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World Food Programme
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Market Functionality Index for Nutrition

Leveraging Markets for Nutritional Impact: Evidence from seven pilot countries

November 2025

Executive summary

Poor households often struggle to access healthy diets because nutritious and fortified foods are either unavailable in local markets or too expensive.

This challenge matters for WFP, as nutrition is central to the organization's mission. WFP is committed to ensuring people receive not only enough food, but also the right nutrients to survive and thrive. Markets are essential to achieving this goal, as WFP increasingly delivers assistance through cash, vouchers, and other market-based interventions.

Yet most market assessments fail to consider nutrition, often overlooking whether markets truly offer affordable and accessible healthy food options.

The Market Functionality Index for Nutrition (MFI-N) bridges this gap. It is a new assessment tool that measures markets' capacity to supply nutritious, diverse, safe, and fortified foods essential for healthy diets, while identifying critical bottlenecks. Implemented alongside WFP's corporate Market Functionality Index (MFI) – the organization's standard framework for assessing market functionality – the MFI-N generates nutrition-specific insights directly relevant to programmatic decision-making.

Between 2023 and 2025, WFP piloted the tool across nine rounds in seven countries (Chad, Niger, Somalia, Ethiopia, Rwanda, Tanzania, and the Philippines), reaching nearly 16,000 traders in over 500 markets. The pilots tested both operational feasibility and value proposition: does the tool work in the field, and does it inform better decisions?

Operationally, the MFI-N proved easy to implement alongside the standard MFI, requiring minimal additional effort for enumerator training, field activities, and data quality monitoring to achieve reliable and comparable results.

The results revealed consistent patterns. Markets often lacked diversity in nutritious and fortified foods, while ultra-processed products dominated shelf space and marketing efforts. Supply chains were generally resilient, but food quality and safety remained persistent weaknesses, potentially limiting the nutritional impact of cash-based assistance.

More importantly, WFP's Country Offices used these findings to make tangible programmatic decisions, confirming the tool's operational value. In Chad and Niger, findings confirmed that local markets could reliably supply nutritious foods, providing the evidence to expand cash and voucher modalities for nutrition-sensitive programming. In Ethiopia, findings supported the expansion of fresh-food vouchers for nutrition treatment activities. In Tanzania, the analysis guided local sourcing strategies for the national school-feeding programme, ensuring that nutritious commodities could be procured sustainably. In Rwanda, the assessment identified gaps in fresh-food availability in refugee settings, prompting targeted support to strengthen retailer capacity. In Somalia and the Philippines, findings informed

cash and social protection programmes, highlighting the extent to which markets could support access to healthy diets.

With the pilot phase now complete, the MFI-N is ready for broader rollout. By integrating seamlessly into WFP's existing market analysis framework, it provides practical, evidence-based guidance on whether, where, and how markets can support access to healthy diets, strengthening WFP's capacity to design nutrition-sensitive, market-based interventions.

Dried fish on sale in a local market, Democratic Republic of Congo. *Photo: © WFP/ Benjamin Anguandia*

Voices from the field:

"The MFI-N directly guided our choice of assistance modalities and enabled us to pilot vouchers and nutrition-sensitive cash transfers, enriching our decision-making." **— WFP Niger**

"As we scale up fresh food voucher programmes, the MFI-N provides a practical way to assess market readiness without needing market experts - though results must always be contextualized." **— WFP Ethiopia**

"In refugee settings, the MFI-N gave us evidence on whether markets could supply nutritious foods, while also highlighting risks and guiding mitigation and market development efforts." **— WFP Rwanda**

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Vegetables on sale in a local market. *Photo: © WFP*

1. Why a market assessment for nutrition?

Nutrition is central to WFP's mission. The organization is committed to ensuring that people receive not only enough food, but also the right nutrients to survive and thrive.[1] Markets are essential to achieving this goal.

Over the past decade, WFP has increasingly used market-based programmes, such as cash and voucher assistance, to deliver food-security and nutrition outcomes. These programmes call for operations that are "*responsive to essential needs and better geared towards healthy diets*".[2] Cash and vouchers are now common modalities for preventing acute malnutrition, reflecting global guidance that prioritises improving home diets over reliance on specialized nutritional products.[3] WFP has also broadened its approach to strengthening food systems, placing greater emphasis on food environments, retail networks, and the role of markets in shaping access to nutritious foods.[4]

Yet WFP's market analysis tools have not fully caught up with this evolution. Existing assessments focus on market functionality under an essential needs framework but do not capture how markets influence access to nutritious and fortified foods.

In 2019, WFP introduced a novel approach to assess markets, the Market Functionality Index (MFI).[5] The MFI evaluates the dynamics between traders and consumers, as well as the transparency and predictability of supplies and prices. It assigns each market a score from 0 to 10, enabling comparison across locations and over time. The tool helps WFP understand one of the key enablers of household food security: the extent to which markets can supply food that is accessible and affordable in a sustained manner. It also supports analysis of the feasibility and risks of market-based assistance and helps identify opportunities to strengthen local market systems.

