





## Key Resources

### The State of Food Insecurity in the World (SOFI)

The State of Food Insecurity in the World raises awareness about global hunger issues, discusses underlying causes of hunger and malnutrition and monitors progress towards hunger reduction targets established at the 1996 World Food Summit and the Millennium Summit. The publication is targeted at a wide audience, including policy-makers, international organizations, academic institutions and the general public with a general interest in linkages between food security, and human and economic development.

SOFI 2011 focuses on the costs of food price volatility, as well as the dangers and opportunities presented by high food prices.

2010: Addressing food insecurity in protracted crises

2011: How does international price volatility affect domestic economies and food security?

Publication cycle: Annual

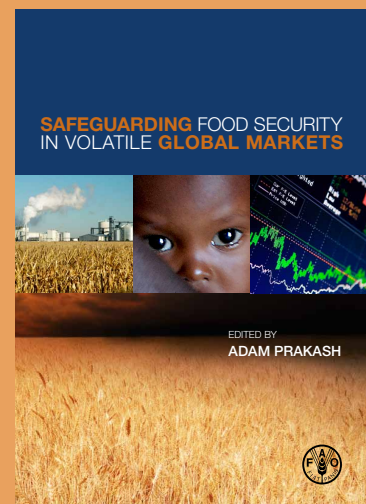
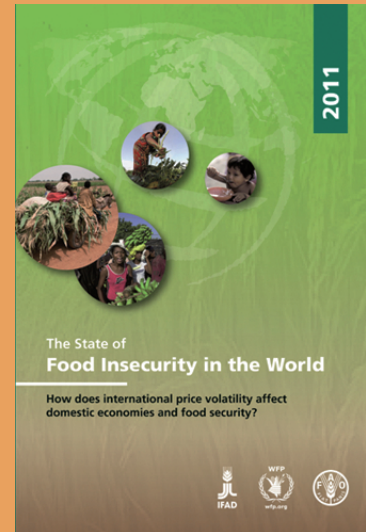
Webpage:

<http://www.fao.org/publications/sofi/en/>

### Safeguarding Food Security in Volatile Global Markets

Safeguarding Food Security in Volatile Global Markets is a four-part volume that gathers together the latest thinking on the issues and controversies surrounding price volatility in global food markets. Drawing from theory, empiricism and heuristic evidence, the book contributes to the debate on the causes, consequences, and challenges of food price volatility. Food security and vulnerability are placed at centre stage, especially in their demands on shaping innovative policy design.

Webpage: <http://www.fao.org/economic/est/volatility/vgm/en/>



## Risks, hazards and shocks

Armed conflict and natural disasters pose a significant risk to a population's food security, especially when combined with poverty, poor governance, scarce resources, unsustainable livelihood systems and the breakdown of local institutions. Under these circumstances, a perceived transitory shock or short-lived crisis can turn into a self-perpetuating vicious cycle, from which countries cannot easily return to a path of longer-term development. Severe events can have an irreversible impact on human capital and societal systems. Armed conflict and natural disasters therefore represent ongoing and fundamental threats to both lives and livelihoods, from which recovery is progressively more difficult over time.

As of 2010, FAO identified 22 countries as being in a state of **protracted crisis**, defined as "those environments in which a significant proportion of the population is acutely vulnerable to death, disease and disruption of livelihoods over a prolonged period of time". The governance of these environments is usually very weak, with the state having a limited capacity to respond to, and mitigate, the threats to the population, or to provide adequate levels of protection. Food insecurity is the most common manifestation of protracted crises. Seventeen of the 22 countries are located in sub-Saharan Africa. All 22 have suffered some kind of human-induced emergency such as conflict or political crisis. Sixteen have also experienced some kind of natural disaster at some point – either as a stand-alone crisis or combined with a human-induced emergency – while 15 have experienced at least one occurrence of combined natural and human-induced emergency. Some protracted crisis situations are limited to a particular geographic area of a country and may not affect the entire population. In the 22 countries, a total of around 166 million people are undernourished, representing nearly 40 percent of their combined population and nearly 20 percent of all undernourished people in the world.

Around 43.7 million people were **forcibly displaced** worldwide in 2010: 15.4 million refugees, 27.5 million internally displaced persons (IDP) as a result of conflict, and nearly 850 000 asylum-seekers. Four-fifths of the world's refugees are being hosted by developing countries, including some of the poorest countries, adding a strain both in refugee numbers and in relation to the size of their economies.

Pakistan bears the largest burden in terms of economic impact, hosting 710 refugees for each US dollar of its per capita GDP (Gross Domestic Product), followed by the Democratic Republic of the Congo and Kenya with 475 and 247 refugees respectively. By comparison, Germany, the industrialized country with the largest refugee population (594 000 people), has 17 refugees for each dollar of per capita GDP.

