Turning resolution into action:

Implementing the World Health Assembly Resolution on Food Fortification

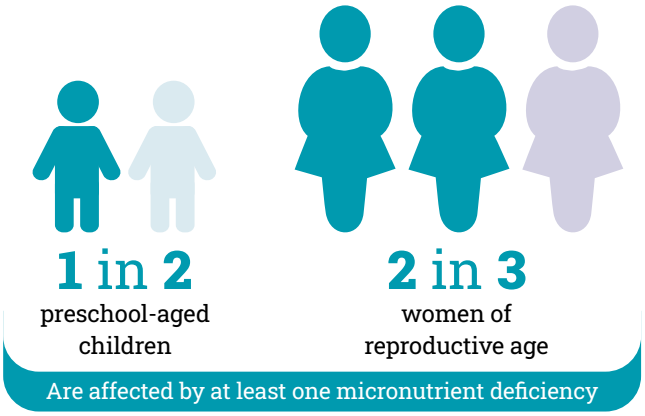
Summary

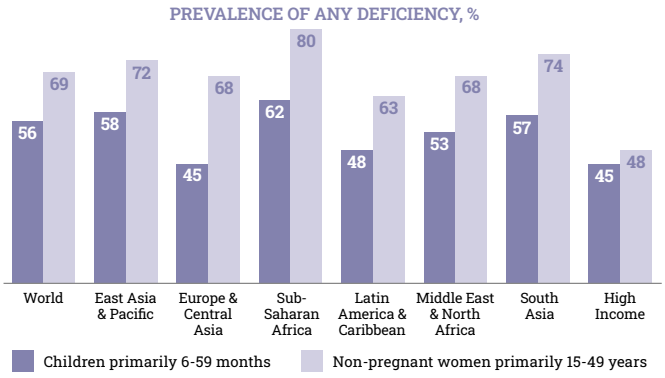
- Micronutrient deficiencies (also known as hidden hunger) are a significant public health problem globally. Pre-pandemic estimates found **1** in **2** children and **2** in **3** women suffering from a micronutrient deficiency. Levels of deficiency are likely to be even higher today given the ongoing global food price crisis arising from the COVID pandemic and Russia's invasion of Ukraine.
- Large scale food fortification (LSFF) adds essential minerals and vitamins to widely consumed foods and is a highly scalable and cost-effective solution proven to prevent micronutrient deficiencies including in low- and middle-income countries.
- Unfortunately, a large unfinished agenda on food fortification remains. Re-doubling collective efforts to improve the reach and quality of food fortification programs has enormous potential to combat hidden hunger worldwide. **84** countries could benefit from establishing new mandatory fortification programs, and most existing programs must be strengthened to reach more people with high-quality fortified food.
- To ensure the success of LSFF, governments can establish and strengthen national mandatory fortification standards as well as regulatory frameworks that ensure access to high-quality fortified foods across the entire population. Strong regulations also help ensure a level playing field for fortified food producers where all are held to the same standard.
- In May 2023, a resolution passed at the 76th World Health Assembly (WHA) called on member states to establish and strengthen food fortification programs to combat the growing global crisis of micronutrient malnutrition and directed the WHO Director General to provide guidance and technical support to Member States in this regard.

Context

The latest evidence published in The Lancet Global Health estimates that **1** in **2** preschool-aged children and **2** in **3** women of reproductive age worldwide have at least one micronutrient deficiency.[1] These deficiencies cause a range of negative health outcomes, including impaired cognitive development, poor growth, and increased susceptibility to infectious diseases. While the estimates in the Lancet study are alarming, they likely understate the problem, as they predate the impact of COVID 19 and the ongoing global food price crisis which have left over **40%** of the world's population unable to afford a healthy diet.[2]

Food quality and availability are expected to decline in the near to medium term as yields of micronutrient rich crops are reduced due to extreme weather. The micronutrient content of staple foods such as wheat and rice is also decreasing due to climate change.[3] Both trends make it more challenging for vulnerable populations to access a micronutrient-rich diet





Source: G.A. Stevens, T. Beal, M.N.N. Mbuya, et al., Micronutrient deficiencies among preschool-aged children and women of reproductive age worldwide: a pooled analysis of individual- level data from population-representative surveys. Lancet Global Health. 2022;10(11):E1590-E9.

Large Scale Food Fortification: An evidence-based intervention to prevent micronutrient deficiencies.

Large scale food fortification (LSFF) adds essential vitamins and minerals to widely consumed foods during processing. It is one of the most cost-effective interventions to reduce micronutrient deficiencies[4] with an average cost-benefit ratio of **1:27**.[5] Food fortification reduces the prevalence of anemia by **34%** and reduces the odds of goiter by **74%**.[6] At least 84 countries could benefit from establishing new mandatory fortification programs. And most existing programs need to be strengthened to ensure access to high-quality fortified food across the entire population.[7]

1 Stevens GA, Beal T, Mbuya MNN, Luo HQ, Neufeld LM. Micronutrient deficiencies among preschool-aged children and women of reproductive age worldwide: a pooled analysis of individual-level data from population-representative surveys. The Lancet Global Health 2022; 10: e1590–99. https://doi.org/10.1016/S2214-109X(22)00367-9

2 Moncayo et al, "Over 3.1 billion people could not afford a healthy diet in 2021 - an increase of 134 million since the start of COVID-19." Data Blog. World Bank. July 17, 2023. https://blogs.worldbank.org/en/opendata/over-31-billion-people-could-not-afford-healthy-diet-2021-increase-134-million-start-covid#:~:text=The%20data%20reveal%20that%20more,of%20the%20COVID%2D19%20pandemic.

