Overseas Development Institute

Briefing Paper 37

April 2008

# Rising food prices: A global crisis

## Action needed now to avert poverty and hunger

Soaring food prices pose problems for three groups. First, the poor whose ability to buy food is undermined. Second, governments of low-income countries facing higher import bills, soaring costs for safety net programmes and political unrest. Third, aid agencies juggling increased demands for food, cash and technical advice. High food prices threaten the gains made since the 1960s and highlight the long-term need for investment in, and better management of, the global food supply.

This Paper examines the causes of rising food prices, expected trends, the likely impact, and possible policy responses.

**The rising price of corn poses a threat to the world's poor.**

### Key points

- Food prices have been rising since 2000, spiked in early 2008, and may remain high for another ten years
- Prompt action is needed to protect the poorest and support low-income countries faced by surging import bills
- In the medium term, economic and agricultural growth can offset the damage, but this will require more determined efforts to boost food production

**Overseas Development Institute**

ODI is the UK's leading independent think tank on international development and humanitarian issues.

**ODI Briefing Papers** present information, analysis and key policy recommendations on important development and humanitarian topics.

This and other ODI Briefing Papers are available from www.odi.org.uk

### What is happening and why?

Before recent price hikes, the real price of food had been falling since the 1950s. The 'green revolution' that began in the mid-1960s saw developing world farmers planting improved varieties of cereals, prompting extraordinary increases in yields, falling food prices and reductions in poverty.

But food prices have risen since the early 2000s, and particularly since 2006. The price of a tonne of wheat climbed from $105 in January 2000, to $167 in January 2006, to $481 in March 2008 (IMF Primary Commodity Prices, 2008). Forecasts for the next ten years predict continuing high prices because of structural changes in supply and demand.

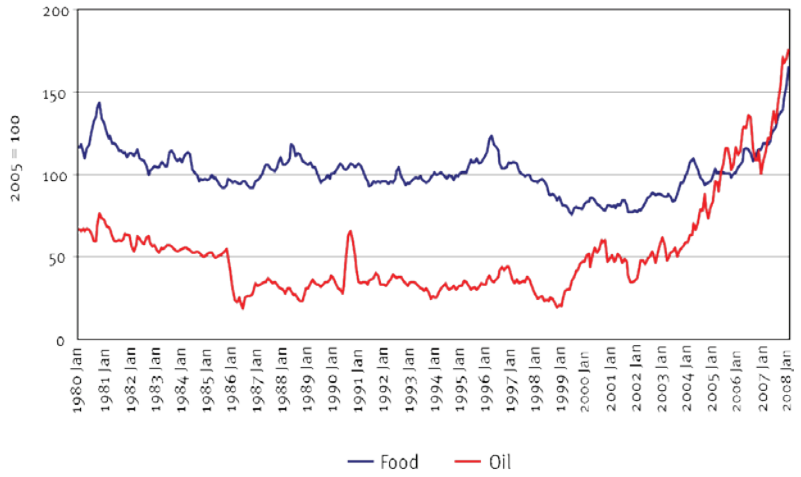
On the supply side, rising oil prices mean increased costs for fertilisers, machine operations and transport. As Figure 1 shows, oil prices have risen faster than food prices and the price of nitrogen fertilisers has risen with them. In the US the price index for nitrogen fertiliser stood at 118 in 2000 but reached 204 by 2006 (US Department of Agriculture, 2008). USDA expects unit costs of production of cereals to rise by up to 15% between 2006-7 and 2016-17.

Short-term supply shocks include poor harvests in some exporting countries – particularly Australia where drought has hit wheat production – at a time of dwindling world cereal stocks. Speculation in commodity prices by investors may have contributed to price rises, and the falling value of the dollar has not helped. Some exporting countries have imposed taxes, minimum prices, quotas and outright bans on exports of rice and wheat.

On the demand side, growing incomes in countries such as China and India mean rising demand for meat. OECD and FAO forecast that in non-OECD countries consumption of meat and dairy produce will rise by up to 2.4% a year between 2007 and 2016 (von Braun, 2007). Much of the additional meat, and some of the dairy, will be produced by feeding grains to livestock.

