Investing in food security as a driver of better jobs[1]

4

Main findings

- Given that food prices have tended to increase over the past few years, the purpose of this chapter is to examine the employment and distributional impacts of this trend in developing countries. On the positive side, higher food prices could benefit many developing and emerging economies where a large proportion of the labour force is engaged in agriculture (the "agricultural-income effect"). On the negative side, higher food prices could aggravate the income inequalities identified in Chapter 1 and poverty within vulnerable groups, such as urban net buyers and rural smallholders (the "poverty effect").

- The chapter finds that the (positive) agricultural-income effect has been small. First, the gains from higher food prices have accrued disproportionately to intermediaries and operators in financial markets, rather than to small producers. Indeed, food commodities have become a major financial product. The amount invested in commodity funds has risen from US$13 billion in 2003 to US$352 billion in May 2011. The rates of return from commodity funds of seven major investors in 2011 range between 6 and 38 per cent. The total commodity return for one of the big investors rose by 84 per cent between 2003 and 2008. In general, during the same period, the prices paid to food producers increased less. For example, producer prices for staple foods increased by between 10 and 20 per cent in Brazil, Cameroon and Mali; and by between 10 and 30 per cent in Burkina Faso, Ethiopia and Kenya. Second, because food prices are so volatile, any increase in agricultural income is perceived by producers – especially small ones – as temporary. Food prices were twice as volatile during the period 2006 to 2010 than during the preceding five years. As a result, producers lack the stable horizon needed to invest the agricultural-income gains, perpetuating food shortages.

1. Excellent research assistance was provided by Eric Ballo and Adam Kahn.

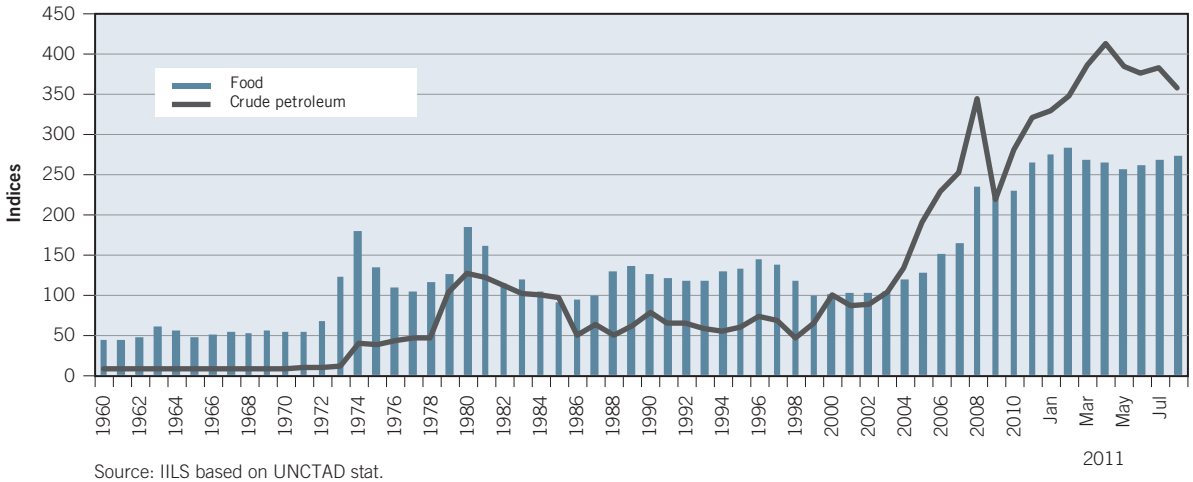
- There is significant evidence of a (negative) poverty effect associated with higher food prices. In nearly half the countries where data exist, the share of food expenditure in household income among the poorest population quintile is over 60 per cent – ranging from 38 per cent in Latin America to 70 per cent in Asia and 78 per cent in Africa. The chapter finds that a further 30 per cent increase in food prices may increase poverty rates by three percentage points in countries with chronic food shortages, such as Bangladesh, Indonesia, Malawi, Nepal and Viet Nam. Also, it is estimated that a 30 per cent rise in food prices will require low-paid workers to find one additional week's employment every month in order to maintain their living standards.

This analysis confirms calls from other agencies, such as the Food and Agricultural Organization (FAO), to boost public investment in agriculture. But it also stresses the need for reduced volatility of food prices so as to reinforce the agricultural-income effect and thus boost market incentives to invest in agriculture. It is therefore crucial that financial speculation on food commodities is curbed, notably by regulating derivatives on commodity contracts and possibly by imposing a tax on such transactions (see Chapter 5).

Introduction

Over the past decade, food prices have increased steeply and may remain high and volatile,[2] thereby threatening the achievement of poverty reduction goals and affecting the development prospects of many countries. According to the FAO Food Price Index, global food prices rose by 30 per cent year-on-year – between August 2010 and 2011 – led by important staple foods. As the vast majority of developing countries are net food importers, higher prices will have adverse impacts on income and employment, as food import bills are expected to increase to US$456 billion in 2011, which is about 25 per cent higher than in the previous year (FAO, 2011a). This is not a temporary phenomenon. Food prices (and crises)

Figure 4.1 Trends in food and oil prices (2000=100)



Source: IILS based on UNCTAD stat.

2. Based on forecasts by the United Nations (2011) and the United States Department of Agriculture (2011).

have for the most part always been driven by external events, but the main drivers have shifted over the past decade and recently food commodities have become essentially a financial product.

Major global food crises in the past half century have mainly been related to wars and revolutions (see figure 4.1). For example, the Iranian Revolution in 1979 and the Iraqi invasion in 1991 triggered rises in the price of petroleum, which impacted fertilizer and transport costs of food; also the fall of the Soviet Union in 1990 triggered a significant global increase in the price of wheat. Since the early 2000s, however, the movement in food prices has become more correlated with that of energy prices. Energy is an input into agricultural production, so it is logical to expect that changes in energy prices lead to changes in food prices to some extent. But the closer correlation between energy and food prices also reflects the shift by institutional investors from traditional markets to commodities markets, including oil and agricultural commodities (Wahl, 2009).

The financialization of commodity markets has led to widespread gains for both institutions and individual investors. However, there have been adverse impacts, which are chiefly borne by net food importing developing countries and poor households. Higher food prices put a strain on public finances (in the form of increased subsidies) and allow less space for policies directed towards social protection, employment creation and rural development. The challenge for policy is to improve food security, by providing immediate assistance for those most in need, while targeting medium- to long-term measures for price stability.

The chapter is structured as follows. Section A examines the macroeconomic, labour market and social impacts of higher food prices. Section B analyses the factors contributing to the food price increases and, finally, Section C discusses key policy challenges.

