

2017

GLOBAL HUNGER INDEX

THE INEQUALITIES OF HUNGER



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Annette Bauteluz of Vieille Place in Nord-Ouest, Haiti, during the corn harvest. Most Haitian households are involved in agriculture. Women in Haiti, as in many countries, play a significant role in farming. Due to gender-discriminatory norms in access to food, women are more likely to suffer from hunger and malnutrition.

FOREWORD

On February 20, 2017, the world awoke to a headline that should have never come about: Famine had been declared in parts of South Sudan, the first to be announced anywhere in the world in six years. This was on top of imminent famine warnings in northern Nigeria, Somalia, and Yemen, putting a total of 20 million people at risk of starvation. The formal famine declaration in South Sudan meant that people were already dying of hunger. Meanwhile, Venezuela's political turmoil created massive food shortages in both the city and countryside, leaving millions without enough to eat in a region that, overall, has low levels of hunger. As the crisis there escalated and food prices soared, the poor were the first to suffer.

Despite years of progress, food security is still under threat. Conflict and climate change are hitting the poorest people the hardest and effectively pitching parts of the world into perpetual crisis. Although it has been said that “hunger does not discriminate,” it does. It emerges the strongest and most persistently among populations that are already vulnerable and disadvantaged.

Hunger and inequality are inextricably linked. By committing to the UN Sustainable Development Goals, the international community promised to eradicate hunger and reduce inequality by 2030. Yet the world is still not on track to reach this target. Inequality takes many forms, and understanding how it leads to or exacerbates hunger is not always straightforward. For example, women and girls comprise 60 percent of the world's hungry, often the result of deeply rooted social structures that deny women access to education, healthcare, and resources. Likewise, ethnic minorities are often victims of discrimination and experience greater levels of poverty and hunger. Most closely tied to hunger, perhaps, is poverty, the clearest manifestation of societal inequality. Three-quarters of the world's poor live in rural areas, where hunger is typically higher. This year's essay, authored by Naomi Hossain, research fellow at the Institute of Development Studies, focuses on

the relationship between hunger, inequality, and power. Underlying nutritional inequalities, Dr. Hossain argues, are inequalities of power—social, economic, or political.

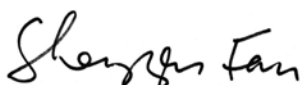
The 2017 Global Hunger Index, jointly published by the International Food Policy Research Institute (IFPRI), Concern Worldwide, and Welthungerhilfe, tracks the state of hunger worldwide, spotlighting those places where action to address hunger is most urgently needed. This year's index shows mixed results: Despite a decline in hunger over the long term, the global level remains high, with great differences not only among countries but also within countries. For example, at a national level, Central African Republic (CAR) has extremely alarming levels of hunger and is ranked highest of all countries with GHI scores in the report. While CAR made no progress in reducing hunger over the past 17 years—its GHI score from 2000 is the same as in 2017—14 other countries reduced their GHI scores by more than 50 percent over the same period.

At the subnational level, inequalities of hunger are often obscured by national averages. In northeast Nigeria, 4.5 million people are experiencing or are at risk of famine while the rest of the country is relatively food secure. This year's report also highlights trends related to child stunting in selected countries including Afghanistan, where rates vary dramatically—from 24.3 percent of children in some parts of the country to 70.8 percent in others.

While the world has committed to reaching Zero Hunger by 2030, the fact that over 20 million people are currently at risk of famine shows how far we are from realizing this vision. As we fight the scourge of hunger across the globe, we must understand how inequality contributes to it. To ensure that those who are affected by inequality can demand change from national governments and international organizations and hold them to account, we must understand and redress power imbalances. This is crucial if we are to reach the Sustainable Development Goals by 2030 and end hunger forever.



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SUMMARY

The 2017 Global Hunger Index (GHI) shows long-term progress in reducing hunger in the world. The advances have been uneven, however, with millions of people still experiencing chronic hunger and many places suffering acute food crises and even famine.

According to 2017 GHI scores, the level of hunger in the world has decreased by 27 percent from the 2000 level. Of the 119 countries assessed in this year's report, one falls in the *extremely alarming* range on the GHI Severity Scale; 7 fall in the *alarming* range; 44 in the *serious* range; and 24 in the *moderate* range. Only 43 countries have scores in the *low* range. In addition, 9 of the 13 countries that lack sufficient data for calculating 2017 GHI scores still raise significant concern, including Somalia, South Sudan, and Syria.

To capture the multidimensional nature of hunger, GHI scores are based on four component indicators—undernourishment, child wasting, child stunting, and child mortality. The 27 percent improvement noted above reflects progress in each of these indicators according to the latest data from 2012–2016 for countries in the GHI:

- The share of the overall population that is undernourished is 13.0 percent, down from 18.2 percent in 2000.
- 27.8 percent of children under five are stunted, down from 37.7 percent in 2000.
- 9.5 percent of children under five are wasted, down from 9.9 percent in 2000.
- The under-five mortality rate is 4.7 percent, down from 8.2 percent in 2000.

Regional Scores

The regions of the world struggling most with hunger are South Asia and Africa south of the Sahara, with scores in the *serious* range (30.9 and 29.4, respectively). The scores of East and Southeast Asia, the Near East and North Africa, Latin America and the Caribbean, and Eastern Europe and the Commonwealth of Independent States range from *low* to *moderate* (between 7.8 and 12.8). These averages conceal some troubling results within each region, however, including scores in the *serious* range for Tajikistan, Guatemala, Haiti, and Iraq and in the *alarming* range for Yemen, as well as scores in the *serious* range for half of all countries in East and Southeast Asia, whose average benefits from China's *low* score of 7.5.

National and Subnational Scores

Eight countries suffer from *extremely alarming* or *alarming* levels of hunger. Except for Yemen, all are in Africa south of the Sahara: Central African Republic (CAR), Chad, Liberia, Madagascar, Sierra Leone, Sudan, and Zambia. Many of these countries have experienced political crises or violent conflicts in the past several decades. CAR and Yemen, in particular, have been riven by war in recent years.

From the 2000 GHI to the 2017 GHI, the scores of 14 countries improved by 50 percent or more; those of 72 countries dropped by between 25 and 49.9 percent; and those of 27 countries fell by less than 25 percent. Only CAR, the sole country in the *extremely alarming* range, showed no progress.

This year's report provides a look at subnational-level data on stunting, which reveal great disparities within countries. Differences in hunger and nutrition profiles mean that, in most countries, a one-size-fits-all approach to tackling hunger and undernutrition is unlikely to yield the best results. Region- or state-level data, together with other information—for example, from focus group interviews—can serve as a solid foundation for good program and policy design. Within countries in all regions of the world are wide variations in subnational-level rates of childhood stunting. Even in some countries with a low national average, there are places where childhood stunting levels are high.

Inequality, Power, and Hunger

In this year's essay, Naomi Hossain, research fellow at the Institute of Development Studies, explores the nexus of inequality, power, and hunger. Most often, it is the people or groups with the least social, economic, or political power—those who are discriminated against or disadvantaged, including women, ethnic minorities, indigenous peoples, rural dwellers, and the poor—who suffer from hunger and malnutrition. They are affected by food and agricultural policies, but have little voice in policy debates dominated by governments, corporations, and international organizations. Analyzing the role that power plays in creating such inequalities in the food system and allowing space for all citizens—especially the least advantaged—to participate in decision making will help address nutritional inequalities.

The 2017 Global Hunger Index therefore presents recommendations that aim to redress such power imbalances, as well as the laws, policies, attitudes, and practices that exacerbate and perpetuate them, in order to alleviate hunger among the most vulnerable. National governments, the private sector, civil society, and international organizations must all act now to reduce inequalities if Zero Hunger is to be reached by 2030.



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Children queuing for porridge at a primary school in Blantyre, Malawi. The right nutrition during the first 1,000 days of a child's life will improve her or his physical and cognitive development and ability to learn in the future.

THE CONCEPT OF THE GLOBAL HUNGER INDEX

The Global Hunger Index (GHI) is a tool designed to comprehensively measure and track hunger at the global, regional, and national levels.¹ The International Food Policy Research Institute (IFPRI) calculates GHI scores each year to assess progress and setbacks in combating hunger. The GHI is designed to raise awareness and understanding of the struggle against hunger, provide a means to compare the levels of hunger between countries and regions, and call attention to the areas of the world in greatest need of additional resources to eliminate hunger.

To capture the multidimensional nature of hunger, GHI scores are based on four indicators:

1. **UNDERNOURISHMENT:** the share of the population that is undernourished (that is, whose caloric intake is insufficient);
2. **CHILD WASTING:** the share of children under the age of five who are wasted (that is, who have low weight for their height, reflecting acute undernutrition);
3. **CHILD STUNTING:** the share of children under the age of five who are stunted (that is, who have low height for their age, reflecting chronic undernutrition); and
4. **CHILD MORTALITY:** the mortality rate of children under the age of five (in part, a reflection of the fatal mix of inadequate nutrition and unhealthy environments).²

There are several advantages to measuring hunger using this combination of factors (Figure 1.1). The indicators included in the GHI formula reflect caloric deficiencies as well as poor nutrition. By including indicators specific to children, the index captures the nutrition situation not only of the population as a whole, but also of children—a particularly vulnerable subset of the population for whom a lack of dietary energy, protein, or micronutrients (essential vitamins and minerals) leads to a high risk of illness, poor physical and cognitive development, and death. The inclusion of both child wasting and child stunting allows the GHI to capture both acute and chronic undernutrition. By combining multiple indicators, the index minimizes the effects of random measurement errors.

GHI scores are calculated using the process described in Box 1.2, and the complete formula is shown in Appendix A. The current formula was introduced in 2015 and is a revision of the original formula that was used to calculate GHI scores from 2006 to 2014. The primary differences are that child stunting and child wasting have replaced child underweight, and the four indicator values are now standardized (Wiesmann et al. 2015).

BOX 1.1 CONCEPTS OF HUNGER

The problem of hunger is complex. Thus there are different terms to describe its different forms.

Hunger is usually understood to refer to the distress associated with lack of sufficient calories. The Food and Agriculture Organization of the United Nations (FAO) defines food deprivation, or undernourishment, as the consumption of too few calories to provide the minimum amount of dietary energy that each individual requires to live a healthy and productive life, given his or her sex, age, stature, and physical activity level.*

Undernutrition goes beyond calories and signifies deficiencies in any or all of the following: energy, protein, or essential vitamins and minerals. Undernutrition is the result of inadequate intake of food in terms of either quantity or quality, poor utilization of nutrients due to infections or other illnesses, or a combination of these factors. These in turn are caused by a range of factors including household food insecurity; inadequate maternal health or child-care practices; or inadequate access to health services, safe water, and sanitation.

Malnutrition refers more broadly to both undernutrition (problems of deficiencies) and overnutrition (problems of unbalanced diets, such as consuming too many calories in relation to requirements with or without low intake of micronutrient-rich foods).

In this report, “hunger” refers to the index based on the four component indicators. Taken together, the component indicators reflect deficiencies in calories as well as in micronutrients. Thus, the GHI reflects both aspects of hunger.

Source: Authors.

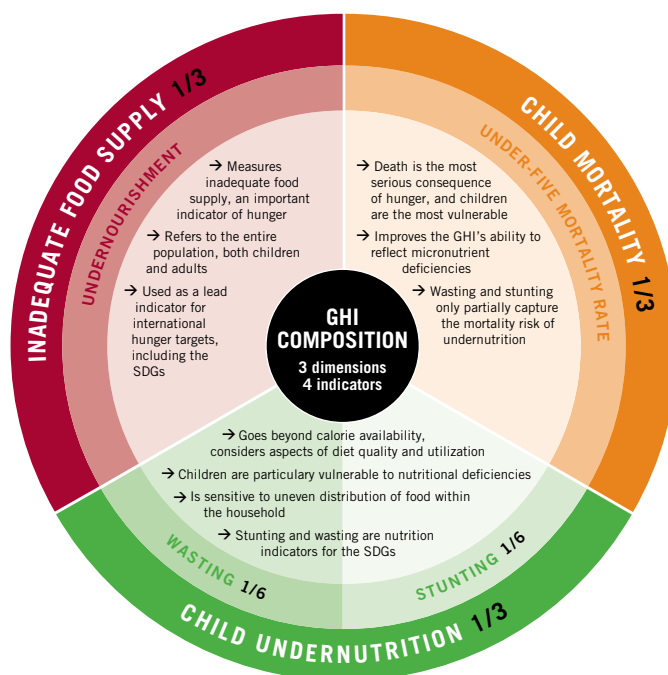
* In estimating the prevalence of undernourishment, FAO considers the composition of a population by age and sex, taking into account the range of physical activity levels of the population and the range of healthy body masses for attained height to calculate its average minimum energy requirement (FAO/IFAD/WFP 2015). This requirement varies by country—from about 1,650 to more than 2,000 kilocalories (food calories) per person per day for developing countries in 2016 (FAO 2017b).

The 2017 GHI has been calculated for the 119 countries for which data on all four component indicators are available and measuring hunger is considered most relevant. GHI scores are not calculated

¹ For further background on the GHI concept, see Wiesmann (2006a).

² According to recent estimates, undernutrition is responsible for 45 percent of deaths among children younger than five years old (Black et al. 2013).

FIGURE 1.1 COMPOSITION OF THE GLOBAL HUNGER INDEX



Source: Wiesmann et al. (2015).

Note: The values of each of the four component indicators are standardized. See Appendix A for the complete GHI formula. SDGs = Sustainable Development Goals. The source for undernourishment data is the Food and Agriculture Organization of the United Nations (FAO); the source for child mortality data is the United Nations Inter-agency Group for Child Mortality Estimation (UN IGME); and the primary sources for the child undernutrition data are the World Health Organization (WHO), World Bank, and UNICEF.

for some high-income countries where the prevalence of hunger is very low. Even within certain high-income countries, however, hunger and undernutrition are serious concerns for segments of the population. Unfortunately, nationally representative data for three of the four GHI indicators—undernourishment, child stunting, and child wasting—are not regularly collected in most high-income countries. While data on the fourth GHI indicator, child mortality, are usually available for these countries, child mortality does not reflect undernutrition in the high-income countries to the same extent as it does in low- and middle-income countries. For these reasons, GHI scores are not calculated for most high-income countries. In addition, GHI scores are not calculated for certain countries with small populations, nor for certain nonindependent entities or territories.

The GHI is only as current as the data for the four component indicators. This year's GHI includes the most recent country-level data from 2012 through 2016. Thus the 2017 GHI scores reflect hunger and undernutrition levels during this period rather than in the year 2017.

Because data for all four indicators in the GHI formula are not available for every country, GHI scores could not be calculated for some, including Burundi, the Comoros, the Democratic Republic of

Congo, Eritrea, Libya, Papua New Guinea, Somalia, South Sudan, and Syria. All available indicator values for these countries appear in Appendix C. Additionally, Box 2.1 of Chapter 2 explores the food and nutrition security situation of those countries without GHI scores where hunger is cause for significant concern.

GHI scores are based on current and historical data that are continuously being revised and improved by the United Nations (UN) agencies that compile them. Each year's GHI report reflects these changes. As a result, GHI scores from different years' reports are not directly comparable with one another. This report contains GHI scores for 2017 and three reference years—1992, 2000, and 2008. To track the progress of a country or region over time, the 1992, 2000, 2008, and 2017 scores within this report can be compared.

The GHI scores presented here reflect the latest revised data for the four component indicators.³ Where original source data were unavailable, estimates for the GHI component indicators were based on the most recent available data. (Appendix B provides more detailed

³ For previous GHI calculations, see von Grebmer et al. (2016, 2015, 2014, 2013, 2012, 2011, 2010, 2009, 2008); IFPRI/WHH/Concern (2007); Wiesmann (2006a, 2006b); and Wiesmann, Weingärtner, and Schöninger (2006).

BOX 1.2 OVERVIEW OF GHI CALCULATION

GHI scores are calculated using a three-step process.

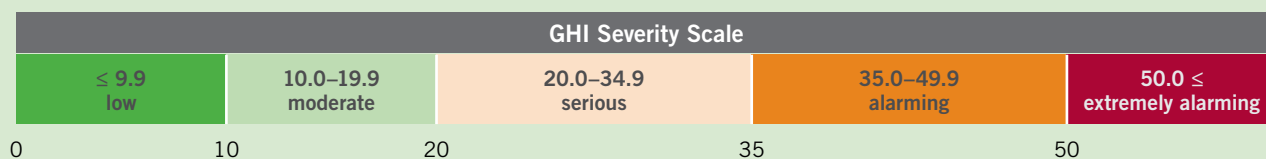
First, values for each of the four component indicators are determined from the available data for each country. The four indicators are undernourishment, child wasting, child stunting, and child mortality.

Second, each of the four component indicators is given a standardized score on a 100-point scale, based on the highest observed level for the indicator globally.

Third, standardized scores are aggregated to calculate the GHI score for each country, with each of the three dimensions (inadequate food supply, child mortality, and child undernutrition, which is composed equally of child stunting and child wasting) given equal weight.

This calculation results in GHI scores on a 100-point scale, where 0 is the best score (no hunger) and 100 is the worst. In practice, neither of these extremes is reached. A value of 0 would mean that a country had no undernourished people in the population, no children younger than five who were wasted or stunted, and no children who died before their fifth birthday. A value of 100 would signify that a country's undernourishment, child wasting, child stunting, and child mortality levels were each at approximately the highest levels observed worldwide in recent decades. (Appendix A provides a detailed guide to calculating and interpreting GHI scores.)

The scale below shows the severity of hunger—from *low* to *extremely alarming*—associated with the range of possible GHI scores.



Source: Authors.

background information on the data sources for the 1992, 2000, 2008, and 2017 GHI scores.)

The four component indicators used to calculate the GHI scores in this report draw upon data from the following sources:


UNDERNOURISHMENT: Data from the Food and Agriculture Organization of the United Nations (FAO) were used for the 1992, 2000, 2008, and 2017 GHI scores. Undernourishment data for the 2017 GHI are for 2014–2016 (FAO 2017b; authors' estimates).

CHILD WASTING AND CHILD STUNTING: Data on the child undernutrition indicators—child wasting and child stunting—are drawn from the joint database of UNICEF, the World Health Organization (WHO), and the World Bank, as well as from the WHO's continuously updated Global Database on Child Growth and Malnutrition, the most recent reports of the Demographic and Health Surveys (DHS) and Multiple Indicator Cluster Surveys (MICS), and statistical tables from UNICEF. For the 2017 GHI scores, data on child wasting and child stunting are from the latest year for which data are available in the period 2012–2016 (UNICEF/WHO/World Bank 2017; WHO 2017;

UNICEF 2017; UNICEF 2013; UNICEF 2009; MEASURE DHS 2017; authors' estimates).

CHILD MORTALITY: Updated data from the United Nations Inter-agency Group for Child Mortality Estimation (UN IGME) were used for the 1992, 2000, 2008, and 2017 GHI scores. For the 2017 GHI, data on child mortality are from 2015 (UN IGME 2015).

The GHI incorporates the most up-to-date data available. Yet time lags and data gaps persist in reporting vital statistics on hunger and undernutrition. The United Nations' Sustainable Development Agenda acknowledges the need for more reliable and extensive country data on hunger and nutrition, and we applaud the efforts to improve the breadth and depth of available data. We encourage further improvements in collecting high-quality data on hunger and undernutrition, which will allow for a more complete and current assessment of the state of global hunger, a better understanding of the relationship between hunger and nutrition initiatives and their effects, and more effective coordination among efforts to end global hunger and malnutrition in all its forms.

A photograph of a farmer walking up a dirt hillside. The farmer is wearing a light blue long-sleeved shirt, dark trousers, and a wide-brimmed hat. He has a large sack slung over his shoulder. In the background, a sprawling city is visible at the foot of the hill, with mountains in the distance under a cloudy sky. The scene is captured in a cinematic style with soft lighting.

A farmer walks up a hillside close to Medellín, Colombia. The country has the world's largest population of internally displaced people, many of whom are farmers and indigenous people. Both geography and ethnicity can impact a person's nutritional status.

GLOBAL, REGIONAL, AND NATIONAL TRENDS

The 2017 Global Hunger Index (GHI) indicates that worldwide levels of hunger and undernutrition have declined over the long term: At 21.8 on a scale of 100, the average GHI score for 2017 is 27 percent lower than the 2000 score (29.9) (Figure 2.1).¹ This improvement reflects the reductions since 2000 in each of the four GHI indicators—the prevalence of undernourishment, child stunting (low height-for-age), child wasting (low weight-for-height), and child mortality.² In the countries included in the GHI, the share of the population that is undernourished is down from 18.2 percent in 1999–2001 to 13.0 percent as of 2014–2016. Of children under five, 27.8 percent are stunted, down from the 2000 rate of 37.7 percent, and 9.5 percent are wasted, down slightly from 9.9 percent in 2000. Finally, the under-five mortality rate dropped from 8.2 percent in 2000 to 4.7 percent in 2015.³

Despite these improvements, a number of factors, including deep and persistent inequalities, undermine efforts to end hunger and undernutrition worldwide. As a result, even as the average global hunger level has declined, certain regions of the world still struggle with hunger more than others, disadvantaged populations experience hunger more acutely than their better-off neighbors, and isolated and war-torn areas are ravaged by famine.

In early 2017, the United Nations declared that more than 20 million people were at risk of famine in four countries: Nigeria, Somalia, South Sudan, and Yemen. These crises are largely “man-made,” the result of violent conflict and internal strife that are preventing people from accessing food and clean water and keeping aid

organizations from reaching people in need. In Somalia—which has suffered years of war and multiple insurgencies, and until recently was deemed a failed state—an ongoing drought sparked the initial crisis (Economist 2017; UN 2017). In March 2017, the UN Undersecretary-General for Humanitarian Affairs declared the situation the worst humanitarian crisis the world has faced since World War II (UN 2017).

