

# Spotlight 6: Food and nutrition security

## Improved nutrition is an essential element of inclusive rural transformation

Food and nutrition security – reliable access to food in sufficient quantity and quality to enjoy a healthy and active life, coupled with a sanitary environment, adequate health services, and knowledgeable care – is a central determinant of broad social and economic welfare (FAO 2013; Timmer et al. 1983).<sup>100</sup> Typically, where food and nutrition *insecurity* is deep and widespread, so, too, are poverty and stagnation (FAO et al. 2015; IFPRI 2015). Inclusive structural and rural transformation – a transformation that delivers widely held benefits – must feature expanded food and nutrition security. But while the link between them is obvious, it is not inevitable. In most contexts, supportive policies and investments are required.

The stakes could not be higher. While the prevalence of undernourished people in the world has declined steadily over the last few decades, 795 million people – just over one in nine – remain undernourished (FAO et al. 2015). An estimated 26 per cent of the world's children is stunted, 2 billion people suffer from one or more micronutrient deficiencies, while 1.4 billion people are overweight, of whom 500 million are obese (FAO 2013). Multiple types of malnutrition – undernutrition, deficiencies in micronutrients (vitamins and minerals) and being overweight and obese – can coexist within the same country, household or individual. This imposes high economic and social costs at all income levels. Globally, economic costs alone are estimated at US\$3.5 trillion a year, or US\$500 per person (FAO et al. 2015). Progress against food and nutrition insecurity is required and structural and rural transformation must play a role.

### Analytical framework

How do these transformations promote food and nutrition security, and vice-versa? And what are the major policies and investments that bring about progress towards these goals?

Figure S6.1 illustrates the two-way relationship. In one direction, the core pillars of food and nutrition security (availability, access and utilization)<sup>101</sup> are affected by the commercialization and specialization that drive and reflect structural and rural transformation. In the other direction, food and nutrition security leads to better health and education outcomes that affirm and strengthen core drivers of structural and rural transformation. Through nutrition-enhancing food systems, the economic dynamism brought about by structural and rural transformation can be translated into general welfare improvements, further affirming and sustaining that dynamism. In both directions, factors that affect the nutritional status of children and pregnant women have long-term consequences, as do opportunities and constraints facing smallholder farmers and traders whose decisions are fundamental to the pace and quality of rural transformation in many contexts.

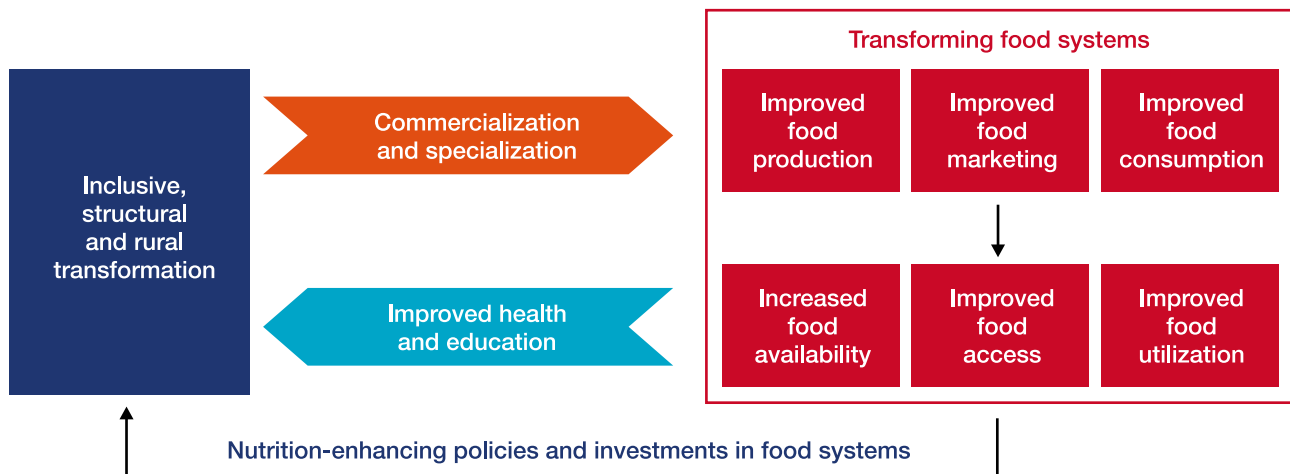
### Food and nutrition security under structural and rural transformation

Significant structural and rural transformations are generally accompanied by wide and deep reductions in food and nutrition insecurity (Timmer 2007). Livelihood options expand and incomes rise, allowing households to increase the quantity and quality of food they consume. Simultaneously, increased food security improves health and education outcomes, leading to structural and rural transformation. All three dimensions of food and nutrition security – availability, access and utilization – make significant gains:

1. *Availability* increases because of improvements in timeliness, intensity and efficiency of food production operations, which increase unit food output and overall food availability.

2. *Access* rises as the commercialization of food production and consumption increase labour and land productivity on farms as well as off-farm employment opportunities, leading to higher incomes and food consumption.

FIGURE S6.1 Analytical framework



Source: Authors.

