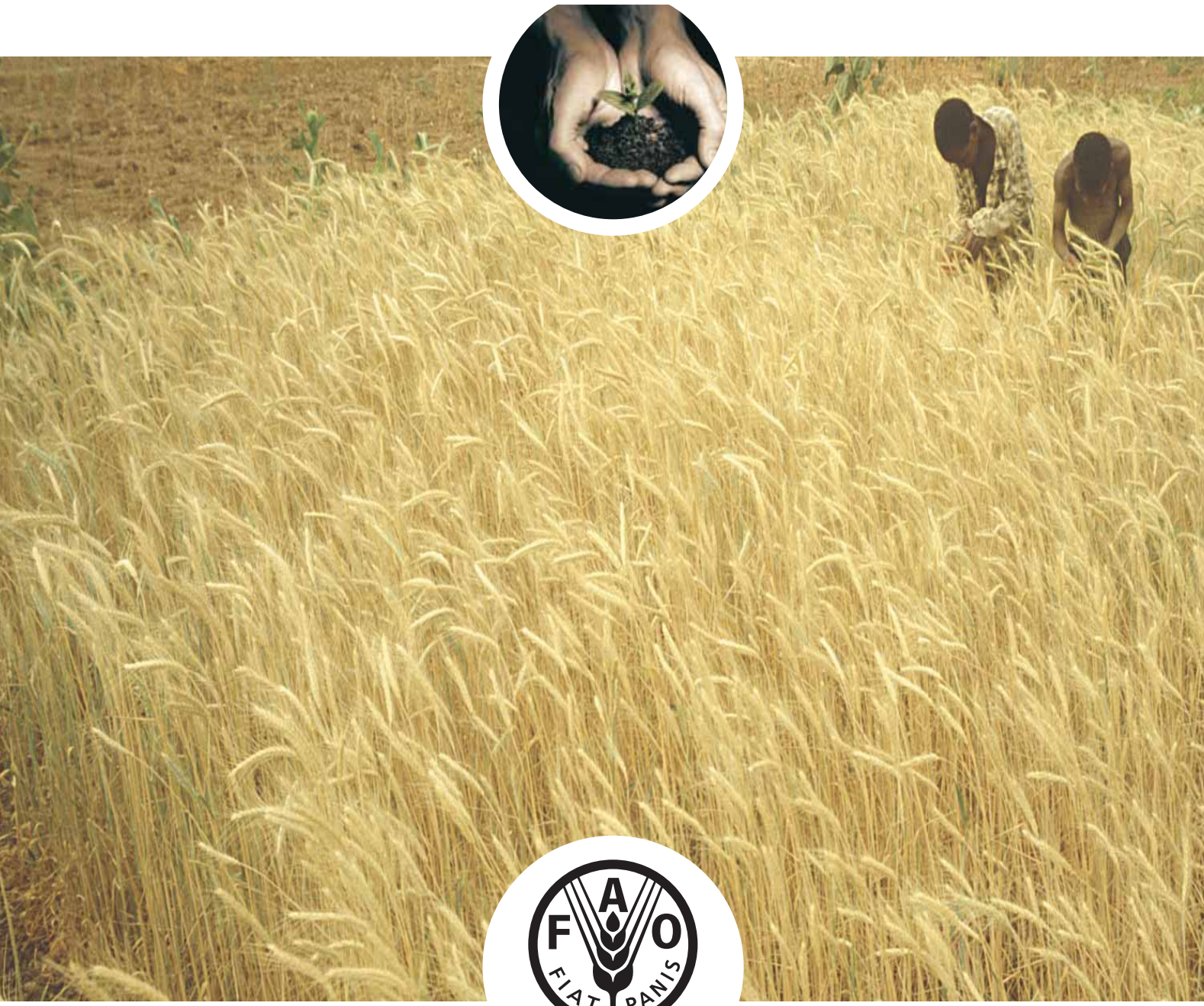
HIGH FOOD PRICES AND THE FOOD CRISIS - EXPERIENCES AND LESSONS LEARNED *



FAO 2009

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High food prices and the food crisis - experiences and lessons learned

FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS
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PART I:
WHAT HAPPENED TO WORLD FOOD PRICES AND WHY?

WORLD FOOD PRICE INFLATION IN 2007 AND 2008

The upturn in international food prices which began in 2006 escalated into a surge of food price inflation around the world increasing food insecurity, leading to violent protests and even fears for international security. Africa was perhaps hardest hit, but the problem was global. Reports of the impact of high food prices on the poor across many developing countries led to calls for international action to reverse the slide towards increased poverty and malnutrition. Food aid agencies such as the World Food Programme encountered difficulties in meeting the higher costs of purchasing food for distribution and appealed for additional funds.

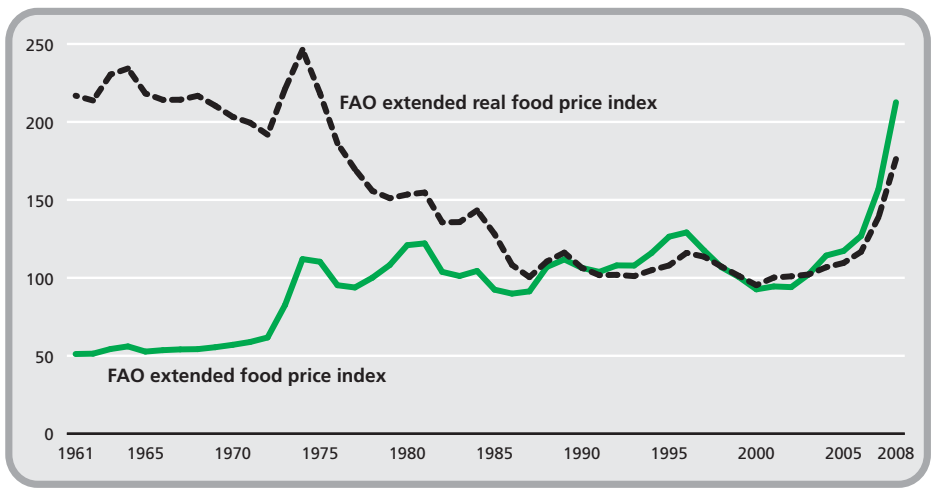
The FAO food price index[1] rose by 7 percent in 2006 and 27 percent in 2007 and that increase persisted and accelerated in the first half of 2008. Since then prices have fallen steadily, but remain above their longer-term trend levels: for 2008, the FAO food price index still averaged 24 percent above 2007 and 57 percent above 2006.

Looking at prices in real terms (deflated by the World Bank's Manufactures Unit Value, muv, index), the increases are still significant. Real prices have shown a steady long-run downward trend punctuated by typically short-lived price spikes. There is some suggestion of a flattening out since the late 1980s with a gradual recovery beginning in 2000 before the sharp increase in 2006: the average growth rate over the 2000-2005 period of 1.3 percent per year jumped to 15 percent since 2006.

WHAT DIFFERENCE DO EXCHANGE RATES MAKE?

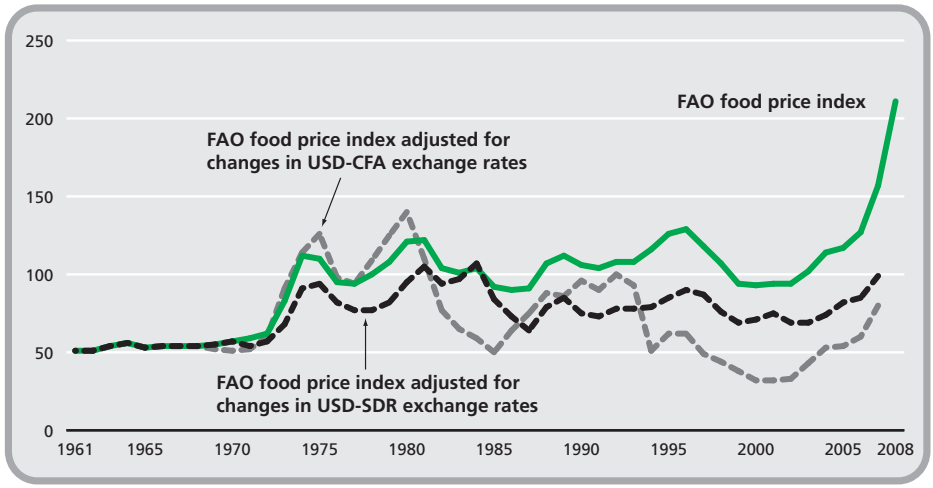
A proportion of these price increases can be attributed to the depreciation of the US dollar in which international prices tend to be denominated. Expressed in other currencies, the increases are less dramatic and within the range of historical variation, but they are still substantial.

Evolution of FAO food price indices, 1998-2000=100



[1] The FAO food price index is a trade weighted Laspeyres index of international quotations expressed in US dollar prices for 55 food commodities (see http://www.fao.org/worldfoodsituation/FoodPricesIndex).

FAO food price index (1998-2000=100) adjusted for changes in exchange rates



Source: FAO and IMF

Note: the SDR is a basket of major currencies (euro, sterling, yen and the US dollar) defined by the IMF;the CFA is the currency used in twelve African economies and whose value is tied to the euro.

The relationship between the currency and commodity prices is a complicating factor in assessing agricultural commodity price increases. It also has implications for how different countries are impacted by the changes. The extent to which international price increases translated to domestic consumer and producer price increases in different countries depends upon their dollar exchange rate as well as a variety of other factors such as import tariffs, infrastructure and market structures which determine the degree of price transmission. Because most commodity prices are commonly expressed in dollars, depreciation in the value of the dollar reduces the cost of commodities for countries whose currencies are stronger than the dollar resulting in cushioning of food price increases to a greater or lesser extent. However, for countries whose local currencies are pegged to the dollar or are weaker than the dollar, depreciation in the dollar increases the cost of procuring food. More than thirty developing countries peg their currency to the dollar.

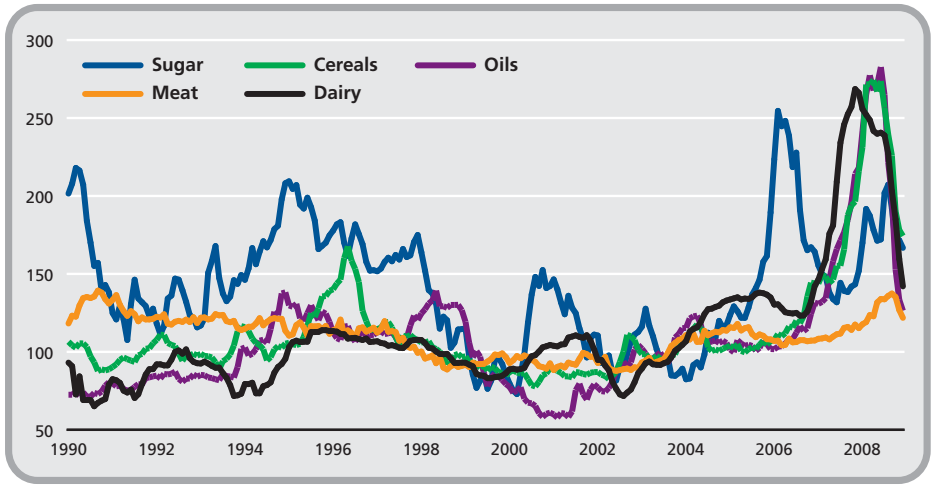
Did the prices of all agricultural commodities increase in the same way?