While the MFI captures the ability of markets to support consumers in meeting their essential needs, it does not assess whether markets deliver the diverse, safe, and nutritious foods required for healthy diets. This gap matters: an estimated 2.6 billion people worldwide - including some 72 percent of the population in low-income countries - cannot afford a

[1] WFP, 2021. Strategic Plan 2022-2025: Turning the tide against hunger. Rome: World Food Programme.
[2] WFP, 2023. WFP Cash Policy: Harnessing the Power of Money to Help People Survive and Thrive. Rome: World Food Programme.
[3] WHO, 2013. Guideline: Updates on the management of severe acute malnutrition in infants and children. Geneva: World Health Organization.
[4] WFP, 2023. Building resilience and fixing food systems to achieve zero hunger. Rome: World Food Programme.
[5] WFP, 2020. Market Functionality Index: Technical guidance. Rome: World Food Programme.

healthy diet.[6] In many cases, markets that perform well for staple foods fail to provide the variety and nutritional quality needed to support healthy diets.

The Market Functionality Index for Nutrition (MFI-N) closes this gap in the existing assessment framework. Developed by WFP's Nutrition, Food Security and Analysis, and Supply Chain teams, the MFI-N adds a nutrition focus to market assessments. It has three core objectives:

- Evaluate the capacity of markets to provide safe and nutritious foods for healthy diets;
- Monitor changes in market capacity over time and across contexts;
- Assess the impact of market capacity on dietary and nutritional outcomes.

2. Value proposition

Building on this rationale, the MFI-N provides WFP with a practical solution to integrate nutrition into market analysis. By combining market dynamics with nutritional considerations, it guides targeted interventions and maximizes programmatic impact. The MFI-N offers five key advantages:

- **Deeper insight into nutrition-relevant market dynamics:** By integrating nutrition into market assessments, the MFI-N identifies how markets influence dietary diversity and nutrition outcomes, enabling more informed and effective interventions.
- **Seamless integration with the existing MFI framework:** It builds on the established MFI by adding nutrition dimensions, creating a more comprehensive tool that aligns market functionality analysis with nutrition objectives.
- **Cross-context comparability and guidance:** The MFI-N allows comparison of results across settings, highlights good practices, and supports context-specific programme design.
- **Support for programme design and monitoring:** It links market's ability to provide diverse food groups with key dietary indicators (e.g., Food Consumption Score - Nutrition[7], Minimum Dietary Diversity for Women[8], Minimum Acceptable Diet[9]), helping assess how market-based interventions may influence nutritional outcomes.
- **Guidance for response options and risk mitigation**: Findings inform suitable assistance modalities and complementary market-support actions to ensure access to healthy diets and monitor programme impact.

[6] FAO, IFAD, UNICEF, WFP and WHO. 2025. The State of Food Security and Nutrition in the World 2025 – Addressing high food price inflation for food security and nutrition. Rome.
[7] WFP, 2024. Food Consumption Score & Food Consumption Score Nutritional Analysis (FCS-N), Guidance Note. Rome: World Food Programme.
[8] WFP, 2022. Minimum Dietary Diversity for Women (MDD-W), Guidance. Rome: World Food Programme.
[9] WFP, 2022. Minimum Acceptable Diet (MAD). Guidance. Rome: World Food Programme.

In short, the MFI-N enables WFP to design more nutrition-sensitive, market-based interventions by leveraging market evidence to strengthen access to healthy, diverse, and fortified foods across operational contexts.

3. MFI-N at glance

The MFI-N is designed to be integrated into WFP's existing market functionality assessments. When a Country Office conducts an MFI-N exercise, it automatically collects the information required for the standard MFI, generating both market functionality and nutrition-specific insights in a single process. Together, they offer a comprehensive, nutrition-sensitive view of market functionality. Country Offices retain full flexibility in deciding whether to use the MFI-N, depending on whether it suits their specific programme objectives and operational needs

While the standard MFI assesses markets against nine dimensions, including assortment of essential goods, availability, prices, resilience of supply chains, competition, market infrastructure, services, food quality, and access and protection, the MFI-N introduces two additional dimensions:

- **Assortment of fortified foods**, measuring the availability of products that address micronutrient gaps; and
- **Marketing and promotion practices**, examining whether traders promote nutritious foods or ultra-processed products.

These additions shift the focus from whether markets function to whether they deliver nutrition. To keep the tool streamlined, dimensions such as competition, infrastructure, services, and access and protection are excluded from the MFI-N but remain fully covered by the standard MFI.

The MFI-N also expands the non-cereal food categories of the MFI to include a broader range of nutritious and nutrient-dense foods, which are assigned greater importance in the overall market functionality score. This ensures that foods contributing most to a healthy diet have a stronger influence on results.

In practice, the additional workload is modest. Conducting the MFI-N alongside the MFI requires only limited extra time and expertise, mainly one additional day of enumerator training and a manageable extension of fieldwork. In return, it yields far richer, nutrition-specific insights that enhance WFP's understanding of how markets enable access to diverse, fortified, and safe foods.

4. Pilot phase: from design to implementation

In late 2023, a joint working group from Global Headquarters including VAM, Supply Chain and Nutrition divisions set out to develop and test the MFI-N. Country selection for piloting reflected both programme demand and the need to test the tool across diverse contexts. In some cases, pilots were initiated by the working group; in others, they responded to direct requests from WFP's Country Offices.

The first pilot took place in December 2023. Over the following 18 months, nine rounds were implemented across seven countries: Chad, Niger, Somalia, Ethiopia, Rwanda, Tanzania and the Philippines – with Chad and Niger each conducting two rounds to validate early findings and inform programme expansion.