A. Macroeconomic, employment and income effects of higher food prices

At the macroeconomic level the adverse impacts of rising food prices stem from the inflationary and trade consequences. The terms of trade impact is important in food importing countries – as the value of food imports rises with respect to the value of exports, there is a deterioration in the balance of payments.[3] For the majority of low-income food deficit countries (LIFDCs)[4] – many of whom also face large current account deficits with respect to their GDP and are heavily dependent on imports of staple foods such as cereals – their position is particularly vulnerable (FAO, 2009).

In this respect, higher food prices have a disproportionate effect on LIFDCs. In these countries, given the large share of food in the consumption basket, higher food prices add downward pressure on real wages – unless, of course, wages catch up to compensate for higher food prices, which is difficult to achieve in practice. Given the higher share of income going towards food, consumer spending on other goods is reduced, which can have adverse impacts on growth, employment and poverty in the medium term. In addition, in developing countries that provide

3. However, there can be offsetting effects – many food importers have benefited from the rise in the price of their non-food commodity exports, such as oil and minerals, as well as exchange rate impacts (since food commodities are denominated in US$).
4. These are countries that have per capita gross national income (GNI) below US$1,855 and a net import food trade position for basic staple foodstuffs.

food subsidies for the poor there is deterioration in fiscal balances. This, in turn, could lead to declining fiscal space, with potentially adverse effects on education and health programmes.

The inflationary effects have the most direct impact in many developing countries …

The pass-through of food price increases from the international to the local food market is greater in developing economies than in developed economies. One of the reasons for this is that in developing economies the cost of staple foods makes up a larger share of the overall prices of food products. Food is less processed in developing countries and therefore, in most instances, other costs, such as labour and transportation, are much lower than in developed economies (IMF, 2011). Increases in international food prices accounted for almost 70 per cent of headline inflation in emerging economies (IMF, 2008); while contributing close to 4 percentage points to the rise in headline inflation in mid-2008, compared with only around 1 percentage point in advanced economies (Cecchetti and Moessner, 2008).

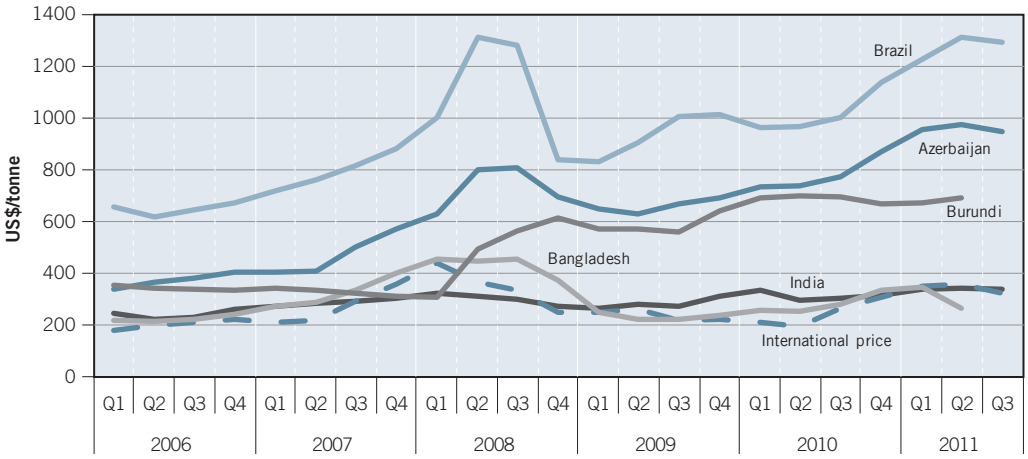
Other empirical studies support the strong pass-through impacts in developing countries. For example, Lora et al. (2011) show that the recent increases in international food prices are likely to result in an increase in domestic inflation in Bolivia, Dominican Republic, El Salvador and Guatemala of more than 10 percentage points, and of between 5 and 10 percentage points in the Bahamas, Colombia, Ecuador, Honduras, Panama and Peru.

As such, domestic prices in many developing countries tend to track closely the international price trends,[5] as can be observed in the case of wheat prices for select developing countries, where the domestic prices generally follow the international trend (figure 4.2). However, there are periods when domestic prices are lower than the international price, and at times the rise in domestic prices outstrips that of the international price. The Asian region has experienced this phenomenon for certain commodities: for example, when global rice prices increased by 16.8 per cent between June 2010 and February 2011, domestic rice prices increased by 21.4 per cent in Bangladesh, 21.6 per cent in Indonesia and 36.7 per cent in Viet Nam (ADB, 2011).

There are, of course, other factors that affect the transmission of global food price fluctuations to domestic food prices, such as exchange rate movements, tariffs, infrastructure, government intervention (in the form of subsidies and price controls) and other market distortions (ADB, 2008a; de Hoyos and Medvedev, 2008). For instance, the low domestic prices in India during the peak of the food crisis were largely due to various commodity-based policies – such as creation of grain banks through government procurement, storage and distribution, and restrictions on international trade (Dawe, 2008) – which acted as a "stabilizer". Additionally, intra-country variance in food prices could be quite large, affecting in particular remote areas with poor infrastructure. For example, estimates based on 30 developing countries show that populations in vulnerable geographic areas paid a 3.2 per cent premium compared with those in urban areas in 2009–10 (Ortiz et al., 2011).

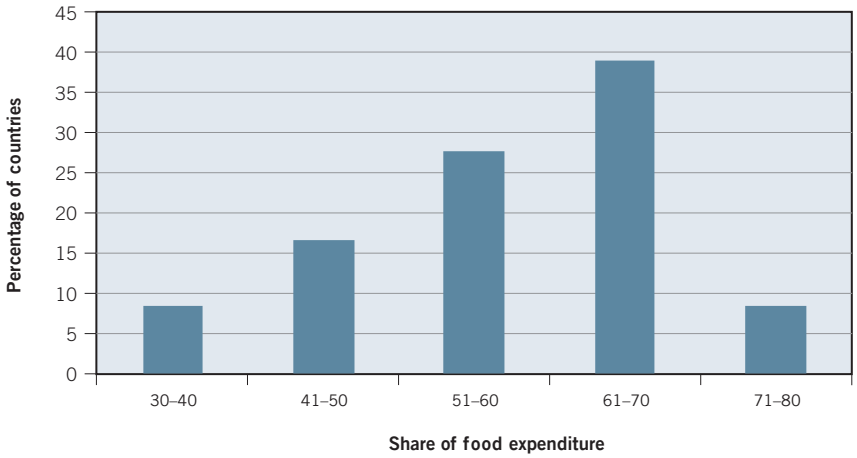
5. See for example Ortiz et al. (2011), who find a strong correlation between local and global food prices in 58 developing countries.

Figure 4.2 International and domestic wheat prices (US$ per tonne)



Source: IILS based on FAO Food Price Data and Analysis Tool.

Figure 4.3 Share of food expenditure in total household income, developing countries



Source: IILS estimates based on Global Income Distribution Dynamics (GIDD) database,[6] World Bank.

