



NOURISHING PROGRESS

Accelerating efforts to prevent micronutrient deficiencies and their consequences through safe and effective food fortification

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Photo: GAIN

AT A GLANCE: FOOD FORTIFICATION TODAY

7 BILLION

Nutrient gaps prevented every year by current fortification programs

\$0.18

Average cost per person to deliver that impact

\$27

Returned in health and productivity for every \$1 invested

151

Countries now fortifying salt, up from 25 in 1990

24.7 BILLION

Nutrient gaps that could be prevented annually with stronger standards, better compliance, and expanded coverage

107

Countries now fortifying wheat flour, up from 27 in 1990

Forward

Three years ago, the world made a commitment. The unanimous adoption of WHA76.19 in May 2023 was more than a resolution on food fortification; it marked a collective pledge by every Member State to take measurable action on one of the most solvable challenges in global nutrition and reaffirming equitable access to preventive health interventions for all. This report highlights meaningful progress, growing momentum, and emerging opportunities in the years since the resolution's adoption.

The backdrop matters. Micronutrient deficiencies, often invisible and frequently overlooked, affects an estimated one in two preschool-aged children and two in three women of reproductive age worldwide. These are not abstract statistics; they are children whose cognitive development is compromised before they can walk, women whose pregnancies carry preventable risks, workers whose productivity and potential are quietly diminished by deficiencies that cost pennies to address. Large-scale food fortification has been meeting this challenge quietly and cost-effectively for decades. A landmark analysis published in the Lancet Global Health in March 2026 has now quantified, for the first time, the precise scale of what has been built and what remains within reach:

current fortification programs prevent 7.0 billion nutrient gaps every year at an average cost of just \$0.18 per person. And with better compliance, stronger standards, and expanded programs, the annual impact could reach 24.7 billion nutrient gaps prevented, at a cost of \$1.15 per person per year.

As the report that follows makes clear, the three years since the adoption of WHA76.19 have delivered meaningful acceleration

in large-scale food fortification efforts worldwide. Governments have launched important new initiatives, from Tanzania's consolidated Mandatory Food Fortification Regulations of 2024 to Ethiopia's historic launch in 2026 of the world's first iodine- and folic acid-double-fortified salt program. Regional coordination mechanisms have also strengthened across East and Southern Africa, West Africa, South Asia, and Southeast Asia, bringing greater alignment and coherence to what was once a fragmented landscape of national programs.

At the same time, persons with spina bifida and hydrocephalus, their representative organizations, families, together with neurosurgeons, and public health and nutrition professionals — united by decades of advocacy and shared evidence and urgency — have emerged even more forcefully in making the case for mandatory folic acid fortification to reduce the prevalence of these preventable conditions. This reflects a broader commitment to integrated, disability-inclusive public health and nutrition policy, grounded in the prevention of lifelong disability through effective public health action. The evidence base has also deepened significantly, with new findings published in The Lancet providing policymakers with unprecedented clarity on the returns that investments in food fortification can deliver through stronger standards, effective implementation, and expanded program coverage.

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The national progress documented in this report spans every region. From Bangladesh’s compliance rates of 98% for packaged edible oil and 88% for iodized salt, to Kenya’s fortified wheat flour coverage more than doubling to 66% of the market, to Peru’s fortified rice program reaching over 3 million children through social assistance programs, governments are demonstrating what is possible when political will is matched with effective regulation, strengthened incentives, and sustained partnership.

Yet the Lancet data also make clear how much ground remains to be covered. Monitoring and enforcement of fortification mandates need to be strengthened almost everywhere. Standards in many countries fall short of WHO recommendations. About half of the world’s population consumes rice as a primary staple food, yet only 10 - 13% of this is currently fortified.

This is not solely a resource problem, it is also a coordination and commitment challenge. Progress will require adequate financing, stronger private sector engagement, and sustained political will, alongside better alignment of policies, standards, and enforcement.

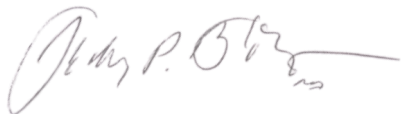
The path from 7 billion nutrient gaps prevented annually to 24.7 billion runs through the decisions governments can make today—on enforcement, standard updates, and regulatory reforms—but those decisions must be supported by investment and enabled by stronger partnerships across public and private actors. Global civil society and development partners stand ready to support every step of that journey, helping to mobilize resources, strengthen implementation, and accelerate impact.

The World Health Assembly resolution on food fortification was unanimous. The case for action is stronger than ever. The question now is how the political will expressed in Geneva in May 2023 can continue to translate into sustained financing, partnerships, policy decisions, and private sector actions that will strengthen and accelerate the progress of staple food fortification, now and in the future.



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HIDDEN HUNGER ON A GLOBAL SCALE

Micronutrient deficiency — often referred to as “hidden hunger” — affects a significant share of the global population, including an estimated one in two preschool-aged children and two in three women of reproductive age¹.



Unlike acute malnutrition, which is often visible through wasting, micronutrient deficiencies are often invisible, silently undermining health and development across the life course. The consequences are profound, widespread, and intergenerational.

A lack of essential micronutrients (vitamins and minerals) — including iron, vitamin A, iodine, zinc, folate, and others — increases susceptibility to infectious diseases, weakens immune system function, and heightens the risk of maternal and child morbidity and mortality. In early childhood, deficiencies can impair physical growth, cognitive development, and learning capacity during critical windows of brain development, with lasting effects on educational attainment and future earning potential. For women, particularly during pregnancy, micronutrient deficiencies contribute to adverse birth outcomes, poor maternal health, and increased risks of maternal anemia, preterm birth, low birthweight, and preventable birth defects.

The impacts extend well beyond health. Micronutrient deficiencies undermine school performance, reduce work productivity, and constrain economic growth by limiting the potential of entire populations. At a societal level, the cumulative burden translates into significant losses in human capital, placing additional strain on already stretched health systems and slowing national development.

The burden is likely to grow as food systems come under increasing strain from conflict, climate change shocks, supply chain disruptions, and rising food prices. As nutritious foods become less affordable and accessible — particularly for low-income and vulnerable households — diets often shift toward cheaper, calorie-dense but nutrient-poor foods. This increases the risk of micronutrient deficiencies and threatens hard-won progress in health, development, and economic resilience. Without sustained action, hidden hunger will continue to undermine efforts to achieve global nutrition, health, and development goals.

The Intervention: Large-Scale Food Fortification

Large-scale food fortification — the addition of vitamins and minerals to widely consumed staple foods and condiments during food processing — is one of the most powerful tools available to address micronutrient deficiency at scale. It targets foods people already eat and can reach entire populations quietly and efficiently.

A growing list of over 150 countries now fortify at least one staple food²: 151 countries are implementing salt iodization programs, 107 countries are employing at least one kind of cereal grain fortification, and dozens more have programs focusing on fortifying edible oils or condiments³.