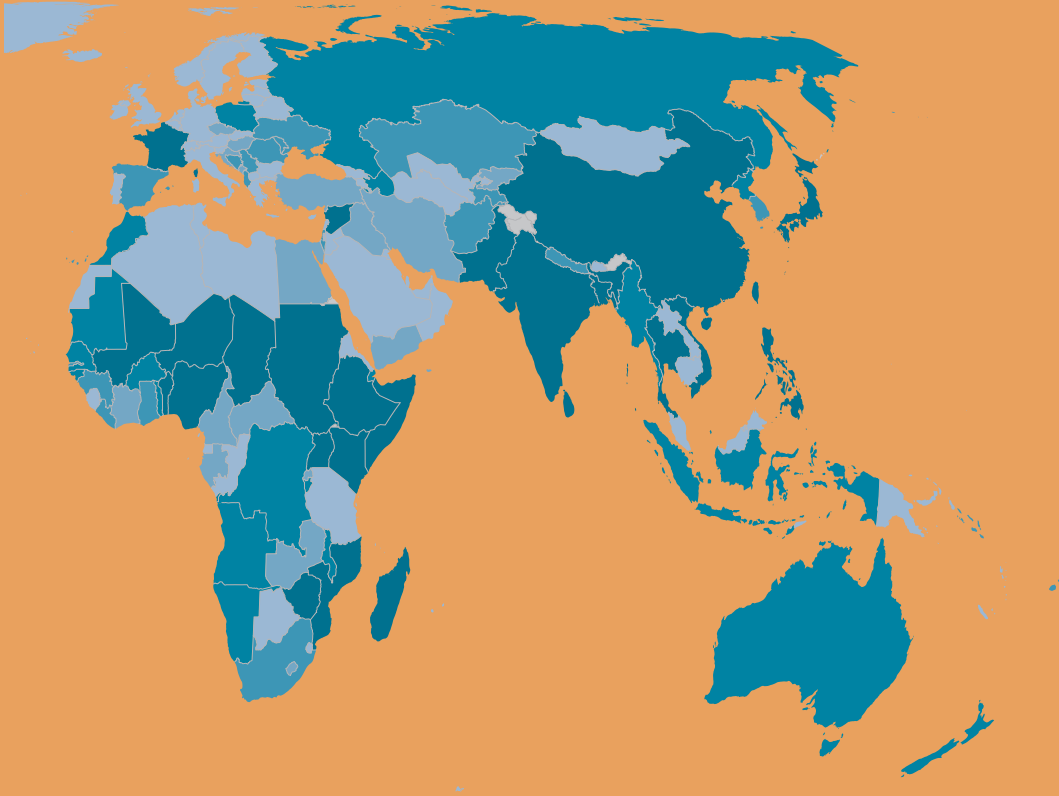
Map 16:



Source: OFDA-CRED

Metalink: [P2.HUN.ODFA.EMDAT.RHS.PPND](https://p2.hun.odfa.emdat.rhs.ppnd.org), p. 166 

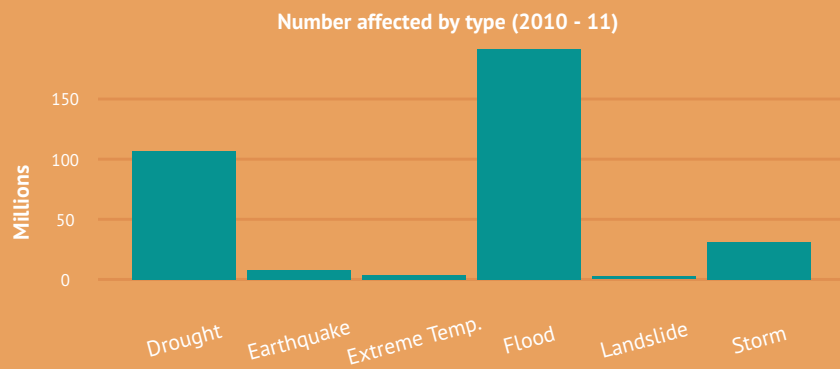
- Around 350 million people were affected by drought and other natural disasters between 2010-2011
- Parts of sub-Saharan Africa and Asia were hardest hit
- Many of those affected already suffer from acute food-insecurity



Number affected by droughts and other natural disasters (thousands, 2010 – 11)



Chart 29: Floods and droughts impact by far the largest number of people



Source: OFDA-CRED

Metalink: [P2.HUN.ODFA.EMDAT.RHS.PPND](https://p2.hun.odfa.emdat.rhs.ppnd.org/), p. 166 

According to the Centre for Research on the Epidemiology of Disasters (CRED), the world endured some 373 **natural disasters** in 2010, which killed approximately 297 000 people – the highest level of fatality in the past two decades – and disrupted the lives of nearly 208 million others. Disaster statistics are often altered by single extreme events that cause excessive human impact. For instance, the 12 January 2010 earthquake in Haiti killed over 222 500 people, and the heat wave that hit the Russian Federation in mid-2010 resulted in around 56 000 fatalities. In the last four decades, the mortality figures of 2010 were only surpassed by the 1970 rates, when a tropical cyclone killed 300 000 people in Bangladesh, and in 1983-84, when famines affected the African continent and caused 450 000 deaths.

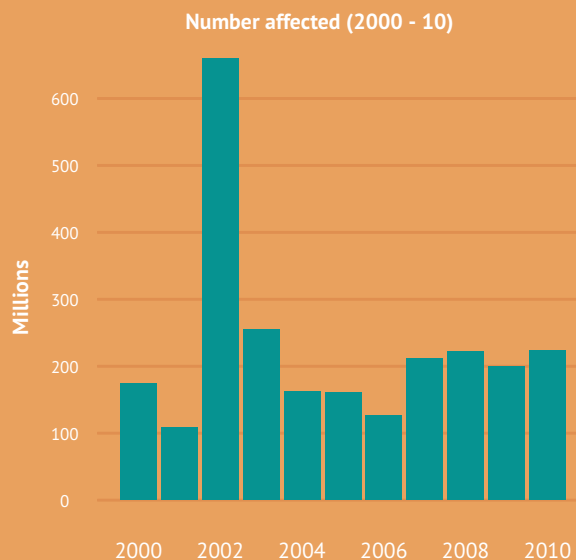
As for major events in 2011, the 2010–2011 drought in the north of China was the worst drought to afflict the country in 60 years. The drought enveloped 7.7 million hectares of winter wheat, and by the end of the episode in June, some 35 million people had been affected. Losses to China’s wheat harvest were a prominent factor in the increase of worldwide wheat prices in early 2011. The March earthquake and tsunami in Japan, which had no long-lasting impact on food security, nevertheless left well over 20 000 people either dead or missing.

