



Food prices: where to now?

Report on a workshop held at ODI on 7 October 2011

Introduction

On 7 October 2011 a meeting was convened to look at the likely trajectory for cereals prices through to 2020 and the policy implications.

Three specialists were invited to speak about future prices:

- Merritt Cluff, Senior Economist at FAO presenting the work on FAO and OECD who annually make projections
- Dirk Willenbockel, Research Fellow at IDS Sussex, who has modelled future food prices for Foresight and Oxfam; and,
- Professor Chris Gilbert, Trento University, an authority on commodity markets who has carried out several influential studies on the food price spike of 2007/08, on index fund investments in futures markets, and on food price volatility, including work for Foresight.

A panel was convened to discuss policy implications, composed of:

- Brendan Bayley, HM Treasury
- Benoit Daviron, CIRAD and also coordinator of the High Level Panel of Experts' group on food price volatility
- Bettina Prato, IFAD
- Ruth Kelly, Oxfam.

Simon Maxwell, senior research associate and former director, ODI, chaired the discussion.

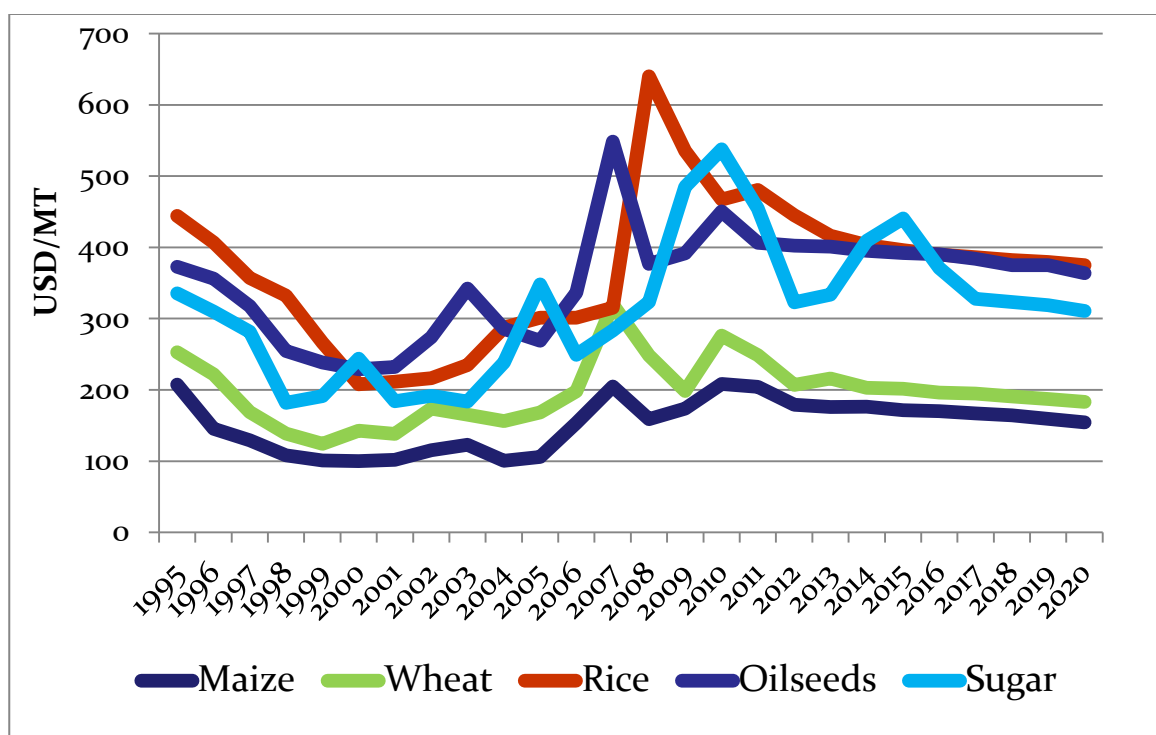
Appendix A has a list of those attending the meeting.