The use of food fortification has grown from a handful of national programs into a truly global movement. In 1990, just 25 countries had mandatory fortification programs in place; by 2024, that number had risen to 151, reflecting expanded political commitment, a growing evidence base, and increasing recognition that fortified

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staple foods are among the most cost-effective tools available for improving public health at scale.

Large-scale food fortification (LSFF) is consistently ranked among the best nutrition interventions in terms of value for money. For every \$1 invested, fortification returns \$27 in health and productivity benefits, making it one of the most compelling cases for continued and expanded public and private commitment to improve health and nutrition⁴.





The Resolution: WHA76.19

In 2023, recognizing micronutrient deficiencies as a public health concern, the World Health Assembly adopted resolution WHA76.19 — a unanimous commitment to accelerate the scaling up of safe and effective food fortification programs. The resolution urges all Member States to enact evidence-based legislation, build multisectoral collaboration, strengthen surveillance, and share data on program performance. It requests the Director-General to provide updated guidance, standards, and technical support to Member States as they pursue the use of food fortification.

As part of the growing momentum behind food fortification, resolution WHA76.19 has contributed to accelerated progress across the global food fortification landscape. Governments have enacted new legislation, scaled existing programs, and built stronger compliance systems; some food producers have started to fortify their products for the first time, others have taken steps to improve and ensure fortification quality; partners have expanded their support for governments and the private sector while deepening their coordination, with increasing inclusion of affected communities in shaping policies that impact their lives. As a result of these efforts, millions more people are now receiving the micronutrients they need through the foods they already eat. This report celebrates progress, documenting concrete achievements that the WHA resolution has inspired, while looking ahead to highlight opportunities that will carry the movement forward through 2030.



The three years since WHA76.19 have seen a meaningful acceleration in engagement around the global food fortification agenda. Governments have enacted new legislation, partners have launched new coordination mechanisms, digital infrastructure has been developed and expanded to strengthen implementation and monitoring. In tandem, communities most directly affected — including people living with spina bifida and other neural tube defects and those who help to care for and support them — have increasingly asserted their role as rights-holders and advocates in the global food fortification agenda. This section presents some of the key developments in the LSFF sector, organized by theme.

Global progress on double-fortified salt

Double-fortified salt (DFS) — combining iodine with a second micronutrient, typically iron or folic acid — is one of the most exciting innovations in LSFF. By building on the infrastructure of existing salt iodization programs, which already reach 89% of households globally⁵, DFS offers a powerful opportunity to address multiple nutrient deficiencies through a single, universally consumed vehicle at minimal additional cost. Research, development, and real-world implementation have accelerated significantly in the period since WHA76.19, with two countries in particular demonstrating what is possible when scientific rigor, government commitment, and private sector partnership come together.

Ethiopia is on the verge of a landmark public health achievement. Building on its successful salt iodization program, the country has developed and rigorously tested a double fortified salt combining iodine and folic acid, with field trials showing a reduction in folate insufficiency among women of reproductive age from 95% to as low as 19%, dramatically cutting the risk of neural tube defects⁶. This contributes to the progressive realization of the right to health and nutrition for women and children. With strong government commitment, private sector support, and economic modeling confirming an exceptional return on investment, Ethiopia is now moving

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to scale, and its evidence-based journey from laboratory to national program offers a compelling model for other countries looking to do the same.

Research on the technical side of fortifying salt with both iodine and iron is also growing and showing real promise. Research and development efforts led by international experts are making advances in premix formulation, including identifying new whitening agents that keep fortified salt stable, visually appealing, and acceptable to consumers. Though centered in India, these innovations are highly adaptable and stand to benefit large-scale food fortification programs worldwide.

Progress on regional coordination

Over the last few years, there has been growing recognition of the important role that regional platforms, especially the Regional Economic Communities (RECs), can play in leading the LSFF agenda. RECs are well positioned to generate political will, promote regional coordination, harmonize fortification standards, strengthen accountability, and facilitate cross-border trade of fortified foods.

Recent years have seen progress in translating this potential into action across several high-burden regions. The Network for Improved Nutrition in South Asia (NINSA) was established to identify priority action areas for fortification across the region. In 2025, the SAARC Agriculture Centre convened an inaugural regional technical meeting on fortification challenges, where a roadmap was developed on regional harmonization of standards for fortified foods to enhance trade and effectively address micronutrient deficiencies in South Asia⁷.

In East Asia and the Pacific, ASEAN has advanced food fortification as a regional priority through the development of shared guidelines and standards. A Technical Nutrition Working Group led the process, supported by regional coordination forums. The effort produced a significant milestone in 2024, when all ASEAN member states endorsed the ASEAN LSFF Minimum Standards, establishing a common baseline for fortification policy across the region⁸.

In Eastern and Southern Africa, regional coordination has been formalized through the Eastern and Southern Africa Regional Coordination Mechanism (ESA RCM) on Food Fortification and Universal Salt Iodization, co-chaired by the East, Central and Southern Africa Health Community (ECSA-HC) and the Southern African Development Community (SADC). Since its establishment, the mechanism has evolved into an institutionalized platform for joint regional leadership, improving coordination and reducing duplication, providing a single

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entry point for development partners across both regional blocs, and expanding technical support to 25 Member States.

A Regional Consultative Meeting in 2024 established a formal agenda built around six priorities: harmonizing regional fortification standards, strengthening regulatory monitoring and enforcement, creating an enabling environment for private sector compliance, improving coordination at regional and country levels, strengthening data systems, and supporting advocacy and public awareness. In 2025, the ESA RCM co-convened the Africa Regional Dialogue on Data for Action in Food Fortification in Addis Ababa, bringing together ESA countries, regional bodies, and global partners to address fragmentation in data collection and strengthen the use of coverage and compliance data for decision-making. The dialogue built consensus around integration of fortification reach, coverage, and quality indicators into existing national surveys and regulatory systems. Across both processes, regional engagement has supported updates to national legislation and fortification standards, strengthened regulatory capacity, and improved consistency in the support that countries receive from development partners.

In West and Central Africa, the Economic Community of West African States (ECOWAS) led a series of technical consultations to revise and harmonize regional fortification standards. These efforts resulted in updated standards, suitable for translation and adoption across all member states; validation of certification schemes for fortified food producers; and establishment of a regional coordination subgroup.

Role of digital systems in monitoring LSFF quality

Despite fortification legislation in over 150 countries, programs frequently fall short of their potential due to gaps in quality, compliance, and coverage. A core driver of this challenge is the absence of timely, reliable data regarding fortification quality and compliance. Traditional inspection methods, often pen and paper-based, are resource-intensive and slow, data collected at different points in the supply chain is rarely shared or triangulated, and when products don't meet fortification standards, it can be difficult to identify and trace key problems in fortification quality back to their source.

Digital innovation can help to fill this gap. A 2025 scoping review identified 125 digital tools and technologies (websites/platforms, modeling tools, edge devices used to test micronutrients, and management information systems, among others) currently in use in food fortification, with adoption of digital tools rising consistently since 2011. This reflects growing recognition across the sector that digital tools have the potential to support efficiencies in data collection, sharing, analysis and use for decision making⁹. One example includes tools that provide end-to-end traceability across the fortified food value chain, from premix sourcing through to retail, integrating with digital data collection and rapid testing devices to enable near real-time data transfer from factories to regulators and supporting faster, more transparent decision-making for both producers and governments. Active pilots and programs in Nigeria, Bangladesh, and India are already demonstrating improved oversight capacity for quality and compliance monitoring across the supply chain.