It is against this backdrop that we explore the state of hunger in the world. The following sections report on hunger and undernutrition at the regional, national, and subnational levels, and provide insight into how and why these have changed over time.

Regional Variations

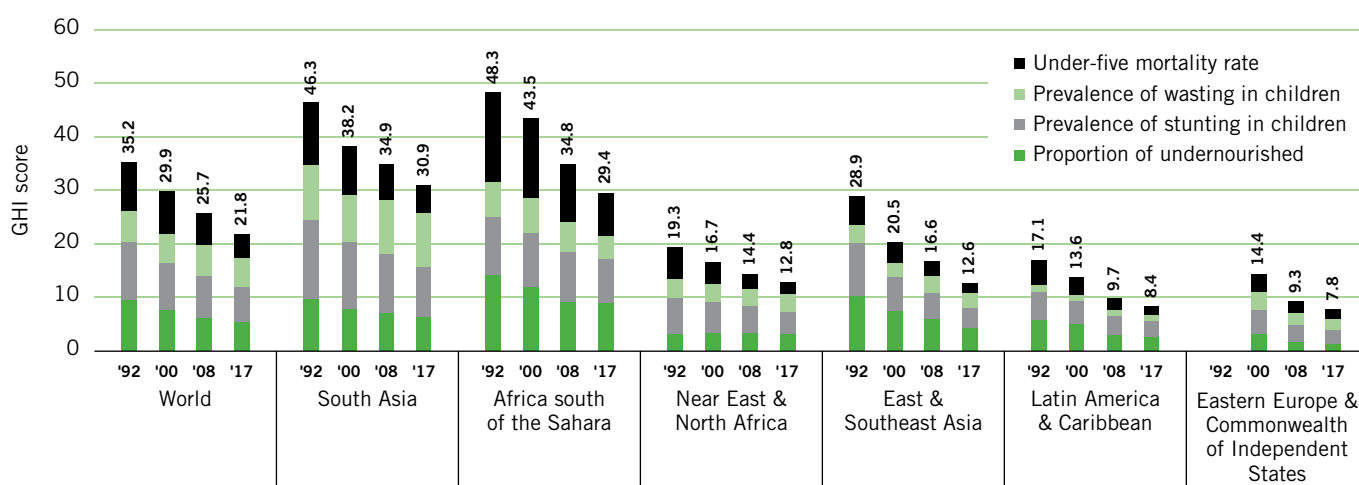
At the regional level, South Asia and Africa south of the Sahara have the highest 2017 GHI scores—30.9 and 29.4, respectively, indicating *serious* levels of hunger (Figure 2.1). The GHI scores, and therefore the hunger levels, for East and Southeast Asia, the Near East and North Africa, Latin America and the Caribbean, and Eastern Europe

¹ The regional and global aggregates for each component indicator are calculated as population-weighted averages, using the indicator values reported in Appendix C. For countries lacking undernourishment data, provisional estimates provided by the Food and Agriculture Organization of the United Nations (FAO) were used in the calculation of the global and regional aggregates only, but are not reported in Appendix C. The regional and global GHI scores are calculated using the regional and global aggregates for each indicator and the formula described in Appendix A.

² The estimates in this paragraph refer to the countries for which GHI data were available. These estimates can vary slightly from those published by other organizations for the same indicators due to the inclusion of different countries.

³ Black et al. (2013) estimate that undernutrition causes almost half of all child deaths globally.

FIGURE 2.1 GLOBAL AND REGIONAL 1992, 2000, 2008, AND 2017 GLOBAL HUNGER INDEX SCORES, WITH CONTRIBUTION OF COMPONENTS



Source: Authors.

Note: See Appendix B for data sources. A 1992 regional score for Eastern Europe and the Commonwealth of Independent States was not calculated because many countries in this region did not exist in their present borders.

and the Commonwealth of Independent States are considered *low* or *moderate*, ranging from 7.8 to 12.8 points. Within each region in the *low* range, however, are also countries with *serious* or *alarming* GHI scores, including Tajikistan in Central Asia, which is part of the Commonwealth of Independent States; Guatemala and Haiti in Latin America and the Caribbean; and Iraq and Yemen in the Near East and North Africa region. Seven of 14 countries in East and Southeast Asia have *serious* scores, though the *low* score of highly populous China improves the regional average.

In the regions with the most hunger, South Asia and Africa south of the Sahara, different indicators drive the high GHI scores. In South Asia, child undernutrition, as measured by child stunting and child wasting, is higher than in Africa south of the Sahara. Meanwhile, Africa south of the Sahara has a higher child mortality rate and struggles more with undernourishment, reflecting overall calorie deficiency for the population.

Given that three-quarters of South Asia's population resides in India, the situation in that country strongly influences South Asia's regional score. At 31.4, India's 2017 GHI score is at the high end of the *serious* category. According to 2015–2016 survey data, more than a fifth (21 percent) of children in India suffer from wasting. Only three other countries in this year's GHI—Djibouti, Sri Lanka, and South Sudan—have data or estimates showing child wasting above 20 percent in the latest period (2012–2016). Further, India's child wasting rate has not substantially improved over the past 25 years (see Appendix C). But the country has made progress in other areas: Its child stunting rate, while still relatively high at 38.4 percent, has decreased in each of the reference periods in this report, down from 61.9 percent in 1992. According to Menon et al. (2017), India has implemented a “massive scale-up” of two national programs that address nutrition—the Integrated Child Development Services and the National Health Mission—but these have yet to achieve adequate coverage. Areas of concern include (1) the timely introduction of complementary foods for young children (that is, the transition away from exclusive breastfeeding), which declined from 52.7 percent to 42.7 percent between 2006 and 2016; (2) the share of children between 6 and 23 months old who receive an adequate diet—a mere 9.6 percent for the country; and (3) household access to improved sanitation facilities—a likely factor in child health and nutrition—which stood at 48.4 percent as of 2016 (Menon et al. 2017).

In Africa south of the Sahara, meanwhile, undernourishment remains stubbornly high, staying virtually the same in 2014–2016 (at 21.6 percent) as in 2007–2009 (at 22.0 percent), and currently constituting the highest regional undernourishment rate in the world. Rising food prices, droughts, and political instability contributed to

this stagnation (FAO/IFAD/WFP 2015). Economic growth (particularly in certain sectors of the economy such as agriculture) and investment (especially in public services such as health and education) have helped some countries in the region to reduce their undernourishment levels (Soriano and Garrido 2016). Countries such as Angola, Gabon, and Mali have experienced substantial reductions in undernourishment rates in recent years, achieving rates under 15 percent as of 2014–2016 (FAO 2017b). A common feature among these and other countries in the region that have lowered their undernourishment rates is relatively rapid improvement in agricultural productivity (FAO/IFAD/WFP 2015).

Although progress on certain indicators has stalled in some places, there has been a steady decline in hunger levels for each region covered in this report (Figure 2.1). Between the 2000 and 2017 scores, Eastern Europe and the Commonwealth of Independent States saw the greatest improvement when measured by the percentage change, though not in absolute terms. During the same period, Africa south of the Sahara, which had the highest regional score in 2000, experienced the greatest decline in absolute GHI values—a 14-point drop. Looking all the way back to 1992, however, Africa south of the Sahara and South Asia have made comparable progress; according to their GHI scores, hunger levels for these regions were remarkably close in 1992 and again in the most recent reference period.

Country-Level Results

The numerical ranking, ordered from lowest to highest hunger levels, for each country included in the GHI is shown in Table 2.1, along with each country's 1992, 2000, 2008, and 2017 GHI scores. Appendix C shows the values of the GHI indicators—the prevalence of undernourishment, child wasting, child stunting, and child mortality—for each country, including their historic values. The individual indicators are particularly important because the nature of hunger and undernutrition—and therefore the right mix of policies and interventions to address them—varies from country to country. Appendix D shows the 1992, 2000, 2008, and 2017 GHI scores for each country, alphabetized by country name.

The 2017 GHI shows that seven countries suffer from levels of hunger that are *alarming*, and one country, the Central African Republic (CAR), suffers from a level that is *extremely alarming*. Seven of these eight countries are in Africa south of the Sahara: CAR, Chad, Liberia, Madagascar, Sierra Leone, Sudan, and Zambia. The exception is Yemen, located at the tip of the Arabian Peninsula.

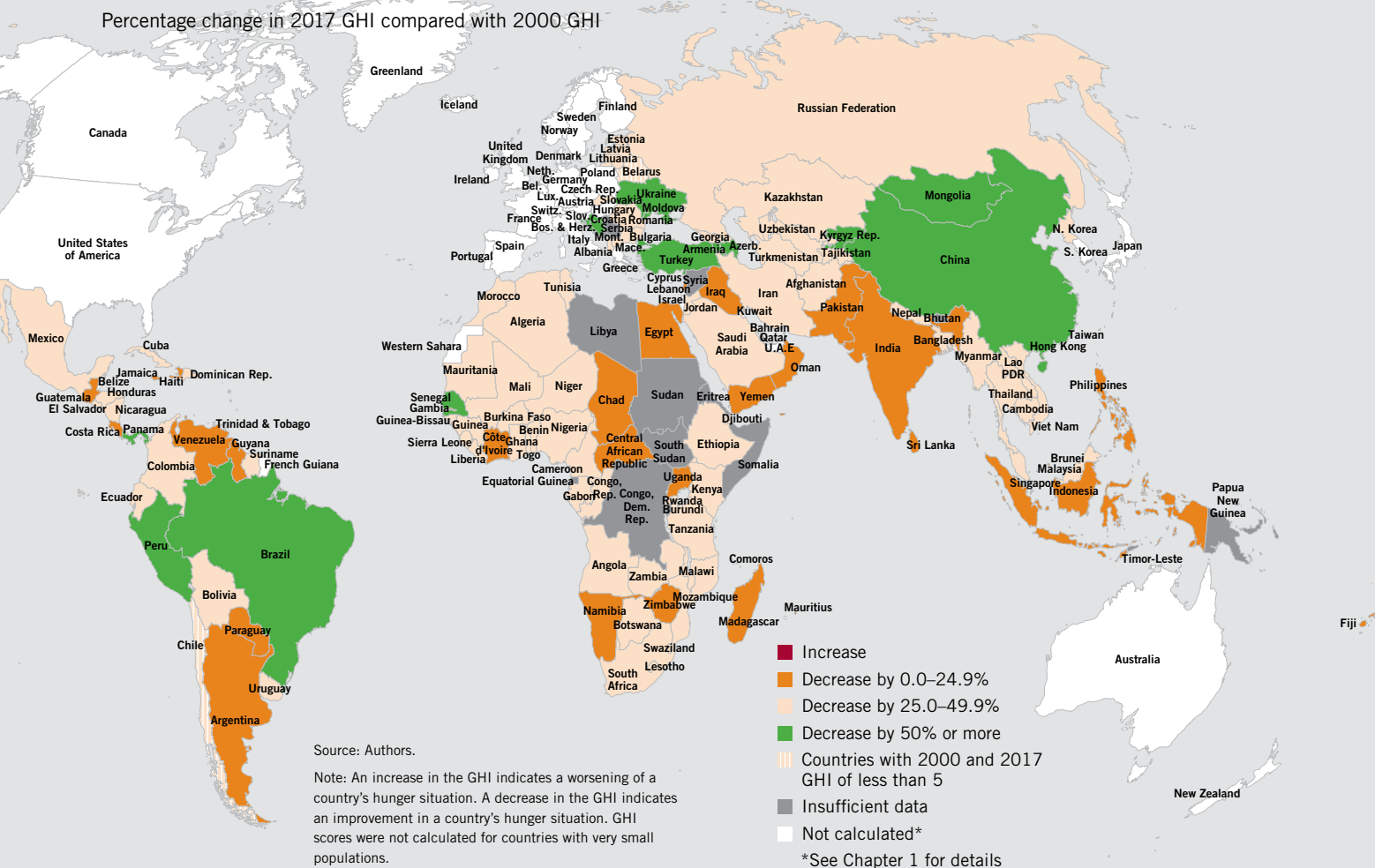
As in years past, GHI scores for several countries could not be calculated because data were not available for all four GHI indicators. Nevertheless, the hunger and undernutrition situations in many of

TABLE 2.1 GLOBAL HUNGER INDEX SCORES BY RANK, 1992 GHI, 2000 GHI, 2008 GHI, AND 2017 GHI

Rank ¹	Country	1992	2000	2008	2017	Rank ¹	Country	1992	2000	2008	2017
2017 GHI scores less than 5, collectively ranked 1–14. ²	Belarus	—	<5	<5	<5	67	Senegal	37.5	37.3	23.7	18.4
	Bosnia & Herzegovina	—	9.8	7.0	<5	68	Philippines	30.5	25.9	20.2	20.0
	Chile	5.9	<5	<5	<5	69	Guatemala	28.5	27.4	22.2	20.7
	Croatia	—	6.2	<5	<5	70	Kenya	39.1	37.6	29.6	21.0
	Cuba	10.5	5.3	<5	<5	71	Swaziland	24.0	29.9	30.7	21.2
	Estonia	—	6.2	<5	<5	72	Indonesia	35.0	25.5	28.3	22.0
	Kuwait	20.0	<5	<5	<5	72	Nepal	42.5	36.8	28.9	22.0
	Latvia	—	6.7	<5	<5	74	Cameroon	40.0	39.6	29.5	22.1
	Lithuania	—	5.9	<5	<5	75	Cambodia	45.8	43.6	27.1	22.2
	Montenegro	—	—	5.2	<5	76	Togo	45.8	39.0	28.3	22.5
	Slovak Republic	—	8.0	6.4	<5	77	Myanmar	55.6	43.6	30.1	22.6
	Turkey	14.3	10.4	5.6	<5	78	Iraq	21.8	26.5	25.7	22.9
	Ukraine	—	13.7	<5	<5	79	Gambia	35.2	27.5	23.8	23.2
	Uruguay	9.7	7.7	6.4	<5	80	Lesotho	26.5	33.2	28.4	24.1
15	Romania	9.3	8.7	6.0	5.2	81	Benin	44.5	37.5	31.7	24.4
16	Costa Rica	7.5	6.2	5.0	5.3	81	Botswana	33.8	33.0	30.7	24.4
16	Macedonia, FYR	—	7.7	6.4	5.3	83	Mauritania	39.4	33.6	23.7	25.2
18	Argentina	7.0	6.6	5.8	5.4	84	Nigeria	48.8	41.0	33.7	25.5
18	Brazil	15.9	11.7	5.4	5.4	84	Sri Lanka	31.6	26.8	24.2	25.5
18	Bulgaria	7.9	8.2	7.6	5.4	86	Congo, Rep.	39.1	36.0	31.6	25.6
21	Kazakhstan	—	11.3	10.9	5.8	87	Namibia	35.4	30.8	30.9	25.7
22	Russian Federation	—	10.5	6.8	6.2	88	Bangladesh	53.6	37.6	32.2	26.5
23	Mexico	14.0	10.8	8.4	6.5	88	Côte d'Ivoire	32.9	32.6	35.1	26.5
24	Serbia	—	—	7.2	6.6	90	Malawi	58.2	44.6	31.5	27.2
25	Jordan	13.4	10.3	6.5	6.7	91	Lao PDR	52.3	48.1	33.4	27.5
26	Trinidad & Tobago	14.5	11.7	10.4	6.9	92	Burkina Faso	47.0	47.9	36.4	27.6
27	Saudi Arabia	14.3	12.5	11.2	7.1	93	North Korea	31.9	40.3	30.7	28.2
28	Tunisia	15.4	10.7	8.0	7.4	94	Guinea	46.5	44.0	33.4	28.6
29	China	25.9	15.8	11.2	7.5	94	Mali	51.4	44.2	35.1	28.6
30	Iran	17.5	13.6	8.7	7.6	96	Tajikistan	—	41.8	32.6	28.7
30	Moldova	—	16.3	13.3	7.6	97	Tanzania	42.9	42.4	33.0	28.8
32	Armenia	—	18.4	11.4	7.7	98	Mozambique	63.6	48.7	37.5	30.5
32	Georgia	—	14.7	8.3	7.7	99	Guinea-Bissau	44.5	43.1	31.4	30.6
34	Colombia	14.6	11.3	9.4	8.0	100	Djibouti	60.3	46.7	35.1	31.4
34	Jamaica	12.0	8.4	7.6	8.0	100	India	46.2	38.2	35.6	31.4
36	Fiji	11.5	9.8	9.1	8.1	100	Rwanda	53.3	56.3	36.2	31.4
36	Lebanon	11.4	9.0	8.2	8.1	103	Uganda	41.2	39.2	33.3	32.0
38	Peru	28.7	20.9	15.3	8.7	104	Ethiopia	—	56.0	40.2	32.3
39	Panama	19.9	20.0	14.1	9.2	105	Angola	65.8	57.5	39.7	32.5
40	Kyrgyz Republic	—	19.7	13.4	9.3	106	Pakistan	42.7	38.2	34.7	32.6
41	Algeria	17.5	15.6	11.3	9.5	107	Afghanistan	50.2	52.7	37.9	33.3
42	Azerbaijan	—	27.5	15.3	9.6	108	Zimbabwe	35.8	40.9	34.5	33.8
43	Suriname	17.0	16.0	11.4	9.9	109	Haiti	51.6	42.7	42.6	34.2
44	Malaysia	19.8	15.5	13.7	10.2	110	Timor-Leste	—	—	46.8	34.3
44	Morocco	18.7	15.7	12.0	10.2	111	Niger	66.2	52.6	37.0	34.5
46	Thailand	25.8	18.1	12.0	10.6	112	Liberia	51.2	48.2	38.9	35.3
47	Paraguay	16.7	14.1	12.1	11.0	113	Sudan	—	—	—	35.5
48	Albania	20.8	21.6	16.5	11.1	114	Yemen	43.5	43.4	36.2	36.1
48	El Salvador	19.5	16.2	12.7	11.1	115	Zambia	48.5	52.3	45.0	38.2
50	Oman	20.8	13.7	10.2	11.3	116	Madagascar	43.9	43.6	36.8	38.3
51	Dominican Republic	23.8	18.4	15.4	11.6	117	Sierra Leone	57.2	54.7	44.5	38.5
52	Turkmenistan	—	21.9	16.5	12.2	118	Chad	62.5	51.9	50.9	43.5
53	Venezuela	15.2	15.2	9.3	13.0	119	Central African Republic	52.2	50.9	47.0	50.9
54	Uzbekistan	—	23.8	16.1	13.1	<p>— = Data are not available or not presented. Some countries, such as the post-Soviet states prior to 1991, did not exist in their present borders in the given year or reference period.</p> <p>¹ Ranked according to 2017 GHI scores. Countries that have identical 2017 scores are given the same ranking (for example, Argentina, Brazil, and Bulgaria are each ranked 18th). The following countries could not be included because of lack of data: Bahrain, Bhutan, Burundi, the Comoros, the Democratic Republic of the Congo, Equatorial Guinea, Eritrea, Libya, Papua New Guinea, Qatar, Somalia, South Sudan, and the Syrian Arab Republic.</p> <p>² The 14 countries with 2017 GHI scores of less than 5 are not assigned individual ranks, but rather are collectively ranked 1–14. Differences between their scores are minimal.</p>					
55	South Africa	18.5	18.8	16.6	13.2						
56	Mauritius	17.4	15.9	14.3	13.3						
57	Mongolia	37.5	31.7	18.1	13.4						
58	Nicaragua	36.1	24.7	18.2	13.6						
59	Guyana	22.3	17.9	17.0	13.7						
60	Gabon	24.2	20.7	17.4	13.8						
61	Honduras	25.9	20.6	17.0	14.3						
62	Ecuador	22.3	20.5	16.4	14.4						
63	Egypt	20.1	16.4	16.6	14.7						
64	Viet Nam	40.2	28.6	21.6	16.0						
65	Ghana	41.9	29.2	21.9	16.2						
66	Bolivia	36.7	30.3	23.9	17.2						

FIGURE 2.2 COUNTRY PROGRESS IN REDUCING GHI SCORES

Percentage change in 2017 GHI compared with 2000 GHI



these countries are cause for significant concern (Box 2.1). Notably, two of the four countries currently facing famine are among those not included in the GHI, yet their populations are indisputably facing extremely alarming hunger. For South Sudan and Somalia, there are insufficient data to calculate GHI scores, yet other data and systems designed to detect acute food-security crises, such as the Famine Early Warning System (FEWS NET), make clear that their hunger levels are extreme (FEWS NET 2017d; FEWS NET 2017b).

The GHI scores of the other two famine-threatened countries, Nigeria and Yemen, fall in the *serious* and *alarming* categories, respectively. They do not fall into the *extremely alarming* category for two key reasons: inequality (the theme of this year's report) and timing. Inequality plays a greater role in Nigeria, where 4.5 million people

(out of a total population of roughly 180 million) in the northeast of the country are experiencing or are at risk of famine, mainly due to ongoing violence spread by Boko Haram (VOA 2017; UNDP 2017a). The remainder of the country faces minimal food-security concerns (FEWS NET 2017c) and uneven levels of child undernutrition (NBS 2015). In Yemen, the crisis is also fueled by violent conflict, but is more evenly spread throughout the country, with 17 million people (about 65 percent of the population) facing food insecurity (UNDP 2017a; FEWS NET 2017a). Timing, meanwhile, factors into all the scores: GHI scores are based on the most up-to-date data available for the GHI indicators. In the case of the 2017 scores, data are included from the most recent reference period (2012–2016) and therefore reflect hunger and undernutrition in this period. The

FIGURE 2.3 HOW SERIOUS, ALARMING, AND EXTREMELY ALARMING COUNTRIES HAVE FARED SINCE 2000



Source: Authors.

