EXECUTIVE SUMMARY

CONTEXT

Micronutrient deficiencies—often referred to as hidden hunger—affect more than five billion people globally, contributing to poor health, impaired cognitive development, and reduced economic productivity.[1] Women and children in low- and middle-income countries (LMICs) are particularly at risk, with one in two pre-school-aged children and two in three women of reproductive age worldwide having at least one micronutrient deficiency.[2] Large-scale food fortification (LSFF)—the addition of vitamins and minerals (fortificants) to widely consumed staple foods and condiments—is a proven, cost-effective strategy to address these deficiencies, delivering high returns on investment, with every USD 1 generating up to USD 27 in economic gains.[3,4] Compared to other interventions, fortification offers a lower cost per disability-adjusted life year (DALY) saved and contributes directly to multiple Sustainable Development Goals (SDGs), including SDG 2 (Zero Hunger) and SDG 3 (Good Health and Well-being).[5,6]

Fortification has expanded significantly, particularly in LMICs, with 143 countries having fortification standards for at least one food vehicle.[7] However, many fortified foods still fail to meet national micronutrient standards, limiting their potential public health impact.[8] These gaps are largely driven by low compliance, resulting from persistent challenges faced by industry and regulatory actors. These include limited resources for monitoring fortification quality and practices, unclear guidance and standards, and limited technical capacity for effective fortification, especially among small- and medium-sized producers.[8-10]

Fortificant producers have a critical opportunity to strengthen the fortification value chain. Beyond supplying high-quality ingredients, it is essential that fortificants are tailored to the intended food vehicle and comply with national regulations and dietary guidelines. Global producers also have the opportunity to prioritize supplying regions with high rates of micronutrient deficiencies and ensure that their products are affordable and accessible. With significant financial and technical resources, these suppliers are also well positioned to support their customers through technical assistance, including training and the provision of equipment. However, their role as part of the business-to-business (B2B) sector, remains largely unexamined in nutrition accountability frameworks. For the private sector to meaningfully advance the nutrition agenda, consensus is needed on the expected and potential performance of fortificant producers, as well as greater transparency on their current practices.

PURPOSE AND SCOPE

To support efforts to improve fortification outcomes, ATNi (Access to Nutrition initiative), with support from the Gates Foundation, developed the **VitaMin Premix Supplier Assessment 2025.** This is the first independent assessment of fortificant producers on their policies and practices to support effective fortification and improve nutrition outcomes. The VitaMin Assessment evaluates **11 of the world's largest producers of micronutrients and premix blends.** Together, these companies supply the majority of fortificants used in LSFF globally, including vitamin A, iron, folic acid and zinc. All 11 producers have at least one facility approved by the Global Alliance for Improved Nutrition (GAIN) Premix Facility (GPF), which certifies fortificant suppliers against stringent quality criteria.

The VitaMin Assessment complements GPF's evaluations of fortificant quality by assessing producers' broader responsibilities in advancing fortification efforts and improving nutrition outcomes. The VitaMin assessment includes:

- **Corporate Profile assessment** of fortificant producers' global policies and practices, evaluated across 11 indicators categorized under four thematic areas: Commercial Nutrition Strategy, Engagement with Customers and Distributors,

Nutrition-Sensitive Activities, and Workforce Nutrition. Companies were assessed based on publicly available information and voluntary disclosures.

- **Country case studies** in India and Kenya provide practical insights into the role of fortificant producers in strengthening the fortification value chain. Findings are drawn from interviews with a range of stakeholders, including fortificant suppliers (n=15), food producers (n=7), an industry association (n=1), a laboratory (n=1), development partners (n=11), and representatives from government and research institutes (n=5).

Together, these components provide a comprehensive review of how fortificant producers contribute to improved nutrition outcomes—highlighting positive practices that other companies can emulate, as well as opportunities to elevate the role of these B2B actors within the broader nutrition and food systems transformation agenda.

KEY FINDINGS

Corporate Profile

As shown in Figure 1, company engagement and disclosure varied among the companies assessed, with only three companies providing detailed, evidence-backed input, while others contributed minimally or did not respond to the assessment. Disclosure was inconsistent across categories. While some information on commercial nutrition strategy was publicly available, it was generally less detailed and provided less insights compared to the information on customer engagement, which was typically shared confidentially.

The key findings are outlined below, with detailed results available in the full report and company result cards available online.

Commercial Nutrition Strategy: Of the 11 companies, two suppliers—dsm-firmenich and Hexagon—have integrated nutrition into their core business strategies with measurable goals. Six others acknowledge their role in addressing public health challenges, but their implementation mechanisms remain unclear. All companies could strengthen documentation and disclosure.

Engagement with Customers and Distributors: Seven of the 11 companies provide some form of technical assistance to customers—such as customization, innovation, capacity building, testing, and instructions on the appropriate handling, storage, and use of the supplied fortificants. However, none demonstrated a structured framework with measurable objectives to guide this support and ensure high quality end-product outcomes.