This approach reduces the burden on both food producers and regulators while giving consumers confidence that staple foods contain the essential micronutrients required by national standards. As programs expand, the priority will be to ensure that digital quality assurance systems are inclusive, co-created with country stakeholders, and fit for purpose. These systems should

be designed for low maintenance and integrated within existing national regulatory infrastructure to support sustained adoption and local ownership. Effective coordination and integration of digital systems will be critical to enabling efficient quality and compliance monitoring, including tracking fortification alongside other food safety and quality standards. It will also be essential to document and share learnings as programs increasingly implement digital tools.

Increasing global focus on enabling access to premix

Behind every fortified food product is a micronutrient premix, the concentrated vitamin and mineral blend that producers add during processing, and the single biggest cost factor in large-scale food fortification, typically accounting for 70–90% of total program costs¹⁰. Ensuring that producers can access quality premix reliably, affordably, and in local currency is one of the most practical levers governments have for making fortification work at scale.

Governments are increasingly working to improve access to quality premix at affordable cost. National premix revolving funds, which allow food producers to easily access quality-controlled micronutrients with short lead times, without the burden of large upfront foreign currency purchases, are being established across multiple countries. Since the WHA resolution on food fortification was adopted, several revolving funds have been launched. Senegal has led the way in providing local premix access for salt producers; Ethiopia has introduced revolving funds, supporting industry access to premixes for flour and oil fortification, and Tajikistan is set to launch a fund for salt and flour producers in 2026.

Reducing taxes and import duties is another direct way governments can support their staple food industries, lowering costs for producers and sending a clear signal that large-scale food fortification is a genuine public-private endeavor, not a regulatory burden imposed on business alone.

Joint advocacy by spina bifida & hydrocephalus associations and neurosurgeons

Spina bifida and hydrocephalus associations have been active partners in global folic acid and micronutrient policy for over 40 years, contributing to advocacy, program design, and implementation across community, national, and international levels. Their engagement has never been passive: organizations representing persons with spina bifida and hydrocephalus have shaped policy discussions, led multi-stakeholder programs, and consistently argued that neural tube defect prevention and lifelong care for affected persons are not competing priorities but mutually reinforcing rights and public health objectives. Over the same period, neurosurgeons and other healthcare professionals involved in the lifelong care and support of persons born with these conditions, have increasingly recognized their own responsibility to move beyond the operating theater and into the policy arena. Their clinical expertise, grounded in direct experience of the health, rehabilitation, and care needs that inadequate folic acid fortification produces, adds a dimension to their advocacy that epidemiological data alone cannot.

The convergence of these two communities into a coordinated global movement has been one of the most significant developments in folic acid fortification advocacy in recent years. Organizations led by persons with lived experience have strengthened their global member network through capacity-building, international convening, and twinning initiatives that enable peer learning and exchange, supporting more coordinated, evidence-informed advocacy. What began as a small network of neurosurgeons has grown into a sustained campaign spanning stakeholder engagement, presentations to the WHO Executive Committee, peer-reviewed publications in leading journals including *The Lancet Global Health*, and country-level advocacy across multiple regions.

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Neurosurgical bodies have passed formal resolutions calling for mandatory folic acid fortification of staple foods, reinforcing the case being made simultaneously by organizations representing persons with spina bifida and hydrocephalus with decades of lived-experience advocacy behind them. At the country level, this joint engagement has produced concrete results, including government commitments to mandatory fortification in Ethiopia, with the projected impact of reducing spina bifida births in Ethiopia by 90%, averting approximately 9,000 cases annually, and freeing tens of thousands of surgical hours annually for other pediatric care¹¹.

The adoption of WHA76.19 in May 2023, with the support of a broad coalition of co-sponsoring governments, was the clearest expression of what this partnership has achieved. The resolution's unanimous passage, and its explicit framing of neural tube defect prevention alongside lifelong care, rehabilitation, and support for affected persons, reflects the integrated advocacy that organizations of persons with spina bifida and hydrocephalus, families, healthcare professionals, and advocates have long pursued together. More than four million preventable cases of spina bifida and anencephaly occurred in the 30 years between landmark trial evidence on folic acid and the resolution's adoption, representing the cost of delayed action. The work now is implementation, and the coalition that secured the resolution is the same one driving it forward. Strengthening alliance-based collaboration offers a clear opportunity to move beyond fragmented implementation toward more integrated, inclusive systems.

Global progress on rice fortification

Global progress on rice fortification is accelerating as governments increasingly recognize its role in addressing micronutrient deficiencies at scale. Multiple countries across Asia, Africa, and South America have advanced national fortification standards, legislation, procurement requirements and frameworks that enable the distribution of fortified rice through social protection systems, including school meals. This progress reflects growing confidence in the technical feasibility, affordability, and nutritional impact of fortified rice when integrated into existing supply chains.

Since the adoption of the resolution, rice fortification has progressed most rapidly in countries where it has been linked to existing public delivery systems. In Bangladesh, fortified rice has expanded from pilot distribution to routine provision through food based social assistance programmes, supported by domestic fortified rice kernel production and strengthened blending capacity, expanding also into open markets and humanitarian response. This has enabled consistent supply at scale and reinforced regulatory oversight, contributing to sustained national coverage. Similar progress has been observed other countries across Asia, Africa, and Latin America and the Caribbean, where fortified rice has been incorporated into school feeding and other publicly supported food programmes following the establishment of national standards and improvements in laboratory and quality assurance capacity.

Today, rice fortification is moving beyond pilots toward long-term integration into food systems. It costs just 1 – 3 US cents to fortify a kilogram of rice¹². With continued political commitment and relatively modest additional investment, fortified rice can become a core component of national nutrition strategies, delivering measurable public health benefits through a staple food consumed daily by more than half of the world's population.

Key opportunities: food systems

Since the first United Nations Food Systems Summit (UNFSS) in 2021, followed by the 2023 and 2025 Stocktake moments, global attention has increasingly focused on how transforming food systems is essential to achieving the 2030 Agenda for Sustainable Development. This growing momentum creates important opportunities to integrate LSFF within food systems agendas.

LSFF is a proven, scalable, and cost-effective solution, yet it is often implemented as a standalone technical activity, rather than embedded within a broader food systems agenda.

Several key opportunities can help advance integration of LSFF into food systems transformation. Firstly, by embedding LSFF across the food supply chain – from production and processing to distribution, retail, and consumption – so that fortification becomes a core function of healthy and efficient food systems. Secondly, ongoing policy and regulatory reforms provide an opportunity to strengthen mandatory fortification legislation, compliance systems, and enforcement mechanisms, which are critical for achieving population-level impact. Third, there is an opportunity to align LSFF with healthy diet agendas by selecting appropriate food vehicles and integrating fortification within broader packages of complementary nutrition interventions. This will help minimize risks of excessive intake and unintended impacts on diet-related non-communicable diseases. Finally, LSFF offers an opportunity to contribute to sustainable, resilient, and climate-smart food systems by improving the nutrient density of foods without requiring increased food production.