By the end of 2011, the food crisis in the Horn of Africa, a result of the driest spell in the region since 1950-51, had affected some 13 million people in Djibouti, Ethiopia, Kenya and Uganda with parts of southern Somalia enduring famine. The situation has been exacerbated by high local cereal prices, excessive livestock mortality, conflict and restricted humanitarian access. In August 2011, the UN refugee agency (UNHCR) reported a ten per day rate of malnutrition-related child mortality at a camp in eastern Ethiopia for Somali refugees who had fled drought, famine and fighting within their own borders.

**Further reading**

- FAO The State of Food Insecurity in the World 2010: Addressing food insecurity in protracted crises ([www.fao.org/publications/sofi-2010/en/](http://www.fao.org/publications/sofi-2010/en/))
- Centre for Research on the Epidemiology of Disasters (<http://www.cred.be/>)
- United Nations High Commissioner for Refugees (<http://www.unhcr.org>)
- Internal Displacement Monitoring Centre ([www.internal-displacement.org/](http://www.internal-displacement.org/))

Chart 30: Natural disasters have affected more than 2.5 billion people over the past ten years



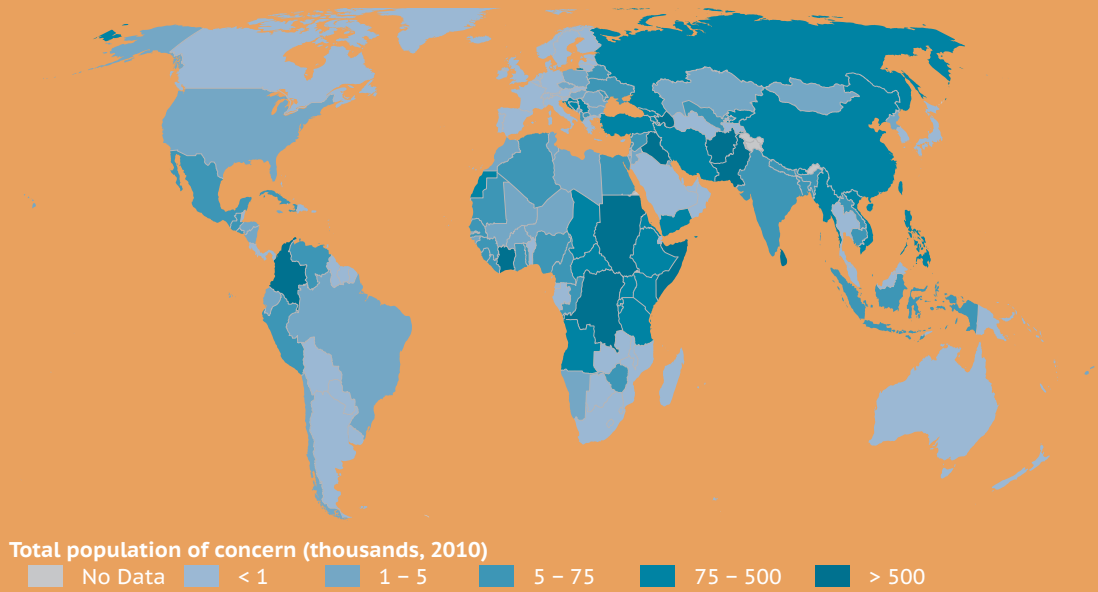
Source: OFDA-CRED  
Metalink: P2.HUN.OFDA.EMDAT.RHS.PPNDT, p. 166

Chart 31: Most countries in protracted crises are in Africa

Countries in protracted crisis	
Afghanistan	Guinea
Angola	Haiti
Burundi	Iraq
Central African Republic	Kenya
Chad	Liberia
Congo	Sierra Leone
Côte d'Ivoire	Somalia
Democratic People's Republic of Korea	Sudan
Democratic Republic of the Congo	Tajikistan
Eritrea	Uganda
Ethiopia	Zimbabwe

Source: FAO, Trade and Markets Division  
Metalink: P2.HUN.FAO.ESA.RHS.NPC, p. 163

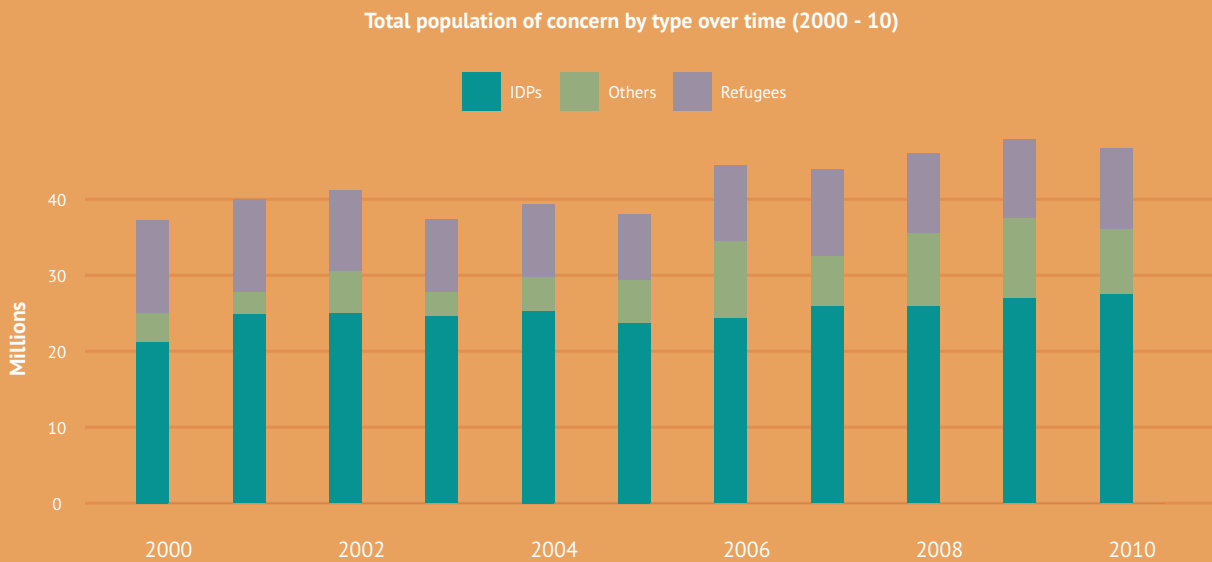
Map 17: Natural disasters and armed conflict result in large numbers of displaced people