… hitting in particular low-income, net food buyers …

It is obvious that low-income non-agricultural households are particularly vulnerable to increases in food prices (Barrett and Bellemare, 2011). According to estimates of the World Bank, the rise in food prices between June and December 2010 pushed an additional 44 million people below the US$1.25 poverty line (World Bank, 2011).

An analysis of 72 developing countries using the Global Income Distribution Dynamics database has shown that the share of food expenditure in total income for the lowest quintile ranges from 38 per cent in Uruguay to 82 per cent in Laos. In about 47 per cent of the countries, the share of food expenditure among the lowest quintile is more than 60 per cent (figure 4.3). In comparison, in developed

6. For more details about the methodology of the dataset, see Ackah et al. (2008).

economies, such as the United States, low-income urban residents spend around 12 per cent of their expenditure on food (Cohen and Garett, 2009).

The high share of food expenditure among poor households means that rising food costs often force them to change their consumption patterns. They may switch to buying food products with lower nutritional value or may consume less, which leads to hunger and malnutrition (Hossain and Green, 2011). In addition to the changes in dietary habits, households also reduce their expenditure on health and education, which has adverse long-term impacts (Ortiz et al., 2011).

... raising overall poverty rates ...

As the share of food expenditure represents a higher percentage of total expenditure among poor households, an increase in food prices represents a reduction in the purchasing power of those households. For this reason, global poverty is estimated to have increased by 3 to 5 per cent since the 2008 food crisis (Ivanic and Martin, 2008). Households who are net sellers of food grains would benefit from the price rise, but net food buyers, especially those in urban areas, and agricultural wage labourers and marginal farmers would face a decline in their welfare.

In this section, we estimate the net poverty effects[7] that would result from an increase in food prices, in terms of the proportion of new households who would fall into poverty (figure 4.4). Since some smallholder farmers might benefit from the increase in price increases, we assume that the impact on them would be lower than for net food buyers. The poverty impacts at the household level of both a 10 per cent and 30 per cent increases in food prices for 13 developing countries in the short term were simulated using the Rural Income Generating Activities (RIGA) database.

Figure 4.4 shows the results of the analysis: the net impact of a 10 per cent food price shock would result in an increase in poverty rates in all the countries, with the net poverty impact ranging from a low of 0 and 0.04 percentage points in Albania, Nigeria and Panama to 2.2 and 2.9 percentage points in Bangladesh and Nepal. However, a 30 per cent increase in food prices has net poverty impacts ranging from 0.04 percentage points in Albania to 6.2 percentage points in Nepal. Poverty rates would triple in Guatemala, Indonesia, Malawi, Nigeria and Viet Nam, while the increases would be much more marginal in Albania and Panama.

... and reducing real wages and/or adding upward pressure on labour supply.

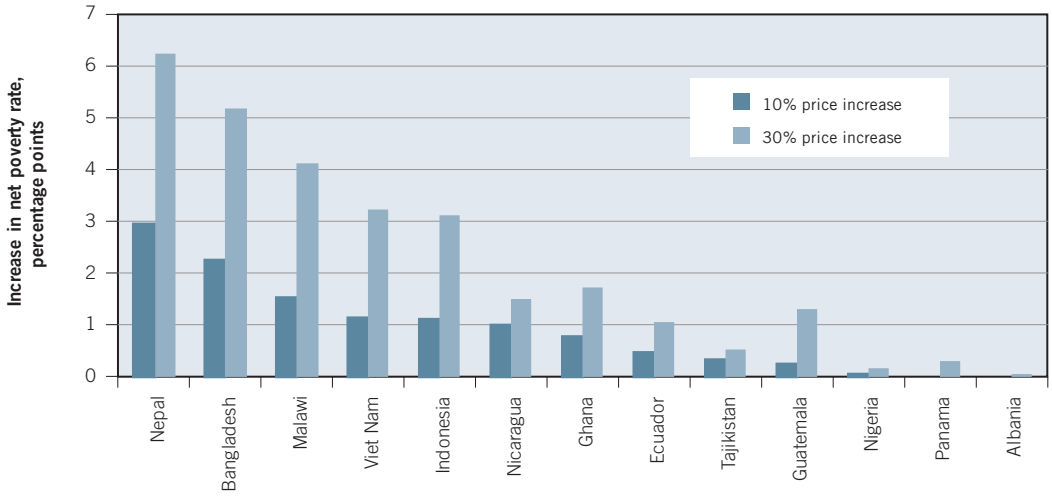
As mentioned above, a rise in food prices could also lead to a reduction in real wages. To make the nominal wage adjustments necessary to neutralize losses from price increases households might increase their labour supply, sometimes through child labour. We estimate the impacts of food price shocks on labour based on the

7. To evaluate the net poverty impacts of price changes:

$$\Delta y_{i/} / y_i = \sum f_i (\Delta p_i / p_i) - \sum s_i (\Delta w_i / \Delta p_i)$$

where $\Delta yi/yi$ is the proportional change in the real attainable expenditure of household i; fi is the vector of shares of net sales in the total net expenditure of the household; and si is the shares of net factor incomes in total household expenditure. We use both the income and expenditure shares to assess the effect of changes in prices on poverty. We also consider major staple foods of the country to analyse the price effects.

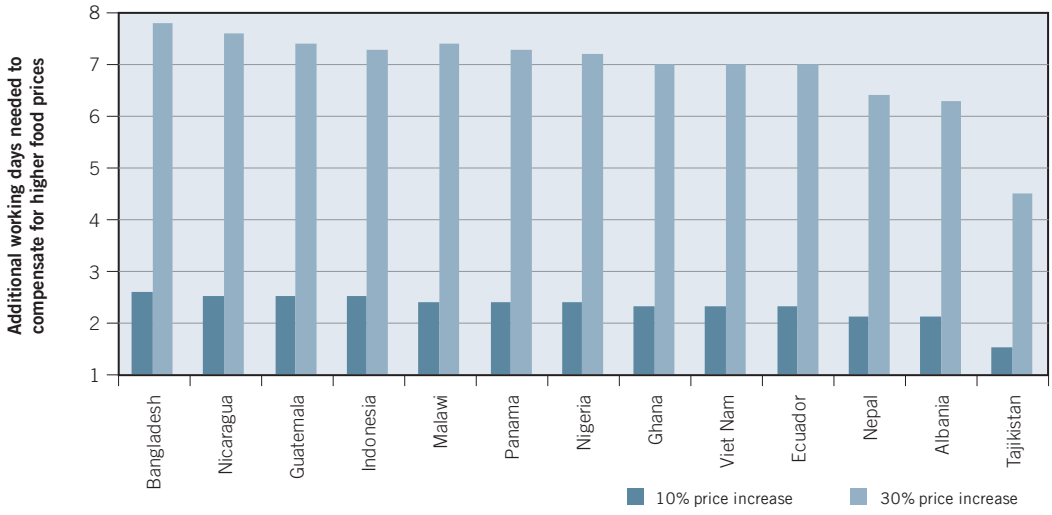
Figure 4.4 Net poverty effects of a 10 per cent and 30 per cent food price increase



Note: Poverty line at US$ 1.25 per day. The corresponding survey years for the countries used for analysis are in parentheses: Albania (2005); Bangladesh (2000); Ecuador (2005); Ghana (1998); Guatemala (2000); Indonesia (2000); Malawi (2004); Nepal (2003); Nicaragua (2001); Nigeria (2003): Panama (2003); Tajikistan (2003); Vietnam (2002).