Key opportunities: school feeding & social protection

Social protection and school feeding systems are among the most powerful vehicles available for getting fortified foods to the people who need them most. For many children, a school meal may be the only reliable meal of the day, making its nutritional quality especially critical. LSFF is especially efficient here, because these programs already deliver staple foods at scale; fortification requires no additional behavior change from families and no extra cost to households. Populations with the greatest nutritional needs receive micronutrients that would otherwise remain inaccessible or unaffordable.

The supply-side benefits are equally significant. Institutional procurement through social protection and school feeding programs creates large, predictable demand for fortified foods, giving private sector producers the confidence to invest in fortification capacity, achieve economies of scale, and drive down costs over time. In this way, social protection and school feeding do double duty: directly protecting the nutritional status of vulnerable populations today, while building the market conditions for fortification to thrive tomorrow.

Since the adoption of the resolution, social protection and school feeding programs across regions across the globe have

increasingly been used to expand access to fortified staple foods at scale. In South Asia, fortified rice and fortified flours have been incorporated into food based social assistance and school meal programs in countries such as Bangladesh, India, Nepal, and Sri Lanka. In Latin America, Peru has expanded the use of fortified rice through national school feeding and early childhood programs, while in Africa countries including Rwanda, Ghana, Senegal, The Gambia, and others have used school feeding and safety net platforms to distribute fortified staples. In Bangladesh, the fortified rice supply chain established for national social protection programs also enabled the provision of fortified rice in Cox's Bazar, demonstrating how strong national systems can support nutrition outcomes in humanitarian contexts. Together, these experiences underscore how social protection platforms have become central to scaling, sustaining and normalizing food fortification since the adoption of the resolution.

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3 COUNTRY PROGRESS

Angola:

- Angola is finalizing a national food fortification strategy to guide multisectoral planning across fortification vehicles, marking the first formal step toward a structured national program.

Azerbaijan:

- Azerbaijan's national government issued a Ministerial Decree on food fortification in May 2023, establishing a regulatory fortification framework and initiating a formal policy pathway toward mandatory fortification.
- The government is engaged with technical partners to build the capacity for a national fortification program, including building an evidence base, developing fortification standards, creating tailored standard operating procedures (SOPs) for millers, and training millers and regulators on the new policies and monitoring best practices.
- A working group of millers has been established to begin voluntary wheat fortification, laying the foundational groundwork ahead of a mandatory program.

Bangladesh:

- In 2024, Bangladesh completed a legislative trilogy for salt iodization: the Iodized Salt Act (2021), the National Salt Policy (2022), and implementing rules (2024), establishing one of the most complete mandatory salt iodization frameworks in the region.
- 98% of packaged edible oil and 88% of packaged salt meet national fortification standards, reflecting the impact of mandatory legislation and multi-agency enforcement.
- Fortified rice now reaches approximately 16 million people through government social safety programs, supported by over 200 blending units and 14 fortified rice kernel factories established with government and partner support.
- Fortification has recently been taken up by the private sector, which launched commercially available fortified rice for the open market in 2024, creating a demand signal independent of government procurement.
- Bangladesh's LSFF program operates through a 200-partner ecosystem spanning five government agencies, 191 private sector partners, two laboratories, and sustained technical assistance from multilateral and development partners¹³. Effective collaboration among regulatory agencies, sustained technical assistance to industry, and active engagement of development partners have further accelerated implementation. In addition, growing private sector participation and improved monitoring and compliance systems have helped transform policy into measurable results.

Cambodia:

- In March 2026, the National Council on Nutrition under Cambodia's Ministry of Planning officially launched the National Strategy for Food Fortification 2025–2030, establishing a formal policy framework targeting key staples including rice, salt, and cooking oil, and setting the direction for private sector engagement in fortification¹⁴.
- In June 2025, the Ministry of Health launched the Fast Track Roadmap for Improving Nutrition 2023–2030, embedding food fortification within a broader multi-sectoral national nutrition strategy.
- In 2024, the national government adopted a national school meals policy, envisioning nutritious school meals as key to strengthening human capital development¹⁵. Cambodia has progressively

integrated fortified rice into its national home-grown school feeding program, working with partners to support millers to establish kernel-blending systems and piloting fortified rice provision across schools. This was supported by a 2023 economic impact assessment, which found that providing fortified rice in schools gives high economic returns in the future, outweighing the cost of implementing the program threefold¹⁶.

- In November 2023, the government launched the Fill the Nutrient Gap analysis in partnership with UN agencies, development partners, and private sector actors. This analysis provided an updated evidence base on nutrient gaps across population groups, equipping decision-makers with integrated solutions across food, health, and social protection systems attuned to realities of Cambodia's rapid development transition¹⁷.

Colombia:

- Colombia has taken a major regulatory step to modernize and expand mandatory food fortification. In 2026, the country established new technical requirements for the mandatory fortification of white rice, maize flour, and wheat flour produced, imported, and marketed nationally, updating and expanding the older framework that had focused mainly on wheat flour since 1996.
- The new regulations broaden the public health reach of fortification by targeting staple foods consumed widely across the Colombian population. The decree mandates fortification of: white rice with folic acid, iron, and zinc; maize flour with iron, zinc, and vitamin A; and wheat flour with iron, zinc, niacin, folic acid, and vitamins B1 and B2, aligning fortification policy with documented micronutrient deficiencies and national dietary patterns.
- Colombia's updated regulations also strengthen implementation, quality assurance, and accountability. It assigns responsibility for compliance to producers, importers, and sanitary registration holders; establishes labeling requirements; mandates quality standards for fortificants; and gives INVIMA (Colombia's national food and drug regulatory authority, responsible for sanitary inspection, surveillance, and control), in coordination with territorial health authorities, responsibility for inspection, surveillance, and control. A 24-month transition period allows industry adaptation before the new requirements become fully mandatory.

Comoros:

- The national government is designing a mandatory fortification program of wheat flour and rice.

Egypt:

- Egypt's national wheat flour fortification program, which enriched the subsidized flour used to bake baladi bread with iron and folic acid, was halted in 2014 following political disruption. In March 2025, the government formally relaunched the National Flour Fortification Programme, in partnership with development partners, restoring fortified baladi bread as a vehicle for micronutrient delivery after more than a decade.
- The relaunch prioritized the 13 governorates with the highest anemia prevalence, reaching populations through public bakeries. Over 600 millers operating flour mills nationwide were trained to ensure compliance with fortification standards across the supply chain¹⁸.
- Egypt is one of the largest consumers of wheat worldwide, making flour fortification an ideal intervention to reduce anemia. It can reduce the prevalence of neural tube defects, which is 3 times higher than the global rate¹⁹.
- Egypt's baladi bread subsidy system, which reaches an estimated 73 million people, represents one of the most powerful existing delivery mechanisms for fortified food in the region. By embedding fortification within this pre-existing infrastructure, the program reaches low-income populations at scale with no additional behavioral change required from households.