While almost all agricultural product prices increased at least in nominal terms, the rate of increase varied significantly from one commodity to another. In particular, international prices of basic foods such as cereals, oilseeds or dairy products increased far more dramatically than the prices of tropical products such as coffee or cocoa and raw materials such as cotton or rubber. Developing countries dependent on exports of these products therefore found that while their export earnings may have been increasing this was at a slower rate than the cost of their food imports. Since many developing countries are net food importers this imposes a serious balance of payments problem.

What is different about the 2007-08 food price increases?

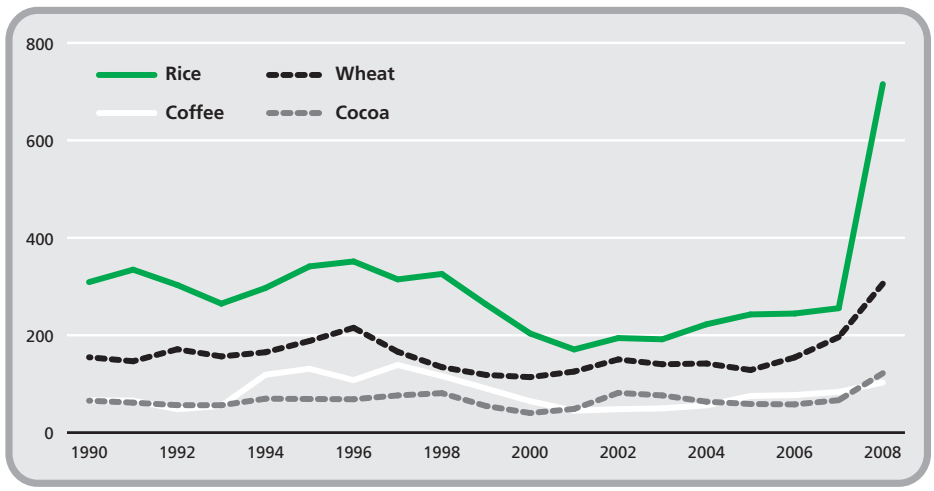
The leap in food prices was in sharp contrast to the secular downward trend and the prolonged slump in commodity prices from 1995 to 2002 which even prompted calls for the revival of international commodity agreements. For some analysts, the increases signalled the end of the long-term decline in real agricultural commodity prices with the Economist

Evolution of monthly FAO price indices for basic food commodity groups, 2002-2004=100



announcing "the end of cheap food"[2]. Others saw the beginnings of a potential world food crisis. It is an interesting question whether these sharp increases are fundamentally different from earlier price spikes and whether the long-term decline in real prices could have come to halt, signalling a fundamental change in agricultural commodity market behaviour. High price events, like low price events, are not rare occurrences in agricultural markets, although often high prices tend to be short lived compared with low prices, which persist for longer periods. What distinguishes this episode is the concurrence of the hike in world prices of not just a few but of nearly all major food and feed commodities and the possibility that the prices may remain high after the effects of short-term shocks dissipate.

Evolution of prices for tropical export crops



Note: wheat and rice prices are in USD per tonne; cocoa and coffee prices are in US cents per pound.

[2] The Economist 6 December 2007.

The price boom was also accompanied by much higher price volatility[3] than in the past, especially in the cereals and oilseeds sectors, highlighting the greater uncertainty in the markets. In the first 4 months of 2008, volatility in wheat and rice prices approached record highs: volatility in wheat prices was twice the level of the previous year while rice price volatility was five times higher. The increase in volatility was not confined to cereals – vegetable oils, livestock products and sugar all witnessed much larger price swings than in the recent past. High volatility means uncertainty which complicates decision-making for buyers and sellers. Greater uncertainty limits opportunities for producers to access credit markets and tends to result in the adoption of low risk production technologies at the expense of innovation and entrepreneurship. In addition, the wider and more unpredictable price changes of a commodity are, the greater is the possibility of realising large gains by speculating on future price movements of that commodity. So volatility can attract significant speculative activity, which in turn can initiate a vicious cycle of destabilising cash prices. At national level, many developing countries are still highly dependent on primary commodities, either in their exports or imports. While sharp price spikes can be a temporary boon to an exporter's economy, they can also heighten the cost of importing foodstuffs and agricultural inputs. At the same time, large fluctuations in prices can have a destabilising effect on real exchange rates of countries, putting a severe strain on their economy and hampering their efforts to reduce poverty.

How does the 2007-2008 high price episode compare with past crises?

A look at past price behaviour can indicate how different the recent high food price episode was. One price peak in particular stands out, as can be seen from the graphs, the so-called world food crisis of the 1970s. There are some similarities with that situation: weather and crude oil price shocks resulting in contractions of food production in the wake of rising food demand brought about by rapid population growth in developing countries. Even export restrictions featured, in the same vein as today, as measures to contain domestic inflation. However, one big difference is that while the 1970s crisis was due to supply-side shocks, demand factors, notably biofuel demand, were key to the 2007-2008 episode and may have longer-lasting effects.

At the peak of the 1970s crisis, international quotations of rice and wheat rose to USD 542 and USD180 per tonne, respectively. It would be tempting to conclude that, since prices in early 2008 far exceeded those witnessed in the 1970s, the world was facing a similar crisis. However, the purchasing power of one US dollar today is of course fundamentally different from what it was in the 1970s. Looking at prices in real terms, a drastically different picture is revealed. At 2000 prices and exchange rates, for instance, the cost of one tonne of rice in 1974 stood well over four times their average over the first four months of 2008.

The end of "cheap" food?

Soaring food prices came as a shock partly because consumers throughout the world had become accustomed to the notion of so called "cheap food". Up until 2006, the real cost of the global food basket had fallen by almost a half over the previous thirty years, with prices of many foodstuffs falling on average by 2 to 3 percent per annum in real terms. Technological advances greatly cheapened the cost of producing foodstuffs and this, together with widespread subsidies in OECD countries that rendered more efficient and cheaper production elsewhere unprofitable, entrenched the role of a few countries

[3] Volatility measures how much the price of a commodity fluctuated over a given time frame using the standard deviation of prices. Wide price movements over a short period of time constitute 'high volatility'.

The 1970s World Food Crisis

Over the two decades prior to the 1970's crisis, cereal output in developing countries rose by 80 percent. The "green revolution" led to big gains in productivity and harvested land areas expanded. But, in 1972, bad weather hit crops across the globe and world food production dropped for the first time in 20 years, down 33 million tonnes at a time when the world needed an extra 24 million tonnes to meet the needs of a rapidly rising population. In the following year, a new supply shock played its part in fuelling higher agricultural prices: oil prices quadrupled. This posed a real threat to the green revolution whose success was heavily dependent on pesticides, herbicides and nitrogen-based fertilizer applications, all of which are derived from petroleum. After paying for their oil import bills, many developing countries had little left to buy the chemicals and nutrients that their high-yield, intensive farming required. In 1974, the world anxiously awaited much needed abundant harvests in richer nations in order to replenish stocks and diffuse the growing price crisis. But instead, the United States, Canada, the former Soviet Union and much of Asia gathered poor crops in that year as a result of bad weather. At the end of the year, world cereal reserves had reached a 22-year low, equal to about 26 days supply, compared with a 95-day supply in 1961. To make matters worse, the United States government banned the exportation of 10 million tonnes of grain (mostly to the former Soviet Union) fearing that such a massive sale would compound domestic food price inflation. After peaking in 1974, prices of most foodstuffs remained consistently high up until the early 1980s. Official estimates of the number of deaths as a direct result of the 1970s world food crisis have not been made, but using deviations from trend mortality rates during the crisis period, unofficial estimates put the figure somewhere around 5 million persons. (www.theoildrum.com).

Source: FAO and *Time*, 11 November 1974

in supplying the world with food. This supply-driven agricultural paradigm sent real prices spiralling downward on a trend lasting for decades. Added to this, changes in the market and policy setting have been instrumental in reducing stock levels and have led to far more planned dependence on imports to meet food needs. Put together, these developments have resulted in a significant role for major exporting countries to supply international markets as needed. It is not surprising therefore that when production shortages occur in such countries, particularly in consecutive years, global supplies are stretched and the ensuing market tightness is manifest in both higher prices and higher volatility. This was precisely the case in the run up to the recent price surge. Against this backdrop, the world's growing demand for agricultural commodities, driven by rising global incomes and population and then expansion in biofuel production, left major exporters with little opportunity to replenish stocks.

Extreme price volatility for several commodities was another factor prompting fears of a wide-scale crisis. In a period of rising and protracted price volatility, it is quite difficult to distinguish between market instability and fundamentally higher price levels. Again, uncertainty as to just what was happening on international food markets added to fears of an impending crisis.

Does the recent high price episode reflect a reversal in the trend of falling real prices or is it the case that the world was experiencing yet another spike, albeit a rather large one? Periods of excessive market turbulence do not necessarily result in a fundamental, permanent shift in the trajectory of prices. When they do so, economists describe the event

as a 'structural break'. Econometric techniques can be used to detect these structural breaks in agricultural commodity prices. Applying these techniques, even the price peaks of the 1970s crisis for many foodstuffs did not manifest themselves as structural breaks. After the worst of the crisis passed, prices simply resumed their preceding trend.

It is difficult to draw any firm conclusions regarding the recent price spike from the evidence to date, and so far econometric tests have failed to detect a structural break. So to answer the question as to whether the recent high price episode is consistent with past commodity price behaviour of sharp but short-lived peaks and prolonged slumps or represents a break with past behaviour patterns it is necessary to explore the nature of the apparent causes. Many different factors have been cited as responsible: production shortfalls, low stock levels, oil prices, biofuel demand, growing incomes in emerging economies, depreciation of the dollar and speculation. While it is difficult to determine their individual contributions quantitatively, some of these factors could have a persistent effect on the average level of prices. There are some features of the current situation, notably the historically low stock levels for cereals and strong demand for biofuels, which suggest that in spite of the downward adjustments from the peak of early 2008, the recent high prices may well not be short-lived but could persist for some years.

