How We Count Hunger Matters

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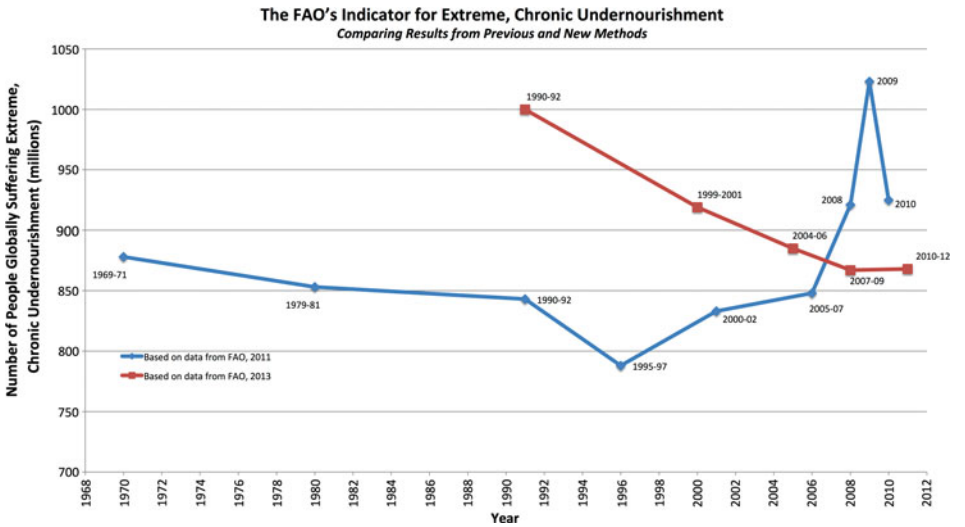
Hunger continues to be one of humanity's greatest challenges despite the existence of a more-than-adequate global food supply equal to 2,800 kilocalories for every person every day.[1] In measuring progress, policymakers and concerned citizens across the globe rely on information supplied by the Food and Agriculture Organization (FAO), an agency of the United Nations. In 2010 the FAO reported that in the wake of the 2007–2008 food-price spikes and global economic crisis, the number of people experiencing hunger worldwide since 2005–2007 had increased by 150 million, rising above 1 billion in 2009.[2] However, in its *State of Food Insecurity in the World 2012* (SOFI 12)[3] the FAO presented new estimates, having revamped its methods and reinterpreted its hunger data back to 1990. The revised numbers for the period 1990–1992 to 2010–2012 reverse the trend to a steadily falling one. Based on the FAO's new calculations, extreme undernourishment peaked in 1990 at a record-breaking one billion, followed by a significant decline through 2006, when progress stalled but did not reverse (see chart below).[4]

Setting aside any question about the specific merits of the agency's new methodology, the FAO's primary measure does not capture the full extent of hunger. Additionally, SOFI 12's overriding messages may obscure important policy

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lessons. We suggest that a wide range of specific government policies that were either underemphasized or completely omitted in SOFI 12 have proven successful in reducing hunger—especially those that promote more equitable access to productive resources, the right to food, a more supportive international economic and trade system, and ecological approaches to production.

Understanding the Numbers

The way the FAO estimates hunger has drawn criticism in the past, and the agency acknowledges that weaknesses remain even with its new methodology.[5] The FAO's primary hunger measure, referred to as the "prevalence of undernourishment," is narrow:

> Undernourishment has been defined as an extreme form of food insecurity, arising when food energy availability is inadequate to cover even minimum needs for a sedentary lifestyle. . . . Hence, the FAO indicator is designed to capture a clearly—and narrowly—defined concept of undernourishment, namely a state of energy deprivation lasting over a year.[6]

There are a number of problems with these assumptions. First, an indicator based on the assumption of caloric needs for a *sedentary* lifestyle seems certain to underestimate the number of people suffering undernourishment, for, as SOFI 12 itself notes, many poor people's livelihoods involve "arduous manual labour."[7] Since the

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report's publication, the FAO has continued to develop its measures, which can be found online in the agency's updated Food Security Indicators.[8] While an assumption of calories needed for a "sedentary lifestyle" produces the publicized estimate of 868 million undernourished worldwide, the data in the online indicators show the consequence of assuming a caloric threshold required for "normal"[9] activity. The rise is dramatic: the number of undernourished people in 2010–2012 could be as high as 1.33 billion—or 53 percent greater than the official 868 million estimate—thus putting the positive message that frames SOFI 12 in a different light.

