados, lemons, guavas)
	Livestock	Sugarcane
		Animal Husbandry (Cattle, goats, sheep, pigs, poultry)
		Dairy (Cow and goat milk, milk processing)
	Fisheries	Meat (Beef, goat, lamb, pork, chicken, poultry, other)
		Aquaculture
	Inputs and Infrastructure	Fishing
		Seeds and Fertilizers
		Post-Harvest Storage and Processing
	Nuts, Spices and Oil Crops	Groundnuts Processing
		Comodities (Coffee, cocoa)
		Herbs and Spices
Honey/Hive Processing		
Groundnuts, soybean, Sunflower (Oil extraction)		
Industries	Agro-Processing	Primary Processing (Milling, drying, shelling, crushing, flaking, oil extraction)
		Secondary Processing (Packaged foods)
	Water and Irrigation Intrastructure	Water Supply (Vendors, storage, irrigation)
	Cottage Industry	Small-scale Food Processing (Bakeries, local dairy)
		Artisanal Products (Hand-crafted food items)
Trade	Retail Markets (Small shops, kiosks)	
Services	Agricultural Support Services	Veterinary Services
		Extension and Advisory Services
		Financial Services (Microcredit, savings groups, insurance)
	Energy and Utilities	Household and Farming Energy (Solar, charcoal)
		Renewable Energy Services (Solar installations)
	Transportation and Logistics	Vehicle Services (Maintenance)
Cross-cutting	Labour and Skills Development	Cold Storage and Transportation
		Labour Sourcing (Agricultural labor)
	Digital and Financial Inclusion	Skills Training (Hospitality, retail)
		Digital Financial Services (Mobile money)
		Business Development Services (SMEs, cooperatives)
Social Safety Nets and Aid	Cash Transfers (Direct aid, food vouchers)	

## 4.2 WEIGHTING AND SELECTION CRITERIA

The assessment team worked together to create sector selection matrix to select priority markets. The matrix criteria were tailored and weighted to the objectives of the Food Systems Assessment as shown in Table 21. Three key criteria were used for selection: relevance for target groups (40%), growth and impact

potential (25%), and feasibility of MSD approach interventions (30%), and Other (5%). Considering the context and goals of the program, potential to see growth in 12 months was important to THRIVE and therefore heavily weighted and climate and conflict concerns also included.

Table 21: Selection Criteria and Weighting

Category of Selection Criteria	Selection Criteria	Weight
Relevance for Target Group (40%)	Potential for Market Engagement of Small-Holder Farmers at Scale	8
	Potential Work Opportunities for Women	5
	Potential Work Opportunities for Youth	5
	Potential to Improve Food Security	6
	Potential to Improve availability and affordability of safe and healthy diets	6
	Potential to Increase Climate Resilience	3
	Potential for Intensification of Farming on Limited Land	3
	Potential to Increase Income from Off-farm Microbusinesses	4
Growth Potential	Strength of Demand and Growth Potential	6
	Skill and will of local private sector to support and scale SHF	6
	Investment and Private Sector Growth Trends	5
	Value Addition Opportunities	4
	Resilience to Climate and Economic Shocks	4
Feasibility of MSD Approach (30%)	Presence of a Robust Private Sector	8
	Lack of Market Distortion due to Donor Dependency, or market distortion	6
	Enabling Market Infrastructure (Roads, processing, storage)	6
	Alignment with National UNFSS pathways commitments	4
	Alignment with government policy	3
Other (5%)	Availability of Market Information	3
	Resilience of the value chain actors' and their abilities to respond to crisis	3
	Relevance to support linkages between rural and urban food supply chains	2

## 4.3 SCORING AND FINAL SELECTION

WHH, the Food Systems Analysis team and Devlearn conducted a market ranking exercise using the market selection matrix to agree on the 'shortlist' of priority

markets. The top 10 scoring from the shortlisting exercise is in Table 22 below for both districts.

Table 22: Scoring and Selection

Mangochie Markets			Scoring
Sector	Sub Sector	Market	Score
Agriculture	Fisheries	Fishing	74
Agriculture	Livestock	Poultry	73
Agriculture	Grains	Maize	72
Agriculture	Livestock	Goat	72
Agriculture	Legumes	Groundnuts	68
Agriculture	Fruits	Mango	67
Agriculture	Inputs and Services	Seeds	65
Services	Agro Services	Extension and Advisory Services	63
Agriculture	Livestock	Animal husbandry	63
Industries	Industries	Cottage industry (Bakery, butchers)	62
Agriculture	Vegetables	Tomato	61
Agriculture	Livestock	Beef	60
Agriculture	Livestock	Dairy	59
Agriculture	Fisheries	Aquaculture	59
Agriculture	Vegetables	Greens	59
Agriculture	Nuts, Spices and Oils	Honey	58
Services	Agro Services	Financial Services (Banks, VSLA)	58
Services	Agro Services	Veteinery	58
Agriculture	Inputs and Services	Fertilizers	57
Crosscutting	Cross Cutting	Agriculture Labour	56
Industries	Industries	Water (Irrigation, supply)	56
Crosscutting	Cross Cutting	Farming Equipment (Tractors, irrigaitons)	56
Industries	Trade	Retail	55
Agriculture	Tubers	Sweet Potato	55
Agriculture	Nuts, Spices and Oils	Moringa	55
Agriculture	Legumes	Soy	55
Industries	Trade	Aggregation	53
Agriculture	Nuts, Spices and Oils	Bao	53
Agriculture	Grains	Rice	52

## Mangochie Markets

## Scoring

Sector	Sub Sector	Market	Score
Agriculture	Tubers	Cassava	51
Agriculture	Legumes	Beans	51
Agriculture	Fruits	Orange	51
Agriculture	Inputs and Services	Post Harvet Storage	50
Agriculture	Nuts, Spices and Oils	Nut Oils	50
Agriculture	Tubers	Irish potato	49
Agriculture	Fruits	Guava	49
Crosscutting	Cross Cutting	Digital Finance	49
Agriculture	Fruits	Papaya	48
Crosscutting	Cross Cutting	Business Dev. Ser	47
Services	transportaiton and Logistics	Cold Chain Transport	47
Agriculture	Nuts, Spices and Oils	Herbs and Spices	47
Agriculture	Legumes	Pidgeon Peas	46
Services	Transportaiton and Logistics	Vehicle Maintenance and Repare	46
Industries	Energy and Utilities	Household firewood /Charcoal	46
Industries	Energy and Utilities	Solar	45
Agriculture	Tubers	Ginger	45
Agriculture	Tubers	Carrot	45
Industries	Industries	Primary Processing (Drying milling etc.)	44
Direct Aid	Direct Aid	Cash Transfers	43
Agriculture	Legumes	Cowpeas	42
Agriculture	Nuts, Spices and Oils	Commodities (Cocoa, coffee)	42
Agriculture	Grains	Millet	37
Agriculture	Grains	Sorghum	37
Direct Aid	Direct Aid	Vouchers	34
Agriculture	Livestock	Pork	32

Further discussion with the team narrowed the selection further. While livestock and agriculture dominated both districts, WHH wanted to ensure a diverse range of markets beyond just these two sectors. Moreover, synergy between sectors in both districts would increase efficiency in research and future interventions. There was commonality in Poultry, Maize,

Groundnuts, and Mango in both Mangochi and Mchinji. Finally, Honey was a top scoring market, but also an area where qualitatively there was exceptional growth potential and active private sector. Further rationale for selection of each sector is outlined in detail below in Table 23.

Table 23: Rationale for Selection

Market System	Rationale for Selection
1. Poultry	<ul style="list-style-type: none"> <li>• Poultry scored exceptionally high in the selection criteria, particularly both the opportunity for SHH, income generating activities and demand.</li> <li>• Nutritionally, poultry meat provides easily digestible, high-quality protein essential for growth and overall health, a good source of phosphorus and B-complex vitamins, and contains less fat than most cuts of beef and pork.<sup>4</sup> A majority of poultry farming is women-led and provides opportunities for youth, as well as provide resilience to climate change through backyard rearing.</li> <li>• Poultry production continues to grow, from almost 100million in 2015 to 160million in 2019.<sup>5</sup></li> <li>• 88% of respondents in Mchinji and 79% in Mangochi owned poultry, with an average of between 9 and 11 chickens per household.</li> <li>• Poultry industries are driving demand for maize as a key ingredient in animal feed. Potential synergies with other sectors.</li> <li>• Backyard and small-scale livestock rearing has low barriers for entry with opportunity for local community.</li> <li>• Improving livestock rearing can improve community resilience to security and environmental shocks through self-sufficient food production.</li> </ul>
2. Maize	<ul style="list-style-type: none"> <li>• Maize reportedly accounts for 60% total food production in Malawi<sup>6</sup>, while Mangochi and Mchinji report over 97% of respondents farming Maize.</li> <li>• In the selection criteria process, Maize scored highly on strength of demand, opportunities for SHH, contribution to food security and affordability</li> <li>• Government initiatives can be leveraged to enhance intervention effectiveness.</li> <li>• Nutritionally, Maize contributes significantly to caloric intake, providing a substantial portion of daily energy needs for Malawians.</li> <li>• While rich in carbohydrates, maize lacks essential amino acids and micronutrients, leading to potential deficiencies when consumed as the predominant food source. Reliance on maize has been linked to widespread malnutrition and poorly diversified diets in Malawi.<sup>7</sup></li> <li>• Opportunities to improve yields through improved farming practices, inputs and pest management</li> </ul>

4 Food and Agriculture Organization of the United Nations. (n.d.). Poultry in human nutrition. Retrieved from <https://www.fao.org/poultry-production-products/products-processing/poultry-in-human-nutrition/en/>

5 CASA Programme. (n.d.). Malawi poultry sector analysis report. Retrieved from <https://www.casaprogramme.com/wp-content/uploads/CASA-Malawi-PoultrySector-analysis-report.pdf>

6 ReliefWeb. (n.d.). Maize consumption estimation and dietary diversity assessment methods: Malawi. Retrieved from <https://reliefweb.int/report/malawi/maize-consumption-estimation-and-dietary-diversity-assessment-methods-malawi>

7 Future of Food. (2021). The economics of ecosystems and biodiversity for agriculture and food: Maize in Malawi. Retrieved from [https://futureoffood.org/wp-content/uploads/2021/01/GA\\_TEEB\\_MalawiMaize201903.pdf](https://futureoffood.org/wp-content/uploads/2021/01/GA_TEEB_MalawiMaize201903.pdf)

## Market System

## Rationale for Selection

### 3. Fisheries

- Fisheries and Fish scored high during the selection criteria particularly in Mangochi. Key potential for SHH and youth, contribution to food security. Overall demand for fish is high
- Significant contribution to Malawi economy, about 4% to Malawi's GDP, with over 60,000 fishers and more than 500,000 people involved in related activities.
- However, diminished fish populations have weakened fishing as a source of livelihood and nutrition.<sup>8</sup>
- Opportunities for women in the fisheries value chain.<sup>9</sup>
- Nutritional Impact of protein intake from fish is crucial in reducing stunting and wasting in children, which are prevalent in Malawi.<sup>10</sup>
- Integrating fish into daily diets can reduce dependency on maize and improve overall caloric and protein intake.<sup>11</sup>
- Processed fish products (e.g., dried, smoked fish) are shelf-stable, making them a reliable source of nutrients year-round.<sup>12</sup>

### 4. Groundnuts

- Scored highly in the selection criteria, particularly in opportunities for women and youth, nutrition and food security.
- Groundnuts are highly nutritious, providing essential proteins, healthy fats, and micronutrients like iron and zinc, making them a critical component of improving household
- Groundnuts are traditionally a women and youth-friendly crop in Malawi, with land allocation often favouring women for its cultivation. This creates significant opportunities for economic empowerment and inclusive growth, as women control both the production and income derived from groundnuts.
- Groundnuts have strong demand both domestically and internationally, with potential for export to regional markets
- The groundnuts sector already benefits from inclusive business models supported by private sector players like Pyxus Agriculture, Afrinut, and farmer organizations
- Groundnuts are a relatively climate-resilient crop compared to maize, with a lower dependency on external inputs like water and fertilizers.
- Promoting groundnuts as an alternative to tobacco or other declining crops provides households with a sustainable source of income and reduces their vulnerability to climatic shocks.

### 5. Beekeeping and Honey

- Honey is a highly nutritious product, rich in energy-providing carbohydrates, antioxidants, and essential minerals like iron and zinc. Its health benefits, including immune system support and antibacterial properties, make it a valuable addition to local diets, improving dietary diversity and addressing malnutrition.
- Beekeeping is highly accessible to women and youth due to its low land requirements and flexible labour demands. Women are already active in honey harvesting, processing, and marketing, while youth can play a key role in value-added activities like branding, packaging, and sales. This creates opportunities for gender and youth economic empowerment
- Increasing demand in local and export markets for organic, sustainably produced honey. There are also opportunities to diversify into high-value by-products such as beeswax (for cosmetics and candles) and propolis (for pharmaceuticals).
- Beekeeping is an environmentally friendly activity that supports biodiversity through pollination and discourages deforestation by providing an alternative livelihood to activities like charcoal burning.

8 FAOLEX Database. (n.d.). National agriculture policy of Malawi. Retrieved from <https://faolex.fao.org/docs/pdf/mlw149236.pdf>

9 FAO Knowledge Platform. (n.d.). Country profiles: Malawi. Retrieved from <https://openknowledge.fao.org/items/377ed142-7a53-4f55-b60c-3e51b8a9c688>

10 FAO Country Profiles. (2022). FAO Malawi News Archive. Retrieved from <https://www.fao.org/countryprofiles/news-archive/detail-news/en/c/1513847>

11 FAO Nutrition Platform. (n.d.). Country profiles: Malawi. Retrieved from <https://www.fao.org/countryprofiles/nutrition/en/?iso3=MWI>

12 WorldFish Center. (n.d.). Nutrition and food security in small-scale fisheries: Malawi. Retrieved from <https://worldfishcenter.org/publication/nutrition-and-food-security-small-scale-fisheries-malawi>

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**Market System****Rationale for Selection**

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**6. Mangoes**

- Mangoes are a rich source of vitamins A and C, essential for boosting immunity and improving vision, as well as dietary fiber, which supports digestion.
  - Mango farming provides significant opportunities for women and youth, particularly in harvesting, sorting, and small-scale processing activities. Women are heavily involved in local markets, while youth can engage in value-added ventures and employment; like drying, juicing, or packaging mangoes for higher profits.
  - Mangoes have a growing domestic and regional demand, with potential for value addition in products like dried mangoes, juice, and purees.
  - Mango trees are drought-tolerant and well-suited to Malawi's climate, making them a viable crop for improving the resilience of smallholder farmers
  - Private sector activities, like Malawi Mangoes Ltd and Mabale Processors already provide market linkages. Leveraging these partnerships can enhance productivity and access to high-value markets.
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# 5. MARKET SYSTEMS ANALYSIS

## 5.1 Poultry

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Poultry farming is a critical component of household livelihoods and food security in Malawi. In Mchinji and Mangochi, poultry farming is widespread, with **88.1% of households in Mchinji owning chickens** and **79% of households in Mangochi**. Indigenous chicken breeds dominate the market due to their adaptability to local environmental conditions, disease resistance, and lower input requirements.<sup>13</sup> These figures underscore the importance of poultry as an accessible source of protein and income for rural families.

Poultry products, including meat and eggs, are a key source of affordable protein for households, contributing to nutrition and dietary diversity. Indigenous chicken meat is also culturally valued and preferred for its taste, especially during ceremonies and social

gatherings.<sup>14</sup> However, the sector remains underdeveloped, with most production occurring at the subsistence level. Commercial poultry farming is concentrated in urban areas, driven by rising demand for poultry products in cities like Lilongwe and Blantyre, spurred by population growth and changing consumption patterns. However, there are growing tourism and hospitality creating further demand.

Despite its potential, the poultry industry faces significant challenges, including frequent disease outbreaks, limited access to quality inputs (e.g., feed and vaccines), and insufficient veterinary services. These constraints are exacerbated by poor market linkages and inadequate infrastructure, particularly in rural areas.

### 5.1.1 SECTOR AND MARKET SYSTEM'S OVERVIEW

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The poultry sector in Mchinji and Mangochi operates within a dual system: traditional free-range systems and more intensive commercial operations. Smallholder farmers dominate production, with most households keeping chickens for household consumption and occasional sales. The average flock size of **11 chickens in Mchinji and 8 chickens in Mangochi** highlights the small-scale nature of production. Small Holder Farmers have significantly more with an average 500 layers and 250 broilers per farmer.

Smallholders primarily market their chickens as live birds, with **traders (often referred to as middlemen) accounting for 57.5% of poultry transactions in Mangochi and 64.7% in Mchinji**. These actors provide cash payments and facilitate market access, but their dominance often results in lower profit margins for farmers. This reliance on informal

market structures highlights the lack of direct linkages to higher-value markets.

In contrast, commercial poultry farming, though less prevalent, is concentrated in urban centres. It relies heavily on imported inputs such as day-old chicks, feed, and vaccines, which drive up costs. The higher productivity of commercial systems makes them better positioned to supply urban supermarkets and institutional buyers.

The poultry value chain in these districts also reflects significant gender dynamics. Women are often the primary caretakers of poultry, managing feeding, health, and marketing. This positions poultry farming as an important opportunity for economic empowerment, particularly for women and youth.

<sup>13</sup> Gondwe, T. N., & Wollny, C. (2005). Marketing system and channels for scavenging local chickens in Malawi. *Livestock Research for Rural Development*, 17(5).

<sup>14</sup> "Community-Based Promotion of Rural Poultry Diversity and Utilisation in Malawi" by Gondwe and Wollny (2002): Gondwe, T. N., & Wollny, C. (2002). *Community-based promotion of rural poultry diversity and utilization in Malawi*.

Figure 2: Poultry Actor Mapping

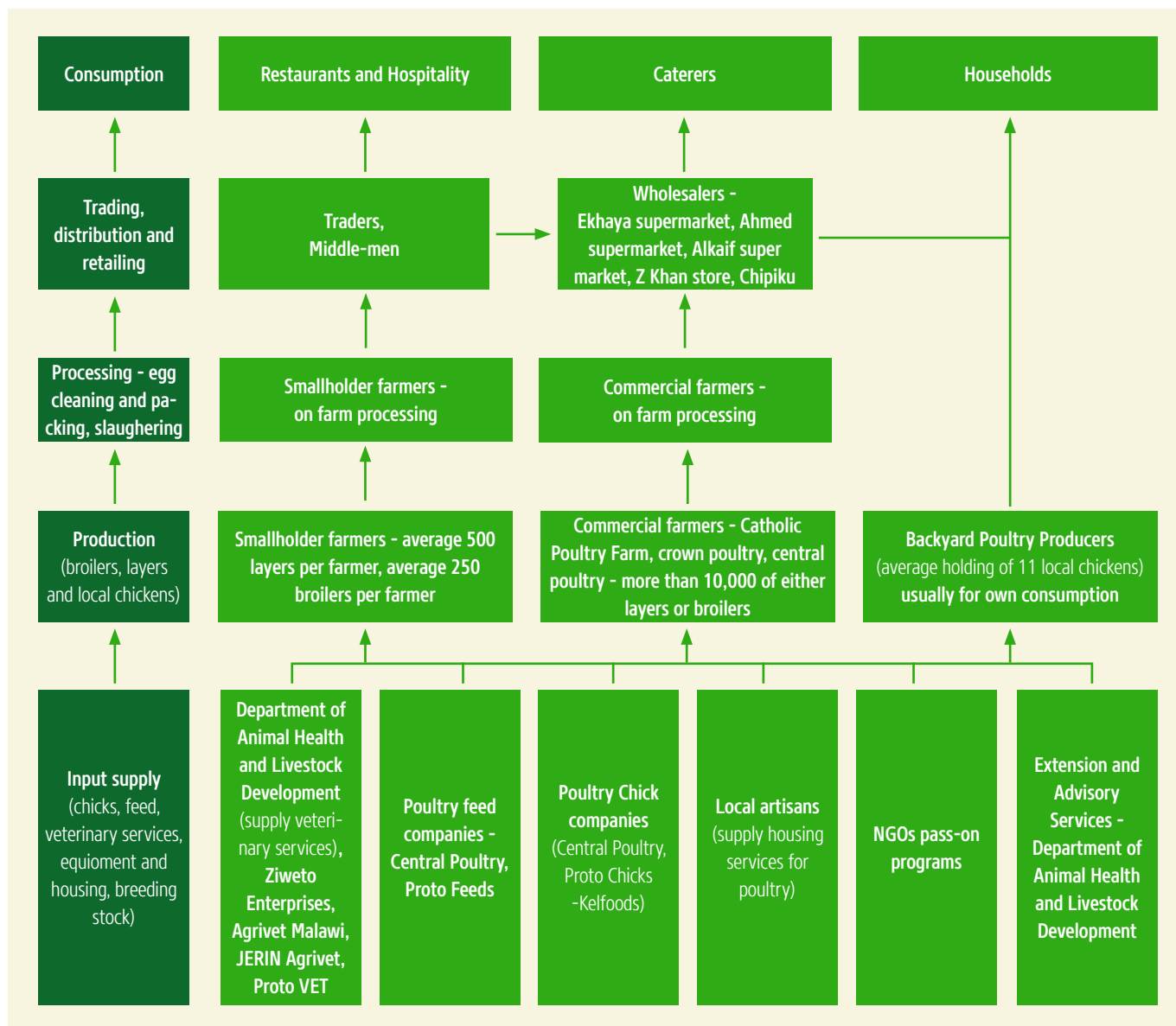
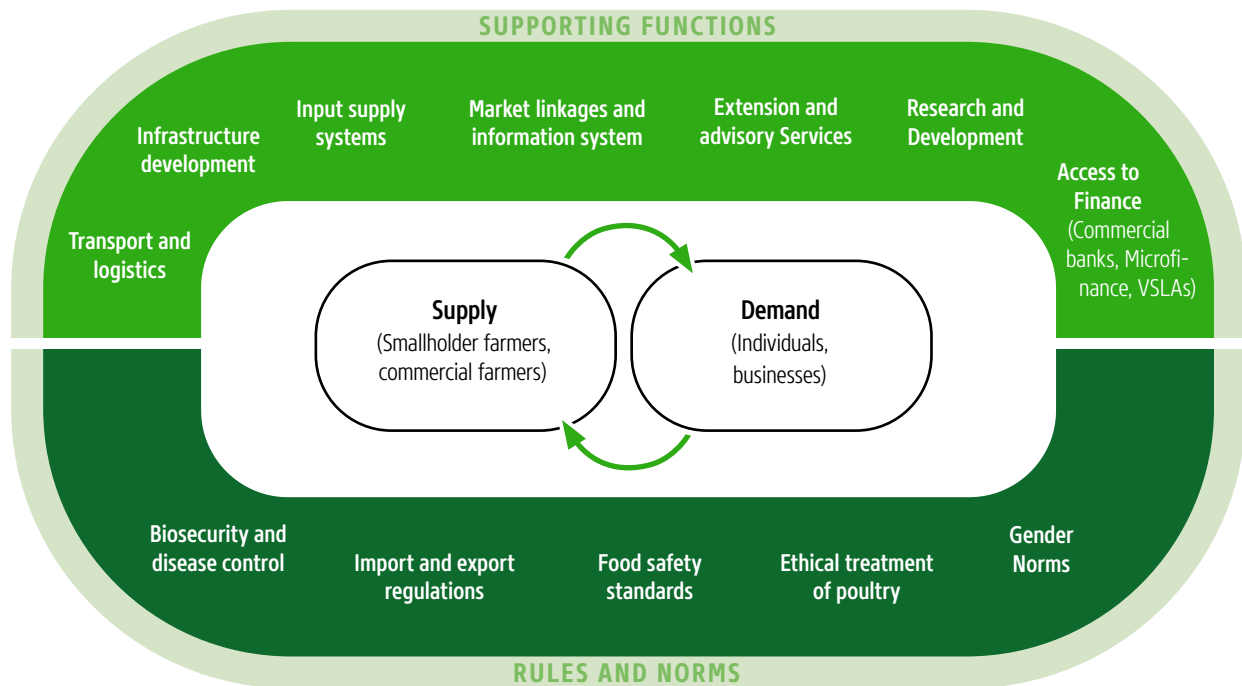


Fig. 2 represent the value chain with a map of actors, which is complex with multiple transactions across the value chain and range of buyers from meat sellers, catering services, live markets, supermarkets

and food sellers. Fig. 3 below represents the market system in poultry, highlighting the supporting functions and rules which support and govern the market. Areas highlighted in yellow are areas of constraint.

Figure 3: Poultry Market System



### 5.1.2 AREAS OF UNDERPERFORMANCE

Key challenges and underperformance within the poultry market system include:

1. **Low Productivity in Traditional Systems:** Poultry farmers rely on scavenging and recycled feed, which limits growth rates and egg production.
2. **High Losses and Disease:** Disease outbreaks, particularly Newcastle disease, are a frequent challenge, compounded by limited access to veterinary services.
3. **Limited Market Infrastructure and linkages:** Poor roads and the absence of cold chain facilities restrict access to higher-value urban markets, forcing farmers to sell at lower prices in local markets.

4. **High Feed Costs:** The absence of local feed mills and reliance on imported feed exacerbate cost challenges for both smallholders and commercial farmers.

Despite these challenges, poultry farming offers significant opportunities for development. Improved feed production systems, veterinary care, and market linkages can help smallholders increase productivity and profitability while meeting growing urban demand.