Agricultural commodity price spikes

A price spike is a pronounced sharp increase in price above the trend value. For practical purposes, a price spike can be identified as an annual percentage change that is more than two standard deviations of the price in the five years preceding the year that the percentage change is calculated from. Using this definition, it is possible to identify the years in which high price events for basic food commodities (using the FAO food price index) occurred during the 1961-2008 period. Checking each year's percentage change against twice the standard deviation calculated as:

$$\sigma_t = \sqrt{\frac{\sum_{t-6}^{t-2}(x_i - \bar{x})^2}{5}}$$

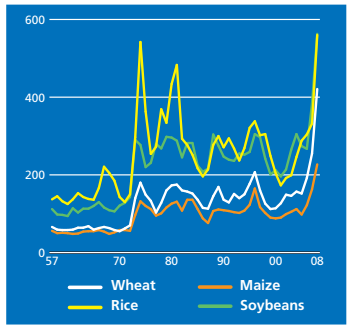
four distinct periods can be identified where prices exhibited significant increases: 1972-74, 1988, 1995, and the current period. The only price events in consecutive years are those that occurred in the first and the last periods: three years in a row in the first (1972, 1973 and 1974) and two years in the last (2007 and 2008). However, when the same methodology is applied to the prices expressed in real terms, only four years appear to have been significant price event years: 1973 and 1974 and 2007 and 2008.

AFTER THE RISE, THE FALL – FOOD PRICES NOW

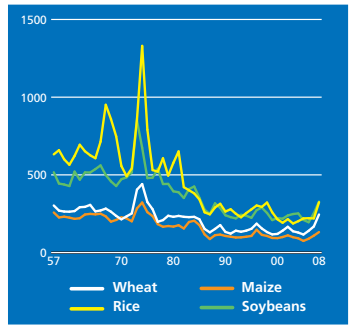
Prices for most agricultural commodities have fallen significantly from the peaks reached in the first half of 2008. World grain prices have fallen by 50 percent and prices for other basic foods have followed. However, prices remain high by historic standards and are still above their 2007 levels. At national level in many countries, but especially in Africa, prices remain substantially above 2007 levels. In some cases the peaks in international prices reached in the first half of 2008 are still working their way through national markets.

Annual food prices, in nominal and real USD terms (1957-2008)

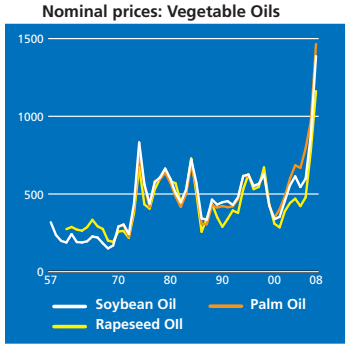
Nominal prices: Bulk Commodities



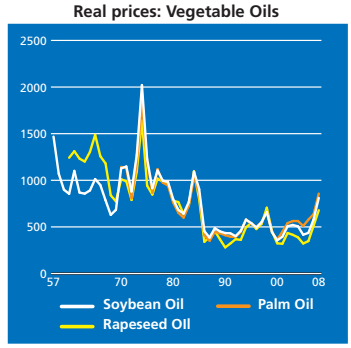
Real prices: Bulk Commodities



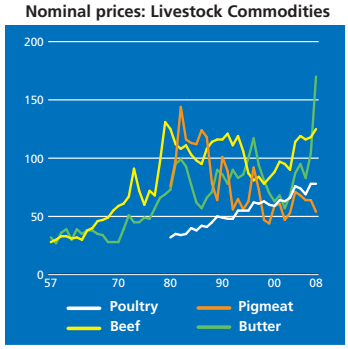
Nominal prices: Vegetable Oils



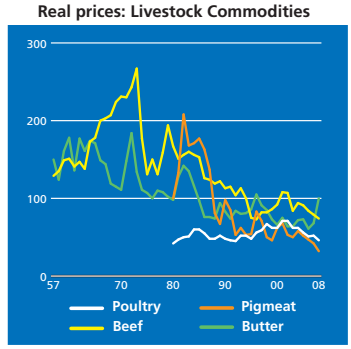
Real prices: Vegetable Oils



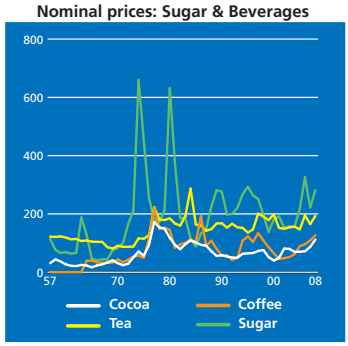
Nominal prices: Livestock Commodities



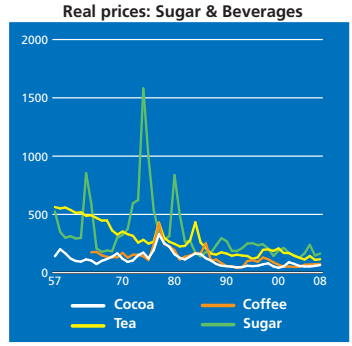
Real prices: Livestock Commodities



Nominal prices: Sugar & Beverages

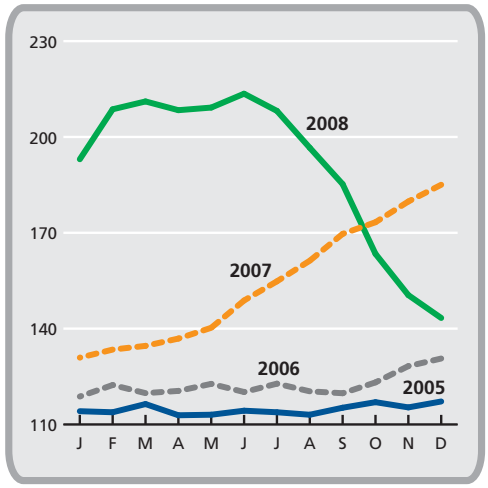


Real prices: Sugar & Beverages

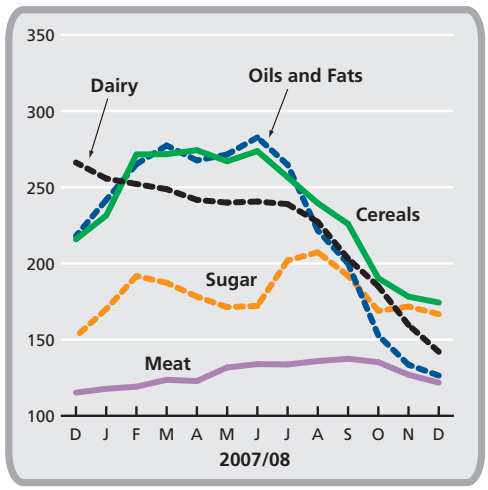


Sources: Cocoa (ICCO); Coffee (ICO); Cotton (COTLOOK, index 'A' 1-3 / 32); Maize (US No.2, Yellow, U.S. Gulf); Rice (White Rice, Thai 100% B second grade, f.o.b. Bangkok) ;Soybeans (US No.1, Yellow, U.S. Gulf); Sugar (ISA); Tea (Total tea, Mombasa Auction Prices); Wheat (US No.2, Soft Red Winter Wheat, US Gulf); Beef (Argentina, frozen beef cuts, export unit value); Butter (Oceania, indicative export prices, f.o.b.); Pig Meat (USA, pork, frozen product, export unit value); Poultry Meat (USA, Broiler cuts, export unit value); Rape oil (Dutch, fob ex-mill); Soya oil (Dutch, fob ex-mill).

FAO food price indices (2002-2004=100)



Food commodity price indices (2002-2004=100)



WHY DID FOOD PRICES INCREASE SO MUCH?

Different analysts and commentators have emphasised different explanations for the leap in food prices. The most popular is increased demand for certain agricultural products as feedstocks for biofuel production, particularly maize for ethanol. Record oil prices and environmental concerns strengthened interest in alternative energy sources and policy measures in the United States and the EU encouraged the expansion of biofuel production. High oil prices also had a direct impact on the costs of agricultural production and prices. A third popular explanation is rapid economic growth in certain emerging economies, notably India and China, increasing demand for food, especially for livestock products which generated increased cereal and oilseed demands for feed. These explanations focus on 'new' drivers in international agricultural commodity markets, and suggest the possibility of a fundamental change in the behaviour of agricultural commodity prices and continuing high prices. 'Traditional' explanations of high prices are also relevant: supply reductions as a result of drought in major exporters and the lowest cereal stock levels for more than 30 years. A variety of other complicating factors have also been cited as at least partial explanations of the high food prices. These include an inflow of speculative funds into agricultural commodity futures markets as the global financial downturn weakened more usual bond and equity markets. Once world prices began to rise significantly, the market and policy responses this provoked added to the inflationary pressure: hoarding against expectations of further price rises, or export restrictions, for example.

In practice, all these factors contributed to pushing up food prices. It is the combination of them that was crucial. These were the immediate triggers of increasing food prices but were against the background of the longer-term problems facing developing country agriculture - slowing growth in yields, lack of investment, declining share of agriculture in development aid, declining funds for research and development – which not only exacerbated the food insecurity problem but also made it even more difficult for developing countries to deal with it.

How are agricultural commodity prices determined?

Agricultural commodity prices are determined by a combination of the so-called market fundamentals of demand and supply and exogenous shocks due to factors such as the weather. In spite of intense research, there are still differences of opinion about the nature of price trends and variability and it is not straightforward, except in hindsight, to distinguish between normal variability and a change in trend.