Source: UNHCR

Metalink: [P2.HUN.UNHCR.GT.RHS.TPC](#), p. 166 

Chart 32: A slight decline in 2010 does not mask an upward trend in the global number of displaced



Source: UNHCR

Metalink: [P2.HUN.UNHCR.GT.RHS.TPCT](#), p. 167

## Undernourishment

Food security exists when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food that meets their dietary needs and preferences for an active and healthy life. Undernourishment or hunger exists when caloric intake is below the minimum dietary energy requirement (MDER). The MDER is the amount of energy needed to perform light activity and to maintain a minimum acceptable weight for attained height. It is derived by aggregating the estimated sex-age-specific minimum dietary energy requirements using the population's relative proportion in corresponding sex-age and weight groups.

The fight against hunger is one of the central objectives for development. Indeed, the first Millennium Development Goal (MDG1) seeks to halve the proportion of people who suffer from hunger between 1990 and 2015.

Habitual food consumption, in terms of **calories per person per day** (kcal/person/day), is the key metric used for measuring and evaluating the evolution of chronic hunger worldwide. There has been significant progress in raising food intake per person at the global level. In the past two decades, this rate increased from an average of 2610 kcal/person/day to less than 2800 kcal/person/day. The gains in the world average predominantly reflect those of the developing countries, given that developed countries previously had fairly high levels of per capita food consumption.

Changes in food consumption levels closely correlate to changes in rates of undernourishment. Based on the latest available data, the total **number of undernourished** people in the world is estimated to have reached 850 million in 2006-08, and according to preliminary forecasts, this figure could reach around 925 million people in 2010-2011. But because the world's population is still increasing (albeit more slowly than in recent decades), a given number of hungry people represents a declining prevalence of people who are hungry.

Not surprisingly, developing countries account for 98 percent of the world's hungry and demonstrate, on average, a **prevalence of undernourishment** of 15 percent. Two-thirds of the hungry live in just seven countries (Bangladesh, China, the Democratic Republic of the Congo, Ethiopia, India, Indonesia and Pakistan) and over 40 percent live in China and India alone. Developing countries' overall progress has been decisively influenced by the significant gains made by the two most populous among them. But for the most vulnerable, the total number of undernourished in the least developed countries rose to 264 million in 2006-08, around 25 percent higher than the level at the beginning of the decade and considerably above the 1 percent increase observed in the developing country group.

Map 18:



Source: FAO, Statistics Division

Metalink: [P2.HUN.FAO.ESS.UNMNT.PREV](#), p. 164 

- 850 million people suffered from undernourishment during the period 2006-08, representing 13 percent of the world's population
- Despite longer term inroads, the goal of halving hunger by 2015 will likely not be achieved
- Recently, economic turmoil and high food prices combined to stall progress in reducing the number of hungry



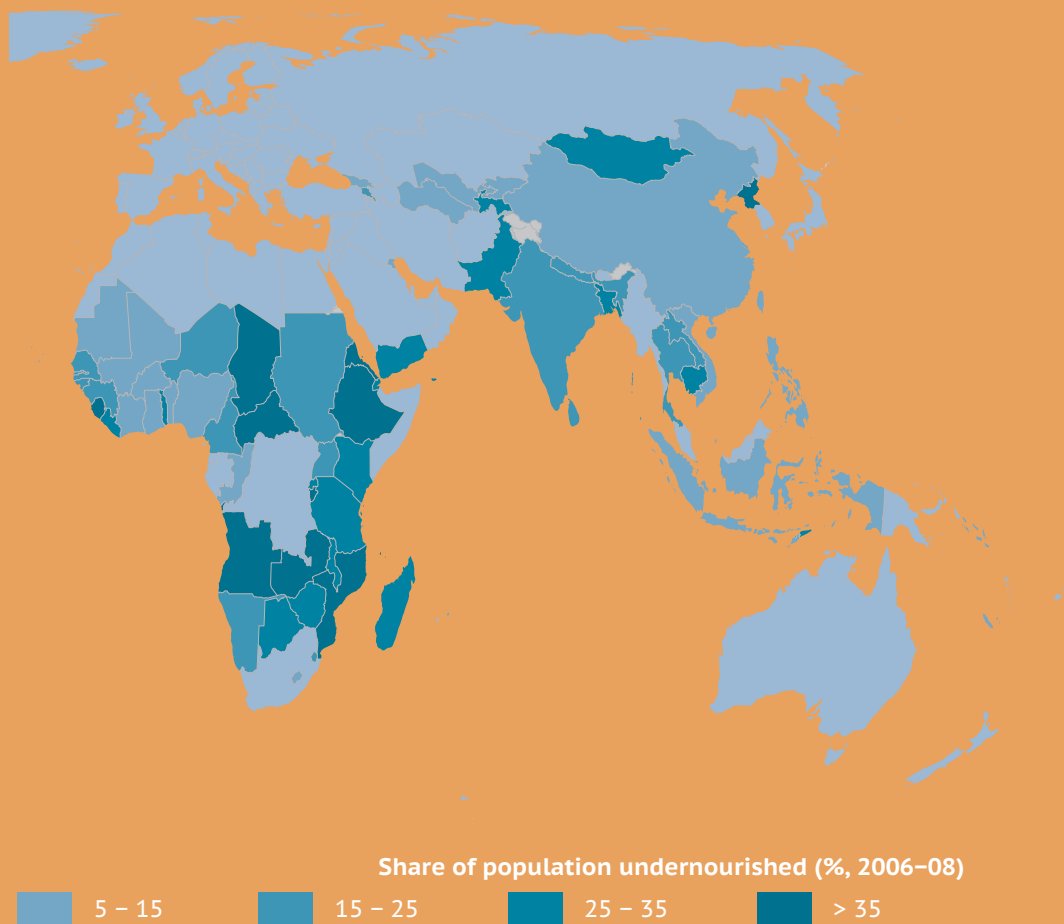
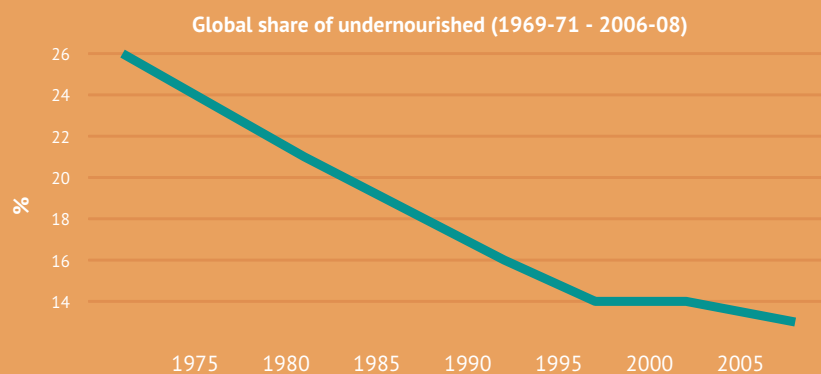