### 5.1.3 BARRIERS AND OPPORTUNITIES FOR TARGET GROUPS

Table 24: Barriers and Opportunities for Target Groups

Market System	Rationale for Selection
Current Assessment and Contribution to Nutrition and varied diets	<ul style="list-style-type: none"> <li>Nutritionally, poultry meat provides easily digestible, high-quality protein essential for growth and overall health, a good source of phosphorus and B-complex vitamins, and contains less fat than most cuts of beef and pork.<sup>15</sup></li> <li>However, there is low purchasing power with a significant portion of Mangochi and Mchinji's population living in poverty cannot afford poultry products regularly. Therefore, poultry meat and eggs are not staple protein sources in most households in Malawi with per capita poultry consumption estimated to be low (around 2–4 kg/year compared to higher levels in other African countries).<sup>16</sup></li> </ul>
Barriers to Entry	<ul style="list-style-type: none"> <li>Working capital required to invest in buying, feeding and caring for poultry is high.</li> <li>Transportation costs for both inputs and moving poultry and eggs to market are seen as high</li> <li>Low purchasing power also limits supplying to wider population.</li> </ul>
Opportunities and Enablers	<ul style="list-style-type: none"> <li>Poultry production continues to grow, from almost 100 million chickens in 2015 to 160 million in 2019.<sup>17</sup></li> <li>Opportunities to women, and youth in the sector. Women traditionally in the poultry sector using backyard farming.</li> <li>Urbanisation and cold chain could enable small scale packaging of chicken parts.</li> <li>Formation of farmer cooperatives can enable collective bargaining, bulk buying of inputs, and access to larger markets.</li> <li>A burgeoning tourist industry demanding poultry provides a market to supply hotels and resorts.</li> <li>Solar-powered incubators, automated feeders, and water systems can increase production efficiency.</li> </ul>

### 5.1.4 ROOT CAUSE ANALYSIS

**Access to Finance and Financial services.** SHH farmer in Mchinji and Mangochi are constrained by a lack of access to working capital to start or grow their poultry businesses. High interest rates for loans in commercial or microfinance institutions. Low literacy levels among smallholder farmers makes it difficult to handle processes and paperwork involved in obtaining loans

**Inputs.** Rising cost of poultry feed while limited equipment such as hatcheries create supply bottlenecks. hence raising prices. Research shows a reliance on imports for feed and equipment. Vaccines, antibiotics, and vitamins are often expensive and not easily accessible in rural areas.

**Market Linkages,** Farmers often lack timely, reliable information about market prices, demand trends, and consumer preferences, resulting in missed opportunities for higher profits. The poultry value chain is often fragmented, with little coordination between input

suppliers (like feed providers), poultry producers, and marketers, resulting in inefficiencies and higher costs.

**Transportation.** Poultry traders noted that transportation costs are increasing and is one of the major constraints to growing their business and profits. Many rural and feeder roads, are unpaved and prone to deterioration during the rainy season, market transportation slow, costly, and unreliable. Access to remote farming areas is particularly challenging, hindering input delivery and product distribution. Limited cold chain infrastructure - lack of refrigerated trucks and cold storage facilities leads to significant spoilage of processed poultry meat.

**Vaccines and Animal health.** Disease is a frequently reported constraint and well documented impact on livestock rates. Many farmers are unaware of proper feeding practices, vaccination schedules, and disease management, leading to inefficient use of inputs.

<sup>15</sup> [https://www.fao.org/poultry-production-products/products-processing/poultry-in-human-nutrition/en/?utm\\_source=chatgpt.com](https://www.fao.org/poultry-production-products/products-processing/poultry-in-human-nutrition/en/?utm_source=chatgpt.com)

<sup>16</sup> [https://www.helgilibrary.com/indicators/poultry-meat-consumption-per-capita/malawi/?utm\\_source=chatgpt.com](https://www.helgilibrary.com/indicators/poultry-meat-consumption-per-capita/malawi/?utm_source=chatgpt.com)

<sup>17</sup> [chrome-extension://efaidnbmnnnibpcajpcglclefindmkaj/https://www.casaprogramme.com/wp-content/uploads/CASA-Malawi-PoultrySector-analysis-report.pdf?utm\\_source=chatgpt.com](chrome-extension://efaidnbmnnnibpcajpcglclefindmkaj/https://www.casaprogramme.com/wp-content/uploads/CASA-Malawi-PoultrySector-analysis-report.pdf?utm_source=chatgpt.com)

Poor cold chain management reduces the quality of vaccines and medicines during transit

**Extension and Advisory Services** There are not enough extension officers to cover the vast number of smallholder farmers, leading to gaps in service delivery. Many rural and remote areas are underserved by extension services, leaving a significant portion of poultry farmers without the necessary support. When there is extension services, extension workers often lack specialized training in poultry-specific issues such as disease management, feed formulation, and biosecurity measures. This limits the effectiveness of the services they provide to farmers.

Extension services rely on face-to-face interactions, which can be inefficient, especially in the context of

limited mobility and geographic barriers. There are no digital platforms and poor internet connectivity restricts the dissemination of online advisory services, limiting the reach of innovative solutions for poultry farming

**Research and Development** Limited research infrastructure - there are few dedicated poultry research facilities in Malawi, and Mangochi and Mchinji, being more rural, face a lack of access to such institutions. This limits the ability to develop new technologies or improve existing poultry breeds and systems. Poultry Research and Development is often underfunded by both the government and private sector, meaning research initiatives lack scale and longevity.

## 5.2 Maize

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Maize is the primarily grown as a staple food in Malawi and most of Southern Africa. Because of its staple status it is subject to both support and regulation by government as it manages the country's food security, and as such can be highly political. The maize market is well established but still experiences underperformances that affect access to nutrition in the country. As it occupies a central position in the dietary tradition of Malawians, WHH strategies around maize are crucial in the achievement of impact in both food security and nutrition. It is also important to note that women are highly involved in family meal planning and preparation and are therefore main sources of information in terms of household nutrition and food security. Together with youths, they provide most of the labour from cultivation to consumption and marketing of maize.

Maize being a staple is supposed to be grown and stored in enough quantities to be consumed from one season harvest to another with surplus being sold on. However, often smallholders sell above their surplus to cater for urgent needs or buy other dietary requirements that they do not grow. This together with low yields due to effects of climate change among other reasons, often poses food security problems whose gaps would require negative coping mechanisms that include skipping meals and reducing portions. For instance, in March 2024, Malawi declared a state

of disaster after about 9million people were badly affected by El Niño. The natural weather phenomenon disrupts rainfall patterns around the Indian and Pacific oceans exacerbated weather irregularities caused by climate change. Up to 4.2 million<sup>18</sup> were experiencing 'acute' food insecurity.

Maize enjoys the most government agricultural support in Malawi in terms of seed and other inputs. It also enjoys access to market through the same government food reserve system. Smallholders do not individually grow large quantities enough to access the market without going through middlemen/traders. The middlemen market is the most easily accessible as it cuts out the need for transportation to buying centres or private millers. It removes the need for storage, pays spot cash and sometimes advance payment often necessary to cater for other household urgent needs. Maize is also subject to government price and distribution controls. Besides smallholders, there are commercial level farms owned by individuals and corporates that grow maize and access markets through different means including warehouse receipting systems. The systems are also available to smallholders provided they meet the minimum quantity requirements. Further markets include processors and export. The export market is regularly controlled by quotas and bans to manage national food security.

### 5.2.1 SECTOR AND MARKET SYSTEM'S OVERVIEW

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In Malawi, households are allocated traditional land through local rules as guided by government policies. Families then decide on the land allocation to various crops they grow. In the two-districts assessed, there is a challenge of limited access to land which coupled with inefficient agricultural practices, reduce the yields

and food security. In Mchinji, the average land area allocated to maize production per household is 3.3 acres, yielding an average of 359 kg/acre or 1,185kg of maize per household. In Mangochi, households allocate an average of 1.5 acres to maize, producing an average of 308 kg/acre or 462 kg per household.

<sup>18</sup> World Food Programme, Sept 2024, Tale of two villages: In Malawi, farmers point the way as drought drives hunger

Maize occupies the biggest of the small lots of land available that range from 2 to 5 acres in both districts. In both cases, it is not enough to meet the annual needs of households resulting in both food insecurity and inadequate nutrition. It is also cultivated by almost every household in Malawi with 99.2% of smallholder farmers in Mchinji and 97.8% in Mangochi grow maize. Because of its regulatory status, most external support around maize is closely guided by government policy. The over-reliance on maize for food security is demonstrated by a low Food Consumption Score (FCS) in Mangochi, where only 59% of households fall into

this category. In Mchinji, 75.2% of households have an acceptable Food Consumption Score (FCS), indicating better dietary diversity.

Despite its high consumption, maize alone does not provide a balanced diet, leading to potential nutritional deficiencies. Dietary diversification is required to improve nutrition security. This includes promoting the consumption of protein-rich and nutrient-dense foods such as legumes, vegetables, and animal-sourced foods.

Figure 4: Maize Mapping

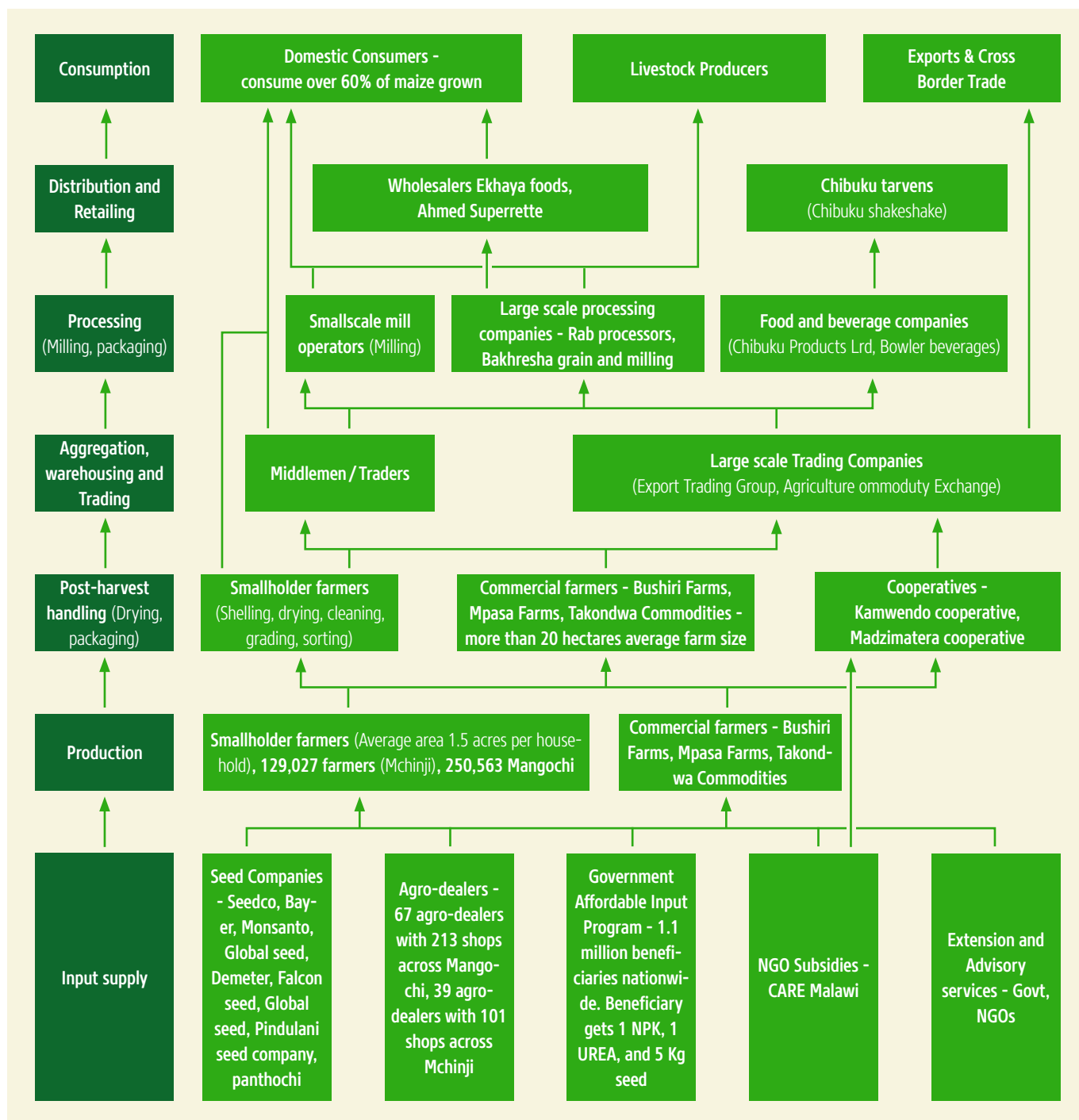
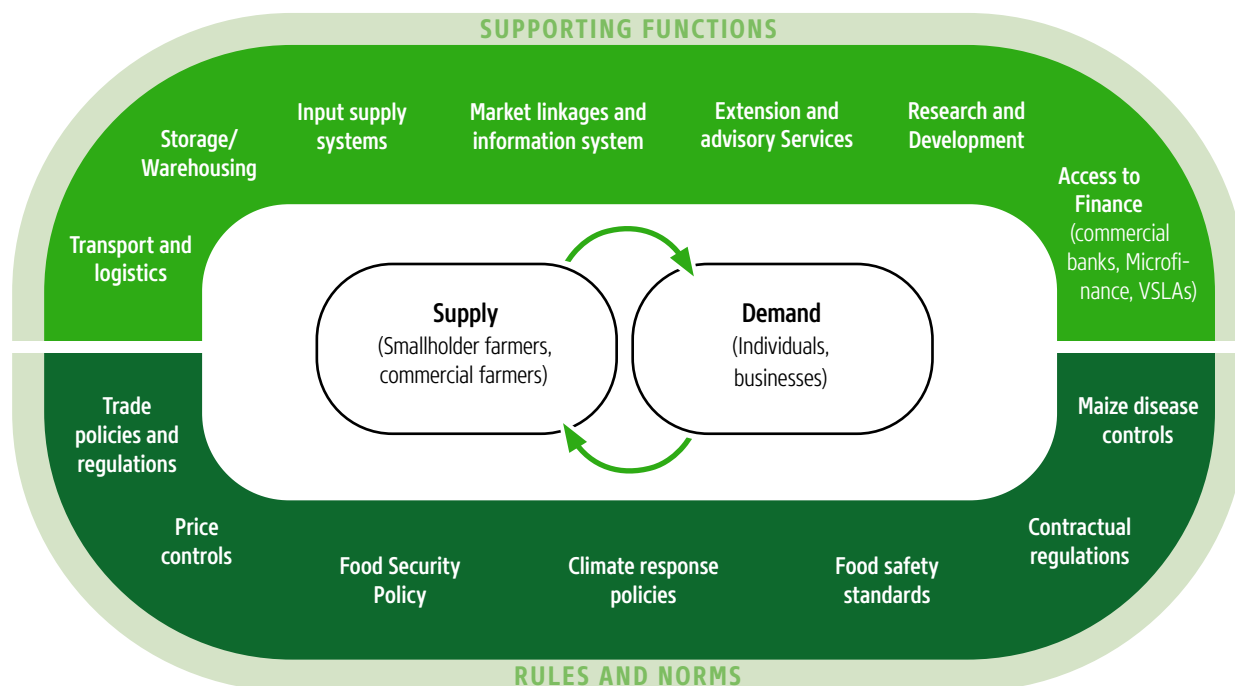


Fig. 4 represents the value chain with many inputs actors supporting smallholder and commercial farms leading domestic consumption, animal feed or export. Fig. 5 represents the maize market system. Government manages the maize supply chain in view of frequent climate shocks and general intermittent shortages in poor households. In good seasons surplus maize is exported. Food security, as noted above, is hinged on the maize staple although other

grains such as rice are gaining regular consumption as substitutes especially in urban areas. The main link for farm off-take are traders who operate largely unregulated. They play crucial duties of aggregating and also pay cash to the farmers unlike the formal markets. Often their involvement comes at a premium on the farmers. WHH, with DevLearn, identified the general supporting functions for maize market.

Figure 5: Maize Market Systems Map



### 5.2.2 AREAS OF UNDERPERFORMANCE

The performance of the supporting functions for the maize market system, is suboptimal for various reasons. Access to finance, inputs supply systems, transport and logistics, extension services and processing, among others, are the areas interventions are acutely

required for addressing food security shortfalls and access to incomes in Mchinji and Mangochi. Attention also needs to be paid to the effects of climate change and sporadic shocks in the target districts.

### 5.2.3 BARRIERS AND OPPORTUNITIES FOR TARGET GROUPS

Table 25: Barriers and Opportunities for Target Groups

<p><b>Current Assessment and Contribution to Nutrition and varied diets</b></p>	<ul style="list-style-type: none"> <li>• Smallholders grow maize mainly as a staple diet for their households. Nutritionally it can form a major part of a balance and varied diet but is not sufficient on its own.</li> <li>• Maize enjoys government support as a staple for food security</li> <li>• There is a current understanding among stakeholders that there is need to diversify to cater of other dietary needs</li> <li>• In both Mchinji and Mangochi, the main growers of maize are smallholders with a few commercial level ones also participating</li> <li>• Surplus maize is sold through government food reserve systems or to private buyers for both processing and export.</li> <li>• There is a guaranteed government market for growers</li> </ul>
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<b>Barriers to Entry</b>	<ul style="list-style-type: none"> <li>• Both districts face significant challenges due to climate change, including prolonged dry spells and flooding, which impact maize production.</li> <li>• High costs and limited access to fertilizers and hybrid seeds are major barriers. In Mangochi, 23.8% of farmers do not use any fertilizer.</li> <li>• Maize is highly vulnerable to pests and diseases such as fall armyworm and maize streak virus.</li> <li>• The farmer-to-extension worker ratio is very high, leaving many farmers underserved.</li> <li>• Poor handling during transportation, pests, and inadequate storage facilities contribute to significant post-harvest losses and limit access to markets.</li> <li>• Middlemen dominate the maize market, accounting for 64.7% of transactions in Mchinji and 57.5% in Mangochi.</li> </ul>
<b>Opportunities and Enablers</b>	<ul style="list-style-type: none"> <li>• Government programs like the Affordable Inputs Program (AIP) support maize production.</li> <li>• There are many efforts towards climate change proofing and reducing the effect of climate shocks on maize production</li> <li>• There are ample opportunities to improve productivity despite the limited access to land thereby increasing annual food security</li> <li>• Both districts have access to water sources like Lake Malawi and the Bua River, presenting opportunities for irrigation.</li> <li>• There are existing market linkages that could be further enhanced to increase and stabilize supply.</li> </ul>

## 5.2.4 ROOT CAUSE ANALYSIS

**Access to Finance and Financial Services:** Maize like other crops requires financing to grow it at viable levels. Access to loans from commercial banks and micro finance institutions (MFIs) or equity/impact finance from institutional investors is often difficult for smallholders who often do not meet viability levels or loan collateral requirements.

**Extension and Advisory Services:** Government extension system is often underfunded and because they prefer to use the traditional face to face interaction with farmers, the extension officers often fail to meet all farmers requiring their services. The extension systems also lacks adequate market information

**Processing:** Investments in modern rural processing capacity is low in Mangochi and Mchinji due to high initial costs of equipment and unreliable energy supplies. Seasonal and climate change induced shortages also weaken the business case of investing in modern mills.

**Inputs Supply Systems:** Government support that is most readily available to smallholders is sometimes

mired with bureaucratic delays, mistiming and other inefficiencies, making overreliance on it risky. In most cases, not all the inputs are available as and when required affecting their efficient use. Own procurement by farmers is costly and high percentage of farmers end up using recycled seed (30% farmers in Mangochi and 10% farmers in Mchinji)

**Storage/Warehousing:** Farmers in Mangochi and Mchinji often experience low production of maize and prefer to keep it at home as it is deemed not worthy to keep at private warehouses. Their home facilities however, have challenges of disease infestation and general poor management that results in losses that impact on food security and farmer incomes.

**Logistics and Transportation:** The main challenge is poor access roads infrastructure. Also because of the small quantities that smallholders grown, most common transport means are bicycles and animal draft power making the trips arduous. In the end the middlemen are the preferred means to both markets and input supply.

## 5.3 Groundnuts

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Traditionally, Malawi is renowned for growing various varieties of groundnuts for both local processing, consumption and export. It is a crop with high participation of woman and youth due to local tradition that allocates family pieces of land to women to grow groundnuts. Groundnuts are grown in small land lots across the country as part of the regular diet added to meals. It is very labour intensive to cultivate, care for and harvest. It also requires good post-harvest care. It is one crop that has immense support from stakeholders including inclusive business partners in the private sector and different development partners. The support is based on the comparative advantage and investments that Malawi has had in growing the crop over the years that makes it one of the most likely crops that could change livelihoods.

### 5.3.1 SECTOR AND MARKET SYSTEM'S OVERVIEW

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In both Mchinji and Mangochi, groundnuts are grown for consumption and as a cash crop. It enjoys supportive government policies and programs that sometimes subsidises inputs and help farmers access markets. Like most crops in Malawi, middlemen are very active in the market, acting as links to processors, traders and export markets. The challenge of storage and immediate cash needs often force farmers to sell immediately after harvest through the traders.

Some recent developments have seen groundnuts gaining stakeholder support as an alternative to crops such as tobacco that are being replaced because of health and environmental concerns. A case in point is that of Pyxus Agriculture, a tobacco affiliated company that has been investing in mechanization and technology, such as the introduction of small-scale speeders, harvesters, and threshers to improve efficiency of production. Pyxus Agriculture, which operates a state-of-the-art groundnut processing facility in Lilongwe also provides a reliable market for the groundnuts using inclusive business models in working with smallholders. Mega Farms unit of the Ministry of Agriculture are also helping in the improvement groundnut farming technologies in Malawi. Other notable participants in the groundnuts market include, Fortune Gardens Limited, that buys groundnuts from smallholder farmers and exports them to neighbouring countries, National Association of Smallholder Farmers of Malawi (NASFAM) that provides farmers with fair prices and markets as well as Agricultural Development and Marketing

Groundnuts, are highly nutritious and offer several health benefits. They are a rich source of essential nutrients, including proteins, healthy fats, vitamins, and minerals. Consumption of groundnuts is already high although availability throughout the year is affected by low productivity due to inefficient traditional ways of cultivation. Market access is also affected by poor disease management limiting access to export opportunities.

Like the rest of the crops, groundnuts are affected by both climate change and intermittent climate shocks that ravage the Southern African region, thereby necessitating specific mitigation strategies.

Corporation (ADMARC), a government-owned corporation that manages the country's food security. Additionally, there are several food processing companies in Malawi such as Rambo Packaging, Kwanza Cocoa, Rab Processors Limited, Malawi Mangoes Ltd, Grain & Milling Company and Proto Feeds. Afri-Nut specialises groundnut processing and distribution inclusive business which aims to move beyond production of raw groundnuts into a range of value-added products including exports.

The International Crop Research for Semi-Arid Tropics (ICRISAT) works with NASFAM in a project to increase productivity while developing a system of grade and standards to enable smallholders to participate in international markets. USAID Feed The Future programme runs Innovation Lab for Peanut that promotes women empowerment using their involvement in growing the crop in Malawi.

Groundnuts interventions have an opportunity to increase dietary variety to the communities of the two districts through working with already existing market linkages and support towards improved practices. Strategies around groundnuts should seek to increase productivity in view of limited availability of land and access to reliable markets. This will in turn afford households extra income to buy other nutritional foods that they do not produce.