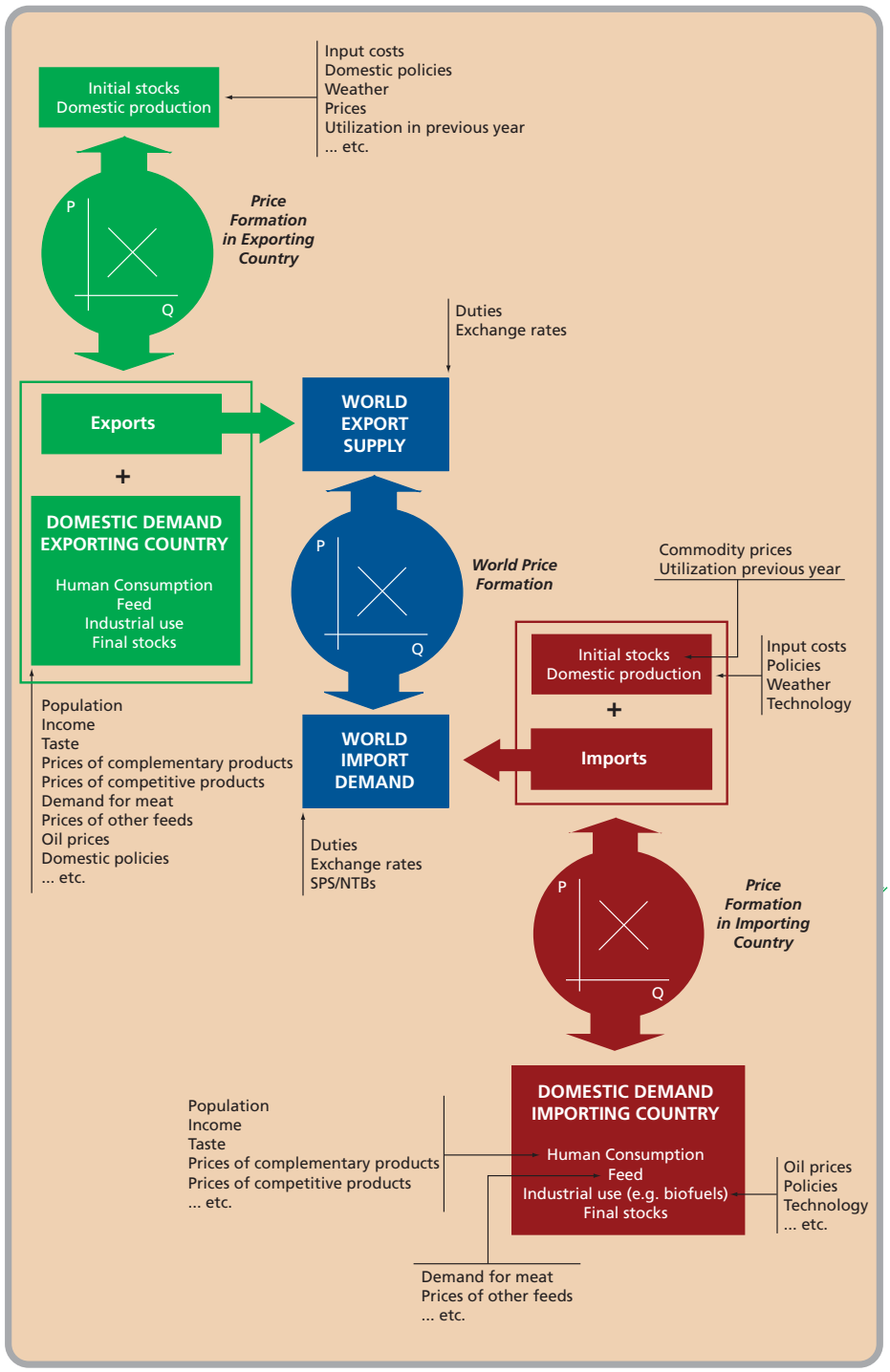
It is important to delineate those factors driving demand and supply which produce the underlying trends in prices and those which cause variability around those trends. Long-run changes in food demand are primarily the result of population and income growth, but are also influenced by relative price changes and the evolution of dietary patterns. Demand for agricultural raw materials such as rubber is related to economic growth more generally. Long-run expansion in supply is primarily driven by technological progress which reduces costs. In the past, technological progress reduced costs and induced supply expansion at a faster rate than population and income growth expanded demand leading to a long-run relative decline in agricultural commodity prices. Recent circumstances may have been different in that demand growth, as a result of income growth in emerging economies and biofuel demands, may run ahead of supply expansion leading to price increases. Supply expansion may be constrained in the short-term by the cost and availability of key inputs and other supply-side problems and in the longer term by the availability of land and water resources, labour and climate change. Volatility in prices stems from supply and demand shocks. In the short-run supply and demand for agricultural products are inelastic and do not respond much to price changes, so supply and demand shocks can produce wide swings in prices. Supply shocks are perhaps most important, because of the dependency of agricultural production on the weather, although demand shocks can be important too, especially for certain raw materials. The impact of shocks in demand and supply on prices can be cushioned by the possibility of running down or adding to stocks. The level of stocks in relation to demand is therefore an important factor in commodity prices. If the "stocks-to-utilization" ratio is low because stocks are low or demand is high or both, there will be upward pressure on prices. Markets and prices for agricultural commodities do not adjust immediately to supply or demand shocks. The effects of shocks tend to be less persistent when they are supply shocks - due to bad weather for example - and more persistent in the case of demand shocks.

Prices of different commodities are linked through possible substitution or complementarity in consumption or production. These lead to cross effects of price changes from one commodity to another: higher prices for maize, for example, will lead producers to grow more maize at the expense of other crops, reducing their supply and raising their prices; or increasing demand for livestock products will lead to increased feed demand and prices for cereals and oilseeds.

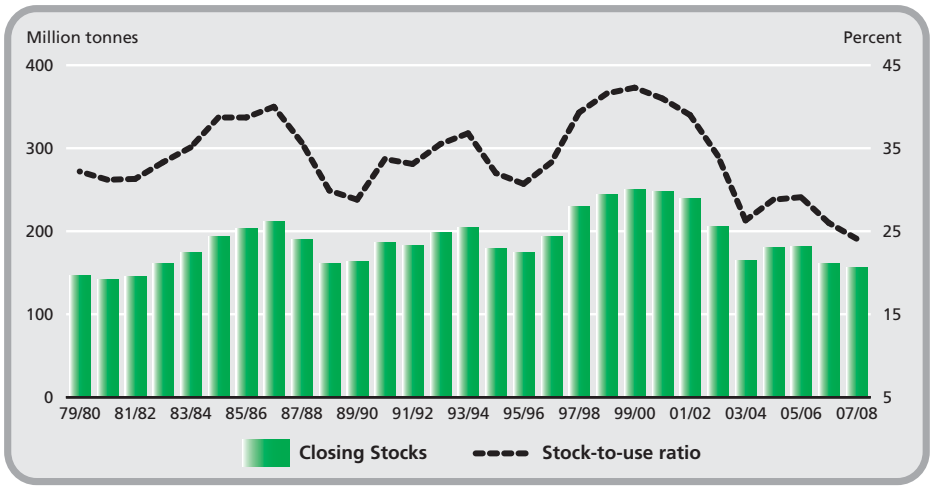
PRODUCTION SHORTFALLS AND LOW STOCKS

Traditional explanations for food price variability emphasise the importance of exogenous shocks to agricultural supply, notably as a result of the weather. A critical initial trigger for the recent price hikes was the decline in the production of cereals in major exporting countries beginning in 2005 and continuing in 2006; cereal production declined by 4 and 7 percent respectively in these two years. However, there was a significant increase in cereal output in 2007, especially in maize in the USA, responding to the higher prices. The quick supply response for cereals in 2007 came at the expense of reducing productive resources allocated to oilseeds, especially soybeans, resulting in a decline in oilseed production.

Factors affecting agricultural commodity prices

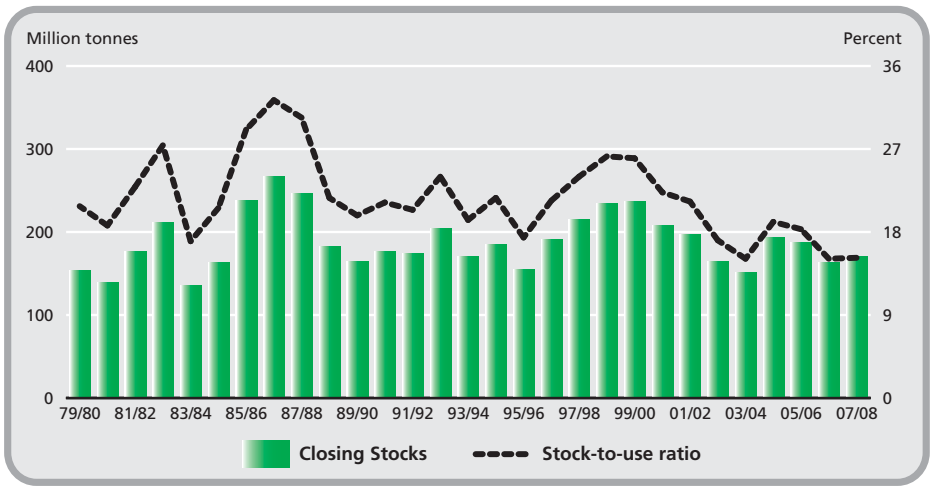


Evolution of wheat ending stocks and stock-to-use ratios



Source: FAO

Evolution of coarse grains ending stocks and stock-to-use ratios



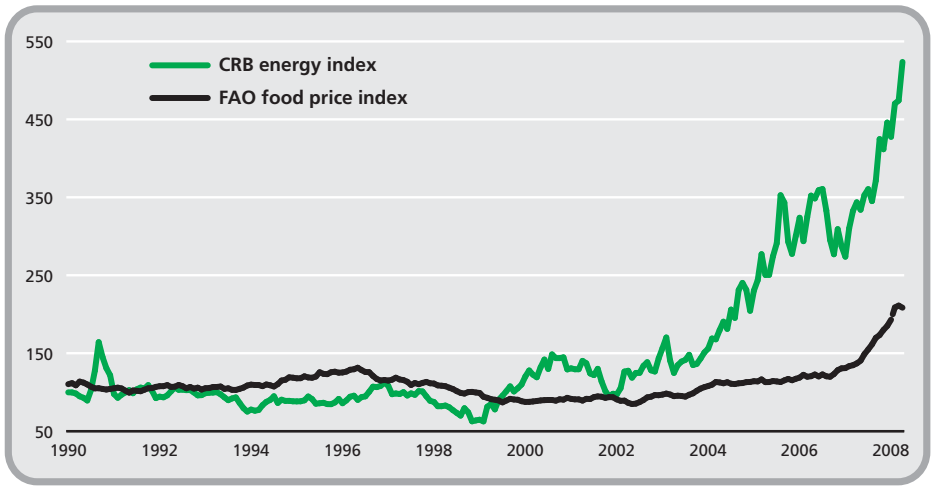
Source: FAO

Stocks play a key role in equilibrating markets and smoothing price variations. If stocks are low relative to utilisation, markets are less able to cope with supply and demand shocks and supply shortfalls or demand increases will lead to bigger price increases. This ratio fell sharply from 2006 onwards, reaching a historic low in 2008.