Chart 33: Progress in reducing the global prevalence of undernourishment has slowed in recent years



Source: FAO, Statistics Division  
 Metalink: P2.HUN.FAO.ESS.UNMNT.PNW, p. 163

The proportion of undernourished people remains highest in sub-Saharan Africa, at 30 percent according to the most recent estimates, but there is wide variation at the country level. The Congo, Ghana, Mali and Nigeria have already achieved MDG1, while Ethiopia and others are close to achieving it. In the Democratic Republic of the Congo, however, the proportion of undernourishment had risen to 69 percent (from 26 percent in 1990–92). A significant number of countries in the region failed to participate in this general thrust towards increasing average food consumption levels, and out of the current 26 developing countries where food consumption is 2200 kcal/person/day or under, 14 are situated in sub-Saharan Africa.

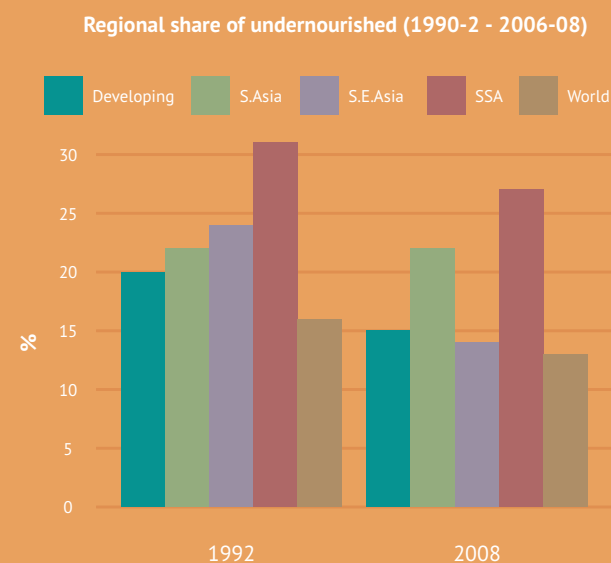
Periods of high food prices during the past five years have affected countries and regions in different ways. While Africa saw a further deterioration of its hunger situation, Asia remained fairly resilient to shocks. Countries in this continent managed to restrict exports, or had sufficient means to aggressively purchase food on international markets, and thus managed to keep their domestic supply and price situation relatively stable. Others had sufficient domestic reserves to buffer against reduced imports; they took shelter from international markets by drawing on these supplies. This left those without safety nets, reserves, exports to restrict or the means to procure food at high prices fully exposed to international price swings.

Recent events and their implications on food security highlight the need to broaden and deepen the set of indicators used to monitor it. FAO has engaged in a series of initiatives aimed at improving the quality and timeliness of information on food security. One important area of activity includes efforts to improve the underlying methodology of the FAO indicator that gauges the prevalence of undernourishment and to add to it related indicators such as **depth of hunger** (i.e. how much a population falls short of minimum food needs in terms of dietary energy). Another area of improvement aims at identifying a suite of indicators that would capture the multidimensionality of food insecurity.

**Further reading**

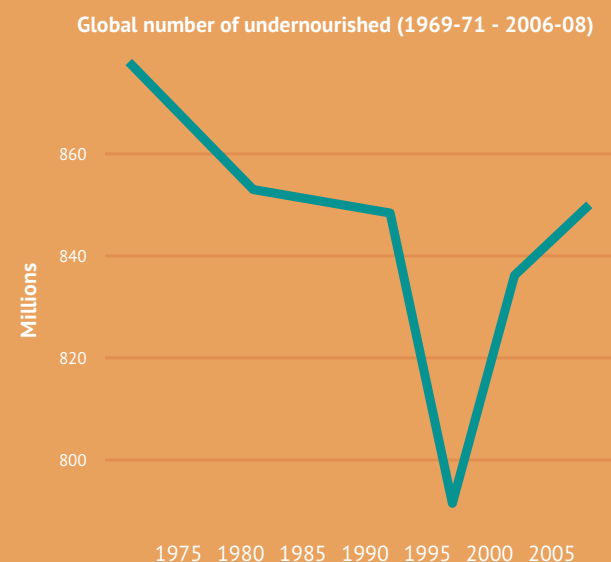
- FAO State of Food Insecurity 2011 (<http://www.fao.org/publications/sofi/en/>)
- FAO Hunger Portal ([www.fao.org/hunger](http://www.fao.org/hunger))

