



Undernourishment around the world in 2012

Undernourishment around the world

Key messages

- ***The State of Food Insecurity in the World 2012* presents new estimates of the number and proportion of undernourished people going back to 1990, defined in terms of the distribution of dietary energy supply. With almost 870 million people chronically undernourished in 2010–12, the number of hungry people in the world remains unacceptably high.** The vast majority live in developing countries, where about 850 million people, or slightly fewer than 15 per cent of the population, are estimated to be undernourished.
- **Improved undernourishment estimates, from 1990, suggest that progress in reducing hunger has been more pronounced than previously believed.**
- **Most of the progress, however, was achieved before 2007–08. Since then, global progress in reducing hunger has slowed and levelled off.**
- **The 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 2007–08.**
- **Despite significant improvements this year to the FAO methodology for estimating undernourishment, further improvements and better data are needed to capture the effects of food price and other economic shocks.** Therefore, the undernourishment estimates do not fully reflect the effects on hunger of the 2007–08 price spikes or the economic slowdown experienced by some countries since 2009, let alone the recent price increases. Other indicators are also needed to provide a more holistic assessment of undernourishment and food security.

About 870 million people are estimated to have been undernourished (in terms of dietary energy supply) in the period 2010–12. This figure represents 12.5 percent of the global population, or one in eight people. The vast majority of these, 852 million, live in developing countries, where the prevalence of undernourishment is now estimated at 14.9 percent of the population (Table 1).

The updated figures emerging as a result of improvements in data and methodology indicate that the number of undernourished people in the world is estimated to have declined more steeply than previously estimated until 2007, although the rate of decline has slowed thereafter (Figure 1). As a result, the developing world as a whole is found to be much closer to achieving the MDG target of reducing by half the percentage of people suffering from chronic hunger by 2015. The current assessment pegs the undernourishment estimate for developing countries at slightly more than 23.2 percent of the population in 1990–92 (substantially higher than previously estimated), thus implying an MDG target of 11.6 percent for 2015. If the average annual decline of the past 20 years continues to 2015, the prevalence of undernourishment in developing countries would reach 12.5 percent, still above the MDG target, but much closer to it than previously estimated.

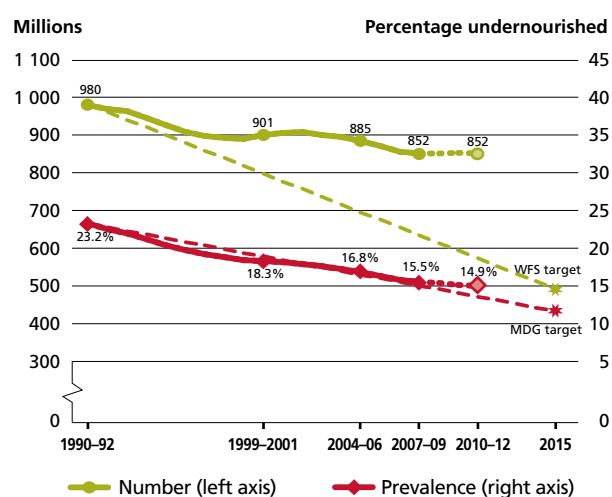
Regionally, the rate of progress in the reduction of undernourishment has been higher in Asia and the Pacific and in Latin America and the Caribbean (Figure 2, page 10). Considerable differences among regions and countries remain, however, and some have moved even further away from their MDG trajectory. A reduction in both the number and proportion of undernourishment in Asia and the Pacific has continued in recent years, meaning that the region is almost on track for achieving its MDG hunger target. The same holds true for Latin America and the Caribbean. South-Eastern Asia has shown the most rapid reduction (from 29.6 to 10.9 percent), followed by Eastern Asia and Latin America (Figure 3, page 10). Undernourishment in sub-Saharan Africa has improved, but less rapidly, while Western Asia has seen an increase in the prevalence of undernourishment over this period.

Different rates of progress have led to significant changes in the distribution of the undernourished in the world between 1990–92 and 2010–12 (Figure 4, page 11). The share of the world's undernourished people has declined most rapidly in South-Eastern Asia and Eastern Asia (from 13.4 to 7.5 percent and from 26.1 to 19.2 percent, respectively), while declining from 6.5 to 5.6 percent in Latin America. Meanwhile, the share has increased from 32.7 to 35.0 percent in Southern Asia, from 17.0 to 27.0 percent in sub-Saharan Africa and from 1.3 to 2.9 percent in Western Asia and Northern Africa.