The level of stocks, mainly of cereals, has been falling since the mid-1990s. Indeed, since the previous high-price event in 1995, global stock levels have on average declined by 3.4 percent per year. There have been a number of changes in the policy environment after the Uruguay Round Agreements that have been instrumental in reducing stock levels in major exporting countries: the size of reserves held by public institutions; the high cost of storing perishable products; the development of other less costly instruments of risk management;

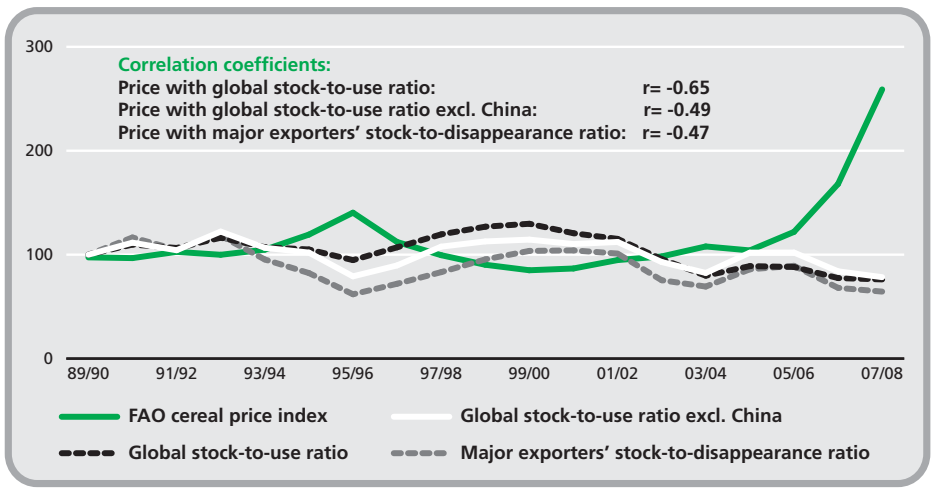
increases in the number of countries able to export; and improvements in information and transportation technologies. When production shortages occur in consecutive years in major exporting countries under such circumstances, international markets tend to become tighter and price volatility and the magnitude of price changes become magnified when unexpected events occur. Indeed, there is a statistically significant negative relationship between marketing season beginning stocks (expressed as a percentage of expected utilisation in the ensuing season) and the cereal prices formed during the same season. This means that tight markets at the global level at the beginning of the marketing season tend to put upward pressure on prices. This was one of the main reasons why international cereal prices spiked so sharply in 2006. Continuing low stock levels is one reason why relatively high prices could be expected to persist for some time. By the close of the seasons ending in 2008, world cereal stocks had increased by only 1.5 percent from their already reduced level at the start of the season and reach their lowest levels in 25 years. The ratio of world cereal stocks-to-utilization

Energy and food price indices (2002-2004=100)



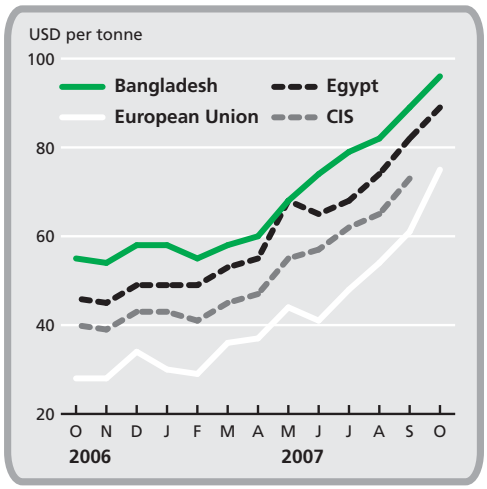
Source: FAO and Reuters-CRB (http://www.crbtrader.com/crbindex/)

Relationship between cereals stock ratios and prices



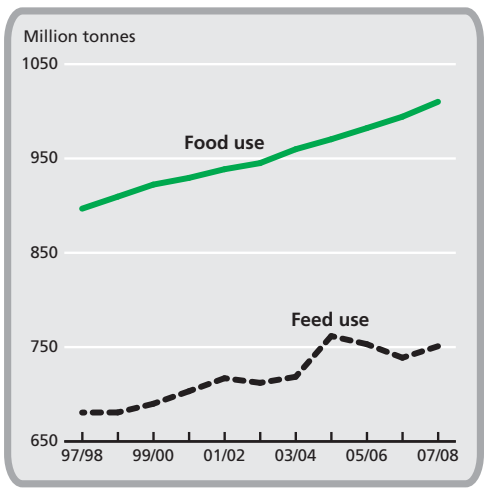
Source: FAO

Ocean freight rates for grains from US Gulf ports to selected countries



Source: International Grains Council

World cereal food and feed utilization



in 2007/08 stood at 19.6 percent, well below the 5-year average of 24 percent and even smaller than the previous low of 20 percent in 2006/07. The stock situation for oils/fats and meals/cakes began to deteriorate in mid-2007 after the spillover effects from developments in the cereals markets, especially of wheat and coarse grains, with the stock-to-utilisation ratio falling from 13 to 11 percent for oils/fats and from 17 to 11 percent for meals/cakes by the end of the 2007/08 season.

Putting food and feed in perspective – China and India

The increase in world population requires higher food production if consumption requirements are to be met. Increasing incomes generally also lead to changes in diets, often reflected in stronger demand for higher value foods (such as livestock products) as opposed to starchy staples (such as wheat). Because these changes are gradual, it is not correct to consider them as an underlying cause for any sudden price increase such as the one experienced recently. Therefore, this widely accepted notion that rising demand in places like China and India, the two most populous countries with rapid population and income growth, is a reason for soaring food prices, warrants re-examination.

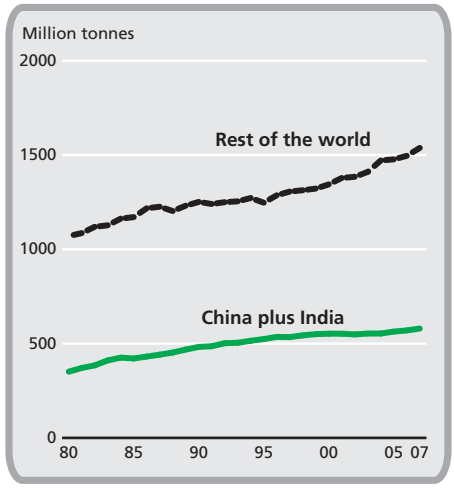
The importance of growth in demand from China and India as a shaper of world food markets and prices was highlighted in a recent International Food Policy Research Institute (IFPRI) study[4]. This argued that rapid economic growth in certain developing economies has pushed up middle class consumers' purchasing power and this has increased demand for livestock products such as meat and milk and hence demand for feed grains.

Emerging economies, particularly China and India, are certainly playing an important role in global agricultural commodity demand and supply. However, the high commodity prices of 2007 and 2008 do not seem to have originated in these emerging markets.

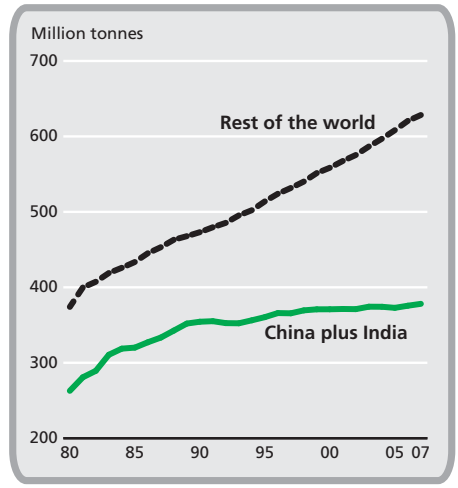
Cereal imports by China and India have been trending downwards since 1980, by about 4 percent per year, from an average of about 14 million tonnes in the early 1980s to roughly 6 million tonnes during the past three years.

[4] International Food Policy Research Institute, High and rising food prices, IFPRI, Washington, 2008

Cereal utilization in China and India and the rest of the world

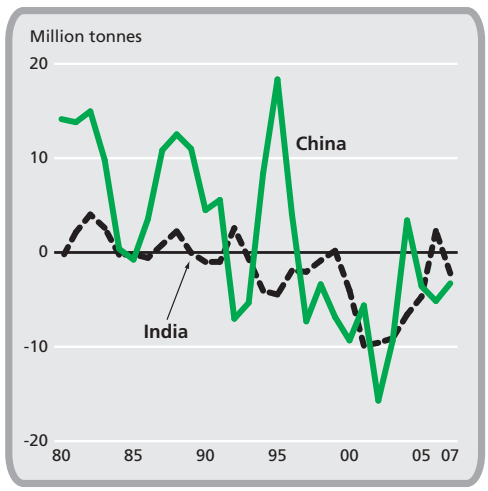


Cereals used for food in China, India and the rest of the world



This means that the growth in cereal feed demand in these two countries, at least up to recently, has been met mainly by domestic sources. Moreover, while China has become a major importer of oilseeds, vegetable oils and livestock products, the country's overall agricultural trade balance remained largely positive in most years since the mid-1990s. The long-term development in the trade position of India also goes contrary to the belief that India is one of the drivers of increasing food prices in world markets. India has been a major exporter of food and in most years, between 1995 and 2007, exported more wheat, rice and meat than it imported. Even India's relatively large imports of vegetable oils need to be considered in the context of equally large exports of oilcakes. In fact, in the case of both China and India, there was no evidence that there has been a sudden increase in the imports of oilseeds, meals and oils to indicate that they have contributed to their price hike, which began in mid-2007 after the spike in the prices of grains (maize in particular) a year earlier. China and India have not been the cause of the sudden price spike in the oils complex, but this does not downplay their role, nor that of the changing consumption patterns, in general, on developments in food markets, both in the past and in the future.

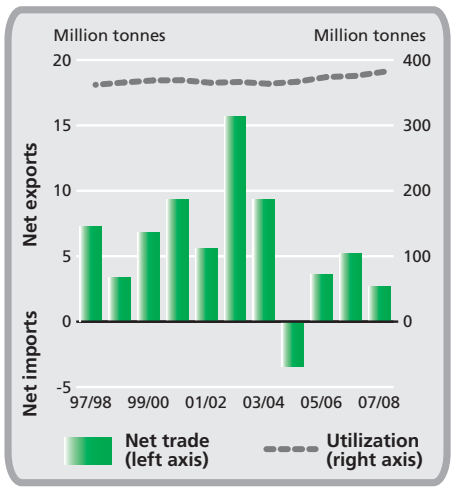
Net imports of cereals by China and India



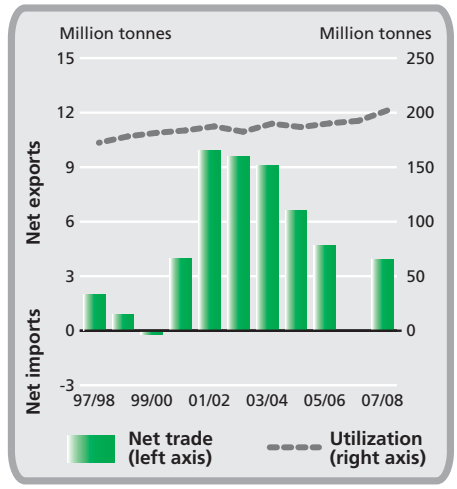
WHAT ABOUT BIOFUELS?

Demand for certain agricultural com-modities as feedstocks for biofuels can mean less productive resources used in the production of food crops. Biofuel production may reduce the availability of food commodities on the market because 'effective' demand for grains,

Cereal utilization and net trade in China

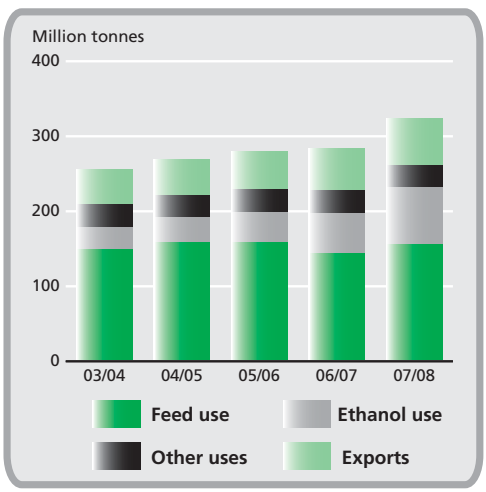


Cereal utilization and net trade in India



sugar or oils and other basic food staples as feedstock for fuel production could outbid that for food where the prices of oil and feedstocks favour biofuel production . This new source of demand has been playing an important role in influencing prices. Among all major food and feed commodities, additional demand for maize (a feedstock for the production of ethanol) and rapeseed (a feedstock for the production of biodiesel) have had the strongest impact on prices. For example, out of nearly 40 million tonnes increase in total world maize utilization in 2007, almost 30 million tonnes were absorbed by ethanol plants alone. Most of this expansion occurred in the United States, the world's largest producer and exporter of maize. In the United States, maize utilized to produce ethanol represented around 30 percent of its total domestic utilization. This contributed to the steep rise in international maize prices observed since the beginning of 2007. The intensity of the price reaction was also related to the fast pace (mostly within 2-3 years) in which this new demand materialized and to its concentration in the United States (more than 90 percent), a major exporter of maize. Globally, some 12 percent of total world maize utilization was used for ethanol in 2007, compared to 60 percent for animal feed. In the EU, the biodiesel sector is estimated to have absorbed about 60 percent of member states' rapeseed oil output in 2007, which amounts to about 25 percent of global production and 70 percent of global trade in the commodity in that year.