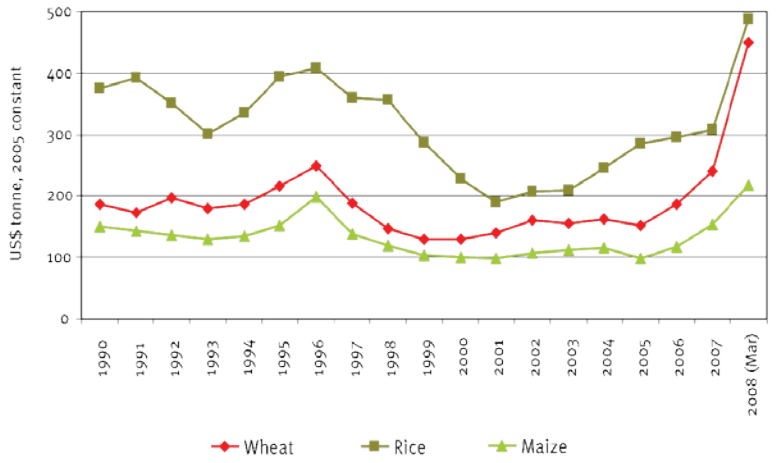
Once oil prices top $60 a barrel, biofuels become more competitive and grains may be diverted to biofuel production (Schmidhuber, 2006). With oil now costing over $100 per barrel – and the US and EU trying to reach biofuel

**Figure 1: Food and oil price indices, 1980 to early 2008**




Commodity Food Price Index, 2005 = 100, includes Cereal, Vegetable Oils, Meat, Seafood, Sugar, Bananas, and Oranges Price Indices Crude Oil (petroleum), Price index, 2005 = 100, simple average of three spot prices; Dated Brent, West Texas Intermediate, and the Dubai Fateh.
Source: IMF Commodity Price data, downloaded 12 March 2008 from http://www.imf.org/external/np/res/commod/index.asp.

**Figure 2: Cereals prices 2000 to 2007, constant 2005 value**




Source: IMF Commodity Price data, downloaded 12 March 2008 from http://www.imf.org/external/np/res/commod/index.asp. FAO report for Mar 2008. Prices deflated by the US GDP deflator.

targets – grains, sugar and palm oil are increasingly used to produce ethanol and biodiesel. Some 80 million tonnes of maize went to US ethanol refineries in 2007 (OECD-FAO, 2007), against total US maize exports averaging 47 million tonnes a year (2000 to 2005). No wonder maize prices rose in 2007, despite one of the largest maize harvests ever seen.

Rising cereal costs are alarming, as they provide the bulk of the diet for many of the poor in developing countries. Rice and wheat prices soared in late 2007 and early 2008, up 60% and 89% respectively over 2007 levels (see Figure 2).

## Future trends

OECD, the Food and Agriculture Organisation (FAO) and USDA predict higher cereal prices over the next 10 years than in the early 2000s, but lower prices than in late 2007. The current high prices are unlikely to last as farmers are expected to increase planting and yields in 2008. However, prices are unlikely to drop to former levels in the medium term. Compared to 2005 levels, the price of maize is likely to be higher by 40% in 2016-17, with wheat prices up by 20%, and rice by 14%.

## Impact on the poor

Rising food prices affect the poor directly, as producers and consumers, and indirectly, through the impact on their economies. The greatest concern is the impact on their food consumption. While most of the world's poor live in rural areas, not all are farmers, and even some farmers buy staples. The poor generally spend large fractions of their budgets on food, so rising prices make them more likely to reduce their food consumption (see Box 1). This may not mean as large a fall in calorie intake, as households may spend more on cheaper, calorie-rich staples and less on foods rich in protein and vitamins, such as meat, fish, dairy, fruit and vegetables, reducing the quality of their diet.

The short-term impacts are alarming: incomes fall by more than 25%, and food consumption by almost 20%. Medium-term prospects remain bleak, with incomes and food consumption down by 11% and 8% respectively.

## Impact on farming

Higher food prices could raise farmers' incomes if global price movements transmit to local markets, and if farmers can respond. However, transmission can be muted by policies on domestic prices and by transport costs. In inland Africa, for example, the effect of global price movements may be minor. In landlocked Malawi, it costs around $50–60 a tonne to ship maize from the port of Beira, plus at least $25 a tonne to ship maize from the Gulf of Mexico. When global maize prices were around $100 a tonne, the import parity price for Malawi was at least $175 a tonne, raising the value of domestically produced maize. As it costs around $100 to produce a tonne of maize in Malawi, it always made sense for the country to grow as much as possible. With world prices at over $200 a tonne, the incentives are even greater.

High transport costs that push up import parity prices also hold down export parity prices. With maize at $100 a tonne, this would have been around $25, but current price levels push it to $125, so Malawi could conceivably consider export production — although current high levels of maize prices are unlikely to be sustained.

Experience suggests that farmers may lack the credit and inputs needed to respond in the short term. But they could benefit in the medium and long term, as in the Asian green revolutions and in many African countries in the recent past.

## Impact on low-income countries

Low-income countries face inflationary pressure and rising import bills – both of which undermine economic growth and development. FAO estimates that food import bills for developing countries rose by 25% in 2007 (Shapouri and Rosen, 2008).