Figure 6: Groundnut Actor Mapping

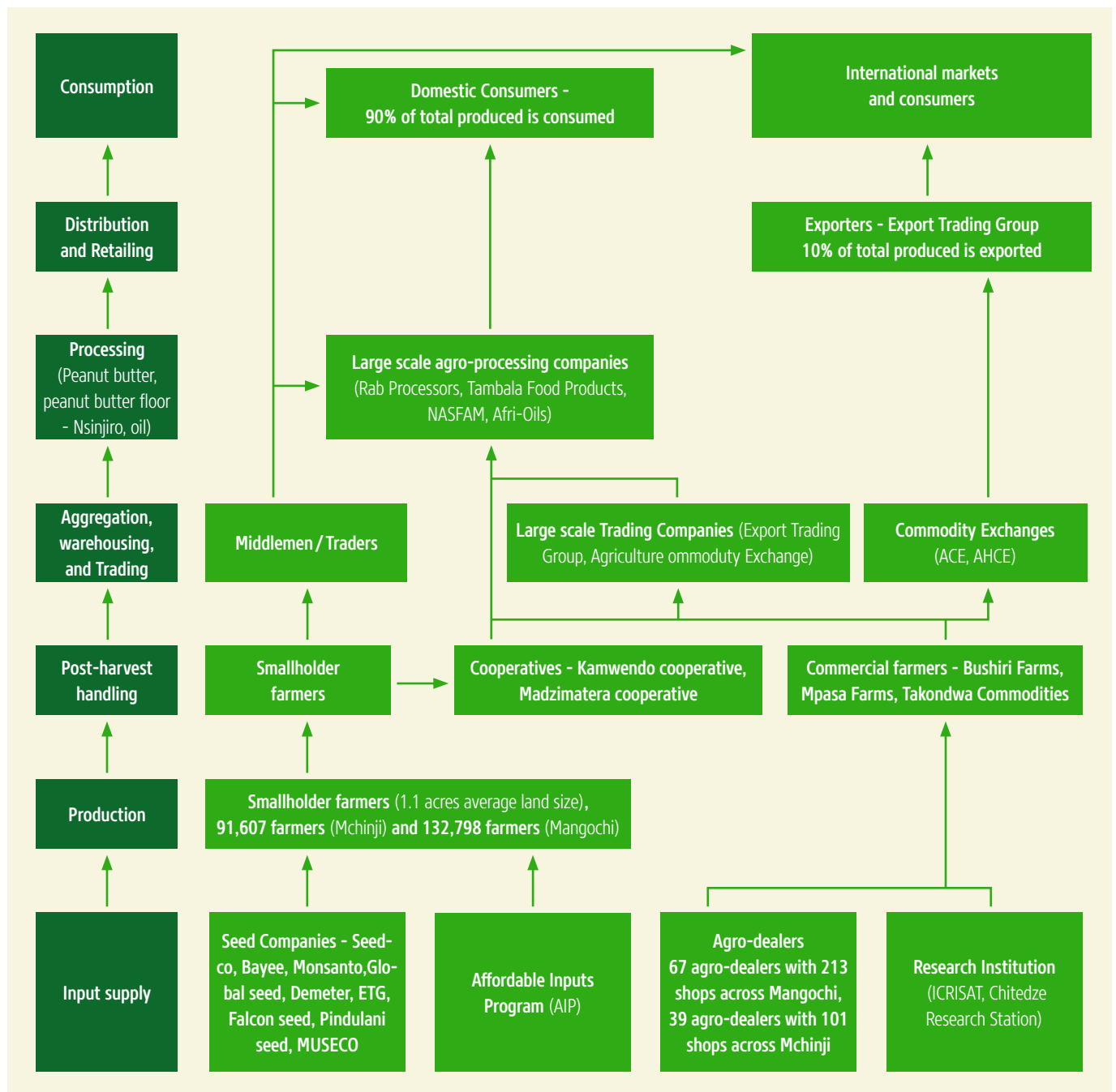
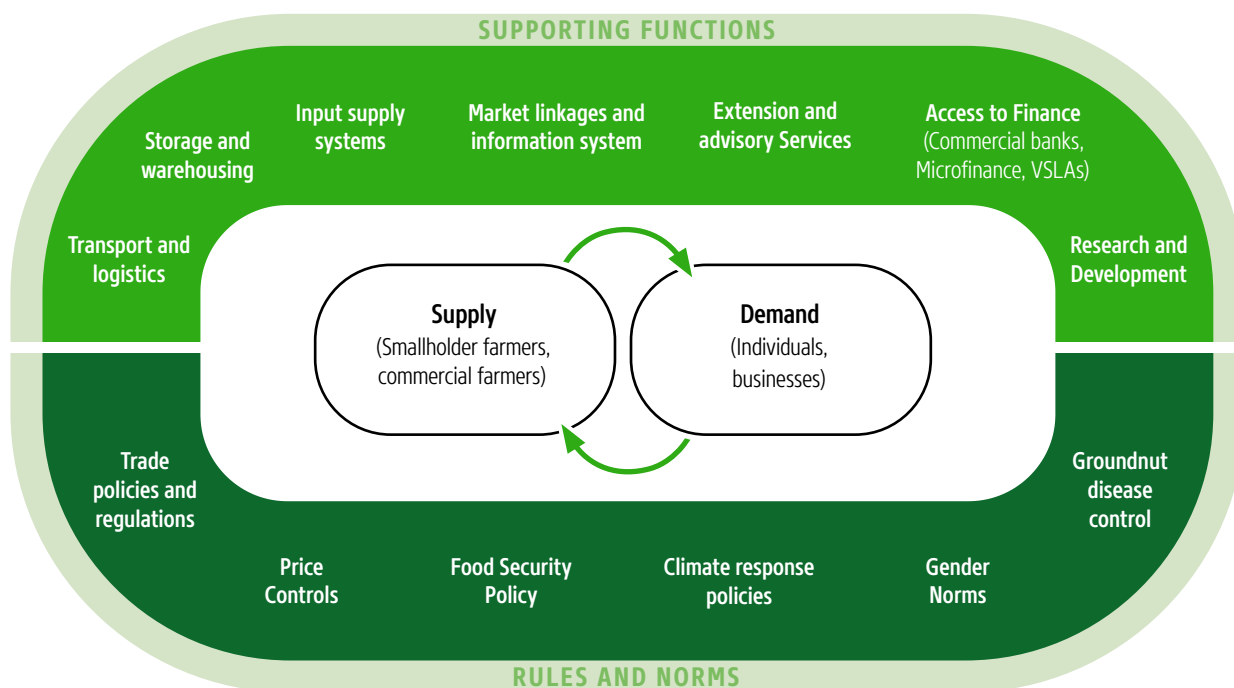


Fig. 6 represents the groundnuts actor maps, notable here is the existence of large-scale trading and commodity exchange, with export markets available. Fig. 7 shows the market system in Malawi and the two districts under focus areas of constraints are highlighted. As alluded to earlier, unique to Malawi

groundnuts production tradition is its women and youths bias. Women are often, through tradition allocated pieces of land that they fully utilize to grow groundnuts. They also control the marketing and incomes from the crop.

Figure 7: Groundnut Market System



### 5.3.2 AREAS OF UNDERPERFORMANCE

The Food Systems Assessment identified underperforming functions and rules in the groundnuts market systems. For the purpose of improved nutrition and access to incomes in Mchinji and Mangochi,

interventions should address input supply, extension services, storage and warehousing as well as access to markets. These will in turn improve productivity, access to nutrition and incomes in the target districts.

### 5.3.3 BARRIERS AND OPPORTUNITIES FOR TARGET GROUPS

Table 26: Barriers and Opportunities for Target Groups

<p><b>Current Assessment and Contribution to Nutrition and varied diets</b></p>	<ul style="list-style-type: none"> <li>• Smallholders grow groundnuts mainly as a traditional crop that has enjoyed government support in view of its distinct comparative advantage in Malawi and both target districts.</li> <li>• Inclusive business private investors supported by development projects are rallying around increased production of groundnuts in the country.</li> <li>• Groundnuts provide essential dietary variety and nutrition security to households in the target districts.</li> <li>• In both Mchinji and Mangochi, the main growers of groundnuts are skewed towards women and youth.</li> <li>• Although there is high household consumption, groundnuts are also considered a cash crop catering for other essentials especially related to food security and nutrition.</li> <li>• Both local and international markets are available for Malawi groundnuts.</li> </ul>
<p><b>Barriers to Entry</b></p>	<ul style="list-style-type: none"> <li>• Limited access to quality seeds and inputs.</li> <li>• Labour-intensive agricultural practices</li> <li>• Lack of mechanization equipment like shelling machines and oil pressers.</li> <li>• Climate challenges such as droughts and floods.</li> <li>• Poor post-harvest handling and storage.</li> <li>• Barriers to export due to inconsistent quality and aflatoxin contamination.</li> <li>• Poor infrastructure and high transportation costs further limit market access and reduce profit margins for farmers.</li> <li>• Risk of duplication in view of the presence of various stakeholders supporting the groundnuts sector</li> </ul>

### Opportunities and Enablers

- High nutritional value of groundnuts, making them attractive to health-conscious consumers and WHH nutritional targets.
- Presence of effective support for the sector
- Groundnuts are gender and youth friendly thereby opportunities to promote inclusive growth.
- Potential for developing processed groundnut products like peanut butter, oil, and snacks as local value addition alternatives.
- Investment in modern storage facilities to reduce post-harvest losses.
- Expansion of small-scale irrigation systems to mitigate erratic rainfall impacts and other climate calamities.
- Linking farmers to processors, traders, and exporters to improve prices and market access.
- Supportive government policies and programs to subsidize inputs and improve infrastructure.

### 5.3.4 ROOT CAUSE ANALYSIS

**Access to Finance and Financial Services:** Groundnuts enjoys both government and inclusive business support especially where there have been opportunities for scaling up. However, at basic household level where the primary purpose is consumption there are no appropriate financial packages that support farmers. In this regard, there are still gaps that need to be plugged especially considering the low literacy levels amongst the growers, preventing them from understanding finance application process.

**Extension and Advisory Services:** Government extension services still rely on face-to-face interactions, which can be inefficient, especially in the context of limited mobility and geographic barriers. The government system is often underfunded and unable to provide full package of services timeously.

**Processing:** There is evidence of many activities in transforming raw groundnuts into finished products that are ready for consumption or further use at both household and national level. This positively enhances nutrition. In the target districts of Mangochi and Mchinji, local commercial value addition however, still lags behind partly due to high energy costs, especially for small and medium-sized processing units. There are inconsistencies in quality and levels of disease infestation such as the prevalent aflatoxin.

**Inputs Supply Systems:** The involvement of inclusive business investors is a positive development in the groundnuts sector. Sometimes progress is limited when some farmers who are below the business support threshold are concerned. These would require special packages to improve their access to inputs so as to improve nutrition and increase incomes. Some WHH household targets often fall into these groups. There is little to no mechanisation in the growing of groundnuts for this group.

**Logistics and Transportation:** Challenges of poor access roads infrastructure limit access to market, inputs and services to farmers. This forces the farmers' to only use one channel, which is the traders.

**Storage/Warehousing:** Locally, in Mangochi and Mchinji facilities are either unavailable or poorly managed resulting in poor food security and farmer incomes. Poor and sometimes, lack of home storage force farmers to sell their products quickly at suboptimal prices.

**Market Linkages and Information Systems:** The marketing systems are dominated by middlemen who aggregate smallholder produce for on-ward selling to processors and the export market. Often there is inadequate information to the farmer to make viable decisions on who to sell to. There are still opportunities to enhance access to information.

## 5.4 Fisheries

Fisheries are a crucial source of food security, income, and livelihoods in Malawi, particularly for communities near water bodies like Lake Malawi, Lake Malombe, and the Shire River. In Mangochi, approximately 83% of households engage in fishing activities, highlighting its economic significance. The sector is characterized by artisanal fishers who rely on traditional techniques, often using dugout canoes and gill nets, to catch key species such as Chambo (tilapia), catfish, and usipa (small pelagic fish).<sup>19</sup>

Fish, especially tilapia, plays a vital role in Malawi's diet as an affordable and accessible protein source. However, artisanal fishers face numerous challenges, including declining fish stocks due to overfishing,

illegal fishing practices, and climate change impacts. Women play a significant role in the sector, although sometimes overlooked, particularly in post-harvest processing and marketing, making fisheries a critical component of household livelihoods.

Despite its importance, the fisheries sector in Malawi operates below its potential. Smallholder fishers have limited access to inputs such as fishing gear, cold storage facilities, and market linkages, which restrict their ability to maximize profits and sustain livelihoods. Furthermore, environmental degradation and habitat loss due to deforestation and pollution have exacerbated the decline in fish populations.

### 5.4.1 SECTOR AND MARKET SYSTEM'S OVERVIEW

The fisheries sector in Mangochi and Mchinji is dominated by artisanal fishers, who contribute over 85% of Malawi's total fish catch.<sup>20</sup> These fishers operate primarily in shallow waters near the shore using small boats. Artisanal fisheries are characterized by informal structures, limited access to capital, and reliance on traditional methods that are labour-intensive but inefficient.

Key species targeted include:

- Chambo a high-value tilapia species often consumed fresh or smoked.
- Usipa (*Engraulicypris sardella*), a low-cost protein source often dried and sold in bulk for rural and urban markets.
- Catfish (*Clarias* spp.), which provides a consistent protein supply for households.

Fish is processed and sold in various forms. Fresh fish is primarily sold in urban markets where cold chain systems are available. Dried or smoked fish is common in rural markets due to limited cold storage facilities, with women leading the processing activities.

Overfishing and unsustainable practices have reduced fish populations, particularly for high-value species.

Fishers increasingly report smaller catches despite longer hours at sea, indicating the need for sustainable management practices. Poor infrastructure, including a lack of cold storage facilities, results in significant spoilage. Approximately 30–40% of the total fish catch is lost during processing and transport, reducing profitability. Artisanal fishers primarily sell their catch to middlemen, who dominate the supply chain. These middlemen aggregate fish for onward sale to urban markets or processors, often taking advantage of fishers' limited bargaining power.

Commercial fishing is dominated by one major company. Maldeco Fisheries is recognized as the largest commercial fishing company and aquaculture producer of **Chambo** in the country. Maldeco's operations account for over **70% of the total commercial fish catch** in Malawi, and about **7% of the total Lake Malawi catch**, which fluctuates between 26,000 and 47,000 tonnes annually.<sup>21</sup> The company's operations have historically been a significant source of employment in the area and the produce for both domestic consumption and export.<sup>22</sup>

Environmental degradation is also frequently reported, with pollution from agricultural runoff and deforestation along lake shores reduces breeding grounds for fish. This has further strained fish populations and impacted fishers' livelihoods.<sup>23</sup>

19 FAO Fisheries Platform. (n.d.). Country profile: Malawi fisheries sector. Retrieved from <https://www.fao.org/fishery/en/facp/mwi?lang=en>

20 IBID.

21 Seafood Media. (n.d.). Company profile: Maldeco Fisheries. Retrieved from [https://seafood.media/fis/companies/details.asp?=&company\\_id=102684&filterby=companies&l=e&page=1](https://seafood.media/fis/companies/details.asp?=&company_id=102684&filterby=companies&l=e&page=1)

22 Face of Malawi. (2024). Maldeco Fisheries future uncertain as it faces possible shutdown. Retrieved from <https://www.faceofmalawi.com/2024/07/10/maldeco-fisheries-future-uncertain-as-it-faces-possible-shutdown/>

23 African Development Bank. (n.d.). Publications. Retrieved from <https://www.afdb.org/en/documents>

Figure 8: Fishers Actor Mapping

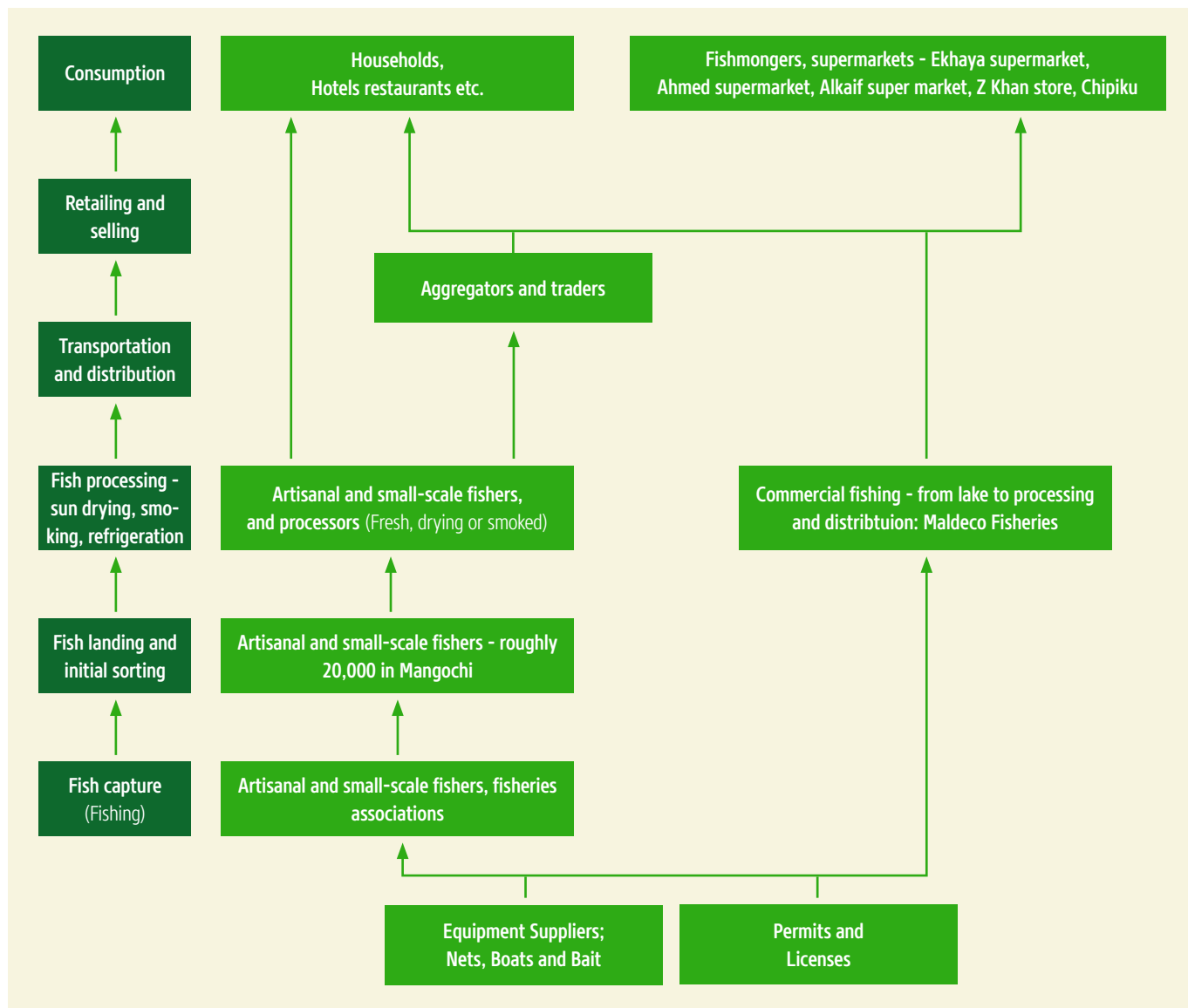
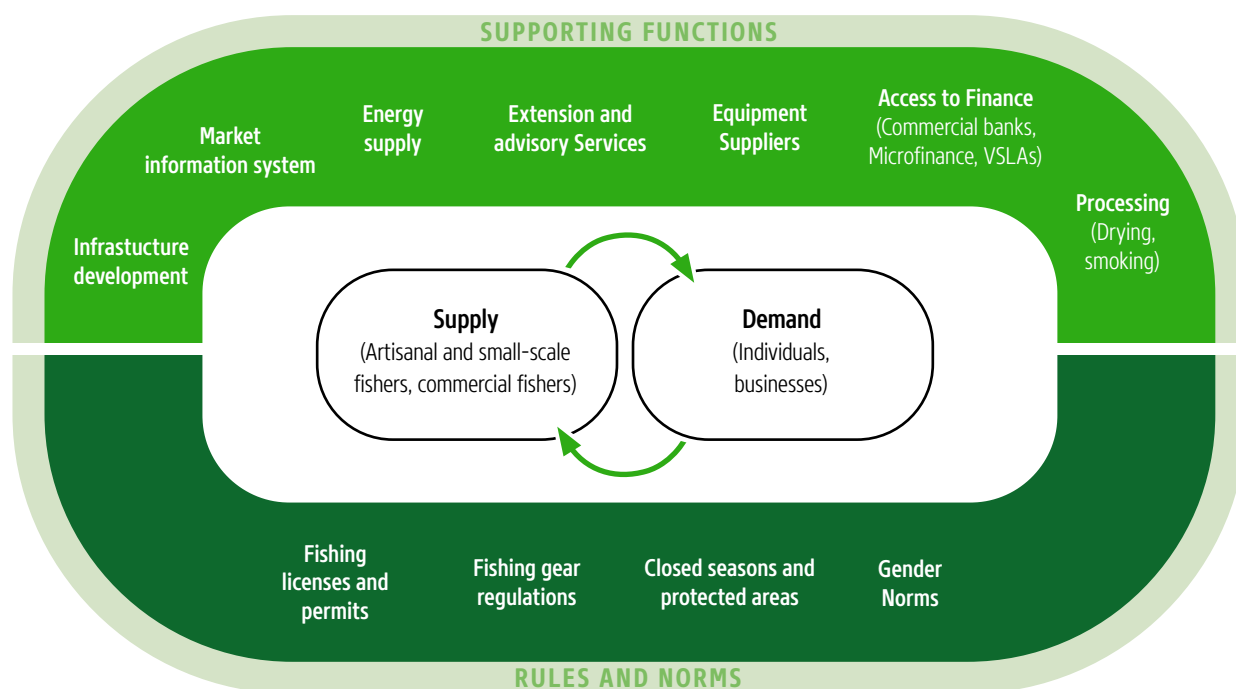


Fig. 8 represents the fisheries value chain, which demonstrate both artisanal fishing with mostly

traditional equipment and drying processes and commercial fishing dominated by one major firm.

Figure 9: Fisheries Market System



### 5.4.2 AREAS OF UNDERPERFORMANCE

The nutritional value of fish and its contribution to incomes is evident but there are significant risks to the future of this market. Overfishing and unsustainable practices are reducing fish populations, forcing fishers to travel farther into deeper waters to find sufficient

catches. Climate change and environmental degradation are further degrading fish stocks. In addition, the processing of fish is limited, and the onward sale to urban markets is also hampered by infrastructure constraints.

### 5.4.3 BARRIERS AND OPPORTUNITIES FOR TARGET GROUPS

Table 27: Barriers and Opportunities for Target Groups

<p><b>Current Assessment and Contribution to Nutrition and varied diets</b></p>	<ul style="list-style-type: none"> <li>• Nutritional Impact of protein intake from fish is crucial in reducing stunting and wasting in children, which are prevalent in Malawi.<sup>24</sup></li> <li>• Integrating fish into daily diets can reduce dependency on maize and improve overall caloric and protein intake.<sup>25</sup></li> <li>• Processed fish products (e.g., dried, smoked fish) are shelf-stable, making them a reliable source of nutrients year-round.<sup>26</sup> The sector is characterized by artisanal fishers who rely on traditional techniques</li> <li>• They suffer from high post-catch losses due to processing and transportation</li> <li>• Environmental degradation and overfishing is reducing catch.</li> </ul>
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24 FAO Country Profiles. (2022). FAO Malawi News Archive. Retrieved from <https://www.fao.org/countryprofiles/news-archive/detail-news/en/c/1513847>

25 FAO Nutrition Platform. (n.d.). Country profiles: Malawi. Retrieved from <https://www.fao.org/countryprofiles/nutrition/en/?iso3=MWI>

26 WorldFish Center. (n.d.). Nutrition and food security in small-scale fisheries: Malawi. Retrieved from <https://worldfishcenter.org/publication/nutrition-and-food-security-small-scale-fisheries-malawi>

### Barriers to Entry

- Basic fishing activities can begin with minimal investment in small nets or basic canoes and fishing is deeply embedded in the livelihoods. However, better-quality equipment like motorized boats and advanced nets require significant investment. Most artisanal fishers, reliance on older, inefficient gear limits productivity and profitability.
- Regulatory Challenges: Fishing in Lake Malawi and surrounding water bodies is regulated but enforcement is lax. Illegal fishing practices, such as using banned nets or fishing in protected breeding zones, are prevalent.
- Competition and declining fish stocks due to overfishing
- Environmental degradation, including deforestation and agricultural runoff, have impacted fish breeding areas. Fishers must travel farther from the shore to find sufficient catches, increasing the costs and risks of fishing.
- Climate change effects, such as fluctuating water levels and rising temperatures, exacerbate these challenges.
- Although women are active in post-harvest processing and marketing, they face significant barriers to participating as fishers. Social norms, lack of access to gear, and safety concerns limit their involvement in actual fishing.
- Market and infrastructure challenges, the dominance of middlemen, poor road networks, and limited cold storage facilities reduce earnings for small-scale fishers.
- Without cooperatives or organized groups, individual fishers often struggle to negotiate fair prices, limiting their economic potential.

### Opportunities and Enablers

- Improved Storage and Processing: Investment in cold storage and value-added processing facilities (e.g., smoking kilns) could reduce post-harvest losses and increase profitability.
- Sustainable Fishing Practices: Promoting community-based management systems and regulating gear use could help restore fish stocks. Programs such as the FAO's sustainable fisheries initiatives provide useful models
- Empowering fishers to form cooperatives and connect directly with buyers can improve their bargaining power and reduce dependency on middlemen.
- Mangochi is a tourist destination due to its proximity to Lake Malawi. This creates demand for fresh and processed fish in hotels and restaurants. Coupled with urbanisation can create further market opportunities.
- Enhanced packaging and branding could target urban and export markets.
- Gender Empowerment: Enhancing women's roles in the value chain, particularly in processing and marketing, could further support household incomes.

## 5.4.4 ROOT CAUSE ANALYSIS

**Regulations and declining fish stocks.** Policies on gear restrictions, fishing zones, and closed seasons are poorly enforced due to limited resources, personnel, and inadequate institutional capacity. Department of Fisheries lacks sufficient funding, training, and equipment to monitor and manage resources effectively. Lack of community buy-in and legal awareness undermines compliance and effectiveness of regulations. The result is overfishing and unsustainable practices reducing fish populations, forcing fishers to travel farther into deeper waters to find sufficient catches.

**Transport, storage and infrastructure.** Post-harvest losses are high due to a lack of cold storage, leading to significant spoilage. Fishers in remote areas struggle to transport their catch to urban markets due to poor roads.

Limited access to reliable electricity - Many fishing communities have limited or no access to grid electricity translating having into inadequate power for cold storage which results in limited use of modern processing technologies like freezing and drying machines.

**Environmental degradation.** Deforestation and agricultural runoff have polluted lakes and rivers, reducing breeding grounds for fish. In addition, rising water temperatures and erratic rainfall patterns attributed to climate change has disrupted fish breeding cycles, further depleting fish stocks.