Four companies—BASF, dsm-firmenich, Hexagon, and Zhejiang NHU—extend handling and storage guidelines to distributors, though these are not explicitly linked to formal agreements and do not reference recognized guidelines. Two other companies—Mirpain Supplevit and Sudeep—mentioned related procedures but did not provide supporting evidence.

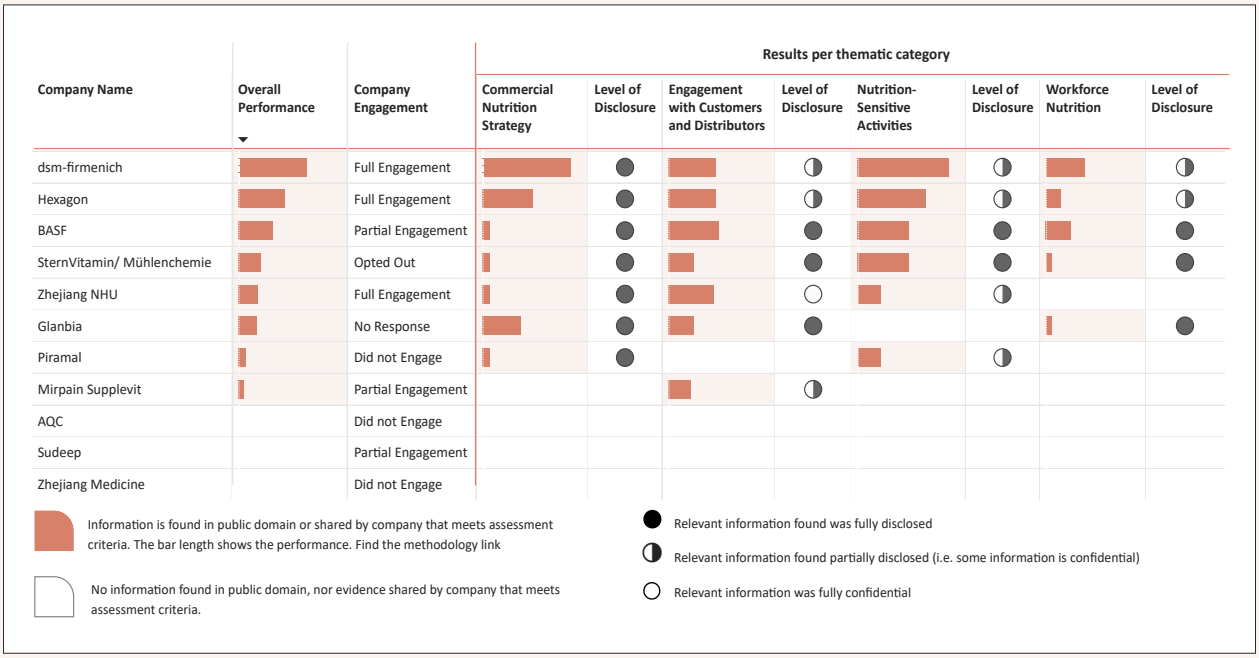
Nutrition-Sensitive Activities: Five of the 11 companies extend technical assistance to millers beyond their direct customer base, with dsm-firmenich and Hexagon providing structured support. Notably, dsm-firmenich links its assistance to measurable targets, enhancing accountability.

Broader collaborative fortification efforts—such as supporting the implementation of regulations, subsidizing premix, or donating equipment—were also identified for five companies (BASF, dsm-firmenich, Hexagon, SternVitamin/Mühlenchemie, and Zhejiang NHU). However, limited disclosure of the planned activities, their scope and objectives makes it difficult to assess the implementation and impact of these efforts.

Workforce Nutrition: Five companies—BASF, dsm-firmenich, Glanbia, Hexagon, and SternVitamin/Mühlenchemie—disclosed initiatives aligned with at least one workforce nutrition pillar (healthy food at work, nutrition education, nutrition-focused health checks, and/or breastfeeding support). BASF and dsm-firmenich were found to offer parental leave beyond legal requirements in some countries. However, no company has a comprehensive workforce nutrition policy covering all four pillars, and most do not disclose whether support is provided consistently to all employees and across all worksite locations.

FIGURE 1

VITAMIN ASSESSMENT: OVERALL PERFORMANCE, PERFORMANCE AND LEVEL OF DISCLOSURE ACROSS CATEGORIES, AND LEVEL OF ENGAGEMENT BY COMPANY



Insights from India and Kenya

Stakeholders interviewed provided examples and insights into the pivotal role of fortificant producers in supporting food fortification. However, small- and medium-sized fortificant producers face several significant challenges that limit the effectiveness and reach of food fortification efforts. These include weak regulatory standards and enforcement, limited technical capacity and quality assurance, supply chain disruptions, and unregulated pricing resulting from a lack of a level playing field.