3 Semba RS, Askari S, Gibson S, et al. The Potential Impact of Climate Change on the Micronutrient-Rich Food Supply, Advances in Nutrition. 202; 13(1): 80-100. https://doi.org/10.1093/advances/nmab104.

4 Hoddinott J, Rosegrant M, Torero M. Investments to reduce hunger and undernutrition, Global Copenhagen Consensus, 2012. https://www.copenhagenconsensus.com/sites/default/files/hungerandmalnutrition.pdf

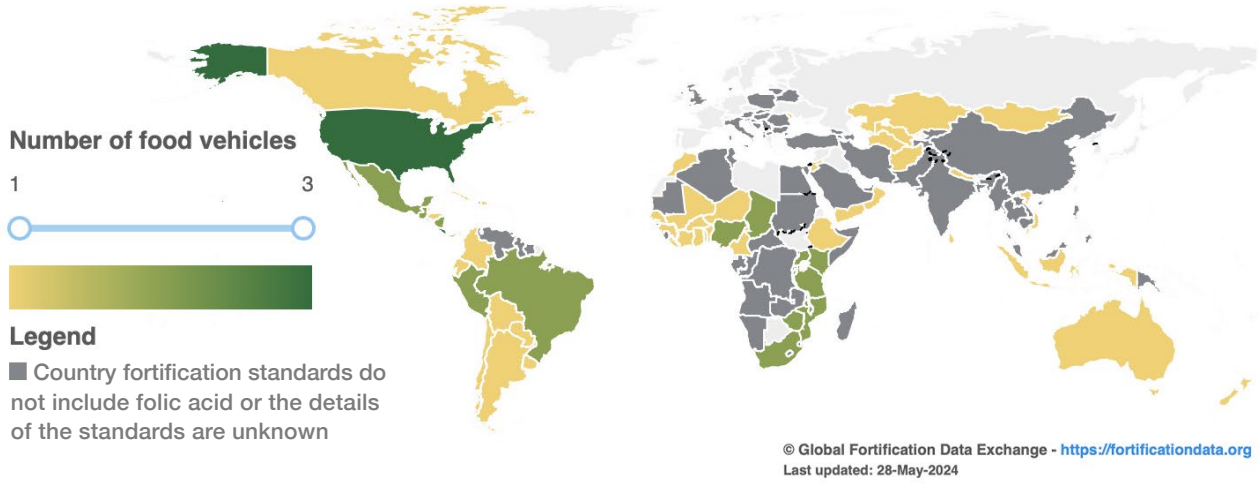
5 Garret G, Matthias D, Keats E, Mduduzi M, and Wouabe E. "Doubling Down on Food Fortification to Fortify the Future." Bill & Melinda Gates Foundation, 24 October, 2019. https://www.gatesfoundation.org/ideas/articles/food-fortification-to-fortify-the-future.

6 Keats EC, Neufeld LM, Garrett GS, Mbuya MNN, Bhutta ZA. "Improved micronutrient status and health outcomes in low- and middle-income countries following large-scale fortification: evidence from a systematic review and meta-analysis." Am J Clin Nutr. 2019 Jun 1;109(6):1696-1708. https://doi.org/10.1093/ajcn/nqz023. PMID: 30997493; PMCID: PMC6537942.

7 Mkambula P, Mbuya MNN, Rowe LA, Sablah M, Friesen VM, Chadha M, Osei AK, Ringholz C, Vasta FC, Gorstein J. The Unfinished Agenda for Food Fortification in Low- and Middle-Income Countries: Quantifying Progress, Gaps and Potential Opportunities. Nutrients. 2020 Jan 29;12(2):354. https://doi.org/10.3390/nu12020354 PMID: 32013129; PMCID: PMC7071326.

The unacceptably high prevalence of folic acid-preventable spina bifida and anencephaly is a striking example of preventable death and morbidity for which LSFF is part of the solution. These neural tube birth defects are among the top contributors to child morbidity without a cure and most affected pregnancies result in miscarriages, terminations, stillbirths, or under-five mortality. Food fortification with folic acid reduces the occurrence of neural tube defects by **41%**.[8] Yet, only **70** countries currently mandate fortification of cereal grains with folic acid and other micronutrients.[9]

Countries with mandatory fortification of wheat flour, maize flour or rice where folic acid is included in the fortification standard



LSFF is unique among nutrition interventions in that implementation is led by the private sector.[10] To ensure that micronutrient deficiencies are appropriately addressed, countries should:

a) Set standards that establish safe upper limits on micronutrients added to food.

b) Create appropriate laws and regulations to ensure a level playing field for all food producers.

c) Consider the micronutrient needs of the population, acceptability, and feasibility of food vehicles, and the effect of overlapping micronutrient interventions.[11,12]

LSFF is an essential part of national and regional efforts to combat micronutrient deficiencies but it is not a silver bullet. It works best as part of a package of complementary interventions, including biofortification, micronutrient supplementation for vulnerable populations,[13] and improving the affordability, availability, and desirability of micronutrient dense foods.

