INTRODUCTION

Diets low in vitamins and minerals can lead to poor health outcomes, serious birth defects of the brain and spine, and poor cognitive development. These irreversible damages adversely affect communities and the economies of entire nations. Children do not develop fully, adults cannot work productively, and excessive resources are spent to treat a variety of nutrition-related health problems.

Globally, more than 2 billion people are affected by vitamin and mineral deficiencies.[1]

KEY MESSAGES

Hidden hunger, also known as micronutrient deficiencies, is a lack of critical vitamins and minerals. It can be life threatening and cause lifelong conditions, including intellectual disability, preventable blindness, and birth defects. Today, it affects more than a quarter of the global population – 2 billion people.

Food fortification is one of the most scalable, sustainable and cost-effective interventions to combat micronutrient malnutrition. Fortification adds essential vitamins and minerals to commonly consumed foods to prevent nutritional deficiencies.

As of 2020, fortification is mandatory in 85 countries for wheat flour, 17 countries for maize flour, 7 countries for rice, 27 countries for oil, and 124 countries for salt.
WHY FORTIFY

Food fortification, the addition of essential vitamins and minerals to commonly consumed foods such as maize flour, edible oil, rice, salt, and wheat flour, is one of the most cost-effective and proven interventions to address vitamin and mineral deficiencies. Food fortification is a complementary intervention to preventing and treating vitamin and mineral deficiencies and should be considered as part of a broader nutrition strategy that includes other nutrition-specific and nutrition-sensitive interventions.

Food fortification spreads the burden of implementation costs between the public and private sector and the consumer. While it is the private sector that fortifies the food, the government can create a more enabling environment for industry by passing mandatory legislation (which creates an even playing field for industry), setting standards to ensure adequate and safe levels of nutrients are added, and monitoring the production of fortified foods.

THE ROLE OF THE GFDX

Designed for, and by the fortification community, the GFDx provides all the data necessary to track global progress on food fortification, and to enable decision makers to use data to improve the quality of national fortification programs.

The GFDx aggregates and visualizes data on five commonly fortified foods: maize flour, oil, rice, salt, and wheat flour. The GFDx includes indicators on food fortification legislation from 1940 to present, fortification standards, and food availability and intake, legislation scope, proportion of foods industrially processed, availability of regulatory monitoring protocols, fortification quality, and population coverage for 196 countries.

FIGURE 1. FORTIFICATION TIMELINE

Mandatory fortification of food vehicles for some countries began before the 1970s.

Since 2000, 95 new countries have enacted mandatory or voluntary legislation of at least one food.

There was a large increase in the number of countries mandating fortification in the 1990s for both wheat flour and salt.

As of 2020, the GFDx reports that 142 countries have mandatory fortification of at least one food.
FIGURE 3. NUMBER OF COUNTRIES WITH MANDATORY OR VOLUNTARY FORTIFICATION

- In 2019, 161 countries had mandatory or voluntary legislation of at least one of the foods.
- Salt is the most widely fortified food with 145 countries having mandatory or voluntary legislation.
- Regionally, the Americas had the highest proportion of countries with fortification legislation of one of the foods, with all 35 countries fortifying wheat flour.
NUTRIENTS IN STANDARDS

Food standards are legal documents that define criteria for food in a country – fortification standards refer to the nutrients specified for addition to a food, the amount, and nutrient compounds that can be used. A country can have a fortification standard and not have mandatory fortification legislation. The following are some nutrients and food vehicles that are used in fortification globally:

17 countries have standard for niacin
32 countries have standard for vitamin A
91 countries have standard for iron
137 countries have standard for iodine

FIGURE 4. COUNT OF NUTRIENTS IN FORTIFICATION STANDARDS, 2020

153 COUNTRIES HAVE AT LEAST 1 NUTRIENT IN ANY FORTIFICATION STANDARDS
18 COUNTRIES HAVE AT LEAST 10 NUTRIENTS IN ANY FOOD FORTIFICATION STANDARDS
**CONCLUSION**

Although countries began passing legislation for mandatory food fortification before the 1970s, there are still wide gaps between the different food vehicles. The fortification of salt is practiced the most in over 100 countries whereas the fortification of rice is practiced in less than 10 countries. While the fortification of the grains are present predominately in the Americas, the fortification of oil is mainly seen in Asia and Africa.

Food fortification can address severe micronutrient deficiencies and therefore it is important to encourage countries to implement fortification programs. For programs to be successful, a broad set of stakeholders across private sector, government, civil society, development agencies and academia must come together to collaborate. The World Health Organization provides recommendations and guidelines for fortification compounds and levels. Countries can use these recommendations to create the desired public health impact. The GFDx became the solution for improved reporting, greater data accountability and enhanced accessibility to inform program refinements, launch new initiatives as well as identify populations and geographies in need.

**SUGGESTED CITATION**


**REFERENCES CITED**