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BEYOND MAIZE — STRENGTHENING DISTRICT FOOD SYSTEMS IN MALAWI

A Localized Food Systems Perspective
on Mangochi and Mchinji Districts

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INTRODUCTION

This synopsis 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 behaviour, 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.



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NEARLY EVERY FARMER GROWS MAIZE. FOOD INSECURITY PERSISTS

Across Mangochi and Mchinji, maize is nearly universal. 97–99% of smallholder farmers cultivate maize. Yet food insecurity remains widespread.

Maize dominates production. It shapes land use. It anchors food security discourse. It shapes farmer behavior. It shapes consumer behavior. Maize is necessary, but it is not sufficient.

This localized food systems assessment was conducted in Mangochi and Mchinji Districts to understand what lies beyond maize, and what structural conditions must change for district food systems to perform.



91.6%
of households
in Mangochi



48.9%
of households
in Mchinji

Experienced months of
insufficient food in the
past year.



LOOKING BEYOND PRODUCTION

Food insecurity in Mangochi and Mchinji cannot be explained by production figures alone. Understanding why maize dominance has not translated into stable food security requires examining:

- ✓ Land size and productivity constraints.
- ✓ Crop diversification patterns.
- ✓ Market access and price dynamics.
- ✓ Post-harvest performance.
- ✓ Dietary diversity.
- ✓ Infrastructure and service gaps.

This assessment applied a localized food systems approach to analyze how these elements interact at district level. It combined:

- ✓ Household survey data.

- ✓ Market systems mapping.
- ✓ Key informant interviews.
- ✓ Value chain diagnostics.
- ✓ Multi-stakeholder consultation and output validation.

The objective was not to measure output alone, but to assess system performance and the roles and opportunities for various actors within key food systems.

This approach also allows identification of areas where the system underperforms, as well as barriers and opportunities for improving food system functioning.

MAIZE PRODUCTION IS WIDESPREAD — BUT NOT SUFFICIENT

Average plot size and maize production per household:

- ✓ **Mchinji:** 3.3 acres → 1,185 kg/year
- ✓ **Mangochi:** 1.5 acres → 462 kg/year

In both districts, reported production does not consistently meet annual household needs.

Small landholdings constrain scaling. Diversification remains limited.

A maize-centered system can stabilize calories. It cannot, on its own, strengthen sustainable food security, livelihoods resilience, and household income.

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

CROP DIVERSIFICATION PATTERN IS UNEVEN

Crop diversification differs significantly between Mangochi and Mchinji.

MANGOCHI

- ✓ 13.2% of smallholder farmers grow one crop
- ✓ 46.8% grow two crops
- ✓ 40.0% of households grow three or more crops

MCHINJI

- ✓ 1.2% of smallholder farmers grow one crop
- ✓ 45.6% grow three crops
- ✓ 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.

The crop mix also differs:

- ✓ **Maize** dominates in both districts (97–99% of farmers).
- ✓ **Groundnuts** and **soybean** are more prominent in Mchinji, supporting commercial linkages.

- ✓ **Pigeon peas** are present in both districts.
- ✓ **Cassava** plays a more significant role in Mangochi.
- ✓ **Rice** is cultivated in suitable areas of Mangochi.
- ✓ **Mango** is an important seasonal crop, though affected by high post-harvest losses.
- ✓ **Fisheries** are structurally important in Mangochi for both income and protein supply.

Diversification matters because it influences:

- ✓ Income buffering capacity
- ✓ Exposure to climate variability
- ✓ Dietary diversity
- ✓ Market participation opportunities

Broader crop portfolios correlate with stronger market participation and absorptive capacity in Mchinji compared to Mangochi.

FOOD INSUFFICIENCY IS STRUCTURAL

Households reporting months of insufficient food:

- ✓ **Mchinji: 48.9%**
- ✓ **Mangochi: 91.6%**

Months of Adequate Household Food Provisioning (MAHFP)¹

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%

¹Months of Adequate Household Food Provisioning (MAHFP): An indicator capturing seasonal food access over the previous 12 months. Households report which months they experienced inadequate food access.