Source: IILS estimates based on Rural Income Generating Activity (RIGA) database[8] provided by the FAO.

Figure 4.5 Employment impact of food price increases among low-income earners

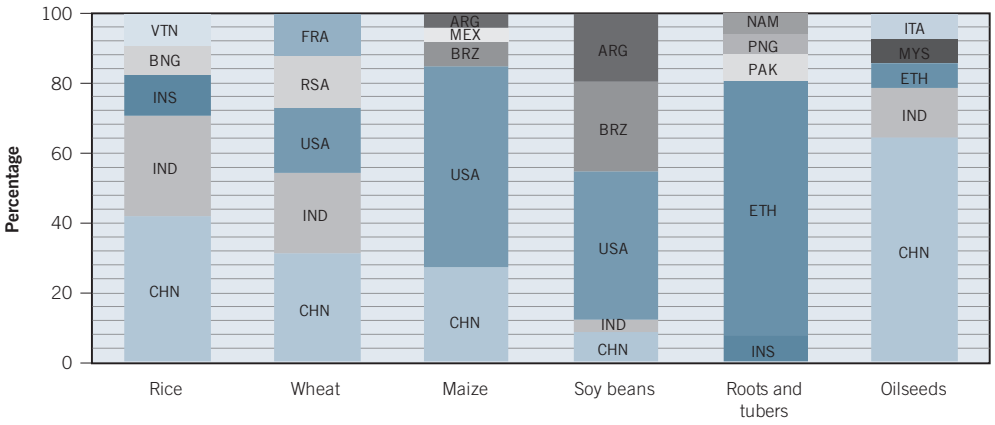


Note: The corresponding survey years for the countries used for analysis are in parentheses: Albania (2005); Bangladesh (2000); Ecuador (2005); Ghana (1998); Guatemala (2000); Indonesia (2000); Malawi (2004); Nepal (2003); Nicaragua (2001); Nigeria (2003): Panama (2003): Tajikistan (2003); Vietnam (2002).

Source: Same as figure 4.4.

8. For more details about the methodology for creating the RIGA-L database, see Quinones et al. (2009). Although the surveys were undertaken over the past decade, the results would not change even if one were to compare the results from a recent survey.

Figure 4.6 Top five producers of staple foods in 2005 (as a share of group total)



Note: ARG, Argentina; BNG, Bangladesh; BRZ, Brazil; CHN, China; ETH, Ethiopia; FRA, France; IND, India; INS, Indonesia; ITA, Italy; MEX, Mexico; MYS, Malaysia; NAM, Namibia; PAK, Pakistan; PNG, Papua New Guinea; RSA, Russian Federation; USA, United States of America; VTN, Viet Nam.

Source: IILS based on http://www.fao.org/es/ess/top/commodity.html.

RIGA datasets, by simulating the direct labour impact of price increases on low-income households (i.e. the bottom two quintiles) in the short term.[9]

We expect that low-income earners in both food-deficit and food-surplus countries would be most affected by the price shock as they are primarily net food buyers. Based on the real wage impacts, we computed the additional number of work days that a worker would be required to work to remain at the same real wage level as before the shock. The analysis shows that a 10 per cent increase in food prices would on average require 2.5 additional work days per month for low-income households in most of the countries (Bangladesh, Ecuador, Ghana, Guatemala, Indonesia, Malawi, Nicaragua, Nigeria, Panama and Viet Nam), while it would take 1.5 additional work days on average for low-income earners in Tajikistan to restore their income to its previous levels (figure 4.5).

A 30 per cent rise in food prices, however, would lead to more than a week's additional work per month for low-income households in the majority of countries analysed. Thus, for low-income households, an increase in food prices translates into a need to supplement current income sources through additional employment (assuming nominal wages are held constant). This phenomenon occurred in Viet Nam in the late 1990s when rice prices increased due to the liberalization of exports and imposition of internal trade restrictions. The result was an increase in child labour among net rice-buying households (Waddington, 2005).

By contrast, the gains from higher food prices mainly accrue to high-income groups …

Higher international food prices also yield income gains for producers. Brazil, China, India and Indonesia are emerging economies which are major producers of staple foods – China, exceptionally, is a major producer of five out of the six

9. This assumes that no other substitution effects take place.

Box 4.1 Reduced access to nutrient-rich foods through export-oriented price distortion

The development of quinoa, the "miracle grain of the Andes", into a major Bolivian export crop led to improved incomes for peasant farmers. However, "this success on international markets resulted in steep local price increases resulting in a highly nutritious traditional food source becoming largely unavailable to the majority of the population". While exporting this well-rounded protein source internationally, Bolivia has been simultaneously receiving significant food aid in the form of wheat, and especially white flour, the largest single component of United States food aid to Bolivia in 2001–02.

From 1998 to 2001, the amount of quinoa exported to North American and European markets increased by nearly 60 per cent. In the Bolivian context, high-quality organic Quinoa Real (the dominant commercial variety), best grown in southern Bolivia, can sell for up to five times the equivalent quantity of soybeans, making quinoa a source of high income for rural farmers. However, in a country where 65 per cent of the population lives on below US$2.00 per day, the development of the quinoa export market has made the crop unaffordable to the majority of the urban population.

Quinoa is highly valued in Bolivia for its nutritional content, and yet the high price is the single biggest factor affecting the diet of the poor; Bolivians note that pasta and bread are widely consumed for their role in "filling us up". Women receive 615 to 1,025 and men 820 to 1,230 calories daily from bread, making white wheat flour the source of up to 50 per cent of daily calorific intake in Bolivia. Thus, development policies pursuing an active export market have created "a system where the most nutritious food crop available is transferred from the poorest in Bolivia to the wealthiest in the United States and Europe, arguably resulting in a decrement in dietary quality while satisfying whims and fads in wealthier countries. In exchange, Bolivians receive white flour."

One policy consideration may be to implement price controls on the domestic market for quinoa. Although such policies have not been very successful in other countries, such as Argentina (which implemented price controls for beef in 2006), in the case of Bolivia quinoa is not widely consumed by the local population (Argentina has the largest per capita consumption of beef worldwide), and therefore should have less distorting impacts. Additional costs could also be offset by the long-term benefits of a healthier diet.