Note: This figure features countries where data were available to calculate 2000 and 2017 GHI scores and where 2017 GHI scores were equal to or greater than 20, reflecting *serious*, *alarming*, or *extremely alarming* hunger levels. Some likely poor performers may not appear due to missing data.

extent of the current crises will therefore be reflected in future GHI indicators and scores.

The Central African Republic, which has the highest 2017 GHI score, has suffered from instability, sectarian violence, and civil war since 2012. Livelihoods have been lost, markets disrupted, and food security weakened (USAID 2017a). As of May 2017, there were 500,000 internally displaced persons in this country of just 5 million people. Underlying CAR's high GHI score are its very high undernourishment value of 58.6 percent, the highest in this year's report, and its child mortality rate of 13 percent, the fourth highest in the

report. The country's child stunting and child wasting estimates are also high and cause for concern.

Despite these troubling cases, there is cause for optimism. Of 119 countries, 43 have *low* 2017 GHI scores (under 10). Roughly half of these are in Eastern Europe and the Commonwealth of Independent States. The rest are in Latin America and the Caribbean, the Near East and North Africa, and East and Southeast Asia. From the 2000 GHI to the 2017 GHI, the scores of 14 countries improved by 50 percent or more; those of 72 countries dropped by between 25 and 49.9 percent; and those of 27 countries fell by less than

25 percent (Figure 2.2). Only CAR showed no progress; its 2017 and 2000 GHI scores are the same.

Just as overall GHI scores vary considerably, so do the component indicators. In terms of undernourishment, Zambia, Haiti, and CAR have the highest shares of undernourished people: between 45.9 and 58.6 percent of their populations cannot meet their minimum calorie needs. Stunting, meanwhile, is most prevalent in Timor-Leste, Eritrea, and Burundi, each with levels at or exceeding 50 percent. Wasting is most prevalent in Sri Lanka, Djibouti, and South Sudan, where 21.4 to 27.3 percent of children under age five are affected. Finally, the under-five mortality rate is highest in Angola (15.7 percent), Chad (13.9 percent), and Somalia (13.7 percent).

According to the 2017 GHI, 52 countries have scores of 20 or higher, and thus still suffer from at least *serious* levels of hunger. Figure 2.3 shows how these countries have fared since 2000. The countries in the lower right of the figure, including CAR, Chad, and Madagascar, have high GHI scores and low rates of hunger reduction since 2000. The countries near the top of the figure have seen sizable reductions in hunger, and those in the upper left, such as Cambodia, Myanmar, Kenya, Cameroon, Togo, and Nepal, have experienced relatively rapid improvements and are nearing the *moderate* category.

Kenya's score has dropped by 44 percent since 2000, moving the country from the *alarming* to the *serious* category, verging on *moderate*. Underlying this progress is improvement in each of the GHI indicators. Kenya has experienced steady economic growth in recent years (WFP 2017a), and has worked to improve food security and nutrition. In 2012, Kenya's government put in place a National Nutrition Action Plan (NNAP), complemented by investments in agriculture, disaster-resilience, food-fortification, and other related initiatives (Dayton Eberwein et al. 2016). Kenya has yet to reach its nutrition targets, and some localities are lagging behind and face more serious hunger and nutrition challenges. The drought affecting East Africa this year has created additional food-security challenges for large parts of the country, with harvests, livestock, and food prices negatively affected (FAO GIEWS 2017b). Aside from the immediate drought-related needs, Dayton Eberwein et al. (2016) estimate that a full range of nutrition interventions with national coverage would require an investment of US\$213 million over five years, while a slightly scaled-down package for the areas in greatest need would require \$135 million.

Nepal's GHI score was also in the *alarming* category in 2000, but is now in the *serious* category, verging on *moderate*. Nepal has experienced declines in undernourishment, child stunting, and child mortality, while its child wasting rate has remained unchanged. According to one study, Nepal's remarkable reduction in child stunting between 2001 and 2011 is associated with, and likely attributable to,

increased household assets (a proxy for household wealth), increased maternal education levels, improved sanitation levels, and implementation and utilization of health and nutrition programs, including antenatal and neonatal care (Headey and Hoddinott 2015). Yet despite Nepal's progress there are still deep inequalities within the country, discussed in more detail in the subnational section below.

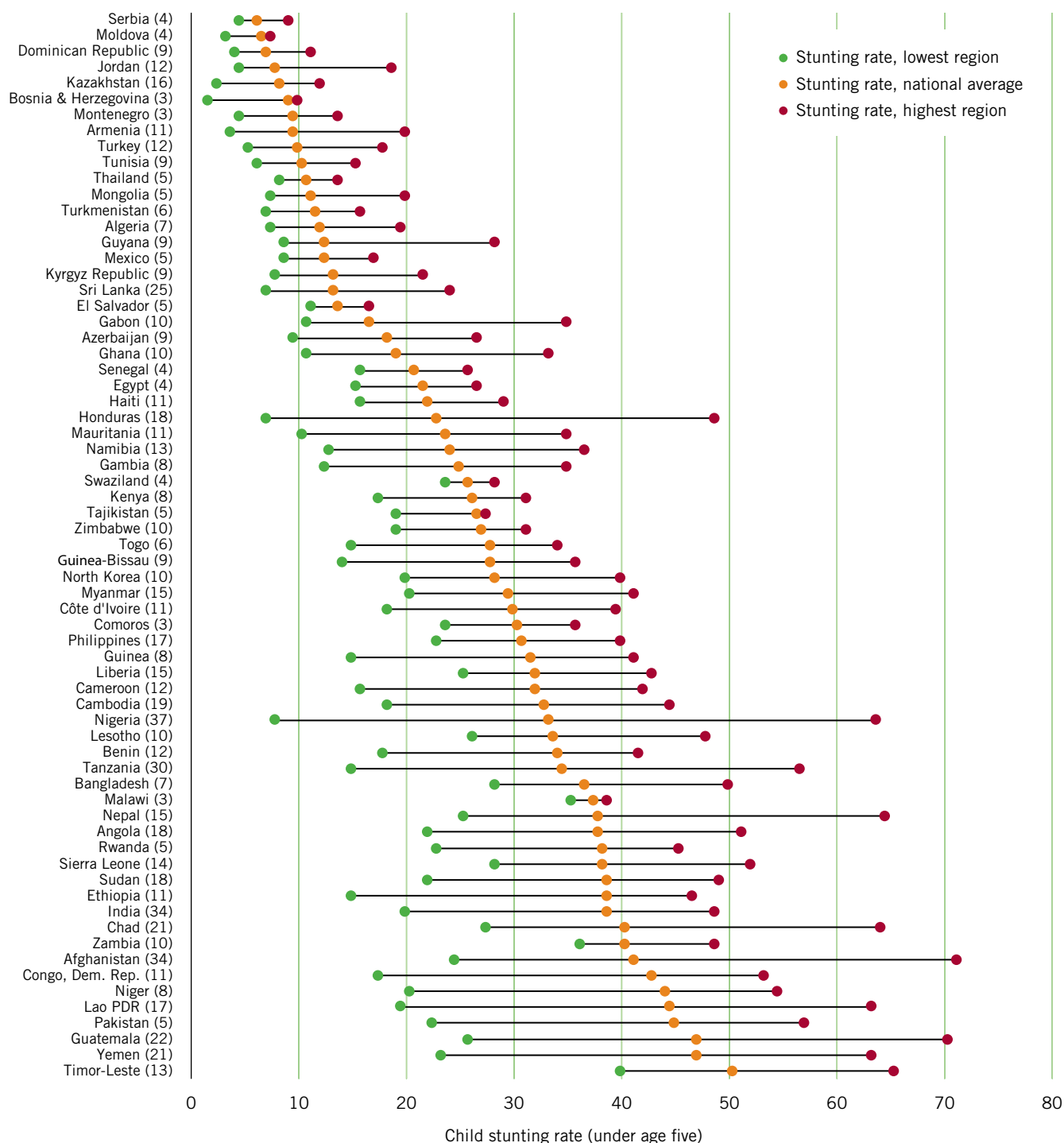
Angola, Ethiopia, and Rwanda, all of which experienced violent conflicts in recent decades, had 2000 GHI scores in the *extremely alarming* category. The 2017 scores of each, however, are 42 to 44 percent lower, placing them in the *serious* category. These countries still have major challenges to overcome. All have stunting levels between 37 and 38 percent, and Angola's child mortality rate (15.7 percent) is the highest in this year's report. Yet they have already come back from the highest levels of hunger and undernutrition, providing hope for countries currently in the throes of violent conflict, massive food insecurity, and even famine.

The situation in Ethiopia, which experienced multiple civil wars and extreme famines between 1974 and 1991 (de Waal 1991), has substantially improved, but remains tenuous. Most of the population is engaged in rainfed agriculture (Asmamaw 2017) and therefore vulnerable to food insecurity due to inconsistent rainfall (USAID 2017c). This year, the drought in East Africa is severely impacting crops and livestock in Ethiopia, putting millions in need of humanitarian assistance (FAO GIEWS 2017b). In 2005, Ethiopia's government established the Productive Safety Net Programme (PSNP), a large-scale program to prevent future food crises. It includes public-works projects and cash or food transfers for households that are unable to participate in the public-works component. Some participants also receive agricultural support through a complementary program (Gilligan et al. 2009). Research has shown that a combination of PSNP assistance and provision of agricultural support services improves households' food security (Gilligan et al. 2009), and that PSNP reduces child undernutrition (Debela et al. 2009). The government has put in place other initiatives to support food security and nutrition, and has committed to ending child undernutrition by 2030. The country still needs to increase agricultural research and development; improve coordination between sectors such as nutrition, agriculture, and health; and expand coverage of targeted nutrition programs (Compact2025 2016).

Subnational Hunger and Undernutrition

An examination of subnational-level data reveals wide disparities within countries. These differences in hunger and nutrition profiles mean that, in most countries, a one-size-fits-all approach to tackling hunger and undernutrition is unlikely to yield the best

FIGURE 2.4 SUBNATIONAL INEQUALITY OF CHILD STUNTING



Source: Authors. Based on surveys listed in UNICEF/WHO/World Bank (2017) and WHO (2017), from 2012–2016. Countries included are those with subnational stunting data available for 2012–2016.

Note: The number in parentheses following each country name indicates the number of subnational units into which the country was divided for the sake of the survey. All stunting values in this figure are taken directly from original survey reports. The national averages may vary slightly from those used for GHI calculations, which in some cases underwent additional analysis before inclusion in UNICEF/WHO/World Bank 2017.

BOX 2.1 COUNTRIES WITH INSUFFICIENT DATA, YET SIGNIFICANT CONCERNS

GHI scores for 2017 could not be calculated for 13 countries because data on the prevalence of undernourishment and, in some cases, data or estimates on child stunting and child wasting were unavailable. Yet the countries with missing data may be the ones suffering most. Therefore, we still review the hunger and undernutrition situations in such places. To monitor and evaluate progress, it is essential that the national governments of these countries, along with the appropriate international organizations, take all steps necessary to make the missing data available without delay. Only when the extent of the problem is known can it effectively be tackled.

The table below shows the existing GHI indicator values for the nine countries without GHI scores that we have determined to be cause for significant concern. We base this determination on the available data and information from international organizations that specialize in hunger and undernutrition.

BURUNDI: Burundi's child stunting level, estimated at 56.6 percent, is the highest of all countries covered in this report. In 2014, the last year that adequate data were available to calculate full GHI scores for Burundi, it had the highest score of all countries for which scores could be calculated, placing it in the *extremely alarming* category (von Grebmer et al. 2014). More than a decade of violent conflict

(1993–2005) contributed to Burundi's poor food security and nutrition situation (Verwimp 2012; WFPUSA 2015). Mercier et al. (2016) show that household exposure to violence during Burundi's civil war still contributed to decreased household welfare in 2012 and predicted that the effects would persist through at least 2017. Due to political unrest beginning in 2015, hundreds of people had died and roughly half a million (of a total population of 11 million) had been internally displaced or fled the country as of early 2017 (USAID 2017b). The UN Office for the Coordination of Humanitarian Affairs' 2017 Humanitarian Response Plan says 7.3 million people, 65 percent of the population, live below the extreme poverty line.

COMOROS: Comoros's child stunting rate is 32 percent; child wasting rate, 11 percent; and under-five mortality rate, 7 percent. A low-lying island nation in the Indian Ocean, the Comoros is vulnerable to the effects of climate change and has been repeatedly hit with natural disasters. Densely populated and heavily reliant on agriculture, the country suffers from poor environmental management and has limited resources to support its growing population (Burak and Meddeb 2012). In addition, the Comoros has experienced at least 20 coups since gaining independence from France in 1975 (CSIS 2008).

EXISTING GHI INDICATOR VALUES

Country	Child Stunting Stunting in children under five 2012–2016 (%)	Child Wasting Wasting in children under five 2012–2016 (%)	Child Mortality Under-five mortality 2015 (%)
Burundi	56.6*	7.6*	8.2
Comoros	32.1	11.1	7.4
Congo, Dem. Rep.	42.6	8.1	9.8
Eritrea	53.3*	14.7*	4.7
Libya	25.9*	5.8*	1.3
Papua New Guinea	41.5*	7.1*	5.7
Somalia	—	—	13.7
South Sudan	36.9*	27.3*	9.3
Syrian Arab Republic	—	—	1.3

Source: Authors.

Note: * indicates IFPRI estimates; — = not available. Undernourishment values are not available for countries in this table.

DEMOCRATIC REPUBLIC OF CONGO (DRC): The DRC has for decades struggled with one of the world's most relentless emergencies. Recently, escalating conflict displaced 1.4 million people in Kasai Province. As of January 2017, more than 5.7 million people were facing crisis-level food insecurity and 173,000 were facing emergency-level food insecurity (ACAPS 2017). Roughly 43 percent of children under age five are stunted, 8 percent are wasted, and the child mortality rate is nearly 10 percent. According to the United States Agency for International Development (USAID), "Recurrent conflict and subsequent internal displacement of persons, lack of improved agricultural inputs and techniques, pervasive crop and livestock diseases, poor physical infrastructure, gender inequity, and a rising fertility rate are among the many factors challenging food security in DRC" (USAID 2016).

ERITREA: Child undernutrition levels are extreme in Eritrea, with the child stunting rate estimated at 53.3 percent and child wasting at 14.7 percent. In 2014, the last year for which a GHI score could be calculated for Eritrea, the country had the second highest score (von Grebmer et al. 2014). Undernutrition in Eritrea is related to the challenges of food production due to limited arable land, water shortages, and frequent droughts. Severe poverty also limits people's ability to buy food (UNICEF 2015).

LIBYA: Libya's child stunting rate is estimated at 25.9 percent, child wasting at 5.8 percent, and child mortality at 1.3 percent. While these values are not extremely high, updated data are urgently needed to shed light on how six years of intermittent civil war and political strife have affected food security and undernutrition. Conflict and instability have damaged supply chains in parts of the country, limiting access to agricultural inputs and diminishing agricultural production. High unemployment and inflation rates have put further stress on the population (FAO GIEWS 2017a). These factors are worsening food security in Libya, particularly for the country's roughly 250,000 internally displaced persons (WFP 2017c).

PAPUA NEW GUINEA: Child stunting in Papua New Guinea is estimated at 41.5 percent and child wasting at 7.1 percent. As a result of drought and frosts brought on by El Niño in 2015–2016, a third of the country's population suffered from

food insecurity, and businesses, schools, and other services were strained (FAO 2015, UNDP 2017b). The country has yet to fully recover from this latest El Niño event and remains vulnerable to additional natural disasters, including the possibility of another El Niño episode occurring in late 2017 (UNDP 2017b).

SOMALIA: Together, severe drought, high levels of internal displacement, and difficulties providing humanitarian assistance to Somalia's population brought Somalia to the brink of famine in 2017. More than a quarter of the population (nearly 3 million people out of a total population of 11 million) are believed to be facing crisis or emergency-level food insecurity (FEWS NET 2017b). A 2011 famine in Somalia claimed 250,000 lives (WFP 2015). Child mortality is the only GHI indicator for which data are available for Somalia; at 13.7 percent, it is the third highest rate of child mortality among the countries included in this report.

SOUTH SUDAN: In February 2017, the UN declared that the counties of Leer and Mayendit in Unity State were in the midst of famine (FAO 2017a). Other localities face emergency situations and could cross the official threshold into famine. As of May 2017, nearly 6 million South Sudanese were believed to be facing levels of food insecurity ranging from critical to catastrophic (IPC 2017b). In 2013, a struggle for power between opposing groups erupted in a civil war that still rages today. The acute food crisis, driven by conflict and insecurity, has had massive impacts, including population displacement, disruption of markets, impending harvest deficits, and ongoing challenges for aid workers seeking to reach those in greatest need (IPC 2017a).

SYRIAN ARAB REPUBLIC: As a result of the Syrian civil war that began in 2011, current data on the country are limited or non-existent. Up-to-date figures on the prevalence of undernourishment, child stunting, and child wasting were not available for this year's GHI. But reports indicate that hunger has increased in Syria and nutrition has suffered. In May 2017, FAO reported: "As the Syrian war enters its seventh year, food production remains at a record low. Hunger is rampant and deepening across the country with over half the population unable to meet their daily food needs" (FAO 2017d).

results. Subnational-level data can be particularly helpful in targeting programs, as geographical targeting has been shown to be both effective and less expensive than household or individual targeting (Mesoamerica Nutrition Targeting Program Study Group 2002; Morris et al. 2000). Region- or state-level data, together with other information—for example, from focus group interviews—can serve as a solid foundation for good program and policy design.

Figure 2.4 provides a snapshot of subnational disparities in child stunting rates for children under age five in 67 countries.⁴ Childhood stunting is a key indicator because it can be caused by a wide range of factors, including not just lack of food but also insufficient intake and absorption of micronutrients related to broader physical health and recurrent diseases that affect child growth. For each country with available data, this figure shows the average national stunting rate as well as that of the regions with the highest and lowest rates in the country. Several factors influence the size of the regional gap in stunting levels, such as the number of subnational units into which a country is split for the sake of the survey, national population size and land area, and the average national stunting level. It is therefore impossible to determine which countries have the highest levels of inequality in stunting based solely on the size of the gaps between the highest and lowest subnational stunting rates.

That said, several interesting patterns do emerge. First, stunting levels vary widely within countries in all regions of the world. For example, Latin America has one of the lowest regional hunger levels, yet stunting levels in Guatemala's departments range from 25 percent to a shocking 70 percent. Second, some countries have relatively low national stunting levels, but have states or regions with levels that are problematically high. In Gabon, where the national stunting rate is only 16.5 percent, the highest regional rate is 34.5 percent. Similarly, some countries with high national stunting levels include regions where the stunting levels are extreme, as in Afghanistan. Third, although making direct comparisons between countries can be problematic, some stand out as having more severe inequalities than do comparable countries. For example, Nepal and Angola have similar average stunting levels and population sizes, and they are divided into roughly the same number of subnational units for the undernutrition surveys. Yet the highest regional stunting rate in Nepal is 64 percent compared to 51 percent in Angola. Each of these examples is described in more detail below.

Guatemala's 2017 GHI score, 20.7, is *serious*, just above the *moderate* category. Guatemala is situated in Central America, where every other country's GHI score is *moderate* or *low*. Yet Guatemala's average stunting rate is very high, at 46.5 percent, and in some departments the stunting levels are abysmal. The areas with the highest stunting rates—Totonicapán at 70 percent, Quiché at 69 percent, and

Huehuetenango at 68 percent (MSPAS, INE, and ICF International 2015)—are contiguous departments in the west of the country. The population of this area, considered to be Guatemala's poverty belt, is heavily indigenous and was disproportionately affected by Guatemala's civil war (1960–1996) (IFAD 2012). Guatemala Department, the department with the lowest stunting rate at 25.3 percent, is dominated by the nation's capital, Guatemala City.

Gabon has a relatively low national stunting rate, but has regions where the prevalence of stunting is high. The highest regional rate is 34.5 percent in the northeastern province of Ogooué-Ivindo, while the national average is only 16.5 percent (DGS and ICF International 2013). Ogooué-Ivindo is sparsely populated and relatively undeveloped. The lowest regional stunting level, 10.6 percent, is in the combined area of Libreville and Port Gentil, the country's two largest cities. Gabon is relatively prosperous compared to other countries in Africa south of the Sahara, with its economy fueled by petroleum sales. But its resources are spread unevenly among the population, and poverty, hunger, and undernutrition still exist (World Bank 2017).

Nepal's average national stunting rate is high at 37.4 percent, but not extraordinarily so. The highs in some areas, however, are extreme—63 percent in the Far-Western Hills and 64 percent in the Mid-Western Mountains (Central Bureau of Statistics 2015). These rugged, mountainous areas are in the poorest part of the country (ADB, n.d.; IFAD, n.d.), where rainfall is scarce, the land is not conducive to farming, and household landholdings for farming are smaller than in the rest of the country (IFAD, n.d.). Access to purchased food is constrained due to poor infrastructure, including limited roads and markets (IPC 2012). According to one study, the Mid Western and Far Western regions should “be understood as different from the rest of the country (the Eastern, Central and Western regions together) on the basis of the high level of chronic poverty found there” (DFID 2013). The subregion with the lowest prevalence of stunting is Eastern Terai, at 25 percent.