Trends in undernourishment presented in this report are broadly consistent with those of other food security and development indicators (Figure 5, page 11). Particularly interesting in this context is the evolution of the new undernourishment estimates in comparison with poverty and child mortality, which suggests that undernourishment has evolved in line with global and regional poverty estimates: for developing countries as a whole, the prevalence of undernourishment has fallen from 23.2 to 14.9 percent over the period 1990–2010, while the incidence of poverty has declined from 47.5 to 22.4 percent, and that of child mortality from 9.5 to 6.1 percent.

FIGURE 1

Undernourishment in the developing world



Note: Data for 2010-12 in all graphics refer to provisional estimates.
Source: FAO.

TABLE 1

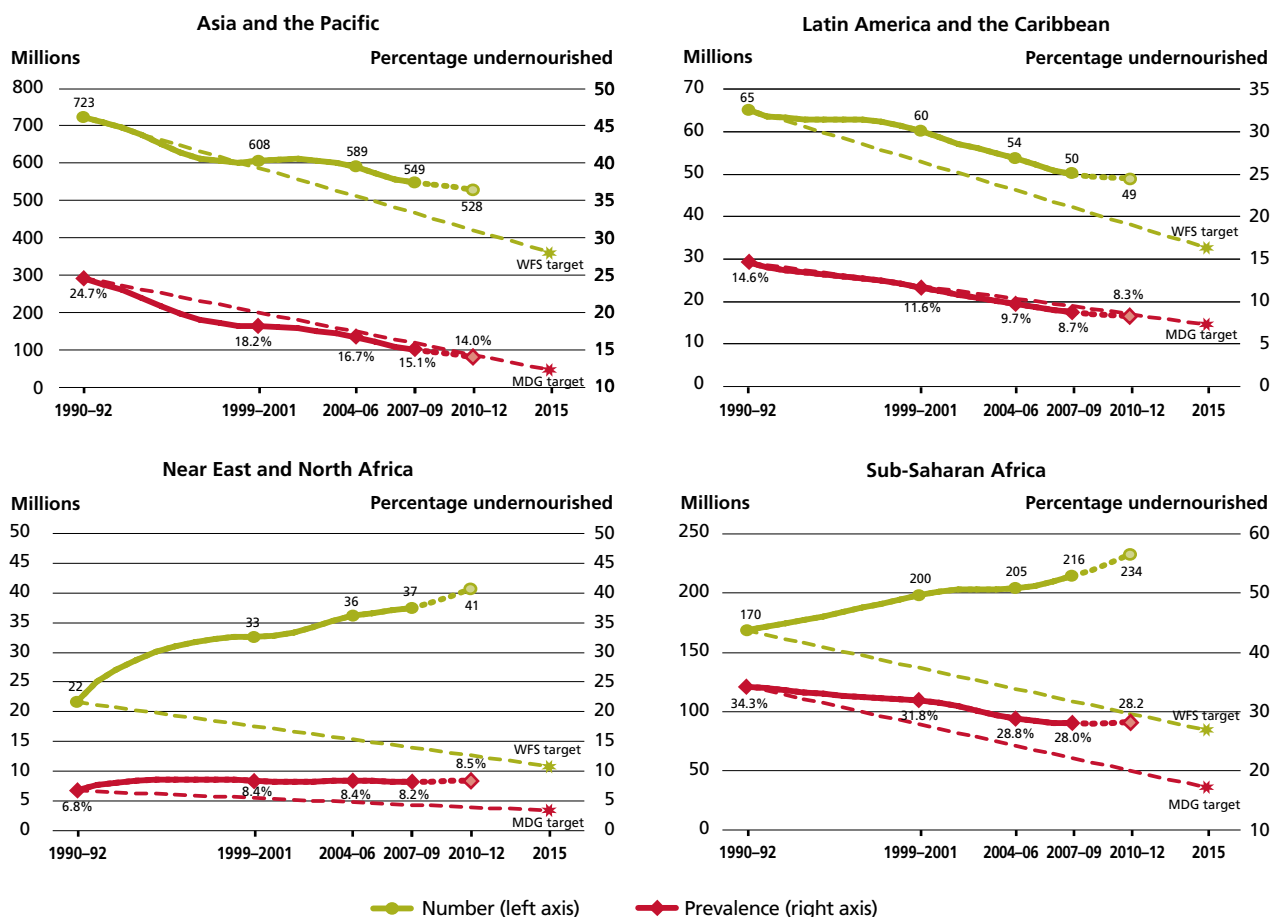
Undernourishment in the developing regions, 1990–92 to 2010–12