Each pilot began with consultations on programme objectives and intended use cases, followed by enumerator training. Training was delivered in person (Chad, Niger, Ethiopia, Philippines) or virtually (Somalia, Rwanda, Tanzania) and typically spanned 3–4 days, combining classroom sessions, digital questionnaire programming, and practicing the tool interviewing traders in the market. Data were collected with a standardized questionnaire on mobile devices, transmitted to the working group for processing and analysis, and the findings fed into concise summary reports.

The tool evolved continuously throughout the pilot phase. Early rounds used an initial version of the questionnaire, and refinements after each mission improved clarity, structure, and automation. Following the Ethiopia round in Q4 2024, a major update introduced real-time data-quality monitoring and streamlined analysis procedures. The final, refined version was applied in Tanzania, establishing the tool for global rollout (Table 1).

Table 1: Pilot phase timeline and scale by country

Country	Period	Version	# Markets	# Traders	Scale
Chad (round 1)	Q4 2023	Alpha	31	877	Sub-national (2 regions out of 23)
Niger (round 1)	Q2 2024	Alpha	74	2,440	Sub-national (6 regions out of 7)
Somalia	Q2 2024	Alpha	97	1,066	National (17 regions)
Philippines	Q3 2024	Alpha	23	1,148	Sub-national (9 regions out of 18)
Ethiopia	Q4 2024	Beta	11	130	Sub-national (2 regions out of 12)
Niger (round 2)	Q2 2025	Beta	41	1,243	Sub-national (6 regions out of 7)
Rwanda	Q2 2025	Beta	31	861	Sub-national (3 regions out of 5)
Chad (round 2)	Q2 2025	Beta	212	7,682	National (20 regions)
Tanzania	Q2 2025	Final	12	519	Sub-national (2 regions out of 31)
Total			**532**	**15,966**	**60 regions** (*)

(*) Unique number of regions covered: one region in Chad and six regions in Niger have been assessed twice

The pilot phase achieved remarkable breadth, engaging nearly 16,000 traders across 532 markets in 60 regions. The largest exercise covered 7,682 traders in 212 markets (Chad, round 2), while the smallest included 130 traders in 11 markets (Ethiopia). Coverage ranged

from national to sub-national levels, depending on programme priorities and decision-making needs.

4.1. Programmatic decisions using MFI-N

We aimed to test the MFI-N across diverse geographical contexts, each presenting distinct programmatic needs and operational questions.

In **Chad**, understanding the availability and market dynamics of key food groups, specifically those expected to influence dietary diversity and nutritional outcomes, was critical for identifying implementation areas and defining activities to support retailers and markets. The MFI-N provided the evidence needed to determine whether local markets could supply the diverse and nutritious foods promoted through assistance, helping to shape a new cash top-up programme for the prevention of acute malnutrition. Insights from the first round guided programme design, while a second round with a broader coverage informed the scale-up of cash and voucher-based interventions nationwide.

In **Niger**, the focus was on diversifying assistance modalities to better address nutrition needs and leverage local market capacities. The MFI-N assessed whether markets could reliably supply the diverse and nutritious foods required for cash and voucher programmes. Two pilot rounds were conducted, the first to test feasibility, the second to validate findings across a wider scope. The results directly informed operational choices, from voucher pilots in Tillabéri to a cash-for-nutrition response in Tahoua, reinforcing the evidence base for more nutrition-sensitive, market-based programming.

In **Ethiopia**, the tool supported the design and expansion of fresh food voucher programmes linked to the management of acute malnutrition in children and the support of pregnant and breastfeeding women. Because vouchers were designed to provide items from specific subcategories of nutrient-rich foods, evidence on market capacity was essential. The MFI-N offered a scalable and efficient way to assess market readiness without requiring specialized market experts in each location, ensuring that programme expansion remained both feasible and nutrition-sensitive.

In **Rwanda**, the MFI-N assessed markets serving refugee populations, providing evidence on their capacity to supply nutritious foods and to identify critical gaps. Results highlighted risks associated with cash-based interventions and informed targeted market-development and risk-mitigation measures, with particular attention to the lowest-performing dimensions, such as food marketing and fortified food.

In **Tanzania**, findings informed the design and scale-up of the national school feeding programme. The assessment offered a nutrition-sensitive view of market supply chains,

enabling the Government and WFP partners to identify sustainable sourcing options and strengthen the programme's long-term viability.

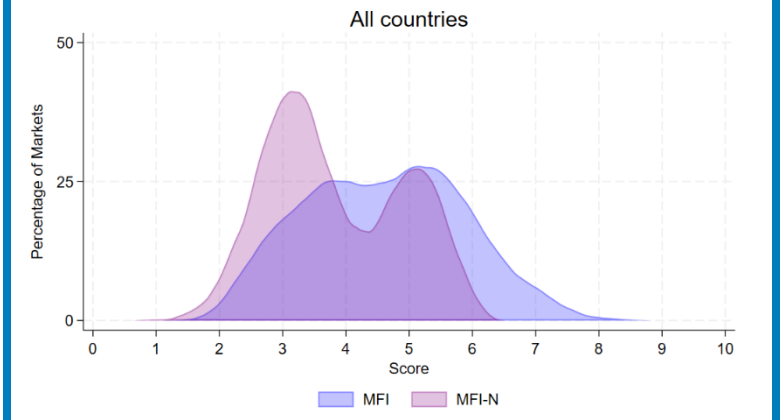
In **Somalia** and the **Philippines**, the tool was used to assess market readiness for cash and voucher assistance, within humanitarian and government-led social protection contexts, respectively. The analyses looked beyond basic availability to determine whether markets truly supported diverse, safe, and nutritious diets, demonstrating the tool's adaptability across very different operational settings.

