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sustainable solutions for ending hunger and poverty

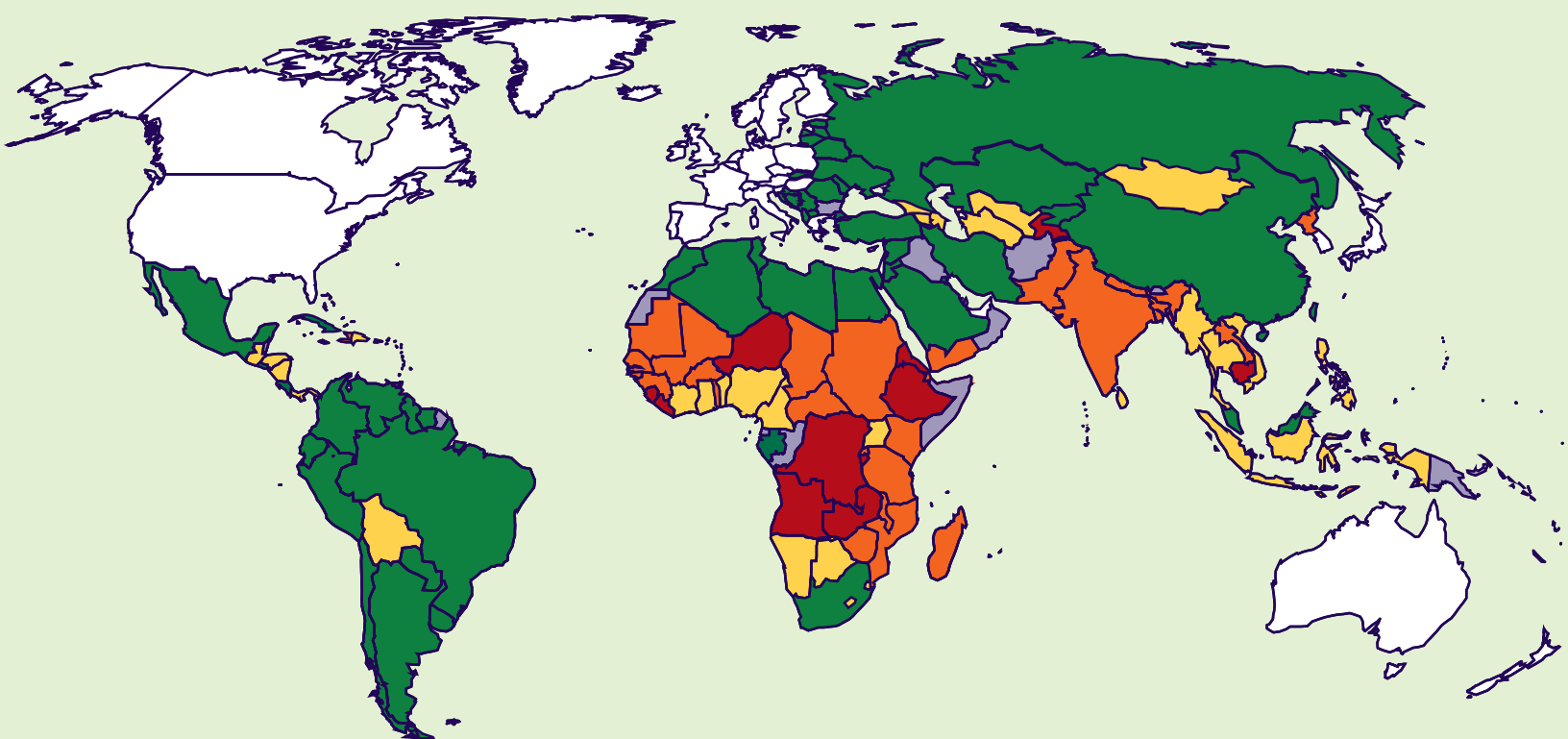
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2006 GLOBAL HUNGER INDEX

A Basis for Cross-Country Comparisons

Doris Wiesmann



Global Hunger Index



Sources: FAO 2005, WHO 2006, UNICEF 2005, and
author's estimates calculated for 2003.

The fight against hunger and undernutrition has been a long-standing component of development efforts. Strategies to improve food security and nutrition are not only worth pursuing for their own sake, but are also key elements of poverty reduction. In spite of this, progress in combating hunger and malnutrition has been lagging for decades. Best practices to combat hunger and undernutrition have been available for a long while, but a lack of political will among leaders and a lack of political power among the poor have hampered their implementation.

