



The Costs of Undernutrition

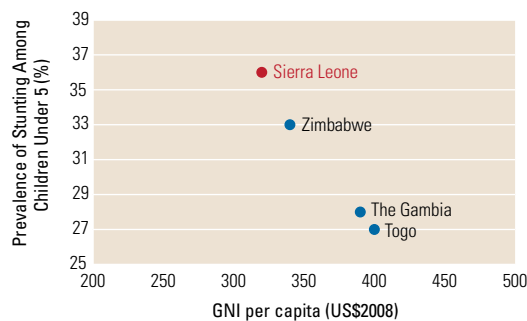
- Over one-third of child deaths are due to undernutrition, mostly from increased severity of disease.²
- Children who are undernourished between conception and age two are at high risk for impaired cognitive development, which adversely affects the country's productivity and growth.
- Childhood anemia alone is associated with a 2.5% drop in adult wages.⁵

Where Does Sierra Leone Stand?

- 36% of children under the age of five are stunted, 21% are underweight, and 10% are wasted.²
- Almost 1 in 4 infants are born with a low birth weight.²
- Sierra Leone will not meet MDG 1c (halving 1990 rates of child underweight by 2015) with business as usual.⁶

As seen in **Figure 1**, Sierra Leone exhibits higher rates of child stunting relative to some other countries with similar per capita income. That Zimbabwe, The Gambia, and Togo have much lower stunting rates demonstrates that it is possible to achieve better nutrition outcomes despite low income.

FIGURE 1 Sierra Leone has Higher Rates of Stunting than Some of its Income Peers



Source: Stunting rates were obtained from WHO Global Database on Child Growth and Malnutrition. GNI data were obtained from the World Bank's World Development Indicators.

Most of the irreversible damage due to malnutrition happens during gestation and in the first 24 months of life.⁶

Annually, Sierra Leone loses over US\$28 million in GDP to vitamin and mineral deficiencies.^{3,4} Scaling up core micronutrient interventions would cost less than US\$4 million per year.

(See *Technical Notes* for more information.)

Key Actions to Address Malnutrition:

Increase nutrition capacity within the Ministries of Health and Agriculture.

Improve infant and young child feeding through effective education and counseling services.

Increase coverage of deworming and vitamin A supplementation for young children and iron supplementation for pregnant women.

Achieve universal salt iodization.

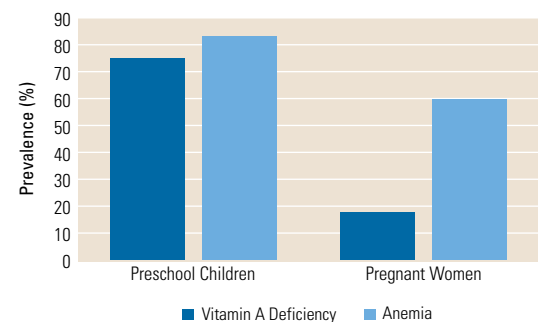
Improve dietary diversity through promoting home production of a diversity of foods and market and infrastructure development.

Increase access to safe, clean water.

Vitamin and Mineral Deficiencies Cause Hidden Hunger

Although they may not be visible to the naked eye, micronutrient deficiencies are widespread in Sierra Leone as shown in **Figure 2**.

FIGURE 2 High Rates of Vitamin A and Iron Deficiency Contribute to Lost Lives and Diminished Productivity



Source: 1995–2005 data from the WHO Global Database on Child Growth and Malnutrition.

- **Vitamin A:** Three-quarters of preschool aged children, and nearly one-fifth of pregnant women are deficient in vitamin A (75% and 18%,

Country Context

HDI ranking: 180th out of 182 countries¹

Life expectancy: 48 years²

Lifetime risk of maternal death: 1 in 8²

Under-five mortality rate: 83 per 1,000 live births¹³

Global ranking of stunting prevalence: 43rd highest out of 136 countries²

Technical Notes

Stunting is low height for age (too short).

Underweight is low weight for age (too small).

Wasting is low weight for height (too thin).

Current stunting, underweight, and wasting estimates are based on comparison of the most recent survey data with the WHO Child Growth Standards, released in 2006.

Low birth weight is a birth weight less than 2500g.

The methodology for calculating nationwide costs of vitamin and mineral deficiencies, and interventions included in the cost of scaling up, can be found at: www.worldbank.org/nutrition/profiles



Poor Infant Feeding Practices

- Two-thirds of all newborns in Sierra Leone do not receive breast milk within one hour of birth.²
- A very large proportion (89%) of infants under six months are not exclusively breastfed.²
- During the important transition period to a mix of breast milk and solid foods between six and nine months of age, 27% of infants are not fed appropriately with both breast milk and other foods.²
- Children's diets are heavily rice-based and dietary diversification is needed.

Solution: Support women and their families to practice optimal breastfeeding and ensure timely and adequate complementary feeding. Breast milk fulfills all nutritional needs of infants up to six months of age, boosts their immunity, and reduces exposure to infections. In high HIV settings, follow 2009 HIV and infant feeding revised principles and recommendations.¹⁴

High Disease Burden

- Undernutrition increases the likelihood of falling sick and the severity of disease.
- Undernourished children who fall sick are much more likely to die from illness than well-nourished children.
- Parasitic infestation diverts nutrients from the body and can cause blood loss and anemia.
- Limited access to safe, clean water is a major problem in Sierra Leone.

Solution: Prevent and treat childhood infection and other disease. Hand-washing, deworming, zinc supplements during and after diarrhea, and continued feeding during illness are important. Intensify efforts to provide safe, clean water.

Limited Access to Nutritious Food

- Almost half (46%) of households are food insecure, according to a measure of per capita access to calories.⁷ Many more households likely lack access to diverse diets year round.
- Achieving food security means ensuring quality and continuity of food access, in addition to quantity, for all household members.
- Very high rates of micronutrient deficiencies signal that dietary diversity is low.

Solution: Involve multiple sectors including agriculture, education, social protection, transport, gender, the food industry, health and other sectors, to ensure that diverse, nutritious diets are available and accessible to all household members, and provide nutrition education so that they are consumed.

References

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respectively).⁸ Supplementation of young children and dietary diversification can eliminate this deficiency.

- **Iron:** More than 4 out of 5 preschool aged children are anemic, as are two-thirds of pregnant women (83% and 60%, respectively).⁹ Iron-folic acid supplementation of pregnant women, deworming, provision of multiple micronutrient supplements to infants and young children, and fortification of staple foods are effective strategies to improve the iron status of these vulnerable subgroups.
- **Iodine:** 45% of households do not consume iodized salt,⁶ leaving children in those households unprotected from iodine deficiency disorders.
- **Zinc:** 57% of the population is at risk of insufficient zinc intake.¹⁰ Zinc supplementation during diarrheal episodes can reduce morbidity from diarrhea by more than 40%.¹¹
- Adequate intake of micronutrients, particularly iron, vitamin A, iodine and zinc, from conception to age 24 months is critical for child growth and mental development.

World Bank Nutrition-Related Activities in Sierra Leone

The World Bank is currently supporting the second phase of the US\$20 million Child and Reproductive Health project which is dedicated to addressing immediate constraints in reducing maternal and under-five mortality. This project will support a basic package of health services, which includes nutrition activities, delivered through health facilities, communities and households.

Addressing undernutrition is cost effective: Costs of core micronutrient interventions are as low as US\$0.05–3.60 per person annually. Returns on investment are as high as 8–30 times the costs.¹²