On occasion the FAO has used the term "prevalence of food inadequacy" to describe another, larger category that it defines in SOFI 12 as being "conceptually analogous to the prevalence of undernourishment," but one that is calculated using a different assumption for energy needs. Thus, the FAO notes that "while the existing prevalence of undernourishment indicator is a conservative estimator of chronic food deprivation ('hunger'), such new estimators are less conservative measures of food inadequacy."[10] Given that this category is based on calories required for what is arguably a more realistic assumption of energy expenditure—labeled "normal"—it seems most helpful to speak of an estimated range of undernourishment and hunger of between 868 million and 1.33 billion.

Second, including only severe, chronic undernourishment lasting more than a year omits the impact of shorter-term hunger episodes, such as those created by food-price spikes or rapid-onset emergencies from disasters.[11] Yet a growing body of research shows that even short-term nutritional deficits, particularly if occurring in the first 1,000 days of life, can negatively affect health, learning, and income over one's lifetime,[12] and even affect one's offspring.[13]

A third shortcoming of a narrow hunger indicator is that it considers only caloric intake and does not incorporate data on the quality of food consumed. When food prices rise, as they have in recent years, poor people may shift spending, foregoing other expenditures in order to eat or choosing less expensive foods that are also less nutritious.[14] To know the real extent of food insecurity, the FAO acknowledges, more attention would need to be given to diet *quality*, including intake of protein, vitamins, and minerals, as opposed to calories alone, which are often in the form of fats and simple carbohydrates associated with obesity and chronic disease.[15]

The narrowness of the FAO's primary hunger measure fits poorly with its very narrow definition of the opposite—"food security"—which it defines as a situation that "exists when all people, at all times, have physical, social and economic access

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to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life."[16] It further defines food security as having four key pillars: availability, access, utilization, and stability of the other three dimensions over time.[17] Thus, on the logical assumption that food insecurity is the absence of food security, food insecurity would be a much broader notion than that of hunger. Yet the FAO's "infographic" issued to accompany its SOFI 12 report uses both "food insecurity" and "hunger" in connection with its indicator for prevalence of undernourishment, which could lead readers to understand these terms as interchangeable.[18]

In a technical note to SOFI 12, the FAO itself acknowledges the weaknesses of its primary hunger indicator, and warns that the indicator is not sufficient to guide policy.[19] Annex 2 to SOFI 12 lists an initial core set of additional indicators, including the prevalence of food insecurity noted above, that aim to capture other aspects of food insecurity, and these additional indicators can also be found online at various UN agency websites.[20] We encourage the FAO to incorporate and report on these diverse indicators more widely. Moreover, this year the FAO is testing an additional approach to measuring hunger. Called "Voices of the Hungry," it is an experience-based food insecurity scale involving fifteen questions that will be added to existing national surveys and rolled out globally in 2014.[21] We strongly encourage the broader adoption of this approach of sampling the experience of affected people themselves as a vitally important complement to estimates based on national food consumption data. In the meantime, we encourage the FAO to ensure that its public representations fully convey that its estimate of severe, chronic undernourishment captures only a narrow slice of the much wider problem of food insecurity in the world.

Interpreting the Trends

SOFI 12's theme is global progress. Its opening page notes that "revised results imply that the Millennium Development Goal (MDG) target of halving the prevalence of undernourishment in the developing world by 2015 is within reach, if appropriate actions are taken to reverse the slowdown since 2007–2008."[22] Although the agency's new methodology may provide a more accurate account of a very narrow concept of hunger, we question the wisdom of switching how the extent of hunger is measured in the twenty-second year of a twenty-five-year assessment exercise.