5. Analytical insights: comparing MFI-N and MFI

A natural question is whether the MFI-N and the standard MFI tell the same story, or whether they capture different aspects of how markets function.

Figure 1 gives a clear answer. The two tools overlap, but they do not measure the same thing, and the gap is operationally important. Across all pilots, MFI-N scores averaged about 3.8 on a 0–10 scale, ranging between 1.2 and 5.9.

Figure 1: MFI and MFI-N scores



By contrast, the standard MFI averaged around 4.6, with a wider spread from about 1.8 to 8.1. Put simply, when the focus shifts from food security to nutritional adequacy, market performance tends to decline.

This decline becomes visible in the score distributions. The MFI-N curve peaks around 3, showing a bimodal pattern, mainly reflecting variation across countries — with some markets performing poorly and those performing moderately well on nutrition-related dimensions. Interestingly, this segmentation appears clearly in the MFI-N but not in the MFI, suggesting that nutrition-sensitive functionality varies more sharply across contexts. In contrast, the MFI curve peaks higher, around 5, and follows a more regular, bell-shaped pattern, indicating steadier performance on overall market functionality.

The most meaningful insight lies not in the average scores, but in the patterns observed across countries and rounds. Across all pilots, results generally show that MFI-N scores tend to be lower than those of the standard MFI, though in some contexts the two are closely

aligned (Table 2). In several cases, the difference between the two indices also reflects the progressive refinement of the tool itself.

In Chad, for instance, the average MFI-N rose from 2.8 in Round 1 to 4.5 in Round 2, while MFI scores remained almost unchanged (4.3 and 4.4, respectively). This improvement likely reflects a better-tailored tool and strengthened capacity to administer it. A similar, though less pronounced, trend occurred in Niger, where the MFI-N increased from 2.8 to 3.4 as the tool was marginally enhanced after the first pilot in Chad.

In later pilots, such as Ethiopia, Rwanda, Chad and Tanzania, MFI and MFI-N scores converge, suggesting that in well-integrated markets, market performance is relatively similar across both food security and nutrition dimensions. With the notable exception of Chad in Round 2, which covered 212 markets, these exercises involved smaller samples (11 markets in Ethiopia, 12 in Tanzania, and 31 in Rwanda). The smaller sample sizes may partially explain the limited variation observed in these contexts.

Table 2: MFI and MFI-N scores by country

Country	Period	MFI-N			MFI		
		Mean	Min	Max	Mean	Min	Max
Chad (round 1)	Q4 2023	2.8	2.1	3.5	4.3	2.7	6.1
Niger (round 1)	Q2 2024	2.8	1.9	3.6	3.8	1.8	6.7
Somalia	Q2 2024	3.3	1.2	4.0	5.5	2.8	8.1
Philippines	Q3 2024	3.2	2.7	3.5	5.5	3.2	7.1
Ethiopia	Q4 2024	4.6	3.9	5.4	4.5	3.5	5.6
Niger (round 2)	Q2 2025	3.4	1.9	5.8	4.7	2.6	6.7
Rwanda	Q2 2025	4.6	3.4	5.2	4.2	3.2	5.7
Chad (round 2)	Q2 2025	4.5	1.7	5.9	4.4	2.2	7.1
Tanzania	Q2 2025	5.6	5.4	5.9	6.2	5.0	7.2

These contrasts become clearer when examining results by dimension. The MFI-N's adds granularity to assortment, availability, prices, and food quality dimensions, uncovering specific bottlenecks that remain invisible in the aggregate scores. Markets may stock food, but not the range or quality required for healthy diets; they may show stable prices overall, yet high volatility for perishable, nutrient-dense products. Let's dive into the specific dimensions.

5.1. Assortment

Why does it matter?

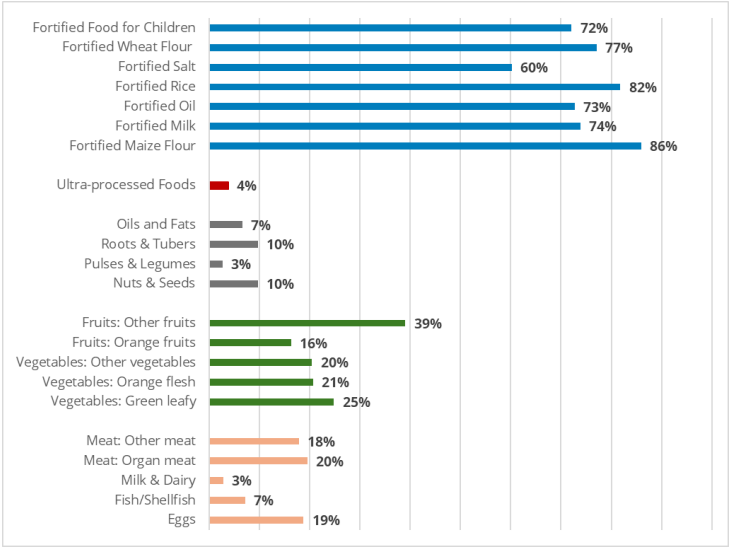
The assortment dimension in the MFI-N goes beyond the standard MFI by assessing the presence of nutritionally important food sub-groups, such as green leafy vegetables, vitamin-A-rich fruits and vegetable, meats and offal, nuts, and seeds. These food groups align with

indicators used by WFP and partners to monitor dietary outcomes, including the Food Consumption Score – Nutrition (FCS-N), Household Dietary Diversity Score (HDDS), Minimum Dietary Diversity for Women (MDD-W), and Minimum Acceptable Diet (MAD) for young children. This makes the MFI-N a practical tool that bridges market analysis and nutrition monitoring, helping determine whether local markets can sustain improvements in dietary diversity.

