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Food Fortification for Schools in Uganda to Combat Micronutrient Deficiencies or Hidden Hunger in Children and Adolescents

An Advocacy Brief

Micronutrient Status in Uganda

Micronutrient deficiencies, also known as hidden hunger, remain a public health concern. Micronutrient deficiencies can have serious health and economic consequences that can limit human potential. They increase the risk for infectious diseases; compromise child growth and development; and reduce educational outcomes and work productivity. Table 1 lists micronutrient deficiencies in women of reproductive age and young children.

Micronutrient deficiencies are substantial when considered to be an unimportant economic development strategy. The reverse is also true. For example, an annual investment of \$1.2 billion in improving the micronutrient supply globally through supplementation, food fortification and/or biofortification of staple crops would result in “better health, fewer deaths, and increased future earnings” of up to \$15.3 billion per year, a 13-to-1 benefit-to-cost ratio (FAO 2013).



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What is a Micronutrient?

Micronutrients are vitamins and minerals needed by the body in very small amounts. However, their impact on health is critical and deficiency of a single micronutrient can cause severe and even life-threatening conditions.

Table I. Micronutrient Deficiencies in Women and Children

Children 6–59 months (preschool/kindergarten age)	
Low/good	High/poor
Vitamin A deficiency 5.5%	Anemia 31.7%
Folate deficiency 1.5%	Iron deficiency 13.7%
B12 deficiency 4.7%	Iron deficiency anemia 6.9% (mild)
	B12 depletion 16.3%
Women 15–49 years and/or reproductive age	
Low/good	High/poor
Vitamin A deficiency 0.5%	Anemia 16.7%
Folate deficiency 4.1%	Iron deficiency 16.7%
Median Urinary iodine concentration 231.5% (high/good)	Iron deficiency anemia 7% (mild)
	B12 deficiency 9.4% (mild)
	B12 depletion 29.1%

Source: Uganda Bureau of Statistics (UBOS). (2020). The Uganda National Panel Survey 2018/19, Wave VII Report. The Republic of Uganda: UBOS.

Fortified Foods Provide Important Nutrition for Ugandan Learners to Succeed

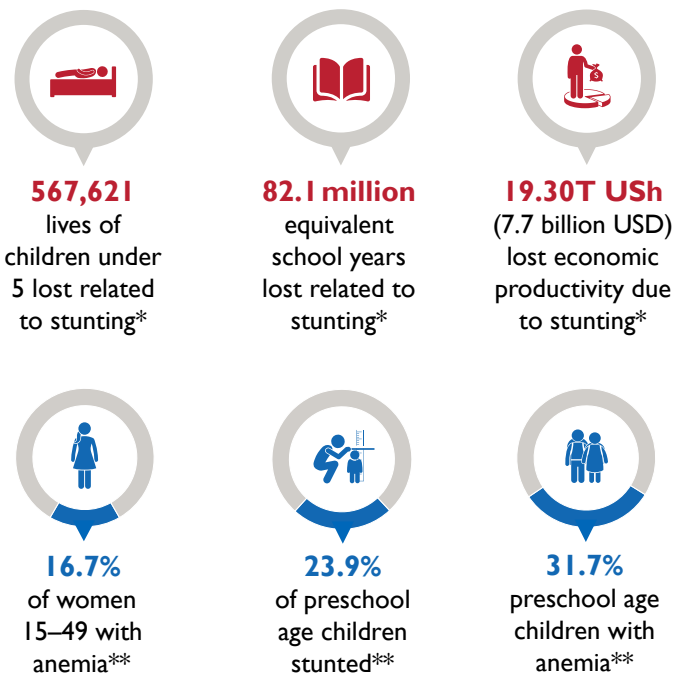


Micronutrient deficiencies such as iron deficiency anemia reduce learning ability and concentration among children in school. The problem persists despite a drop in anemia rates in recent years (UNICEF 2019). Malnutrition in adolescence can also adversely affect school achievement as well as health and productivity in adult life. Anemia and other micronutrient deficiencies cause irreversible mental impairment of millions of growing minds, including lowered IQ and suboptimal learning outcomes. Impacts are illustrated in Figure I.