3. *Utilization* improves as rising household incomes and associated demand-driven deepening of food systems broadens the availability and affordability of nutrition-rich foods. Access to health services, water and sanitation also improve.

But these effects are not automatic. Figure S6.2 plots measures of the three forms of malnutrition – undernutrition (stunting), micronutrient deficiencies (anaemia) and being overweight (obesity) – against levels of structural transformation as captured by the share of agriculture in GDP in a set of 16 countries from around the world. The countries fall into three income groups – low, low-middle and high-middle – and their agricultural GDP shares range from 2.5 per cent (South Africa) to 44 per cent (Niger).

No causal relationships are assumed or implied, but the data indicate that, generally, as the transformation progresses, undernutrition and micronutrient deficiencies fall, but with all three forms of malnutrition remaining significant in most countries. Obesity rates surge at high levels of transformation, but are also important at lower levels.

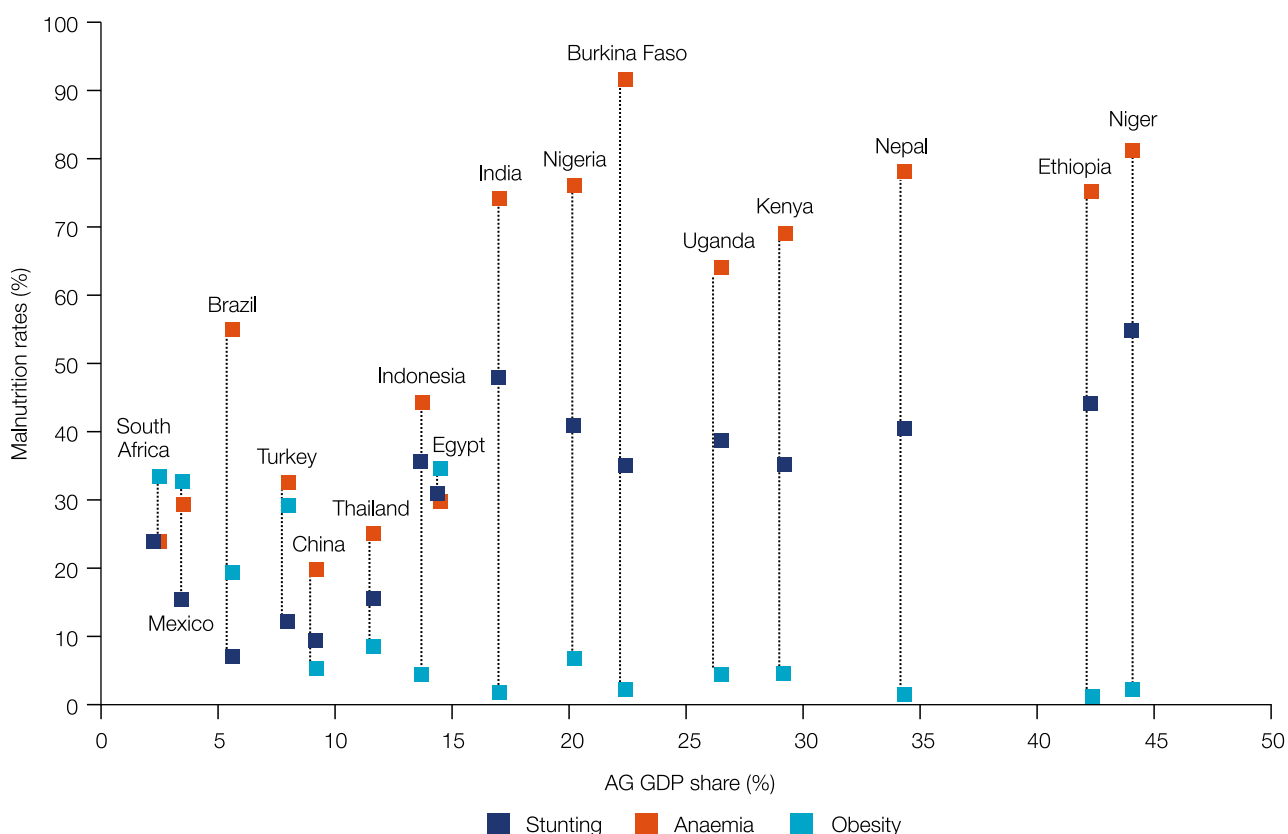
While more data is needed, (Reardon and Timmer 2012), the coexistence of undernutrition, obesity and micronutrient deficiencies in the different contexts, illustrated in figure S6.2, has been linked to several factors.

These include economic and gender inequality, urbanization, rapidly changing consumer preferences, sedentary lifestyles, use of cheap obesogenic foods because of low purchasing power, inadequate sanitation, climatic and socio-economic shocks, and poor targeting and lack of focus on nutrition in food-based safety nets (IFPRI 2015). The countries examined in figure S6.2 exhibit several of these influences.

Despite significant recent progress in cutting undernutrition, stunting and anaemia remain high in the five low-income countries (Niger, Ethiopia, Nepal, Uganda and Burkina Faso). Factors driving these outcomes include inequality, lack of diversification in livelihoods and diets, low purchasing power, lack of knowledge, inadequate sanitation and hygiene, and humanitarian crises (Headey 2015; FANTA 2010).