Eswatini:

- In 2023, the government of Eswatini embarked on a landscape analysis and new national micronutrient survey — the first since 2007 — with support from development partners. Launched in 2024, the analysis found that in the absence of mandatory fortification legislation or national standards, only one wheat flour miller is voluntarily fortifying its products using South African standards. The analysis also found that maize flour fortification is an untapped priority opportunity, with school feeding programs flagged as a key delivery channel for reaching vulnerable children²⁰.
- The findings of this analysis and the ongoing national micronutrient survey will form a roadmap to establish mandatory fortification standards, integrating compliance monitoring into existing structures and strengthening capacity will ensure a sustainable impact.

Ethiopia:

- Ethiopia has been focused over the last few years on intensively studying the feasibility of double-fortified salt (DFS, fortified with both iodine and folic acid). Studies show that DFS is stable, quickly raises folate levels, and is highly acceptable to consumers.
- In November 2025, both national oversight committees unanimously endorsed the evidence package; the program was formally launched in 2026 with ministerial representation, and a mandatory national standard was adopted in April 2026. With this, Ethiopia became the first country in the world to mandate iodine and folic acid double-fortified salt, reaching a population of over 120 million at an additional cost of just \$0.01 per capita per year.
- Following a two-year preparatory grace period, wheat flour and edible oil fortification became mandatory in July 2024, with government agencies conducting active regulation of millers and edible oil processors, supported by advanced laboratory capacity.
- In March 2025, a tax exemption on the importation and local production of micronutrient premix and dosing equipment became effective. This fiscal measure directly reduces the cost of fortification inputs for industry, one of the most practical and underappreciated barriers to compliance at scale.
- National governance of the fortification program has been institutionalized through regular meetings of the National Food Fortification Steering Committee and National Food Fortification Technical Committee, providing structured coordination across ministries, regulators, and industry.
- The Ethiopian Food and Drug Authority has invested in advanced laboratory infrastructure to support compliance verification, and fortified foods have been integrated into public procurement guidelines, creating a reliable demand signal for domestic fortified food production.

Ghana:

- The Ghanaian Food and Drugs Authority (FDA) conducted compliance monitoring across all three mandatory fortification categories, salt, wheat flour, and vegetable oil, and reviewed and updated its code of practice for the manufacture, packaging, distribution, and sale of iodized salt. To strengthen producer compliance, the FDA also developed business case models for salt iodization and disseminated them to large, medium, and artisanal salt producers.
- In 2023, the national Food Fortification Alliance was reactivated, restoring a formal multi-stakeholder coordination and oversight mechanism for LSFF across the country.
- In 2025, Ghana's government, in partnership with multilateral and development partners, launched a fortified rice school feeding initiative targeting more than 150,500 students in six regions. The program works directly with local rice millers, who have been equipped with fortification machinery to supply schools through the national school feeding program. The initiative has generated measurable supply-side impact alongside its nutrition goals: participating millers have significantly increased their annual production capacity, and a 7.9% increase in school enrollment has been recorded across participating schools²¹.

India:

- India has made significant progress in introducing double-fortified salt (DFS), fortified with both iron and iodine, into social safety net programs. DFS is now distributed through the Public Distribution System (PDS) and other social safety net programs in four states (Madhya Pradesh, Gujarat, Himachal Pradesh, and Tamil Nadu), reaching an estimated 128 million people. Evaluations in Madhya Pradesh have shown uptake exceeding 90% when DFS is distributed through the PDS, with success attributed to government support, stable supply chains, quality monitoring, and targeted behavior change communication.
- Wheat flour fortification has also been institutionalized through the PDS in Himachal Pradesh and Ladakh. Himachal Pradesh became the first state in India to achieve 100% coverage of fortified wheat flour through PDS, reaching nearly 7.3 million beneficiaries. In Ladakh, approximately 226,010 people benefit from fortified wheat flour.

Indonesia:

- Indonesia has mandated the fortification of wheat flour since 2002, making it one of the longest-running large-scale fortification programs in the Asia-Pacific region, alongside mandatory edible oil and iodized salt fortification.
- In the post-resolution period, the government has moved decisively to build on this foundation. Food fortification was embedded as an indicator in Indonesia's National Medium-Term Development Plan (RPJMN) 2025–2029, anchoring it within the country's core development framework. A National Strategic Plan for Large-Scale Food Fortification covering 2025–2045 is in development, signaling a long-term institutional commitment to the agenda²².
- In 2024, the national development planning ministry formally established a National Food Fortification Coordination Forum, bringing together ministries, industry associations, multilateral agencies, and development partners under structured national oversight.
- Rice fortification standards and fortified rice kernel standards were enacted in 2024 and 2025, establishing a regulatory foundation for what would be a transformative intervention in a country where rice is the primary dietary staple. The standards include iron, zinc, folic acid, and vitamins B1 and B12 as core micronutrients, with vitamins B3 and B6 as additionally recommended nutrients. Policy and technical readiness work — including stakeholder consultations and analysis of alignment with social protection and school feeding programs — has been underway since 2023.
- To strengthen the evidence base for future implementation, government and partners conducted a landscape analysis of LSFF in 2024, providing the government with updated data on reach, gaps, and priorities.

Kenya:

- The availability of iron and folic acid-fortified wheat flour more than doubled between 2023 and 2025, from 29% to 66% of the market, driven by stronger compliance monitoring and industry engagement. Wheat flour fortification compliance has reached 84% and maize flour 46%, reflecting sustained investment in enforcement and quality assurance systems.
- Kenya has achieved over 99% household consumption of adequately iodized salt, one of the country's most successful public health nutrition interventions and a significant contributor to reducing iodine deficiency disorders.
- Kenya revised its national fortification standards for wheat and maize flour, updating requirements for vitamin A, zinc, and folate in line with the latest scientific evidence and regional guidance.
- Regulatory oversight and multisectoral coordination have been strengthened through the Kenya National Food Fortification Alliance, embedding fortification within key national frameworks including the Kenya Nutrition Action Plan 2023–2027 and Kenya's Nutrition for Growth commitments.
- Several counties, including Nairobi, Nakuru, Nyandarua, Elgeyo Marakwet, and Kakamega, have

- integrated LSFF into their County Nutrition Action Plans. In 2025, Nairobi City County enacted the first sub-national food fortification law in Kenya, creating momentum for other counties to follow.
- Kenya contributed to the development of East African Standards for rice and fortified rice kernels, advancing regional harmonization and supporting the introduction of fortified rice across the East African region.

Lesotho:

- Lesotho has mandated the fortification of wheat flour, maize flour, and edible oil since 2020. In 2024, the country invested in strengthening enforcement capacity through a training workshop for wheat and maize millers, government food inspectors, and laboratory technicians, building the human infrastructure needed to translate the legislative mandate into consistent compliance.

