Micronutrient FORUM

Turning evidence into collective action

Millers For Nutrition Stocktaking

Assessment of Implementation Approaches: Enablers and Challenges

Engaging the Private Sector in Large-Scale Food Fortification

For the first time in the history of large-scale food fortification (LSFF) programming, stakeholders are seeing unprecedented momentum in private-sector engagement. With over 500 millers in eight countries, the Millers for Nutrition (M4N) coalition[1] has successfully motivated millers to not only comply with mandatory regulations but also expand access to fortified foods in non-mandatory markets and at the base of the pyramid through market-based approaches.

While governments are responsible for ensuring that their populations have access to a healthy diet, it is often the private sector that produces food. It is therefore fundamental that millers are engaged in public health programming. M4N started with the premise that miller engagement is key to sustained excellence in fortification. The program was designed to motivate millers by celebrating, encouraging, and enabling them in their work to improve nutrition for all.

> "Millers from non-participating countries want to join the M4N coalition".
>
> Dominic Schofield, Senior Director, Agri-Food Systems, TechnoServe

Innovative M4N Implementation Approaches

By understanding the private sector's competitive nature, M4N applied various implementation models to engage millers. This paper describes three approaches and the enablers and challenges encountered in Nigeria, Kenya, and India regarding product quality ranking, reaching the base of the pyramid through market-based approaches, and expanding the reach of fortified foods in a non-mandatory environment. These three approaches were selected because they represent distinct implementation challenges faced by LSFF programs: improving compliance in mandatory markets, expanding access to underserved consumers, and creating demand in voluntary markets.

Although these programs have been running for only three years, they show great promise for expanding the reach of fortified foods, not only in these countries but globally.

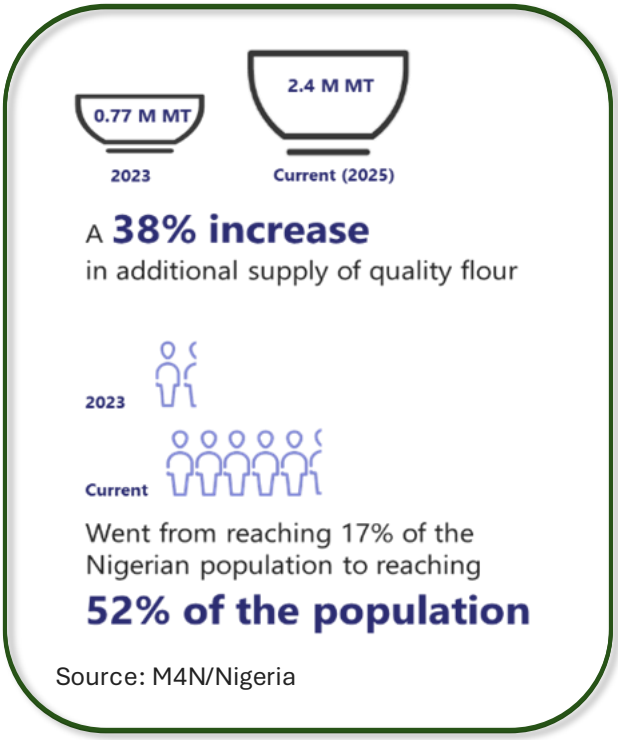
---

[1] M4N is a three-year project funded by the Gates Foundation and implemented by TechnoServe in Bangladesh, Ethiopia, India, Indonesia, Kenya, Nigeria, Pakistan, and Tanzania.

1. *Product quality ranking: Micronutrient Fortification Index & Kenya Millers Fortification Index*

Even with mandatory fortification regulations, compliance has varied across food vehicles and countries. A mandatory environment does not necessarily mean high compliance. M4N has demonstrated that access to compliance data can drive industry interest to improve the quality of their brands. Creating competition through transparency, companies push to outperform their rivals. The strongest performers are then celebrated through awards ceremonies and CEO fora, incentivizing companies to showcase their commitment to support population health by meeting quality standards and fortifying their products.

The Micronutrient Fortification Index (MFI) and Kenya Millers Fortification Index (KMFI) allow food processing companies to publicly report and track levels of staple food fortification, as well as other quality system metrics. Brand performance is available online for consumers and competitors to access, providing a transparent way to measure and incentivize industry-wide progress on fortification. Miller participation is high. While compliance levels have improved, there are, in some cases, setbacks – largely due to premix quality.