What does the data show?

Figure 2 shows the percentage of markets where no trader sells nutritious or fortified foods. The longer the bar, the less likely it is that the specified food is on sale in the market. Across all the pilots, pulses and legumes, nuts and seeds, oil and fats, and milk and dairy products were almost universally offered for sale, with fewer that than 10 percent of markets lacking traders selling them.

Figure 2: Share of markets with no trader selling the specified foods



In contrast, about one in five markets did not sell fresh fruits and vegetables, meat, and eggs. Iodized salt was absent from 60 percent of markets, while other fortified foods - key tools for addressing micronutrient deficiencies - were rarely found, with absence rates above 70 percent. This means that in fewer than one market out of three, these products were on sale. At the same time, ultra-processed foods dominated shelf space in most markets.

Such findings underscore that markets may perform well in terms of food assortment overall but often fail to provide the diversity required for healthy diets. The disaggregated data also reveal two areas where information has long been lacking:

- **Fortified foods:** Despite WFP's longstanding engagement in food fortification, granular data on fortified products in local markets remain limited. The MFI-N fills this gap by providing actionable insights that can inform fortification efforts by governments and partners.
- **Ultra-processed foods:** Their widespread presence and contribution to the growing burden of non-communicable diseases (such as heart disease, diabetes, and cancer), is of increasing concern. Evidence from the MFI-N pilots shows that these products are

ubiquitous, even in markets serving the most vulnerable. These data have already informed external analysis, including the forthcoming UNICEF's State of the World's Children 2025 report, demonstrating the value and rarity of such market-level evidence.

Takeaway for programmatic decisions

The limited assortment of fresh, fortified, and nutrient-dense foods constrains markets' ability to support healthy diets across many contexts. This challenge is especially pronounced in fragile or emergency settings, where disrupted supply chains and weak infrastructure reduce access to perishable foods. In such contexts, the absence of fortified foods can deepen nutritional vulnerabilities, underscoring the need for market-development and retailer-engagement activities to complement cash or voucher intervention aimed at improving nutrition outcomes.

5.2. Availability

Why does it matter?

The availability dimension in the MFI-N assesses the continuous presence of nutritious foods in markets. This is vital for understanding whether markets can sustain the supply of foods needed for healthy diets over time. Availability issues, such as stock-outs or difficulty restocking perishable items like eggs, fresh produce, or dairy, are especially critical for cash and voucher programmes, where ensuring the continuous availability of nutritious foods is key to improving nutrition outcomes.

What does the data show?

In most cases, the MFI shows little to no availability issues, mainly because cereals, which are usually well stocked, carry a high weight in the overall score. However, once cereals are excluded and the remaining food groups are disaggregated into more detailed categories in the MFI-N, the picture becomes more nuanced, with the distribution plot shifting to the left (Figure 3).This indicates greater variability, particularly for perishable nutritious food groups like eggs, fresh produce, and meat, as illustrated by Figure 4, where about 20 percent of the markets reported availability issues. By contrast, pulses and legumes, nuts and seeds, oils and fats, and milk and dairy products were almost always available in the assessed markets.

Figure 3: MFI and MFI-N assortment scores

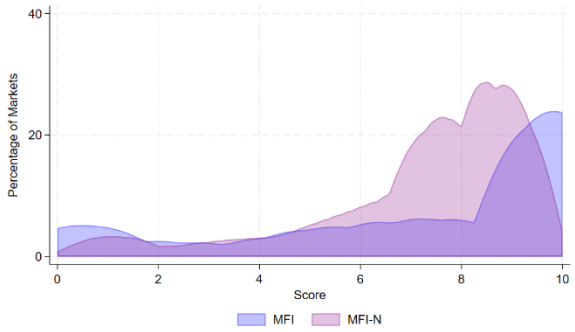
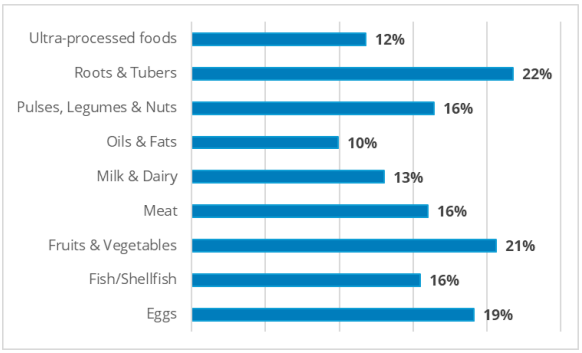


Figure 4: Percentage of markets with availability issues



Takeaway for programmatic decisions

While most markets can sustain the supply of staple foods, availability gaps for nutritious and perishable foods remain a critical concern. These gaps are particularly problematic in fragile settings, where seasonality and external shocks can disrupt access to fresh foods. Understanding these patterns is essential to target interventions that stabilize the supply of nutritious foods and ensure that nutrition-sensitive programs achieve their objectives.