	Number (millions) and prevalence (%) of undernourishment				
	1990–92	1999–2001	2004–06	2007–09	2010–12*
WORLD	1 000	919	898	867	868
	18.6%	15.0%	13.8%	12.9%	12.5%
DEVELOPED REGIONS	20	18	13	15	16
	1.9%	1.6%	1.2%	1.3%	1.4%
DEVELOPING REGIONS	980	901	885	852	852
	23.2%	18.3%	16.8%	15.5%	14.9%
Africa	175	205	210	220	239
	27.3%	25.3%	23.1%	22.6%	22.9%
Northern Africa	5	5	5	4	4
	3.8%	3.3%	3.1%	2.7%	2.7%
Sub-Saharan Africa	170	200	205	216	234
	32.8%	30.0%	27.2%	26.5%	26.8%
Asia	739	634	620	581	563
	23.7%	17.7%	16.3%	14.8%	13.9%
Western Asia	8	13	16	18	21
	6.6%	8.0%	8.8%	9.4%	10.1%
Southern Asia	327	309	323	311	304
	26.8%	21.2%	20.4%	18.8%	17.6%
Caucasus and Central Asia	9	11	7	7	6
	12.8%	15.8%	9.9%	9.2%	7.4%
Eastern Asia	261	197	186	169	167
	20.8%	14.4%	13.2%	11.8%	11.5%
South-Eastern Asia	134	104	88	76	65
	29.6%	20.0%	15.8%	13.2%	10.9%
Latin America and the Caribbean	65	60	54	50	49
	14.6%	11.6%	9.7%	8.7%	8.3%
Latin America	57	53	46	43	42
	13.6%	11.0%	9.0%	8.1%	7.7%
Caribbean	9	7	7	7	7
	28.5%	21.4%	20.9%	18.6%	17.8%
Oceania	1	1	1	1	1
	13.6%	15.5%	13.7%	11.9%	12.1%

* Projections
Source: FAO.

FIGURE 2

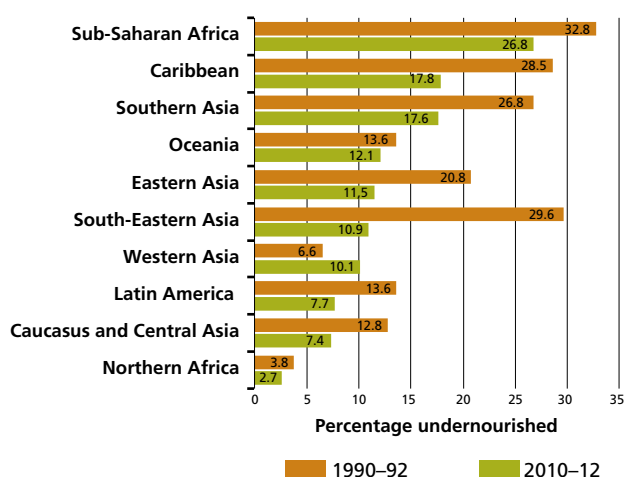
Hunger trends in the developing regions



Source: FAO.