In terms of infant and young child feeding practices, the Mid-Western Mountains and Far-Western Hills subregions have poor records, with only about one-quarter of children between the ages of 6 and 23 months receiving minimally acceptable dietary diversity, compared to about a third of children in Nepal as a whole. In addition, just over 50 percent of children in the Far-Western Hills met recommended standards for meal frequency, compared to three-quarters of children in the country overall (Central Bureau of Statistics 2015). In terms of child health, Eastern Terai had higher-than-average rates of

⁴ Child stunting is highlighted here because subnational data are available for a wide range of countries and because, unlike child wasting, it is not significantly subject to seasonal variation. Data are drawn from surveys conducted in 2012–2016, the same reference years used for child undernutrition data for 2017 GHI scores.

child illness, but people there were more likely than people in the Mid-Western Mountains and Far-Western Hills to seek advice or treatment for their children, and caregivers were more likely to recognize warning signs of serious illness (Central Bureau of Statistics 2015). This is noteworthy because good health is essential for proper child growth, in part because healthy children are better able to absorb nutrients.

In Afghanistan, the national prevalence of child stunting is 40.9 percent. The stunting rate in Farah Province, 70.8 percent, is the highest of any region in any country for which there are sub-national stunting data in this report. The province with the country's lowest rate, 24.3 percent, is Ghazni (MPH, UNICEF, and AKU 2014). Farah is an interesting case. It is neither one of the poorest provinces in Afghanistan, nor one of the provinces facing the highest levels of food insecurity (World Bank 2011; CSO 2014). As Higgins-Steele et al. (2016) point out, however, many factors other than poverty affect children's nutrition status, including "health status, dietary intake, food availability, care of mothers and children, health environment and services, and public policies and laws."

Farah Province is very remote and stands out in lack of access to drivable roads. Only 27 percent of the population lives within 2 km of a drivable road. This is one of the lowest rates in all of Afghanistan—far below the national average of 80 percent (CSO 2014). In addition, of Afghanistan's 33 provinces, Farah has the fifth lowest rate of household use of iodized salt. In Farah, the salt in just 17 percent of households tested positive for iodine versus the national average of 44 percent (MPH, UNICEF, and AKU 2014). Lack of iodized salt is associated with child stunting (Krämer et al. 2016; Semba et al. 2008). Farah also has an extremely low female literacy rate of 11.1 percent (the national average is 17 percent) (CSO 2014). Low female literacy is associated with child undernutrition worldwide

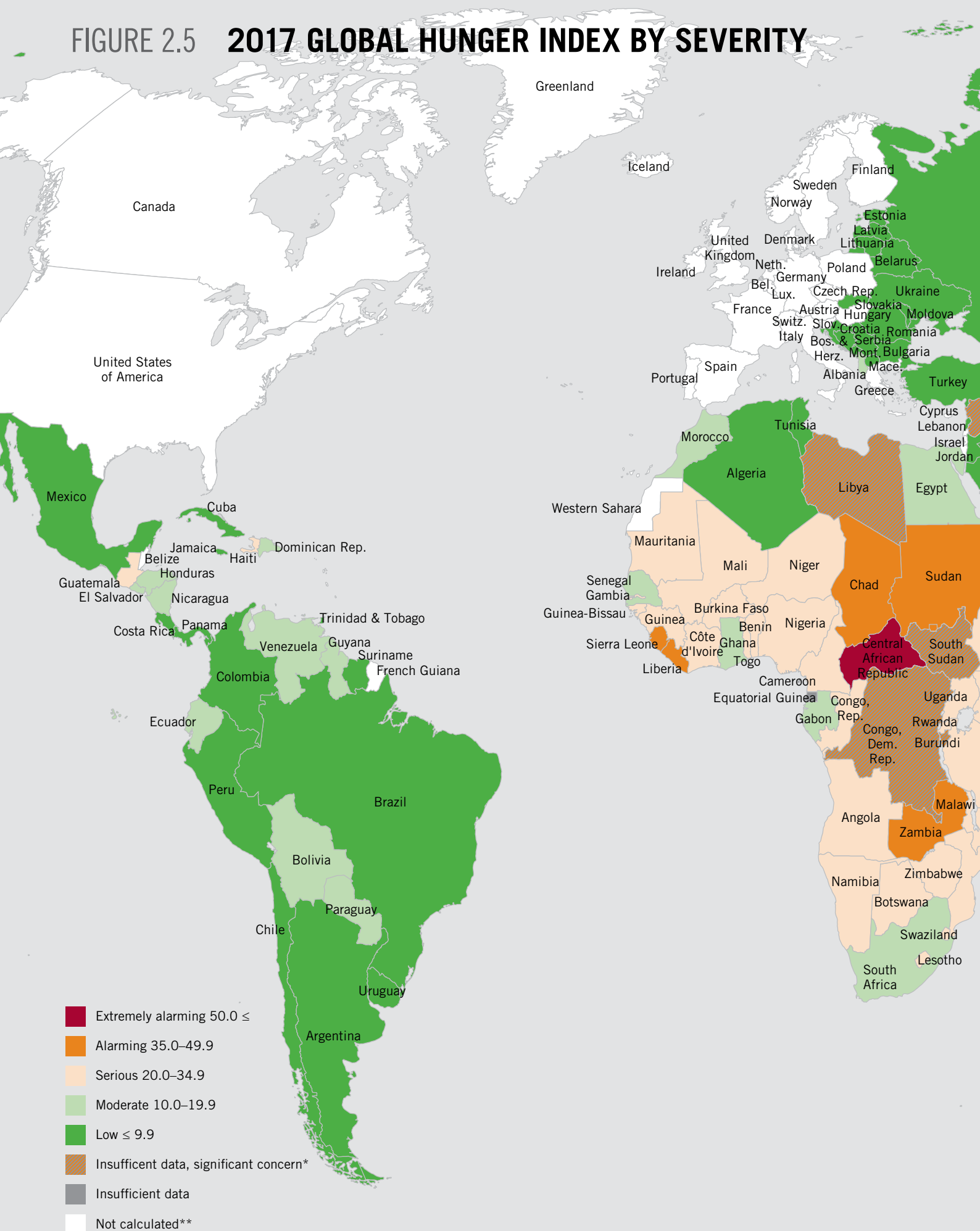
(Frongillo et al. 1997). Tackling Afghanistan's formidable nutrition challenges, both in Farah and in the country as a whole, will require a range of actions to address both the immediate and underlying causes of undernutrition (Varkey et al. 2015).

The preceding examples focus on geographic inequalities within countries. But there are many dimensions of inequality—both intra-national and international—based on ethnicity, locality (rural–urban), gender, age, and wealth. These dimensions of inequality, which often underlie and contribute to geographic inequality, are described in more detail in the following chapter.

Progress and Challenges

As the issue of famine looms large, it is easy to lose sight of the progress that has been made in the fight against hunger and undernutrition. The 2017 Global Hunger Index shows positive developments on many fronts, but there are still deep inequalities in hunger and undernutrition at the regional, national, and subnational levels. Too many people lack access to the quantity and quality of food they need. And too many people are not healthy enough to nutritionally benefit from food, for example, because infectious diseases prevent them from properly absorbing nutrients. The United Nations' Sustainable Development Agenda includes the goal of ending hunger worldwide, while "leaving no one behind" (UN 2015). Examining hunger through the lens of inequality brings into sharper focus those populations, at all levels, who have so far been left behind. As we make progress in combating hunger, we should apply lessons learned and concentrate attention and resources on the areas where hunger and undernutrition are still unacceptably high in order to further decrease hunger in the future.

FIGURE 2.5 2017 GLOBAL HUNGER INDEX BY SEVERITY



*See Box 2.1 for details

**See Chapter 1 for details



Source: Authors.

Note: For the 2017 GHI, data on the proportion of undernourished are for 2014–2016; data on child stunting and wasting are for the latest year in the period 2012–2016 for which data are available; and data on child mortality are for 2015. GHI scores were not calculated for countries for which data were not available and for certain countries with small populations.

The boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by the International Food Policy Research Institute (IFPRI), Welthungerhilfe (WHH), or Concern Worldwide.

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Farmers in Bangkok, Thailand, rally in 2014 to demand payments owed to them under a failed government rice-subsidy scheme. In many countries, small-scale producers are excluded from participating in decision making on the national and global food policies that affect them.

INEQUALITY, HUNGER, AND MALNUTRITION: POWER MATTERS

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In the same world where around 800 million people go hungry and 2 billion suffer from some form of malnutrition, more than a third of the adult population is obese and a third of all food produced is lost or wasted (FAO/IFAD/WFP 2011; FAO/IFAD/WFP 2015; FAO 2011). So while the problems in the world food system¹ are vast, they are also unevenly spread. Typically, groups with the least social, economic, or political power suffer hunger or malnutrition—whether they are barely eking out a living in remote rural areas of poor countries or residing in marginalized communities in the big cities of wealthy states.

This uneven distribution of hunger and malnutrition in all its forms is rooted in inequalities of social, political, and economic power. Therefore, the first step in tackling the inequalities of hunger is to understand how they are embedded in and magnified by the inequalities of power at work in the food system. It is not easy to make sense of power relations. They often operate out of sight and in such complex webs that even the most sophisticated and advanced solutions to hunger may fail to make long-term gains. Policies that do not take into consideration the underlying power dynamics—no matter how practical, technical, or scalable—are unlikely to succeed.

How do inequalities of power lead to unequal nourishment? Power is defined as “the degree of control over material, human, intellectual and financial resources exercised ... in the social, economic and political relations between individuals and groups” (VeneKlasen and Miller 2002, 41). Power may be an abstract concept, but its impact is tangible. In food systems, power is exercised in a variety of ways and spaces, by a variety of actors: through concentrations of capital and market share that allow agri-food corporations to influence the price of food and food inputs as well as their supply or quality; by government offices, international organizations, or public-private partnerships that can influence, implement, or block food policies and, with their intellectual or organizational resources, can shape debates and mobilize public opinion; or through the authority of individuals over decisions about household expenditures and family meals.

As Olivier de Schutter, UN special rapporteur on the right to food from 2008 to 2014, writes in the *2015 Global Nutrition Report*, “food systems are defined by political decisions and the differential power of actors to influence those decisions” (IFPRI 2015, 96). In the food system, this differential power appears in various forms, levels, and spaces, ranging from who has the cash to decide what to get for dinner tonight, all the way up to whose voice gets heard in debates about international regulations and policy frameworks.

Global policy debates are increasingly acknowledging the power relations that drive and maintain the inequalities underlying hunger and malnutrition. But they do so unsystematically, in ways that draw attention to the power of men over women in poor households, for instance, while sidelining the power of big firms over national food policies, local markets, and individual food choices. This is particularly problematic because power, measured in terms of financial heft and geographical reach, is highly concentrated among large transnational food companies (Howard 2016). This concentration of market power has also been associated with rising levels of overweight and obesity in countries transitioning from low- to middle-income status (Baker and Friel 2014; Malik, Willett, and Hu 2013; Monteiro et al. 2013). It is therefore critical to draw attention to the spaces in the food system where power imbalances can be—and are being—challenged, resisted, and shifted.

In 2016, the United Nations (UN) Sustainable Development Goals (SDGs) came into force to guide efforts over the next decade and a half “to end all forms of poverty, fight inequalities and tackle climate change, while ensuring that no one is left behind” (UN 2016). SDG2, the second of 17 SDGs, aims to “end hunger, achieve food security and improved nutrition, and promote sustainable agriculture” (UN 2014). Yet it draws no attention to the different ways in which different groups are affected by malnutrition. SDG10, meanwhile, targets economic, social, health, and political inequalities, but makes no mention of hunger and nutrition even though groups that experience hunger, micronutrient deficiencies, and overweight and obesity are concentrated among the economically, socially, politically, and geographically disadvantaged.

Interweaving Inequalities

The intersection of malnutrition with other forms of inequality reflects how the food system amplifies the economic, social, and political disparities that already divide societies. In 2016–2017, the most dire manifestations of inequality in the global food system were the acute food crises and famine affecting 108 million people, heavily concentrated in East Africa and the Middle East (FAO 2017c; FSIN 2017). The “new famines” of the twenty-first century have stemmed mostly from armed power struggles, in which combatants have used hunger as a weapon (Devereux 2006; Maxwell and Fitzpatrick 2012). The 2016–2017 food crises, though linked to the East African drought,

¹ Food systems are the web of activities involved in producing, processing, packaging, distributing, retailing, preparing, and consuming food, as well as how those activities interact with each other across levels and scales with variable effects (Eriksen et al. 2010).

Note: The views expressed in this chapter are those of the author. They do not necessarily reflect the views of IFPRI, Welthungerhilfe, or Concern Worldwide.

have afflicted people who were already hungry or undernourished because of violence, displacement, climate change, or high food prices (FAO 2017c).

Gender inequality is widely recognized as an axis of nutritional inequality. Many forms of chronic malnutrition are closely associated with low birthweight and child and infant nutrition status, which are linked to women's lack of power in the household and society. Gender relations influence which children go hungry, as families forced to ration meals often favor boys, who are seen as future breadwinners, over girls, who are considered burdens on the family until they marry and leave (UNICEF 2011).² Gender equality and women's empowerment tend to correlate with better nutrition status in most contexts (Osmani and Sen 2003; Bhagowalia et al. 2015; Malapit and Quisumbing 2015; Cunningham et al. 2015; van den Bold, Quisumbing, and Gillespie 2013; Agustina et al. 2015; Darnton-Hill and Cogill 2010). Yet women's empowerment is generally treated as a matter of strengthening their purchasing power and control over household decisions, rather than one of redressing women's lack of collective power in higher levels of the food system—where, for example, debates about agriculture and food-trade policy take place—that directly affect hunger and nutrition.³

Socioeconomic class and geography intersect with, and often surpass, gender as an axis of inequality. As a recent report notes, “Power imbalances, often stemming from economic inequalities, are ... a key factor in the way food systems operate” (IPES 2015, 5). Families' income, social status, and location often appear to play a greater role in determining whether children are stunted than does gender, as data for East Africa show (Figure 3.1). In Ethiopia, Tanzania, and Uganda, for instance, children are less likely to be stunted if they live in the capital city, close to the centers of power.

To see how power intersects with the food system, one need only look at the poor nutrition outcomes—such as low weight-for-height (wasting), low height-for-age (stunting), and micronutrient deficiencies—among indigenous peoples, who often face both poverty and sociopolitical marginalization (Valeggia and Snodgrass 2015). In Latin America, many countries suffer severely from the double burden of malnutrition—the coexistence of undernutrition and overnutrition (Rivera et al. 2014). According to one study, almost half of all children in Guatemala are stunted, but the double burden of malnutrition is highest among indigenous peoples in the highland regions: more than a quarter of families there have stunted children and overweight mothers (Ramirez-Zea et al. 2014).

The kind of access people have to changing food markets also shapes hunger and nutrition inequalities (Hossain et al. 2015). In urban settings, marginalized people often find themselves integrated into market-based food systems on adverse terms, stuck in “food

deserts” (areas where fresh whole foods are unavailable) or unable to afford healthy foods even when they are available (Walker, Keane, and Burke 2010). It is therefore unsurprising that in high-income countries, including Australia and Canada, the risk of obesity among indigenous people may be as much as 1.5 times higher than for non-indigenous people in comparable areas (Egeland and Harrison 2013). In the United States, obesity rates are highest among people with the lowest incomes, racialized and marginalized groups, and those living in poor areas marked by social division (Ogden et al. 2015; CDC 2017).

Understanding Power

The uneven distribution of hunger and malnutrition reflects wider inequalities of power in society. Yet power dips in and out of view in global food and nutrition policy debates. These debates tend to focus on the power of individuals (usually women) to feed families well, and on government commitment to food and nutrition security (Gillespie et al. 2013; Reich and Balarajan 2014; te Lintelo and Lakshman 2015), while overlooking power exercised at higher levels or in forms that are difficult to measure.

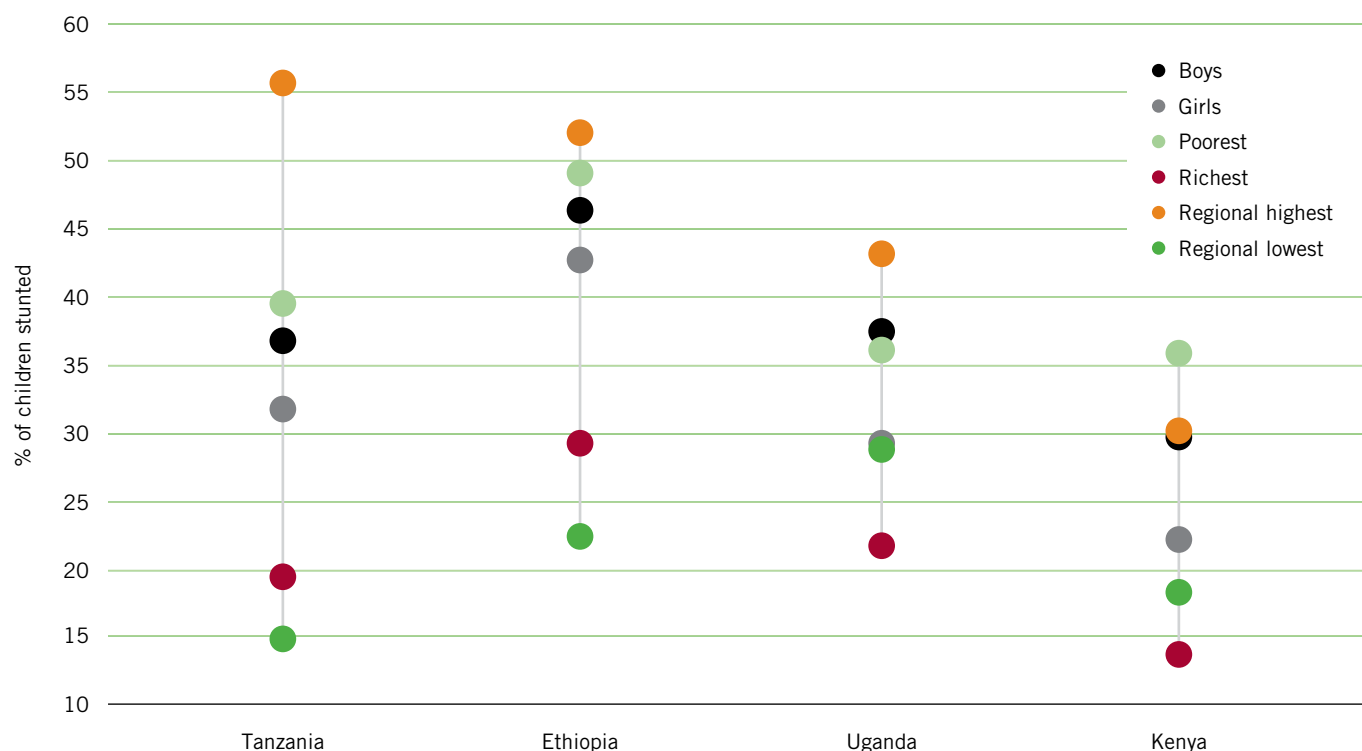
Although power is not the subject of the *Global Nutrition Report*, for example, the concept recurs throughout the 2016 edition, illustrating power's integral role in nutrition outcomes: throughout the text are references to “female empowerment”; purchasing and political power in Brazil's Fome Zero movement; the need for a “more political approach to nutrition” that could “help tip the balance of power to eliminate malnutrition in all its forms”; the power of policy makers and others to effect policy change; the power of marketing to children; and the power of the infant-feeding lobby in the process of Brazil's passage of a law limiting the marketing of breast-milk substitutes (IFPRI 2016). Power is inescapable in any analysis of hunger and malnutrition. Yet without *systematic* and *purposeful* analysis, key issues go missing from the conversation, such as the consequences of the central role played by transnational corporations in the global food system (Clapp 2012; Howard 2016).

Power in the global food system is now so concentrated in the hands of these corporations that they largely determine how and which food moves from producers to consumers. This system is often visualized as an hourglass: food is grown by millions of farmers worldwide, and every person in the world eats. But getting food from

² Such biases are not found across all cultures, tend to be most acute among the poorest people, and may be declining with improving basic food security (IFPRI 2015; Behrman 1988; Marcoux 2002).

³ Women's empowerment in development has increasingly been defined and operationalized narrowly, limiting what empowerment interventions can achieve (Battilwala 2007; Cornwall and Rivas 2015).

FIGURE 3.1 **INEQUALITIES IN RELATION TO STUNTING IN SELECTED EAST AFRICAN COUNTRIES**



Source: Group-based Inequality Database (GRID), available at <https://campaigns.savethechildren.net/grid>.

“farm to fork” is increasingly mediated by a few large commodity distributors, suppliers, retailers, and processing and packaging firms. Three transnational firms—Monsanto, DuPont, and Syngenta—dominate commercial seed transactions globally (Howard 2009); another three—ADM, Bunge, and Cargill—are responsible for most international grain trade (Hendrickson et al. 2008). The biggest 100 firms control 77 percent of processed food sales worldwide, a share that is growing (Clapp and Scrinis 2017). Why does this matter? One key reason is that when food systems open up to global trade, people often turn to cheap processed foods, leading to the double burden of malnutrition (Monteiro et al. 2013).