5.3. Prices

Why does it matter?

Stable prices are essential to maintain consistent access to nutritious foods. Volatile prices undermine affordability, disrupt consumption patterns, and can quickly erode the nutritional impact of assistance. To capture these dynamics, the MFI-N asks traders whether prices have significantly increased in recent weeks and whether they are generally able to anticipate price trends in the near future, thereby assessing both the stability and predictability of food prices.

What does the data show?

Figure 5 shows how markets perform across different levels of price stability, with markets closer to the left indicating more issues to flag. A taller and narrower curve means that most markets cluster around similar levels, whereas a flatter curve reflects greater variation across markets. The MFI-N curve is more concentrated around medium-to-high stability, suggesting that most markets selling nutritious foods experience moderate and relatively stable prices. The MFI curve, by contrast, is flatter and more dispersed, revealing wider differences in price stability when essential goods (including non-foods products) are considered together.

Within nutritious foods, oils and fats, roots and tubers, and fruits and vegetables face the most severe price volatility, affecting about 23 percent of markets (Figure 6). Eggs and pulses,

legumes and nuts follow closely, with price issues reported in 18 percent of markets, while meat and fish or shellfish show moderate instability at around 15 percent. Ultra-processed foods, by contrast, face price problems in only about 13 percent of markets, making them the most price-stable category assessed.

Figure 5: MFI and MFI-N price scores

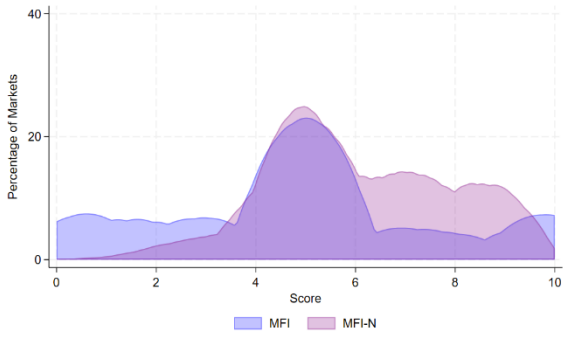
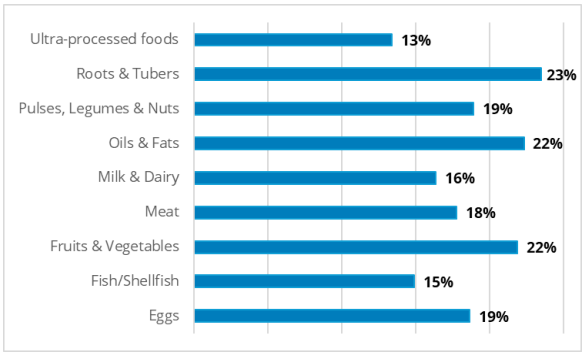


Figure 6: Percentage of markets with price issues



Takeaway for programmatic decisions

While overall price stability for nutritious foods is moderate, several categories, particularly perishable and fresh products, remain highly vulnerable to shocks and seasonal fluctuations. The MFI-N exposes these food-group-specific dynamics that are hidden in aggregated MFI results.

These findings can inform market development interventions (e.g., strengthening cold-chain infrastructure, improving transport connectivity, or facilitating trader storage) and shock-responsive social protection programmes that help households absorb price spikes for nutritious foods, ensuring that cash and voucher assistance continues to support healthy diets.

5.4. Resilience of supply chains

Why does it matter?

Resilient supply chains are essential to ensure that nutritious foods remain accessible in the face of shocks. The MFI-N assesses both the responsiveness and vulnerability of market supply chains, whether traders can quickly replenish stocks when demand rises, and whether their sourcing is diversified enough to withstand disruptions. Markets with multiple suppliers and geographically diverse sourcing are better positioned to maintain a steady flow of goods, whereas reliance on a single supplier or local sources increases the risk of shortages.

What does the data show?

Figure 7 shows that supply chain resilience is a relative strength for nutritious foods. The MFI-N distribution is concentrated toward the higher end of the scale, with 64 percent of markets scoring above 7 on a 0–10 scale. The MFI distribution follows a similar pattern but is slightly more spread out, indicating that supply chains for nutritious foods are generally as resilient—or marginally more so—than for food in general.

Across food groups, meat, eggs, roots and tubers, and fruits and vegetables face the most frequent resilience challenges, affecting about 16–18 percent of markets, likely linked to their perishable nature and seasonal availability. Fish and shellfish, milk and dairy, oils and fats, and pulses, legumes and nuts show stronger resilience, with supply chain issues in 10–13 percent of markets (Figure 8). Ultra-processed foods exhibit similarly stable supply chains, with problems in only about 13 percent of markets.