FIGURE 3

Progress towards meeting the MDG target across regions



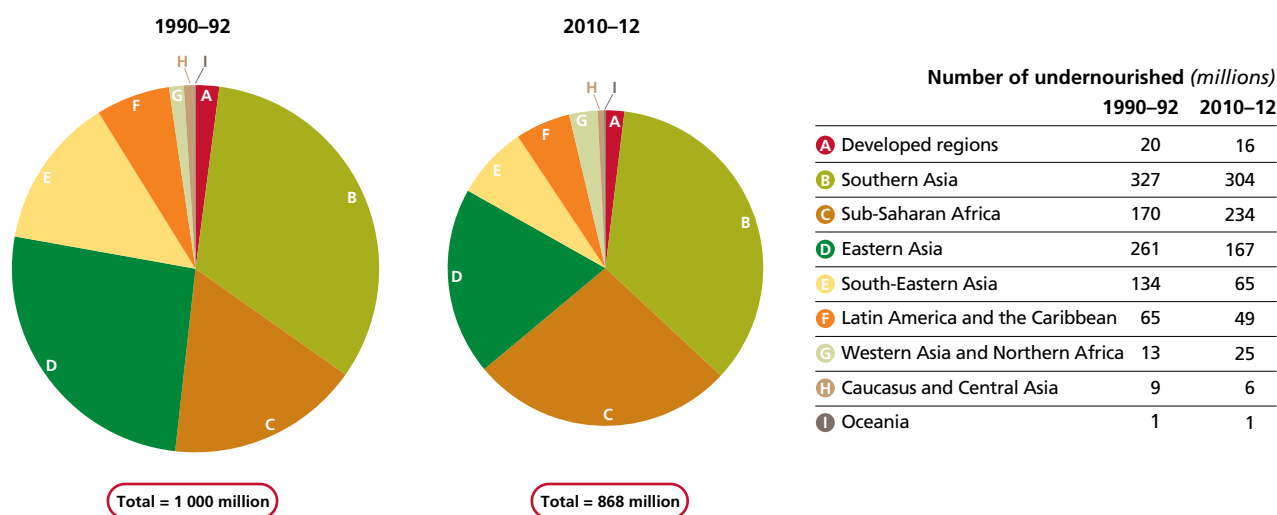
Source: FAO.

Undernourishment in recent years

The new estimates suggest that the increase in hunger during 2007–10 – the period characterized by food price and economic crises – was less severe than previously estimated. There are several reasons for this. First, the methodology estimates *chronic* undernourishment based on habitual consumption of dietary energy and does not fully capture the effects of price spikes, which are typically short-term. As a result, the prevalence of undernourishment (PoU) indicator should not be used to draw definitive conclusions about the effects of price spikes or other short-term shocks. Second, and most importantly, the transmission of economic shocks to many developing countries was less pronounced than initially thought. More recent GDP estimates suggest that the “great recession” of 2008–09 resulted in only a mild slowdown in GDP growth in many developing countries, and increases in domestic staple food prices were very small in China, India and Indonesia (the three largest developing countries). Past estimates of undernourishment assumed that

FIGURE 4

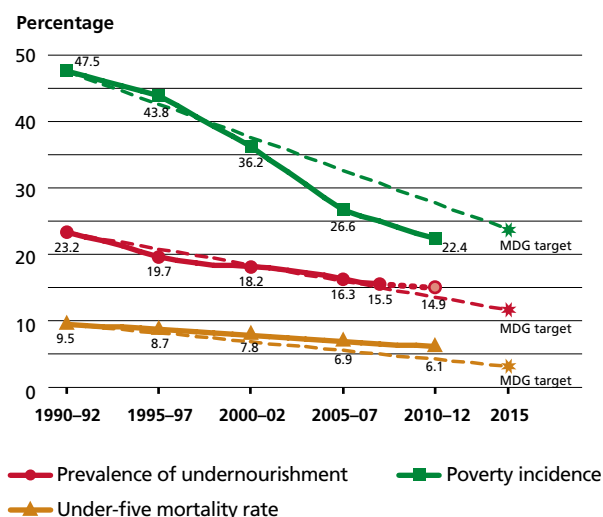
The distribution of hunger in the world is changing
Number of undernourished by region, 1990–92 and 2010–12



Note: The areas of the pie charts are proportional to the total number of undernourished in each period. All figures are rounded.
Source: FAO.

FIGURE 5

Poverty, undernourishment and child mortality in the developing world



Source: FAO.

developing countries and their most vulnerable populations were much more exposed to the economic downturn.

Although the estimates of the prevalence of undernourishment are lower than previous calculations, the period 2007–10 is characterized by a significant slowdown in progress towards lower hunger rates, bringing hunger

reduction essentially to a halt for the developing countries as a whole. Again, the overall picture masks very different trends across regions and countries. In Western Asia, the prevalence of undernourishment was increasing before 2007 and continued its upward trend. In sub-Saharan Africa, the modest progress achieved during 2002–05 was reversed, with hunger rates rising by 2 percent per year since 2007. Progress slowed in Latin America and the Caribbean, from an average annual rate of reduction of 1.9 percent per year in 2002–05 to 0.9 percent in 2006–09. Eastern Asia and South-Eastern Asia, by contrast, managed to accelerate their hunger reduction rates. South-Eastern Asia was able to speed up hunger reduction from 3.1 percent per year before 2007 to 4.6 percent afterwards, while Eastern Asia improved the pace from 0.1 percent to over 4 percent.