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This is not the first time that a new measurement system has dramatically improved the perceived progress toward the goal of halving world hunger. At the 1996 World Food Summit in Rome, 186 governments pledged to cut the *number* of undernourished people globally to half the 1996 level "no later than 2015."[23] In 2000, however, when the MDGs were adopted, success was redefined as cutting in half the *prevalence* (proportion) of undernourished people in the developing regions, relative to the 1990 level.[24] The effect of this redefinition was that the number of undernourished people allowable in 2015 while still meeting the MDG was raised by about 220 million. Combined with the new estimates from the recent change in methodology, this redefinition means that we are now about five-sevenths of the way toward meeting the goal rather than one-seventh of the way there.[25]

Aggregation of global hunger data also masks important variations across regions.[26] While SOFI 12 acknowledges such regional variations, its overall message is that there have been "significant improvements in food security and nutrition outcomes worldwide."[27] Stressing the global trend fails to communicate how concentrated the gains have been: just two countries, China and Vietnam (where most of the decline occurred in the 1990s), account for 91 percent of the global net decrease of 132 million extremely and chronically undernourished people over the two-decade period covered by SOFI 12. Offsetting some of the gains over this period, the forty-five Least Developed Countries (LDCs) listed in SOFI 12 saw an increase of 59 million people who have experienced extreme and chronic undernourishment.[28]

Variations within regions are also wide, but largely unexplored. SOFI 12 presents sub-Saharan Africa as lagging behind other regions in progress against hunger, and its infographic summarizing the report's message singles out sub-Saharan Africa as the only region in which the "number of hungry people is rising."[29] But there is an important caveat here: based on the FAO's 2010 data (which is the most recent available), the Democratic Republic of the Congo accounts for nearly half of this rise.[30] Moreover, seven out of the region's thirty-two countries for which the FAO includes data have achieved substantial progress—reducing their national hunger numbers by at least 21 percent. In fact, Ghana achieved the *world's* greatest reduction over this period, with an astounding 87 percent decline in the number of undernourished people. These extreme contrasts contain essential lessons for shaping anti-hunger strategies.

While the report stresses the importance of promoting economic growth (supplemented by safety net programs to reach the vulnerable in society) as an

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effective strategy for reducing hunger, SOFI 12 also acknowledges that the "linkage between economic growth and nutrition has been weak."[31] Indeed, FAO data show that economic growth rates for developing countries were higher in the 2000s than in the 1990s.[32] But it was in the *slower-growth* 1990s that these countries experienced a greater advance against hunger.[33] In India, for example, the average per capita GDP growth rate over the last two decades was more than twice the world average, but the country reduced its number of hungry people by less than 10 percent.[34]

A Range of Policies Required

Beyond economic growth and safety nets there exists a wide range of proven anti-hunger strategies, some of which the FAO has analyzed and promoted and which we encourage the agency to feature more in its annual SOFI reports. Here we highlight four strategies—fundamental building blocks for stronger food security policies that we feel deserve greater attention in the current policy-making context.

- *Policies promoting more equitable control over productive assets, including land, and a fair return to producers*

We welcome SOFI 12's encouragement of changes giving "workers a stronger voice in social dialogue and bargaining processes" and of investing in smallholders.[35] Beyond such advances, however, there are a number of other reforms that could help small farmers, and especially women, achieve more equitable access to productive assets. Some of the countries that have shown the most progress in reducing hunger, including China and Vietnam, have a relatively equitable distribution of land and other food-producing resources.[36] SOFI 12 acknowledges the positive effects of more equitable access to land, but does not suggest agrarian reform, carried out in a democratic fashion, as a policy option. Additionally, policies encouraging coproduction, marketing, and savings via cooperatives—not mentioned in SOFI 12—are proving to be effective in a number of countries, including Ghana.[37]

- *Policies promoting the right to food*

In 2000 the United Nations created the post of Special Rapporteur on the Right to Food to promote right-to-food policies worldwide. The Special Rapporteur and the FAO have been developing indicators to assess the progress of countries in the realization of this goal.[38] Brazil, a leader in the movement, created a "legislative

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framework on the right to food" in 2006, and in 2010 the right became part of its constitution. Since 1990–1992, Brazil has cut its number of hungry people by 40 percent through new civil-society and government structures that have provided specific policy and accountability mechanisms. SOFI 12 praises Brazil's safety net, the *Bolsa Familia* program (which consists of the world's largest conditional cash transfer system), as well as the country's right-to-food policies.[39] However, because of the report's emphasis on safety nets, readers may miss the way that right-to-food initiatives in Brazil are also creating fairer market relationships. For instance, the city of Belo Horizonte, as mentioned in SOFI 12, provides local farmers with the opportunity to sell healthful produce in the inner city provided they do so at set prices that are within the reach of poor consumers.[40]

