



Country Context

HDI ranking: 132nd out of 182 countries¹

Life expectancy at birth: 66 years²

Lifetime risk of maternal death: 1 in 55²

Under-five mortality rate: 81 per 1,000 live births²

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.

Overweight is a body mass index (kg/m²) of ≥ 25 ; obesity is a BMI of ≥ 30 .

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

The Costs of Malnutrition

- 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.
- The South Asia region is anticipated to lose a cumulative US\$20 billion to chronic disease by 2015.⁵
- The economic costs of undernutrition and overweight include direct costs such as the increased burden on the health care system, and indirect costs of lost productivity.
- Childhood anemia alone is associated with a 2.5% drop in adult wages.⁶

Where Does Bhutan Stand?

- 37% of children under the age of five are stunted, 11% are underweight, and 5% are wasted.¹⁵
- 40% of those aged 15 and above are overweight or obese.⁷
- 9% of infants are born with a low birth weight.¹⁵
- Bhutan is currently on track to meet MDG 1c (halving 1990 rates of child underweight by 2015).⁸

As seen in **Figure 1**, Bhutan has similar high rates of stunting relative to its South Asian neighbors. Countries with comparable per capita incomes, however, exhibit lower rates of child stunting, which demonstrates the ability to achieve better nutrition outcomes despite low income. Bhutan also has higher maternal and infant mortality rates relative to income and health spending than all of its South Asian neighbors.¹⁴ This indicates that available funds can be used more effectively to benefit women and children's health and nutrition.

Most of the irreversible damage due to malnutrition happens during gestation and in the first 24 months of life.⁸

The Double Burden of Undernutrition and Overweight

While more than a third of all children in Bhutan are undernourished, the country has also seen a recent increase in adult obesity. The coexistence of under- and overnutrition can cause particular risks:

Annually, Bhutan loses over US\$2.4 million in GDP to vitamin and mineral deficiencies.^{3,4}

Scaling up core micronutrient interventions would cost US\$340,000 per year.

(See *Technical Notes* for more information.)

Key Actions to Address Malnutrition:

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

Reduce iron deficiency through multiple interventions including deworming and multi-micronutrient supplements for young children, iron-folic acid supplementation for pregnant women, and fortification of staple foods.

Continue to invest in universal salt iodization and vitamin A supplementation of young children.

Improve dietary diversity and design policies that will increase access to healthy diets both for those at risk of undernutrition and those at risk of obesity.

FIGURE 1 Bhutan has Higher Rates of Stunting than Many 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.

low-birth weight infants and stunted children may be at greater risk of chronic diseases such as diabetes and heart disease than children who start out well-nourished.⁹

This "double burden" is the result of various factors. Progress in improving community infrastructure and development of sound public health

Poor Infant Feeding Practices

- During the important transition period to a mix of breast milk and solid foods between six and nine months of age, it is critical that infants are fed appropriately with both breast milk and nutrient-dense complementary foods.

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.

High Disease Burden

- Undernutrition increases the likelihood of falling sick and 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.

Solution: Prevent and treat childhood infections and other diseases. Hand-washing, deworming, zinc supplements during and after diarrhea, and continued feeding during illness are important.

Limited Access to Nutritious Food

- Achieving food security means ensuring quality and continuity of food access, in addition to quantity, for all household members.
- Dietary diversity is essential for food security.

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

References

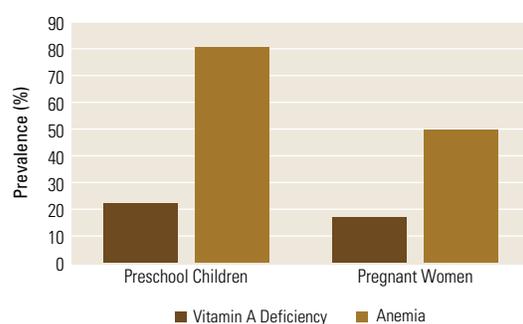
1. UNDP. 2009. *Human Development Report*.
2. UNICEF. 2009. *State of the World's Children*.
3. UNICEF and the Micronutrient Initiative. 2004. *Vitamin and Mineral Deficiency: a Global Progress Report*.
4. World Bank. 2009. *World Development Indicators* (Database).
5. Abegunde D et al. 2007. *The Burden and Costs of Chronic Diseases in Low-Income and Middle-Income Countries*. *Lancet* 370: 1929–38.
6. Horton S, Ross J. 2003. *The Economics of Iron Deficiency*. *Food Policy*. 28:517–5
7. WHO. 2009. *WHO Global InfoBase* (Database).
8. UNICEF. 2009. *Tracking Progress on Child and Maternal Nutrition*.
9. Victora, CG et al. *Maternal and Child Undernutrition: Consequences for Adult Health and Human Capital*. *Lancet* 2008: 371:340–57.
10. Popkin BM, et al. 1996. *Stunting is Associated with Overweight in Children of Four Nations that are Undergoing the Nutrition Transition*. *J Nutr* 126:3009–16.
11. WHO. 2009. *Global Prevalence of Vitamin A Deficiency in Populations at Risk 1995–2005*. *WHO Global Database on Vitamin A Deficiency*.
12. WHO. 2008. *Worldwide Prevalence of Anemia 1993–2005: WHO Global Database on Anemia*.
13. Horton S, et al. 2009 *Scaling Up Nutrition: What Will it Cost?*
14. WHO World Development Indicators, & Royal Monetary Authority (2009).
15. National Nutrition, Infant and Young Child Feeding Survey, 2008. Nutrition Programme, Dept. of Public Health, Ministry of Health, Bhutan.

systems has been slow, thwarting efforts to reduce undernutrition; while rapid urbanization and the adoption of Western diets high in refined carbohydrates, saturated fats and sugars, combined with a more sedentary lifestyle are commonly cited as the major contributors to the increase in overweight and chronic diseases.¹⁰

Vitamin and Mineral Deficiencies Cause Hidden Hunger

Although they may not be visible to the naked eye, vitamin and mineral deficiencies impact well-being and are pervasive in Bhutan, as indicated 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:** More than 1 in 5 preschool aged children (22%) and 17% of pregnant women in Bhutan are deficient in vitamin A.¹¹

- **Iron:** 80% of preschool aged children and 50% of pregnant women in Bhutan are anemic.¹² 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:** Currently 96% of households in Bhutan consume iodized salt.⁸ Efforts to maintain universal salt iodization will ensure that children continue to be protected from iodine deficiency disorder.
- 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 Bhutan

In 2005, a policy note was produced that examined human development outcomes in Bhutan, with particular attention to areas of nutrition, food security, and child health.

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.¹³