Analyzing the role power plays in creating nutritional inequalities means making sense of its different forms, not all of which are quantifiable, and of the multiple levels and spaces in the food system where power is at play, not all of which are obvious (Gaventa 2006; Gaventa and Martorano 2016). Policy makers would benefit from such analyses—which can highlight gaps in thinking, areas for action, and possible allies—in formulating realistic nutrition policies and interventions. Asking questions about power in the food system can help in diagnosing its inequalities and in identifying realistic opportunities

for addressing them. For instance, is it realistic to expect billions of individuals to eat healthier diets when an onslaught of advertising and a glut of attractive, affordable new food items are urging them otherwise (Brownell et al. 2010)?

Similarly, is breastfeeding really just an individual choice? The decision to breastfeed or not is often dictated by other factors—whether maternity-leave provisions are in place for working mothers or regulations prohibiting breast-milk-substitute samples are enforced—that are beyond the control of new mothers (Rollins et al. 2016). Framing breastfeeding as an individual choice lets the multibillion-dollar breast-milk-substitute industry off the hook for its concerted efforts to get mothers to buy their products. Information on the benefits of breastfeeding alone is not a sufficient counterweight to this industry’s great marketing power. Thus initiatives encouraging breastfeeding would do well to target some efforts toward the spaces in which the producers of breast-milk substitutes make their decisions. For now, however, most behavior-change communications programs focus on changing individual behaviors rather than the structures that determine them (USAID/SPRING/ GAIN 2014).

Spaces for Change

Power is not monolithic and immovable. It is exercised in a range of forms (from consumption to advertising to policy making), at various levels (global, national, and local), in multiple spaces (from farmers' unions to UN committees), offering myriad opportunities for campaigners, activists, practitioners, and policy makers to advocate, devise strategies, and build coalitions for change. The vast inequalities in the food system have generated a similarly wide range of efforts to resist and redistribute power. A necessarily selective sample of these efforts highlights both their potential to redress imbalances of power as well as the challenges such efforts face.

The last decade has seen an unprecedented expansion of “invited spaces” for dialogue and advocacy around nutrition between mutually acceptable parties. In principle, these spaces offer champions of change opportunities to challenge or hold the powerful to account. For instance, the global Scaling Up Nutrition (SUN) Movement, which involves 59 national governments as well as representatives from business, civil society, donors, and UN system networks, aims to “end malnutrition in all its forms” by initiating, supporting, and monitoring progress on nutrition. The Global Alliance for Improved Nutrition (GAIN), meanwhile, aims to “find and deliver solutions to the complex problem of malnutrition” through forging alliances among the public sector, private sector, and civil society.⁴

Both SUN and GAIN take multistakeholder partnerships seriously. But with power so weighted against hungry and malnourished people and so concentrated among transnational corporations, are power relations in the food system likely to be shifted through decisions and alliances made in such spaces? Are the rules of entry and the agendas for dialogue open to proponents of alternative views who seek to shift control over the food system from big corporations to producers, consumers, and advocates of agroecological agriculture? These questions deserve a closer look. Much work remains to be done to create equitable spaces for policy dialogue, in which the interests of those with little power and at greatest risk of hunger and malnutrition have a real chance at meaningful participation in global policy debates.

Invited spaces can, however, create opportunities for “speaking truth to power,” particularly with respect to the performance of national governments, which still have the authority to shape their food systems (Pritchard et al. 2016) and the duty to ensure food security. Initiatives such as the Hunger Reduction and Nutrition Commitment Index aim to create and sustain pressure for reform and national political accountability by gathering data for hunger and malnutrition and monitoring policy change (IFPRI 2015). For such efforts to be effective, they must have “teeth”—that is, the power to bring sanctions or enforce change (Fox 2015). But “naming and

shaming” will only work on actors that can be shamed and are likely to have little effect on governments that are unaccountable to the hungry. Thus better nutrition-related data alone cannot guarantee greater government commitment to fighting hunger and malnutrition and may overshadow the experiences of those affected (CSM 2016). Meanwhile, agrifood corporations may be insensitive to their public image or immune to demands for accountability for hunger and nutrition, and can only be punished where it hurts most—the bottom line.

Popular Movements for Food Sovereignty and Food Rights

Invited spaces tend to give *some* civil society activists and scholars *some* access to powerholders. But there are numerous movements rooted in struggles around agriculture, peasants' rights, poverty, and hunger operating at the grassroots level that have little access to these spaces. Transnational food-sovereignty and food-justice movements aim to radically redistribute power in the food system (Holt-Giménez and Shattuck 2011; Holt-Giménez and Patel 2012). These movements organize people disempowered in the global food system and also aim to demonstrate viable agroecological alternatives to current agricultural practices (Edelman 2003; Holt-Giménez and Altieri 2013).

Spearheaded by the international peasant movement La Via Campesina, the food-sovereignty movement seeks to shift control away from transnational corporations toward small-scale producers and consumers, giving them “sovereignty”—that is, more power to take decisions over what food they grow and eat (Patel 2009).⁵ The food-sovereignty and food-justice movements believe that returning control—over land and inputs, local markets, and national policies—to those with limited power in the food system will make it more ecologically beneficial and better able to provide nourishment. In the past decade, these movements have played a key role in opening the debate about the human and ecological costs of food-system globalization and demonstrating alternative models.

National right-to-food movements and their supporters, such as the Global Network for the Right to Food and Nutrition, articulate popular demands for action on hunger and nutrition, often outside of invited spaces. These movements confront power directly, but within the international human-rights framework. They seek to tackle accountability for hunger by combining evidence-gathering and

⁴ See the websites of SUN and GAIN at <http://scalingupnutrition.org/about-sun/the-vision-and-principles-of-sun/> and <http://www.gainhealth.org/about/gain/>, respectively. Some critics view GAIN's support for fortification as creating new markets for the private sector rather than solving nutritional deficiencies resulting from diets composed of industrialized foods (Clapp and Scrinis 2017; Moodie et al. 2013; Dixon 2009).

⁵ Interested readers can find out more about La Via Campesina at <https://viacampesina.org/landingpage/>.

publicity campaigns with grassroots efforts to mobilize for, secure, and uphold rights. Such movements sometimes manage to claim policy spaces once closed to them—shifting the power dynamics in unexpected directions—as was the case with the Committee on World Food Security (CFS), now deemed the UN’s “most inclusive body.”⁶

Popular struggles over power in the food system also include food riots, quite apart from food-sovereignty or right-to-food movements. History has shown that food riots tend to break out when food prices spiral out of control, as they did during the global food-price spikes of 2008 and 2010–2011 (Bohstedt 2016; von Braun 2010). Between 2007 and 2012, riots erupted in more than 30 countries, shaping the political and policy responses to food crises during these years (Berazneva and Lee 2013; Hendrix and Haggard 2015; Arezki and Bruckner 2011; Bellemare 2015; Schneider 2008). Some of the most violent struggles took place in middle-income countries such as Algeria, where 800 people were injured in clashes with police. Protests against high food prices in the Middle East and North Africa helped trigger the Arab Spring (Lagi, Bertrand, and Bar-Yam 2011).

Rebellions over food prices are often linked to wider contests over economic injustice and inequality, and are deeply rooted in shared perceptions of the morality of food systems and related struggles over wages, working conditions, and civil and political rights (Hossain and Kalita 2014; Hossain and Scott-Villiers, forthcoming). Such outbreaks of violence intrude into the policy space, borrowing the power of mass media to grab the attention of political elites (Swinnen, Squicciarini, and Vandemoortele 2011) and get their concerns on the policy agenda (de Brito et al. 2014).

Between 2007 and 2012, fears of unrest and loss of political legitimacy led many political and policy elites to respond to public anger, taking high-profile action against speculators, stabilizing local prices through market interventions and food grain reserves, establishing cash or food transfers to the most vulnerable, and investing in domestic agriculture (Hossain and Scott-Villiers, forthcoming). Food riots are the undesirable but likely consequence of people’s loss of power over their food systems, but in some cases they prompt a rebalancing of those systems.

Leaving No One Behind

The uneven distribution of hunger and nutrition reflects the unequal distribution of power in the food system. In its hourglass shape, the power at the center amplifies poverty and marginalization at both ends of the system: at one end, small-scale farmers and low-paid

food producers suffer hardship; at the other end, those excluded from or adversely incorporated into globalized food markets face hunger and malnutrition. Transnational corporations’ growing control over what we eat—which often deepens existing inequalities—has generated a wide range of spaces and forms of resistance. Power analysis encourages us to look beyond the obvious and the measurable, to trace the effects of interests operating at multiple levels of the food system, to find opportunities where and when they arise, and to enter spaces where that power can be challenged, resisted, and redistributed.

Achieving the Sustainable Development Goals’ aim of “leaving no one behind” demands approaches to hunger and malnutrition that are both more sensitive to their uneven distribution and more attuned to the power inequalities that amplify the effects of poverty and marginalization in all forms of malnutrition. Power analysis can help equalize change in the food system if:

- researchers and analysts use its conceptual tools to name all forms of power that keep people hungry and malnourished, helping draw attention to forms of power that are hard to see because they are exercised, for example, in complex webs of supply chains and distribution networks or through the “soft power” of marketing, advertising, and research funding;
- intervention design focuses more strategically on where power is exerted, highlighting how and when policies and interventions aimed at changing people’s eating habits should be accompanied by actions to address influences on those habits that operate higher up the system—for instance, real power would derive from women organizing to demand the enforcement of breast-milk-substitute regulations, food-security programs that are fair and provide nutritious food, and a seat at the food-policy table;
- activists, practitioners, policy makers, and all champions of eradicating hunger and malnutrition can identify and exploit spaces for change in the food system, highlighting obstacles to reform, changing the rules by which decisions get made, devising sanctions with the “teeth” to hold the powerful to account, and empowering the hungry and malnourished to challenge and resist loss of control over the food they eat.

⁶ The Food Governance blog features a fascinating recent debate about the challenges and prospects of the CFS; <https://foodgovernance.com/the-future-of-the-cfs/>.



Allaya Alli Salimu discusses hygiene and nutrition with other members of a community health club in Salima, Malawi. Training and teaching in villages can broaden access to information on nutrition and healthy food.

POLICY RECOMMENDATIONS

Although enough food is produced globally to feed the world, hunger persists—largely the product of various and severe inequalities. Yet neither hunger nor inequality is inevitable; both are rooted in uneven power relations that often are perpetuated and exacerbated by laws, policies, attitudes, and practices. The following recommendations aim at redressing such power imbalances in order to alleviate hunger among the most vulnerable:

Foster Democratic Governance of National Food Systems

To foster genuinely democratic governance of our food system, governments must actively include in the policy-making process under-represented groups, such as small-scale farmers, that are involved in producing food and feeding people but often excluded from contributing to the policies and laws that affect their livelihoods.

Broaden Participation in International Food-Policy Debates

International bodies aiming to increase food and nutrition security must ensure the meaningful participation of people's movements and civil society organizations from all parts of the world to generate more productive debates around paradigms of food systems.

Guarantee Rights and Space for Civil Society

Governments must ensure space for civil society to play its role in holding decision makers to account on their obligation to protect and ensure the Right to Food. Integral to this are freedom of assembly and association, including peaceful protest, and the right to information.

Protect Citizens and Ensure Standards in Business and Trade

Governments should create and enforce regulatory frameworks to safeguard citizens—especially the most vulnerable—from the negative impacts of international trade and agriculture agreements and the actions of private firms that could endanger citizens' food sovereignty and food and nutrition security. Private companies should act in compliance with internationally agreed human rights and environmental standards in their business activities, as described in the UN Guiding Principles on Business and Human Rights.

Analyze Power to Make Better Policies

National policies should take into account how hunger and malnutrition are distributed across the population, and how power inequalities affect different groups in society—for example, how discriminatory gender norms and practices can harm the nutritional status of women and girls. Focusing on trade, land, agricultural, and other policies that have both visible and hidden impacts on food and nutrition security will help to align efforts in the fight against global hunger.

Increase Support for Small-Scale Food Producers

Governments should build the capacity of small-scale producers, particularly women, by ensuring access to public services such as infrastructure, financial services, information, and training.

Advance Equality through Education and Social Safety Nets

To reduce gross inequality and hunger, national governments must provide access to education and create social safety nets to ensure that all members of society—including the most vulnerable and marginalized—have income security and can access essential health care.

Hold Governments Accountable with Timely Data

To monitor progress toward Zero Hunger and hold governments accountable to their commitments, critical data gaps in relation to both hunger and inequality must be addressed, and national governments and international organizations must support the collection of disaggregated, independent, open, reliable, and timely data.

Invest in the SDGs and Those Left Behind

Donors should adequately fund efforts to achieve the SDGs. This is particularly crucial for low-income countries, where official development assistance (ODA) is disproportionately necessary. Donors should meet internationally agreed targets by contributing 0.7 percent of gross national income (GNI) to ODA as well as 0.15–0.2 percent of GNI to the Least-Developed Countries.

APPENDIXES

FORMULA FOR CALCULATION OF GLOBAL HUNGER INDEX SCORES

GHI scores are calculated using a three-step process:

<p>First, values for the four component indicators are determined from the available data for each country. The indicators are</p> <ul style="list-style-type: none"> → the percentage of the population that is undernourished, → the percentage of children under five years old who suffer from wasting (low weight-for-height), → the percentage of children under five years old who suffer from stunting (low height-for-age), and → the percentage of children who die before the age of five (child mortality). 	<p>STEP 1 Determine values for each of the component indicators:</p> <p>PUN: proportion of the population that is undernourished (in %)</p> <p>CWA: prevalence of wasting in children under five years old (in %)</p> <p>CST: prevalence of stunting in children under five years old (in %)</p> <p>CM: proportion of children dying before the age of five (in %)</p>
<p>Second, each of the four component indicators is given a standardized score based on thresholds set slightly above the highest country-level values observed worldwide for that indicator between 1988 and 2013.¹ For example, the highest value for undernourishment estimated in this period is 76.5 percent, so the threshold for standardization was set a bit higher, at 80 percent.² In a given year, if a country has an undernourishment prevalence of 40 percent, its <i>standardized</i> undernourishment score for that year is 50. In other words, that country is approximately halfway between having no undernourishment and reaching the maximum observed levels.</p>	<p>STEP 2 Standardize component indicators:</p> <p>Standardized PUN = $\frac{PUN}{80} \times 100$</p> <p>Standardized CWA = $\frac{CWA}{30} \times 100$</p> <p>Standardized CST = $\frac{CST}{70} \times 100$</p> <p>Standardized CM = $\frac{CM}{35} \times 100$</p>
<p>Third, the standardized scores are aggregated to calculate the GHI score for each country. Undernourishment and child mortality each contribute one-third of the GHI score, while the child undernutrition indicators—child wasting and child stunting—each contribute one-sixth of the score.</p>	<p>STEP 3 Aggregate component indicators:</p> $\begin{aligned} &\frac{1}{3} \times \text{Standardized PUN} \\ &+ \frac{1}{6} \times \text{Standardized CWA} \\ &+ \frac{1}{6} \times \text{Standardized CST} \\ &+ \frac{1}{3} \times \text{Standardized CM} \\ &= \text{GHI score} \end{aligned}$

This calculation results in GHI scores on a 100-point scale, where 0 is the best score (no hunger) and 100 is the worst. In practice, neither of these extremes is reached. A value of 100 would signify that a country's undernourishment, child wasting, child stunting, and child mortality levels each exactly meets the thresholds set slightly above the highest levels observed worldwide in recent decades. A value of 0 would mean that a country had no undernourished people in the population, no children younger than five who were wasted or stunted, and no children who died before their fifth birthday.

¹ The thresholds for standardization are set slightly above the highest observed values to allow for the possibility that these values could be exceeded in the future.

² The threshold for undernourishment is 80, based on the observed maximum of 76.5 percent; the threshold for child wasting is 30, based on the observed maximum of 26.0 percent; the threshold for child stunting is 70, based on the observed maximum of 68.2 percent; and the threshold for child mortality is 35, based on the observed maximum of 32.6 percent.

DATA SOURCES FOR THE GLOBAL HUNGER INDEX COMPONENTS, 1992, 2000, 2008, AND 2017

GHI	Number of countries with GHI	Indicators	Reference years	Data sources
1992	95	Percentage of undernourished in the population ^a	1991–93 ^b	FAO 2017b and authors' estimates
		Percentage of wasting in children under five	1990–94 ^c	UNICEF/WHO/World Bank 2017; WHO 2017; ^d and authors' estimates
		Percentage of stunting in children under five	1990–94 ^c	UNICEF/WHO/World Bank 2017; WHO 2017; ^d and authors' estimates
		Under-five mortality	1992	UN IGME 2015
2000	115	Percentage of undernourished in the population ^a	1999–01 ^b	FAO 2017b and authors' estimates
		Percentage of wasting in children under five	1998–02 ^e	UNICEF/WHO/World Bank 2017; WHO 2017; ^d and authors' estimates
		Percentage of stunting in children under five	1998–02 ^e	UNICEF/WHO/World Bank 2017; WHO 2017; ^d and authors' estimates
		Under-five mortality	2000	UN IGME 2015
2008	118	Percentage of undernourished in the population ^a	2007–09 ^b	FAO 2017b and authors' estimates
		Percentage of wasting in children under five	2006–10 ^f	UNICEF/WHO/World Bank 2017; WHO 2017; ^d and authors' estimates
		Percentage of stunting in children under five	2006–10 ^f	UNICEF/WHO/World Bank 2017; WHO 2017; ^d and authors' estimates
		Under-five mortality	2008	UN IGME 2015
2017	119	Percentage of undernourished in the population ^a	2014–16 ^b	FAO 2017b and authors' estimates
		Percentage of wasting in children under five	2012–16 ^g	UNICEF/WHO/World Bank 2017; WHO 2017; ^d and authors' estimates
		Percentage of stunting in children under five	2012–16 ^g	UNICEF/WHO/World Bank 2017; WHO 2017; ^d and authors' estimates
		Under-five mortality	2015	UN IGME 2015

^a Proportion of the population with chronic calorie deficiency.

^b Average over a three-year period.

^c Data collected from the years closest to 1992; where data from 1990 and 1994 or 1991 and 1993 were available, an average was used.

^d UNICEF/WHO/World Bank 2017 is the primary data source, and WHO 2017; UNICEF 2017, 2013 and 2009; and MEASURE DHS 2017 are complementary data sources.

^e Data collected from the years closest to 2000; where data from 1998 and 2002 or 1999 and 2001 were available, an average was used.

^f Data collected from the years closest to 2008; where data from 2006 and 2010 or 2007 and 2009 were available, an average was used.

^g The latest data gathered in this period.