Behind these regional divergences stand markedly different capacities to deal with economic shocks (such as price increases and economic recessions), including vastly different levels of vulnerability in the face of global recession and differences in the ability to take advantage of higher prices through increased supply response, depending on market infrastructure, technology levels and natural resource endowments. (Some indicative comparisons were presented in the 2011 edition of this report.) Some countries in Asia managed to mitigate international price pressure through border measures and counter-cyclical measures to avert the worst impacts of the recession. In those countries, domestic rice prices rose only slightly. Many African countries, by contrast, were fully exposed to both price hikes and the

BOX 1

Improvements in data and methodology

This year's edition of *The State of Food Insecurity in the World* presents new estimates of the number and proportion of hungry people in the world going back to 1990, reflecting several key improvements in data and in FAO's methodology used to derive its prevalence of undernourishment indicator (PoU). The new estimates incorporate

- the latest revisions of world population data;
- new data from demographic, health and household surveys that suggest revised minimum dietary energy requirements, by country;
- new estimates of dietary energy supply, by country;
- country-specific estimates of food losses at the retail distribution level; and
- technical improvements to the methodology.

(For more detail on these changes, see pages 13–14 and the technical annex.)

Notwithstanding these improvements, it is important to note several caveats. First, the PoU indicator is defined solely in terms of dietary energy availability and its distribution in the population and does not consider other aspects of nutrition. Second, it uses the energy

requirements for minimum activity levels as a benchmark for dietary energy adequacy, whereas many poor and hungry people are likely to have livelihoods involving arduous manual labour. And third, the current methodology does not capture the impact of short-term price and other economic shocks, unless these are reflected in changes in long-term food consumption patterns. These limitations are consistent with definitions used previously, but they underline the need to consider the PoU indicator as a conservative estimate of undernourishment. Further improvements and a broader set of indicators are necessary to reach a more holistic understanding of undernourishment and food insecurity. For example, alternative indicators could include those using a higher minimum energy requirement threshold corresponding to higher activity levels. These would imply very different levels and trends in undernourishment, as discussed further in the technical annex.

global recession, with limited access to the means and measures necessary to mitigate hardships for their populations. All this suggests that additional regionally focused efforts are required. These efforts should be led by national governments and fully supported by the international community.

The lesson to be learned from these diverse experiences is that, even in cases where a sharp reduction in the total amount of dietary energy consumed by the population as a result of higher food prices cannot be detected, higher food prices may nevertheless have had other negative impacts. These may include a deterioration in dietary quality, as well as reduced access to other basic needs such as health and education. In response to income losses and/or higher food prices, for example, poor consumers in many countries may have had to compromise on the quality and diversity of the food they consumed by reverting to cheaper and less nutritious foods. Such impacts are difficult to quantify with the information currently available in most countries, and certainly cannot be captured by an indicator based only on the adequacy of dietary energy.

Also, significant short-term hardships that many of the poor may have endured when food prices spiked in the short run, or when the economic recession left them without jobs and livelihoods for months, will not be fully captured by an

indicator of chronic undernourishment based on annual average consumption. The poorest of the poor were unlikely to have had either food stocks or financial savings to draw upon and, where public safety nets were unavailable or ill-functioning, they may have been exposed to severe short-term food deprivation that would only be revealed if timely and frequent assessments of acute food insecurity were possible for representative samples of the population.

To summarize, the experience of recent years has demonstrated that the consequences of food price rises and other economic shocks are diverse and complex, involving more than simply total dietary energy intake; they range from a deterioration of dietary quality to possible cuts in other types of consumption that are fundamental for human development and growth in both the short and longer term. Further improvements in the methodology, better data and a wider suite of indicators are needed to fully capture these effects. Although the data and methodology used to derive the PoU indicator do not allow estimation of the impact of short-term price spikes (and dips), it is clear that progress in reducing the prevalence of undernourishment has slowed considerably since 2007, and many regions are unlikely to achieve the MDG hunger target without early resumption of progress, requiring inclusive economic recovery as well as food price stability.