## 5.5 Beekeeping and Honey

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Malawi has a thriving beekeeping industry with many small-scale farmers producing honey. It is estimated that the country produces 1,500 to 2,000 metric tons of honey per year with a beekeeping community of over 5,000 smallholders most of whom are affiliated to community-based groups. Honey is produced primarily for selling and secondly for consumption, with a significant part of it reaching the export market. Honey is also viewed as an essential part of dietary diversity if produced and made available in the right quantities to the local community. The Ministry of Agriculture, Irrigation and Water Development and USAID's Beekeeping Project are recognised as some of the main institutions giving support to beekeeping and honey producers in Malawi.

The Beekeepers Association of Malawi represents the producers who they also support with training, advocacy and market access. Plan International Malawi

supports community-based beekeeping projects by training in sustainable practices. In terms of nutrition, honey is known to contain carbohydrates, mainly energy-giving fructose and glucose. It is also a source of minerals such as calcium, iron zinc and others.

Although traditionally practiced as a part-time activity in Africa, beekeeping has gained traction as a vehicle for efficient use of local resources and conservation promoted by many development partners. Honey and its by-products are often sold in high value markets affording smallholders extra income. Beekeeping is often touted as one of the income generating alternatives to charcoal burning and general harvesting of trees for different non-sustainable purposes. It is also promoted for bees' role in crosspollinating plants and encouraging their natural sustenance and bio-diversity.

### 5.5.1 SECTOR AND MARKET SYSTEM'S OVERVIEW

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The Food Systems Assessment found that honey production is an important livelihood activity for many rural communities in Mchinji and Mangochi districts of Malawi. The districts however are suffering from deforestation like much of Malawi. Together with climate change and extreme weather events, depleted vegetation is affecting honey production in these areas. In Mchinji, erratic rainfall and high temperatures are perceived to pose significant effects on access to forests, which in turn affects honey production<sup>27</sup>. Similarly, in Mangochi, climate change is associated with reduced availability of essential forest products, including honey.

Many beekeepers in Mchinji and Mangochi use traditional methods, which can result in lower honey quality and quantity. Honey is viewed mostly as an income generating activity. For dietary reasons, it is important to encourage communities to explore recipes that includes honey for its nutritional and health benefits.

In the two districts targeted support activities already exist for smallholder farmers and cooperatives as noted in Fig. 10 below.

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<sup>27</sup> Chisale, Chirwa, Babalola & Manda, 2021; Perceived Effects of Climate Change and Extreme Weather Events on Forests and Forest-Based Livelihoods in Malawi

Figure 10: Beekeeping Actor Mapping

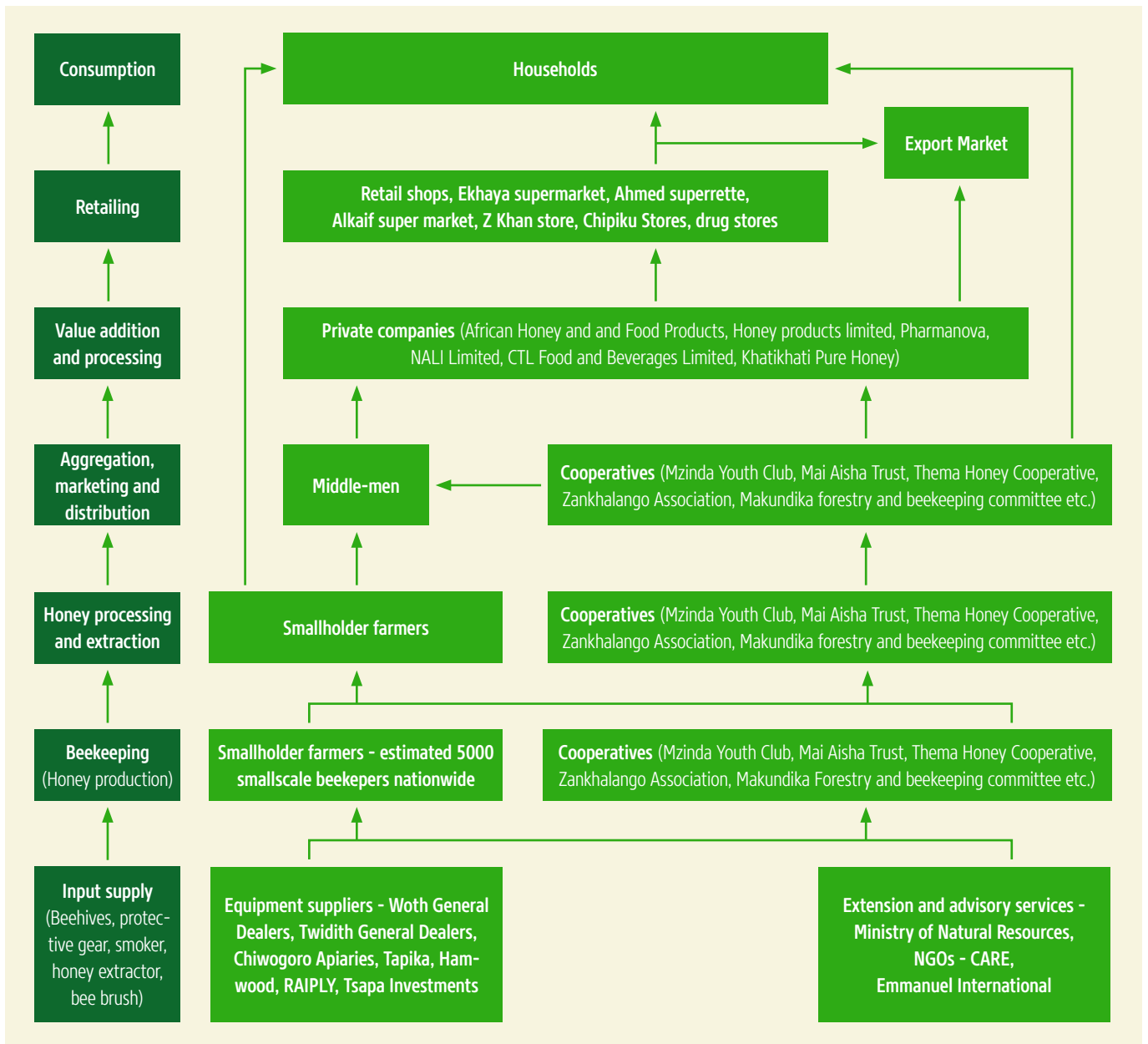
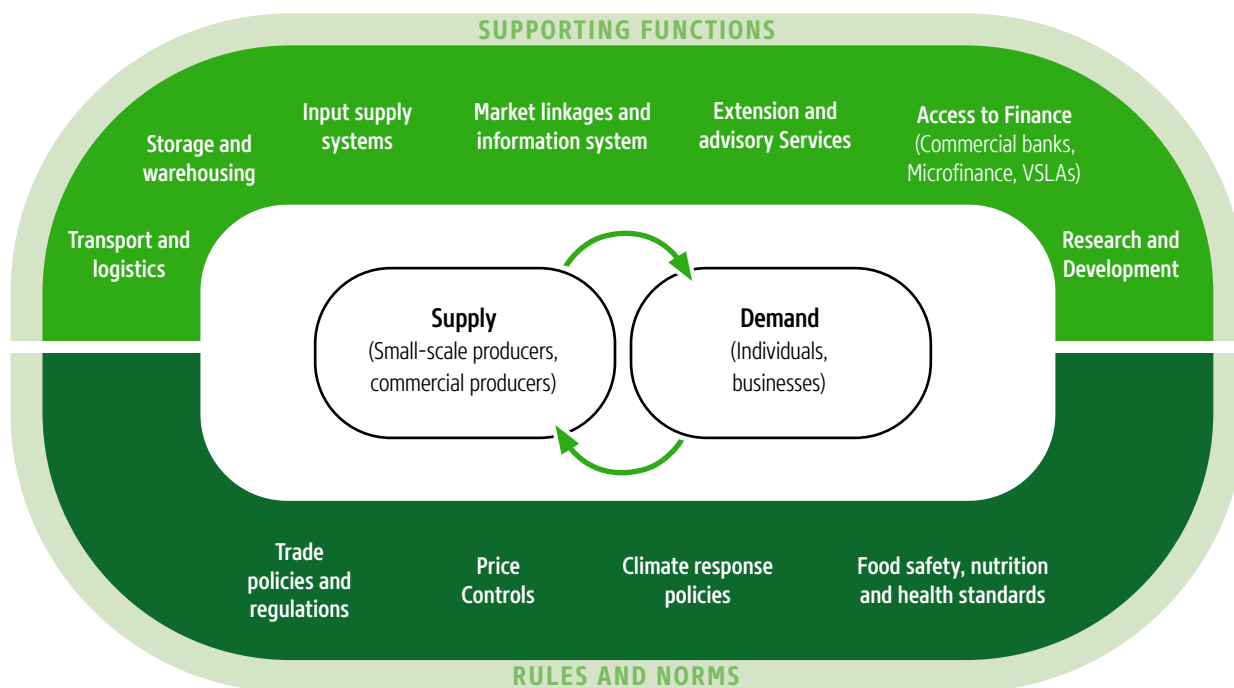


Fig. 11 below represents the beekeeping market system. Consumption by households in Mchinji and Mangochi is not regular although Food System Audit identified specific nutrition and health benefits of bee products. Other markets for bee products include wax which is used for production of candle and polishes. Initial investments are often high for producers. There

are also knowledge gaps compromising quality but involvement of NGO in support of extension and training are very helpful to producers. WHH observed that the extra income from bee products can be used to purchase other foods to cater for the nutritional needs of households.

Figure 11: Beekeeping Market System



### 5.5.2 AREAS OF UNDERPERFORMANCE

Despite support from NGOs and government, the honey and bee products sector in Mchinji and Mangochi still has gaps in performance in terms of

access to finance, especially for initial investments, input supply, extension services market linkages as well as nutrition and health knowledge.

### 5.5.3 BARRIERS AND OPPORTUNITIES FOR TARGET GROUPS

Table 28: Barriers and Opportunities for Target Groups

<p><b>Current Assessment and Contribution to Nutrition and varied diets</b></p>	<ul style="list-style-type: none"> <li>• Smallholders in Muchinji and Mangochi practice beekeeping with support from government and NGOs</li> <li>• Although there is a market for honey there are still gaps in making the product beneficial to producers who are often limited by poor beekeeping practices</li> <li>• Beekeeping is tied to conservation of natural forests as an alternative source of income to wood products.</li> <li>• Although produced as an income-generating product honey has several nutrition and health benefits that can be gained by households that produce it.</li> <li>• The beekeeping sector is well coordinated by stakeholders from government, NGOs and private sector although continuous knowledge gaps exist amongst producers</li> <li>• There are still huge opportunities for expansion and scaling up activities</li> <li>• Beekeeping commands high-end healthy foods niche market, locally and internationally</li> </ul>
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<b>Barriers to Entry</b>	<ul style="list-style-type: none"> <li>• The initial investment required for beekeeping equipment is substantial.</li> <li>• Technical expertise, extension services, training in modern beekeeping practices and market information are sometimes inadequate</li> <li>• Variability in honey quality due to inconsistent beekeeping practices, bee health issues, diseases and pests can affect consumer confidence and limit market access.</li> <li>• Meeting international market standards, such as organic or fair-trade certifications, can be challenging and costly.</li> <li>• Unpredictable weather patterns and environmental changes can affect bee populations and honey yields.</li> <li>• Navigating regulatory requirements and obtaining necessary permits can be complex and time-consuming especially with low literacy levels of some beekeepers.</li> <li>• Theft of beehives is a common issue, which can discourage new entrants from investing in beekeeping.</li> </ul>
<b>Opportunities and Enablers</b>	<ul style="list-style-type: none"> <li>• Growing local and international demand for natural and organic products provides niche market for organic honey</li> <li>• Diversification into value-added products such as honey-based beverages, cosmetics, candles, pharmaceuticals and food industries ingredients.</li> <li>• Beekeeping is an environmentally friendly activity that supports biodiversity and ecosystem.</li> <li>• Beekeeping can be integrated with agroforestry, climate change mitigation and other sustainable farming practices.</li> <li>• Advances in beekeeping equipment, such as modern hives, automated honey extractors, and solar-powered devices can enhance production, value addition and reduce labour costs.</li> <li>• Access to research, training programs and extension services from Government, NGOs and other players is slowly improving</li> </ul>

#### 5.5.4 ROOT CAUSE ANALYSIS

**Inputs Supply Systems:** High initial investment costs in equipment and access to bee colonies are often impediments for rural small-scale beekeepers.

**Market Access:** Many small-scale beekeepers have limited knowledge of market dynamics, such as consumer preferences, pricing, and how to expand their reach. The specialised markets also have strict traceability and branding requirements that smallholders find difficult to maintain sometimes.

**Access to Finance and Financial services:** Lack of collateral, high interest rates and low literacy rates affect the beekeepers' ability to access loans although

there are opportunities in the Malawi financial sector, NGOs and Government.

**Extension and Advisory Services:** Extension services provide limited reach and are not adequately knowledgeable on trends in the sector.

**Research and Development:** There is limited funding for research into new technologies, beekeeping practices, and bee diseases especially in view of climate change and incessant climate shocks in the targeted districts. Climate change affects the availability of nectar-producing plants, impacting bee health and honey production.

## 5.6 Mangoes

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Mangoes are among the most widely grown fruits in Malawi, particularly in Mangochi, where 83.3% of households cultivate mangoes, and in Mchinji, where 70% of households grow them dominated by small-holder farmers who produce both local varieties, such as Dodo/Boloma and Kalisere, and improved varieties, including Anderson, Kent, and Tommy Atkins.

Mangoes are a significant contributor to household nutrition and contributes to varied diets beyond maize and proteins. Despite their potential, mango farming in these districts faces significant challenges, including reliance on traditional farming methods, limited access to improved varieties, and lack of post-harvest infrastructure. The seasonal nature of mango production often leads to gluts during the harvest period, followed by scarcity, which affects profitability.

### 5.6.1 SECTOR AND MARKET SYSTEM'S OVERVIEW

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The mango market operates predominantly in informal systems, where farmers sell their produce through local markets or to middlemen. This informality likely leads to inefficiencies and lower profit margins for farmers. In Mangochi, **middlemen dominate 57.5% of mango transactions**, compared to **64.7% in Mchinji**, where more organized market linkages are available.

Mangoes are highly seasonal, with most production concentrated in a 2–3-month period. Malawi produces approximately 1.7 million tonnes of mangoes annually. This positions Malawi among the top mango-producing countries in Africa.<sup>28</sup> During this time, oversupply leads to low prices and significant wastage due to a lack of preservation methods such as cold storage and drying facilities. Approximately **30–40% of mangoes** in Mangochi are lost post-harvest due to inadequate cold storage, poor packaging, and inefficient transportation networks. Farmers often resort to selling at low prices during harvest gluts to avoid spoilage. Additionally, the limited application of Good Agricultural Practices (GAP) has led to lower yields and quality issues, hindering commercialization.

Processing activities in Malawi are minimal, with only a few processors, such as **Malawi Mangoes Ltd**, engaged in producing mango juice and dried mango.

In contrast, countries like Kenya and Uganda have established large-scale mango processing facilities, producing juices, purees, and dried mango products for export markets. However, since 2011, Malawi Mangoes Ltd has transformed unused lakeside land into premium, irrigated farms and trained 5,000 low-income community members to become high-quality mango-growing entrepreneurs. The company operates a 10,000 square meter certified processing facility, contributing to the national economy through exports and employment.<sup>29</sup>

Despite the high demand for mangoes in regional and international markets, Malawi's mango exports remain underdeveloped. Imported processed mango products often dominate urban markets, outcompeting locally produced mangoes in terms of branding and packaging. Whereas, neighbouring countries like Mozambique and Tanzania have been more successful in tapping into the export market due to better infrastructure and organized value chains. Moreover, Malawi primarily produces local mango varieties unsuitable for export due to their taste profile and high fiber content. This limitation has resulted in less than 1% of production entering formal markets<sup>30</sup> and exports accounting for only 0.25% of Malawi's total exports in 2022.<sup>31</sup>

28 Times Malawi. (2024). Malawi ranked highest mango producer in Africa. Retrieved from <https://times.mw/malawi-ranked-highest-mango-producer-in-africa/>

29 Malawi Mangoes Ltd. (n.d.). About us. Retrieved from <https://www.malawimangoes.com/about-us/>

30 Michigan State University. (n.d.). NAPAS: Malawi New Alliance Policy Acceleration Support Project. Retrieved from <https://www.canr.msu.edu/resources/napas-malawi-new-alliance-policy-acceleration-support-malawi-project>

31 Malawi Value Chains. (n.d.). Mango value chain. Retrieved from <https://www.malawivaluechains.com/mango>

Figure 12: Mangoes Actor Mapping

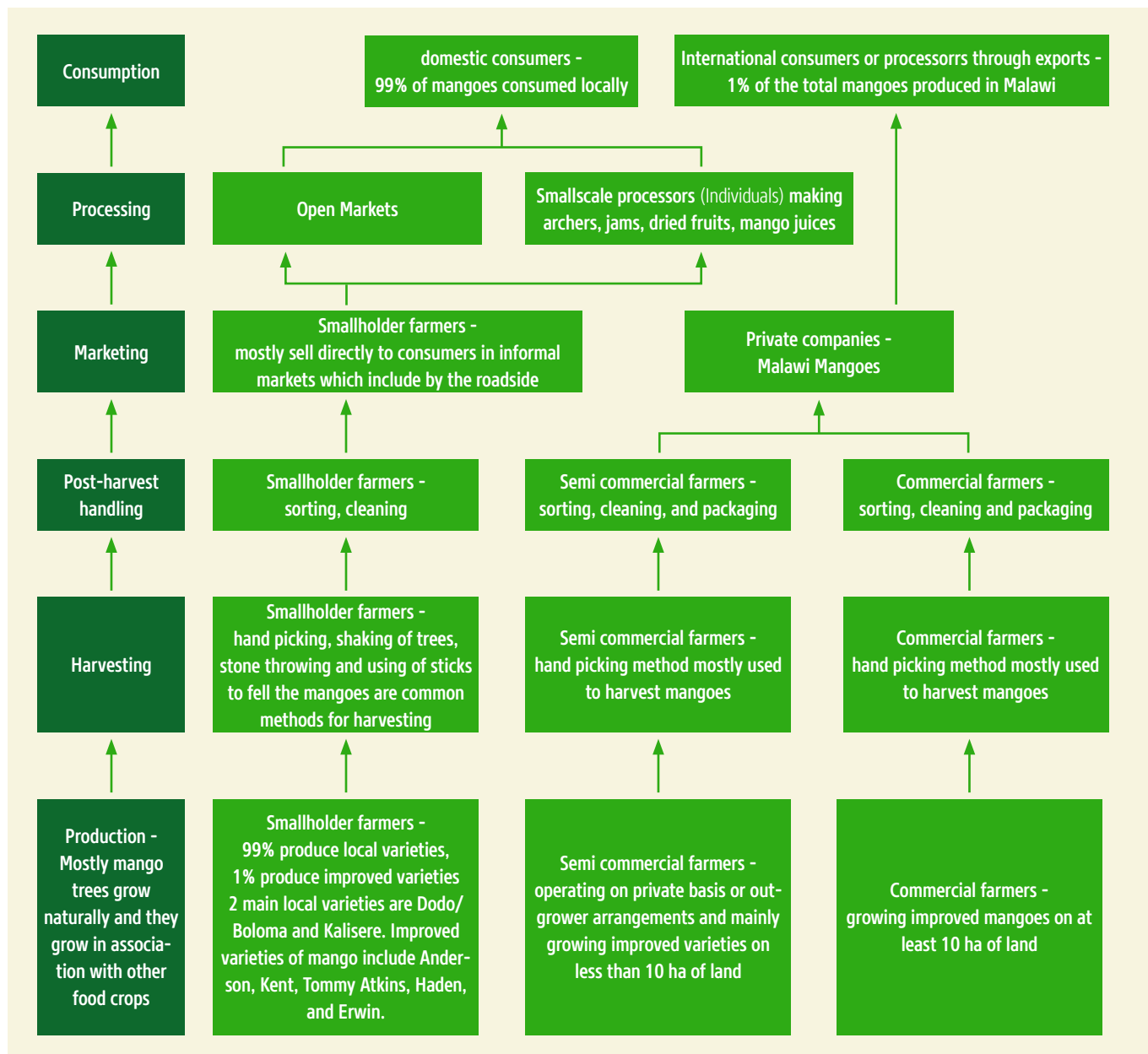
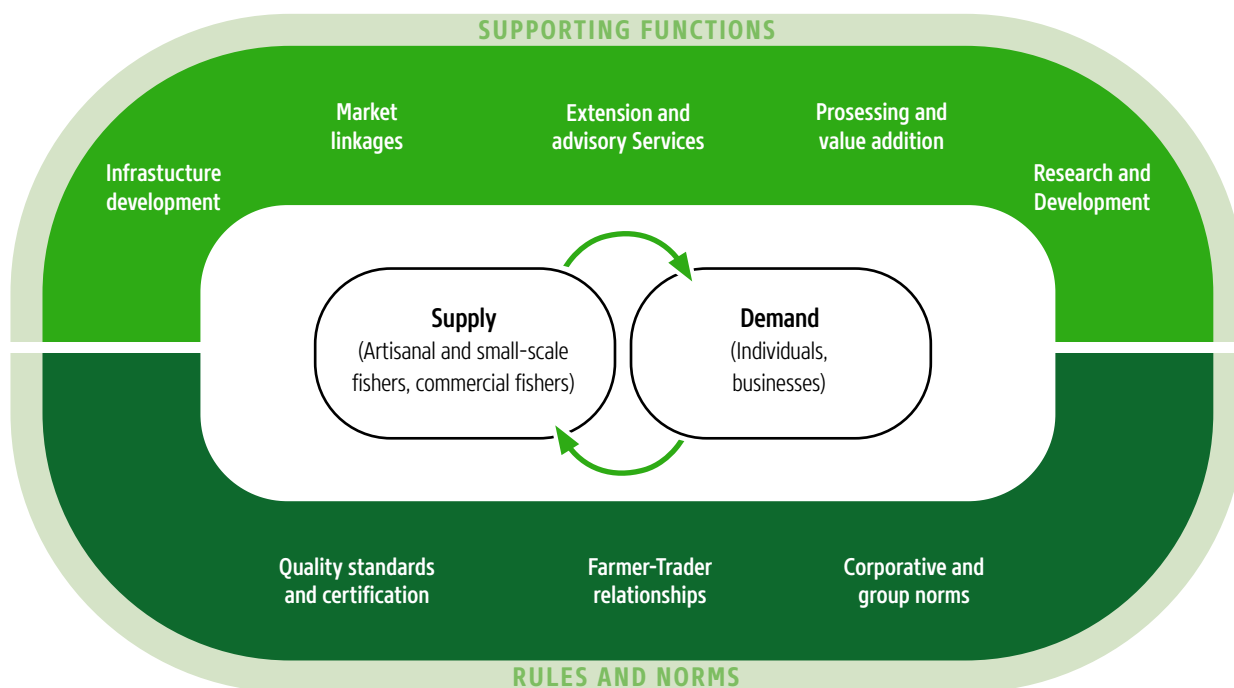


Figure 13: Mangoes Market System



### 5.6.2 AREAS OF UNDERPERFORMANCE

The informal, small holder farmer approach to mangoes in Mchinji and Mangochi currently mean there is a predominance of local varieties which are

less desirable for consumers, limited good agricultural practices and extension service, large post-harvest losses, and limited value addition and processing.

### 5.6.3 BARRIERS AND OPPORTUNITIES FOR TARGET GROUPS

Table 29: Barriers and Opportunities for Target Groups

<p><b>Current Assessment and Contribution to Nutrition and varied diets</b></p>	<ul style="list-style-type: none"> <li>• Over 83.3% of households in Mangochi and 70% in Mchinji grow mangoes, primarily for local consumption and small-scale sales.</li> <li>• Mangoes provide important dietary diversity, contributing to vitamin A intake and overall household nutrition.</li> <li>• Farmers predominantly cultivate local varieties such as Dodo, which are resilient but yield lower-quality fruit compared to improved varieties.</li> <li>• Poor post-harvest handling and spoilage reduce mango availability for household consumption during the off-season.</li> <li>• Women play a critical role in mango farming, particularly in harvesting, sorting, and selling. They are also highly involved in processing activities like drying and juicing.</li> <li>• Mango farming provides seasonal income, which women often allocate to household nutrition and children’s education.</li> </ul>
<p><b>Barriers to Entry</b></p>	<ul style="list-style-type: none"> <li>• High initial costs for improved mango seedlings and orchard management practices limit adoption of commercial varieties.</li> <li>• Youth involvement is limited to low-value roles such as harvesting and selling mangoes at local markets.</li> <li>• Lack of training and capital restrict youth participation in value-added activities, such as processing or packaging mangoes.</li> <li>• Limited access to cold storage and drying facilities results in 30–40% post-harvest losses during peak harvest seasons.</li> <li>• Poor market information prevents farmers from identifying higher-value markets or negotiating fair prices with middlemen.</li> </ul>

## Opportunities and Enablers

- Remains high demand for processed Mangoes, with imports of Mango juices and other products dominating the urban markets in Malawi.
- Expansion of farmer cooperatives could help aggregate produce, improve bargaining power, and reduce dependency on middlemen.
- Investments in cold storage and value-added processing facilities (e.g., drying, juicing) can reduce post-harvest losses and increase incomes.
- Opportunities to engage in value addition (e.g., mango drying, juice production) could create higher-value roles for youth in the mango value chain.
- Access to microfinance or grants for youth-led agribusiness initiatives, particularly for mango farming or processing.
- Training programs on mango farming techniques, business management, and market access could empower youth, women to participate more actively, while improving GAP overall.
- Enhancing women's roles in farming groups, processing and value addition (e.g., dried mangoes, mango snacks) could increase their incomes and economic independence.
- Targeted extension services and training for women on improved mango farming and post-harvest handling practices.