Figure 7: MFI and MFI-N resilience of supply chains scores

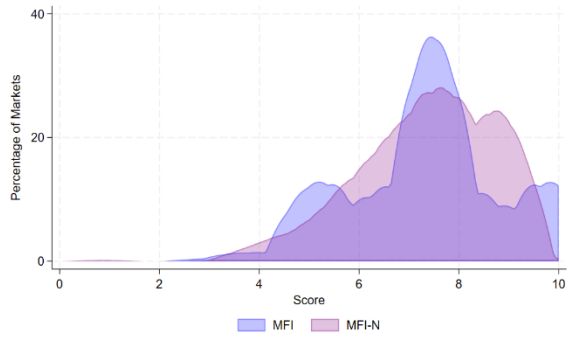
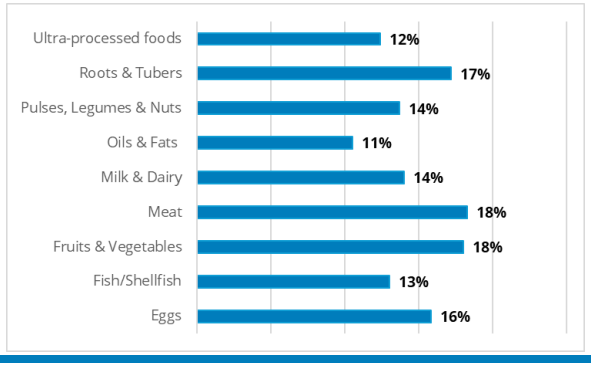


Figure 8: Percentage of markets with resilience of supply chains issues



Takeaway for programmatic decisions

Supply chain resilience for nutritious foods is generally strong across pilot contexts, with most markets reporting multiple suppliers and geographically diverse sourcing. However, perishable and seasonal commodities, particularly roots and tubers, meat, and fresh produce, remain more exposed to disruptions. These food groups may require targeted market-strengthening measures, such as improving storage, transportation, and cold-chain systems, or supporting trader networks in remote areas.

Monitoring supplier concentration through the MFI-N can also help identify markets at higher risk of supply interruptions, enabling proactive interventions that sustain the flow of nutritious foods in times of stress.

5.5. Food quality

Why does it matter?

Although labelled as food quality, this dimension primarily captures food safety conditions in markets. It assesses whether foods are handled, stored, and displayed in ways that prevent contamination and spoilage, key aspects of food safety rather than of nutritional or sensory quality. Unlike other dimensions, it relies on direct observation by enumerators rather than trader interviews, meaning that the indicator and resulting scores are identical for both the MFI and MFI-N.

Food safety and quality concerns have important implications as nutritionally vulnerable individuals, such as young children targeted by nutrition programmes, are also typically more vulnerable to food born illnesses.

What does the data show?

Figure 9 reveals a concerning picture. The distribution of scores is relatively flat and spread across the full 0–10 range, indicating high variability in food safety practices across markets. Overall, 45 percent of markets score high on food quality and safety (score above 7), but 22 percent fall into the low category (score below 4), showing persistent weaknesses in basic hygiene standards.

Food spoilage and expired products are the most common problems driving these results, each affecting roughly one in five markets (Figure 10). Exposure to contaminants follows, impacting about 10 percent of markets. Damaged or unlabeled packaging is reported in about 6 percent, while refrigeration challenges, either complete absence or interruptions in the cold chain, affect around 4 percent. Lack of food separation was not observed as an issue.

Figure 9: MFI-N food quality scores

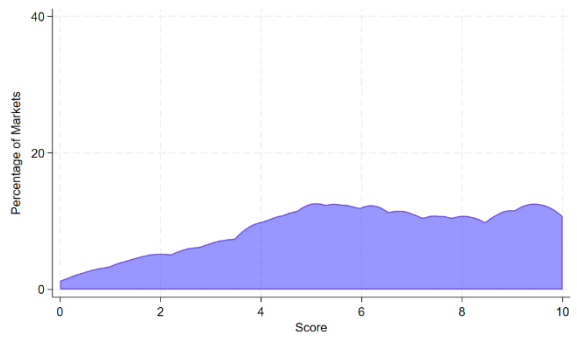
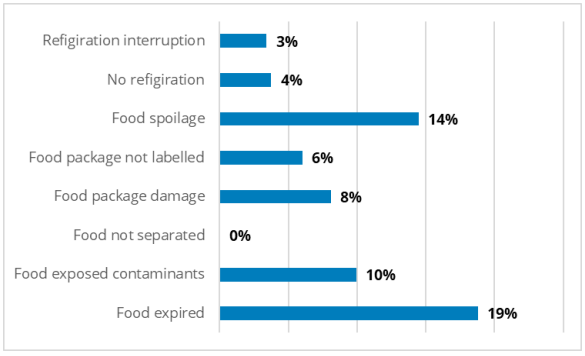


Figure 10: Percentage of markets with food quality issues



Takeaway for programmatic decisions

Food quality and safety challenges are widespread but must be interpreted within the realities of informal market systems. In many low-income settings, fresh products such as meat and dairy reach markets soon after slaughtering or milking, which limits the need for long-term refrigeration but still requires strict hygiene and handling practices.

Findings from the MFI-N can inform context-appropriate interventions, such as hygiene training for traders, improved storage and basic infrastructure, or targeted cold-chain investments, rather than applying standards suited to formal retail systems in high-income contexts. For cash and voucher programmes, these insights underscore the importance of retailer engagement and food-safety support to ensure that access to nutritious foods also translates into safe consumption and positive nutrition outcomes.

5.6. Food marketing

Why does it matter?