Cereals prices in 2020

The projections of cereals prices through to 2020 under discussion turn out to be fairly consistent.

Those from FAO/OECD, see Figure A — and USDA — expect that prices will fall from their levels in 2010 to 2020, although in most cases they will be above the levels seen in 2006, just before the 2007/08 price spike.

Figure A: FAO/OECD projections through to 2020, in constant values



Source: FAO, Merritt Cluff's presentation

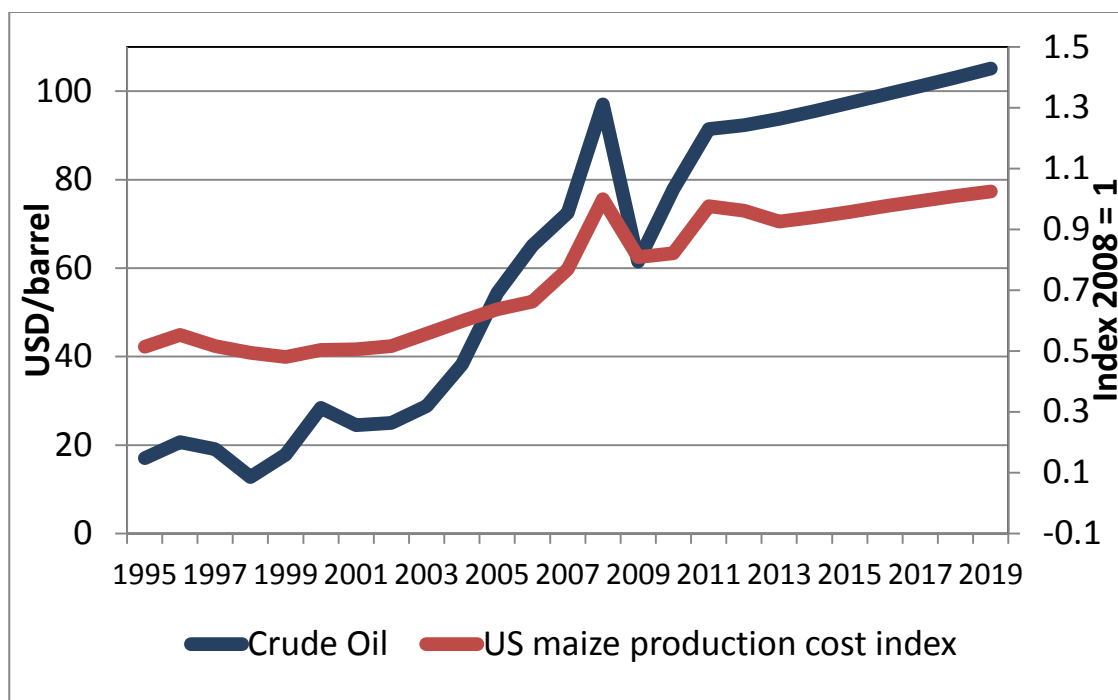
IDS projections using the Globe Computable General Equilibrium (CGE) model for Oxfam apparently see prices rising between 2010 and 2020, but these are not directly comparable to other forecasts, since they take as a base for 2010 not observed prices, but those predicted by the CGE model that runs from its baseline in 2004. Since the model cannot replicate the events leading to the spike and the surge seen from mid-2010 onwards, it would therefore considerably undershoot the observed values. As Dirk Willenbockel explained, when this is taken into account the model may well be showing a fall in prices from their observed levels in 2010 to those projected to 2020.