Many receive food aid that is likely to be reduced just when it is most needed. As food aid is programmed by budget, not volume, rising prices depress supply. With the World Food Programme (WFP) needing another $500 million to sustain current operations, the likely outcome for these countries is that food availability will fall.

However, higher food prices are incentives to produce local food and could stimulate agriculture, cushioning the impact on the poor. In the coastal cities of West Africa, a shift to consumption of bread, rice and pasta based on imported grains at the expense of local yam, cocoyam, cassava, millet and sorghum could be reversed, giving a fillip to domestic farmers.

Outcomes, weighing costs to consumers against gains to farmers, are hard to predict but existing models shed some light (Box 2) on Cambodia. Effects vary, with farming households benefiting, and others losing out. Overall, the economy suffers and reduced consumer spending on other goods and services puts a brake on economic growth.

## Policy recommendations

Immediate action is needed to alleviate the distress caused by the price spikes, such as transfers to the poor or general food subsidies. Resources are needed to support WFP and compensate poor countries for higher import bills. Improved coordination across the UN and donors, and greater alignment with national efforts and priorities will be critical. In the medium term, growth can boost incomes to compensate for high food prices, but the right policies are needed to help farmers produce more food.

### Responding to the crisis

The main options are compensating transfers and control of food prices. Transfers in the form of cash or vouchers would need to reach those facing undernutrition. However, this means compensating the poor while the nearly poor, who pay the same prices, are left out. Schemes to raise incomes through public works, with workers receiving wages rather than hand-outs, are more feasible. Examples of innovative schemes include Latin American conditional cash transfers and the introduction of universal old age pensions in India and South Africa.

Price controls can mean setting prices, but can be hard to enforce and could remove incentives for farmers to produce more. Food price subsidies might be wasteful, as wealthier consumers would also benefit. And subsidising 'inferior' foods is less popular, politically, than subsidising favoured items.

Developing countries have tried to manage food price rises through subsidies, reducing tariffs on imported grains, and by limiting or taxing grain exports (FAO, 2008). This last could exacerbate the price spike and depress incentives to farmers to increase output.

Many low-income countries face the double shock of rising bills for oil and food imports, hindering growth and pushing up inflation. At the same time, efforts to protect the poor from rising food prices could mean heavy increases in the cost of social programmes.

### Box 1: Do biofuels lead to higher food prices and hungry people?

In the early 2000s, 20 million tonnes of US maize went to ethanol plants. In 2007, 80 million tonnes were delivered – a figure expected to rise to 100 million by 2010, driven in large part by the Renewable Fuel Standard that requires 28 Billion litres of fuel in the US to come from alternative sources by 2012. Similar increases are being seen in Brazil, Canada, China and the EU. In South-East Asia, vast areas are shifting to oil palm, a key feedstock for biodiesel.

Demand for biofuels encourages the use of land for feedstock and it is no coincidence that feedstock prices are rising. Maize prices doubled between 2006 and 2008, while palm oil prices rose 2.5 times. IFPRI's IMPACT model predicts that maize prices will rise by 26% by 2020 under current plans for biofuels production, and by 72% with drastic expansion.

**Percentage changes in world prices by 2020: Two scenarios**

| | Biofuel expansion (a) | Drastic biofuel expansion (b) |
|---|---|---|
| Cassava | 11 | 27 |
| Maize | 26 | 72 |
| Oilseeds | 18 | 44 |
| Sugar | 11.5 | 27 |
| Wheat | 8.3 | 20 |

Notes: (a) Based on actual biofuel production plans/projections in relevant countries and regions; (b) Based on doubling actual biofuel production plans/projections in relevant countries and regions.
Source: IFPRI IMPACT projections (in constant prices) in von Braun 2007.

With current technology (and given US and EU subsidies and targets), it seems that biofuels will push up food prices. This could be offset if poor farmers in developing countries had the same incentives as farmers in North America and Europe, and if technical advances that would allow grasses and woody biomass to be converted to biofuel can be realised. Biofuels could then become an important source of income for poor farmers, but – for now – those who see biofuels as a threat to the hungry have a point.

Sources: OECD FAO (2007), Peskett et al. (2007), von Braun (2007), Schmidhuber (2006).

### Box 2: Impact of rising food prices on households in Cambodia

A Computable General Equilibrium (CGE) model of the Cambodian economy has simulated the impacts of a 26% increase in rice prices in the medium term. Not surprisingly, a higher rice price stimulates a 13% increase in rice production and rice exports rise by more than 80%. Rice farmers benefit, but the rest of economy suffers. Resources shift from other farm activities to paddy fields, so livestock and fish production decline. Higher rice prices reduce household spending on other goods and services, depressing the economy. GDP falls by around 0.2%. Farming households are better off, with incomes for surplus producers rising by almost 4%; but other households see incomes fall by around 2%.

Source: Initial computations using a CGE for Cambodia.