Chart 34: Despite falling prevalence of undernourishment, it nevertheless remains unacceptably high



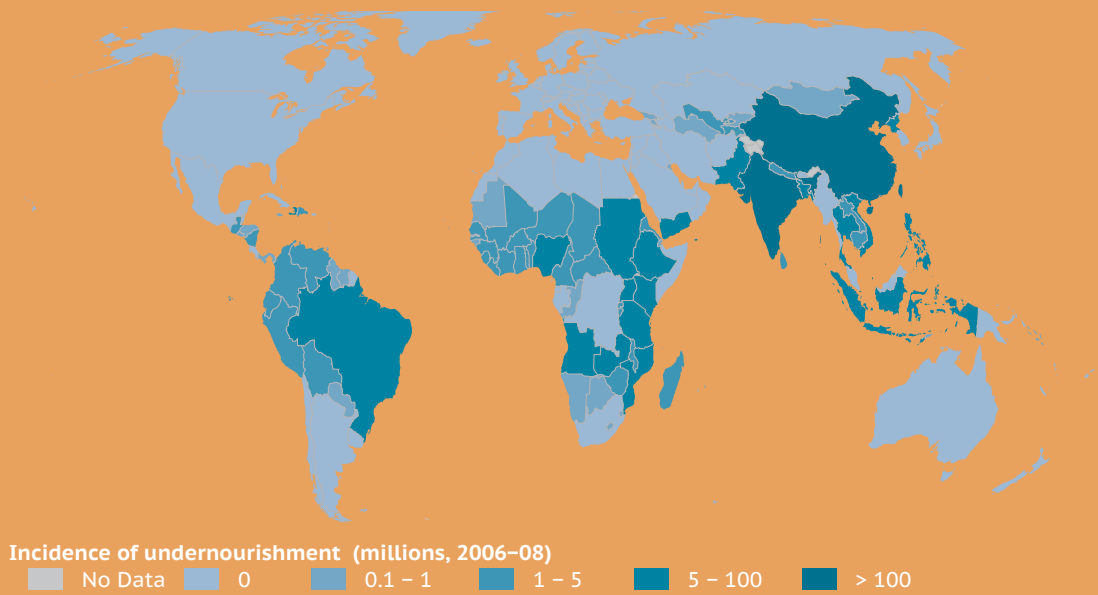
Source: FAO, Statistics Division  
 Metalink: P2.HUN.FAO.ESS.UNMNT.PREVR, p. 164

Chart 35: The global number of undernourished has increased in the past decade, reversing the considerable gains of the 1990s



Source: FAO, Statistics Division  
 Metalink: P2.HUN.FAO.ESS.UNMNT.PNW, p. 163

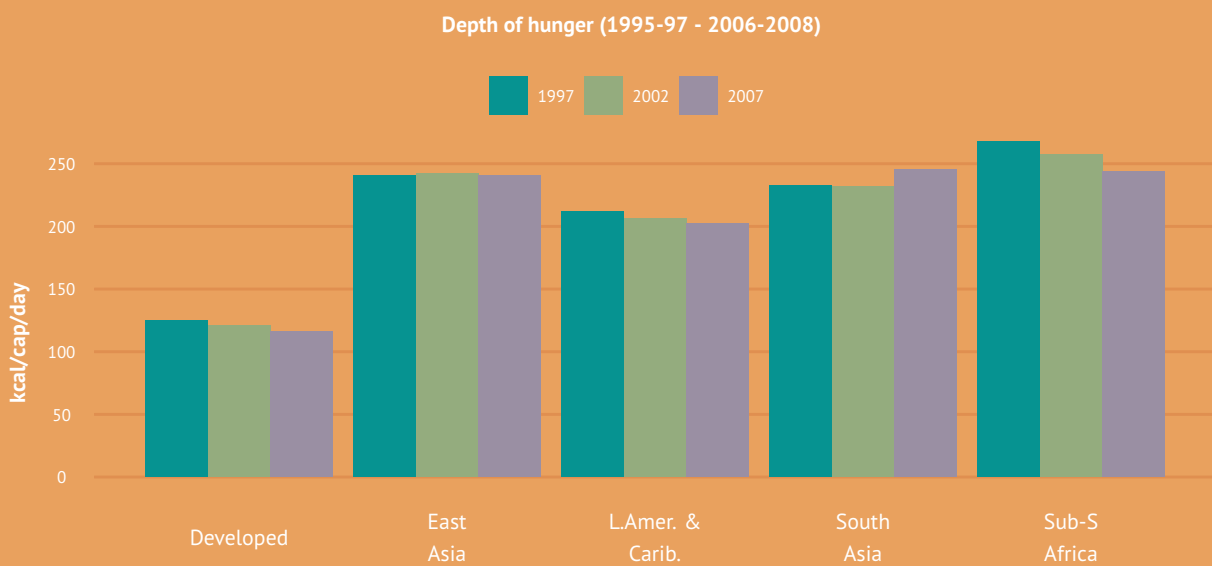
Map 19: Two thirds of the hungry live in just seven countries



Source: FAO, Statistics Division

Metalink: [P2.HUN.FAO.ESS.UNMNT.NUM](#), p. 163

Chart 36: Large food deficits prevail where undernourishment is high



Source: FAO, Statistics Division

Metalink: [P2.HUN.FAO.ESS.UNMNT.DEP](#), p. 163

## Diets

Worldwide, any progress in raising food consumption per person has invariably been accompanied by significant structural change in **dietary patterns**. Food consumption is now more centred on caloric-yielding foodstuffs and less on starchy staples such as roots and tubers, at least in the countries that recorded such growth. The combination of urbanization, rising incomes and opportunities for trade has fuelled trends in dietary convergence and dietary adaptation.

