



## Country Context

**HDI ranking:** 122nd out of 182 countries<sup>1</sup>

**Life expectancy:** 70 years<sup>2</sup>

**Lifetime risk of maternal death:** 1 in 71<sup>2</sup>

**Under-five mortality rate:** 35 per 1,000 live births<sup>2</sup>

**Global ranking of stunting prevalence:** 3rd highest out of 136 countries<sup>2</sup>

## Technical Notes

**Stunting** is low height for age.

**Underweight** is low weight for age.

**Wasting** is low weight for height.

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/m<sup>2</sup>) of  $\geq 25$ ; **obesity** is a BMI of  $\geq 30$ .

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](http://www.worldbank.org/nutrition/profiles)

## The Costs of Malnutrition

- Underweight in Guatemala (at 18%) cost the country \$3.1 million, or 11.4% of GDP, in lost productivity in 2004. This is over half the combined cost of undernutrition for all of Central America.<sup>3</sup>
- Over one-third of child deaths are due to undernutrition, mostly from increased severity of disease.<sup>2</sup>
- 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.<sup>4</sup>
- The Latin America and Caribbean region is anticipated to lose a cumulative US\$8 billion to chronic disease by 2015.<sup>5</sup>

## Where Does Guatemala Stand?

- Guatemala has the third highest rate of chronic malnutrition (stunting) in the world (54.5%).<sup>2</sup>
- Indigenous children suffer disproportionately, with rates of stunting and underweight almost twice that of non-indigenous children.<sup>11</sup>
- 67% of Guatemalans aged 15 and above are overweight, of which 29% are obese.<sup>6</sup>
- 1 in 8 infants are born with a low birth weight.<sup>2</sup>

As seen in **Figure 1**, Guatemala has higher rates of stunting than other countries in its region and income group, and has the third highest rate of stunting in the world. Countries with similar per capita incomes in other regions, such as Iraq and Swaziland, also exhibit lower rates of child stunting.

**FIGURE 1 Guatemala has Higher Rates of Stunting than its Neighbors and Income Peers**



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

Annually, Guatemala loses over US\$300 million in GDP to vitamin and mineral deficiencies.<sup>9,10</sup> Scaling up core micronutrient nutrition interventions would cost less than US\$16 million 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 based on regular growth monitoring of children.

**Reduce anemia among young children and pregnant women** through supplementation and fortification of staple foods.

**Address the growing burden of overweight and obesity** through policies that promote diverse diets and physical activity.

## Ethnicity and nutrition

Indigenous groups have disproportionately high rates of malnutrition. Nearly 8 out of 10 indigenous children are stunted compared to 4 of 10 non-indigenous children. Large differentials in chronic malnutrition by ethnicity may reflect social exclusion or other forms of differential access to services.<sup>7</sup> Indeed, supply side barriers have been shown to be particularly important for the indigenous population.<sup>8</sup>

As seen in **Figure 2**, indigenous groups within the country have disproportionately high rates of stunting compared to other ethnic groups.

## The Double Burden of Undernutrition and Overweight

Not only does Guatemala show one of the worst chronic malnutrition rates in the world, it has also experienced a recent and rapid increase in adult obesity, particularly among those living in urban areas.<sup>7</sup> Low-birth weight infants and stunted children may be at greater risk of obesity and chronic diseases such as diabetes and heart disease than children who start out well-nourished.<sup>12</sup>

This "double burden" is the result of various factors. Progress in improving community infrastructure and development of sound public health systems has been slow, thwarting efforts to reduce undernutrition; while the adoption of diets high in refined carbohydrates, saturated fats and sugars, as well as a more sedentary lifestyle are commonly cited as the

## Poor Infant Feeding Practices

- Just over one-half (60%) of all newborns receive breast milk within one hour of birth.<sup>2</sup>
- One-half (51%) of infants under six months are exclusively breastfed.<sup>2</sup>
- During the important transition from breastfeeding to a mix of breast milk and solid foods between 6 and 9 months of age, one-third of infants are not fed appropriately with *both* breast milk and other foods.<sup>2</sup>

**Solution:** Support women and their families to exclusively breastfeed up to six months, and to introduce adequate complementary foods when children are six months of age, while still breastfeeding.

## High Disease Burden

- Malnutrition 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.

**Solution:** Prevent and treat childhood infection and disease through hand-washing, deworming, zinc supplements during and after diarrhea, and continued feeding during illness.

## Limited Access to Nutritious Food

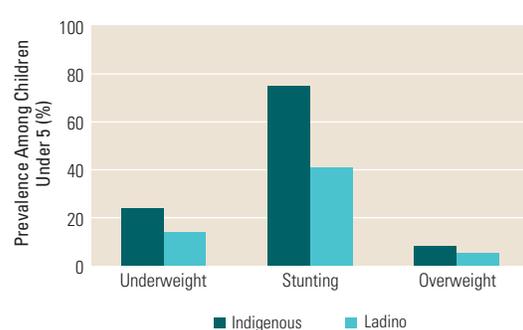
- For most households in Guatemala, access to calories is not a problem.
- Dietary diversity is essential for food security.
- Achieving a diverse and nutritious diet seems to be a problem reflected in high rates of anemia, overweight and obesity.