Source: Brett (2010).

staples (figure 4.6).[10] Thus, higher international prices for such crops should have beneficial impacts for producers in these countries.[11]

While there is an element of truth in this argument, evidence suggests that the gains from higher food prices mainly accrue to high-income groups. Most low-income groups – which gain little from higher food prices but are significantly affected in terms of more expensive food consumption – are net losers from higher food prices (table 4.1 and box 4.1).

10. Although staple foods vary by region, rice, maize and wheat provide 60 per cent of the world's food energy intake and are the staple foods of over 4 billion people worldwide. Other crops, such as roots and tubers (cassava and potatoes), are an important staple for over 1 billion people in the developing world (FAO, 2011b).
11. Ng and Aksoy (2008) argue that many countries which are not primary exporters of food crops are still net agricultural or non-food commodity exporters – thus rising food prices have an offsetting impact when the rising prices of other exports are taken into consideration. In this sense, the authors note that the impact of higher food prices on developing countries is overstated.

… and have small effects on incentives to invest in agriculture.

In spite of the relatively high prices for agricultural commodities, farmers' investment decisions are primarily driven by the high price volatility. Price volatility increases uncertainty for farmers and affects their incomes, thus discouraging them from making essential investment that could have an impact on productivity and output. In particular, resource-poor farmers have not responded to price incentives in the market. For example, the supply response to recent food price increases in cereal has mainly come from large-scale commercial producers and not from small-scale farmers in developing countries. With the exception of Brazil, China and India, cereal production in developing countries actually fell between 2007 and 2008, by 1.6 per cent, as resource-poor farmers could not respond quickly to price incentives (IFAD, 2011).

Unless other measures are introduced, the recent price instability is expected to continue into the future, owing to climate change and increased speculative activity, as well as restrictive trade policies that limit access to markets in developed economies (Polaski, 2008; UNEP, 2010).

In summary, rising food prices have aggravated poverty without boosting food production or jobs.

The majority of the poor are net buyers of staple foods, thus they are the hardest hit by rising food prices. This group includes the urban poor, agricultural workers and non-farm rural workers. Even smallholders often do not produce enough staple foods for their own consumption, and only a minority of farmers have enough land and capital to produce a significant surplus to sell. For example, in Bangladesh, 80 per cent of the poor are smallholders and the majority are net buyers of food (Janvry and Sadoulet, 2008), and in Mozambique, 61 per cent of rural households are net buyers of maize, an important food staple (Boughton et al., 2006). Table 4.1 further supports the findings that the distributional impact of rising food prices on poverty and income are uneven, with net buyers being more adversely affected than net sellers, and that poverty increases are larger than poverty reductions.

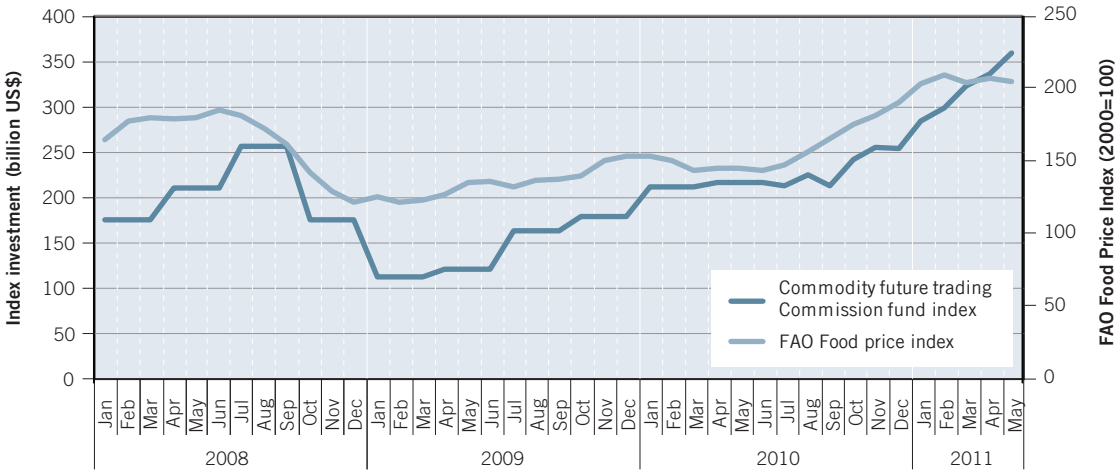
B. Factors contributing to food price increases

Food price increases over the past decade have been the result of a complex interplay of both short-term and long-term factors. The drivers of price change include weather-related supply shocks, underinvestment in agriculture, shifts towards biofuel production, land grabs and speculative activities in commodity derivative markets.

Food has become a financial product …

The amount of money invested in commodity index funds rose from US$13 billion in 2003 to US$192 billion in March 2008, which means that the volume of index fund speculation increased by 1,900 per cent between 2003 and March 2008, and the holdings in commodity index funds increased from 500,000 in 2003 to almost 2.5 million in 2008 (Masters, 2008). The total investment in com

Figure 4.7 Food prices and commodity markets, in billion US$



Source: IILS estimates based on FAO and Thomson Reuters database.

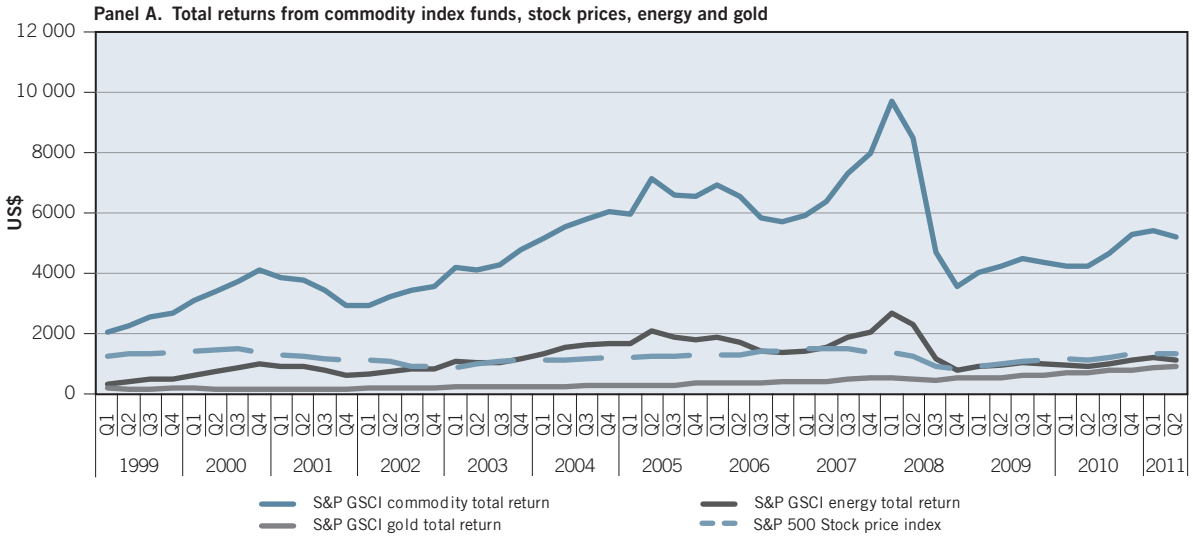
Table 4.1 Summary effects of distributional impacts of rising food prices