CALORIE SUFFICIENCY DOES NOT EQUAL DIET QUALITY

The Food Consumption Score (FCS) measures dietary diversity and frequency of consumption of key food groups over the previous seven days.

This assessment shows that:

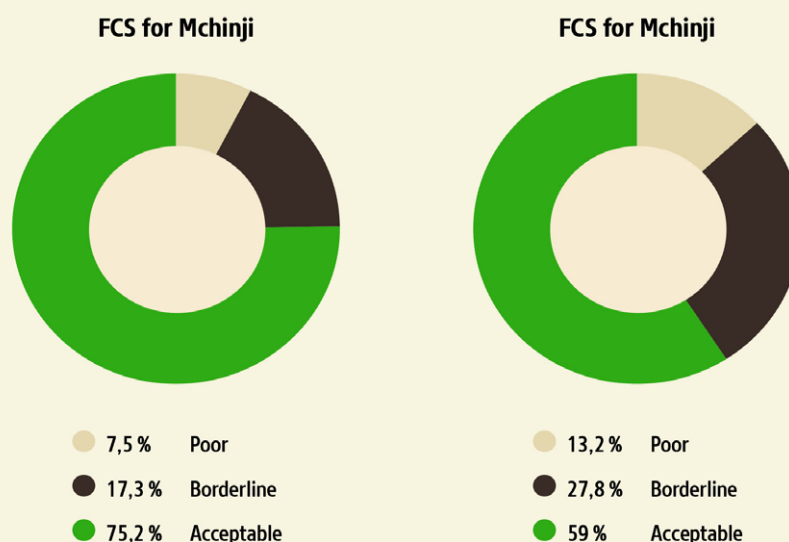
- ✓ 41% of households in Mangochi have poor or borderline dietary diversity.
- ✓ 24.8% of households in Mchinji fall into those same categories.

Staple grains, mainly maize, are consumed daily in both districts.

Protein-rich foods, such as legumes, fish, and others, are consumed only 2–3 days per week on average.

Maize provides calories. It does not ensure dietary adequacy.

Diet Quality by District (Food Consumption Score)



MARKETS DO NOT RELIABLY CONVERT PRODUCTION INTO INCOME

Production alone does not determine household food security. Market performance shapes whether crops translate into stable income. In Mangochi, weaker market integration compounds existing production constraints. In Mchinji, stronger crop commercialization (e.g., soybean and groundnuts) improves income buffering, but does not eliminate vulnerability.

Maize markets are relatively mature and widespread. However, price volatility and limited aggregation capacity constrain value retention at farm level. Higher-value or perishable crops, such as mango

or fish, face additional post-harvest and coordination bottlenecks, further limiting income potential.

Across both districts, farmers report structural market constraints:

- ✓ Transport, storage, and infrastructure constraints affect nearly half of farmers.
- ✓ Low prices affect 81–91% of farmers.
- ✓ Formal contract farming engagement remains limited — 29.3% in Mchinji and only 10.1% in Mangochi.

Where value chains lack processing, aggregation, and storage capacity, farmers sell quickly and at lower margins.

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%

These conditions limit bargaining power and reduce income predictability. This reflects a broader pattern of system underperformance, where limited aggregation, weak coordination, and infrastructure gaps prevent markets from functioning efficiently and translating production into stable income.

INFORMAL ACTORS PLAY A CENTRAL ROLE IN SHAPING HOW THESE MARKETS FUNCTION

Local traders, brokers, aggregators, processors, and transporters form the backbone of food markets in both districts. They provide essential services — including aggregation, liquidity, transport, and market access — particularly in contexts where formal market structures are weak or absent.