Maize flour, wheat flour, salt, vegetable oils, and fats are used in preparation of school meals. All of these foods lose most of the vitamins and minerals during the milling process (UBOS and WFP 2013). Improving the nutritional quality of the meals through fortified foods served in schools is an important way to improve learners' nutrition, reversing negative effects.

Figure I. Impact of Micronutrient Deficiencies



*Source: Office of the Prime Minister Uganda. 2013. *Reducing Malnutrition in Uganda: Summary of Uganda PROFILES 2013 Estimates to Support Nutrition Advocacy*. Kampala: Office of the Prime Minister Uganda.

**Source: Uganda Bureau of Statistics (UBOS). (2020). The Uganda National Panel Survey 2018/19, Wave VII Report. The Republic of Uganda: UBOS

What is Fortification?

Fortification is the practice of deliberately adding essential micronutrients (vitamins and minerals) in foods to improve nutritional quality and restore micronutrient content lost during processing (WHO 2006). Along with providing a low-risk, safe public health benefit, fortification increases the nutritional content of staple foods and helps restore lost micronutrients.

Source: FAO (Food and Agriculture Organization of the United Nations and WHO (World Health Organization). 2006. *Codex Alimentarius International Food Standards: General Principles for the Addition of Essential Nutrients to Foods*. Revised Version." Geneva, Switzerland:WHO and Rome; Italy: FAO.

Key Messages



Improving the nutritional quality of meals can improve learning outcomes.

The food served in institutions has the potential to reduce anemia and support cognitive and brain function (Bellisle 2004). Fortified foods help fill nutritional gaps and increase vitamin and mineral consumption that would otherwise be less than the recommended value. In schools using fortified flour, learners' daily nutrient intake increases 45–100 percent.



Fortified flour is a small price to pay for guaranteed good nutrition.

The price difference between fortified and unfortified flour is minimal. This should help allay fears about cost and price fluctuations among institution administrators. Negotiating for bulk purchases at the district or regional level can also help maintain low prices and reduce transport costs.



Improving nutrition in meals helps protect learners' health.

Feeding children and adolescents fortified foods in school has the potential of improving their cognitive and brain abilities and overall academic performance. Improving access to fortified food in school meals could mitigate micronutrient deficiencies and have a positive effect on learning.

Call to Action

- **Sensitize parents/guardians, teachers, pupils/students, and others as to the benefits of fortified foods.** Address misconceptions about fortified foods. Explain to stakeholders that fortified foods are of great value to the populations they serve.
- **Identify nutrition and food fortification champions in the school.** Enlist credible spokespersons such as a respected teacher, student leader, parent, and others to support fortification programs
- **Use social media and digital channels** such as a website, Facebook, X (formerly Twitter), LinkedIn, and others to send out messages on consumption of fortified foods to learners and their families.
- **Integrate food fortification communication in day to-day programs of the schools** including staff meetings, pupil and student assemblies, parent-teacher association (PTA) meetings, annual general meetings, daily assemblies, and more. This will help create awareness, acceptance, and enthusiasm for food fortification.
- **Attach food fortification information leaflets** in formal communication packages such as newsletters, stakeholder reports, meeting invitation letters, and any other written material.



Photo Credit: USAID's Development Credit Authority

- **Participate in forums with industry professionals** who process and sell fortified foods (maize flours, wheat flour, edible oils and fats, and salt) and are certified by the Uganda National Bureau of Standards for food quality and safety. This will allow them to ask questions and understand the process of fortification.
- **Invest in and share periodic research** that demonstrates the nutritional status of learners before and after the introduction of fortified foods.
- **Engage policy makers** and regulatory bodies and provide them with more details and information on fortified foods so they can promote and incorporate their use in various programs.

References

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USAID ADVANCING NUTRITION

Implemented by:
JSI Research & Training Institute, Inc.
2733 Crystal Drive
4th Floor
Arlington, VA 22202

Phone: 703–528–7474
Email: info@advancingnutrition.org
Web: advancingnutrition.org

September 2023

USAID Advancing Nutrition is the Agency's flagship multi-sectoral nutrition project, addressing the root causes of malnutrition to save lives and enhance long-term health and development.

This document is made possible by the generous support of the American people through the United States Agency for International Development (USAID). The contents are the responsibility of JSI Research & Training Institute, Inc. (JSI), and do not necessarily reflect the views of USAID or the United States government.