Madagascar:

- Following the revitalization of the National Alliance for Food Fortification (ANFA), Madagascar adopted a National Food Fortification Strategy in late 2023, with an operational plan running through 2025–2028 providing a structured implementation roadmap across multiple fortification vehicles.
- In 2024, Madagascar conducted its first National Survey on Micronutrient Deficiencies, generating the scientific evidence needed to target fortification interventions, guide national nutrition policy, and adapt the new strategy to actual population needs.
- Madagascar is working toward the launch of vegetable oil fortification standards, expanding Madagascar’s fortification program beyond its current staples.
- Madagascar has maintained its salt iodization program through continued multi-stakeholder coordination and is establishing a national revolving fund to ensure the continuous availability of potassium iodate, a model for program resilience in a constrained funding environment. A strategic communication plan for iodization and salt consumption for 2024–2026 supports sustained public engagement alongside these supply-side efforts.

Mauritius:

- In 2023, Mauritius passed mandatory legislation for the fortification of wheat flour with iron, zinc, folic acid, and vitamin B12, making it one of a small number of African nations to have enacted new mandatory flour fortification legislation in the post-resolution period.
- The legislation was supported by a comprehensive package of regulatory infrastructure developed in parallel: revised food safety regulations to accommodate fortification, a national standard for fortified wheat flour, and a costed implementation plan covering industry adoption, quality assurance, and compliance monitoring.
- The process was built through close collaboration between the Government of Mauritius, multilateral agencies, development partners, and regional institutions, reflecting the kind of technical partnership model that the 2023 WHA resolution was designed to catalyze.

Mongolia:

- Mongolia’s Law on Fortified Food (2018) established a legal foundation for mandatory large-scale fortification, and the years since have focused on generating the evidence needed to activate it. In 2024, Mongolia conducted a new National Nutrition Survey, introducing indicators specifically designed to identify population-level micronutrient gaps and prioritize food vehicles for fortification. For the first time, the survey assessed nutritional status across all school grades, generating data critical for designing fortification strategies that reach children and adolescents.
- Survey findings were disseminated to more than 200 stakeholders including Members of Parliament, line ministries, academia, and civil society, followed by consultations with Parliament and authorities across all 21 provinces and nine districts of Ulaanbaatar. The process was

designed explicitly to translate new evidence into regulatory strengthening and program scale-up, creating both political momentum and institutional ownership for next steps.

Mozambique:

- Mozambique enacted a landmark mandatory food fortification law in 2016, requiring the fortification of five staple food vehicles: wheat flour, maize flour, cooking oil, sugar, and salt, as part of a multi-sector plan to reduce chronic undernutrition.
- In December 2025, the government enacted a comprehensive update to the original 2016 legislation. The new regulation codifies specific minimum and maximum fortification levels for all five mandated food vehicles, introduces a mandatory fortification logo on all packaging, establishes a formal premix supplier registration system, requires quarterly laboratory testing by producers, and creates a structured sanctions regime for non-compliance, including fines, suspension, and a one-year ban from the fortified food supply chain for repeat offenders. The regulation enters into force in June 2026.
- A national digital monitoring system, FortifyMIS, was introduced to enable real-time compliance tracking, with inspectors and producers uploading data directly to generate compliance dashboards. In 2024, the National Inspectorate for Economic Activities trained 30 additional regulatory agents to standardize inspection protocols nationwide.
- In 2025, Mozambique provided assistance to 214 national industries, incorporated 23 new small milling units and 20 salt producers, and trained around 3,500 stakeholders in fortification and good production practices²³.
- By 2025, industrial compliance had reached 70% of essential food production, with salt iodization achieving 50 to 60% market share. A 2025 market assessment confirmed that fortification is taking place across all five mandated food vehicles.

Namibia:

- Almost 100% of wheat, maize, and rice in Namibia is produced in industrial mills, making these staple foods ripe for fortification.
- Despite fortification standards being voluntary, Namibia has achieved 95% fortification of wheat flour and 85% for maize²⁴.
- Namibia established the Namibia Alliance for Improved Nutrition (NAFIN) in 2010, a multi-stakeholder platform, advising the government on that process. NAFIN consists of representatives from relevant ministries, donors, civil society and multilateral partners.
- As of 2026, the national government is drafting a fortification strategy and costed plan.

Nepal:

- Nepal has maintained one of the most successful universal salt iodization programs in South Asia since the early 1990s, with a well-functioning public-private system for salt importation and a distribution network that reaches the majority of households nationwide, providing a strong foundation for broader fortification efforts.
- Building on this track record, Nepal introduced mandatory fortification of industrially produced flour with folate, iron, and vitamin A in 2011, expanding the country's fortification portfolio beyond iodine and embedding micronutrient delivery into staple food supply chains.
- In 2024, Nepal took a further step forward with the introduction of rice fortification with iron, folate, and vitamin A, extending the reach of its fortification programs to one of the country's most widely consumed staples.
- By 2030, Nepal will expand the distribution of fortified rice through existing social protection programmes at a subsidized cost across all 753 local levels. Progress will be monitored through the annual review of the Multisector Nutrition Plan Programme and periodic government monitoring.

Nigeria:

- In 2023, single vitamins and minerals to be used for food fortification were re-classified by the Nigeria Customs Service, reducing the import tax from 20% to 5%. This directly lowered costs for food producers and strengthened the case for fortification as a genuine public-private partnership.
- In 2024 Nigeria adopted voluntary industrial standards for the fortification of bouillon with iron, zinc, folic acid, and vitamin B12, extending the reach of fortification to one of the most widely consumed condiments in the country.
- In December 2025, legislators championed and passed the first reading of a bill to phase out bulk, unbranded edible oil from the Nigerian market, a measure that would support compliance with food fortification standards and improve safety across the edible oil supply chain.
- The Nigeria Industrial Standard for Fortified Rice Kernels was approved in early 2026, providing the regulatory foundation for rice fortification to be implemented and scaled nationally.

Pakistan:

- Four of Pakistan's provinces have enacted mandatory fortification legislation covering wheat flour, edible oil, and ghee: Sindh, Balochistan, Khyber Pakhtunkhwa, and Gilgit-Baltistan. In 2025, a federal Food Fortification Bill for the Islamabad Capital Territory was introduced in the National Assembly, representing a significant step toward a national legislative framework to complement existing provincial laws.
- Edible oil fortification has reached near-universal coverage within Pakistan's formal sector, with virtually 100% of processed and packaged edible oil now fortified with vitamins A and D, reaching an estimated 135 million people annually. Compliance monitoring has transitioned from project-based oversight to government-owned quality assurance systems embedded within provincial food safety mandates, with routine testing finding 81% national compliance with the vitamin A standard between November 2024 and October 2025.
- Salt iodization has continued to consolidate, with approximately 81% of edible salt produced by formal processors meeting the national iodization standard and reaching nearly 100 million people. Government-led inspection visits and laboratory-based iodine testing through provincial quality control laboratories have increased significantly.
- Pakistan revised its national standards to limit industrially produced trans-fatty acids to less than 2% in alignment with WHO recommendations, and has strengthened enforcement capacity across provincial food regulatory authorities through updated SOPs and technical guidance for the edible oil and fat industry.
- In July 2025, the Millers for Nutrition Coalition launched in Pakistan, supporting over 1,000 industrial and small-scale mills through capacity building, testing equipment, and premix provision to accelerate wheat flour fortification compliance at scale.
- Pakistan has also implemented a program to digitize monitoring of its edible oil fortification program, strengthening quality assurance and accountability across the supply chain.