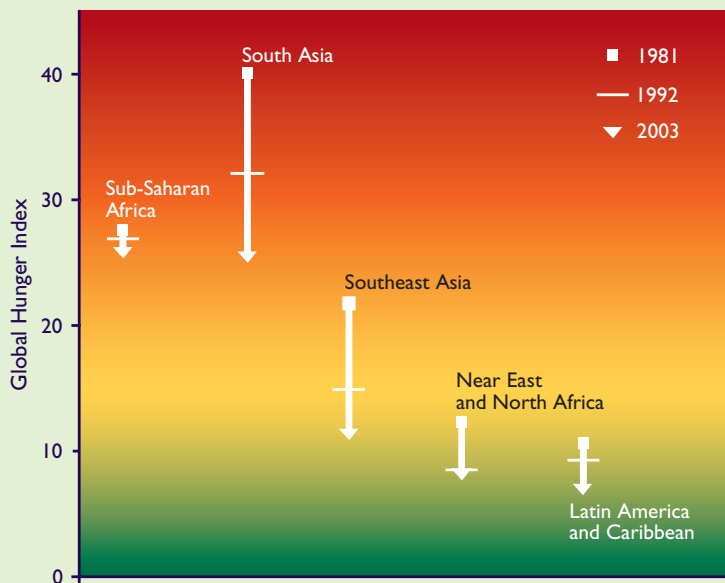
THE GLOBAL HUNGER INDEX

Indices can be powerful tools for international monitoring and advocacy, and if used in international rankings, can help foster a sense of healthy competition among countries. With this in mind, IFPRI's Global Hunger Index (GHI) was designed to help mobilize political will and promote good policies by ranking countries and illustrating trends. It captures three dimensions of hunger: insufficient availability of food, shortfalls in the nutritional status of children, and

child mortality, which is to a large extent attributable to undernutrition. Accordingly, the index includes the following three equally weighted indicators: the proportion of people who are food energy deficient as estimated by the Food and Agriculture Organization of the United Nations, the prevalence of underweight in children under the age of five as compiled by the World Health Organization, and the under-five mortality rate as reported by UNICEF (see Figure 2 for full references).

As compared to using a group of single indicators, a composite index like the GHI has several advantages. It integrates different aspects of multifaceted phenomena like hunger and undernutrition, it reduces the impact of

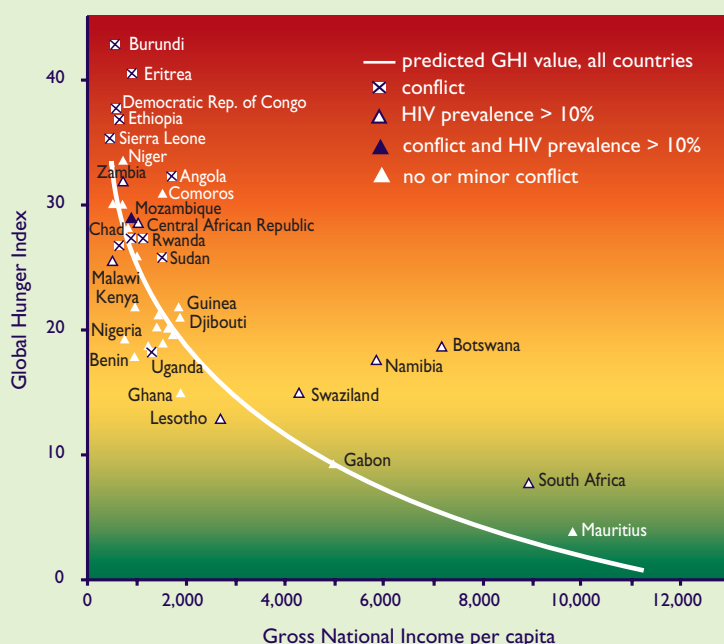
Figure 1 Regional GHI Trends, 1981–2003



Source: Author's calculations (see Wiesmann 2006).

Note: Eastern Europe and the Former Soviet Union are not included because data availability is insufficient to show long-term trends.