DATA UNDERLYING THE CALCULATION OF THE 1992, 2000, 2008, AND 2017 GLOBAL HUNGER INDEX SCORES

Country	Proportion of undernourished in the population (%)				Prevalence of wasting in children under five years (%)				Prevalence of stunting in children under five years (%)				Under-five mortality rate (%)			
	'91-'93	'99-'01	'07-'09	'14-'16	'90-'94	'98-'02	'06-'10	'12-'16	'90-'94	'98-'02	'06-'10	'12-'16	1992	2000	2008	2015
Afghanistan	37.4	46.1	24.6	23.0	11.5 *	13.4 *	8.9 *	9.5	51.3 *	54.7 *	51.3 *	40.9	16.8	13.7	11.0	9.1
Albania	7.7	7.2	9.7	4.9	9.4 *	12.2	9.4	6.2 *	37.2 *	39.2	23.1	17.9 *	3.7	2.6	1.8	1.4
Algeria	9.1	10.7	7.5	4.6	7.1	3.1	4.1 *	4.1	22.9	23.6	13.2 *	11.7	4.5	4.0	2.9	2.6
Angola	65.4	50.0	23.7	14.0	7.9 *	8.7 *	8.2	4.9	52.9 *	47.1 *	29.2	37.6	22.6	21.7	19.2	15.7
Argentina	4.7	3.5	4.1	3.6	1.6	1.6 *	1.2	1.6 *	7.1	9.9 *	8.2	7.5 *	2.6	2.0	1.5	1.3
Armenia	—	23.8	5.2	4.4	5.0 *	2.5	4.2	4.2	23.5 *	17.7	20.8	9.4	4.5	3.0	2.0	1.4
Azerbaijan	—	23.2	2.6	1.2 *	6.6 *	9.0	6.8	3.1	30.0 *	24.1	26.8	18.0	9.5	7.4	4.3	3.2
Bahrain	—	—	—	—	7.0 *	6.7 *	3.5 *	3.1 *	15.3 *	13.7 *	9.2 *	9.1 *	2.2	1.3	0.9	0.6
Bangladesh	36.1	20.8	16.4	15.1	16.1	13.8	17.5	14.3	71.5	54.0	43.2	36.1	13.2	8.8	5.6	3.8
Belarus	—	2.3 *	1.6 *	1.1 *	2.6 *	2.0 *	1.9 *	1.8 *	7.5 *	6.0 *	4.2 *	2.8 *	1.7	1.4	0.7	0.5
Benin	28.0	22.6	12.8	10.3	11.2 *	9.0	8.4	4.5	43.7 *	39.1	44.7	34.0	17.0	14.5	11.6	10.0
Bhutan	—	—	—	—	6.0 *	2.5	4.7	4.8 *	59.9 *	47.7	34.9	28.9 *	12.2	8.0	4.8	3.3
Bolivia	35.9	33.4	28.1	20.2	3.6	1.6	1.4	1.6	37.1	33.1	27.2	18.1	11.5	8.0	5.2	3.8
Bosnia & Herzegovina	—	4.7	2.8	1.9 *	5.7 *	7.4	4.0	2.3	19.9 *	12.1	11.8	8.9	—	0.9	0.8	0.5
Botswana	26.8	35.6	31.9	26.0	13.1 *	6.0	7.2	6.8 *	41.0 *	29.1	31.4	23.5 *	5.9	8.3	6.2	4.4
Brazil	14.2	12.0	2.6	2.3 *	2.9 *	2.2 *	1.6	1.9 *	13.3 *	10.0 *	7.1	7.9 *	5.5	3.2	1.8	1.6
Bulgaria	1.9 *	4.8	5.8	3.4	3.4 *	3.2 *	3.4 *	2.8 *	12.8 *	10.2 *	8.1 *	6.2 *	2.3	2.1	1.4	1.0
Burkina Faso	22.7	25.4	22.6	20.2	15.5	15.7	11.3	7.6	40.7	45.5	35.1	27.3	20.2	18.6	13.0	8.9
Burundi	—	—	—	—	7.4 *	8.2	7.5 *	7.6 *	59.7 *	63.1	57.7 *	56.6 *	17.4	15.2	10.9	8.2
Cambodia	30.9	29.2	18.7	15.3	13.9 *	16.9	8.9	9.6	58.5 *	49.2	39.5	32.4	11.8	10.8	5.2	2.9
Cameroon	36.5	30.6	14.5	7.9	4.5	6.2	7.3	5.2	36.3	38.2	36.4	31.7	14.3	15.0	11.3	8.8
Central African Republic	47.7	42.6	34.7	58.6	9.7 *	10.5	12.2	7.2 *	42.6 *	44.6	45.1	42.6 *	17.6	17.5	15.8	13.0
Chad	55.7	40.1	40.7	32.5	14.6 *	13.9	15.7	13.0	47.2 *	39.3	38.7	39.9	20.9	19.0	16.8	13.9
Chile	7.4	4.7	4.1	3.7	0.5	0.5	0.3	0.3	4.2	3.0	2.0	1.8	1.6	1.1	0.9	0.8
China	23.3	15.9	13.5	9.6	3.9	2.5	2.6	1.8 *	38.0	17.8	9.8	6.3 *	5.2	3.7	1.9	1.1
Colombia	12.6	9.7	9.5	7.1	1.7 *	1.1	0.9	1.1 *	22.0 *	18.1	12.7	12.2 *	3.3	2.5	2.0	1.6
Comoros	—	—	—	—	5.3	13.3	9.6 *	11.1	38.5	46.9	39.6 *	32.1	11.7	10.1	9.1	7.4
Congo, Dem. Rep.	—	—	—	—	12.1 *	20.9	14.0	8.1	45.2 *	44.4	45.8	42.6	18.2	16.1	12.5	9.8
Congo, Rep.	43.7	32.5	33.0	28.2	7.1 *	7.1 *	7.2 *	8.2	32.2 *	28.9 *	28.8 *	21.2	9.7	12.2	7.3	4.5
Costa Rica	5.5	5.1	5.1	5.6	2.1 *	1.7 *	1.0	1.4 *	10.7 *	7.9 *	5.6	5.2 *	1.6	1.3	1.0	1.0
Côte d'Ivoire	13.3	17.6	16.5	15.4	8.3	6.9	14.0	7.6	34.2	31.5	39.0	29.6	15.3	14.6	11.7	9.3
Croatia	—	10.4	2.2 *	1.4 *	1.6	1.3 *	1.0 *	1.2 *	1.3	1.4 *	1.3 *	1.0 *	1.1	0.8	0.6	0.4
Cuba	13.2	3.7	2.3 *	0.8 *	3.3 *	2.4	2.4 *	2.0 *	8.6 *	7.0	6.1 *	4.4 *	1.2	0.8	0.6	0.6
Djibouti	75.7	48.1	24.1	12.8	17.3 *	19.4	17.0	21.5	34.3 *	26.5	33.0	33.5	11.5	10.1	8.1	6.5
Dominican Republic	29.2	28.1	20.2	13.5	2.2	1.5	2.3	2.4	21.2	8.0	10.1	7.1	5.6	4.1	3.5	3.1
Ecuador	16.2	18.5	14.6	12.1	2.8 *	3.2	2.7 *	2.3	38.1 *	32.5	26.3 *	25.2	5.2	3.4	2.7	2.2
Egypt	5.8	5.3	4.6	4.5	4.3	6.9	7.9	9.5	33.1	24.6	30.7	22.3	7.8	4.7	3.1	2.4
El Salvador	16.0	11.2	11.6	12.3	1.4	1.5	1.6	2.1	29.5	32.3	20.6	13.6	5.3	3.2	2.2	1.7
Equatorial Guinea	—	—	—	—	8.4 *	9.2	3.1	2.7 *	50.9 *	42.6	26.2	25.1 *	18.2	15.2	11.8	9.4
Eritrea	—	—	—	—	11.8	14.9	15.3	14.7 *	69.6	43.7	50.3	53.3 *	—	8.9	6.0	4.7
Estonia	—	5.6	2.8	2.5 *	4.6 *	2.7 *	2.5 *	2.5 *	11.4 *	5.4 *	4.4 *	3.8 *	1.9	1.1	0.6	0.3
Ethiopia	—	51.9	35.6	28.8	9.2	12.4	10.8 *	9.9	66.9	57.4	46.4 *	38.4	19.5	14.5	8.7	5.9
Fiji	5.6	4.8	4.3	4.6	9.8	7.2 *	6.3 *	5.3 *	4.3	5.8 *	6.4 *	4.9 *	2.8	2.5	2.4	2.2
Gabon	14.6	9.4	10.2	7.0	4.0 *	4.3	3.7 *	3.4	30.3 *	26.3	19.2 *	17.5	9.1	8.5	6.9	5.1
Gambia	14.3	13.1	11.3	10.9	10.8 *	8.9	8.5	11.1	33.9 *	24.1	25.5	25.0	15.9	11.9	8.7	6.9
Georgia	—	13.7	6.9	7.0	3.5 *	3.1	1.6	2.2 *	22.2 *	16.1	11.3	10.3 *	4.7	3.6	1.9	1.2
Ghana	35.1	15.9	6.4	7.6	10.9	9.9	8.7	4.7	41.2	31.3	28.6	18.8	12.0	10.1	8.0	6.2
Guatemala	15.3	20.7	15.9	15.6	2.2 *	3.7	1.1	0.7	58.5 *	50.0	48.0	46.5	7.3	5.1	3.7	2.9
Guinea	22.7	26.3	18.6	17.5	10.5 *	10.3	8.3	7.8	40.5 *	46.9	40.0	33.6	22.6	17.0	12.1	9.4
Guinea-Bissau	20.9	26.4	23.8	28.3	8.6 *	11.8	4.8	6.0	42.2 *	36.1	27.7	27.6	22.0	17.8	12.8	9.3
Guyana	18.4	8.3	11.3	8.5	8.9 *	12.1	6.8	6.4	18.1 *	13.8	18.9	12.0	5.7	4.7	4.2	3.9
Haiti	61.6	54.9	52.5	46.8	5.9	5.6	10.3	5.2	40.1	28.3	29.7	21.9	13.8	10.5	8.3	6.9
Honduras	23.0	19.6	15.6	14.8	2.1	1.2	1.4	1.4	42.5	34.5	29.9	22.7	5.3	3.7	2.7	2.0
India	21.7	17.2	16.3	14.5	20.0	17.1	20.0	21.0	61.9	54.2	47.9	38.4	11.9	9.1	6.6	4.8
Indonesia	17.9	17.8	17.0	7.9	13.5 *	5.5	14.8	13.5	53.2 *	42.4	40.1	36.4	7.7	5.2	3.6	2.7
Iran	3.8	4.9	6.4	5.5	9.7 *	6.1	3.8 *	3.7 *	23.5 *	20.4	7.9 *	7.2 *	5.2	3.5	2.1	1.6
Iraq	18.8	28.3	29.6	27.8	4.4	6.6	5.8	5.3 *	27.6	28.3	27.5	22.4 *	5.2	4.5	3.8	3.2
Jamaica	9.6	7.3	8.2	8.4	3.2	3.0	2.1	3.0	14.7	6.6	5.2	5.7	2.9	2.2	1.9	1.6
Jordan	7.6	8.1	3.7	4.2	3.8	2.5	1.6	2.4	20.5	12.0	8.3	7.8	3.4	2.8	2.2	1.8
Kazakhstan	—	5.9	3.8	2.0 *	4.9 *	2.5	4.9	3.1	20.7 *	13.9	17.5	8.0	5.3	4.4	2.6	1.4
Kenya	36.8	32.2	25.6	19.1	7.1	7.4	7.0	4.0	40.2	41.0	35.2	26.0	10.8	10.8	7.0	4.9
Kuwait	30.0	1.9 *	1.7 *	2.3 *	4.8 *	2.2	2.2	3.1	14.1 *	4.0	5.1	4.9	1.6	1.3	1.1	0.9
Kyrgyz Republic	—	16.3	9.8	6.4	8.5	3.7 *	1.3	2.8	27.3 *	25.9 *	22.6	12.9	6.5	4.9	3.4	2.1
Lao PDR	44.0	37.6	23.6	17.1	11.8	17.5	7.3	6.4	53.6	48.2	47.6	43.8	15.4	11.8	8.6	6.7
Latvia	—	5.2	1.9 *	1.3 *	5.1 *	2.9 *	2.2 *	2.8 *	7.4 *	5.6 *	4.7 *	3.8 *	2.3	1.7	1.1	0.8
Lebanon	2.1 *	1.9 *	3.9	5.4	5.2 *	4.6 *	4.2 *	3.8 *	20.1 *	15.8 *	13.6 *	12.6 *	3.0	2.0	1.1	0.8
Lesotho	16.7	13.7	12.3	14.5	3.2	6.7	3.9	2.8	39.2	53.0	42.0	33.2	8.9	11.7	11.7	9.0

DATA UNDERLYING THE CALCULATION OF THE 1992, 2000, 2008, AND 2017 GLOBAL HUNGER INDEX SCORES

Country	Proportion of undernourished in the population (%)				Prevalence of wasting in children under five years (%)				Prevalence of stunting in children under five years (%)				Under-five mortality rate (%)			
	'91-'93	'99-'01	'07-'09	'14-'16	'90-'94	'98-'02	'06-'10	'12-'16	'90-'94	'98-'02	'06-'10	'12-'16	1992	2000	2008	2015
Liberia	31.1	38.4	37.3	42.8	6.7 *	7.4	7.8	5.6	42.9 *	45.3	39.4	32.1	25.5	18.2	10.1	7.0
Libya	—	—	—	—	—	7.4 *	6.5	5.8 *	—	26.2 *	21.0	25.9 *	3.8	2.8	1.9	1.3
Lithuania	—	2.9	1.7 *	1.7 *	5.4 *	3.2 *	1.9 *	2.8 *	9.5 *	7.5 *	5.3 *	4.8 *	2.0	1.2	0.8	0.5
Macedonia, FYR	—	7.9	4.1	3.9	4.5 *	1.7	2.7 *	2.6 *	11.2 *	8.0	8.4 *	7.0 *	3.4	1.6	1.2	0.6
Madagascar	27.6	34.2	32.3	42.3	6.4	10.4 *	9.5 *	8.5 *	60.9	55.3 *	49.2	46.9 *	15.1	10.9	6.7	5.0
Malawi	47.2	27.1	22.4	25.9	6.6	6.8	1.8	2.7	55.8	54.6	48.8	37.1	22.7	17.4	10.0	6.4
Malaysia	3.9	2.8	4.2	2.2 *	18.4 *	15.3	12.7 *	8.0	27.5 *	20.7	17.2	17.7	1.5	1.0	0.8	0.7
Mali	18.1	14.6	7.9	4.0	16.0 *	12.6	15.3	13.6 *	48.2 *	42.7	38.5	35.4 *	24.7	22.0	14.8	11.5
Mauritania	13.8	11.7	9.4	5.3	17.4	15.3	8.1	14.8	54.8	39.5	23.0	27.9	11.5	11.4	10.3	8.5
Mauritius	7.9	6.6	4.9	5.2	15.7 *	15.0 *	14.9 *	13.8 *	14.4 *	12.6 *	10.3 *	9.0 *	2.1	1.9	1.6	1.4
Mexico	6.6	4.4	4.6	4.2	3.1 *	2.3	2.0	1.0	23.2 *	21.7	15.5	12.4	4.2	2.6	1.8	1.3
Moldova	—	19.6	18.5	8.5	5.0 *	4.1 *	3.3 *	1.9	15.1 *	12.0 *	8.4 *	6.4	3.4	3.1	1.8	1.6
Mongolia	45.4	35.1	24.2	19.6	2.4	7.1	1.7	1.0	33.1	29.8	15.5	10.8	9.8	6.3	3.5	2.2
Montenegro	—	—	0.5 *	0.2 *	—	—	4.2	2.8	—	—	7.9	9.4	—	—	0.8	0.5
Morocco	7.6	6.8	5.5	3.5	2.6	4.2 *	3.5 *	3.6 *	29.9	24.3 *	18.2 *	17.3 *	7.3	5.0	3.6	2.8
Mozambique	57.5	40.3	33.3	26.6	9.6 *	6.8	4.2	4.7 *	51.4 *	49.6	43.7	39.1 *	23.2	17.1	11.4	7.9
Myanmar	62.0	48.4	21.7	16.9	12.7	10.7	7.9	7.0	53.6	40.8	35.1	29.2	10.4	8.2	8.7	5.0
Namibia	35.8	26.3	33.5	28.8	9.6	10.0	7.5	7.1	35.7	29.5	29.6	23.1	7.0	7.6	6.0	4.5
Nepal	21.9	22.0	12.6	8.1	11.9 *	11.3	12.7	11.3	61.5 *	57.1	49.3	37.4	12.7	8.1	5.1	3.6
Nicaragua	52.5	32.6	22.1	17.0	2.4	2.3	1.5	1.3 *	29.6	25.2	23.0	15.4 *	6.1	4.0	2.8	2.2
Niger	34.4	21.8	12.5	11.3	18.9	16.2	12.9	18.7	48.3	54.2	47.0	43.0	31.4	22.7	14.1	9.6
Nigeria	16.1	9.4	6.1	7.9	20.6	17.6	14.4	7.2	43.8	39.7	41.0	32.9	21.2	18.7	14.1	10.9
North Korea	26.8	37.5	40.8	40.8	9.2 *	12.2	5.2	4.0	43.7 *	51.0	32.4	27.9	5.5	6.0	3.2	2.5
Oman	18.4	11.8	6.7	6.2	7.8	7.3	7.1	7.5	24.2	12.9	9.8	14.1	3.2	1.7	1.2	1.2
Pakistan	24.0	23.4	21.3	19.9	12.5	14.2	12.8 *	10.5	54.5	41.5	40.3 *	45.0	13.4	11.2	9.6	8.1
Panama	23.6	27.7	16.5	9.3	1.6 *	1.4 *	1.2	1.1 *	27.1 *	21.7 *	19.1	13.2 *	2.9	2.6	2.1	1.7
Papua New Guinea	—	—	—	—	8.6 *	8.3 *	8.1 *	7.1 *	50.2 *	48.0 *	47.2 *	41.5 *	8.7	7.9	7.0	5.7
Paraguay	18.9	12.9	12.8	12.0	0.6	2.3 *	1.7 *	2.6	18.3	17.5 *	14.0 *	10.9	4.3	3.4	2.6	2.1
Peru	28.8	21.8	14.2	7.9	1.9	1.1	0.8	0.6	37.3	31.3	28.2	14.6	7.1	3.9	2.3	1.7
Philippines	26.2	20.4	13.3	13.8	8.8	8.0	6.9	7.9	40.9	38.3	32.3	30.3	5.2	4.0	3.3	2.8
Qatar	—	—	—	—	—	2.6 *	2.8 *	1.9 *	—	3.4 *	1.5 *	1.1 *	1.8	1.2	1.0	0.8
Romania	3.5	1.7 *	0.7 *	0.7 *	3.3	4.3	2.8 *	2.9 *	11.2	12.8	11.1 *	9.4 *	3.5	2.7	1.6	1.1
Russian Federation	—	5.1	1.4 *	0.9 *	5.9 *	4.4 *	3.4 *	4.1 *	17.7 *	15.5 *	12.6 *	11.1 *	2.6	2.3	1.4	1.0
Rwanda	50.9	54.9	38.7	41.1	5.0	8.3	4.3 *	2.2	56.8	47.6	43.1 *	37.9	16.6	18.4	7.8	4.2
Saudi Arabia	9.8	6.2	7.8	4.4	2.9	7.3 *	6.1 *	2.7 *	21.4	15.5 *	11.9 *	9.9 *	3.7	2.3	1.8	1.5
Senegal	26.5	28.5	14.5	11.3	9.0	10.0	8.5 *	7.8	34.4	29.5	23.8 *	20.5	13.9	13.5	7.6	4.7
Serbia	—	—	5.9	5.6	—	—	4.0	3.9	—	—	7.4	6.0	—	—	0.8	0.7
Sierra Leone	40.2	39.9	30.6	30.9	10.2	11.6	10.5	9.4	40.9	38.4	37.4	37.9	26.3	23.6	17.9	12.0
Slovak Republic	—	5.9	5.4	3.1	3.6 *	3.9 *	3.6 *	3.4 *	9.8 *	9.2 *	5.4 *	4.6 *	—	1.2	0.9	0.7
Somalia	—	—	—	—	—	19.3	15.0	—	—	29.2	25.3	—	17.5	17.4	16.9	13.7
South Africa	5.3	4.7	4.4	4.6	5.9 *	4.5	4.7	4.3 *	31.5	30.1	23.9	20.9 *	5.8	7.5	6.8	4.1
South Sudan	—	—	—	—	—	—	—	27.3 *	—	—	—	36.9 *	—	—	—	9.3
Sri Lanka	30.8	29.6	27.1	22.1	17.5	15.5	13.3	21.4	29.7	18.4	18.3	14.7	2.1	1.6	1.2	1.0
Sudan	—	—	—	25.6	—	—	—	16.3	—	—	—	38.2	—	—	—	7.0
Suriname	13.3	12.9	9.1	7.9	6.9 *	7.0	5.0	4.7 *	14.1 *	14.5	9.8	8.4 *	4.5	3.4	2.6	2.1
Swaziland	17.0	19.3	23.0	19.6	1.8 *	1.7	1.1	2.0	35.3 *	36.6	40.4	25.5	7.9	12.8	11.4	6.1
Syrian Arab Republic	—	—	—	—	10.0	4.9	11.5	—	32.9	24.3	27.5	—	3.4	2.3	1.7	1.3
Tajikistan	—	42.4	38.6	30.1	13.8 *	9.4	5.5	9.9	35.5 *	42.1	34.0	26.8	11.6	9.3	5.6	4.5
Tanzania	26.8	36.7	34.2	32.3	7.9	5.6	2.7	4.5	49.7	48.3	43.0	34.4	16.3	13.1	7.4	4.9
Thailand	32.5	18.8	10.0	9.5	7.3	6.2 *	4.7	5.4	21.1	19.3 *	15.7	10.5	3.3	2.3	1.6	1.2
Timor-Leste	—	—	32.9	26.9	—	13.7	24.5	11.0	—	55.7	53.9	50.2	—	—	7.0	5.3
Togo	42.4	30.4	22.6	11.5	11.3 *	12.4	6.0	6.7	35.2 *	33.2	26.9	27.5	14.2	12.1	9.6	7.8
Trinidad & Tobago	14.4	11.6	10.4	4.8	6.7 *	5.2	4.9 *	4.1 *	8.0 *	5.3	3.9 *	3.0 *	3.0	2.9	2.5	2.0
Tunisia	5.4	4.9	5.2	5.0	5.4 *	2.9	3.4	2.8	21.5 *	16.8	9.0	10.1	5.3	3.2	1.9	1.4
Turkey	0.5 *	0.8 *	0.3 *	0.2 *	3.8	3.0	0.8	1.7	24.1	19.1	12.3	9.5	6.6	4.0	2.2	1.4
Turkmenistan	—	8.2	4.5	5.5	8.6 *	7.1	7.2	4.2	28.9 *	28.1	18.9	11.5	9.0	8.2	6.4	5.1
Uganda	24.9	27.9	29.8	39.0	6.1 *	5.0	6.3	4.3	43.3 *	44.8	38.7	34.2	18.0	14.8	8.6	5.5
Ukraine	—	4.5	1.2 *	2.2 *	1.9 *	8.2	1.4 *	1.3 *	11.0 *	22.9	8.0 *	6.3 *	2.0	1.9	1.3	0.9
Uruguay	5.9	4.2	3.0	1.3 *	3.0 *	2.3	2.5	2.0 *	14.7 *	12.8	10.8	9.3 *	2.2	1.7	1.3	1.0
Uzbekistan	—	16.4	10.2	6.3	7.8 *	8.9	4.5	5.7 *	30.1 *	25.3	19.6	15.0 *	7.1	6.3	4.9	3.9
Venezuela	13.8	16.4	4.0	13.0	4.3	3.9	4.5	4.2 *	18.3	17.4	14.6	15.9 *	2.8	2.2	1.7	1.5
Viet Nam	41.6	24.3	15.5	10.7	6.7	9.0	9.7	6.4	61.4	43.0	30.5	24.6	4.7	3.4	2.6	2.2
Yemen	28.0	29.9	27.1	28.8	14.3	15.9 *	14.3 *	16.2	52.4	54.7 *	47.0 *	46.8	12.0	9.5	6.1	4.2
Zambia	38.2	47.6	53.0	45.9	6.3	5.7	5.6	6.3	46.4	57.9	45.8	40.0	18.9	16.3	9.3	6.4
Zimbabwe	43.5	43.3	36.0	44.7	5.3	8.5	3.8	3.3	28.5	33.7	35.1	27.6	8.3	10.6	9.5	7.1

Note: — = Data not available or not presented. Some countries, such as the post-Soviet states prior to 1991, did not exist in the present borders in the given year or reference period.