Peru:

- In August 2021, Peru passed a Fortified Rice Law mandating all rice on the market, whether produced domestically or imported, to be fortified with vitamin A, vitamin B complex, vitamin D, vitamin E, iron and zinc²⁵. A 2024 implementing regulation further reinforced quality and monitoring requirements, cementing the legislative framework.
- Implementation has scaled rapidly: more than 150 rice millers applied for certification to produce fortified rice²⁶, and by 2025 over 3 million children were receiving fortified rice through social assistance programs²⁷.
- Fortified rice reached commercial markets for the first time in 2023, extending access beyond social protection beneficiaries and signaling the beginning of broader market transformation.

The Philippines:

- The Philippines has held legislation mandating fortification of salt, wheat flour, sugar, edible oil, and rice, since 2000. However, national standards have not included folic acid and specify iron compounds with limited bioavailability. In March 2026, an update to add folic acid and bioavailable iron in wheat flour fortification national standards, bringing them into line with global best practice, was approved.
- Approval of the wheat flour standard revision represents the first major milestone of the Philippine Plan of Action for Nutrition (PPAN) 2023–2028. The strategy aims to reduce malnutrition by 2028 through enhanced micronutrient intake, including by updating mandatory standards and scaling up the mandatory fortification of rice with iron, as well as fortifying cooking oil and refined sugar with Vitamin A.
- Civil society engagement has been a key driver of momentum. The Spina Bifida Support Group Foundation of the Philippines (SBSGF) has been a central partner, bringing the perspective of those most affected into government engagement and public campaigns, and helping build the domestic advocacy coalition needed to sustain pressure for approval.

Senegal:

- Senegal’s government published its long-term national development plan, “Senegal 2050,” in October 2024, positioning nutrition as a strategic pillar of human capital development. The plan explicitly commits to guaranteeing sufficient, healthy, and diverse food for all Senegalese, creating a high-level policy mandate for fortification that did not previously exist.
- Building on this framework, Senegal developed and validated a Strategic Plan for Food Fortification 2024-2028, covering wheat flour, vegetable oil, and salt iodization. The plan sets out a vision, strategic actions, and a budget, providing a comprehensive roadmap for the first time and anchoring fortification within the government’s broader nutrition governance structure. Key actions include: strengthening enforcement for edible oil (vitamin A) and wheat flour (iron/ folic acid); scaling up rice fortification in collaboration with local producers; and enhancing compliance monitoring at the production and market levels to ensure standards (e.g., ECOWAS harmonization) are met.
- In 2025, Senegal developed national standards for rice fortification, establishing the regulatory foundation to introduce fortified rice as a new vehicle alongside existing mandatory commodities.
- Senegal, with support from partners, launched a fortified rice program for school meals, distributing over 30 metric tons of multi-nutrient fortified rice to 61,000 students across 236 primary schools during the 2024-2025 school year, providing a concrete delivery mechanism ahead of broader national scale-up²⁸.
- Senegal remains the leading salt producer and exporter in West Africa, with more than 50% of local production of salt exported in the region, of which 100% is adequately iodized.

Tanzania:

- Tanzania enacted its Mandatory Food Fortification Regulations in April 2025. The regulations consolidate and replace the country’s 2010 iodized salt and 2011 maize flour, wheat flour, and edible oil frameworks into a single comprehensive legal instrument, making fortification of all four staple foods mandatory across micro, small, medium, and large-scale producers alike. The Tanzania Bureau of Standards is mandated to enforce full compliance from December 2025, with non-compliant producers subject to penalties and closure.
- Alongside the new regulations, Tanzania developed a National Food Fortification Guideline aligned with the mandatory framework, providing producers with the technical standards and

operational guidance needed for implementation.

- In Zanzibar, the Multisectoral Nutrition Strategic Action Plan 2024/25-2028/29 was adopted, with explicit targets to increase iodized salt use and improve iodine status among women of reproductive age.

Türkiye:

- The Government of Türkiye has initiated the development of wheat flour fortification standards and a national implementation roadmap, marking the first formal steps toward mandatory fortification in a country that is among the world's largest wheat producers and flour exporters. Adoption of fortification standards in Türkiye would have significant regional reach given the scale of its milling industry.

The United States of America:

- The enactment of California Assembly Bill 1830 in September 2024, signed by Governor Newsom, represents a landmark in US food fortification policy. Taking effect January 1, 2026, the law mandates folic acid fortification of corn masa flour, making California the first US state to require fortification of a food that was excluded, without justification, from the 1996 federal folic acid mandate. Alabama passed comparable legislation taking effect in 2026, and additional states including Florida, Georgia, Oklahoma, and Oregon are considering similar measures.
- The legislation addresses a longstanding health equity gap. Hispanic women in the United States are 19% more likely than non-Hispanic women to have a pregnancy affected by a neural tube defect, and voluntary folic acid fortification of corn masa flour, approved by the FDA in 2016, demonstrably failed to close this disparity. The market share of fortified corn masa flour is projected to reach approximately 25% by the end of 2025, up from under 6% in 2024.

Zimbabwe:

- Zimbabwe has initiated the development of national food fortification standards, with government engagement and technical support from development partners.

Ethiopia's World-First Double-Fortified Salt Program

Ethiopia carries the highest reported burden of neural tube defects in Africa, at 80 cases per 10,000 live births, more than three times the continental average²⁹. To combat this, Ethiopia is pioneering a world-first public health intervention: double-fortified salt enriched with both iodine and folic acid (DFS-loFA), designed to prevent NTDs, stillbirths, and low birthweight at population scale.

The program is built on a robust evidence base built over the last few years. A double-blind randomized controlled trial confirmed that DFS-loFA rapidly and substantially raises folate levels among women of reproductive age³⁰. An industrial pilot at a domestic producer demonstrated that both micronutrients remain stable for over

ten months under local heat and humidity conditions, with more than 94% retention from factory to household and no detectable difference in taste or smell³¹. And a study involving women of reproductive age in urban and rural areas of the country confirmed that DFS is highly acceptable in terms of color, texture, aroma, and taste³².

In November 2025, Ethiopia's Project Advisory Committee and Food Fortification Steering Committee unanimously endorsed the full evidence package and recommended immediate progression to a mandatory national standard. The program was formally launched in 2026 with representation from both the Ministry of Health and the Ministry of Industry. A mandatory DFS-loFA standard was adopted in April 2026, making Ethiopia the first country in the world to mandate this formulation. The intervention builds on Ethiopia's universal salt iodization program, which already reaches over 90% of households, and will add just \$0.01 per capita per year to existing iodization costs³³.