Figure 2a Sub-Saharan Africa



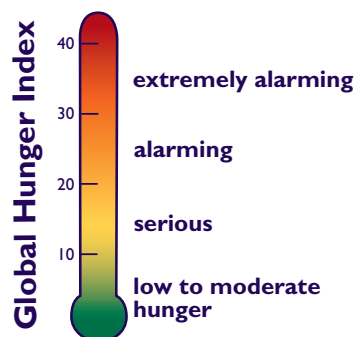
Sources: The GHI 2003 data are from: FAO, 2005, *The State of Food Insecurity in the World*; Program, 2006, Uppsala Conflict Database, www.pcr.uu.se/database/index.php. Data on HIV prevalence from UNAIDS.

Notes: GNI per capita is based on purchasing power parity and expressed in constant 2005 US dollars.

random measurement errors, and it facilitates the use of statistics by policymakers and the public by condensing information.

RANKING AND TRENDS

The index ranks countries on a 100-point scale, with 0 being the best score (no hunger) and 100 being the worst, though neither of these extremes is achieved in practice. In general, values greater than 10 indicate a serious problem, values greater than 20 are alarming, and values exceeding 30 are extremely alarming. The Global Hunger Index is restricted to developing countries and countries in transition. Developed countries are excluded because they have, for the most part, overcome hunger, and overconsumption is now a much greater problem than lack of food.



The GHI has been calculated for 1981, 1992, 1997, and, most recently, for 2003. In the latest round, 94 developing countries and 22 countries in transition were ranked.¹ The GHI findings show that the current hot spots of hunger and undernutrition are in South Asia and Sub-Saharan Africa, although Haiti, Yemen, Tajikistan, Laos, Cambodia, Timor-Leste, and the Democratic Republic of Korea also have GHI values higher than 20 (see cover map).

Nonetheless, in the past two decades, some countries and even entire regions have begun to escape the vicious cycle of hunger and poverty. They include large parts of the Andean region of South America, African countries like Ghana and Chad (excluding the recent refugees from Darfur), and some Southern African countries such as Mozambique and Angola, where major civil wars came to an end. Though South Asia is still an area of great concern, the GHI has decreased there and in most of Asia, where the Green Revolution boosted food supplies and acted as an engine for economic growth. In contrast, the trends are mixed for Sub-Saharan African countries, where there has been less progress in rural growth (see Figure 1).

¹ The cover map shows data for 97 developing countries and 22 countries in transition. Costa Rica, Libya, and Paraguay have been included but their GHI scores were calculated only up to 1997. For more information, see Wiesmann 2006.

Figure 2b South and Southeast Asia

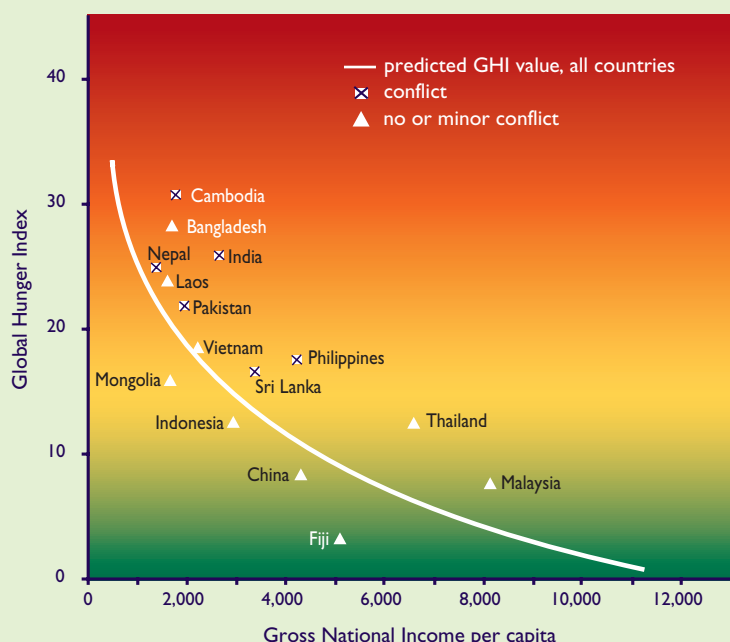
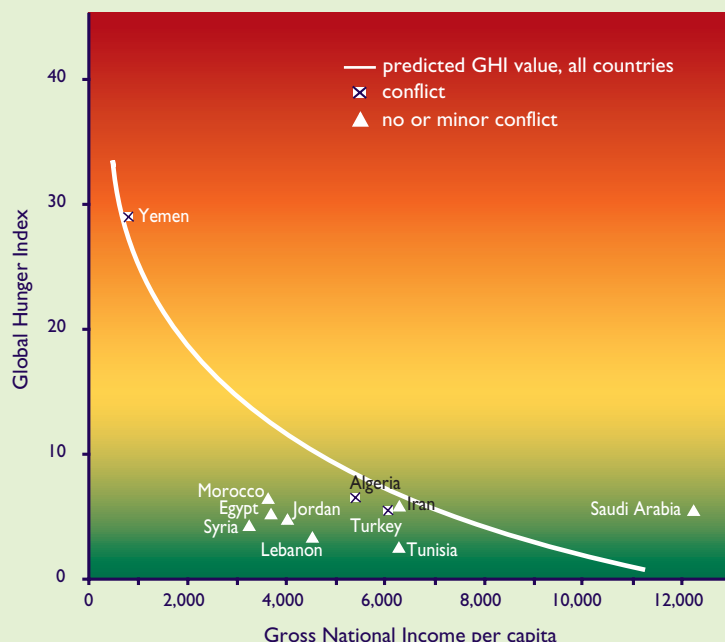