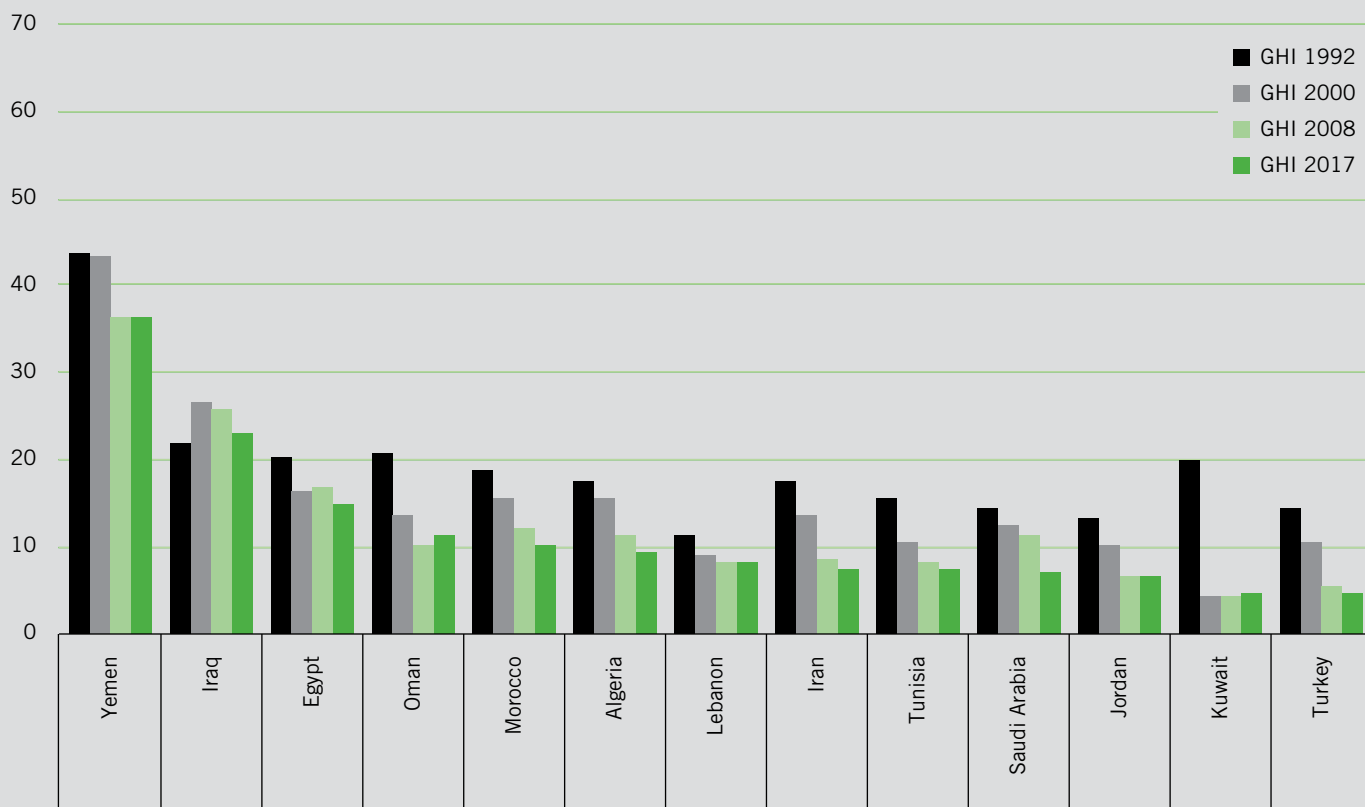
*IFPRI estimates

2017 GLOBAL HUNGER INDEX SCORES

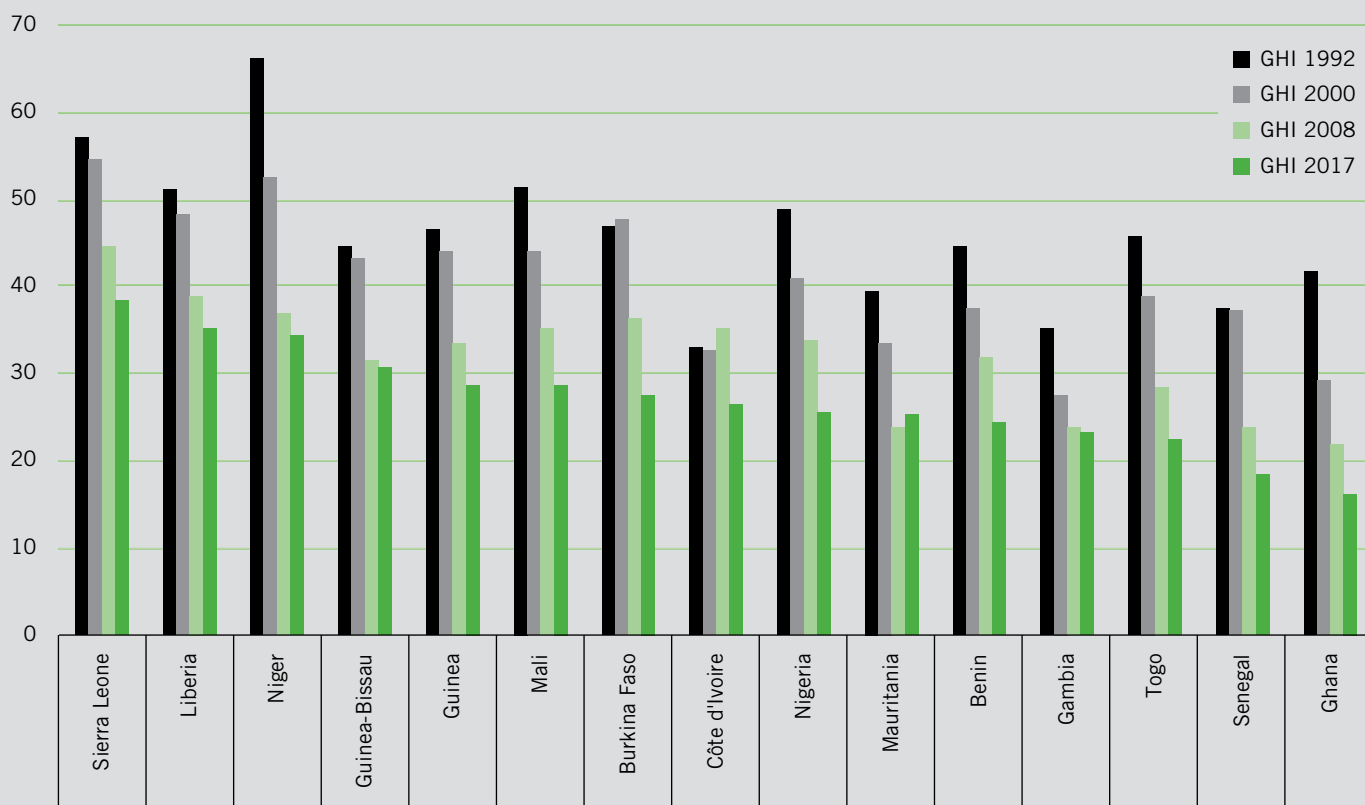
Country	1992	2000	2008	2017	Country	1992	2000	2008	2017
with data from	'90-'94	'98-'02	'06-'10	'12-'16	with data from	'90-'94	'98-'02	'06-'10	'12-'16
Afghanistan	50.2	52.7	37.9	33.3	Lesotho	26.5	33.2	28.4	24.1
Albania	20.8	21.6	16.5	11.1	Liberia	51.2	48.2	38.9	35.3
Algeria	17.5	15.6	11.3	9.5	Libya	—	—	—	—
Angola	65.8	57.5	39.7	32.5	Lithuania	—	5.9	<5	<5
Argentina	7.0	6.6	5.8	5.4	Macedonia, FYR	—	7.7	6.4	5.3
Armenia	—	18.4	11.4	7.7	Madagascar	43.9	43.6	36.8	38.3
Azerbaijan	—	27.5	15.3	9.6	Malawi	58.2	44.6	31.5	27.2
Bahrain	—	—	—	—	Malaysia	19.8	15.5	13.7	10.2
Bangladesh	53.6	37.6	32.2	26.5	Mali	51.4	44.2	35.1	28.6
Belarus	—	<5	<5	<5	Mauritania	39.4	33.6	23.7	25.2
Benin	44.5	37.5	31.7	24.4	Mauritius	17.4	15.9	14.3	13.3
Bhutan	—	—	—	—	Mexico	14.0	10.8	8.4	6.5
Bolivia	36.7	30.3	23.9	17.2	Moldova	—	16.3	13.3	7.6
Bosnia & Herzegovina	—	9.8	7.0	<5	Mongolia	37.5	31.7	18.1	13.4
Botswana	33.8	33.0	30.7	24.4	Montenegro	—	—	5.2	<5
Brazil	15.9	11.7	5.4	5.4	Morocco	18.7	15.7	12.0	10.2
Bulgaria	7.9	8.2	7.6	5.4	Mozambique	63.6	48.7	37.5	30.5
Burkina Faso	47.0	47.9	36.4	27.6	Myanmar	55.6	43.6	30.1	22.6
Burundi	—	—	—	—	Namibia	35.4	30.8	30.9	25.7
Cambodia	45.8	43.6	27.1	22.2	Nepal	42.5	36.8	28.9	22.0
Cameroon	40.0	39.6	29.5	22.1	Nicaragua	36.1	24.7	18.2	13.6
Central African Republic	52.2	50.9	47.0	50.9	Niger	66.2	52.6	37.0	34.5
Chad	62.5	51.9	50.9	43.5	Nigeria	48.8	41.0	33.7	25.5
Chile	5.9	<5	<5	<5	North Korea	31.9	40.3	30.7	28.2
China	25.9	15.8	11.2	7.5	Oman	20.8	13.7	10.2	11.3
Colombia	14.6	11.3	9.4	8.0	Pakistan	42.7	38.2	34.7	32.6
Comoros	—	—	—	—	Panama	19.9	20.0	14.1	9.2
Congo, Dem. Rep.	—	—	—	—	Papua New Guinea	—	—	—	—
Congo, Rep.	39.1	36.0	31.6	25.6	Paraguay	16.7	14.1	12.1	11.0
Costa Rica	7.5	6.2	5.0	5.3	Peru	28.7	20.9	15.3	8.7
Côte d'Ivoire	32.9	32.6	35.1	26.5	Philippines	30.5	25.9	20.2	20.0
Croatia	—	6.2	<5	<5	Qatar	—	—	—	—
Cuba	10.5	5.3	<5	<5	Romania	9.3	8.7	6.0	5.2
Djibouti	60.3	46.7	35.1	31.4	Russian Federation	—	10.5	6.8	6.2
Dominican Republic	23.8	18.4	15.4	11.6	Rwanda	53.3	56.3	36.2	31.4
Ecuador	22.3	20.5	16.4	14.4	Saudi Arabia	14.3	12.5	11.2	7.1
Egypt	20.1	16.4	16.6	14.7	Senegal	37.5	37.3	23.7	18.4
El Salvador	19.5	16.2	12.7	11.1	Serbia	—	—	7.2	6.6
Equatorial Guinea	—	—	—	—	Sierra Leone	57.2	54.7	44.5	38.5
Eritrea	—	—	—	—	Slovak Republic	—	8.0	6.4	<5
Estonia	—	6.2	<5	<5	Somalia	—	—	—	—
Ethiopia	—	56.0	40.2	32.3	South Africa	18.5	18.8	16.6	13.2
Fiji	11.5	9.8	9.1	8.1	South Sudan	—	—	—	—
Gabon	24.2	20.7	17.4	13.8	Sri Lanka	31.6	26.8	24.2	25.5
Gambia	35.2	27.5	23.8	23.2	Sudan	—	—	—	35.5
Georgia	—	14.7	8.3	7.7	Suriname	17.0	16.0	11.4	9.9
Ghana	41.9	29.2	21.9	16.2	Swaziland	24.0	29.9	30.7	21.2
Guatemala	28.5	27.4	22.2	20.7	Syrian Arab Republic	—	—	—	—
Guinea	46.5	44.0	33.4	28.6	Tajikistan	—	41.8	32.6	28.7
Guinea-Bissau	44.5	43.1	31.4	30.6	Tanzania	42.9	42.4	33.0	28.8
Guyana	22.3	17.9	17.0	13.7	Thailand	25.8	18.1	12.0	10.6
Haiti	51.6	42.7	42.6	34.2	Timor-Leste	—	—	46.8	34.3
Honduras	25.9	20.6	17.0	14.3	Togo	45.8	39.0	28.3	22.5
India	46.2	38.2	35.6	31.4	Trinidad & Tobago	14.5	11.7	10.4	6.9
Indonesia	35.0	25.5	28.3	22.0	Tunisia	15.4	10.7	8.0	7.4
Iran	17.5	13.6	8.7	7.6	Turkey	14.3	10.4	5.6	<5
Iraq	21.8	26.5	25.7	22.9	Turkmenistan	—	21.9	16.5	12.2
Jamaica	12.0	8.4	7.6	8.0	Uganda	41.2	39.2	33.3	32.0
Jordan	13.4	10.3	6.5	6.7	Ukraine	—	13.7	<5	<5
Kazakhstan	—	11.3	10.9	5.8	Uruguay	9.7	7.7	6.4	<5
Kenya	39.1	37.6	29.6	21.0	Uzbekistan	—	23.8	16.1	13.1
Kuwait	20.0	<5	<5	<5	Venezuela	15.2	15.2	9.3	13.0
Kyrgyz Republic	—	19.7	13.4	9.3	Viet Nam	40.2	28.6	21.6	16.0
Lao PDR	52.3	48.1	33.4	27.5	Yemen	43.5	43.4	36.2	36.1
Latvia	—	6.7	<5	<5	Zambia	48.5	52.3	45.0	38.2
Lebanon	11.4	9.0	8.2	8.1	Zimbabwe	35.8	40.9	34.5	33.8

— = Data are not available or not presented. Some countries, such as the post-Soviet states prior to 1991, did not exist in their present borders in the given year or reference period.