At the same time, their role also shapes system outcomes:

- ✓ Price setting and bargaining power: Farmers often sell immediately after harvest to informal traders due to urgent cash needs and limited storage, reducing their ability to negotiate prices.
- ✓ Aggregation and coordination: Informal traders organize the movement of goods across markets, but operate with limited transparency and coordination, contributing to price volatility.
- ✓ Risk absorption and transfer: Informal actors absorb risks related to transport, perishability, and market fluctuations, but these risks are often transferred back to producers through lower farmgate prices.
- ✓ Limited upgrading pathways: The dominance of informal trading structures can constrain investments in storage, processing, and formal market linkages, limiting value addition.

Where value chains lack processing, aggregation, and storage capacity, and where informal systems dominate without adequate support, farmers sell quickly and at lower margins. These conditions limit bargaining power and reduce income predictability.

This reflects a broader pattern of system underperformance, where informal but essential market structures are not sufficiently supported, integrated, or leveraged to translate production into stable income.



WHERE VALUE IS LOST

Beyond production volumes and market access, value retention remains constrained in both districts.

The assessment identifies structural bottlenecks in selected value chains:

- ✓ High post-harvest losses in perishable crops such as mango.
- ✓ Losses and inefficiencies in fish handling and processing (Mangochi).
- ✓ Limited local processing and storage capacity.
- ✓ Weak aggregation systems for higher-value crops.

When value is lost between harvest and market, production gains do not translate into income or nutrition gains.

This affects both districts, though the commodities differ. In Mangochi, fisheries and mango losses reduce income and protein availability.

In Mchinji, limited processing and aggregation constrain the commercial potential of soybean and groundnuts.

These bottlenecks point to clear opportunities for improving system performance through targeted investments in storage, processing, and aggregation.

ASSETS AND COPING STRATEGIES

Household capacity to manage food shortfalls depends not only on production, but also on available assets and coping mechanisms. 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%) as compared to farmers in Mangochi.

COPING STRATEGIES DURING FOOD SHORTAGES

When households experience food insufficiency, reported coping strategies in both districts include:

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%

Given the higher share of households reporting food insufficiency in Mangochi, reliance on these strategies is correspondingly more frequent. The reported coping responses are similar in type across districts, but differ in intensity.

OBSERVED PATTERN

Asset ownership and coping strategies reflect underlying structural conditions:

- ✓ Smaller landholdings and lower production levels correspond with more frequent reliance on short-term coping.
- ✓ Broader asset bases support greater flexibility in managing seasonal shortfalls.

These findings complement the production, market, and nutrition patterns identified in earlier sections.

BUILDING FUNCTIONAL DISTRICT FOOD SYSTEMS

Then strengthening food security requires aligning system components where they interact — at district level. The assessment highlights specific areas of system underperformance:

- ✓ Weak coordination between production, markets, and nutrition outcomes
- ✓ Limited value addition and high post-harvest losses
- ✓ Fragmented service provision (extension, finance, market information)
- ✓ Uneven access to productive assets and income opportunities