Figure 2c Near East and North Africa



UN 2005; WHO, 2006, WHO Global Database on Child Growth and Malnutrition, www.who.int/nutgrowthdb/; UNICEF, 2005, *The State of the World's Children 2005*; and author's estimates. The GNI and HIV prevalence in 2003 are from UNAIDS/WHO, 2006, *Report on the Global HIV/AIDS Epidemic—June 2006*.
00 international dollars. In Sub-Saharan Africa not all countries are labeled.

SELECTED

DETERMINANTS OF HUNGER AND UNDERNUTRITION

This brief examines three selected—and often interrelated—causes of hunger and undernutrition as measured by the Global Hunger Index: a country's poor macroeconomic performance, warfare, and the prevalence of HIV.

Poor Macroeconomic Performance

National incomes are central to food security and nutrition because household food security, knowledge, and caring capacity—as well as health environments—require a range of goods and services to be produced by the national economy or to be purchased on international markets. An analysis of the GHI in relation to Gross National Income (GNI) per capita shows that the availability of economic resources at the national level largely determines the extent of hunger and undernutrition. Poor countries tend to have high GHI values.

However, the graphs in Figure 2 also make it possible to identify countries that do notably better

in terms of the GHI than would be expected from their GNI per capita. These are the countries with GHI scores far below the predicted values (the white line). Vice versa, countries that do considerably worse than expected from their level of economic development have higher GHI values than predicted. The differences between actual and predicted values are used to evaluate countries' performance in converting economic resources into gains in food security and nutrition.

In Sub-Saharan Africa (Figure 2a), a large number of countries have considerably higher GHI values than would be expected from their GNI per capita—mostly as a consequence of political instability and war. However, in Namibia and Botswana, which were not involved in armed conflicts, studies show high income inequality and high HIV/AIDS infection rates are obstacles to achieving food security and reducing child malnutrition and child mortality.

In South and Southeast Asia (Figure 2b), hunger is greater than predicted from GNI per capita in Cambodia, India, and Bangladesh. Cambodia still suffers from the consequences of armed conflict and from a lack of education and basic infrastructure. In India and Bangladesh, high rates of child malnutrition, as opposed to the two other dimensions of hunger, are the main reason for high GHI values relative to GNI per capita. Current research indicates that the low status of women in South Asian countries and their lack of nutri-