Source: M4N/Nigeria

2. *Reaching the base-of-the-pyramid (BoP) through market-based approaches*

Large-scale food fortification is an effective and cost-effective way to reach large population groups with nutrient-rich foods for a healthy diet. However, it largely relies on people with access to formal markets to buy and consume these fortified foods. Often the most nutritionally vulnerable segments of the population do not have such access and instead rely on informal markets, buying their staple foods from kiosks or other outlets. Reaching those at the BoP with fortified foods has been challenging and has mostly been met through social protection programs.

M4N-Smart Duka Preliminary Results, Phase 2

Transactional value multiplier of 3.6x suggesting that for every Kenya Shilling (KES) invested in the intervention, approximately KES 3.60 worth of products is transacted within the BoP market. This finding demonstrates the program's effectiveness in catalyzing market activity, strengthening distribution channels, and expanding access to essential products among underserved consumers.

Source: National Duka Owners Umbrella Organization

M4N has broken this barrier by successfully testing and seeing results from an aggregated M4N Business-to-Business (B2B) market linkage model. This program included mobilizing micro-retailers to participate in the pilot, building capacity of millers on BoP markets, targeted sensitization on food fortification and aggregation[2] through National Duka-owners Umbrella Organization (NDO) networks.

Experiences over the past year defined a business case which successfully demonstrates commercial viability, profitability for micro-retailers, and improved last-mile access to fortified foods for vulnerable populations. The program currently works with 30 Smart Duka groups (comprising 10-20 members each) in four regions.

Sylvia Nyambura, Smart Duka, Kenya
Photo credit: TNS. Kenva

[2] Smart Duka groups operate as structured collectives of micro-retailers who pool resources to enhance their business operations, negotiate better terms, and access new opportunities. They aggregate orders to achieve better pricing and a more reliable supply chain.

3. Launching fortified rice in a voluntary market

The journey to achieving quality fortified rice in India began over a decade ago. Efforts focused on reaching vulnerable populations through the Government of India Public Distribution System (PDS). Because of this, the general perception of the population was that fortified rice was for "poor people" and thus not needed for other segments of the population – a misconception. M4N, within two years managed convince rice millers that expanding their markets to reach other consumers was "Good for Business. Great for People".

A viable business case was developed that focused on product differentiation[3] and leveraging e-commerce for better positioning. Early adopters were incentivized via recognition through high-profile launch conferences, including media exposure. Successes and recognition have created a "fear of missing out" (FOMO) among other millers, leading to increased interest and traction across states.

In just 18 months, 15 brands of fortified rice were launched with a cumulative volume of 37,000 MT and a reach of 680,000 consumers.

"I was looking for a way to differentiate my product. Fortification gave me something meaningful that others were not offering."

Abhishek Agarwal, Director, ShyamaTara Rice Mills

Source: Millers for Nutrition. May 2026. *Case Study. ShyamaTara Rice Mills – Building an Open Market for Fortified Rice in India*.

[3] Five (or more) micronutrients were added to fortified rice in commercial market brands vs. the three required in the PDS. This was an important distinction as PDS foods are considered for poor people and fortified rice was not considered to be needed for others.

Although these implementation approaches differed in their objectives and operating contexts, common implementation factors emerged across all three. The following section synthesizes these cross-cutting enablers and challenges

Common Implementation Lessons

Enablers and challenges across approaches

This review identified four key implementation enablers across the three highlighted approaches: strong stakeholder relationships and engagement, strategic planning and use of evidence, capacity strengthening, and mechanisms to motivate and recognize millers. While these factors facilitated implementation, they also present ongoing implementation challenges, requiring sustained resources and continued investment to maintain their effectiveness.

1. Strong stakeholder relationships and engagement

A distinguishing feature of the M4N approach is its recognition of the critical role millers play in LSFF. TechnoServe (TNS) places the private sector at the center of implementation by engaging millers as partners, listening to their needs, and identifying the factors that enable and motivate compliance. Across the three implementation approaches, strong stakeholder relationships were a key enabler of implementation. Building trust among millers, program staff, and other fortification stakeholders facilitated collaboration, increased industry ownership, and supported uptake of program activities.

While stakeholder engagement was a critical enabler, it also represented an ongoing implementation challenge. Building and maintaining relationships require sustained investment of time, resources, and technical support. For example, the Smart Duka approach extended beyond connecting retailer groups with millers to include raising awareness of the importance of fortified foods among retailers, many of whom became advocates within their communities. Although this contributed to increased availability of fortified staple foods, sustaining existing partnerships and establishing new ones remained resource intensive.