Maize utilization and exports in the United States



The issue is not limited to how much of each crop may be used for biofuels rather than for food and feed, but how much of planting area could be diverted from producing other crops to those used as feedstock for the production of biofuels. Already high maize prices since mid-2006 encouraged farmers in the United States to plant more maize in 2007. Maize plantings increased by nearly 18 percent. This increase

was only made possible by the reduction of soybean and wheat areas. The expansion in maize plantings combined with favourable weather resulted in a bumper maize harvest in 2007 enabling the United States to meet both domestic demand, including that from its growing ethanol sector, as well as exports. However, this apparent success in maize disguised another important development: reduced wheat and soybean plantings, and therefore their production. This was one reason for their sharp price increases. Of course, had production in Australia not suffered from another year of drought and outputs in the European Union and Ukraine also were not hampered by the unfavourable weather, it is conceivable to assume that grain prices would not have increased by as much as they did.

This chain reaction somewhat re-peated itself in 2008 but this time in reverse order. Farmers in the United States cut back on their maize plantings in favour of soybeans because of their higher relative prices. Strong soybean prices gave rise to a substantial increase in soybean planted area in the United States for the 2008/09 marketing season. This trend is confirmed by the soybean/maize price ratio in the futures market. From a historical perspective, whenever the ratio approaches two, as a rule of thumb soybeans are favoured over maize, resulting in a shift of planting area from soybeans to maize. As this ratio fell in 2006/07 farmers drastically increased maize plantings. However, with the ratio well over two in the 2007/08 season, farmers expanded soybean plantings instead. Increases in soybean plantings were a positive development for the soybean market but left the maize market precariously balanced. In view of the new US Energy Bill, the demand for maize by the ethanol sector is expected to continue to rise. If production of maize were to decline in 2009, it would be difficult to picture how the United States could meet all demand (food, feed, fuel and export) without a significant drawdown on its own maize stocks during the 2009/10 season. The market will be closely watched for indications of this eventuality. In these periods of market tightness, maize prices could firm, with a strong possibility of spill over to other major food and feed crops.

With the exception of ethanol production from sugar cane in Brazil, production of biofuels is currently not economically viable without subsidies or other forms of policy support. The production costs per litre of biofuel are by far the lowest for Brazilian sugar cane ethanol which is the only biofuel that is consistently priced below its fossil-fuel equivalent. Brazilian biodiesel from soybean and United States ethanol from maize have the next lowest net production costs, but in both cases costs exceed the market price of fossil fuels. European biodiesel production costs are more than double those for Brazilian ethanol, reflecting higher feedstock and processing costs. According to the Global Subsidies Initiative, the United States spent USD 5.8 billion on biofuel subsidies in 2006 while the EU spent USD 4.7 billion. These policy interventions encouraged the rush to liquid biofuels and hence increased demand for certain agricultural products as feedstocks. One motivation for such support - the claimed environmental benefits of biofuels over fossil fuels - is now being questioned as evidence emerges that reductions in greenhouse gas emissions are less than originally assumed for certain types of biofuels. However, while support for biofuels remains in place, the additional demand for the agricultural products involved will continue to shore up their prices with spill-over effects on prices in other agricultural markets.

Much depends on oil prices. The higher oil prices are, the more economically viable biofuel production becomes and the more agricultural products are demanded as feedstocks. When oil prices reach a level where biofuels become competitive, demand by the energy market for agricultural products as feedstocks increases and this new demand pushes up agricultural prices. Agricultural and energy markets therefore become linked in a new way. As energy markets are huge relative to agricultural markets, demand from the biofuel sector could *in principle* absorb any additional production of crops useable as feedstocks

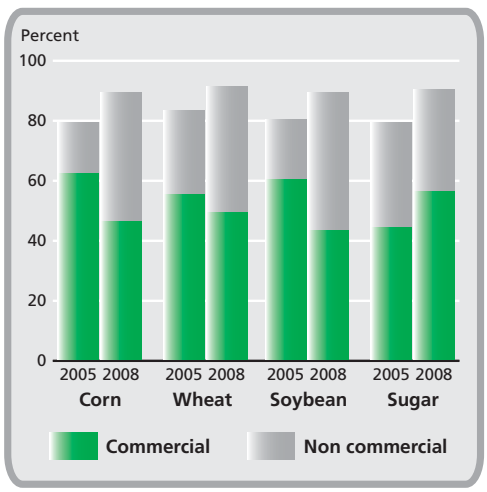
so the energy market would effectively set a floor price for the agricultural products. It would also set a ceiling on agricultural product prices at the point where they have risen so much that biofuel production is no longer competitive. It would be energy demands rather than food demands which would set agricultural product prices and agricultural product prices would be tied to energy prices. Clearly this would be a major departure from how agricultural product prices have been determined in the past.

What is the role of speculation?

Recent discussions of high food prices included a growing interest in the possible effects of speculators and institutional investors – "non-commercial traders" - buying into agricultural commodities on futures markets as returns on other assets became less attractive. There has been some concern that speculation has contributed to increasing food prices. The downturn in the global properties and securities markets resulted in an inflow of funds into agricultural commodity futures markets looking for profits, both from traditional institutions like hedge funds and pension funds and from newer commodity-linked and exchange-traded funds. Global trading activity in futures and options combined has more than doubled in the last five years. In the first nine months of 2007, this activity grew 30 percent over the previous year. Notably, the share of non-commercial traders taking long positions in the commodity markets has been going up, indicating increased interest on their part in buying futures contracts. Between 2005 and 2008, non-commercial traders almost doubled their share of open interests in the maize, wheat and soybean futures markets although their share in the sugar futures market remained largely unchanged. Investments by institutional investors can be large, although the volume of these investments in agricultural commodities has not been as significant as in other commodities such as metals.

The increase in the shares of non-commercial traders in corn, wheat and soybean markets coincided with the increase in prices of these commodities in the physical markets. This high level of speculative activity in agricultural commodity markets in the last few years has led some analysts to connect the increases in food prices with increased speculation. However, it is not clear whether speculation on agricultural commodities was driving prices higher or was attracted by prices which were increasing anyway. A recent study by the IMF concluded that in general it was the high prices which were encouraging inflows of investment funds into futures markets for agricultural commodities. This question of causality requires further research. Large inflows of funds could provide a further explanation at least for the persistence of high food prices and their apparently increased volatility. Again, further research is needed. In the meantime, the role, if any, of financial investors in influencing food prices is a matter of concern to the extent that some countries have even considered additional regulation.

Share of commercial and non-commercial traders in futures markets



Source: OECD

No single explanation for soaring food prices

The sharp jump in the US dollar prices of food which peaked in the first half of 2008 can be characterized as the most

significant spike since the 1970s. The reason for this development was supply and demand imbalances in many of the major commodity markets, notably cereals and oilseeds. It is primarily on the demand side that plausible explanations for the food price hike can be found. The principal drivers of increasing prices on the supply side tend to be short-lived and are related to production shortfalls and to policy measures such as restrictive export policies by major traders. On the demand side, factors contributing to the recent rise in world food prices are few. Unlike with supply, in general changes on the demand side are not rapid nor are they unexpected. This is because aside from the emerging biofuel factor, the main drivers of demand in food markets are population and income growth. In most cases, these two fundamental variables manifest a gradual (and expected) upward demand progression and in this way allow for supply to adjust. The situation during the recent high price period does not depart from this trend in that neither food nor feed demand exhibited any sudden or unexpected increase that would have merited the kind of price rises witnessed by markets. Speculation and inflows of investment funds are more likely to have followed the increasing prices than to have caused them. Only the rapid expansion of demand for biofuel feedstocks marks a major departure from past experience. However, biofuel demand alone cannot explain the extent of the price increases through 2007 and early 2008. Record oil prices have increased interest in biofuel development but have also

Speculation on agricultural commodity markets

Typically commodity exchange markets provide risk management tools such as futures and options to enable market participants like farmers, processors, producers or traders – "commercial traders"- to hedge against the risk of price fluctuation in the future. These markets also assist in the discovery of prices and thus provide a measure of predictability in ascertaining future prices. Another market activity is speculation, undertaken, mainly by speculators or investors – "non-commercial traders". This involves making profits by speculating on future movements in the price of an asset or a commodity.

Speculation is important for the efficient functioning of markets since it brings liquidity into the market and helps farmers and other participants to offset their exposure to future price fluctuations in the physical commodity markets. However, speculation can sometimes play a perverse role in markets. For instance, excessive levels of speculation can lead to sudden or unreasonable fluctuations or unwarranted changes (in one particular direction) in commodity prices. This may occur when an increasing share of open interests (number of outstanding futures contracts) is held by investors interested in gaining from future price movements with little regard to the fundamentals of commodity demand and supply. The impact of excessive speculation is thus counterproductive to futures markets because the risk of price volatility is a fundamental condition which these markets attempt to address. In addition, excessive speculation in agricultural commodity markets may transmit inappropriate market signals to agricultural producers leading to inefficient allocation of resources.

The level of speculative activity could be controlled by regulating commodity markets. One way is through limiting the number of futures contracts one participant, other than a participant eligible for hedge exemption, can hold thereby limiting the ability of a single participant to influence the market. However, this is risky as excessive regulation may drive speculators out of the market, depriving it of liquidity.

had a major impact in their own right driving up production and transport costs. Upward pressure on prices has been reinforced also from the demand side by fears that prices might go even higher and increased demand for stocks. The sharp increase in food prices on world markets cannot be attributed to any one single factor. Each one of those causes commonly cited cannot of itself explain the pattern and extent of recent price movements. It is their coincidence and combination that accounts for the dramatic changes. Disentangling their separate effects is problematic, although the evidence does point to biofuel demand and oil prices as the principal drivers.