Marketing practices influence what consumers see, value, and ultimately buy. In local markets, they shape the visibility of nutritious versus less nutritious foods, often amplifying the presence of ultra-processed foods and thereby steering dietary patterns. The MFI-N assesses whether traders actively promote different food groups, through product display, pricing offers, or other marketing strategies, to understand whether market incentives support or undermine healthy diets.

What does the data show?

Ultra-processed foods receive the most marketing attention, with promotional activities observed in approximately 16 percent of shops.

Figure 11: Percentage of traders with marketing practices

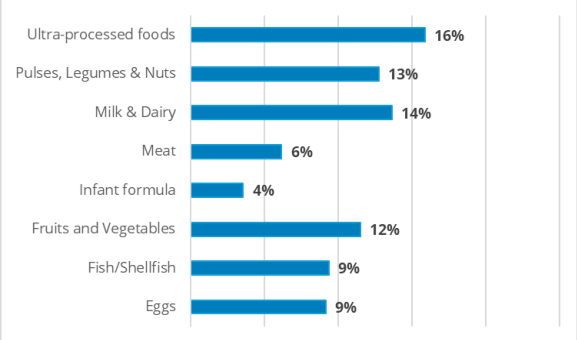
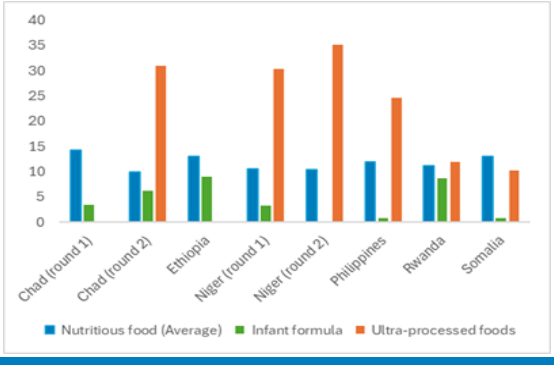


Figure 12: Percentage of traders doing marketing by country/round



In contrast, nutrient-dense foods receive less promotion: milk and dairy (13%), pulses, legumes and nuts (13%), fruits and vegetables (12%), eggs and fish or shellfish (10%), and meat (8%). Infant formula shows only minimal marketing presence at around 4 percent (Figure 11).

This imbalance suggests that commercial incentives within markets often reinforce less healthy food choices rather than supporting nutritious diets. Country-level differences are also notable: Chad, Niger, and the Philippines display higher levels of ultra-processed food marketing, while Randa, Somalia and Tanzania (not displayed on the chart) show lower levels. Ethiopia markets displayed virtually no marketing activity for ultra-processed food during the assessment period (Figure 12).

Takeaway for programmatic decisions

Marketing practices in assessed markets systematically favour ultra-processed foods over nutrient-dense options, potentially undermining the nutrition objectives of cash and voucher programmes. Market-level data can inform targeted interventions (such as retailer incentives, promotional campaigns for nutritious foods, or regulation of ultra-processed food marketing) to shift commercial practices toward healthier consumption patterns.

In contexts where marketing imbalances are particularly strong, complementary behaviour change communication may also be needed to help beneficiaries navigate market environments that actively promote less healthy choices.

5.7. Lessons learned

The pilot phase of the MFI-N generated critical insights:

- **The tool is operationally feasible:** Data for both the MFI and MFI-N can be collected together within reasonable time and budget requirements, alleviating initial concerns about additional burden. Country Offices confirmed that the MFI-N provides relevant, actionable insights into market functionality from a nutritional perspective, directly supporting programmatic decision-making.
- **Training is decisive:** Enumerator training emerged as the single most important factor for ensuring data quality and comparability across contexts. Real-time data quality monitoring proved equally critical, particularly during the early stages of data collection, to detect and address issues before they affected results.
- **Interpretation guidance is essential:** While Country Offices valued the insights generated, they emphasized the need for clearer guidance on how to interpret results and translate findings into programmatic action. The pilot phase provided valuable learning on linking market performance to intervention design, retailer engagement strategies, and risk mitigation measures.

- **Technical refinements strengthened the tool:** Iterative adjustments to weighting schemes, questionnaire design, and food group categorization, culminating in the major update following the Ethiopia round, significantly improved both data quality and usability.

Tomatoes on sale in a local market, Cameroon. *Photo: © WFP/ Joseph Famboove*

6. Concluding remarks

The MFI-N has proven to be a practical and effective tool for filling a critical information gap, the lack of systematic market assessments that capture nutrition dimensions. Across seven pilot countries, it demonstrated that nutrition-sensitive market analysis can be conducted efficiently alongside the standard MFI, producing evidence that directly informs programme design and decision-making.

The tool revealed consistent patterns across contexts: nutritious and fortified foods remain less diversified, more volatile in price, and less promoted compared to ultra-processed foods. Additionally, food safety practices need greater attention. Fortunately, most markets exhibited strong supply-chain resilience, indicating that strengthening trader capacity can lead to significant nutritional improvements.

Building on these results, the MFI-N is ready for scale-up. Its integration within WFP's corporate market analysis framework will enable Country Offices to routinely assess how markets facilitate or hinder access to healthy diets. The next phase will focus on institutionalizing the tool, embedding training modules, automating data processing and

visualization, and developing clear guidance for interpreting results. This approach will ensure global consistency and usability.

By systematically linking market functionality with nutrition outcomes, the MFI-N enhances WFP's ability to design, target, and monitor market-based interventions that can improve access to safe and nutritious foods for everyone.

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