Projections are only as good as the assumptions that lie behind them, hence most of the session was given over to discussing these. Some seven key drivers underlie thinking. They can be divided amongst those affecting supply, demand and stocks, as follows:

Supply side:

- **Oil prices** — difficult to predict more than a year or so in advance, but central to projections since they affect the cost of production through machinery operations and nitrogenous fertiliser as well as transport costs, see Figure B. Increasingly, however, high oil prices encourage production of biofuels — see below — so that energy and food markets are ever more closely linked;

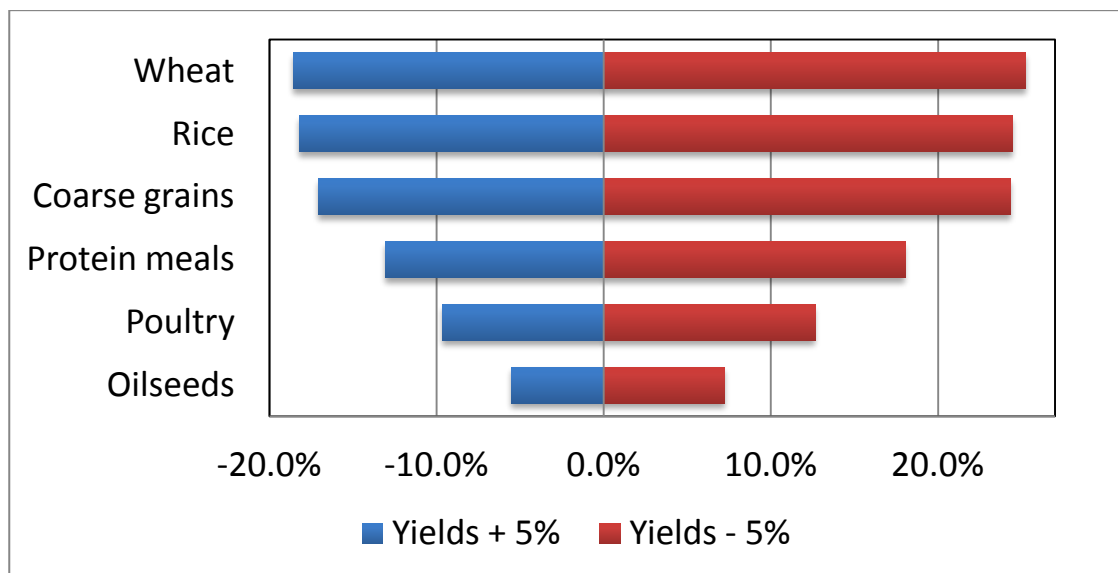
Figure B: Relation of oil prices and US production costs for maize



Source: FAO, Merritt Cluff's presentation

- **Productivity increases**, and especially increases in yields per hectare. Projections are highly sensitive to these, FAO reckoning that every percentage point improvement in yields reduces prices by around 4%, see Figure C; and,

Figure C: The effect of yield changes on prices, 2011 to 2020



Source: FAO, Merritt Cluff's presentation

- **Climate change**. The projections to 2020 do not explicitly take this into account, since it is not expected to have a major effect on yields by 2020. More extreme weather, however, may well mean more variable harvests by 2020, so this may raise variability of prices.

Demand:

- **Growth of large Asian economies**, China above all, see Table D. Population growth may be small, but incomes are rising and with them the demand for meat — see the next point, and oil that partly explains the expected higher oil prices.