### 5.6.4 ROOT CAUSE ANALYSIS

**Extension and advisory services:** Extension services provide limited reach and are not adequately knowledgeable on trends in the sector.

**Extension and inputs supply systems:** There is a slow uptake of improved mango varieties, largely because of insufficient awareness and access to quality seedlings. Lack of coordination between different stakeholders such as government agencies, NGOs, private companies, and farmers which results in fragmented and sometimes redundant extension services, diluting the impact of efforts to boost mango production.

Extension officers often lack sufficient training, resources, and transportation to reach remote farming communities. This limits their effectiveness in promoting better farming techniques, pest management, and post-harvest handling. They often fail to adequately address the challenge of poor post-harvest handling which prevents farmers from improving the shelf life and marketability of their mangoes.

**Infrastructure:** Poor road networks hinder the transportation of mangoes to processing plants or markets, leading to delays, spoilage, and reduced profitability for farmers. The mango industry suffers from inadequate cold storage and refrigeration infrastructure. Mangoes are highly perishable, and without facilities, there are significant post-harvest losses. A lack of cold chain logistics also limits the ability to export mangoes to international markets.

**Processing:** High costs of processing equipment and/or lack of modern processing in both districts hampers the ability to add value through the production of processed products like mango juice, dried mango, or mango puree. Inconsistent mango supply due to agriculture practices and seasonal varieties in both districts results in an erratic supply of mangoes for processing. This makes

it difficult to run processing operations year-round and maintain a steady supply of value-added products.

There is also very limited knowledge among smallholder farmers on how to process mangoes.

**Research and Development:** Research on mango cultivation and processing often lacks adequate funding, limiting the capacity to develop improved varieties, efficient farming techniques, and post-harvest solutions. Poor collaboration between research institutions, government, private sector, and farmers reduces the effectiveness of development efforts, leading to weak translation of research findings into practical solutions for farmers.

Research findings often do not reach farmers in a timely manner or are not adapted to their needs, leading to low adoption rates of new practices or technologies.

**Market Access:** Many smallholder farmers in Malawi rely on informal market systems, where prices are often lower, and there is little assurance of consistent demand. Poor road infrastructure and limited storage facilities make it difficult for farmers to reach larger urban centers. This increases post-harvest losses and reduces the potential for mangoes to be sold at higher-value markets. The distance to markets also increases the cost of transportation, reducing profit margins for both farmers and traders.

International markets require mangoes and mango-based products to meet specific quality standards, including certifications for food safety and traceability. Many smallholder farmers in Malawi do not have access to the resources or training required to meet these standards, limiting their ability to export to high-value markets.

## 6. INTERVENTION IDEAS

The following section develops intervention ideas for the shortlisted sectors of Poultry, Maize, Fisheries, Groundnuts, Beekeeping/Honey, and Mangoes. The ideas were developed based on Food Systems Audit, market systems analysis, multistakeholder dialogues and KIIs. Intervention ideas were validated with WHH team and stakeholders. There are several intervention ideas which could be implemented simultaneously or as a standalone intervention. In each case,

the intervention focuses on WHH core objective of improving nutrition and varied healthy diets in the context of working in a market system. Each sector has a market vision, a logic chain (including outputs, outcomes and impact) and each intervention idea identifies theory of change, intervention concept, systemic change potential, target group, timeline and feasibility, impact on women and youth, and where possible initial activities and potential partners.

### Target Group Impact Assessment

Target Group Impact Assessment presents an analysis of the potential impact of proposed interventions across three key target groups: **Smallholder Farmers, Nutritionally at Risk Populations, and Women and Youth**. The assessment aims to provide a clear snapshot of how each intervention contributes to inclusive growth, improved food security, and social equity within Malawi's food systems.

The impact assessment was conducted through a qualitative analysis based on, **Desk review** of sector-specific interventions, drawing from existing programmatic evidence and contextual insights from Malawi's food systems and others, **consultation with stakeholders** (where applicable), and **Logical mapping** of each intervention's primary

Interventions were rated as **High, Medium, or Low** based on their anticipated scale of impact:

- **High:** Strong, direct, and widespread benefits to the target group.
- **Medium:** Moderate, indirect, or context-dependent benefits.
- **Low:** Limited or negligible impact, often due to structural or accessibility barriers.

#### SUMMARY OF FINDINGS

The results of the assessment are summarized in the **Intervention Impact Summary Table**, which rates each intervention's expected impact on the three target groups.

A key observation is that most interventions are rated as **High** or **Medium** across the target groups, reflecting the inclusive and multi-dimensional design of the proposed activities. This indicates that the interventions have been strategically selected to address systemic barriers and create broad-based benefits.

Table 30: Target Group Impact Assessment

Intervention	Smallholder Farmers	Nutritionally at Risk	Women and Youth
<b>Poultry</b>			
Strengthen Smallholder Poultry Production Through Climate-Resilient Practices	High	High	High
Develop Localised Feed Production Systems, Group Buying and Selling Model	High	Medium	Medium
Improve Market Linkages and Access to Formal Poultry Markets	Medium	High	High

Intervention	Smallholder Farmers	Nutritionally at Risk	Women and Youth
<b>Maize</b>			
Complement Government Support for Climate-Resilient Maize Production	High	High	Medium
Promote Safe Grain Storage Technologies	High	High	Medium
Promote Inclusive Business Models for Maize	Medium	Medium	High
<b>Fisheries</b>			
Promote Sustainable Fishing Practices	High	High	Medium
Improve Fish Storage and Post-Harvest Handling	Medium	High	High
Promote Sustainable Aquaculture Development	High	High	High
<b>Groundnuts</b>			
Support Inclusive Business Models in Groundnuts	High	Medium	High
Promote Groundnut Storage Systems	Medium	High	High
Promote Local Processing and Consumption of Groundnut Products	Medium	High	High
<b>Beekeeping and Honey</b>			
Expand Access to Beekeeping and Bee Product Market Information	Medium	Medium	High
Facilitate Access to Affordable Financial Packages and Equipment for Beekeepers	Medium	Medium	High
<b>Mangoes</b>			
Promote Improved Post-Harvest Handling and Storage Systems for Mangoes	High	High	High
Facilitate Mango Value Addition and Strengthen Market Linkages	High	High	High

## ANALYSIS OF THE MOST IMPACTFUL INTERVENTIONS

Several interventions stand out for their high potential impact across all three target groups:

- 1. Strengthen Smallholder Poultry Production Through Climate-Resilient Practices:** This intervention demonstrates consistently high impact across all target groups. It enhances smallholder farmers' resilience by increasing productivity through climate-smart practices, while simultaneously improving access to affordable, protein-rich food for nutritionally at-risk populations. Additionally, poultry production is often managed by women and provides income opportunities for youth, making it highly inclusive.
- 2. Promote Sustainable Aquaculture Development:** This intervention demonstrates high impact
- 3. Facilitate Mango Value Addition and Strengthen Market Linkages:** The mango sector offers significant value addition opportunities that benefit smallholder farmers through higher incomes, while processed mango products enhance food availability for nutritionally at-risk groups. The sector's labour-intensive nature creates pathways for women and youth to engage in processing, packaging, and marketing activities.
- 4. Support Inclusive Business Models in Groundnuts:** Groundnuts are both a key cash crop and a nutrient-dense food. Inclusive business models can enhance smallholder productivity, strengthen

due to its potential to diversify income for smallholder farmers, improve access to affordable protein for nutritionally at-risk populations, and create employment opportunities for women and youth in both production and processing activities.

food security, and empower women and youth who are actively engaged in groundnut farming, processing, and trade.

- 5. Promote Improved Post-Harvest Handling and Storage Systems for Mangoes:** This intervention reduces post-harvest losses, enhancing incomes for smallholder farmers and improving the availability of nutritious fruits for vulnerable populations. Women and youth benefit significantly through their involvement in post-harvest activities and value chains.
- 6. Improve Fish Storage and Post-Harvest Handling:** Improved fish storage reduces food waste, ensures better quality products for consumers, and opens up opportunities for women and youth engaged in fish processing and marketing. The intervention also contributes directly to improved nutrition outcomes.

### CROSS-CUTTING OBSERVATIONS

- **Women and Youth:** Interventions that incorporate inclusive business models or focus on value addition

consistently show high impact for women and youth. These interventions provide opportunities beyond primary production, such as in processing, marketing, and entrepreneurship.

- **Nutritionally at Risk Populations:** Interventions that improve food availability and diversity—particularly in fisheries, groundnuts, and mangoes—demonstrate strong nutritional benefits.
- **Smallholder Farmers:** Agricultural productivity interventions (e.g., climate-resilient practices, improved post-harvest handling) show high impact due to their direct influence on incomes and food security at the household level.

This impact assessment highlights the breadth and depth of potential benefits from the proposed interventions. The analysis provides a framework for prioritizing interventions that deliver inclusive outcomes, promote economic resilience, and improve food and nutrition security across Malawi's diverse food systems.

## 6.1 Poultry

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### Market Vision:

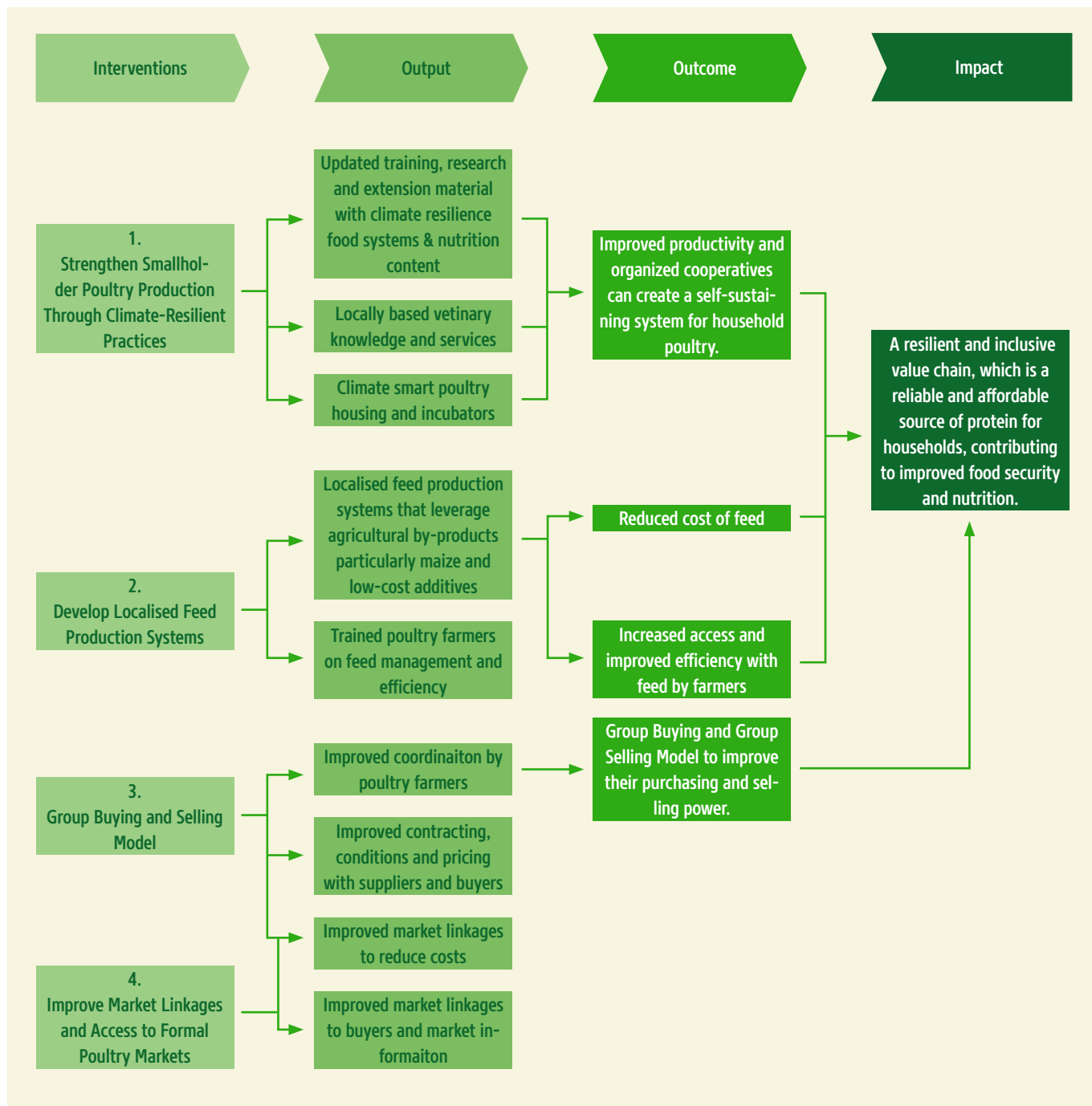
The poultry sector in Mangochi and Mchinji is characterized by a dual system of traditional smallholder production and a nascent commercial farming segment. Smallholders dominate the market primarily rearing indigenous breeds. These chickens are resilient to local conditions but have low productivity due to traditional rearing systems, reliance on scavenging, and limited access to quality feed and veterinary services.

The sector faces challenges including frequent disease outbreaks (e.g., Newcastle disease), poor market linkages, and high feed costs. Despite these constraints, poultry farming remains a critical livelihood activity, especially for women and youth, who are heavily involved in production and marketing. Poultry offers a scalable pathway to improved food security, providing a vital source of protein and household

income, with potential for market growth through targeted interventions.

The market vision for the poultry sector is to transform it into a resilient and inclusive value chain. The sector in Mangochi and Mchinji has the potential to become a reliable and affordable source of protein for households, contributing to improved food security and nutrition. By addressing productivity constraints, enhancing market linkages, and promoting climate-resilient practices, the poultry market can empower women and youth, create economic opportunities, and ensure year-round protein availability in target districts. A robust poultry value chain can also foster inclusivity by integrating smallholder farmers into commercial systems, thereby enhancing livelihoods and resilience.

Figure 14: Poultry Market Vision



**Intervention 1** Strengthen Smallholder Poultry Production Through Climate-Resilient Practices

**Theory of Change** If smallholder poultry farmers adopt climate-resilient and improved management practices, then productivity will increase, resulting in enhanced protein availability and income generation for households.

<b>Intervention Concept</b>	<p>WHH will support the implementation of an <b>integrated training program</b> focusing on modern poultry management practices, such as disease prevention (e.g., regular vaccination campaigns), and the use of low-cost, locally sourced feeds (e.g., maize bran, soybean meal).</p> <p>WHH will promote community-based veterinary services, ensuring affordable and accessible vaccinations and treatments.</p> <p>To address climate resilience, WHH will introduce improved poultry housing designs to reduce exposure to extreme weather conditions.</p>
<b>Potential Partners</b>	<p>Ministry of Agriculture (Livestock and Veterinary Departments)</p> <p>Private veterinary service providers (e.g., Afrivet or Farmers World)</p> <p>Farmer cooperatives</p> <p>Other NGOs such as Heifer International or World Poultry Foundation</p>
<b>Facilitation Activities</b>	<p><b>Leverage existing extension systems:</b> Partner with the Ministry of Agriculture’s Livestock and Veterinary Services to integrate training on climate-resilient practices (e.g., disease control, improved housing, and feeding) into their regular extension services. WHH can co-design training modules and provide initial capacity-building for extension staff.</p> <p><b>Support lead farmer models:</b> Identify and train <b>lead farmers</b> to act as community champions for poultry management. These farmers will run demonstration farms and mentor peers, reducing the dependency on external trainers.</p> <p>Partner with private veterinary companies to deliver affordable vaccines and services. Also work with them to set up community vaccination campaigns for Newcastle disease.</p>
<b>Systematic Change Potential</b>	<b>Medium-to-high:</b> Improved productivity and organized cooperatives can create a self-sustaining system for smallholders. However, systemic resilience depends on long-term access to affordable inputs and services.
<b>Timeframe</b>	<b>1–3 years</b> to establish training programs and cooperatives, with measurable productivity improvements after the first two production cycles.
<b>Feasibility</b>	Feasible if initial resistance to adopting new practices is addressed through targeted farmer education and demonstrations, as well as commercial incentives
<b>Women and Youth</b>	Targeted training programs for women and youth can empower them to manage small-scale poultry businesses. Youth can also engage in input supply or veterinary service delivery.
<b>Synergies with NGOs or Government</b>	<p>Government’s livestock development programs.</p> <p>NGOs supporting climate-resilient agriculture and livestock systems.</p>

**Intervention 2**      **Develop Localised Feed Production Systems**

<b>Theory of Change</b>	If locally produced, affordable, and nutritious poultry feed is made available, then smallholders can reduce production costs and increase productivity, improving incomes and access to poultry products and nutrition.
<b>Intervention Concept</b>	<p>WHH will facilitate the development of <b>localised feed production systems</b> that leverage agricultural by-products particularly maize and low-cost additives.</p> <p>Training will be provided to cooperatives and small-scale feed manufacturers on feed formulation and production. Partnerships with the private sector will enable the production and distribution of affordable feed.</p>

<b>Potential Partners</b>	<p>Private feed companies (e.g., CP Feeds, AgriFeeds)</p> <p>Local maize and soybean producers</p> <p>Farmer cooperatives and associations</p> <p>Government (Livestock and Feed Programs)</p>
<b>Facilitation Activities</b>	<p>Provide training on feed formulation using locally available ingredients.</p> <p>Connect smallholder poultry farmers to feed producers through cooperatives or farmer groups.</p> <p>Facilitate partnerships with private companies to ensure consistent production and distribution.</p>
<b>Systematic Change Potential</b>	<p><b>High:</b> Localized feed production can significantly reduce dependency on imported feeds and improve cost structures, creating a more resilient value chain.</p> <p>However, the risk and further research required on the use on free range poultry scavenging for feed versus benefits of investment into localised feed.</p>
<b>Timeframe</b>	Delivery of first beneficiaries 3–6 months, dependent on partner sourcing and length of training required
<b>Feasibility</b>	<b>Med-High:</b> Support is more direct to individuals and more feasible. Growth and scale will need potential partners, demonstrated results.
<b>Women and Youth</b>	Women and youth can participate in feed production and distribution, creating new employment and entrepreneurship opportunities.
<b>Synergies with NGOs or Government</b>	<p>Collaboration with NGOs promoting value chains (e.g., FAO, Heifer International).</p> <p>Synergies with government agricultural programs targeting feed production.</p>

### Intervention 3

### Group Buying and Selling Model

<b>Theory of Change</b>	If backyard Poultry farmers establish a Group Buying and Group Selling Model (cooperative), they can increase their purchasing power and reduce cost. Thereby increasing poultry health, and yields contribution to increased nutrition, profits and business sustainability.
<b>Intervention Concept</b>	<p>Poultry farmers establish a Group Buying and Group Selling Model to improve their purchasing and selling power and increase yields, nutrition and profits. Also increasing access to correct feed, vaccines and information sharing.</p> <p>WHH will support the organization of community/cooperatives of interventions (or support existing groups) into groups.</p> <p>WHH will design and support the implementation of a group buying model for key inputs. Undertaking activities such as price scoping, negotiations, group governance, procurement thresholds and timelines.</p> <p>On selling, WHH will also support an aggregation and market sale model to reduce costs, particularly in last mile and live market transportation.</p> <p>The savings from inputs and transport will benefit current and new livestock farmers through increased incomes.</p>

<b>Potential Partners</b>	<p>Poultry Farmers</p> <p>Private feed companies (e.g., CP Feeds, AgriFeeds)</p> <p>Local maize and soybean producers</p> <p>Farmer cooperatives and associations</p>
<b>Facilitation Activities</b>	<p>WHH facilitates poultry sellers to coordinate as a group.</p> <p>WHH facilitates connections and negotiations with input suppliers.</p> <p>WHH market linkages to market sellers (if required) and transporters</p>
<b>Systematic Change Potential</b>	<b>High:</b> If buying group is incentivized to cooperation and savings, sustainable change is highly likely. Intervention supporting cooperatives have been successful in Nigeria.
<b>Timeframe</b>	<b>3 months</b> to established model and training material with benefits immediate.
<b>Feasibility</b>	<b>High:</b> Coordination of willing participants with the right incentives
<b>Women and Youth</b>	<b>High:</b> Intervention can specifically target IDPs and Women during implementation
<b>Synergies with NGOs or Government</b>	Other NGOs are likely in this sphere and should be scoped for synergies. Working with other proposed interventions across poultry interventions.

#### Intervention 4

#### Improve Market Linkages and Access to Formal Poultry Markets

<b>Theory of Change</b>	If market linkages between smallholder poultry farmers and formal buyers are strengthened, then farmers can access higher-value markets and out-grower models leading to increased incomes and economic resilience.
<b>Intervention Concept</b>	<p>WHH will establish direct connections between smallholder poultry farmers and formal buyers (e.g., supermarkets, restaurants, and processors) to ensure consistent market access and fair pricing.</p> <p>WHH will support farmers in meeting formal market requirements (e.g., quality standards and consistent supply) by providing training and capacity-building initiatives. WHH and buyers will co-invest in models to improve poultry farmers access to equipment and inputs.</p> <p>The intervention could also introduce digital platforms for farmers to access real-time market information, connect with buyers, and receive mobile payments.</p>
<b>Potential Partners</b>	<p>Poultry Farmers</p> <p>Input suppliers</p> <p>Private buyers such as retailers, wholesalers and hospitality industry</p>

<p><b>Facilitation Activities</b></p>	<p>WHH can organize forums or workshops where commercial buyers (e.g., supermarkets, processors) and smallholder groups co-design supply agreements, ensuring both sides' needs are met. These agreements can cover pricing, quality standards, and delivery schedules.</p> <p>Support cooperative-led contract farming models, working with farmer cooperatives to negotiate contracts with formal buyers, with WHH providing technical backstopping (e.g., contract templates) but letting cooperatives lead the process.</p> <p>WHH can explore any digital market information providers or Agri-tech start-ups to develop platforms that allow smallholders to access market information, payment systems, and real-time price updates.</p> <p>WHH can build capacity for quality assurance by working with processors or private buyers to provide training on quality control and packaging through partnerships with cooperatives or farmer groups. For example, buyers could co-invest in training to ensure supply consistency.</p> <p>WHH can facilitate partnerships between buyers and cooperatives that include WHH and private sector cost-sharing for smallholder upgrades (e.g., cold storage or transportation).</p>
<p><b>Systematic Change Potential</b></p>	<p><b>High:</b> If buying group is incentivized to cooperation and savings, sustainable change is highly likely. Intervention supporting cooperatives have been successful in Nigeria.</p>
<p><b>Timeframe</b></p>	<p><b>3 months</b> to established model and training material with benefits immediate.</p>
<p><b>Feasibility</b></p>	<p><b>High:</b> Coordination of willing participants with the right incentives</p>
<p><b>Women and Youth</b></p>	<p><b>High:</b> Intervention can specifically target IDPs and Women during implementation</p>
<p><b>Synergies with NGOs or Government</b></p>	<p>Other NGOs are likely in this sphere</p>

## 6.2 Maize

### Market Vision:

Although the maize market is liberalised in Malawi, as a staple, it is subject to periodic control in pursuit of country's food security. Productivity in the maize sector is a priority of government and development partners and several interventions have been done to prop up maize in view of climate change and shocks. Researched information on improved drought resistant seed and sustainable methods of farming are regularly disseminated through government, NGO and private sector extension systems. Smallholders, however still struggle to produce more and would require further support. Such support will be most effective with cooperation of government as the staple is also a political crop in most respects.