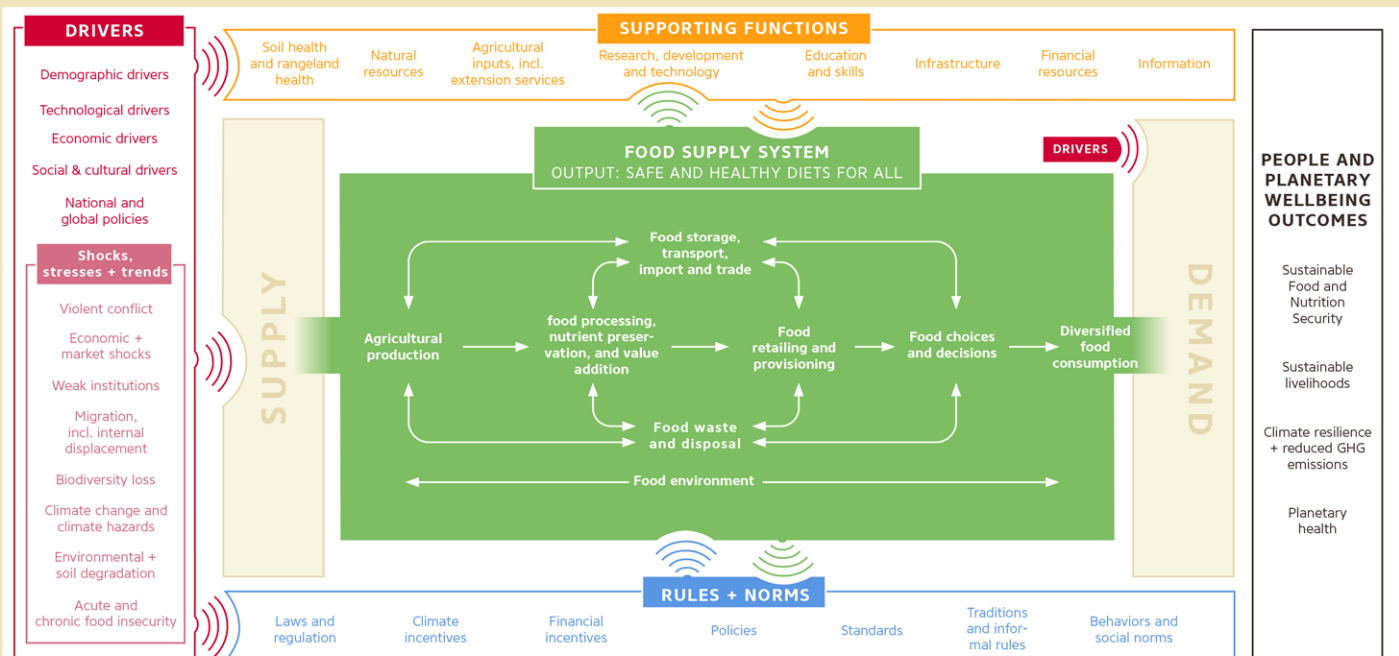
At the same time, the assessment identifies opportunities to strengthen system performance:

- ✓ Leveraging existing value chains (e.g., fisheries, groundnuts, poultry)
- ✓ Strengthening aggregation and market linkages
- ✓ Expanding local processing and value addition
- ✓ Improving alignment between sectoral interventions at district level

Strengthening food security requires more than increased output. It requires improving how the food system functions.

Welthungerhilfe and Concern Worldwide invite partners to engage in district-level collaboration grounded in evidence and focused on functional system performance.

Food systems schema



FOOD SUPPLY SYSTEM

The core system within a food system is the **food supply system** which ensures the flow of food commodities from farm to fork. The **food environment** refers to the physical, economic, political, and socio-cultural surroundings that influence people's food choices and nutritional status through the availability, affordability, convenience, promotion, and sustainability of foods.

DRIVERS

Drivers, shocks, stresses and trends can affect the core system, supporting functions, and/or related rules and norms at any time and at any intensity.

SUPPORTING FUNCTIONS

Supporting functions refer to the services, infrastructure, information, and resources that enable the food supply chain and/or core market to develop, transition and function effectively and sustainably.

RULES + NORMS

Food supply chains and supporting functions do not happen in isolation. They are always subject to an institutional context or business environment.

Rules and norms refer to the formal and informal institutions that shape how food is produced, distributed, accessed, and

consumed. **Rules** include policies, laws, regulations, and standards set by governments or institutions, while **norms** are socially shared beliefs, cultural practices, and unwritten expectations influencing behavior. Together, they determine who has power and access within the food system, affecting equity, sustainability, and resilience.

WHO DRIVES CHANGE IN DISTRICT FOOD SYSTEMS?

Food system performance depends on how different actors interact across production, markets, and consumption. Food system transformation depends not only on crops and markets, but on the people participating across the system.