Figure 2d Latin America and Caribbean

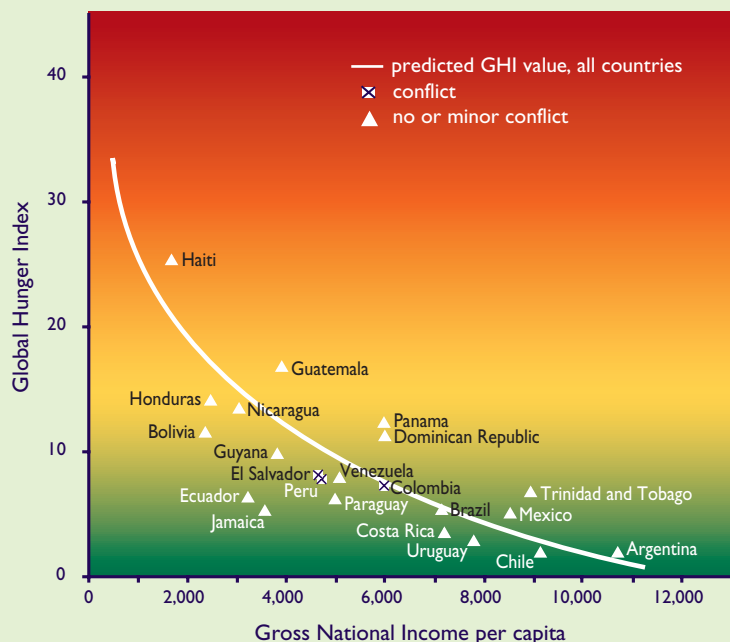
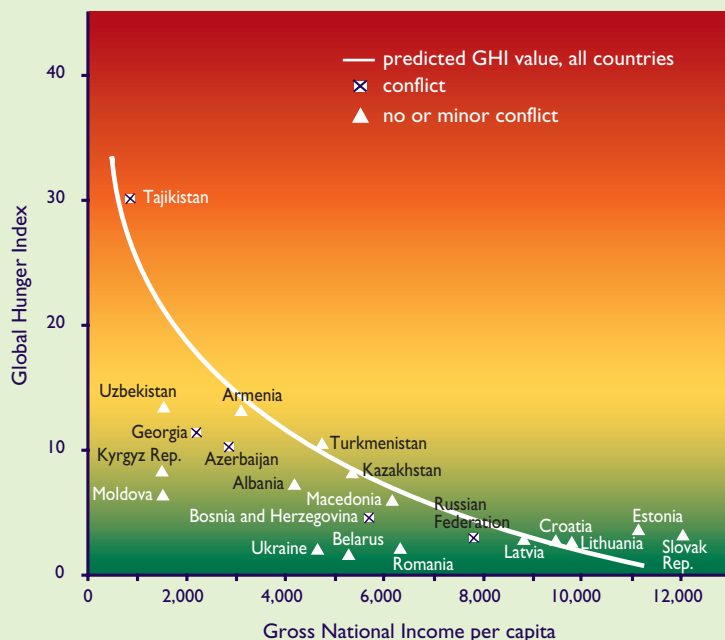


Figure 2e Eastern Europe and Former Soviet Union



per capita data (2001–2003 average), are from World Bank, 2005, *World Development Indicators on CD-ROM*. Information on conflicts (during 1989–2003) is from Uppsala Conflict Data

tional knowledge are important determinants of high prevalence of underweight in children in this region.

In the Near East and North Africa (Figure 2c), the majority of countries performed well as compared to their level of economic development, particularly Egypt and Syria. This can be partly attributed to the relatively equal income distribution within the countries of the region and to the subsidization of basic foods.

In Latin America and the Caribbean (Figure 2d), Ecuador and Jamaica can be considered outliers with relatively low GHI values, while Panama, Guatemala, and Haiti are outliers with relatively high GHI values. Haiti is the poorest country in the Western hemisphere, with a long history of political crises, violence, and bad governance.

For several countries in Eastern Europe and the Former Soviet Union (Figure 2e), the GHI is amazingly low, given their GNI per capita (Moldova, the Kyrgyz Republic, Ukraine, and Uzbekistan). The economic situation in many transition countries deteriorated after the breakdown of communism, but high levels of education, the existing infrastructure, past investments in health care systems, and home-gardening on private plots have helped to prevent large rises in child malnutrition and child mortality.

Conflict

Countries that have experienced long-lasting violent conflicts affecting the productive base of the economy and the population's livelihoods have very high GHI scores, indicating miserable outcomes in terms of hunger and undernutrition. Nine of the 12 countries with the worst rankings—Burundi, Eritrea, the Democratic Republic of Congo, Ethiopia, Sierra Leone, Angola, Liberia, Cambodia, and Tajikistan—were affected by wars in the GHI reference period or are still recovering from cruel internal conflicts.

But armed conflicts aggravate hunger even apart from their impact on macroeconomic performance: combatants frequently use hunger as a weapon by cutting off food supplies, starving opposing populations into submission, and hijacking food aid intended for civilians. Warfare disrupts markets and destroys crops, livestock, roads, and land. Caring capacity, which is an important determinant of child nutrition and survival, is affected by massive population displacements in violent conflicts, which often result in household dissolution, community disintegration, and the breakdown of social networks. Health environments—another main determinant of child nutrition and survival—can worsen in multiple ways. Large population movements, the destruction of health facilities, and the living conditions in refugee camps facilitate the spread of infectious diseases, including HIV/AIDS. The detrimental effects of conflict on hunger do not always show up in GNI figures, because a booming war economy, fueled by international trade in diamonds or oil, can disguise agricultural decline and the desperate living conditions of the population.