Despite widespread evidence of LSFF's effectiveness,[14] it is currently underutilized, especially in low- and middle-income countries and in Europe. A resolution passed unanimously by the 2023 World Health Assembly (WHA), "Accelerating efforts for preventing micronutrient deficiencies, spina bifida, and other neural tube defects through safe and effective food fortification,"[15] garnered significant global support. The resolution was co-sponsored by 37 Member States and endorsed by over 70 organizations representing the nutrition, disability rights, and health policy sectors.[16]

8 Keats EC, Neufeld LM, Garrett GS, Mbuya MNN, Bhutta ZA. Improved micronutrient status and health outcomes in low- and middle-income countries following large-scale fortification: evidence from a systematic review and meta-analysis. Am J Clin Nutr. 2019 Jun 1;109(6):1696-1708. doi: 10.1093/ajcn/nqz023. PMID: 30997493; PMCID: PMC6537942.

9 Global Fortification Data Exchange. Accessed 28/05/2024. https://www.fortificationdata.org.

10 Durotoye T, Yusufali R, Ajieroh V, Ezekannagha O. Building the Commitment of the Private Sector and Leveraging Effective Partnerships to Sustain Food Fortification. Food and Nutrition Bulletin. 2022;0(0). doi:10.1177/03795721221123699

11 World Food Programme (WFP), 2022. Food fortification: An effective and safe way to fight micronutrient malnutrition and its consequences.

12 Friesen V, Mbuya M, Neufeld L, Weiringa FT, A Framework for Evidence-Based Decision Making in Large-Scale Food Fortification Programs, Current Developments in Nutrition 2020; 4(2). https://doi.org/10.1093/cdn/nzaa067_029

13 Osendarp S. "The world's most cost-effective health intervention is being overlooked." SDG2 Advocacy Hub, 24 March 2021. Available from: https://sdg2advocacyhub.org/index.php/news/worlds-most-cost-effective-health-intervention

14 Osendarp SJM, Martinez H, Garrett GS, Neufeld LM, De-Regil LM, Vossenaar M, et al. Large-Scale Food Fortification and Biofortification in Low- and Middle-Income Countries: A Review of Programs, Trends, Challenges, and Evidence Gaps. Food and Nutrition Bulletin. 2018;39(2):315-31. https://doi.org/10.1177/0379572118774229

15 *Accelerating Efforts for Preventing Micronutrient Deficiencies and Their Consequences, Including Spina Bifida and Other Neural Tube Defects, through Safe and Effective Food Fortification.* The Seventy-sixth World Health Assembly, 2023. Available from: https://apps.who.int/gb/ebwha/pdf_files/EB152/B152_CONF5-en.pdf

16 https://www.gainhealth.org/sites/default/files/news/documents/Resolution-Accelerating-efforts-for-preventing-micronutrient-deficiencies-and-their-consequences-including-spina-bifida-and-other-neural-tube-defects-through-safe-and-effective-food-fortification.pdf

This WHA food fortification resolution calls on Member States and the WHO Director General to take specific actions to deploy food fortification as a critically important tool in the fight against malnutrition, including by supporting, strengthening, and expanding food fortification programs where appropriate. The resolution establishes a biennial reporting cadence to monitor and assess the progress of national food fortification programs through 2030.

Implementing the 2023 WHA Resolution – Opportunities for Member States

Passage of the WHA Resolution on food fortification was just the first step in a journey to improved nutrition worldwide. To implement the resolution, Member States could commit to:

- Investing in micronutrient data collection to guide LSFF standards and policies and to track the quality, coverage, and impact of programs;
- Aligning national food fortification programs with food consumption patterns and levels of micronutrient deficiency, for example by adjusting standards or adding mandatory food vehicles;
- Improving the reach or impact of food fortification, for example by strengthening monitoring and enforcement of fortification mandates to improve quality and create a level playing field for fortified food producers;
- Increasing the ability of food producers to fortify, for example by eliminating import taxes on fortification inputs and strengthening communication with food producers to better address their needs and challenges;
- Facilitating access to vitamin/mineral premix that meets national standards;
- Supporting a regional coordination or action plan for fortification, for example through the processes currently underway in East and Southern Africa, Economic Community of West African States (ECOWAS) and South Asia.

Member states can formalize their plans to accelerate the progress of food fortification by including them in their official commitment at the 2025 Nutrition for Growth Summit in Paris