Dietary convergence refers to the increasing similarity in global diets, characterized by a greater reliance on a narrow base of staple grains (wheat and rice), increased consumption of meat, dairy, edible oils, salt and sugar, and lower intake of fibre – much in the form of highly processed foodstuffs. On the other hand, dietary adaptation – or the consumption of more convenience foods – reflects the rapid pace and time pressure of urban lifestyles.

Cereals continue to be by far the most important source of dietary energy, providing 50 percent of all global calories. However, global per capita food use of cereals has been in gradual decline since the early 1990s. This is largely a reflection of changing diets in Asia, where the major countries (particularly those in the East Asia region) are moving away from predominantly rice-based diets.

In contrast, for agro-ecological reasons, wheat constitutes the fastest of all growing cereals in countries that are non-producers or minor producers. Coarse grain consumption is also on a downward path but continues to be important mainly in sub-Saharan Africa, where it accounts for as much as 70 percent of all cereal consumption.

Livestock products contribute around 13 percent of global calories and 28 percent of protein directly through provision of meat, milk, eggs and offal. In spite of recent growth in consumption, especially in Asia and Latin America, many people are still deficient in the nutrients that can be provided by animal source foods. Even quite small amounts are important for improving the nutritional status of low-income households.

Meat, milk and eggs provide proteins with a wide range of amino acids that match human needs as well as bio-available micro-nutrients such as iron, zinc, vitamin A, vitamin B12 and calcium in which many malnourished people are deficient. Energy and protein consumption are closely correlated, and insufficient calorie consumption tends to go in tandem with insufficient protein consumption. But in the absence of cultural grounds, poverty for the most part is major determinant, as the consumption of livestock products is dictated by income, which explains the low observed intake in poorer regions.

Map 20:



Source: FAO, Statistics Division

Metalink: [P2.HUN.FAO.ESS.DIET.DES](https://www.fao.org/ess/indicators/indicators.do?indicators=P2.HUN.FAO.ESS.DIET.DES), p. 163 

- 2790 calories per person per day represents the average available food supply at the world level
- In the poorest countries the average falls to just 2120 but rises to 3430 calories per person per day in developed countries
- There is enough food available to feed the world, but large disparities in the distribution of food obstruct the fight against hunger

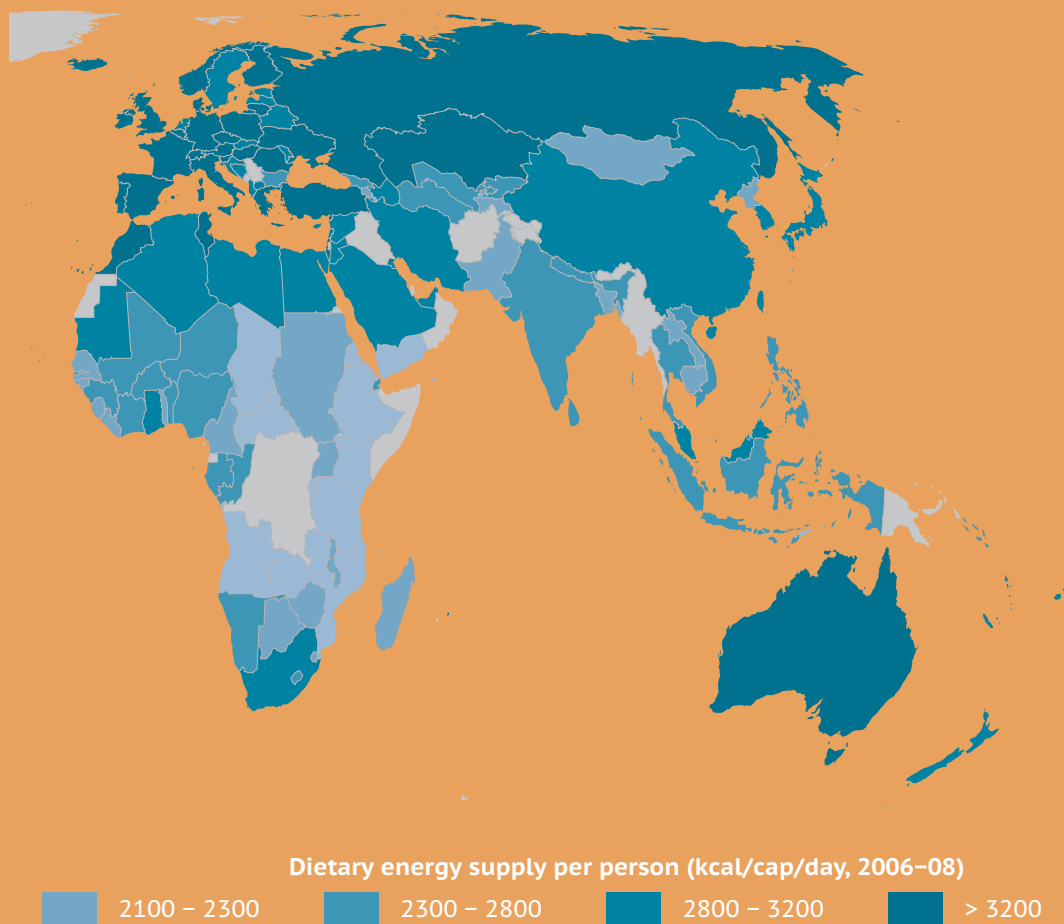
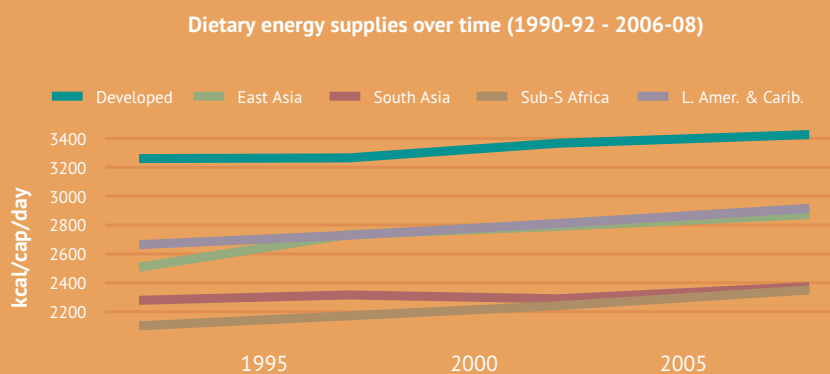