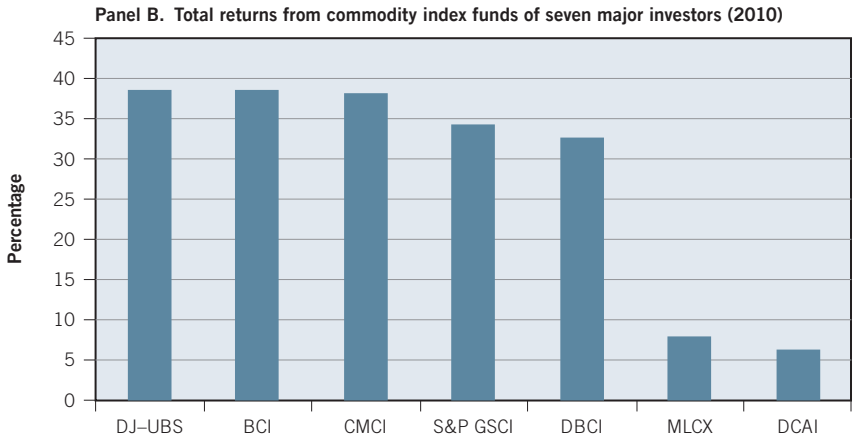
	Poverty effect	Income effect
Net buyers	**Overall negative**	**Overall negative**
Urban	10% increase in maize prices leads to 0.3% increase in poverty in Malawi[a] Poverty increased in Viet Nam[b]	10% increase in food prices leads to 2.6% income loss in Malawi[a] Income would drop by 25% if food prices doubled for 60% of the population in Ghana[e]
Rural landless	Poverty increased in Viet Nam[b]	10% increase in food prices leads to 1.2% income loss in Malawi[a]
Rural smallholders	Increase in poverty in Pakistan, Madagascar, Nicaragua and Zambia[c] 10% increase in maize prices leads to 0.5% increase in poverty in Malawi[a]	10% increase in food prices leads to 1.2% income loss in Malawi[a] 28% fall in incomes in 2009 in the United States compared with 2007 levels[d]
Net sellers	**Overall positive**	**Overall positive**
Rural smallholders	Reduction in poverty in Peru and Viet Nam[c] Top 20% gain from increase in maize prices in the short term[a] Gained the most from price rise in Viet Nam[b]	

Note: [a] Karfakis, et al., 2011. [b] Vu and Glewwe, 2011. [c] Ivanic and Martin, 2008. [d] Wise 2011. [e] Bryngelsson et al., 2009.

modity index funds dropped slightly in 2009 to approximately US$240 billion due to lower commodity prices, but then increased to US$352 billion in May 2011 (figure 4.7).

Figure 4.8 Total returns from commodity index funds





Note: DJ-UBS: Dow Jones-UBS Commodity Index; BCI: Barclays Capital Commodity Index; CMCI: Bloomberg Agriculture Constant Maturity Commodity Index; S&P GSCI: Standard & Poor Goldman Sachs Commodity Index; DBCI: Deutsche Bank Commodity Index; MLCX: Merrill Lynch Commodity Index extra; DCAI: Diapason Commodities Management Agriculture Index Fund.

Source: IILS estimates based on the websites of UBS, Dbfunds, Merrillinvest, RBS, Diapasconcm and Thompson Reuters database.

Based on the performance of the commodity index funds, stock prices, energy and gold on Standard and Poor's S&P500 for the period 1999 to 2011, the total returns from commodity index funds have been steadily rising, and at a much higher rate than for financial and other investments (figure 4.8, panel A). The total returns from these funds clearly indicate that when returns from other financial instruments declined in the aftermath of the financial crisis, commodity markets were the most attractive for financial investors.

Some of the financial investors, such as Merrill Lynch, Dow Jones-UBS, S&P Goldman Sachs and Deutsche Bank, hold 17 to 35 per cent of future contracts for agricultural products, and they roll over their positions continuously by buying calendar spreads. An analysis of 1-year returns from commodity index funds (2010) for seven major investment banks in 2011 ranges between 6 and 38 per cent (figure 4.8, panel B). Thus, it is clear that in the current commodity price environment there is growing use of commodities as investments, largely due to the high short-term gains and because they constitute an attractive vehicle for portfolio diversification. And, there is some evidence that speculative activities have

contributed to excessive fluctuations in food commodity future prices and distorted signals for expected prices (FAO, 2010). However, what is particularly disturbing is that large investment banks give price forecasts for commodities and therefore stand to benefit if these forecasts come to pass. Thus, they have a dual role as both player and driver in the market.

... contributing significantly to price volatility in some cases.

Increasingly, there is evidence that financial speculation in the commodity markets has been one of the driving factors behind rising food prices and volatility.[12] Speculation is not new to commodity markets, and purchases of agricultural commodities future contracts have classically been the means by which a limited number of traders stabilized future prices and allowed farmers to finance future crop production (Pace et al., 2008). But, what has changed is the growing number of financial investors that have entered into the market through index funds since the 2000s (Chowdhury, 2011), as investment in commodity markets has become more attractive to non-commercial investors due to the higher expected returns and negative correlation to other options, such as stocks or bonds (Hailu and Weersink, 2010). It also offers a hedge against inflation.

The increased participation of index fund investors in commodity markets represents a significant structural change, and it has also generated a wide debate among policy-makers and academics about the role of financial speculation. The problem with such investment is that trade has become de-linked from the market fundamentals of demand and supply, and instead is influenced by other factors in the financial market, most particularly profit motives.

Some studies suggest that the influx of index investors and new money into the commodity futures market have created a commodity price bubble (Hailu and Weersink, 2010; Ghosh, 2010; Wahl, 2009). The argument is countered somewhat by other studies, which find no link between investment by index funds and commodity price changes; there is a weak evidence for a link between index-based investment and grain prices (Gilbert, 2009) and no effects over long-horizon regressions (Irwin and Sanders, 2010). But based on a recent survey of commodity market participants, UNCTAD (2011a) finds that the role of financial investors has become more important in recent years and that they can move prices in the short term.

Underinvestment in agriculture

The underinvestment in public goods in agriculture has been pertinently raised in a number of studies and reports (World Bank, 2008a; FAO, 2009), as official development assistance to agriculture declined in real terms by nearly half between 1980 and 2005 (Cabral, 2007). It fell from about 17 per cent in the early 1980s to about 3 per cent in 2005. While aid flows have increased by 4 per cent per year

12. Among recent studies in this area, see for example: Chowdhury, 2011; Jomo, 2011; Ghosh, 2010; and Wahl, 2009.

in real terms following the Monterrey Conference[13] in 2001, a large aid shortfall still remains.