- *More fair and supportive international economic and trade policies*

Other effective anti-hunger policies involve removing obstacles that originate far beyond the countries where hunger concentrates. As seen dramatically in recent years, policies in rich industrialized countries that affect the entire global economy—including those driving up investment in agrofuels and speculation in agricultural commodity markets—have been associated with elevated and more volatile world food prices.[41] At the same time, agricultural trade policies and practices that systematically disadvantage developing countries have contributed to a growing dependence on imported food in some of the world's poorest countries. The food import bill of the LDCs, for example, rose from $6.9 billion in 2000 to $23 billion in 2008.[42] Volatility-reducing policies on trade, agrofuels, and financial speculation in the industrialized countries could have positive effects on hunger globally, yet these are not taken up at all in SOFI 12.[43]

- *Policies supporting more diversified agroecological food production practices*

Finally, policies encouraging agroecological farming methods hold much promise for ending hunger. SOFI 12 notes the importance of sustainability in food production, and reports that there is "a range of possible approaches to incorporating environmental values in agricultural policy-making."[44] Agroecological farming methods merit strong support because they can reduce poor farmers' indebtedness and can increase income when inputs are farmer-controlled. Agroecology also enhances crop diversity, which helps avert total crop failures and protects the natural environment for long-term food security. Agroforestry and organic

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systems can, for example, restore degraded soil, thus bringing damaged land back to higher levels of production while largely avoiding expensive external inputs.[45]

Conclusion

SOFI 12 celebrates the world's progress toward ending hunger and suggests that, with a return to pre-recession economic growth, the world is well on its way to meeting the Millennium Development Goal of cutting the prevalence of hunger by half. We, however, urge more caution. The primary hunger indicator highlighted in SOFI 12 is a narrow one that is sure to undercount the number of people who face hunger. We encourage the FAO both to develop and communicate a wider conceptualization of hunger and food insecurity in its indicators and to promote the full range of policies that have proven essential to ending hunger.

NOTES

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[3] FAO, *The State of Food Insecurity in the World 2012* (Rome: FAO, 2012), www.fao.org/docrep/016/i3027e/i3027e.pdf.
[4] Ibid., p. 9, Figure 1.
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[6] FAO, *State of Food Insecurity 2012*, p. 50.
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[8] FAO publications online, "The State of Food Security in the World 2012: Food Security Indicators", www.fao.org/publications/sofi/food-security-indicators/en/.
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[19] FAO, *State of Food Insecurity 2012*, Technical Note, p. 14.

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[20] Ibid., pp. 54–56.
[21] FAO, "Voices of the Hungry: An Experience-based Food-Security Indicator," Food Statistics Division, 2012, www.fao.org/fileadmin/user_upload/newsroom/docs/VOH_final_COLOR.pdf.
[22] FAO, *State of Food Insecurity 2012*, p. 8.
[23] FAO, *Rome Declaration and Plan of Action* (Rome: World Food Summit, November 13–17, 1996), Item 7.
[24] United Nations, *The Millennium Development Goals Report* (New York: UN, 2010).
[25] Please see supplementary materials that provide the calculations for these numbers at www.yale.edu/macmillan/globaljustice/supplement.html.
[26] Derek Headey, "The Impact of the Global Food Crisis on Self-Assessed Food Security," *World Bank Economic Review* 27, no. 1 (2013), pp. 1–27.
[27] FAO, *State of Food Insecurity 2012*, p. 4.
[28] Ibid., p. 46.
[29] See www.fao.org/infographics/pdf/FAO-infographic-SOFI-2012-en.pdf.
[30] The DRC experienced a 32 million rise in the number of undernourished people between 1990–1992 and 2005–2007, which is the most recent FAO data (FAO, *The State of Food Insecurity 2010*, p. 52, Annex 1, Table 1); and the increase in the number of undernourished in the region between 1990–1992 and 2010–2012 was 64 million (FAO, *The State of Food Insecurity 2012*, p. 9, Table 1).
[31] FAO, *State of Food Insecurity 2012*, p. 27.
[32] Ibid., p. 15, Figure 6.
[33] Ibid., p. 9, Table 1.
[34] World Bank Data online, "GDP per capita growth (annual %)", www.data.worldbank.org/indicator/NY.GDP.PCAP.KD.ZG. See also FAO, *State of Food Insecurity 2012*, p. 48.
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