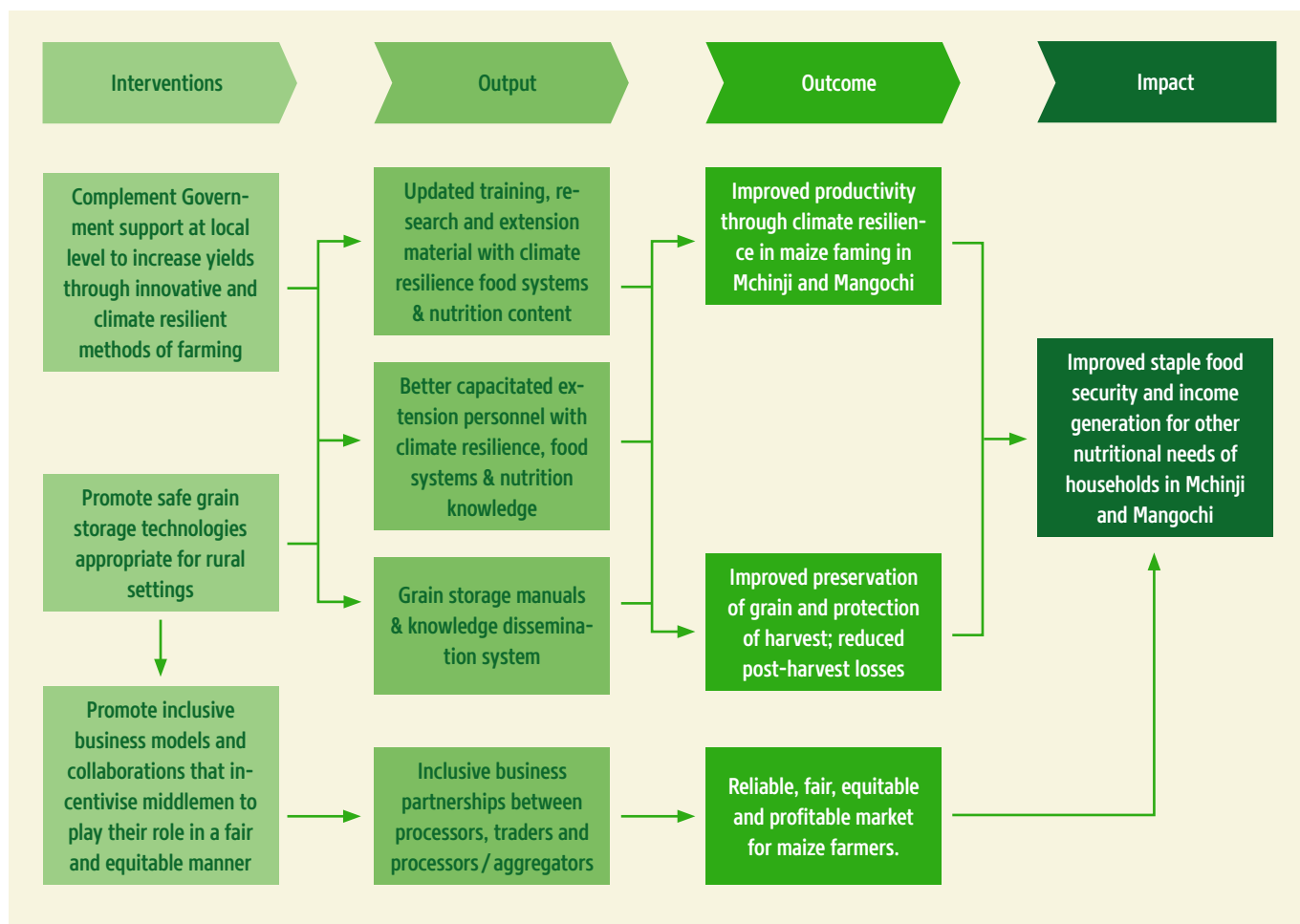
Government sets producer prices for maize and participates in the market through Agricultural Development and Marketing Corporation (ADMARC) that also manages the country's food reserves. Private participants include traders who are the main buyers from smallholder produces, processors and other off-takers. There is also commercial level production and marketing of maize in Malawi. Most processors are

also linked to middlemen traders of bulk the maize and sell to them. It is important for WHH to get the perspective of processors on what constraints they face in this marketing arrangement and how they can be addressed in a manner that incentivises smallholders to produce more.

The Food Systems Assessment found that the maize market still fails to meet full annual food needs of households in Mchinji and Mangochi. Contributing to improvement of productivity of smallholders will improve food security and access to incomes in the target districts.

Therefore, the market vision is to improved maize production and yield to meet food security needs, and potentially domestic and export markets. Maize can form a reliable and stable food for Mangochi and Mchinji district all year round through improved knowledge, planning and storage. With improved climate resilience, maize can contribute to household diet, primarily in form of carbohydrates.

Figure 15: Maize Market Vision



**Intervention 1** Complement Government support at local level to increase yields through innovative and climate resilient methods

<b>Theory of Change</b>	If local maize production systems are improved and % yields increase, then, households will have access to the staple food over longer periods of the year thereby improving basic food security.
<b>Intervention Concept</b>	<p>While government already supports farmers through inputs, mainly seed and fertilizers, WHH can further support productivity by promoting conservation agriculture practices, such as mulching and contour farming to help reduce soil erosion and improve water retention.</p> <p>WHH will support farmers in implementing climate change resilient practices by promoting drought-tolerant seed varieties, implementing conservation agriculture and agroforestry.</p> <p>WHH to promote intercropping activities in view of the shortage of land to improve diet diversity of households</p>
<b>Potential Partners</b>	<p>Government of Malawi through Ministry of Agriculture</p> <p>Other existing players (e.g., Permaculture Malawi, Never Ending Food (NEF), Mua Mission, Private companies)</p>
<b>Facilitation Activities</b>	<p>WHH supports development of good agricultural practice guides relevant to food security and climate resilience.</p> <p>WHH partners with farmer organisations and government to facilitate farmer training and back-stopping including lead farmer demo plots.</p> <p>WHH promote inclusive business partnership with private off-takers of surplus maize; traders and processors.</p>

<b>Systematic Change Potential</b>	<b>Medium</b> – systemic change value, government buy-in is essential as maize is a national food security crop subject to strict controls and regulation. However, conservation farming practices can cascade across neighbouring communities through farmer-to-farmer knowledge sharing if activities demonstrate results.
<b>Timeframe</b>	<b>3–5 years</b> , while training material and partnerships can be created in year 1 and 2, multiple seasons required to demonstrate and scale practices.
<b>Feasibility</b>	While conservation farming and agroforestry practices may not always lead to immediate yield increases, the focus on soil regeneration, biodiversity, and ecosystem services can lead to long-term yield improvements and more climate resilient and productive ecosystems.
<b>Women and Youth</b>	Intervention can specifically target Women and Youths in practice and training.
<b>Synergies with NGOs or Government</b>	Other NGOs, Research and Training institutes are already active in this area

## Intervention 2

## Promote safe grain storage technologies appropriate for rural settings

<b>Theory of Change</b>	If farmers access appropriate support to improve their storage practices and technologies, then, the resultant reduction in post-harvest losses will improve food security and access to extra income as prices of the commodity increase in lean seasons.
<b>Intervention Concept</b>	<p>WHH provides technical support on appropriate and effective rural maize storage systems. Supporting both technical design of facilities and business models for sustainable storage systems.</p> <p>WHH develops nutrition information, independently or with storage providers, to incentivise farmers to store maize for own use and limit periods without staples in the two districts</p> <p>WHH supports farmers to raise capital through such schemes as government's Agriculture Commercialization (AgCOM) project.</p> <p>WHH explores warehouse receipting systems (WRS) for farmers who wish to store and sell later.</p> <p>WHH supports possibility of private investors such as traders into local storage systems including Warehouse Receipt System operators</p> <p>WHH can provide cost sharing, de-risking support or other ways to farmers or storage businesses to encourage uptake.</p>
<b>Potential Partners</b>	<p>Government of Malawi</p> <p>Farmers' Union of Malawi (FUM)</p> <p>National Smallholder Farmers' Association of Malawi (NASFAM)</p> <p>Private storage providers and grain buyers</p> <p>Processing companies</p>
<b>Facilitation Activities</b>	<p>Collecting, collating and dissemination of information on appropriate grain storage systems and technologies.</p> <p>Work with farmers and private sector to develop storage business models and incentives</p> <p>Develop nutritional and educational benefits of grain storage.</p> <p>Explore Warehouse Receipt System (WRS) possibilities.</p> <p>Supporting access to finance by smallholders, storage providers and other private actors to acquire the storage systems</p>

<b>Systematic Change Potential</b>	<b>High</b> potential to improve storage systems to contribute to food security and nutrition, as well as reduce price fluxes due to season.
<b>Timeframe</b>	<b>1–3 years</b> to move from business models and educational material for partners to sustained business model and community knowledge.
<b>Feasibility</b>	<b>Low</b> – The attraction of cash from middlemen /traders often overwhelms poor rural farmers, and is an area to overcome in order to move towards storage systems.
<b>Women and Youth</b>	Intervention will benefit Women and Youths who are very active in farming and household food planning.
<b>Synergies with NGOs or Government</b>	Government, NGOs and Farmers Associations are highly involved in supporting the maize market system

### Intervention 3

Promote inclusive business models and collaborations that incentivise middlemen to play their role in a fair and equitable manner

<b>Theory of Change</b>	If middlemen, who account for 64.7% of transactions in Mchinji and 57.5% in Mangochi in the maize market are incentivised to operate in a more regulated manner, smallholders will get value for their crop, thereby earning higher income to improve food security and nutrition diversity.
<b>Intervention Concept</b>	<p>WHH identifies constraints faced by processors and other commercial level off-takers who use the services of middlemen/traders especially in terms of quality and pricing.</p> <p>WHH working with private processors develop market incentives to improve maize agricultural practices, inputs, yield, storage and payment systems in a way that produce win-win benefits for farmers and traders</p> <p>WHH pilot ideas with commercial buyers who work with middlemen to implement the incentives through to smallholder farmers.</p> <p>Concept can be piloted at local level in Mchinji and Mangochi</p>
<b>Potential Partners</b>	<p>Private grain buyers</p> <p>Processing companies</p> <p>Government of Malawi</p> <p>Farmers' Union of Malawi (FUM)</p> <p>National Smallholder Farmers' Association of Malawi (NASFAM)</p>
<b>Facilitation Activities</b>	<p>WHH conducts interviews and collects information on constraints and opportunities from commercial maize buyers such as processors and exporters.</p> <p>WHH collects information on constraints and opportunities from middlemen and traders.</p> <p>WHH uses information to intervene and improve the market system in a way that, while addressing the issues, also incentivises the farmers to be more productive and earn value for their crop.</p> <p>WHH can provide underwriting, inputs or cost sharing on new pilot models</p>
<b>Systematic Change Potential</b>	<b>High</b> potential for systemic change, noting that many traders and stakeholders may not cooperate for fear of losing their entrenched advantageous positions. If incentives are realigned, the integral part of traders in market systems can become self-regulating and scalable.
<b>Timeframe</b>	New models could be developed in year 1 and 2 but will take interactions over seasons to scale over <b>3–5 years</b>

<b>Feasibility</b>	While the activities around this call for working at wide market level and with processors, which could be beyond district level, piloting at the district level is possible
<b>Women and Youth</b>	Intervention will benefit Women and Youths who are very active in maize farming. Incentives, model can specifically be inclusive of women and youth.
<b>Synergies with NGOs or Government</b>	Government, NGOs and Farmers Associations are highly involved in supporting the maize market system

## 6.3 Groundnuts

### Market Vision:

Malawi has enjoyed considerable regional comparative advantage in the production of groundnuts for local consumption, processing and export over a long time. However, the sector has had significant decline since 2013<sup>32</sup> partly because of the prevalence of aflatoxin reducing access to some export markets. The decline has largely been arrested with new growth recorded since 2019. While there are well-researched actions to manage the diseases being implemented, the traditionally women and youths friendly crop remains labour intensive when compared to other crops. Often, smallholders use old methods of farming. There is also limited access to land and poor storage systems among other challenges.

Over the last few years, there has been positive activities in the market with several private companies introducing inclusive business models that affords farmers access to mechanisation. Traders still play significant farmgate buying role as farmers often find it difficult to navigate poor road infrastructure to markets. It is important to have a deeper understanding of activities in the sector especially regarding existing inclusive business models being implemented. Together with this will be more information on the opportunities and constraints from other chain

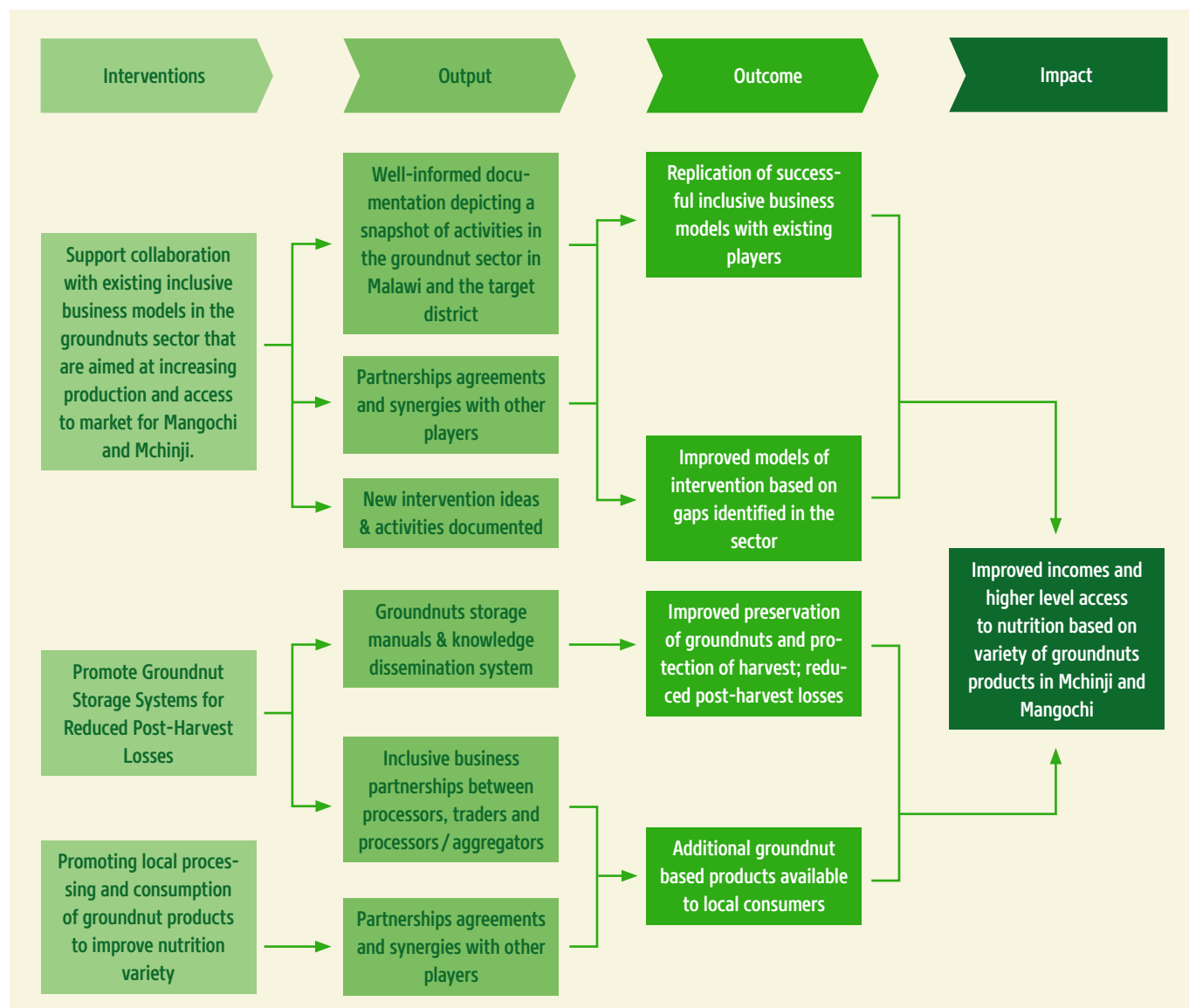
actors such as processors and exporters. It is from that more complete picture that more interventions can be confidently designed. The present assessment focussed mostly of producers.

The groundnut sector has the potential to become a significant driver of economic empowerment, nutrition improvement, and climate resilience for smallholder farmers. By addressing key challenges such as low productivity, limited access to quality inputs, post-harvest losses, and weak market linkages, the sector can be transformed into a competitive and inclusive value chain. Groundnuts, as a protein-rich crop, can play a critical role in enhancing household nutrition and dietary diversity while generating stable incomes for smallholders, particularly women and youth, who are heavily involved in its production.

The vision is that of a successful groundnut sector based on sustainable, market-oriented production integrating smallholder farmers into high-value domestic and export markets while ensuring food security, promoting gender and youth inclusion, and building climate resilience through improved practices and technologies.

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Figure 16: Groundnuts Market Vision



**Intervention 1** Support collaboration with existing inclusive business models in the groundnuts sector that are aimed at increasing production and access to market for Mangochi and Mchinji.

<b>Theory of Change</b>	If WHH support localises replication of existing successful inclusive business models that improve productivity and access to profitable markets, then farmers will benefit from applying tried and tested solutions that afford them both nutrition and increased incomes
<b>Intervention Concept</b>	<p>WHH commissions study into understanding the full scope of activities of stakeholders in support of the groundnuts sector.</p> <p>WHH consolidate learnings and lessons from current interventions and business models.</p> <p>WHH identifies specific niche gaps that they can fill to enhance existing efforts at local targeted districts level.</p> <p>WHH supports activities towards filling the gaps to increase productivity and access to markets</p>

<b>Potential Partners</b>	<p>Government of Malawi - Ministry of Agriculture</p> <p>Pyxus Agriculture</p> <p>Fortune Gardens Limited</p> <p>National Association of Smallholder Farmers of Malawi (NASFAM)</p> <p>Private Companies (Rambo Packaging, Kwanza Cocoa, Rab Processors Limited, Malawi Mangoes Ltd, Grain &amp; Milling Company and Proto Feeds. Afri-Nut</p> <p>Research Institutes (ICRISAT, Universities etc)</p>
<b>Facilitation Activities</b>	<p>Commission comprehensive study into stakeholder activities in support of groundnuts specifically referencing target districts</p> <p>Document, adopt and adapt successful models into local activities in support of productivity and market access.</p>
<b>Systematic Change Potential</b>	<b>High</b> – Existing efforts have been documented to be at different success levels. Local application of the tried and tested solution is more likely to succeed than ‘reinventing the wheel’
<b>Timeframe</b>	<b>Medium</b> - 1 to 2 years
<b>Feasibility</b>	<b>High</b> – Activities around groundnuts in Malawi are many and varied
<b>Women and Youth</b>	IntGroundnuts production, local processing and marketing is traditionally women and youth friendly
<b>Synergies with NGOs or Government</b>	NGOs, Government, Research institutes and private companies are highly involved in supporting groundnuts

## Intervention 2

## Promote Groundnut Storage Systems for Reduced Post-Harvest Losses

<b>Theory of Change</b>	<p>If farmers are equipped with appropriate groundnut storage technologies and practices, and incentivized to store for own use or later sale, then post-harvest losses will be reduced, improving their household food security, nutrition, and access to additional income during lean seasons when prices are higher.</p>
<b>Intervention Concept</b>	<p>WHH will facilitate partnerships between groundnut farmers, private storage providers, and financial institutions to promote and scale effective storage systems tailored to rural contexts. The intervention will:</p> <ul style="list-style-type: none"> <li>Promote the adoption of cost-effective and climate-appropriate storage solutions, such as hermetic storage bags, solar dryers, or community storage facilities.</li> <li>Integrate nutrition education to encourage households to store groundnuts for self-consumption, reducing food insecurity during periods without staples.</li> <li>Support farmers in accessing financing mechanisms, such as microloans or government programs (e.g., AgCOM), to invest in storage technologies.</li> <li>Explore the feasibility of warehouse receipt systems (WRS) for smallholders, allowing them to store groundnuts and sell during periods of higher market prices.</li> <li>Encourage private sector investments in decentralized storage and aggregation systems to improve farmer access and scalability.</li> </ul>

<b>Potential Partners</b>	<p>Government of Malawi</p> <p>Farmers' Union of Malawi (FUM)</p> <p>National Smallholder Farmers' Association of Malawi (NASFAM)</p> <p>Private grain buyers</p> <p>Processing companies</p>
<b>Facilitation Activities</b>	<p>WHH will identify and collaborate with storage solution providers (e.g., hermetic bag manufacturers) and facilitate market entry into rural areas by connecting them with farmer cooperatives and agro-dealers. Co-design business models with storage providers to ensure affordability and sustainability through cost sharing, risk sharing or input supply.</p> <p>WHH will collaborate with NASFAM and local farmer groups to deliver training on groundnut storage best practices and post-harvest handling, using demonstration plots and lead farmer models.</p> <p>WHH will disseminate nutrition education through community workshops and materials, emphasizing the importance of groundnut storage for household food security.</p> <p>Facilitate partnerships between farmer cooperatives and financial institutions to provide tailored credit packages for purchasing storage technologies. Collaborate with government programs like AgCOM to mobilize resources for storage infrastructure.</p> <p>WHH will work with grain buyers, processors, and warehouse operators to pilot receipt systems that enable farmers to store surplus groundnuts and use the receipt as collateral for short-term credit.</p> <p>WHH could also conduct research on existing post-harvest systems, generate case studies, and share findings with key stakeholders to inform policies and scale successful practices.</p>
<b>Systematic Change Potential</b>	<b>High:</b> Encouraging private sector involvement and building local capacity will create a self-sustaining system for groundnut storage, reducing losses and improving incomes long-term.
<b>Timeframe</b>	<b>3–5 years:</b> Initial setup (e.g., pilots, partnerships, and training) within the first two years, with scaling and systemic changes evident in subsequent seasons.
<b>Feasibility</b>	<p><b>Medium:</b> Farmers' preference for immediate cash from traders could hinder adoption of storage systems. Mitigation strategies could include</p> <ul style="list-style-type: none"> <li>• Educating farmers on the financial benefits of delayed sales.</li> <li>• Ensuring affordability of storage solutions through financing and subsidies</li> </ul>
<b>Women and Youth</b>	Intervention will benefit Women and Youths who are very active in groundnuts farming
<b>Synergies with NGOs or Government</b>	Other NGOs active in the sector as well Farmers' Associations

### Intervention 3

### Promoting local processing and consumption of groundnut products to improve nutrition variety

<b>Theory of Change</b>	If local processing and value addition for groundnuts are scaled through partnerships and business model development, and nutrition information is disseminated, then dietary variety, income opportunities, and local food systems performance will improve, contributing to food security and economic resilience.
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<b>Intervention Concept</b>	<p>WHH will facilitate partnerships with local processors, machinery suppliers, and farmer organizations to drive investment in groundnut value addition while promoting the consumption of processed groundnut products. The intervention will include:</p> <p>Engage processors to identify constraints (e.g., access to machinery, finance, or markets) and co-develop business models for sustainable value addition.</p> <p>Facilitate access to equipment by linking local processors with machinery suppliers, offering cost-sharing mechanisms (e.g., hire purchase or lease-to-own models).</p> <p>Promote product innovation by supporting processors in developing, testing, and packaging high-value groundnut-based products such as peanut butter, roasted groundnuts, or therapeutic foods (e.g., Plumpy Nut).</p> <p>Disseminate nutrition information on groundnuts to encourage local consumption and integrate it into farmer training programs and extension services.</p> <p>Partner with processors to strengthen market linkages by exploring formal market outlets (e.g., schools, hospitals, and supermarkets) and regional export opportunities.</p>
<b>Potential Partners</b>	<p>Ministry of Agriculture and Ministry of Trade</p> <p>Local Processors and Traders: Small-scale agro-processors, local trader cooperatives, and emerging value addition champions.</p> <p>Machinery Suppliers: Companies providing groundnut processing equipment (e.g., shellers, grinders, and packaging units).</p> <p>Farmer Organizations: NASFAM and Farmers' Union of Malawi (FUM).</p> <p>NGOs and Research Institutions: FAO, ICRISAT, Feed the Future Innovation Lab on Peanuts Technologies, and universities conducting research on value addition.</p>
<b>Facilitation Activities</b>	<p>WHH facilitates business roundtables with local processors to identify key constraints and explore opportunities for scaling up value-added products. WHH can support business planning workshops to develop market-driven business models tailored to the local context.</p> <p>Work with machinery suppliers to co-design financing options for processors, such as hire purchase or leasing.</p> <p>WHH can facilitate demonstrations of processing equipment (e.g., peanut butter machines or shellers) and organize co-investment opportunities for local processors.</p> <p>WHH can promote product innovation and packaging through partnering with processors to test and develop new groundnut-based products (e.g., fortified peanut butter or energy bars). This could also extend to branding and packaging specialists to improve the marketability of groundnut products.</p> <p>WHH can work with government and businesses to develop and distribute nutrition education materials highlighting the benefits of groundnuts, incorporating these into government extension services and community outreach programs.</p> <p>Market Development can be improved by facilitating partnerships between processors and formal markets, such as schools (for feeding programs), hospitals (for therapeutic foods), and supermarkets.</p>
<b>Systematic Change Potential</b>	<p><b>Medium-to-High:</b> Promoting sustainable business models and partnerships with private sector players can create long-term systemic changes in local processing and consumption. However, the level of risk for processors entering new markets or investing in equipment needs to be mitigated through co-financing and pilot models.</p>
<b>Timeframe</b>	<p><b>3–5 years:</b> Initial engagement with processors and machinery suppliers within 1–2 years, followed by pilot product launches and scaling in years 3–5.</p>

<b>Feasibility</b>	<b>High</b> , with Groundnuts as a staple crop in Malawi, and the existing comparative advantage in production provides a strong foundation for scaling value-added processing. The main challenge is the high cost of equipment and business entry risks, which can be addressed through innovative financing models and co-investment.
<b>Women and Youth</b>	Groundnut processing and marketing are traditionally women- and youth-friendly activities. Women can benefit from small-scale processing at the household or cooperative level, while youth can engage in branding, packaging, and product distribution, creating employment and entrepreneurial opportunities.
<b>Synergies with NGOs or Government</b>	NGOs, Government, Research institutions and private companies are highly involved in supporting groundnuts

## 6.4 Fisheries

### Market Vision:

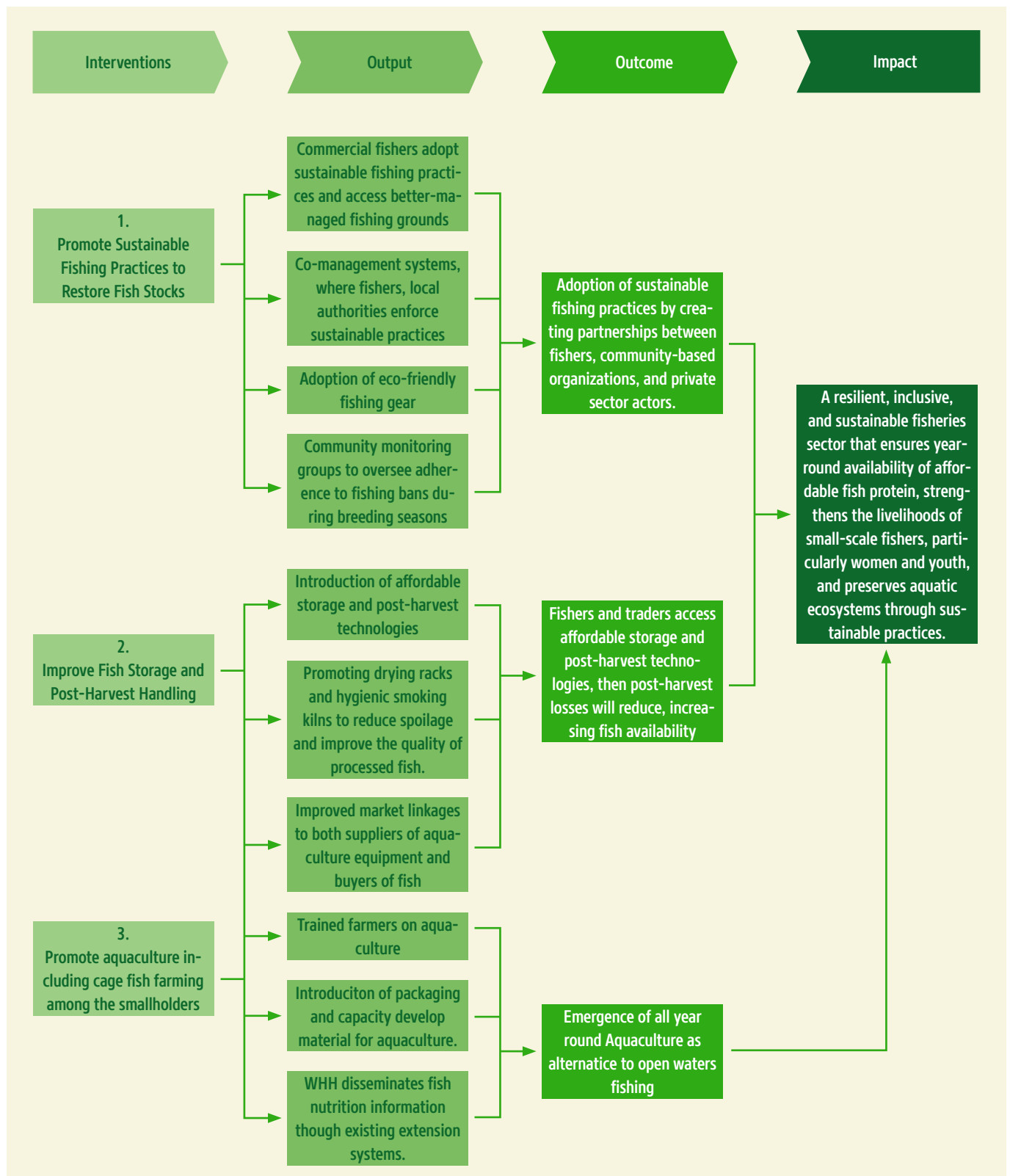
The fisheries sector in Mangochi and Mchinji plays a vital role in livelihoods, food security, and nutrition. However, key challenges include declining fish stocks due to overfishing and habitat destruction, poor post-harvest handling, which leads to significant losses (estimated at 30–40%), and weak market linkages that constrain access to higher-value markets. Furthermore, barriers to entry for women and youth, such as lack of access to capital and resources, prevent inclusive participation in the value chain.

