

TÜRKIYE

TRANSFORMING LIVES THROUGH LARGE-SCALE WHEAT FLOUR FORTIFICATION

Vitamins and minerals have the power to unlock—or undo—human potential. Ensuring that all people can consume diets rich in vitamins and minerals, also known as micronutrients, is foundational to building a healthy food system and to achieving national goals.

Micronutrient malnutrition is a pressing issue globally and in Türkiye. According to Türkiye Nutrition and Health Survey (2019), daily intake of micronutrients such as folic acid, iron, and vitamin B12 is well below what is needed, especially for girls and women of childbearing age.¹

The opportunity:

- Reach more than 80 million people with essential nutrients
- Prevent birth defects of the brain and spine (neural tube defects (NTDs)) for an estimated 3,500 babies
- Prevent 1.6 million cases of anemia for women of childbearing age



3,500 babies

are born each year in Türkiye with an NTD that can be prevented with folic acid.²

Each of the 20 million women of childbearing age in Türkiye is at risk of having a baby with a birth defect of the brain and spine (NTD). Women who regularly consume foods fortified with folic acid are less likely to have an infant with an NTD.



1/3 of women

in Türkiye are anemic.³

Anemia is often caused by deficiencies of micronutrients including iron and zinc. Pregnant women with severe anemia are twice as likely to die during or shortly after pregnancy than non-anemic women.



₺149 billion

(€5 billion) annual losses in Türkiye's GDP are due to micronutrient deficiencies.⁴

Proper nutrition is essential for maximizing economic productivity. Anemia can lower productivity by as much as 17%.⁵ Children who do not get the micronutrients their bodies need between conception and age two are at high risk for impaired brain development, which negatively affects future productivity and growth.

FORTIFICATION AS A POWERFUL SOLUTION

Fortification is the addition of small amounts of micronutrients to commonly consumed foods, like wheat flour and rice, during the milling process. Often the micronutrients added replace those naturally available in the food but lost during milling.

Large-scale food fortification is an established food systems intervention with a proven track record of virtually eliminating micronutrient deficiencies over the past 100 years. Globally, [92 countries](#) have legislation to mandate fortification of at least one industrially milled cereal grain.⁶ Many of these countries import fortified wheat flour from Turkish millers; as a result, these millers already have the equipment and know-how for fortification.

Top economists have declared large-scale food fortification to be one of the most cost-effective development investments that exist today.^{7 8}

As part of broad national programs to reduce chronic undernutrition, fortification can save national economies an estimated annual 2-3% of GDP, and it costs only cents per person per year.⁹

In 2023, the World Health Assembly voted to adopt the resolution “[Accelerating efforts for preventing micronutrient deficiencies and their consequences, including spina bifida and other neural tube defects, through safe and effective food fortification](#)”. The resolution urges Member States to dialogue with public, private, and civic stakeholders on the importance of preventing micronutrient deficiencies through interventions like food fortification. Large-scale food fortification can help countries achieve United Nations [Sustainable Development Goals](#) on maternal and child health and health equity.



Photo: Corinne and Jim Vail

THE OPPORTUNITY FOR FORTIFICATION IN TÜRKİYE

With marginal cost and the potential to improve lives, food fortification offers a tremendous opportunity to prevent NTDs, reduce anemia, and improve the livelihoods of the most vulnerable populations in Türkiye. By enacting mandatory fortification of wheat flour, fortified flour has the potential to reach nearly all of the country’s population—more than 80 million people—and prevent NTDs for an estimated 3,500 babies and 1.6 million cases of anemia for women of childbearing age.

Beyond improving health, reducing micronutrient deficiencies can improve economic productivity, reduce healthcare expenditures, and build food security as Türkiye boldly faces challenges like recovery from the 2023 earthquake, climate change, and the global refugee crisis. Fortification advances the ultimate goal of healthy, safe, accessible, locally produced diets for everyone. Wheat flour fortification improves overall intake of essential micronutrients, amplifying the success of nutrition and Türkiye’s other important health interventions.



- [1] Turkish Ministry of Health - General Directorate of Public Health. Türkiye nutrition and health research. 2019.
- [2] Çaylan et al. BMC Pregnancy and Childbirth. 2022.
- [3] World Health Organization. The global prevalence of anemia in 2011. 2015.
- [4] World Bank. World Development Indicators (Database). 2009.
- [5] Horton, S. & Ross, J. The economics of iron deficiency. Food Policy. 2003.
- [6] Food Fortification Initiative. Global Progress. 2023.
- [7] Horton S., et al. Best practice paper food fortification with iron and iodine. Copenhagen Consensus Center. 2008.
- [8] Hoddinott J., et al. Investments to reduce hunger and undernutrition. Copenhagen Consensus Center. 2012.
- [9] Walters, D. et al. An Investment Framework for Meeting the Global Nutrition Target for Anemia. 2017

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