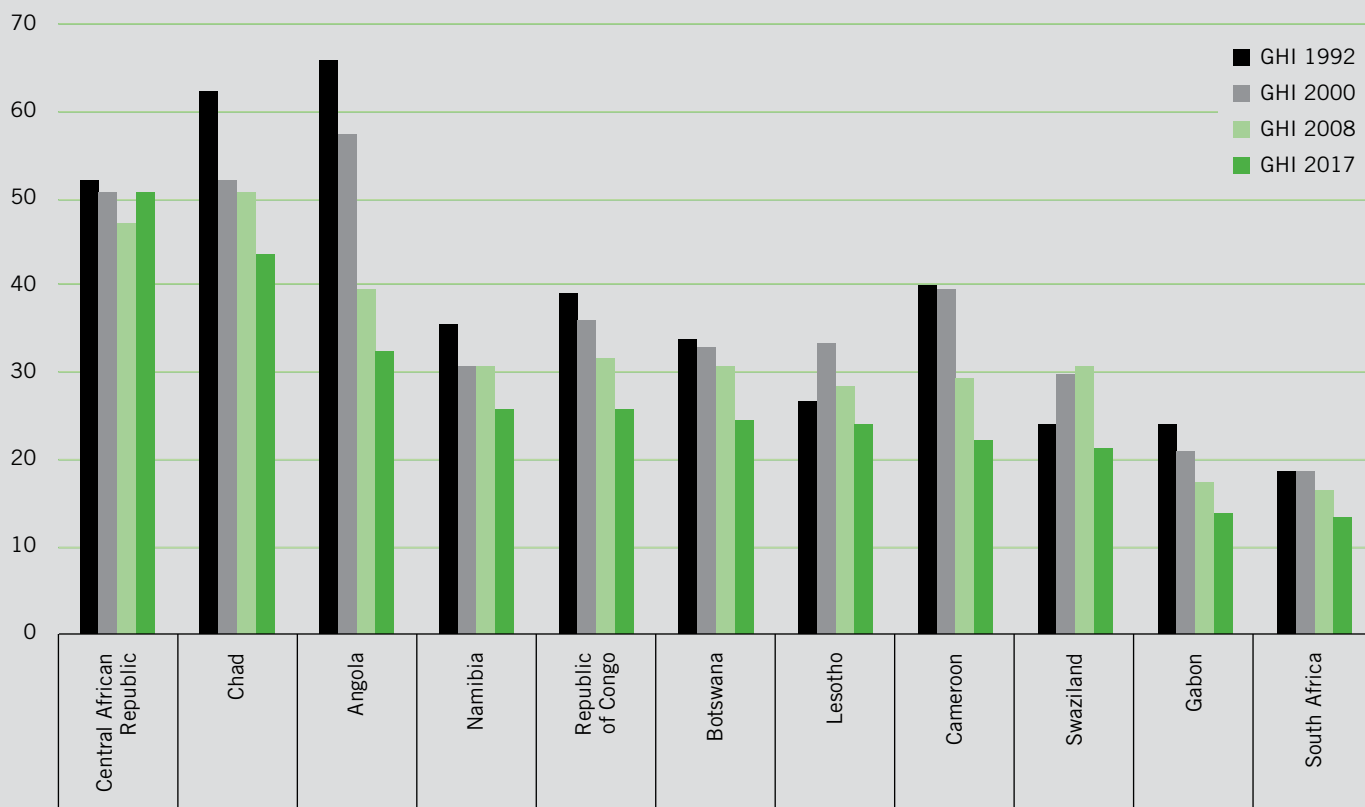
NEAR EAST AND NORTH AFRICA



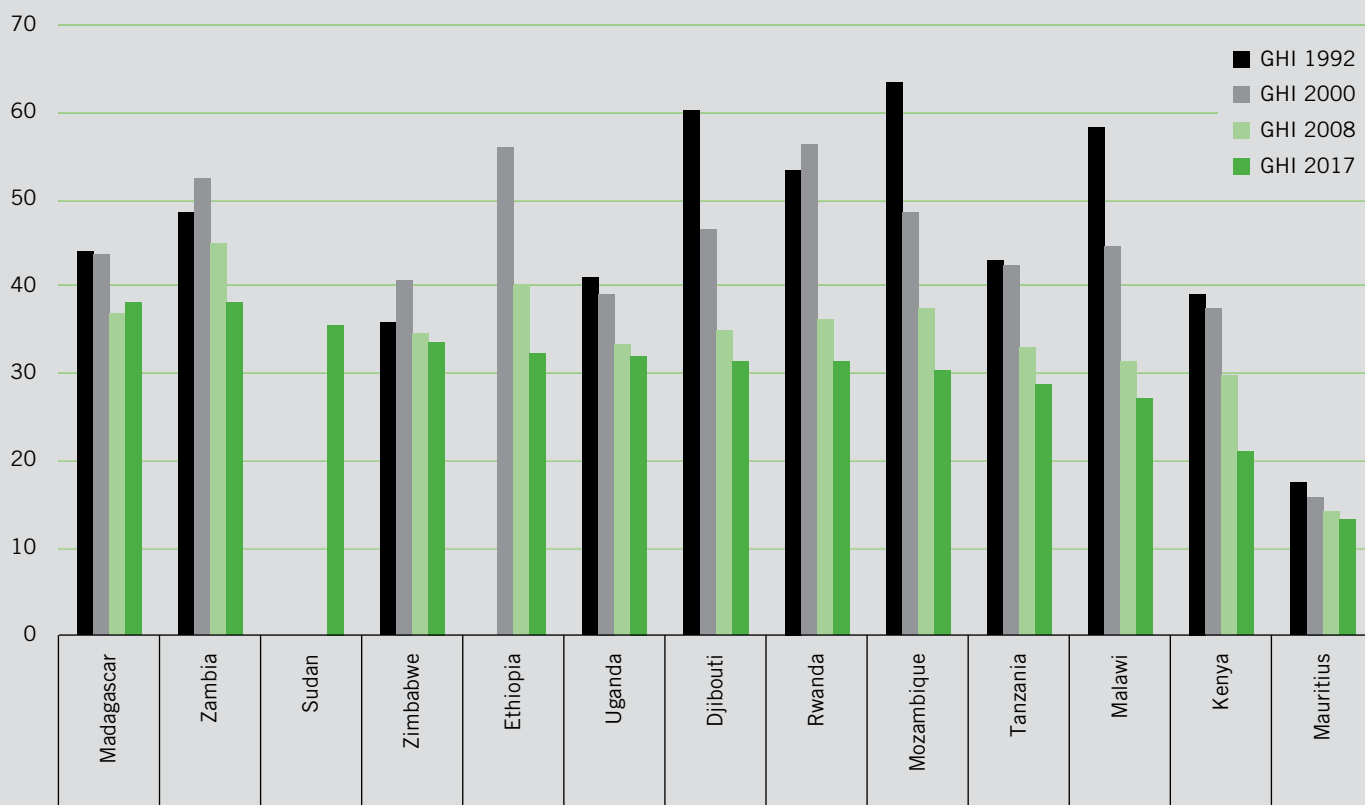
WEST AFRICA



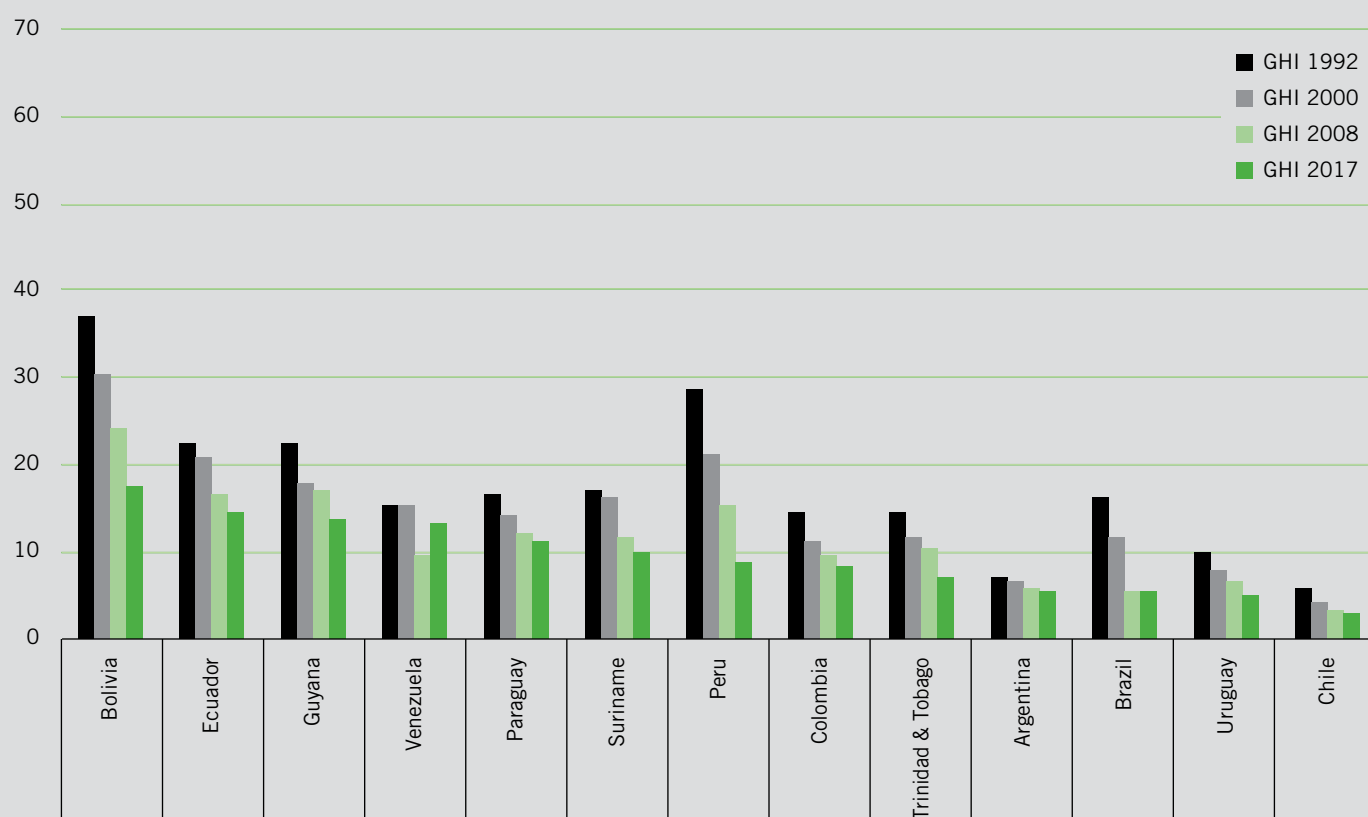
CENTRAL AND SOUTHERN AFRICA



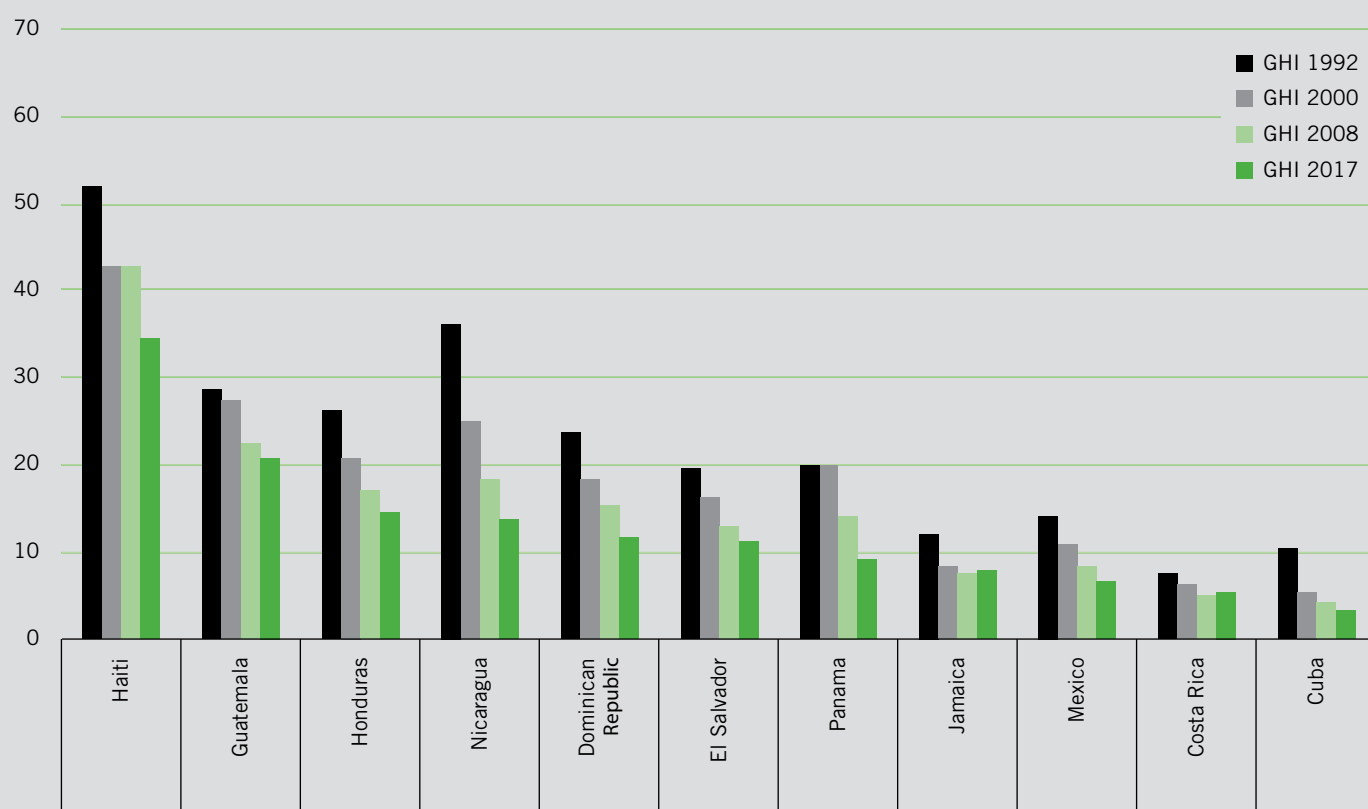
EAST AFRICA



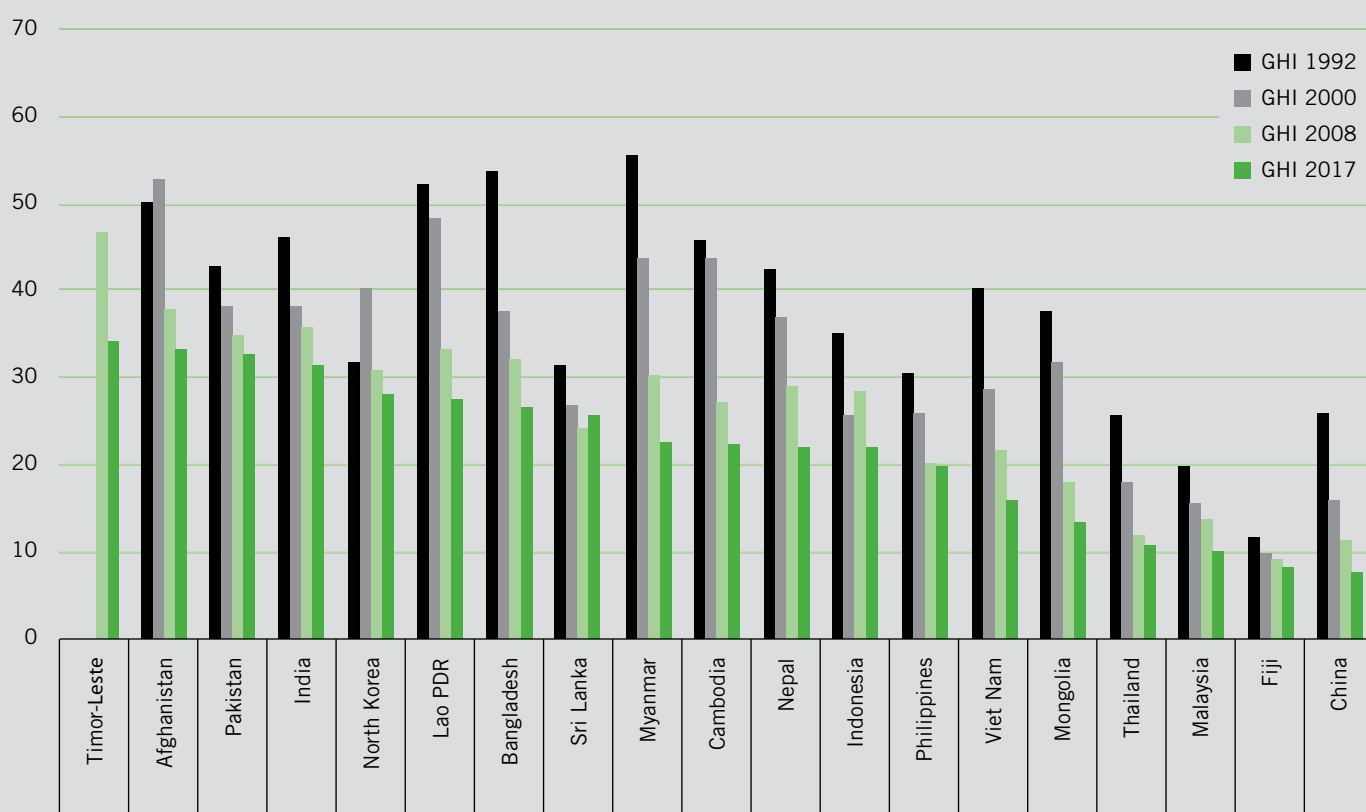
SOUTH AMERICA



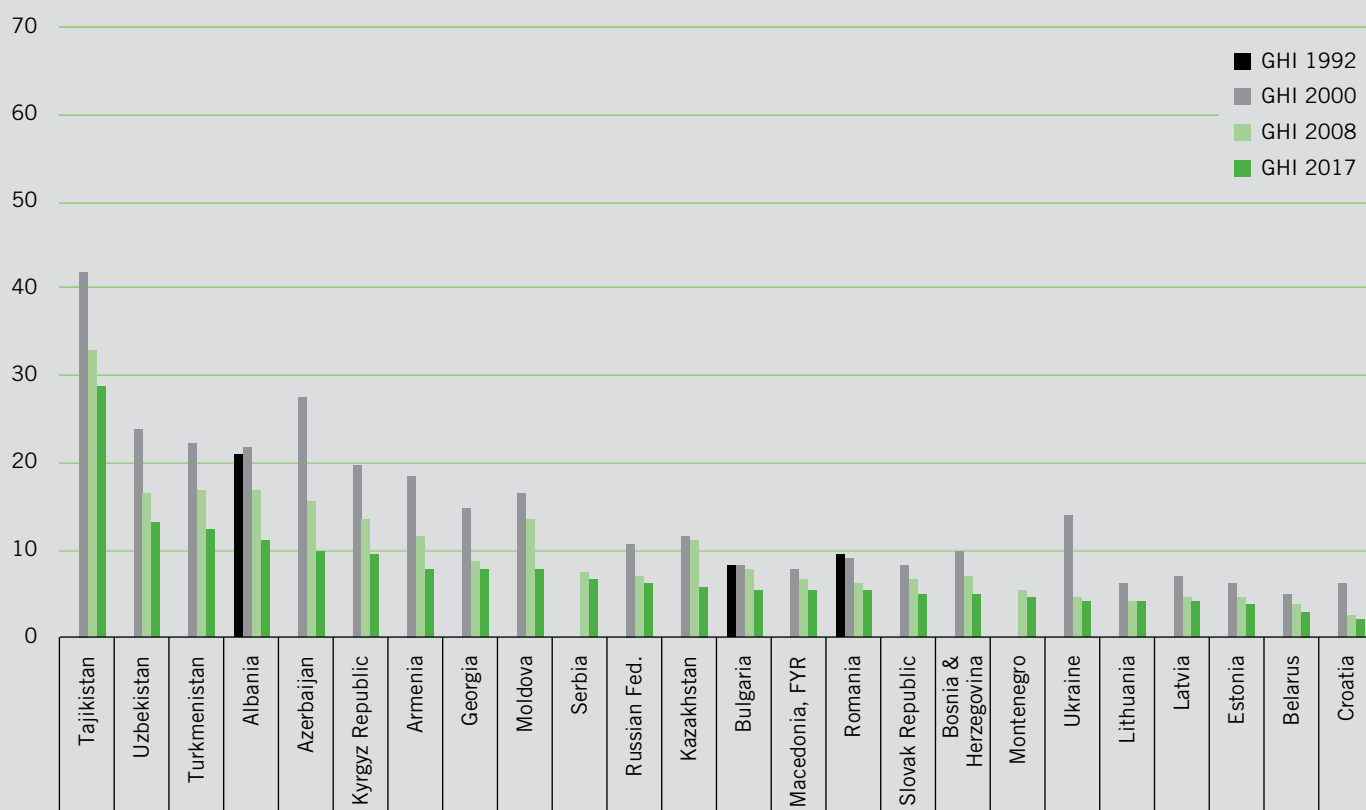
CENTRAL AMERICA AND THE CARIBBEAN



SOUTH, EAST, AND SOUTHEAST ASIA



EASTERN EUROPE AND THE COMMONWEALTH OF INDEPENDENT STATES



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PARTNERS



Who we are

The International Food Policy Research Institute (IFPRI) identifies and analyzes alternative strategies and policies for meeting the food needs of the devel-

oping world, with particular emphasis on low-income countries and on providing evidence for policy solutions that sustainably reduce poverty and end hunger and malnutrition.

What we do

Our research focuses on six strategic areas: ensuring sustainable food production, promoting healthy food systems, improving markets and trade, transforming agriculture, building resilience, and strengthening institutions and governance. The role of gender is a crosscutting theme, embedded in the research of all six areas.

Our vision

A world free of hunger and malnutrition.



Who we are

Founded in Ireland in 1968, Concern Worldwide is a nongovernmental, international humanitarian organiza-

tion dedicated to reducing suffering and working toward the ultimate elimination of extreme poverty. We work in 28 of the world's poorest countries, with offices in Ireland, the United Kingdom, the United States of America, and the Republic of Korea, and more than 3,500 committed and talented staff.

What we do

Our mission is to help people living in extreme poverty achieve major improvements that last and spread without ongoing support from Concern Worldwide. To this end, Concern Worldwide will work with the poor themselves, and with local and international partners who share our vision, to create just and peaceful societies where the poor can exercise their fundamental rights. To achieve this mission, we engage in long-term development work, respond to emergency situations, and seek to address the root causes of poverty through our development education and advocacy work.

Our vision

A world where no one lives in poverty, fear, or oppression; where all have access to a decent standard of living and the opportunities and choices essential to a long, healthy, and creative life; and where everyone is treated with dignity and respect.



Who we are

Welthungerhilfe is one of the largest nongovernmental aid agencies in Germany. It was founded in 1962 under the umbrella of the Food and Agriculture Organization of the

United Nations (FAO). At that time, it was the German section of the Freedom from Hunger Campaign, one of the first global initiatives to fight hunger.

What we do

We fight hunger and poverty. Our goal is to make ourselves redundant. We provide integrated aid, from rapid disaster aid to long-term development cooperation projects. We supported people in 39 countries through 407 overseas projects in 2016.

How we work

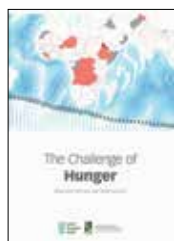
Help to self-help is our basic principle; it allows us to strengthen structures from the bottom up together with local partner organizations and ensures the long-term success of project work. In addition, we inform the public and take an advisory role with regard to national and international policy. This is how we fight to change the conditions that lead to hunger and poverty.

Our vision

A world in which all people can exercise their right to lead a self-determined life with dignity and justice, free from hunger and poverty.

12 YEARS OF TRACKING WORLD HUNGER

Since 2006, the Global Hunger Index has been reporting on the state of hunger globally, by region, and by country



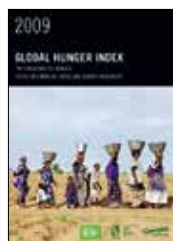
Case Studies in the Post-Conflict Countries of Afghanistan and Sierra Leone



Measures Being Taken to Reduce Acute Undernourishment and Chronic Hunger



The Vicious Circle of Hunger and Poverty



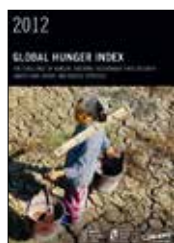
Financial Crisis and Gender Inequality



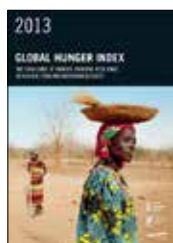
The Crisis of Child Undernutrition



Taming Price Spikes and Excessive Food Price Volatility



Ensuring Sustainable Food Security Under Land, Water, and Energy Stresses



Building Resilience to Achieve Food and Nutrition Security



The Challenge of Hidden Hunger



Armed Conflict and the Challenge of Hunger



Getting to Zero Hunger



The Inequalities of Hunger

For more information about the 2017 Global Hunger Index, visit www.globalhungerindex.org.

GHl resources for researchers and developers include:

- Interactive maps
- Dataverse data files
- Global Hunger Index Linked Open Data (LOD) available in both Resource Description Format (RDF) and Web Ontology Language (OWL) for reuse in new applications and analyses
- Global Hunger Index SPARQL Endpoint

Global Hunger Index for Mobile Devices

You can download the report from Google Books, Google Play, Amazon, and iTunes.

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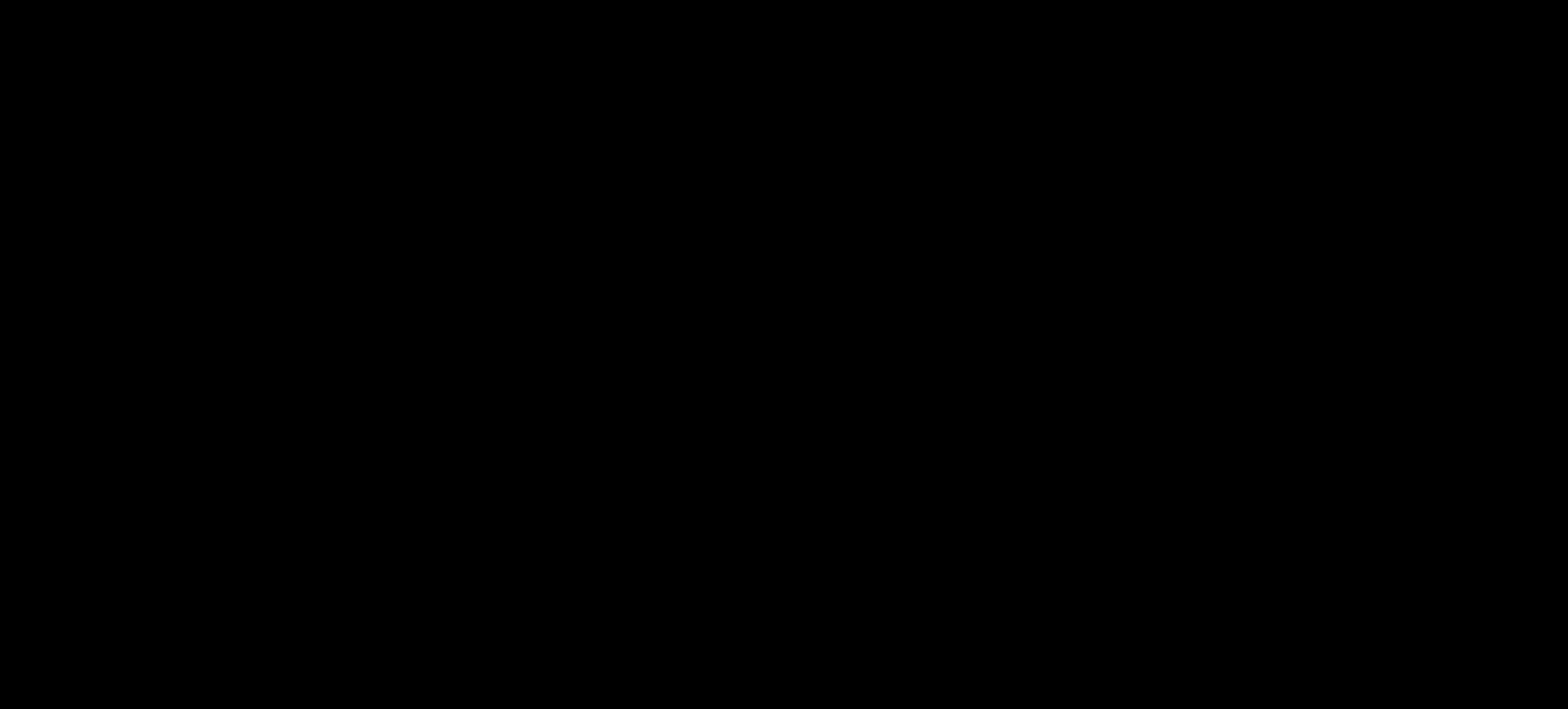
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