Table D: Granger causality tests for change in food prices

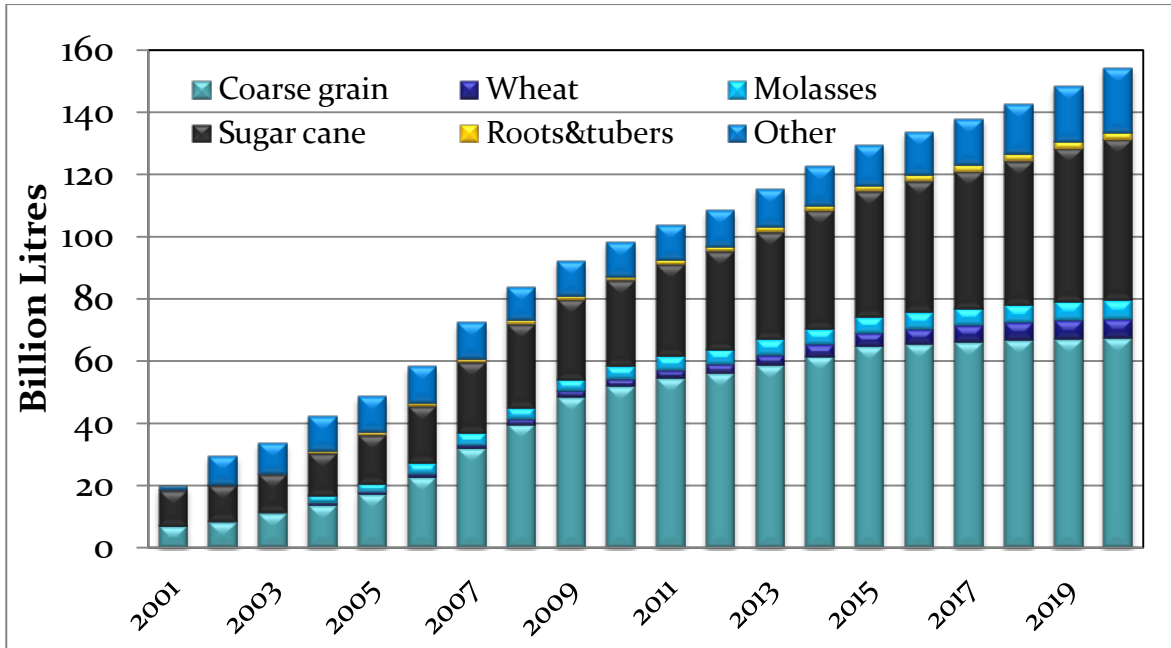
Influence of economic growth on IMF food price index, March 2000 to December 2010			
	Bivariate		Trivariate
China	2.64	-	1.86
OECD	-	1.88	0.40

Source: Chris Gilbert’s presentation

Much thus depends on how long China can sustain rapid rates of growth, that in turn depends on the ability to raise productivity of capital and labour, and to find markets for increased production, probably increasingly internally;

- **Meat consumption** — since so much of expected increases in meat production comes from grain-fed poultry and pigs, the extent to which the emerging economies raise their intakes of meat has a significant effect on cereals markets, above all those for maize, sorghum and soybeans; and,
- **Biofuels** — while mandates and subsidies may have stimulated the remarkable increase in production in the US and Europe since the early 2000s, high oil prices and the installed capacity of refineries mean that production will probably continue to increase, see Figure E for ethanol, with upward pressure on maize, sugar and vegetable oil prices.