Countries need compensatory financing to respond to the food price spike. There is a case for the IMF to provide more resources under the Compensatory Financing Facility to help low-income countries that import both oil and food. WFP has identified 30 countries at risk: Afghanistan; Angola; Benin; Burundi; Chad; DRC; Eritrea; Ethiopia; Gambia; Guinea; Guinea-Bissau; Haiti; Kenya; Madagascar; Malawi; Mauritania; Mozambique; Myanmar; Nepal; Niger; OPT; São Tomé and Príncipe; Senegal; Sierra Leone; Somalia; Tajikistan; Timor-Leste; Yemen; Zambia and Zimbabwe.

For donors, priorities include meeting the WFP call for at least $500 million to meet the higher costs of food aid. But there is also scope for more coordination across UN agencies, as part of the 'One-UN' system. In line with the Paris principles, it would help if every country at risk had a national plan that could be financed.

## The medium-term response

Rising incomes from economic growth can compensate for increased food costs in the medium term. Two to four years of growth may be enough to offset real income losses and there is scope to expand food supply and mitigate price rises. Ensuring that small farmers can respond to higher prices is a familiar policy challenge now made all the more pressing . Public investments in infrastructure and agricultural research would pay dividends; as would support for institutions giving small farmers access to finance, inputs and information.

Uncertainty and controversy surround technical agricultural advances. Most agricultural research is by companies that may not prioritise boosting outputs of food grains. Biotechnology promises much, but has delivered relatively little for staple food production. That may change with higher prices for grains and it seems that marker-assisted selection is leading to rising grain yields. Higher prices may make countries more inclined to introduce genetically modified organisms. Furthermore, how much can output be raised given limited land and water, and anxieties over conservation and pollution?

If demand were restricted, food might become cheaper. Controlling food spending is administratively difficult and politically unattractive; but countries, including the UK, have had rationing in the past. In the medium to long term, rising food prices make population control policies more attractive: whether world population stabilises at eight, nine or ten billion matters that much more.

## Responding in low-income countries

Countries should prepare for a world where food and oil imports cost far more than they have in the past. Countries now have an incentive to develop their unused agricultural potential, and investing in food production will pay dividends. Some countries with abundant land could offset higher oil prices through biofuel production, but this needs care if it is not to displace food crops and push food prices higher. Where land and water permit, biofuel production is an option if oil prices stay above $60 a barrel.

## Global and donor responses

Aid agencies should provide more support to developing country efforts to boost social protection in the short term, and food production in the medium term. If less food aid is available, its use must be prioritised and efforts to close gaps between emergency relief and long-term development become more pressing.

Finally, rising food prices raise questions about global food systems. The conventional wisdom that markets produce efficient outcomes may be right in normal times, but wrong when those times are abnormal. Little consideration has been given to contingency plans to deal with abnormal events, as the run-down food stocks in China, the EU and the US demonstrate. Conventional wisdom needs revisiting and the world's rich nations may need to reinvest in strategic stocks to offset sudden shocks.

Writtenby ODI Research Fellows Steve Wiggins (s.wiggins@odi.org.uk) and Stephanie Levy (s.levy@odi.org.uk).

The research for this Briefing Paper has been supported by the Future Agricultures Consortium (www.future-agricultures.org) and the Chronic Poverty Research Centre (www.chronicpoverty.org), as well as ODI.

## References

International Monetary Fund, Primary Commodity Prices (www.imf.org/external/np/res/commod/index.asp).

OECD-FAO (2007) *Agricultural Outlook 2007-2016*, Rome and Paris: OECD.

Peskett, L., Slater, R., Stevens, C. and Dufey, A. (2007) 'Biofuels, agriculture and poverty reduction', *Natural Resource Perspectives 107*, London: ODI.

Rosen, S. and Shapouri, S. (2008) 'Rising Food Prices Intensify Food Insecurity in Developing Countries', *Amber Waves* 6 (1).

Schmidhuber, J. (2006) 'Impact of an increased biomass use on agricultural markets, prices and food security: A longer-term perspective', Presentation to the International symposium of Notre Europe, Paris.

USDA (2008) 'USDA Agricultural projections to 2017, Long-term Projections Report OCE-2008-1', Washington, DC: US Department of Agriculture.

von Braun, J. (2007) *The World Food Situation. New Driving Forces and Required Actions*, Washington, DC: International Food Policy Research Institute.

World Bank (2008) *Global Economic Prospects: Technology Diffusion in the Developing World*, Washington, DC: World Bank.

Photo credit: flickr/r-z.

odi

Overseas Development Institute

111 Westminster Bridge Road, London SE1 7JD

Tel +44 (0)20 7922 0300

Fax +44 (0)20 7922 0399

Email publications@odi.org.uk



ISSN 0140-8682