Public expenditure on agriculture has also declined in most developing countries, even in areas where public investment has produced high returns, such as agricultural research and development. According to Fan and Saurkar (2006), the share of agricultural expenditure in total government spending dropped from 11 per cent in 1980 to about 7 per cent in 2002, based on an analysis of 44 developing countries.

In many developing countries, structural adjustment loans were promoted in the agricultural sector in the 1980s and 1990s with the aim of removing agricultural input and output subsidies and downsizing agricultural sector agencies. Some authors argue that the IMF and World Bank initiatives in many of these countries resulted in a decline in government expenditure on agriculture (Akroyd and Smith, 2007). Baviera and Bello (2009) found that the productive capacity of agriculture in sub-Saharan Africa was eroded in the 1980s because governments were pushed to completely dismantle the elaborate systems of public agencies that provided farmers with access to land, credit, insurance inputs and cooperative organization.

There is evidence which show that increases in government spending or aid in agriculture would lead to both agricultural growth and reduction in poverty in rural areas.[14]

Land grabs and foreign acquisition of agricultural land

While there has been a decline in public investment and official development assistance to agriculture over the past two decades, the past decade has also seen an increase in foreign private investment in agriculture. In many of the less-developed countries this investment has been in the form of land leases and land transfers to resource-rich countries. Between 2004 and 2009, the proportion of land acquired varied from 0.8 per cent in Mali to 2.3 per cent in Madagascar[15] (Cotula et al., 2009). Globally, about 15 to 20 million hectares of land have been leased or transferred since 2000[16] (HLPE, 2011). The land deals occur at multiple levels, involving national governments, foreign governments, private investors and multinational companies. These large-scale investments have been lauded by some as new engines of economic growth, having the potential to increase capital flows to agricultural development and rural development. However, their adverse impacts on smallholders, food production (and its domestic availability) and employment are not made explicit (Graham et al., 2011).

13. The first United Nations-hosted conference to address key financial and development issues was held in March 2002 in Monterrey, N.L., Mexico. The purpose of this meeting was to discuss about aid effectiveness and to increase aid. The international community agreed to increase its funding for development during this meeting but also acknowledged that aid alone is not enough but there is a need for more commitments from Governments towards development objectives.
14. See for example Fan et al. (2007) for some of the country cases.
15. This is based on in-country systematic inventories of areas involved in large-scale land investments.
16. These estimates are largely based on media reports, so it might be an overestimate as some of the land deals either have not turned into reality or have been recalled.

A recent report by the High Level Panel of Experts[17] (HLPE, 2011) argues that these investments involve a complex interlocking of global systems of interest, both direct and indirect. The direct players include companies that plan to grow food and animal feed, while the indirect players – such as pension fund managers, real estate groups and finance capital – consider land as an additional asset within a broader portfolio. However, it is very difficult to provide evidence or an estimate of how much of this land investment is "speculative". Land leases and transfers in Africa seem to be motivated by high commodity prices, food security concerns and biofuels; while in Latin America and the Caribbean they are driven by the demand for natural resources (FAO, 2009; HLPE, 2011).

The private investors who are approaching many of the Asian and African governments for land acquisition often accept these deals immediately as they create a fresh flow of foreign capital to build infrastructure and upgrade storage, but the extent to which these resources are utilized effectively is questionable. Investments have also been made in countries where land laws are weak (HLPE, 2011). International investment in agriculture in developing countries is largely concentrated among a few players – Saudi Arabia, the Gulf States, some Asian players (China, India and South Korea) and the United Kingdom – principally to secure their food supplies (Cotula et al., 2009) or for biofuel production. Interestingly enough, all of these countries are relatively more food secure than the host countries. Some of the regional blocs also seem to have an influence on these investments, such as the European Union through its directive on biofuels (which makes it mandatory that, by 2020, 10 per cent of the fuel used in transport must be biofuel) (HLPE, 2011).

C. Policy challenges and the way forward

Insufficient investment in the agriculture sector, coupled with the increasing number of land grabs (for biofuels, cash crops or intercountry investment), is chiefly responsible for the worrying food security situation. While these issues are crucial, it is also important to tackle the excessive price volatility associated with the growing financialization of commodity markets. This issue was recently placed at the centre of the G20 debate. The first meeting of the G20 agriculture ministers was held in June 2011, following a number of regional ministerial meetings in Africa and Asia. The agriculture ministers agreed to support for smallholders and women farmers, and long-term investment and productivity, but passed on the financial issues to the November G20 finance ministers' meeting at Cannes, where the International Organization of Securities Commissions will investigate and report on key issues affecting short-term price volatility.

Addressing trading in commodities based on purely financial motives

In the short term it is important to reduce speculation on food commodities by increasing the oversight and regulation of both the futures markets and over-the-counter trading. Additionally, more transparency with regard to agricultural information and traders and their volumes will limit risk taking and improve identification and overall commodity market efficiency.

17. The UN Committee on World Food Security (CFS) has set up this High Level Panel on experts on food security and nutrition for getting credible scientific and knowledge-based advice for policy formulation.

Box 4.2 Regulations on commodity speculation in India

In considering how best to design policy to reduce volatility in wheat prices, the Indian Government undertook an analysis of the links between commodity speculation and the domestic price of wheat (Dasgupta et al., 2011) using historical data pertaining to wheat prices with and without bans on futures trading. They found that "banning wheat futures lowers domestic wheat prices, and drives a better wedge between international and domestic wheat prices, and therefore, regulatory mechanisms should be used to either regulate the domestic commodity futures better, or even to ban them outright in times of high or volatile global commodity and wheat prices".

These results led the Government to conclude that there is a need to regulate commodity futures in wheat much more strongly (and even to ban them during excessive international prices) and to rely less on outright export bans, which remain a weak and likely ineffective or blunt instrument. Thus, India has continued its ban on a commodity futures market since the onset of the food crisis.

Improved oversight of the market is needed to detect irregularities in trading and to help reduce price volatility. Of course it is important to find the right balance between regulation and market liberalization, but in its present form the market is tilted towards too much of the latter and is not functioning based on the principles of demand and supply. This impairs the hedging function of the exchange needed for trade efficiency (UNCTAD, 2011b).

There are a number of recommended actions that could be taken to improve the regulatory function of markets. First, position limits could be imposed on commodities traders. Such limits are currently under review in both the United States and the European Union. In any case, an interim solution could be the introduction of a position management system, whereby once a trader reaches a predetermined limit they would have to provide further information before being allowed to go forward (UNCTAD, 2011b; Chilton, 2011). This could be particularly useful during periods of external shocks that have been shown to impact on price movements, such as energy or exchange rate shocks. Additionally, to reduce excessive risk taking, a progressive tax system could be introduced – so that as the price of the commodity moves outside a specific range, the tax rate on profits increases.