Chart 37: Dietary energy supplies are on the rise, but not sufficient to make inroads in reducing undernourishment



Source: FAO, Statistics Division

Metalink: P2.HUN.FAO.ESS.DIET.DES, p. 163

The rapid growth in consumption of vegetable oils, in combination with their high calorie content, has been instrumental in bringing about the increases in food consumption of those developing countries that characterize progress towards food security. One out of every four calories added to the consumption of the developing countries originated in this group of products. Sugar shares many of the characteristics of vegetable oils as a fast-rising consumption item. The scope for consumption growth is still considerable and momentum in food use is likely to be sustained.

Consumption of pulses has stagnated overall and registered drastic declines in Asia and sub-Saharan Africa. These trends reflect not just changing consumer preferences, but cultivation shifts towards self-sufficiency in cereals. Roots, tubers and plantains are the mainstay of sustenance in many countries with low and middle levels of overall food consumption, predominantly in sub-Saharan Africa and in Latin America and the Caribbean. Nineteen countries in Africa, which represent 60 percent of the continent’s overall population, depend on these products for over 20 percent of food consumption in terms of calories. Data show that in many of the countries with high dietary dependence on roots and tubers, production of these crops is an important determinant of changes in national average food consumption.

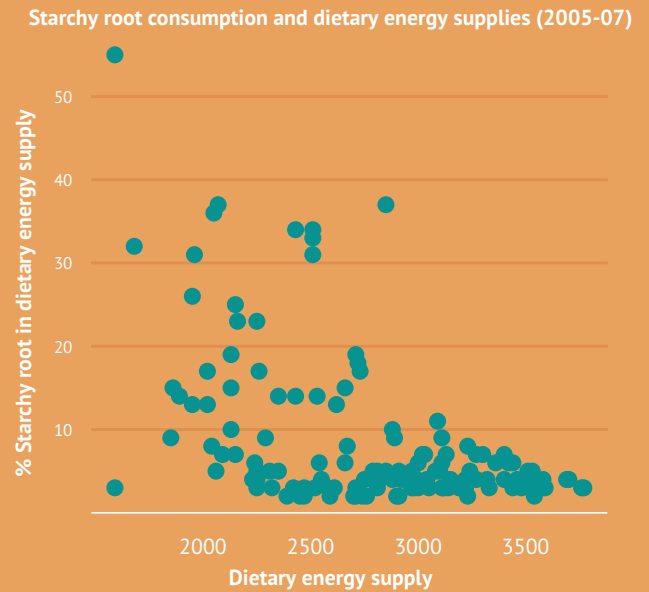
Vulnerability to unstable food prices is high when food intake is concentrated on one staple commodity, especially when that staple is traded in large volumes on international markets. By implication, when **dietary concentration** on one staple is high, that staple accounts for a high share of expenditure.

The countries that tend to concentrate most on one staple are the rice economies in South and Southeast Asia. The dominance of preferences towards rice in that region and the reluctance to shift to other staples restricts the potential for using trade in other staples to moderate variability in rice prices. In some countries, such as Pakistan, Morocco, Yemen, and Chile, there is also a high dependence on wheat, while Mexico and in much of southern Africa rely on maize. Countries in which cassava is a major staple, such as in West and Central Africa, generally have the most diverse food consumption baskets.

**Further reading**

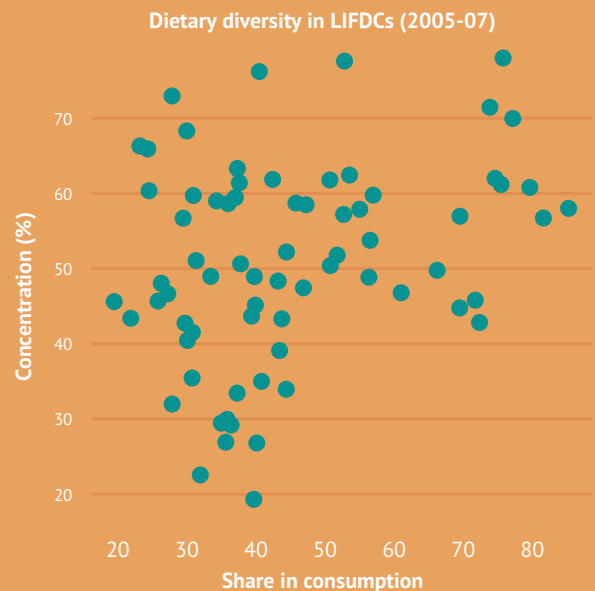
- FAO Statistics Division - food security [www.fao.org/economic/ess/ess-fs/](http://www.fao.org/economic/ess/ess-fs/)
- FAO World Livestock 2011: livestock in food security [www.fao.org/docrep/014/i2373e/i2373e.pdf](http://www.fao.org/docrep/014/i2373e/i2373e.pdf)

Chart 38: High dependence on root crops in food-insecure countries



Source: FAO, Statistics Division  
 Metalink: P2.HUN.FAO.FV.DIET.RTDES, p. 165

Chart 39: Diets of many vulnerable countries characterized by high consumption of one or two staples



Source: FAO, Statistics Division  
 Metalink: P2.HUN.FAO.FV.DIET.DIV, p. 165