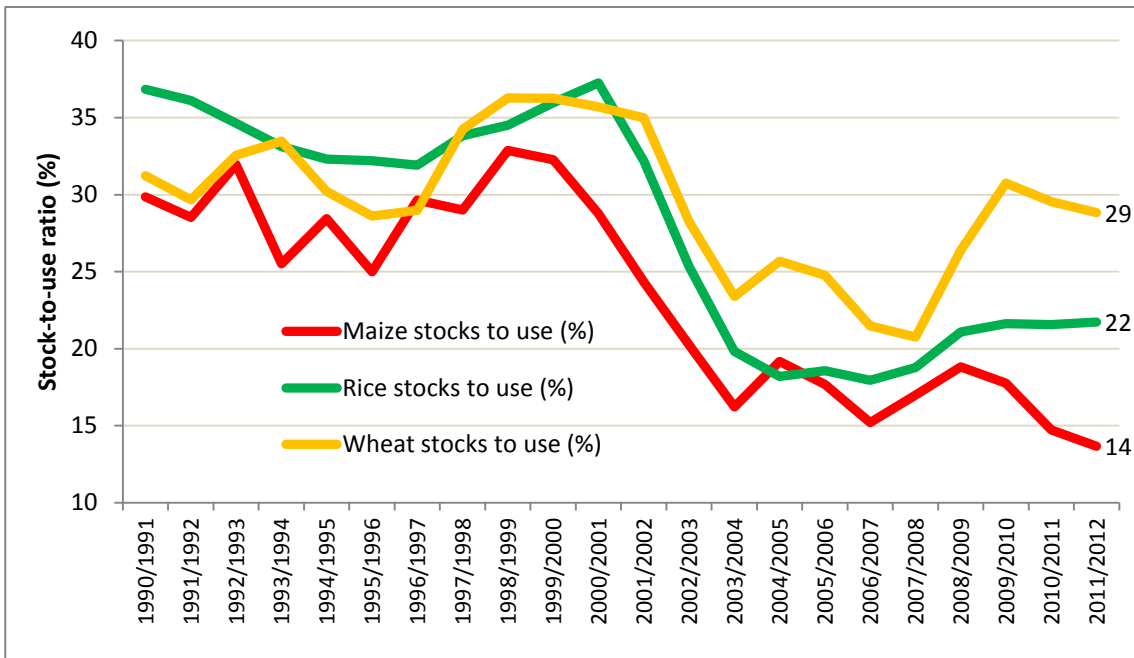
Figure E: Projected ethanol production



Source: FAO, Merritt Cluff's presentation

Stocks of cereals have been reduced, see Figure F, owing partly to public stocks being reduced as policy and partly to private stocks being drawn down during years when consumption exceeded production. Stocks are currently low and for the near future are not expected to be rebuilt by much.

Figure F: Stock to use ratios for the main cereals, 1990 to 2011



Source: Constructed with data from USDA FAS, using ending stocks

The role of *speculation by index funds on futures markets* remains much debated, but this is not seen as significant in the projections discussed. Chris Gilbert thought that while it played a (minor) role in 2007/08, by now traders on markets had taken this into consideration so that in

future prices were less likely to be pushed beyond the levels that reflect fundamental supply and demand.

While the models do not attempt to project *volatility* of prices, there are reasons to expect this to increase since low stocks mean that any unexpected poor harvests — and extreme weather arising from global warming may well increase their frequency — or sudden increases in demand, or policies that restrict exports will lead to adjustment largely by price, rather than by release of stocks. Furthermore, rising incomes in the developing world tend to make demand for staple foods less elastic, thereby amplifying price rises in response to supply shocks. Biofuel mandates also reduce flexibility of supply. On the other hand, increasing integration of markets across the world will tend to reduce the overall variance in cereals harvests.

The overall impression is of substantial changes to forces of supply and demand: high oil prices stimulating biofuels production and the impending impacts of climate change are novel elements — and both potentially threaten to drive up food prices and increase variability. For the time being, the models do not see them as driving prices higher, but they — plus increased meat demand from consumers with rising incomes — explain why no-one expects cereals prices to fall back to the levels seen in the early 2000s. Moreover, where there are imponderables, there is probably more chance that they will lead to higher prices than projected, rather than lower.

Hence while the best assessments forecast some fall in prices over the next decade, uncertainties mean that this is far from certain. In particular, it is clear that greater margins are needed to accommodate any future shocks without them causing severe price spikes.

Policy implications

Policy priorities and options discussed can be summarised under the following three headings:

1. Longstanding development concerns that become more pressing if international food prices are not going to fall back

Agricultural development was stressed, both as a way to reduce poverty through creating jobs, as well as a supply response to ease pressure on food prices. The rider to this is the increasing need to ensure that *agriculture is environmentally sustainable* —not degrading soils or polluting watercourses, economising on water use, producing lower net emissions — while being more resilient to more variable weather expected from global warming.

Finding ways to make agriculture and the livelihoods of the poor *more resilient to shocks* becomes that much more important if price spikes may happen. *Disaster risk reduction* plans and measures are indicated. Sharp seasonal price swings in countries isolated from world markets is a long-standing concern. If prices are more variable, then *social safety nets* need to be in place so that those vulnerable to higher and more volatile prices can be protected. If they are not already in place, it is almost impossible to set them up to respond to sudden shocks.