Controlling for the variation of GNI per capita, the Global Hunger Index is 3.8 points higher in countries that were involved in warfare between 1989 and 2003 than in non-war countries (that is, the Global Hunger Index is about 22 percent higher for war countries than it is for non-war countries with comparable levels of economic development). A higher proportion of undernourished and a higher prevalence of underweight children in war countries (+6.9 and +4.2 percentage points, respectively) are responsible for this result, while no significant difference is observed with regard to the under-five mortality rate.

HIV and AIDS

AIDS affects agricultural production and household food security, and HIV/AIDS and hunger can become intertwined in a vicious cycle. Food insecurity may heighten exposure to HIV (for example, when men migrate to look for work or women engage in



transactional sex to provide for their families) and the susceptibility to infection (because malnutrition weakens the immune system). People living with HIV who are malnourished are more vulnerable to severe opportunistic infections and more likely to die soon. In Sub-Saharan Africa alone, AIDS has orphaned more than 12 million children. Given the death and disease toll of AIDS in some countries, traditional kinship networks are stressed to the limits of their capacity to provide care for orphans and the sick. Women and girls are hit hardest due to their greater social and biological vulnerability to infection and their role as caretakers for sick family members, with negative consequences for child care. With the mother-to-child transmission rate being between 25 and 35 percent, HIV is contributing substantially to increasing infant and child mortality rates in the Sub-Saharan countries worst affected by HIV and AIDS.

Controlling for the variation in GNI per capita, the Global Hunger Index is 3.9 points higher in countries with an HIV prevalence greater than 10 percent than it is in countries with lower prevalence rates. This can be attributed to concurrent significant differences in the percentage of undernourished and the under-five mortality rate (+7.1 and +4.1 percentage points, respectively). The manner in which the AIDS pandemic is confronted is crucial for protecting food security in the affected countries. Without combating HIV/AIDS effectively, the fight against hunger cannot be won in the countries that are hit hardest by the epidemic.

Opportunities for Action

As revealed by the GHI, most hunger hot spots today are in South Asia and Sub-Saharan Africa. Reducing hunger and undernutrition in these areas will require public action by both government and civil society organizations, and policies tailored to the specific circumstances of each region. For example, the main

reason child malnutrition occurs at a higher rate in South Asia than in drought-stricken, conflict-plagued Sub-Saharan Africa is that feeding and caring practices for young children are inadequate. Therefore, IFPRI researchers have concluded that more educational opportunities for women must be created in South Asia and similar regions to address their inadequate knowledge and low status, which contribute to high child malnutrition rates. In Sub-Saharan Africa, on the other hand, social protection and interventions in agriculture, public health, and nutrition are needed to combat the AIDS pandemic and its negative impact on food security and nutrition. In addition, more attention should be given to conflict prevention and resolution as well as to post-conflict rehabilitation measures. In order to alleviate food shortages and achieve sustainable increases in agricultural productivity, higher investments in rural infrastructure, water and land management, marketing, and farmers' education are also needed.

It is hoped that the Global Hunger Index will increase attention to the hunger problem, make national and international players in developed and developing countries more accountable for their commitments, and help speed up urgently needed progress in the fight against hunger.

FURTHER READING

- Gillespie, S., ed. 2006. *AIDS, Poverty, and Hunger: Challenges and Responses*. Washington, D.C.: International Food Policy Research Institute.
- Messer, E., M. Cohen, and T. Marchione. 2001. *Conflict: A Cause and Effect of Hunger. Environmental Change and Security Project (ECSP) 7: 1–16*. Washington, D.C.: Woodrow Wilson Center for Scholars.
- Smith, L., and L. Haddad. 2000. *Explaining Child Malnutrition in Developing Countries: A Cross-Country Analysis*. Research Report 111. Washington, D.C.: International Food Policy Research Institute.
- Wiesmann, D. 2006. *A Global Hunger Index: Measurement Concept, Ranking and Trends*. Food Consumption and Nutrition Division Discussion Paper 212. Washington, D.C.: International Food Policy Research Institute.

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