Peru's fortified rice model

Peru carries one of the highest burdens of childhood anemia in the Americas, with 43% of children under three affected nationally³⁴. Low dietary iron intake is the primary driver, and progress through supplementation alone had stalled. In response, Peru pursued a unique approach, using its position as a major rice-producing and -consuming nation, where 83% of the population eat rice daily, to deploy fortified rice as a vehicle for large-scale micronutrient delivery³⁵.

Peru's innovative strategy deliberately inverted the conventional model: rather than mandating fortification first and building supply, the government first created institutional demand by introducing fortified rice into national social assistance programs. Starting with school feeding pilots in 2017, fortified rice was progressively rolled out through Qali Warma, Cuna Más, and other programs, reaching children under three, school-age children, and families in poverty. By 2025, over 3 million children were receiving fortified rice through social assistance programs.

Once this predictable market was established, the government, with support from development partners, supported the private sector to respond to this new market with increased supply. After providing capacity building and knowledge transfer activities to medium- and large-scale millers, over 150 local rice millers applied to become certified, fostering a sustainable supply chain. The evidence base and private sector capacity this generated paved the way for Peru's mandatory Fortified Rice Law, passed in 2021, just four years after the first pilot.

Regional leadership has been central to driving results. In Lambayeque, fortified rice was integrated into major commercial brands, the Regional Food and Nutrition Security Council was reactivated, and all three provincial municipalities incorporated fortified rice into procurement. In Cusco, a dedicated Food Fortification Committee was established to accelerate scale-up. Together, the two regions reignited national debate on universal fortification and generated the

political momentum and practical evidence to sustain it.

The results are striking. Anemia among children under three fell from 17.1% to 11.2%, with an even sharper reduction among children under one, from 33.1% to 19.5%. The government has mobilized over USD 48 million to sustain and expand the program, and a 2024 implementing regulation further strengthened quality and monitoring requirements across the supply chain.

Building South Asia's Most Comprehensive Fortification Program

Bangladesh has built one of South Asia's most comprehensive large-scale food fortification programs, combining a robust legislative framework with expanding social protection delivery and high compliance rates across mandatory commodity categories.

On salt, Bangladesh enacted a sequence of interlocking legislation: the Iodized Salt Act in 2021, the National Salt Policy in 2022, and the Iodized Salt Rules in 2024, creating a complete framework covering production, import, distribution, and retail. The results are measurable: 88% of packaged salt now meets iodization standards. Edible oil has been fortified with vitamin A since 2015 and is also achieving significant results, delivering 98% compliance in packaged products, among the highest rates in the region.

Rice fortification has scaled substantially through government social protection programs. Fortified with six micronutrients - zinc, iron, folic acid, vitamin A, vitamin B1, and vitamin B12 - currently 16 million people receive fortified rice through social safety nets³⁶, including vulnerable women, low-income families and Rohingya refugees. This is an incredible scale up since the beginning of the program in 2013, when only 30,000 received fortified rice³⁷. The private sector has also recently launched fortified rice commercially, extending access beyond social protection beneficiaries and signaling growing market demand.

4 A CALL TO ACTION

Food fortification currently protects billions of people from micronutrient deficiencies and has the potential to triple its current impact at minimal cost according to a landmark analysis published in *The Lancet Global Health* this year.

WHAT THE NUMBERS SAY:

Friesen and Free et al. modeled the impact of food fortification across 185 countries for 13 micronutrients³⁸. Their findings are striking:

- Current programs prevent 7.0 billion nutrient gaps every year, a figure that underscores the scale of what has already been built.
- Improving compliance with existing standards to 90% could prevent an additional 6.1 billion nutrient gaps, at a cost of just \$0.43 per person per year.
- Aligning national standards with WHO guidelines and improving compliance could prevent an additional 10.3 billion gaps, at \$0.82 per person per year.
- Full expansion — aligned standards, improved compliance, and new programs — could reach 24.7 billion nutrient gaps prevented annually. The cost: \$1.15 per person per year.
- Every \$1 invested in fortification returns \$27 in health and productivity benefits.

This analysis arrives at a moment when resources for global nutrition are under pressure. Donor budgets are tightening. Competing crises — climate, conflict, economic instability — are pulling existing resources in multiple directions. In this environment, food fortification stands out because it is fundamentally about coordination and modest investments in existing systems, not massive capital expenditure. For new programs this means adding a step to existing production of staple foods and condiments. For existing programs, accelerated progress and expanded impact comes through adjusting the standards that fortified food producers already follow, building the monitoring systems that governments already need, and ensuring quality premix supply that programs already use — these steps are achievable with coordination, modest and targeted investment, and sustained political will.

What has been accomplished since WHA76.19 is already making a genuine difference in millions of lives. But much more

can still be accomplished if governments, industry, development partners, and civil society each contribute their part. The path to tripling the impact of fortification does not require a revolution in resources. It requires better compliance, stronger standards, smarter expansion, and a modest investment of additional resources.

The resolution adopted three years ago clearly defined the problem, laid out the actions required, and established mechanisms for accountability. The question now is whether the political will demonstrated in Geneva in May 2023—and reinforced at the Nutrition for Growth Summit in Paris in March 2025—will translate into sustained action by governments and the private sector, with support from civil society and the development community. If it does, the path to 2030 could become one of the great victories in global public health.

Three Actions That Would Change the Numbers

1 Enforce existing standards

Closing the compliance gap will require stronger public-private collaboration to build capacity and address persistent technical barriers. Strengthening quality assurance and monitoring across the fortification value chain will depend on a coordinated, multi-stakeholder approach, supported by targeted investments in laboratory infrastructure, inspector training, digital monitoring systems, and meaningful incentives for compliance among food producers. This step is the lowest-hanging fruit, requiring no new standards or legislation, only the commitment and resources to fully implement what already exists. Achieving 90% compliance with current standards alone could prevent an additional 6.1 billion nutrient gaps – an 87% increase in impact.

2 Align national standards with WHO guidelines

Many countries currently fortify at levels below WHO recommendations, limiting impact. Aligning national standards with global guidance, based on population needs and dietary patterns, would significantly increase the nutritional impact of programs that are already operational. This regulatory change has the potential to prevent an additional 4.2 billion gaps, increasing impact by 150%, assuming high compliance is maintained.

3 Expand programs to high-need regions

Countries with widespread deficiency and widely consumed, centrally processed staple foods — for example, rice in West Africa and South Asia – have great potential for new program impact. Seventy-seven countries currently have no folic acid fortification program of any kind³⁹. Reaching these countries with technical support, feasibility assessments, and legislation is where the largest gains in prevention lie, addressing an additional 7.5 billion gaps beyond the gains described in the steps above.

THE BOTTOM LINE

Current impact:

7 BILLION

nutrient gaps prevented each year



With compliance + aligned standards + expansion:

24.7 BILLION

nutrient gaps prevented each year

In an era of constrained resources, food fortification is among the best possible investments in health, equity, and human potential.

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7 billion → 24.7 billion

The potential of food fortification is within reach.

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