Stunting and anaemia rates in the five low-middle-income countries (Kenya, Nigeria, India, Egypt and Indonesia) are not significantly below those in the low-income countries, with Nigeria and India doing especially poorly. For Nigeria – where most indicators of malnutrition have worsened recently (WHO 2015) – agricultural stagnation, poor health and sanitation, and lack of nutrition knowledge are critical drivers. For India, culturally rooted inequality and poor access to health and sanitation services are important. Indonesia's high rates of undernutrition and micronutrient

FIGURE S6.2 Malnutrition rates and agricultural share of GDP, 16 countries worldwide



Sources: Shares of agriculture in GDP are from World Bank Indicators 2015; stunting, anaemia, and obesity rates are from FAO 2013.

deficiencies are related to high consumption of processed food, lack of exercise and limited access to healthy foods, especially in urban areas (Shrimpton and Rokx 2013). Egypt's poor scores on all three indicators have been linked to poor diet choices, sedentary lifestyles in urban areas, culture-related body preferences for women and institution and removal of price subsidies for wheat and bread (Galal 2002).

In the six high-middle-income countries (Thailand, China, Turkey, Brazil, Mexico and South Africa), stunting rates and micronutrient deficiencies are half those in the low-middle-income and low-income countries. The exception is the high rate of anaemia in Brazil, reflecting significant "hidden hunger" linked to inequality, undiversified diets and unequal access to crucial services. Turkey, Mexico and South Africa have serious obesity problems. Stunting rates in South Africa are exceptionally high for a country at this level of income and structural transformation (see chapter 3). Thailand and China show strong

performance on all three measures, albeit with evidence of rapidly rising obesity (Ramachandran and Snehalatha 2010).

Figure S6.2 confirms that different forms of food and nutrition insecurity indicate incomplete, uneven and non-inclusive structural and rural transformation (Tschirley et al. 2015). Significant food and nutrition insecurity may also point to a transformation that is at risk of stalling, as the huge costs of malnutrition mount. For this report, however, the more important recognition is that food and nutrition security can be a platform for inclusive and sustained structural and rural transformation.

#### **Nutrition-enhancing food systems for inclusive structural and rural transformation**

Improved nutrition – especially reductions in maternal and child undernutrition – leads to lower mortality and, with a lag, to lower birth rates (Haddad et al. 2015). This yields a "demographic dividend" of healthy and

productive workers available for employment within two decades. Better nutrition leads to better education attainment, which drives technology adoption. Better education also drives up wage rates and incomes (Hoddinott et al. 2008) while higher incomes improve nutrition. A 10 per cent increase in GDP is associated with a 6 per cent decrease in stunting and a 4 per cent decrease in underweight women (Gelli et al. 2015). All of these outcomes affirm structural and rural transformation.

But the demographic dividend and related benefits are not assured. Persistent malnutrition causes outcomes inimical to inclusive structural and rural transformation (Haddad et al. 2015). Large pockets of poverty (and thus also of malnutrition) persist in most low- and middle-income countries. And, as illustrated above, income growth can have unintended negative consequences. A 10 per cent increase in GDP is associated with a 7 per cent increase in being overweight and obesity in women (Gelli et al. 2015). At issue, therefore, is the strength of the nutritional underbellies (or backbones) of the *food systems* that determine the nutritional content of diets.

Food systems encompass the entire range of activities involved in the production, processing, marketing, consumption and disposal of goods that originate from agriculture, forestry or fisheries. Well-functioning food systems perform these functions efficiently and predictably, providing adequate returns to producers, processors and distributors, and delivering safe and nutritious food to well-informed consumers. Food systems also involve the people and institutions that initiate or inhibit change in the system as well as the socio-political, economic and technological environment in which they take place (FAO 2013).

Key elements of food systems can be shaped to enhance household livelihoods more broadly and bring about nutritional improvement (IFPRI 2015). Diversification of food systems is linked to commercialization and specialization, as subsistence-oriented production at the farm level is replaced by greater specialization along intensified crop lines, which itself reflects greater market dependence for the disposal of

output. Food-system attributes that support healthy diets thus span production, marketing and consumption. Actions are both “nutrition-specific” – producing good nutrition outcomes – and “nutrition-sensitive” – improving the general economic, social and political environment (FAO 2013).

### Implications for policy and investment

The policies and investments that strengthen all aspects of food systems include:

- *Production.* Policies should promote availability, affordability, diversity and quality of food; nutrition-oriented research and development; nutrition-rich foods in school and home gardens; and sustainable production methods.
- *Marketing.* Given the increasingly vital role of food companies, regulations and tax policies should promote efficiency, safety and diversity of supply chains, and also innovation in production and transport, especially to cut waste and spoilage.
- *Consumption.* Well-targeted food assistance programmes, appropriate price incentives, nutrition regulation, education for women and information campaigns about better diets are all crucial. These must be underpinned by improved access to sanitation. Publicly held food reserves remain important in many national food and nutrition security strategies.

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