Similarly, in India, a small implementation team was responsible for engaging stakeholders across a large geographic area, highlighting the challenges of maintaining meaningful engagement at scale.

2. Business cases and use of evidence

A key learning prior to M4N was that data are central to effective engagement with the private sector. Millers require clear information on the performance of their brands, comparative performance across producers, and actionable insights on how to improve fortification processes. In some cases, products were being fortified, but laboratory results indicated suboptimal compliance, highlighting the value of data in identifying underlying issues such as premix quality and production processes, guiding tailored technical assistance. Evidence also played an important role in onboarding millers and generating interest in participation. Data were used to develop business cases for expanding into the BoP using market-based approaches and for making fortified rice available in the open market.

While the use of data and evidence was a key enabler of implementation, it also requires substantial and ongoing investment. Developing and maintaining the evidence base depends on continuous data collection, analysis, and dissemination. The MFI/KMFI are resource-intensive and currently rely heavily on TNS support, raising questions about long-term sustainability.

Program assessments and reviews, while essential for guiding implementation and strengthening decision-making, also involve significant financial and technical costs. Sustaining this evidence-driven approach will therefore require consideration of resource requirements and institutionalization of data systems beyond program-funded support.

3. Capacity strengthening and technical support

A strong motivator for millers is the ability to access technical support for business planning, integration of fortification into manufacturing processes, development of quality assurance and quality control (QA/QC) systems, and broader business development support such as plant layout optimization. The ability of M4N to bring together Strategic Fortification Partners (SFPs)[4] was key to garnering trust among millers, despite the competitive nature of companies.

In India, targeted training and technical assistance were particularly important for rice millers seeking to expand into fortified rice products. At the request of millers, support was provided to strengthen compliance with food safety and regulatory standards, including requirements for +F[5] endorsement, as well as guidance on packaging and labelling to ensure regulatory compliance and clear communication of product benefits. Additional support included supply chain optimization, digital marketing, and consumer awareness activities.

While capacity strengthening and technical support were critical enablers of implementation, they also present ongoing implementation challenges. The effectiveness of this support depends on the sustained availability of technical expertise, continued engagement of SFPs, and adequate resources to maintain tailored, context-specific assistance. As the program scales, maintaining the intensity and quality of technical support required for diverse millers and markets may become increasingly resource demanding.

[4] SFPs: BASF, BioAnalyt, Bühler, dsm-firmenich, Mühlenchemie, SternVitamin; Regional SFPs: Hexagon Nutrition, Piramal, Sanku.

[5] +F is the official logo for fortified food, introduced by the Food Safety and Standards Authority of India (FSSAI).

4. Motivation and recognition

Millers can be motivated to adopt and sustain good quality fortification practices through a combination of tailored technical assistance, coalition building, and recognition of performance[6]. Motivation and recognition mechanisms were an important enabler across the M4N approaches. These mechanisms were designed to encourage millers' participation, reinforce compliance with fortification standards, and sustain engagement over time. Recognition functioned not only as a reward for performance but also as a mechanism to stimulate continued improvement and strengthen commitment to quality standards.

In practice, recognition mechanisms were closely linked to performance monitoring systems such as the MFI and the KMFI, which provided visibility of millers' performance and enabled comparison across brands. Public recognition, rankings, and awards contributed to increased engagement and incentivized improvements in fortification practices. In India, high-profile launches of fortified rice, combined with media coverage, also played a role in generating interest among additional millers.

While these mechanisms supported initial uptake and engagement, sustaining motivation over time requires ongoing reinforcement. The effectiveness of recognition depends on continued visibility, credible and trusted performance data, and alignment with millers' commercial incentives. Without sustained reinforcement, the motivational effect of recognition may diminish over time, particularly once initial awards or visibility gains plateau.

[6] Lessons learned under the TechnoServe *Strengthening African Processors of Fortified Foods (SAPFF)* program which was implemented in Nigeria, Kenya, and Tanzania from 2016 to 2022.

Conclusion

M4N demonstrates that successful food fortification implementation requires more than just regulatory compliance. Sustainable improvement depends on creating commercial value for millers through trusted partnerships, evidence, technical support, and recognition. Within just three years, these implementation approaches have shown promising results, demonstrating their potential to strengthen food fortification program in diverse contexts.

The approaches and lessons from M4N should be adapted in other countries where millers are eager to improve fortification practices and expand access to fortified foods.

By strengthening partnerships between governments, industry, and technical partners, it is possible to move closer to a future where everyone—regardless of where they live—has access to the fortified foods they need to lead healthy, productive lives.

August 2026