**Solution:** Involve multiple sectors including education, health, agriculture, gender, the food industry, and other sectors, to ensure that diverse, nutritious diets are available and accessible to all household members. Examine food policies and the country regulatory system as they relate to overweight and obesity.

## References

1. UNDP. 2009. *Human Development Report*.
2. UNICEF. 2009. *State of the World's Children*.
3. Martinez, R. and A. Fernandez. 2008. *The Cost of Hunger: Social and Economic Impact of Child Undernutrition in Central America and the Dominican Republic*. ECLAC and WFP.
4. Horton S, Ross J. 2003. *The Economics of Iron Deficiency*. Food Policy 28: 517-5.
5. Abegunde D et al. 2007. *The Burden and Costs of Chronic Diseases in Low-Income and Middle-Income Countries*. The Lancet 370: 1929-38.
6. WHO. 2009. *WHO Global InfoBase* (Database).
7. Marini A, Gragnolati M. 2003. *Malnutrition and Poverty in Guatemala*. World Bank Policy Research Paper.
8. Gragnolati M, Marini A. *Health and Poverty in Guatemala*. World Bank Policy Research Working Paper 2966.
9. UNICEF and the Micronutrient Initiative. 2004. *Vitamin and Mineral Deficiency: a Global Progress Report*.
10. World Bank. 2009. *World Development Indicators* (Database).
11. WHO/PAHO 2008. *Malnutrition in Infants and Young Children in Latin America and the Caribbean: Achieving the Millennium Development Goals*.
12. Victora CG et al. *Maternal and Child Undernutrition: Consequences for Adult Health and Human Capital*. The Lancet 2008; 371: 340-57.
13. 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
14. WHO. 2008. *Worldwide Prevalence of Anemia 1993-2005: WHO Global Database on Anemia*.
15. WHO. 2009. *Global Prevalence of Vitamin A Deficiency in Populations at Risk 1995-2005*. WHO Global Database on Vitamin A Deficiency.
16. UNICEF. 2009. *Tracking Progress on Child and Maternal Nutrition*.
17. Horton S. et al. 2009. *Scaling Up Nutrition: What will it Cost?*
18. Marini A et al. 2009. *Promoción del Crecimiento para Prevenir la Desnutrición Crónica: Lecciones de Programas con Base Comunitaria en Centro America*. World Bank.

**FIGURE 2 Indigenous Groups in Guatemala Suffer from High Rates of Stunting**



Source: 2003 data cited in WHO/PAHO 2008<sup>11</sup> (figures based on WHO child growth standards).

major contributors to the increase in overweight and chronic diseases.<sup>13</sup>

## 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 prevalent in Guatemala.

- **Iron:** 38% of children under-five and 22% of pregnant women suffer from anemia.<sup>14</sup> Iron deficiency increases the risk of maternal mortality and in children leads to impaired cognitive development, poor school performance, and reduced work productivity.
- **Vitamin A:** 16% of preschool aged children are deficient in vitamin A.<sup>15</sup> An estimated 1,500 deaths in Guatemala are precipitated by vitamin A deficiency annually.<sup>9</sup>
- **Iodine:** Just under half of all households use iodized salt in Guatemala, and an estimated 67,000 children annually are born mentally impaired due to iodine deficiency.<sup>16</sup>

## World Bank Nutrition-Related Activities in Guatemala

**Projects:** The World Bank is currently supporting a US\$49 million Maternal-Infant Health and Nutrition project which includes components geared towards reducing child malnutrition, and will be supporting a US\$120 million Expanding Opportunities for Vulnerable Groups project which aims to increase access to essential health and nutrition services, especially in poor and indigenous areas. This project is pending government approval.

**Analytic Work:** A new protocol for local evaluation of the child growth monitoring program is being piloted and will be evaluated soon. This will be financed by the Japan Trust Fund for Scaling-Up Nutrition. The World Bank, in collaboration with the Ministry of Health, has also produced and disseminated a video to make chronic malnutrition more visible and promoted the use of basic health and nutrition services. Finally, the World Bank recently published a review of all the community based growth promotion programs in Central America, highlighting promises and challenges in their attempt to extend coverage of preventive nutrition services to the most vulnerable populations<sup>18</sup>.

**World Bank nutrition activities in Latin America:** [www.worldbank.org/lacnutrition](http://www.worldbank.org/lacnutrition)

**Addressing undernutrition is cost effective: Costs of core micronutrient interventions are as low as US\$0.05-8.46 per person annually. Returns on investment are as high as 6-30 times the costs.<sup>17</sup>**



THE WORLD BANK

Produced with support from the Japan Trust Fund for Scaling Up Nutrition