Second, an outright ban on speculation in the commodity market could be introduced – as is being practised in some cases (see box 4.2). Indeed, Ghosh (2010) argues "the resolution of the world food crisis requires specific controls on finance, to ensure that food cannot become an arena of global and national speculation. These controls should include very strict limits (indeed bans) on the entry of financial players into commodity futures markets." In the event of such an occurrence, there are indeed other alternatives to commodity markets that can stabilize the future income streams of farmers and provide crop security, such as mutual insurance among farmers and state-guaranteed prices.

Third, the timeliness, reliability and coordination of agricultural data – currently obtained from a wide variety of sources – could be improved. Improved transparency would also help to reduce reliance on price forecasts by large investment banks, which have a vested interest in market outcomes – because most of the undisclosed data available refer to privately held stocks. The recent proposal by the G20 agriculture ministers for an FAO-based Agricultural Market Information System (AMIS), to encourage major agri-food players such as Archer Daniels Midland, Bunge, Cargill and Louis Dreyfus (who collectively are responsible for

75 to 90 per cent of global grain trade) to share data and promote cooperation, is a welcome step (Murphy, 2011). However, the AMIS is unlikely to be sufficiently far reaching – the need for such a system highlights the fact that international markets are not working and require further regulation.

It is imperative to have new regulations that address financial commodity price volatility because speculative activity yields stark consequences for millions of people across the developing world.

Tackling supply-side constraints through increased agricultural investment and productivity

There are also important domestic measures that governments can take to stabilize commodity prices, such as building up commodity reserves. Holding stocks for emergencies has been a controversial policy action, but countries that hold stocks on a significant scale, such as China and India, have managed to mitigate the worst price increases (Ghosh, 2010). Grain reserves can work in a similar way to strategic oil reserves, and can be used both for food security and for signalling to the market.

For the medium and long term, however, the neglect of the agriculture sector must be addressed through improving the ratio of food crops to cash crops (including biofuels) and by increasing investment and productivity growth. This will not only improve food security, but will also contribute to improved agriculture wages and much-needed employment growth. This apart, the past decade has observed an increasing number of land grabs (for biofuels, cash crops or inter-country investment), which clearly calls for a definitive policy direction to ensure that food insecurity is not increased in already food insecure countries. The issue of productive investments in rural development for reducing poverty, improving food security and enhancing employment growth was also part of the discussion at the ILO's Governing Body Meeting in March 2011 (ILO, 2011).

Policies and programmes to lessen poverty and food insecurity and to enhance equity and sustainability of incomes and livelihoods must seek to achieve an agriculture-led broad-based economic development. To do this requires according the highest priority to smallholder farmers, as they are vital for agriculture and the rural economy. Furthermore, increased capital formation, along with expansion of irrigation techniques, is needed in the agriculture sector as it has been declining in a number of regions.

Investment in the expansion of irrigation, and also in the maintenance of existing irrigation structures, is critical for ensuring food security and also for generating productive employment for the poor and low-income agricultural households in rural areas. Along with government efforts to reduce price distortions and address water shortages and climate change, there need to be incentives for farmers to switch from non-food to food crops and to increase productivity. For example, smallholders often have little choice but to participate in inefficient markets with several layers between the producer and the consumer.

There is an increasing trend for big private agri-business and multinational companies to work in partnership with smallholders in food production. These partnerships provide the smallholders with access to technology, credit and expertise and help them to raise their incomes, but the balance of power is often skewed towards the big businesses. The smallholders will often lack the leverage and organization needed to engage their partners in collective bargaining or social dialogue. Efforts therefore need to be made to improve the bargaining power of

these smallholders or to empower them so that they can better manage their position with regard to the growing risks and opportunities in the international agricultural markets.

Unequal access to land has also had an impact on smallholder incomes, and the land grabs and transfers over the past decade in sub-Saharan Africa have put a further strain on smallholders. In Guatemala, government access-to-land programmes for beneficiaries with little or no land and no off-farm opportunities were found to be important for poverty reduction in the short term (Bandeira and Sumpsi, 2009). In rural Mozambique, increases in landholding size were found to reduce poverty when combined with inputs such as labour, fertilizers and animal traction (Cunguara, 2008). As land laws are often very weak, the legal and technical advice for the governments and local communities should be enhanced and strengthened (HLPE, 2011).

Providing well-designed social protection

Recent food price shocks have actually led to nearly a billion people facing hunger, and each year more than 3.5 million children die from malnutrition (FAO, 2010). Therefore, in addition to addressing short- and longer-term market issues, there is also a need to focus on immediate assistance for the poor and vulnerable. In this regard, the expansion of social safety nets and assistance programmes is crucial. An option for mitigating both the poverty and nutritional effects of food price increases and shocks in the short term could be the provision of cash transfers along with micronutrient supplementation – targeted at poor women and young children (Glassman, 2011).

These programmes can also be relatively cost-effective and can help to reduce the risk of poor families selling productive assets for food, discontinuing their children's education or, more importantly, reducing their food consumption. In this respect, the social transfers could play an important role in combating the impact of food insecurity. For example, to strengthen the safety net programmes for the most vulnerable population, Cambodia instituted the National Task Force for Emergency Food Assistance and provided compensatory consumption support, including the provision of free food to selected families and to those enrolled in the food-for-work programme (ADB, 2008b). To encourage children from poor households to continue at school during the food crisis and to discourage child labour, school feeding programmes were introduced in Brazil, Burkina Faso, Cape Verde, China, Honduras, Kenya, Mexico, Mozambique and Philippines (World Bank, 2008b).

Support programmes such as food stamps or vouchers can also help to shore up consumption while also meeting immediate food needs, particularly during times of crisis. However, while food subsidies can help to mitigate social unrest in the short term, they are relatively less cost-effective. Thus, during a crisis, a social protection floor can play a very important role in providing income security to vulnerable individuals and families. Simultaneously, efforts should be made to ensure that minimum wages are implemented for all workers and that minimum wage adjustments are made to reflect the changes in food prices.

Ensuring the global commitment to food security

Because of concerns about underinvestment in agriculture, a number of commitments were made in the past decade to increase aid to developing countries.[18] However, few donors seem to have met their stated commitments to scale up aid (OECD, 2008). Furthermore, there was a global recommitment to ensure global food security in L'Aquila, Rome, in 2009. It was clearly expressed that food security is closely connected with economic growth and social progress. It was also recognized that the present food crisis was indeed due to the longstanding underinvestment in agriculture, and that this would not only increase the number of hungry poor, but would also jeopardize the progress towards meeting the UN Millennium Development Goals.

The ILO, which has been part of the United Nations High Level Task Force on the Global Food Security Crisis since June 2009, has been given the important task of promoting and coordinating a comprehensive response to the challenge of achieving food security as part of its Decent Work Agenda. One of the major items of the 312th Session of the Governing Body in November 2011 will be to carry this agenda forward.

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