The assessment identifies four groups whose participation is critical for systemic change:

Target Group	Role in System	Opportunity
Smallholder farmers	Core producers	Productivity and commercialization
Nutritionally vulnerable populations	Food system consumers	Nutrition-sensitive interventions
Women	Key actors in livestock, processing, trade	Income and empowerment
Youth	Potential entrepreneurs	Agribusiness services and logistics
Informal market actors (traders, aggregators, processors, transporters)	Market intermediaries coordinating aggregation, pricing, and distribution	Improved market efficiency, value addition, and system

Strengthening collaboration across these actors is critical for improving system performance and enabling coordinated change.

PRIORITY VALUE CHAINS AS ENTRY POINTS FOR SYSTEMIC CHANGE

Several value chains offer practical entry points for improving food system performance. These value chains are relevant not only for production, but for strengthening linkages between production, value addition, and markets.

Value Chain	Production & Inputs	Value Addition	Market Opportunities	Inclusion Opportunities
Poultry	Improved breeds and veterinary services	Local feed production	Expanded local poultry markets	Strong participation of women and youth
Groundnuts	Improved seed varieties and crop management	Oil and paste processing	Regional trade and commercial markets	Smallholder commercialization opportunities
Fisheries	Improved handling and storage	Fish drying and processing	Strengthened fish trade networks	Livelihood sector for lake communities
Beekeeping / Honey	Expansion of beekeeping systems	Honey processing and packaging	Niche honey markets	Low-input enterprise suitable for smallholders
Mango	Improved orchard management	Drying, juice, and snack processing	Export and domestic fruit markets	Opportunities for women and youth enterprises

Focusing on these value chains allows targeted interventions at key leverage points where improvements can generate broader systemic changes.



ENABLING SERVICES AND SYSTEM SUPPORT

Value chain performance is shaped by supporting services that enable production, processing, and market participation. The assessment identifies gaps in these enabling functions as key barriers to system performance:

- ✓ Limited extension coverage and technical support, particularly for diversification and value addition.
- ✓ Restricted access to finance for smallholders and small enterprises.
- ✓ Information gaps in markets and pricing, limiting decision-making and bargaining power.

Agricultural Extension Services play a central role in:

- ✓ Improving production practices.
- ✓ Supporting livestock and fisheries management.
- ✓ Promoting processing and post-harvest handling techniques.

Financial Services enable:

- ✓ Investment in inputs and productive assets.
- ✓ Expansion of small-scale agribusiness development of processing and value addition activities.

Digital tools support:

- ✓ Access to price information
- ✓ Market linkages.
- ✓ Improved coordination between producers and buyers.

Strengthening these enabling services can improve coordination across the system and support more efficient and better-performing value chains.



FROM PRODUCTION SYSTEMS TO FOOD SYSTEMS

Agricultural development strategies often focus primarily on increasing yields. However, food system outcomes depend on interactions between multiple components.

DISTRICT FOOD SYSTEM COMPONENTS

- ✓ Agricultural production
- ✓ Market infrastructure
- ✓ Value chains and processing
- ✓ Services and finance
- ✓ Nutrition and consumption patterns

When these components function independently, improvements in one area may not translate into improved livelihoods or nutrition.

Strengthening **connections between system components** allows improvements to reinforce each other.



STRENGTHENING DISTRICT-LEVEL FOOD SYSTEMS

The assessment identifies several strategic priorities for strengthening district food systems.

KEY PRIORITIES

Diversify economic opportunities

- ✓ Expand participation across multiple value chains
- ✓ Reduce exposure to climate and market shocks
- ✓ Strengthen value addition
- ✓ Expand local processing capacity
- ✓ Increase the share of value retained in rural economies

Improve coordination

- ✓ Strengthen collaboration between producers, enterprises, and institutions
- ✓ Align investments across the system

Support inclusive participation

- ✓ Expand opportunities for women and youth
- ✓ Strengthen entrepreneurship across agricultural value chains

Improving food security requires strengthening how district food systems function as integrated economic systems.

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