Environmental degradation, caused by unsustainable practices and climate change, exacerbates the sector's fragility. Additionally, infrastructure deficiencies, including limited cold storage and transportation networks, hinder the development of a resilient value chain. Despite these constraints, there is substantial

unmet demand for fish, both locally and regionally, providing opportunities for economic growth and improved nutrition. There is a substantial challenge to the future of the sector.

The vision is to establish a resilient, inclusive, and sustainable fisheries sector that ensures year-round availability of affordable fish protein, strengthens the livelihoods of small-scale fishers, particularly women and youth, and preserves aquatic ecosystems through sustainable practices. By addressing systemic constraints and enabling market actors to take ownership of solutions, the sector can contribute to improved nutrition, food security, and economic resilience in the target districts.

Figure 17: Fisheries Market Vision



**Intervention 1** Promote Sustainable Fishing Practices to Restore Fish Stocks

**Theory of Change** If small-scale and commercial fishers adopt sustainable fishing practices and access better-managed fishing grounds, then fish stocks will recover, improving the availability of fish for nutrition and increasing incomes from higher catches.

<p><b>Intervention Concept</b></p>	<p>WHH will facilitate and work with a broad collation of forces for the adoption of sustainable fishing practices by creating partnerships between fishers, community-based organizations, and private sector actors. This include introducing and scaling co-management systems, where fishers, local authorities, and the government collaborate to enforce sustainable practices.</p> <p>This would also include encouraging the adoption of eco-friendly fishing gear, such as legal nets that reduce overfishing of juvenile stocks.</p> <p>Supporting the establishment of community monitoring groups to oversee adherence to fishing bans during breeding seasons will also be required.</p> <p>Alternatively, promoting aquaculture as a complementary livelihood, reducing pressure on wild fish stocks while enhancing fish availability.</p>
<p><b>Potential Partners</b></p>	<p>Government of Malawi: Department of Fisheries</p> <p>NGOs and Donors: WWF, FAO, and local conservation organizations</p> <p>Private Sector: Suppliers of fishing gear and aquaculture inputs</p> <p>Fishing Cooperatives: Community-based fishing organizations and local fisher groups</p>
<p><b>Facilitation Activities</b></p>	<p>WHH will collaborate with the Department of Fisheries to establish or strengthen Beach Village Committees (BVCs) for managing local fishing grounds.</p> <p>WHH can provide technical support to enforce fishing bans, monitor fish stocks, and implement locally agreed-upon rules.</p> <p>Facilitating market access to legal gear through partnering with private suppliers to improve the availability and affordability of legal fishing gear, using models like cost-sharing or community-based retail hubs.</p> <p>Communication will be key, and WHH can organise sensitisation campaigns to educate fishers on the benefits of eco-friendly gear and compliance with regulations.</p> <p>Monitoring will also be key with WHH supporting local youth groups or cooperatives to conduct fish stock monitoring, incentivizing their participation through formal recognition or small stipends.</p> <p>WHH can also design interventions to promote Aquaculture as a complementary or alternative approach in the fishing sector</p>
<p><b>Systematic Change Potential</b></p>	<p><b>High:</b> Building local capacity for sustainable resource management and engaging private suppliers ensures long-term adoption of improved practices.</p>
<p><b>Timeframe</b></p>	<p><b>3–5 years</b> as recovery of fish stocks requires sustained efforts, but adoption of sustainable practices can begin within the first two years.</p>
<p><b>Feasibility</b></p>	<p><b>Low-Medium:</b> Cultural resistance to gear changes and enforcement challenge, as well as government capacity may arise and will require mitigation through participatory approaches and visible community benefits.</p>
<p><b>Women and Youth</b></p>	<p>Although fishing is dominated by men, women can play key roles in aquaculture and fish processing activities, while youth can participate in resource monitoring, fish farming, or input supply chains.</p>
<p><b>Synergies with NGOs or Government</b></p>	<p>Align with government trade and fisheries policies.</p> <p>Partner with organizations like Technoserve and SNV for capacity-building and market linkages.</p>

<b>Theory of Change</b>	If small-scale fishers and traders access affordable storage and post-harvest technologies, then post-harvest losses will reduce, increasing fish availability for nutrition and improving incomes through higher-quality fish sales.
<b>Intervention Concept</b>	<p>WHH will facilitate partnerships to introduce affordable storage and post-harvest technologies tailored to the needs of small-scale fishers. This includes piloting solar-powered cold storage units or ice-making facilities through cooperatives or community hubs.</p> <p>Promoting drying racks and hygienic smoking kilns to reduce spoilage and improve the quality of processed fish. Strengthening local fish aggregation systems to streamline transportation to urban markets, reducing spoilage in transit.</p>
<b>Potential Partners</b>	<p>Private Sector: Supermarkets, processors, and exporters</p> <p>Fishing Cooperatives: Community-based organizations</p> <p>Government of Malawi: Trade and Fisheries Departments</p> <p>NGOs: Organizations supporting market linkages</p>
<b>Facilitation Activities</b>	<p>WHH would build private sector partnerships with solar companies and cold chain providers to co-design affordable leasing or hire-purchase models for cold storage systems.</p> <p>Working with ice suppliers to establish local ice depots near fishing hubs, reducing transport time and costs for fishers.</p> <p>WHH could support capacity building for post-harvest handling: by collaborating with private fish processors and NGOs to train fishers and traders on best practices for handling, drying, and storage to meet market quality standards. Lead fisher or processor models to demonstrate improved practices is one method to achieve this.</p> <p>WHH can facilitate the formation or strengthening of fishing cooperatives to manage shared storage facilities and work with financial institutions to enable cooperatives to access financing for storage infrastructure investments.</p> <p>Finally, WHH can partner with buyers and retailers to create demand for higher-quality dried or smoked fish, establishing stable market outlets for cooperatives.</p>
<b>Systematic Change Potential</b>	<b>High</b> potential through strengthening market linkages and enabling cooperatives to manage supply chains will create systemic shifts in the value chain.
<b>Timeframe</b>	<b>2–3 years</b> from initial market connections within two years, with full-scale implementation and expansion in years three and four.
<b>Feasibility</b>	<b>Medium</b> feasibility challenges may arise in meeting quality and quantity requirements for formal buyers, but these can be addressed through targeted training and buyer partnerships.
<b>Women and Youth</b>	Although fishing is dominated by men, women can play key roles in aquaculture and fish processing activities, while youth can participate in resource monitoring, fish farming, or input supply chains.
<b>Synergies with NGOs or Government</b>	<p>Align with government trade and fisheries policies.</p> <p>Partner with organizations like Technoserve and SNV for capacity-building and market linkages.</p>

<b>Theory of Change</b>	If small-scale fishers engage in aquaculture, they will improve their access to nutrition and incomes even during times where fishing on Lake Malawi is prohibited for breeding purposes.
<b>Intervention Concept</b>	<p>WHH will partner with Government, Private companies and other NGO in providing capacity building services to small scale fish pond owners.</p> <p>WHH promote synergies between small scale producers and expert cage fish producers on Lake Malawi to allow them to learn and practice</p> <p>WHH support small-scale fishers in acquiring facilities and equipment to practice aquaculture.</p>
<b>Potential Partners</b>	Government, FAO, UNDP, African Development Bank, LUANAR, MADECO
<b>Facilitation Activities</b>	<p>WHH partners with other stakeholders in designing programme of support to small scale fish producers.</p> <p>WHH support organisations of producers into viable groups that can be worked with as single units.</p> <p>WHH supports production and packaging of capacity develop material for aquaculture.</p> <p>WHH disseminates fish nutrition information though existing extension systems.</p> <p>WHH develops and disseminates business cases for bigger producers to get into business synergies with small scale cage fish farmers.</p> <p>WHH avails material support to trained farmers with linkages to markets through their larger partners.</p>
<b>Systematic Change Potential</b>	<b>High</b> potential based on the local dietary cultures that include fish that is only less available because of over-fishing on large water bodies like Lake Malawi.
<b>Timeframe</b>	<b>2–3 years</b> from initial market connections within two years, with full-scale implementation and expansion in years three and four.
<b>Feasibility</b>	<b>Medium</b> as pond fish farming requires land which is not adequately available in the two districts.
<b>Women and Youth</b>	Aquaculture is more women and youth friendly than wild fishing on lakes and rivers
<b>Synergies with NGOs or Government</b>	FAO, UNDP and other organisations are working closely with government in the promotion on integrated agriculture and aquaculture

## 6.5 Beekeeping and Honey

### Market Vision:

Malawi has the natural environment for bees to thrive although its forests and agricultural land suffers from degradation caused by such activities as charcoal burning for domestic energy. Smallholder venturing into beekeeping has had lots of support from Government and development partners who also see it as means to earning income while preserving natural resources. Bee products are varied in terms of their value in diet, health and even industrial uses. Beekeeping has enjoyed NGO support in terms of organizing groups, disseminating information on production and markets including some inclusive business models.

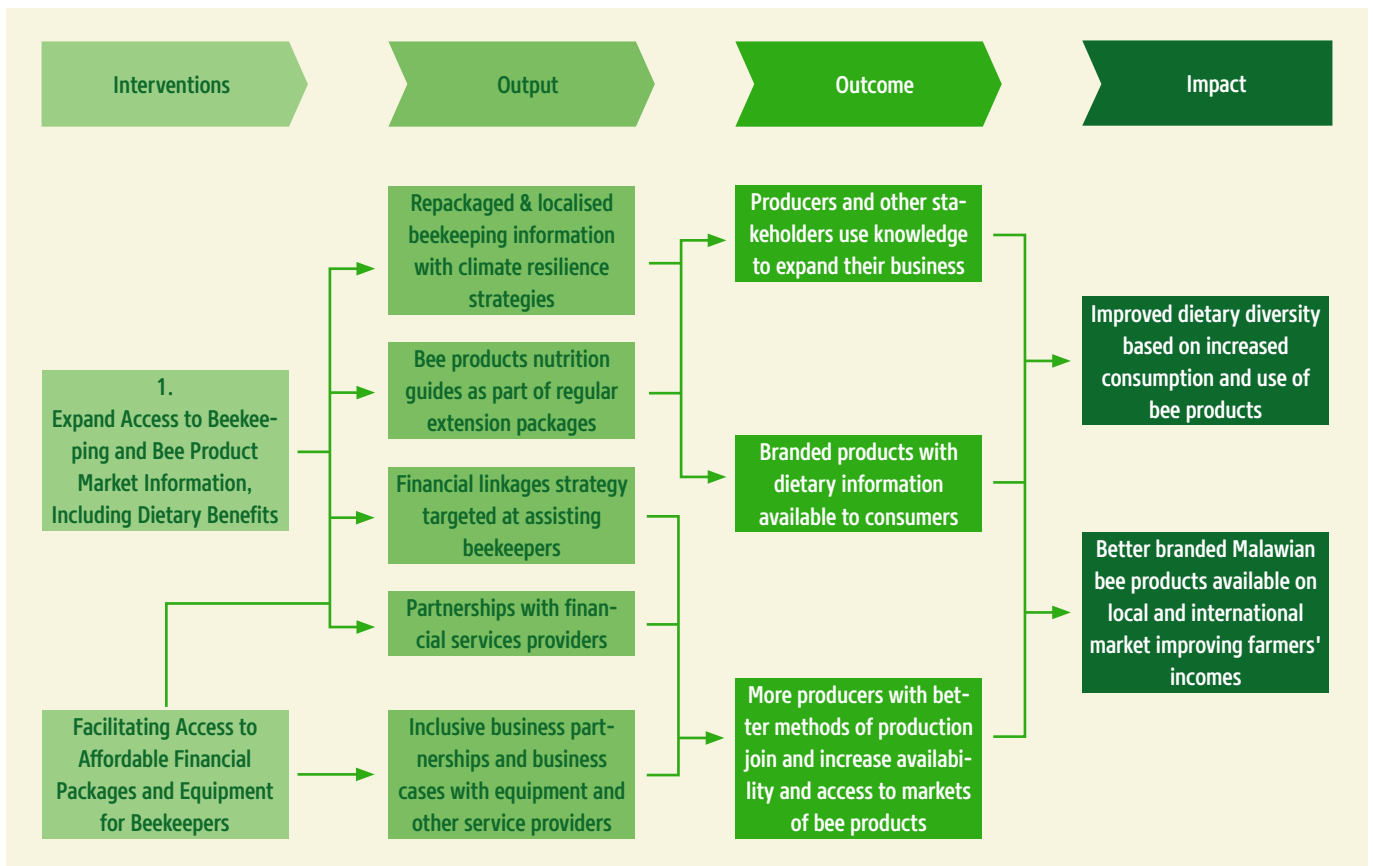
For more focused interventions, it would be beneficial to further understand the perspective of other players beyond producer groups, in terms of constraints and opportunities so that a complete picture emerges to assist design of more interventions. The beekeeping and honey sector in Mchinji and Mangochi has the potential to transform into a sustainable, inclusive, and high-value value chain, contributing to improved

livelihoods, environmental conservation, and household nutrition. By addressing key constraints such as low productivity, poor quality, weak market linkages, and environmental degradation, the sector can create significant economic opportunities for smallholder beekeepers, particularly women and youth.

The vision is to enable a vibrant beekeeping industry where smallholder farmers are equipped with the knowledge, tools, and market access to sustainably produce high-quality honey and other bee products (e.g., beeswax, cosmetics, and medicinal products). This transformation will meet unsatisfied market demand, improve household nutrition, and contribute to the preservation of natural ecosystems through sustainable forest management practices.

The goal is to establish beekeeping as a profitable and environmentally friendly livelihood option, integrating smallholders into formal markets while promoting biodiversity and enhancing climate resilience.

Figure 18: Beekeeping and honey market vision



<b>Theory of Change</b>	If market information about beekeeping and bee products is localized, repackaged, and extensively disseminated alongside knowledge of their dietary benefits and other uses, then farmers will recognize the opportunities in beekeeping, leading to increased investment and participation in the sector.
<b>Intervention Concept</b>	<p>WHH will facilitate partnerships to gather and adapt existing knowledge and market information for beekeeping and bee products, ensuring the information is relevant, accessible, and practical for farmers in Mchinji and Mangochi. This intervention will:</p> <p>Leverage existing resources (e.g., USAID’s Malawi Gold Standard Beekeeping Handbook, FAO’s From Charcoal to Honey) and local expertise (e.g., the Beekeepers Association of Malawi) to collate and enhance production and market information.</p> <p>Collaborate with local extension systems, private sector actors, and NGOs to disseminate this knowledge widely in communities, using culturally appropriate formats (e.g., translated guides, radio programs, and demonstration sessions).</p> <p>Facilitate engagement with market players, including buyers and investors, to establish inclusive business models and improve smallholder access to higher-value markets.</p> <p>Integrate nutrition education into extension services, emphasizing the dietary value of honey and other bee products to improve household food security.</p>
<b>Potential Partners</b>	<p>Government of Malawi – Agriculture and Forestry/Natural Resources departments etc</p> <p>NGOS/Development partners (USAID, IFAD, CARE, etc)</p> <p>Others - Beekeepers Association of Malawi, Malawi Bureau of Honey Cooperatives, etc.</p> <p>Private investors and buyers</p>
<b>Facilitation Activities</b>	<p>Partner with government extension systems and existing beekeeping initiatives to identify relevant market, production, and nutrition information.</p> <p>WHH can repackage, or support further expansion of information into simple, user-friendly formats, such as illustrated guides, video demonstrations, or translated materials in local languages.</p> <p>WHH can collaborate with media outlets to produce radio programs, community announcements, or mobile-based alerts on beekeeping opportunities and market prices.</p> <p>Provide training to extension agents on the latest beekeeping techniques, market opportunities, and nutritional benefits, ensuring they can effectively disseminate this knowledge to farmers.</p> <p>WHH can work with lead farmers or local champions to establish community-based knowledge hubs that provide ongoing support.</p> <p>Organize forums or workshops with honey buyers, processors, and exporters to identify their requirements (e.g., quality standards, volumes) and share this information with smallholder beekeepers.</p> <p>WHH can facilitate introductions between farmer groups and buyers to explore inclusive business models (e.g., contract farming, co-investment in equipment).</p> <p>Support buyers and processors to develop branded products that highlight the nutritional and environmental benefits of honey.</p> <p>WHH can support the integration of nutrition-focused messaging into extension services, showcasing honey’s role as a natural sweetener and its immune-boosting properties. This could include partnering with schools, health centres, and community programs to promote honey consumption as part of a balanced diet.</p>

<b>Systematic Change Potential</b>	<b>High:</b> By embedding knowledge dissemination into local systems and fostering partnerships with private sector actors, this intervention addresses key systemic constraints and encourages sustainable growth in the beekeeping sector.
<b>Timeframe</b>	<b>3–5 years</b> , with year 1–2 for developing and piloting information dissemination systems, followed by scaling and institutionalizing the approach over subsequent years.
<b>Feasibility</b>	<b>High</b> – activities in the beekeeping sector are enjoying continuous support
<b>Women and Youth</b>	Beekeeping and honey processing at basic level, are highly accessible to women and youth due to their low capital requirements and flexible labour needs. This intervention can directly target women-led groups and youth entrepreneurs, empowering them to take on key roles in production, processing, and marketing.
<b>Synergies with NGOs or Government</b>	Leverage ongoing NGO programs (e.g., USAID’s Malawi Gold Standard Beekeeping initiatives) and government forestry or climate resilience programs to align efforts and avoid duplication.  Collaborate with Beekeepers’ Associations and agricultural research institutions for technical support and co-creation of educational materials.

**Intervention 2** **Facilitating Access to Affordable Financial Packages and Equipment for Beekeepers**

<b>Theory of Change</b>	If beekeepers are linked to affordable financial packages and access to modern equipment through sustainable credit mechanisms, then both the quality and quantity of production will improve, leading to better nutrition and increased incomes for producers.
<b>Intervention Concept</b>	<p>WHH will facilitate partnerships between financial institutions, equipment suppliers, and organized beekeeper groups to address barriers to finance and technology adoption. The intervention will link beekeepers to financial packages (e.g., loans or grants from AgCOM or microfinance institutions) that enable them to invest in modern beekeeping practices and equipment.</p> <p>WHH will also partner with equipment suppliers to offer credit terms, such as hire-purchase or lease-to-own models, ensuring affordability and scalability for smallholder producers.</p> <p>Market linkages can also be improved by connecting producers with honey buyers, processors, and value-addition champions to ensure sustainable demand for bee products.</p> <p>In addition, the intervention can support the formation or strengthening of beekeeper cooperatives or groups to improve collective bargaining, access to finance, and economies of scale.</p>
<b>Potential Partners</b>	<p>Government of Malawi: AgCOM Project, Ministry of Agriculture.</p> <p>Private Sector: Honey processors, exporters, and equipment suppliers.</p> <p>Microfinance Institutions: Savings and Credit Cooperatives (SACCOs), Opportunity Bank, and similar financial service providers.</p> <p>NGOs: Mercy Corps, CARE, and others with expertise in agriculture finance and value chain development.</p> <p>Beekeepers’ Associations: Beekeepers Association of Malawi, Malawi Bureau of Honey Cooperatives.</p>

<p><b>Facilitation Activities</b></p>	<p>WHH will collaborate with AgCOM and microfinance institutions to develop and promote affordable financing packages tailored to small-scale beekeepers. In addition, facilitate financial literacy and loan-readiness training for producers to ensure they can successfully apply for and manage loans.</p> <p>WHH can identify and strengthen existing beekeeper groups or cooperatives, enabling them to pool resources, improve creditworthiness, and negotiate better terms with financial institutions. In addition, support the establishment of new groups where none exist, using participatory approaches to ensure inclusivity.</p> <p>WHH can partner with local suppliers to co-develop hire-purchase or lease-to-own models for modern beekeeping equipment (e.g., modern hives, protective gear, processing units). Moreover, WHH can facilitate demonstration events showcasing modern equipment to build producer awareness of its benefits and encourage adoption.</p> <p>WHH can also organize buyer-producer dialogues and market fairs to establish direct connections between producers and processors/buyers. This can encourage buyers and processors to co-invest in production groups, offering guarantees or partial upfront payments tied to supply contracts.</p> <p>Finally, capacity building can be achieved by technical training on the use of modern equipment and good beekeeping practices to ensure productivity improvements and compliance with market standards.</p>
<p><b>Systematic Change Potential</b></p>	<p><b>High:</b> Strengthening access to finance and equipment will empower producers to invest in long-term improvements, while linking them to markets ensures sustainable demand and scalability. Facilitating private sector-led solutions further embeds systemic change.</p>
<p><b>Timeframe</b></p>	<p><b>3–5 years:</b> Initial focus on identifying financial partners and piloting financing models in years 1–2, with scaling and integration into market systems in years 3–5.</p>
<p><b>Feasibility</b></p>	<p>Medium Growing demand for honey and bee products provides strong incentives for producers to adopt modern practices, while government and private sector interest in the beekeeping sector supports intervention feasibility. However, financial literacy among producers will be key to success and requires targeted efforts.</p> <p>– activities in the beekeeping sector are enjoying continuous support</p>
<p><b>Women and Youth</b></p>	<p>Beekeeping is a women- and youth-friendly activity due to its low land requirements and flexible labour needs. Women and youth can benefit from targeted support in financial literacy, leadership roles in cooperatives, and access to credit for small-scale businesses. This intervention will actively promote their participation.</p>
<p><b>Synergies with NGOs or Government</b></p>	<p>Leverage existing programs like AgCOM and collaborate with NGOs such as Mercy Corps and CARE to align financing and technical support activities.</p> <p>Partner with government extension services to disseminate training and market information, ensuring widespread reach and sustainability.</p>

## 6.6 Mangoes

### Market Vision:

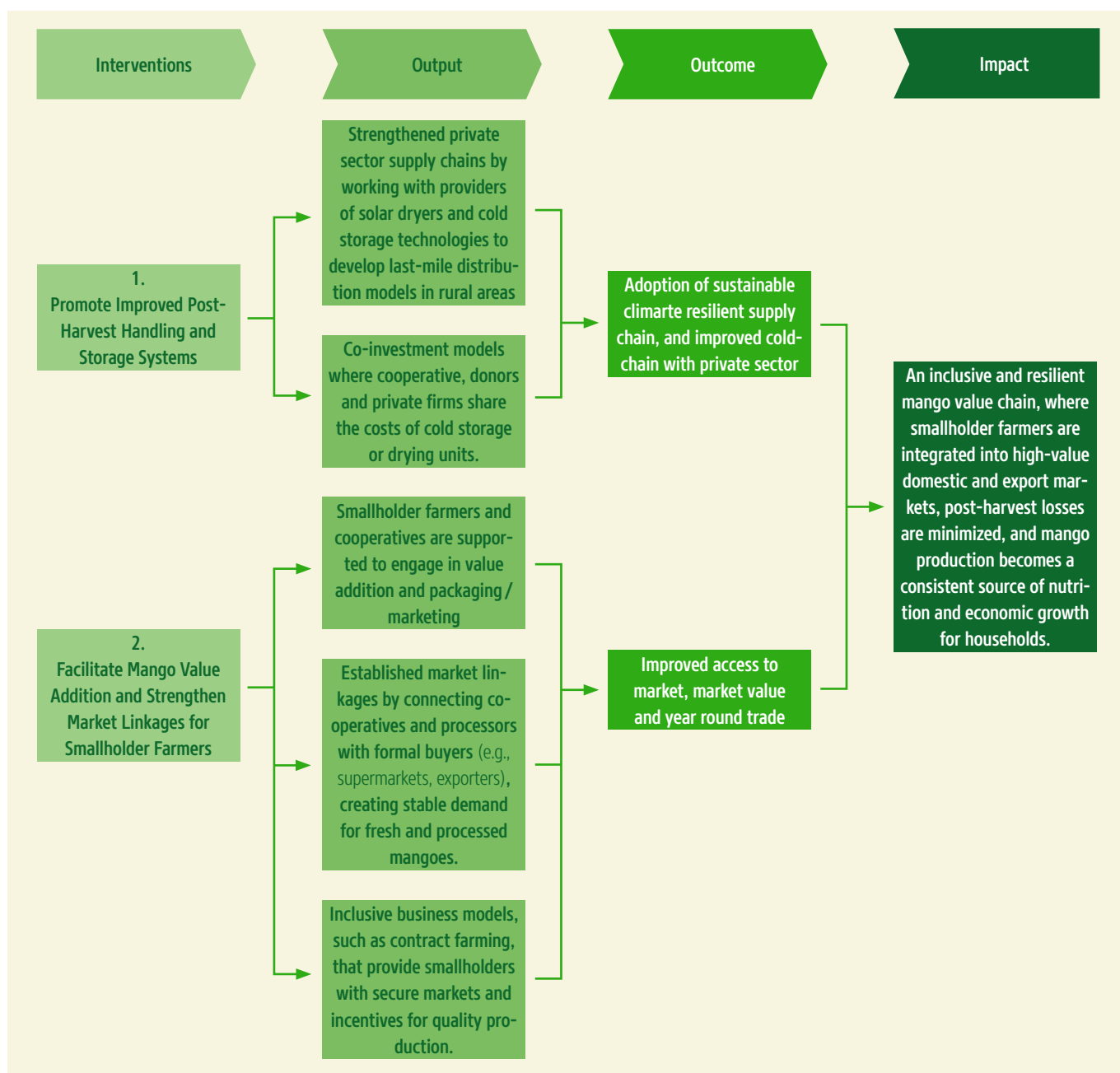
The mango sector in Mangochi and Mchinji has the potential to become a high-value contributor to household nutrition, food security, and economic resilience. Currently, mango production is dominated by smallholder farmers who cultivate a mix of local and improved varieties. However, the sector faces several challenges, including post-harvest losses due to lack of cold storage and processing infrastructure, market inefficiencies with limited access to formal markets, and poor quality management, which restricts export potential.

