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# ISSUES

## IN FOOD SECURITY

### Effects of Income Distribution on Food Security

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**Issue.** Participants at the 1996 World Food Summit pledged “to reduce the number of undernourished people to half their present level no later than 2015.” Fulfilling that pledge depends on global food security and governments’ commitments to implement policies that reduce food gaps. A common cause of chronic undernutrition among developing countries is inadequate purchasing power: regardless of what country they live in, the wealthy go hungry perhaps only in times of war or natural disaster. As with individuals, so with nations: undernutrition tends to be much more severe in lower income countries than in higher income countries. The different causes of food insecurity require different strategies for improvement.

**Background.** Estimates of food gaps at the national level obscure differences in food consumption among different segments of the population. Since such data do not exist, however, we used an indirect method of estimating calorie consumption by different income groups (quintiles) based on income distribution data. The resulting “distribution gap” measures the amount of food needed to raise food consumption of each income quintile to the minimum nutritional requirement. We then used the consumption levels of different income groups to estimate the number of people who cannot meet their nutritional requirements.

When the impact of unequal incomes is taken into account, food consumption in the lowest income quintile is, as expected, much lower than the national average. For 67 low-income developing countries, the estimated food gaps for the lowest income quintiles were much greater than the national-level gaps. In 2000, the total distribution gap for the 67 countries was more than 25 million tons, 50 percent larger than the national average nutritional gap. The distribution gap is projected to exceed 30 million tons by 2010.

Consumption data by different income groups illustrate how purchasing power affects nutritional vulnerability. For example, in Latin America—the region with the most skewed income distribution—the estimated per capita food

consumption of the highest income quintile was 50 percent higher than the consumption of the lowest income quintile in 2000.

In Asia, the most populous region, consumption in all but the lowest income group is estimated to have exceeded the minimum nutritional standard in 2000. Assuming continued economic recovery in the region, Asia’s distribution gap is projected to decline through 2010, a considerable achievement. Rapid growth in agricultural production, above the rate of population growth, raised food availability and practically eliminated the 1960’s-era threat of famine.

Sub-Saharan Africa is the most vulnerable region with respect to food security. Within Sub-Saharan Africa, consumption in only the top two income groups exceeded nutritional requirements in 2000. In the lowest income group, consumption was estimated at only 81 percent of nutritional requirements. These consumption ratios are expected to fall slightly over the next decade, further undermining the region’s food security. With caloric intake in this region already at precariously low levels, any further declines could worsen the health and well-being of the region’s population.

#### Number of people with insufficient food and the size of food deficit

	Number of people with insufficient food		Distribution gap	
	2000	2010	2000	2010
	<i>Million people</i>		<i>--1,000 tons--</i>	
Total	774	695	25,315	30,874
Asia	307	177	5,489	5,294
Sub-Saharan Africa	344	435	15,294	22,496
Latin America	62	47	1,897	1,813
North Africa	48	31	1,970	1,131
Newly independent states	13	6	664	141

Source: ERS, USDA, Food Security Assessment model.

While the total food gap for the 67 countries is projected to grow over the next decade, the number of people (in each income quintile) whose consumption falls short of the minimum nutritional requirement is projected to decline, from 774 million in 2000 to 695 million by 2010. This means that the nutritional disparity among and within the countries will intensify more than food deficits will spread. In other words, the hunger problem will get more severe in the vulnerable countries and/or among the lower income groups.

### Ratio of food consumption to nutritional requirements

Region/year	Income quintile				
	Lowest	Second	Third	Fourth	Highest
	<i>Ratio</i> <sup>1</sup>				
<b>North Africa</b>					
2000	1.08	1.13	1.17	1.21	1.31
2010	1.14	1.20	1.24	1.29	1.39
<b>Sub-Saharan Africa</b>					
2000	0.81	0.90	0.96	1.03	1.19
2010	0.79	0.88	0.94	1.01	1.16
<b>Asia</b>					
2000	0.99	1.05	1.09	1.14	1.26
2010	1.01	1.07	1.12	1.17	1.29
<b>Latin America</b>					
2000	0.85	0.95	1.02	1.09	1.27
2010	0.93	1.03	1.11	1.19	1.38
<b>Newly independent states</b> <sup>2</sup>					
2000	0.90	0.98	1.04	1.10	1.21
2010	1.09	1.19	1.26	1.34	1.47

<sup>1</sup>A ratio value equal to 1.0 means food consumption by population in the income group is meeting nutritional requirements; > 1.0 means food consumption exceeds nutritional requirements; < 1.0 means food consumption falls below nutritional requirements.

<sup>2</sup>Based on average regional income distribution.

Sub-Saharan Africa is the only region where the number of hungry people is projected to increase—by 20 percent in the next decade. At the same time, the region's distribution gap is projected to increase at a much faster rate than the number of hungry people, implying that food insecurity will intensify. In other regions, food security among the lower income groups is projected to improve, on average. In the lower income countries of Asia, the number of hungry people is projected to decline—from 307 million in 2000 to 177 million in 2010. By 2010, Asia is projected to account for nearly two-thirds of the population of the 67 low-income countries, but only a quarter of the hungry people.

**Alternatives.** Food insecurity of the lower income groups is mainly due to poverty, and most food-insecure people live in the rural areas. Growth in the agricultural sector, therefore, is key to improving food security of the poor. In the long term, the countries must develop strategies to foster broad-based income growth that lifts the purchasing power of the poor. In the short to medium term, however, targeted nutritional interventions can improve the situation significantly. Many lower income countries, such as India and Bangladesh, showed considerable achievements in reducing undernutrition during the last few decades, mainly through rapid growth in agricultural production and provision of safety net programs, such as food subsidies for the poor. Even in these countries, however, further reduction in the number of hungry people will be a challenge, as increases in the costs of subsidies pose a budgetary problem. This means that to combat hunger, targeted safety net programs should be combined with increases in agricultural investment to raise productivity and income of the poor.

**Information Sources.** More information can be found in ERS in *Food Security Assessment 2000* (<http://www.ers.usda.gov/publications/gfa12/>).

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