Some broad indication of the relative impacts on food prices of the various factors can be gleaned from simulations with the OECD-FAO Aglink-Cosimo model of world agricultural market. This model is used to generate market projections over the medium term on the basis of assumptions concerning the future values of key variables affecting markets and prices[5]. Varying these assumptions and comparing the resulting projections gives an indication of the strength of each influence. The five key assumptions examined were: 1) biofuel use of grains and oilseeds; 2) petroleum prices; 3) income growth in major developing economies: China, India, Brazil, Indonesia and South Africa (EE5); 4) the exchange rate of the USD relative to the currencies of all other countries, and 5) crop yields.

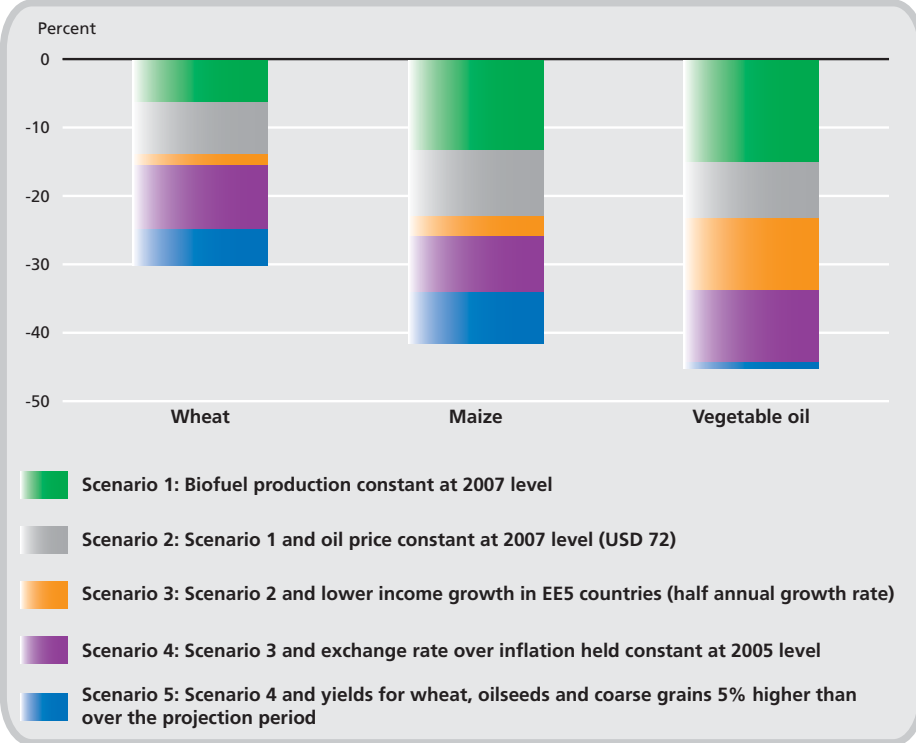
For coarse grains and vegetable oil, the price outlook would be most affected if biofuels production were to remain constant at 2007 levels. Changes in demand for these commodities as feedstocks for biofuel production are a source of uncertainty, no matter whether the cause is an oil price change, a change in biofuel support policies or a new technological development that lead processors to buy different feedstocks. Holding biofuels production constant at its 2007 level results in a 12 percent decline in the 2017 projected prices for coarse grains and around 15 percent in the projected price of vegetable oil. The second scenario shows that wheat, coarse grains and vegetable oil price projections are all highly sensitive to petroleum-price assumptions and would be a further 8-10 percent lower if oil prices fell to their 2007 level. The reduced GDP growth scenario produces wheat and coarse grains prices that are only modestly (1 to 2 percent) below the baseline. For vegetable oils, reflecting presumably a much higher income elasticity of the demand and a greater influence of the five countries in world trade, the simulated price difference is over 10 percent. A fourth scenario simulating a stronger US dollar raises prices in domestic currency terms in exporting countries, providing greater incentives to increase supplies. At the same time, a stronger US dollar reduces the import demand in importing countries. The combination of greater export supply and weaker import demand puts additional downward pressure on world prices. By 2017, wheat, coarse grain and vegetable oil prices would all be some 5 percent below the corresponding baseline projection. The scenario under which cereals and oilseeds yields are assumed to be 5 percent higher leads to projected wheat and maize prices for 2017 that are 6 percent and 8 percent lower respectively than the corresponding baseline value, but make little difference for projected vegetable oil prices.

Why have prices fallen?

The sharp fall in international food prices since July 2008 reversed their equally sharp rise up to that point and pushed them back towards their 2007 levels. The underlying causes of

[5] Aglink-Cosimo is a partial equilibrium model, a joint project of FAO and the Organization for Economic Co-operation and Development (OECD). These scenarios are described in more detail in the OECD-FAO Agricultural Outlook 2008-2017. Aglink-Cosimo provides a comprehensive dynamic economic and policy specific representation of 58 of the world's major producing and trading countries and regions for the main temperate-zone commodities as well as rice, sugar and palm oil. Ethanol and biodiesel are also now included. As most models of this type, the model is driven by elasticities, technical parameters and policy variables.

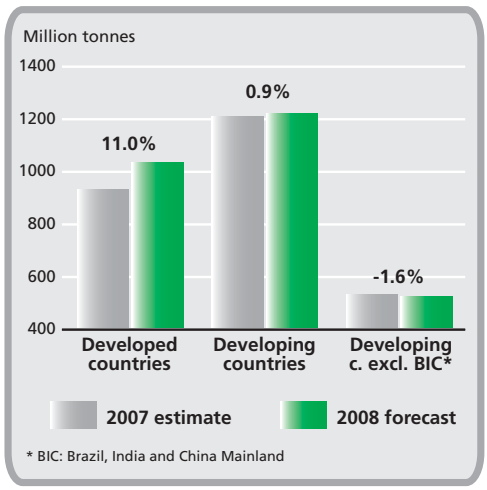
Sensitivity of projected world prices to changes in five key assumptions, percentage difference from baseline values, 2017



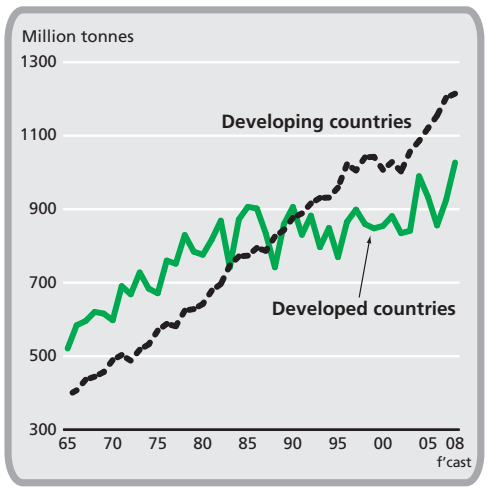
the reversal are a mixture of supply and demand factors. High prices have encouraged an expansion in global production of cereals, although this supply response was concentrated mostly in the developed countries and, among developing countries, Brazil, China and India. With the exception of these three, ceral production actually fell between 2007 and 2008 in developing countries. It is clear therefore that high food prices were not an opportunity seized by the majority of poor farmers in developing countries: their supply response was limited in 2007 and has been virtually zero in 2008. Falling food prices have little to do with increasing global supplies. The explanation is more in terms of slowing demand as the financial crisis and emerging global recession reduced economic activity and oil prices tumbled. The declining demand is impacting most, at least initially, on the markets and prices of agricultural raw materials such as rubber, but food prices are also being affected.

Falling food prices are obviously good news for consumers but they should not be taken to imply that the global food system's problems are solved. Most of the critical factors which underlay the high price episode and the resulting threat to food security remain. Developing country food production has not seen any significant increase and weaker price incentives will not encourage further expansion of production elsewhere. Global cereal stocks are still low with the cereals stocks-to-use ratio in 2008/09 below their 5-year average. Although oil prices have fallen drastically, biofuel demand remains strong as feedstock prices have fallen and new ethanol production capacity comes on line. The impact of falling oil prices on agricultural prices is complicated. Lower oil prices reduce energy and fertilizer costs but will compound the downward pressure on prices of those commodities usable as feedstocks as biofuel becomes less competitive. The net effect will depend upon the relative price

Cereal production in 2007 and 2008



Cereal production in developing and developed countries



movements between oil and feedstocks, notably maize.

What about the medium-term?

The fall in food prices on international markets has been sharp but prices remain substantially above their average of the last five years. The big question is whether prices will fall further or remain at these historically high levels. Prices have fallen in the second half of 2008 as dramatically as they increased in the first half. In either case, some overshooting is likely reflecting the much increased volatility, so it is difficult to distinguish an adjustment to a new trend. However, some of the factors cited as explanations for high prices suggest that they will persist, against the pattern of past commodity price behaviours where price spikes have been short-lived and followed by prolonged slumps. More generally, as noted above, with the significant exception of oil prices, the factors which contributed to high food prices remain unchanged. Supplies have not increased substantially and stocks remain low.

The *OECD-FAO Agriculture Outlook* 2008-2017 indicated that both nominal and real agriculture commodity prices would fall from the record levels reached in early 2008, but would remain higher over the next decade compared to the previous one. That decline has already begun, but more rapidly than expected as a result of the financial crisis and the downturn in the world economy. How long that decline will continue will depend upon the speed of recovery from the recession. However the *Outlook* argued that among the prime factors in the latest price spike – droughts in key grain-producing regions; increased biofuel feedstock demand; high oil prices; US dollar depreciation; and a changing demand structure for commodities all in the context of low stocks – some have permanent elements that are expected to sustain higher prices over the next ten years. In particular, the *Outlook* pointed to biofuel demand and oil prices. While globally, and in absolute terms, food and feed remain the largest sources of demand growth in agriculture there is now a fast growing demand for feedstock by the bioenergy sector. Biofuel demand is the largest source of new demand in decades and is seen as a strong factor underpinning the upward shift in agricultural commodity prices. Biofuels have forged a new link between agricultural product prices and oil prices which also has the potential to break the pattern of long-run decline in real agricultural commodity prices at least in the medium-term.

The financial Crisis, recession and agricultural commodity prices

Growth of the world economy is expected to be only 2 percent in 2009 compared to 3.8 percent in 2008. Evidence of global recession has accumulated with projected growth in major developed economies reduced to zero or even negative. The financial crisis and more significantly the global recession has obviously contributed to the dramatic fall in agricultural commodity prices. However, it is difficult to separate the impacts of the crisis and recession from the expected market adjustments to apparent overshooting of prices upwards in 2007 and the first half of 2008. Agricultural markets and prices will be affected on both the demand- and supply–sides, not only through reduction in economic growth rates and demand but also through exchange rate changes, changes in the availability and cost of credit and changes in the availability of other external funding, including aid. However, the reduction in global economic growth will be the major influence on agricultural commodity markets and developing country agricultural prospects in the near future.