For countries as a whole, if there are price shocks that push up sharply the import costs for net food importing low income countries, then better *shock facilities* from bodies such as the IMF are needed. Current provisions proved insufficiently agile to cope with the effects of the 2007/08 price spike.

There was little disagreement over the importance of these measures.

2. Improving the functioning of international markets for cereals

Some ***policies that can distort incentives*** to producers and consumers, such as heavy subsidies to OECD farming and biofuels mandates, need to be reined in. ***Sudden and unpredictable interventions*** to restrict exports need to be resisted. Overall, ***more information on stocks and on trading in futures markets*** would improve transparency in markets and reduce uncertainty.

Whether it would help to ***regulate futures markets*** to damp down speculative investments by non-commercial actors remains a bone of contention, some arguing that this would be justified by the precautionary principle, others seeing this as ineffective, potentially counter-productive given the likely growing importance of markets for the management of price risk, and a diversion from more important measures.

3. Deeper changes to meet changing circumstances: policies for the longer run

Some proposals are probably not politically feasible in the short run, but the debate needs to be opened to prepare the way for options for the future.

Rules for world agricultural trade enshrined in the WTO were conceived when OECD countries were concerned about over-production and what to do with surpluses. If the future is likely to see episodes of scarcity, then rather different rules may be needed: instead of focusing on tariffs and quotas for market access, guaranteeing supplies to the world market may be more important.

Stores of grains are currently low, apparently unlikely to rise much in the short term. Is this time then to re-open consideration of increased public storage, with international or regional co-ordination of their operation?

The two main additional sources of ***demand for cereals, from biofuels and meat***, are currently taken as exogenous. Given that their increased demand for cereals could be large, the possibilities of dampening these demands needs addressing, if much higher levels of staple food prices are to be averted. Options may include taxes on biofuels and meat.

On all of these points, there is scope for more discussion of their importance and which measures would be technically and politically feasible.

Concern was expressed that options being tabled for agricultural ministers of the G20 fell well short of the scope and ambition of those compiled in the UN's Comprehensive Framework for Action. The gap between the two, of course, is largely a reflection of differences of opinions over policies where agreed texts tend then to reflect a minimum package on which all will agree.

Steve Wiggins, Sharada Keats, & Anna Locke 13 October 2011

Appendix A: List of Participants

Brendan	Bayley	Treasury
James	Birch	APGOOD
Ephraim	Chirwa	Chancellors College, Malawi/ Future Agricultures Consortium
Edward	Clay	ODI
Merritt	Cluff	FAO
Benoit	Daviron	CIRAD
Chris	Durham	DEFRA
Rebecca	Fisher Lamb	Foresight Project, Government Office for Science
Chris	Gilbert	University of Trento/ Birkbeck, University of London
Lucy	Grieg	DEFRA
Caroline	Henshaw	Dow Jones
Sharada	Keats	ODI
Ruth	Kelly	Oxfam
Jo	Khinmaung	Hunger Alliance, Tearfund
Jaakko	Kooroshy	Chatham House
Anja	Langenbacher	Gates Foundation
Anna	Locke	ODI
Simon	Maxwell	ODI
Andy	Norton	ODI
Yvonne	Pinto	Imperial College, London
Colin	Poulton	SOAS
Bettina	Prato	IFAD
Samrat	Singh	Institute of Development Studies, Sussex
Stephen	Spratt	Institute of Development Studies, Sussex
Aston	Stockdale	FCO
Jim	Sumberg	Institute of Development Studies, Sussex
Dirk Willem	te Velde	ODI
Steve	Wiggins	ODI
Dirk	Willenbockel	Institute of Development Studies, Sussex
Robin	Willoughby	Hunger Alliance, Concern