Despite these constraints, the sector offers significant opportunities. Mangoes are a rich source of vitamins A and C, and they can play a critical role in enhancing dietary diversity. Additionally, value addition through

processing into dried mangoes, juices, and other products can unlock higher market value and reduce waste. By addressing systemic bottlenecks, strengthening market linkages, and fostering sustainable production practices, the mango value chain can contribute to improved nutrition and income for smallholder farmers, particularly women and youth.

The vision is to create an inclusive and resilient mango value chain, where smallholder farmers are integrated into high-value domestic and export markets, post-harvest losses are minimized, and mango production becomes a consistent source of nutrition and economic growth for households.

Figure 19: Mango Market Vision



<b>Theory of Change</b>	If smallholder mango farmers access affordable post-harvest handling and storage technologies, then post-harvest losses will reduce, increasing income from higher-quality produce and improving nutrition through year-round mango availability.
<b>Intervention Concept</b>	<p>WHH will facilitate partnerships to scale affordable post-harvest handling and storage solutions, ensuring smallholder farmers reduce losses and access higher-value markets. This intervention will encourage the private sector to invest in and supply solar drying technologies, cold storage, and improved packaging materials.</p> <p>The intervention will enable farmer cooperatives to adopt and manage these solutions, either independently or in partnership with private service providers.</p> <p>It should focus on building farmer capacity in sorting, grading, and proper packaging to ensure fruit quality is maintained, targeting both local and export markets.</p>
<b>Potential Partners</b>	<p>Government of Malawi: Ministry of Agriculture and Ministry of Trade.</p> <p>Private Sector: Suppliers of cold storage and solar drying technologies, processors.</p> <p>NGOs and Development Partners: SNV, GIZ, and Technoserve.</p> <p>Farmer Cooperatives: Groups managing mango production and marketing.</p>
<b>Facilitation Activities</b>	<p>WHH strengthen private sector supply chains by working with providers of solar dryers and cold storage technologies to develop last-mile distribution models in rural areas, supported by cooperatives or agro-dealers.</p> <p>WHH will investigate and facilitate co-investment models where cooperatives and private firms share the costs of cold storage or drying units. WHH can provide de-risking or cost sharing models. Moreover, WHH can partner with input providers to bundle storage solutions with complementary inputs, such as improved mango seedlings or pesticides.</p> <p>WHH can support cooperatives in aggregating produce and managing shared storage infrastructure. Training can be facilitated on managing cold storage and solar drying technologies to ensure operational sustainability.</p> <p>Market Development for processed mangoes which are currently imported through engaging buyers (e.g., processors and supermarkets) to create demand for dried, processed and high-quality fresh mangoes. Facilitate agreements where buyers co-finance or lease storage infrastructure in exchange for a steady supply of quality produce.</p>
<b>Systematic Change Potential</b>	Embedding private sector actors and cooperatives in storage and handling systems ensures scalability and sustainability, reducing dependence on external actors.
<b>Timeframe</b>	<b>3–5 years:</b> Pilots and capacity building in years 1–2, scaling models by year 3, and widespread adoption by year 5.
<b>Feasibility</b>	<b>Medium</b> , as proven technologies like solar dryers and cold storage are available, but cost and accessibility challenges require facilitation of co-financing models.
<b>Women and Youth</b>	<p>Leadership roles and targeted training can focus on women and youth on sorting, grading, and managing storage facilities to ensure they are actively involved in improving post-harvest practices.</p> <p>Support youth to establish small businesses around mango storage services (e.g., renting out drying racks or managing aggregation points).</p>
<b>Synergies with NGOs or Government</b>	<p>Collaborate with GIZ, SNV, and FAO on value chain projects.</p> <p>Work with the Ministry of Agriculture to integrate post-harvest training into extension services.</p>

<b>Theory of Change</b>	If smallholder farmers and cooperatives are supported to engage in value addition and connected to high-value domestic and export markets, then incomes will increase, post-harvest losses will reduce, and the availability of mango-based products will improve, contributing to better nutrition and economic resilience.
<b>Intervention Concept</b>	<p>WHH will facilitate partnerships between mango farmers, cooperatives, processors, and market actors to enhance value addition and improve access to high-value markets.</p> <p>This intervention will enable cooperatives and processors to develop value-added mango products such as dried mangoes, juices, and purees by facilitating access to equipment, training, and financing.</p> <p>In addition, it should build market linkages by connecting cooperatives and processors with formal buyers (e.g., supermarkets, hotels, exporters), creating stable demand for fresh and processed mangoes.</p> <p>The intervention, should promote inclusive business models, such as contract farming, that provide smallholders with secure markets and incentives for quality production.</p> <p>Over and above this, WHH could use the intervention to research, introduce digital tools to provide real-time price updates, demand forecasts, and buyer connections, reducing market inefficiencies and empowering farmers with better information.</p>
<b>Potential Partners</b>	<p>Ministry of Agriculture and Trade for export promotion and certification support. Processors like Malawi Mangoes Ltd and smaller agro-processing companies.</p> <p>Supermarkets, hotels, and exporters as high-value buyers.</p> <p>FAO, GIZ, SNV, and Technoserve for technical support and capacity building.</p> <p>Cooperatives and mango producer groups for aggregation and quality control.</p> <p>Microfinance institutions, savings and credit cooperatives, and commercial banks for financing equipment and working capital.</p>
<b>Facilitation Activities</b>	<p>WHH can support value addition by facilitating access to mango processing equipment through lease-to-own, hire purchase, or co-financing models with equipment suppliers.</p> <p>WHH can work with suppliers or directly to train cooperatives and processors on mango drying, juicing, and packaging to meet market quality and export standards.</p> <p>WHH can strengthen market linkages to organize buyer-seller forums to connect cooperatives, processors, and buyers, establishing contracts and long-term partnerships, such as contract farming models where buyers provide input financing or quality-based incentives to farmers.</p> <p>If successful, WHH can collaborate with branding and marketing experts to develop attractive packaging for processed mango products.</p> <p>For cooperatives, WHH can support cost savings through setting up aggregation hubs for sorting, grading, and bulk marketing of mangoes, improve transport systems and costs, ensuring mangoes reach markets in better condition.</p>
<b>Systematic Change Potential</b>	<b>High:</b> Strengthening value addition and market linkages empowers cooperatives, processors, and buyers to take ownership of supply chains, reducing reliance on external actors and creating long-term economic opportunities.
<b>Timeframe</b>	<b>Years 1–2:</b> Initial capacity building, equipment facilitation, and pilot market linkages. <b>Years 3–5:</b> Scaling of processing operations, market linkages, and digital tools.

<b>Feasibility</b>	<b>Medium / High</b> , the growing demand for processed mango products domestically and internationally, combined with existing interest from processors and buyers, makes this intervention feasible. However, challenges such as high equipment costs and export certification requirements need targeted support.
<b>Women and Youth</b>	Promote women and youth participation by providing tailored training for women and youth on value addition, cooperative management, and digital market tools. Encourage youth to establish logistics businesses or operate processing units for mango products.
<b>Synergies with NGOs or Government</b>	<p>Collaborate with SNV and Technoserve for capacity building and value chain development.</p> <p>Align with Ministry of Agriculture and Trade programs promoting agro-processing and export certification.</p> <p>Leverage funding and technical expertise from GIZ, FAO, and similar organizations.</p>

# 7. INTERVENTION IMPACT SUMMARY

Justifications for Intervention Impact Ratings

## POULTRY SECTOR

### **Strengthen Smallholder Poultry Production Through Climate-Resilient Practices**

High impact on smallholder farmers due to increased productivity and resilience. High impact on nutritionally at-risk groups by improving protein availability. High impact on women and youth as they play key roles in poultry farming.

### **Develop Localised Feed Production Systems**

High impact on smallholder farmers by reducing feed costs. Medium impact on nutritionally at-risk groups as it indirectly improves poultry productivity. Medium impact on women and youth through opportunities in feed production enterprises.

### **Group Buying and Selling Model**

High impact on smallholder farmers through collective bargaining power. Medium impact on nutritionally at-risk groups as it indirectly improves food access. High impact on women and youth as cooperatives often empower these groups.

### **Improve Market Linkages and Access to Formal Poultry Markets**

Medium impact on smallholder farmers due to better market access. High impact on nutritionally at-risk groups through increased availability of affordable poultry products. High impact on women and youth through enhanced income opportunities.

## MAIZE SECTOR

### **Complement Government Support for Climate-Resilient Maize Production**

High impact on smallholder farmers by increasing maize yields. High impact on nutritionally at-risk groups as maize is a staple. Medium impact on women and youth as they are involved in maize farming but may have limited decision-making power.

### **Promote Safe Grain Storage Technologies**

High impact on smallholder farmers through reduced post-harvest losses. High impact on nutritionally at-risk groups by improving food security. Medium impact on women and youth through improved household food management.

### **Promote Inclusive Business Models for Maize**

Medium impact on smallholder farmers due to improved market systems. Medium impact on nutritionally at-risk groups through better food availability. High impact on women and youth as inclusive models often promote gender equity.

## FISHERIES SECTOR

### **Promote Sustainable Fishing Practices**

High impact on smallholder farmers as sustainable practices improve productivity. High impact on nutritionally at-risk groups by increasing fish availability. Medium impact on women and youth due to limited roles in direct fishing activities.

### **Improve Fish Storage and Post-Harvest Handling**

Medium impact on smallholder farmers through reduced post-harvest losses. High impact on nutritionally at-risk groups as fish remains fresher for longer. High impact on women and youth involved in fish processing and sales.

### **Promote Sustainable Aquaculture Development**

High impact on smallholder farmers by diversifying income sources. High impact on nutritionally at-risk groups through increased protein access. High impact on women and youth through employment in aquaculture operations.

## GROUNDNUTS SECTOR

### **Support Inclusive Business Models in Groundnuts**

High impact on smallholder farmers through improved productivity and market access. Medium impact on nutritionally at-risk groups due to groundnut's nutritional value. High impact on women and youth involved in groundnut production.

### **Promote Groundnut Storage Systems**

Medium impact on smallholder farmers through reduced post-harvest losses. High impact on nutritionally at-risk groups by improving food security. High impact on women and youth as they manage household food supplies.

### **Promote Local Processing and Consumption of Groundnut Products**

Medium impact on smallholder farmers through value addition opportunities. High impact on nutritionally at-risk groups via nutrient-rich products. High impact on women and youth involved in processing activities.

## HONEY/BEEKEEPING SECTOR

### **Expand Access to Beekeeping and Bee Product Market Information**

Medium impact on smallholder farmers through increased market opportunities. Medium impact on nutritionally at-risk groups via honey's health benefits. High impact on women and youth due to low entry barriers in beekeeping.

### **Facilitate Access to Affordable Financial Packages and Equipment for Beekeepers**

Medium impact on smallholder farmers by easing access to beekeeping tools. Medium impact on nutritionally at-risk groups through indirect income effects. High impact on women and youth via entrepreneurship opportunities.

## **MANGO SECTOR**

### **Promote Improved Post-Harvest Handling and Storage Systems for Mangoes**

High impact on smallholder farmers through reduced spoilage. High impact on nutritionally at-risk groups with year-round fruit availability. High impact on women and youth through processing and marketing roles.

### **Facilitate Mango Value Addition and Strengthen Market Linkages**

High impact on smallholder farmers by opening new markets. High impact on nutritionally at-risk groups via diversified food products. High impact on women and youth through entrepreneurship and value-added roles

# CONCLUSIONS | OUTCOMES FROM MULTI-STAKEHOLDER WORKSHOP: SHORT-AND MEDIUM TERM PRIORITY ACTIONS TO ADDRESS FOOD SYSTEM CHALLENGES

The food system assessment for Malawi highlighted key short- and medium-term priority areas at the national level by analyzing value chains, incorporating stakeholder inputs, and addressing systemic challenges affecting food and nutrition security. This structured approach ensures that interventions are strategically targeted and aligned with national development goals. However, to effectively address localized challenges and leverage specific opportunities, replicating this process at the district level is crucial. Successful district-level assessments require inclusive stakeholder engagement, comprehensive data collection, and alignment with national priorities to develop actionable and effective strategies tailored to the needs of local communities. As part of this study, a Multi-Stakeholder Workshop was conducted to identify and prioritize district-level actions addressing food system challenges, focusing on practical short- and medium-term solutions. These actions were derived from national priority areas while excluding policy-related interventions, which fall under central governance. This section summarizes the resulting prioritized actions, emphasizing their potential to drive meaningful improvements at the local level.

To ensure access to safe and nutritious food for all, a range of short- and long-term strategies have been identified. To address the challenge of low productivity and limited production of diversified, nutritious foods, the short-term priority is to scale up investments in integrated value chains that support household-level farming of vegetables, fruits, legumes, and livestock. In the long term, the focus shifts to promoting efficient utilization of idle estate farms by reallocating or expanding them into highly productive farm units. For inadequate dietary diversification, the short-term strategy is to challenge the entrenched perception that “maize is food and food is maize” through government programs, narratives, and initiatives like the Affordable Inputs Program (AIP). This includes fostering household adoption of diverse food consumption habits and promoting alternative off-farm income opportunities, such as apiculture through co-management of forest reserves. Over the long term, these efforts should be complemented by strategies to enhance household income diversification.

Poor health and sanitation facilities, another critical challenge, can be addressed in the short term by revamping district waste disposal services and encouraging privatization of waste management. In the long term, improving access to basic health services will require constructing new facilities, rehabilitating existing ones, and recruiting qualified staff. Similarly, the issue of consuming unsafe food can be mitigated

in the short term by scaling up post-harvest handling technologies at the household and national levels. In the long term, establishing robust food safety risk monitoring systems will be essential to ensure food quality at all levels. Behavior change communication campaigns targeting low consumption of nutrient-dense foods, such as indigenous and animal-sourced foods, should be prioritized in the short term. Over time, incorporating food system education into school curricula, starting from primary school, will help embed an understanding of nutrition in future generations.

To address inadequate access to nutritious foods, medium-term efforts should focus on consumer awareness campaigns that promote healthy diets, targeting urban and middle-income populations. In the long term, leveraging regional and international markets can enhance the district's ability to manage food surpluses and deficits through export and import mechanisms. These strategies provide a roadmap for transforming food systems to ensure long-term food security and improved nutritional outcomes.

To promote healthy and sustainable consumption patterns, a series of short- and long-term strategies have been prioritized to tackle existing challenges. One key issue is the inadequate capacity in agro processing, value addition, and utilization. In the short term, efforts should focus on refocusing vocational and technical training to foster the development of technologies and innovations for food preservation and value addition. Introducing farmer-friendly financing mechanisms to support investments in community-level agro-processing is also critical. The lack of diversity in nutritious food options is another pressing challenge. In the short term, promoting local seed banks for highly nutritious indigenous cultivars is essential, alongside enhancing infrastructure to facilitate value chain functions— particularly road networks in rural areas with high potential for food system transformation.

Addressing food wastage and losses requires a circular food systems approach that prioritizes prevention, redistribution, and reuse of food waste. Key interventions include: (i) mandatory segregation of food waste by businesses and households to facilitate collection for processing into valuable products, (ii) incentives for food donations, making it cheaper to donate food than to discard it, (iii) mandatory measurement of food waste by businesses to increase awareness and accountability, (iv) taxing or banning landfill and incineration of food waste, and (v) incentivizing the use of food waste as feedstock for creating products

such as processed foods, animal feed, or fertilizers. Currently, the district faces an unregulated food environment, which affects the quality of food consumed. Short-term strategies include facilitating the processing of diverse, nutrient-rich foods by reducing taxes on healthy foods and increasing taxes on unhealthy ones. In the long term, leveraging public procurement to deliver healthier meals through programs such as school feeding initiatives will help grow demand for nutritious foods. These strategies aim to create an enabling environment for sustainable food systems, ensuring healthier dietary practices and reducing the ecological footprint of food consumption.

The food system also faces the critical challenge of ensuring nature-positive production systems. One significant issue is poor industrial and domestic waste management. To address this, it is imperative to strictly enforce council by-laws on waste disposal and the Environmental Management Act immediately, while gradually strengthening regulations on Environmental Impact Assessments for industries. Another pressing challenge is the prevalence of poor farming practices and unsustainable food production systems. Addressing these issues requires a multi-pronged approach, including: scaling out climate smart agricultural technologies to enhance productivity and resilience; increasing investments in seed systems that support biodiversity and the development of sustainable seed technologies; promoting Integrated Pest Management (IPM) to reduce chemical use in food production and processing; and encouraging equitable land tenure systems, focusing on improving access, ownership, and control of land, especially for youth, women, and marginalized groups. Additional measures include enforcing laws to curb charcoal production and sales, while promoting alternative livelihoods to reduce dependency on forest resources. Raising awareness of the importance of forests and biodiversity is vital, as is providing training for farmers in conservation agriculture and agroforestry practices (particularly for leguminous crops) to boost both income and environmental sustainability.

Key initiatives to scale up include natural forest regeneration and management practices, such as stump regeneration, and rolling out a national soil health restoration program to rehabilitate degraded lands. Establishing community-level conservation initiatives, where communities are empowered to protect and manage forests and natural resources, is also crucial. Promoting sustainable, off-farm income generating activities linked to natural resources and incentivizing farmers and communities to adopt environmentally friendly practices will further support sustainable production. Alternative farming systems like permaculture and agroecology should be promoted. Strengthened regulation of mining permits, implementation of environmental and social management plans, and penalties for illegal sand mining are also essential in urban and semi-urban areas. Empowering and operationalizing catchment management committees,

introducing innovative social protection programs such as cash-for environment management, and identifying and protecting biodiversity hotspots are additional strategies. In the long term, the district should focus on climate change adaptation and mitigation measures, such as watershed catchment management practices, including bamboo planting in water catchment areas. These interventions collectively aim to establish sustainable, nature-positive production systems that safeguard the environment while enhancing livelihoods.

To enhance equitable livelihoods, the district must address key challenges and implement targeted strategies to overcome food system disparities. One critical issue is the unequal distribution of resources and productive assets. In the short term, efforts should focus on equipping women and youth with agribusiness skills to facilitate their meaningful participation in the sector. Additionally, implementing a comprehensive land reform program to increase access to and secure ownership of land for Malawians is essential. Systemic market failures also pose a significant challenge. To address this, the priority is to accelerate the establishment of productive alliances between producers and output markets. Over time, investments by the government and private sector in market linkages and infrastructure—such as cold chains for processing, storage, and trade—will be vital to improve the accessibility and consumption of nutrient-rich foods, particularly perishable fruits and vegetables.

The lack of diversified income-generating activities is another pressing issue. To tackle this, the district should scale up investments in vocational and entrepreneurship training related to agribusiness while reviving and redesigning the rural transformation agenda to unlock economic opportunities in rural areas. These efforts should be sustained both in the short and long term. Infrastructure plays a critical role in supporting equitable livelihoods. To address current gaps, infrastructural projects—such as road construction—must be de-politicized and refocused on areas with the greatest need. Additionally, fostering a mindset change through moral education and value reinforcement at a young age is crucial to combat corruption and ensure the efficient implementation of these projects. By addressing these challenges holistically, the district can create more equitable opportunities and lay the foundation for sustainable livelihoods.

To strengthen resilience to vulnerabilities, it is critical to implement strategies that address both current and anticipated challenges. To improve resilience against systemic hazards, risks, and natural disasters, the immediate priority is to scale up natural resource management practices. This includes land restoration, farmer-managed natural regeneration (FMNR), agro-ecology, and regenerative technologies such as conservation agriculture and catchment

conservation measures. Additionally, the conservation of food diversity through gene banks, including community-level initiatives, is essential for sustaining biodiversity in both the short and long term. Given Malawi's dependence on rainfed agriculture, addressing the challenges posed by climatic variability is crucial. This can be achieved by increasing the training and recruitment of irrigation engineers and exploring land consolidation programs to facilitate equitable and effective irrigation schemes. These efforts will ensure more stable agricultural outputs regardless of seasonal variations.

Food production seasonality remains a significant issue. To tackle this, the district should intensify integrated farming systems, with a particular focus on small livestock, which can serve as a sustainable food source at the household level. Investments in cold chain infrastructure for fisheries, livestock, and perishable farm commodities are equally important to reduce post-harvest losses and ensure year round availability. To enhance adaptive capacity more broadly, the district must scale up social and behavior change communication efforts. These should address the root causes of harmful coping mechanisms while linking social support programs with agricultural input initiatives to create synergies. Furthermore, establishing clear strategies to help beneficiaries transition from dependency on these programs will ensure long-term sustainability and resilience. By addressing these priorities holistically, the district can better equip communities to withstand vulnerabilities and build a more adaptive and resilient food system.

**Lead Authors:**

Thokozani Sentara (Quantum Consultancy),  
Dr. Sarah Tione (Quantum Consultancy),  
Kevin Conroy (DevLearn),  
Pedzisai Mufara (DevLearn),  
Adam Kessler (DevLearn),  
Tunsume Mwaibasa (WHH, Malawi),  
Claudia Plock (WHH, Malawi),  
Jasmin Koottummel (WHH, HO).

**Contributors:****Concern Worldwide:**

Tommy Chimpanzi (Concern Worldwide).

**Commissioned by:**

WHH Malawi in the context of the 'Right to Food in Africa Program' and in close collaboration with Concern Worldwide.

**With financial support by:**

Federal Ministry for Economic Cooperation and Development

**Contact:**

Claudia Plock, Head of Programmes,  
WHH Malawi  
claudia.plock@welthungerhilfe.de

**Published by:**

Deutsche Welthungerhilfe e. V.  
Friedrich-Ebert-Straße 1  
53173 Bonn  
Germany  
Tel. +49 (0)228 2288-0  
Fax +49 (0)228 2288-333  
info@welthungerhilfe.de  
Member of Alliance 2015

**Layout:**

Hugo Rohrbeck

**Title-Photo:**

Isaac Mwase / Welthungerhilfe

**Data collection and analysis process:**

August 2024 – February 2025

**Published:**

May 2025

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