Improvements in data and methodology

■ Improving the prevalence of undernourishment indicator

Over the past two years, FAO has overhauled the methodology used to estimate its PoU indicator. The proposed changes were noted in the 2011 edition of this report and have been presented at various scientific fora, including the National Academy of Sciences in Washington DC in February 2011, a Round Table of the Committee on World Food Security in Rome in September 2011, and the International Scientific Symposium on Food and Nutrition Security Information in Rome in January 2012.

These changes are wide-ranging and include a comprehensive revision of food availability data (including improved estimation of food losses), improved parameters for dietary energy requirements, updated parameters for food access and a new functional form for the distributions used to estimate the prevalence of undernourishment. Some of the changes pertain to regular data updates carried out almost every year (population estimates, revision of food availability data), while others are the outcome of intensive efforts, aimed at substantially improving the methodology currently used. Essentially, all the updates and improvements were contingent upon the availability of new data sources.

For the first time, sufficient data on food supply and consumption are available to assess comprehensively and in a methodologically consistent way trends in dietary energy availability up to the current year. New food balance sheets have been compiled, up to 2009, and food supply projections have been made for the period 2010–12 that reflect the most up-to-date evidence on food production, trade and uses during recent years. In addition, household survey data on food consumption for a number of countries have enabled revisions to be made that estimate more accurately the inequality of food access in many countries, although these surveys cover different years (between 1995 and 2010) for different countries.

While data remain scarce, recent analyses indicate that food losses and waste can be significant. Among the methodological changes introduced thus far, accounting for food losses at the retail level is the single most important factor affecting the new hunger estimates, lifting them by 117 million in 2008 compared with the estimates reported in the 2011 edition of this report. In the past, food losses incurred at the retail level were not captured by the methodology.

The new undernourishment estimates also incorporate the effects of population data revisions. While these revisions had little impact on global estimates, they have been pronounced for certain countries and regions. China's population estimate for the 1990s, for example, has been revised upwards by as much as 25 million people, while Bangladesh's population has been revised downwards by about 11 percent (or 17 million people), all the way back to 1990. Such changes in estimated population size affect estimates of undernourishment in two ways. First, they make the same amount of food available to a different number of people, thus changing the estimates of dietary energy supply for the average consumer, which in turn alters the estimated prevalence of undernourishment. Second, they change the total number of people for which the prevalence level applies, thus leading to a different number of undernourished people.

All other data and methodological revisions result in a reduction in the estimated number of undernourished people in developing countries. These other revisions are also larger in recent years than in 1990, which results in a stronger decline in the prevalence of undernourishment over time compared with the estimates published previously. More detail on these changes and their impacts on the prevalence of undernourishment are presented in the technical annex.

Despite these enhancements, important data gaps and data quality problems nevertheless remain. Key improvements that are still needed include:

- A concerted effort to improve the quality of basic data on food production, utilization, storage and trade. To this end, FAO is leading the implementation of the Global Strategy for the Improvement of Agricultural Statistics to address the declining capacity of many developing countries to produce basic statistics and to address emerging data needs.
- A continuous effort to maintain an up-to-date parameter base for undernourishment estimates, with regular "health checks" of the parameters for food requirements and access. Methodological and data revisions are a normal feature of any statistical domain, and are the result of ongoing efforts to constantly improve the quality of available data.

In addition, further efforts are needed to more explicitly incorporate the impacts of price and income shocks into the analysis.

■ ... and moving towards a suite of food security indicators

Notwithstanding improvements in data and methodology, the PoU indicator alone is clearly not sufficient to provide a comprehensive picture of the food security situation in every country. For this reason, a preliminary set of more than 20 indicators, available for most countries and years, has been identified, including measures of dietary energy supply, food production, food prices, food expenditures, anthropometric indicators and volatility. These indicators are presented in the *State of Food Insecurity in the World* companion website (www.fao.org/publications/sofi/en/) to allow food security analysts and policy makers to make a more comprehensive

assessment of the various dimensions and manifestations of food insecurity, and thus inform policy for more effective interventions and responses.

Plans are underway to expand and improve the indicator base. To this end, FAO is launching an initiative to create an “experience-based” food security indicator (similar to the Latin American and Caribbean Food Insecurity Scale) for a large number of countries, available on an annual basis. The initiative is based on a global poll that will monitor food insecurity based on short interviews. Such an indicator would ensure timely monitoring of the difficulties that individuals and households face in accessing food, thus providing a direct basis for food security interventions.