Larger fortificant producers can play a key role by:

- **Improving Accessibility to Fortificants:** Global fortificant producers collaborate with local distributors and development partners to expand market reach. They work closely with distributors to ensure they have the technical capacity to preserve product quality during transport. Some fortificant suppliers also accommodate smaller food producers by offering fortificants in smaller packages. These efforts make fortificants more available and affordable across diverse market segments.
- **Enabling Effective Fortification:** Local suppliers support the correct use of fortificants by providing tailored technical assistance—particularly to food producers new to fortification. This includes guidance on optimal storage conditions (e.g. temperature and moisture control) and equipment use, which is especially relevant for smaller producers who often request such assistance. Some local suppliers also provide access to laboratory facilities for product testing and training on analytical techniques, helping food producers build capacity and confidence in fortification practices. In addition, some suppliers offer food producers free quality checks on products they supplied, especially when nearing expiry.

The country case studies also highlight the role of stakeholders in the wider value chain, such as food producers and governments, in driving successful fortification. Food producers can play a critical role by demanding higher quality fortificants and greater transparency, while governments can create a level playing fields through clear fortification standards, stronger monitoring and enforcement, and supportive policies.

CONCLUSION

Fortificant suppliers have significant potential to positively influence nutrition outcomes with their products and beyond—through their customer base, across the value chain, and within their own workforce. The VitaMin Assessment of 11 of the world's largest micronutrient and premix producers highlights several examples of these companies' nutrition-related efforts. However, these examples were largely incidental. **The assessment found limited systemic and routine disclosure, as well as a lack of clarity regarding the objectives, scope, and results of nutrition activities among most micronutrient and premix producers.**

As a result of this assessment, ATNi has seen improved transparency from Hexagon on its website, demonstrating that **greater transparency is both achievable and meaningful.** The company's improved disclosure underscores the value of the assessment framework in guiding producers towards more structured and accountable nutrition-related practices, setting a precedent for others in the industry to follow.

To fully harness this potential, **sector-wide alignment is needed to clearly define the role of fortificant producers** and establish explicit expectations and minimum performance standards. **Effective market and policy incentives are also essential** to drive more strategic and responsible corporate practices, particularly when nutrition is embedded within core business strategies.

The VitaMin Assessment is the first of its kind to monitor the role of B2B suppliers in the food fortification value chain. ATNi hopes and expects to see improvements in this space, as demonstrated by the progress already achieved through its indexes and assessments of consumer-facing food companies.

RECOMMENDATIONS

The assessment provides actionable recommendations to strengthen accountability and transparency across the fortification sector. In addition to guiding industry efforts, the findings are intended to also inform policymakers, investors, and civil society—who play a critical role in enabling and incentivizing responsible business practices that improve global public health outcomes.

TABLE 1
OVERVIEW OF ATNI'S RECOMMENDATIONS BY STAKEHOLDER GROUP

Stakeholder	ATNi Recommendations
Fortificant Producers	**1) Safeguard Fortificant Quality across the Value Chain** Fortificant producers should ensure high-quality sourcing and production is aligned with national standards and dietary needs. This includes implementing strict handling and storage practices—both directly and through distributors—and aligning practices with global guidelines, such as the Pan-American Health Organization (PAHO) Code of Practice for Food Premix Operations. **2) Strengthen Fortification through Structured Efforts and Partnerships** Companies are encouraged to embed nutrition into their core business strategies with clear goals and robust monitoring frameworks that reflect both business priorities and nutrition impact. Structured support—such as training, quality control, and targeted programmes for vulnerable populations—can be scaled up through shared-value partnerships with governments and development partners to amplify impact and foster sustainable progress. **3) Promote Transparency** Companies should disclose the scope, objectives, and outcomes of their nutrition strategies and fortification-supporting activities, emphasizing measurable achievements. **4) Foster Peer Learning and Innovation** Companies should share successful practices and innovative solutions—for example, through initiatives such as Millers for Nutrition. Demonstrating the tangible benefits of fortification helps build momentum and encourages broader adoption across the sector.
Policymakers	**1) Harmonize Fortification Standards and Practices** Governments should coordinate with national, regional, and global stakeholders to develop clear, evidence-based standards for micronutrients, premixes, and fortification processes. These standards must be regularly updated, context-specific, and supported by technical training and guidance to ensure industry compliance and alignment with public health priorities. **2) Strengthen Monitoring and Enforcement** Governments are encouraged to integrate fortification monitoring into existing food safety systems, establish digital traceability tools, and build regulatory capacity to enhance efficiency and enforcement. **3) Reduce the Costs of Fortification** Policymakers should remove import taxes and customs duties on fortificants, subsidize key fortification inputs, and benchmark fortificant prices to ensure fairness. Incorporating fortified foods into public distribution and social safety net programmes can further strengthen the market for LSFF and enhance accessibility.
Investors	**Allocate Capital to Fortificant Producers that Demonstrate Leadership in Quality, Transparency, and Public Health Impact.** Key indicators include: • Conducting and disclosing independent audits of quality control systems; • Supplying fortificants that comply with national standards and regulations; • Applying consistent practices across markets aligned with global guidelines; and • Ensuring affordability and accessibility in high-need markets. Transparent reporting on fortification activities and outcomes further strengthens accountability and impact.

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