The impacts on demand for commodities will obviously be negative. Experience of previous recessions suggests that demand for, and prices of, raw materials such as natural rubber and fibres will be hardest and fastest hit, followed by livestock products for which income elasticities are relatively higher. The impact on basic food such as cereals and rice may be less, as consumption levels are defended and demand is maintained. Developing countries dependent on exports of raw materials and tropical products will face balance of payments problems in the absence of a similar or stronger decrease in the cost of food imports on which many also depend. The prevailing uncertainty and consequent negative market expectations are likely to further dampen demand overall. Hopes that commodity demand and prices might be sustained by continuing high growth rates in China and India and other rapidly growing economies in the developing world now look less tenable as their projected growth has been revised downwards. Availability of credit and liquidity is constraining agricultural trade, adding to the downward pressure on international prices but also reducing trade volumes. Falling oil prices will compound downward pressure on prices for commodities usable as feedstocks in biofuel production, although the net effect will depend upon their price movements relative to oil and the extent of biofuel policy support.

Lower prices in general are good news for consumers but will affect incentives for producers to make the investments needed to achieve greater food security in the medium and long term. With incentives for producers reduced some cutback in production might be expected, also reducing scope for rebuilding grain stocks. Whether falling prices are really good news for consumers depends on what happens to incomes, which will fall along with employment in the event of worldwide recession. Many developing countries are also highly dependent on remittances, so downturns in the developed economies could have an indirect impact on domestic demand in developing countries as employment and incomes of migrant workers fall. Remittances also provide funds for investment, including in agriculture.

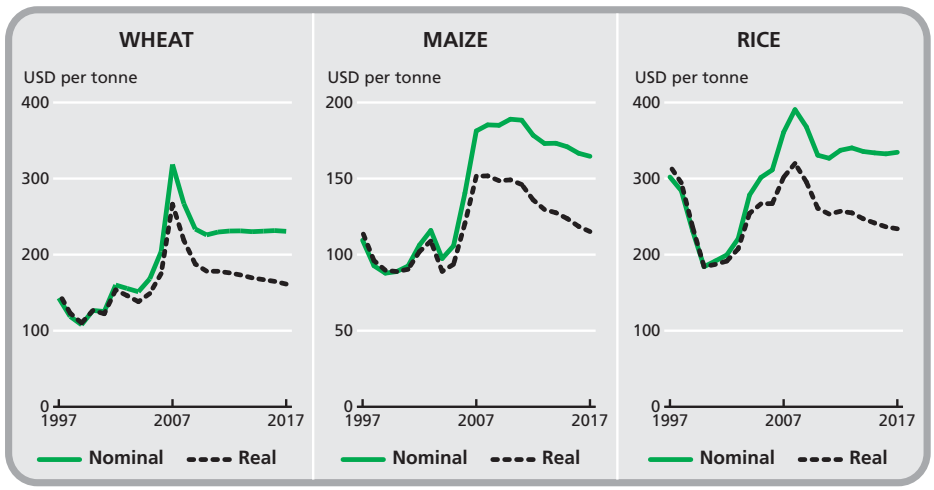
THE IMPACTS OF HIGH FOOD PRICES

THE IMPACTS OF RISING FOOD PRICES ON CONSUMERS[6]

The impact of high food prices is obviously most severe for the poor who rely on purchased food. For the poor in developing countries food can account for at least 50 percent and up to 70-80 percent of their budget so higher prices affect not only their food consumption in terms of quantity and quality, but also their spending in general. The most visible indicator of this negative impact was the social unrest and rioting that erupted around the world triggered by soaring food prices. Disturbances were mostly concentrated in urban areas where dependency on imported food and exposure to international food prices is probably highest and consumers felt the brunt of the impact of soaring food prices. However, the rural poor are also affected, even though their connections to international food markets might be weaker. The impact of higher food prices on the poor depends crucially upon whether they are net food-sellers, in which case the impact could in principle be positive, or net food-buyers in which case the impact is unequivocally negative. The evidence suggests that most households in the developing world and especially the poor are net buyers of food and this holds even for rural households which are mostly in agriculture. Whether urban or rural, it is the poorest of the poor who spend the biggest share of their income on food and who have no access to assets such as land who suffer most. Female-headed households figure disproportionately on both counts, so the negative impacts of high food prices also have a gender dimension which needs to be addressed in policy responses.

Faced with sharply rising food prices, poor households had to adjust their food consumption patterns. Households are reported to have reduced their food intake or to have attempted to maintain it by reducing their spending on more expensive foods and other non-food items. Among the poorest population groups, per capita cereal consumption may even rise in spite of increasing prices, as consumers shift to a cereals-based diet away from more expensive and higher quality food groups, including meat,

Medium-term projections of selected commodity prices



Source: FAO-OECD Agricultural Outlook

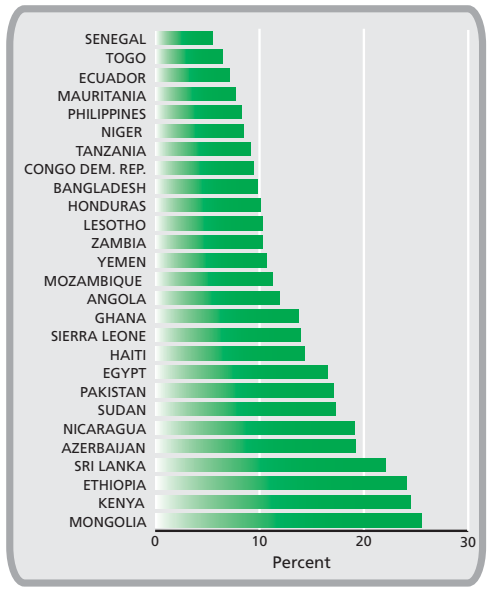
[6] See *FAO State of Food Insecurity in the World 2008* for a detailed discussion of these impacts.

dairy products and vegetables. In spite of the soaring prices in global commodity markets, in particular of tradable staples such as wheat, rice and maize, the most recent data on the food use of these key commodities illustrate the resilience of per capita consumption. This trend is the same for most low-income countries, including those with high levels of undernourishment. However, there are also instances of consumers returning to more traditional foods as the costs of preferred but imported cereals increased.

Rising food prices fuel inflation

Rising food prices contribute to the overall rate of inflation in most countries, including developed countries. Changes in food prices are an important component of the general rate of inflation, as measured by the consumer price index (CPI). This is a weighted average of the changes in the prices of a representative, fixed basket of goods, including food, and with the weights reflecting the importance of each good in the typical household budget. The greater the share of food in the household budget, the more rising food prices fuel general inflation. For most developed countries, food expenditure shares range between 10 and 20 percent. In developing countries the share of food expenditure in household budgets is much higher, absorbing more than half of family income in countries such as Kenya, Haiti, Malawi and Bangladesh.

Selected annual consumer price indices as of September 2008

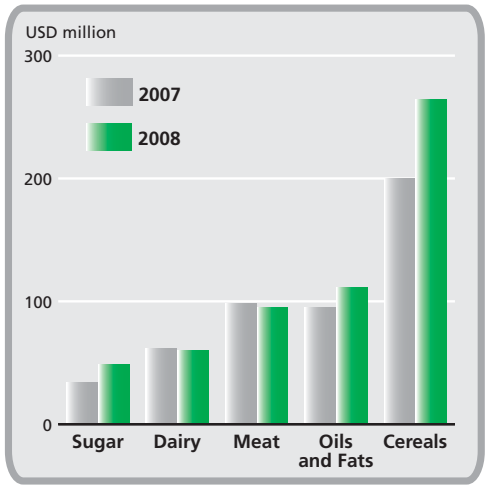


In addition to imposing a heavy burden on the cost of living, rising food prices can have further indirect effects on inflation if they prompt pay increases – higher wage demands have been at the core of several protests. An inflation-targeting central bank might have to curb inflationary pressure from higher food prices when the effect on non-food prices is significant, and this would mean raising interest rates. This has become a growing tendency in developing countries, but higher interest rates would undermine the much needed investment in sectors which provide a path out of poverty for vulnerable countries, especially the agricultural sector.

Higher food prices mean higher food import bills

In spite of the recent falls in international food prices, the global cost of imported basic foodstuffs in 2008 is forecast to reach more than USD 1 trillion, nearly 25 percent higher than in 2007, driven by substantially increased prices of rice, wheat, coarse grains and vegetable oils and compounded by increased freight costs which nearly doubled for many routes. Many of the poorest countries are food importers, heavily dependent upon cereal imports. Higher food prices on world markets mean higher food import bills and a balance of payments problem. The total cost of food imports for developing countries was already 33 percent higher in 2007 than in 2006, and annual food import bills for low-income food-deficit countries (LIFDCs) are now more than double their 2000 level.

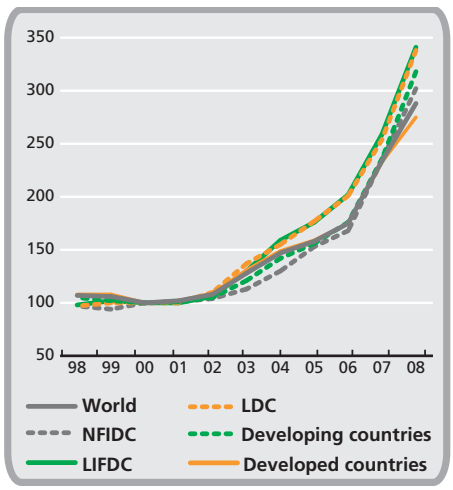
Food import bills in 2007 and 2008



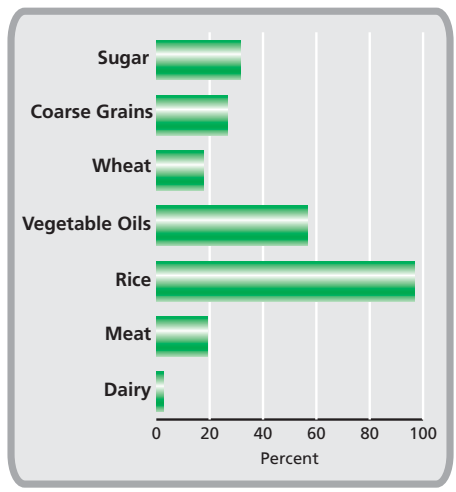
At national level, the impact of high commodity prices depends among other things upon whether a country is an importer or an exporter, what it imports or exports, its trade policy and its exchange rate policy. Low-income food-deficit countries dependent on increasingly costly cereal imports (in some cases for up to 80 percent of dietary energy supplies) and upon exports of tropical products or agricultural raw materials, for which prices increased less, and with currencies linked to or depreciating against the dollar are obviously the most vulnerable. The situation of countries that in addition are food insecure (in the sense of more than 30 percent of the population being under-nourished) and net fuel importers is obviously extremely precarious. There are more than twenty developing countries with these characteristics with at least 16 of them in Africa.

It is apparent that the most vulnerable countries bear the highest burden of the increasing cost of imported food, with total expenditures by LIFDCs some 35 percent higher in 2008 than in 2007 – the largest annual increase on record. Compared to other developing countries, LIFDCs already tend to have on average significantly greater current account deficits as a percentage of their GDPs, spend a much greater share of the value of their merchandise exports to import food and have lower income per head[7]. The majority of LIFDCs have witnessed a decline in the value of their currencies against the dollar which

Food import bills of developed and developing countries (1998-2000=100)

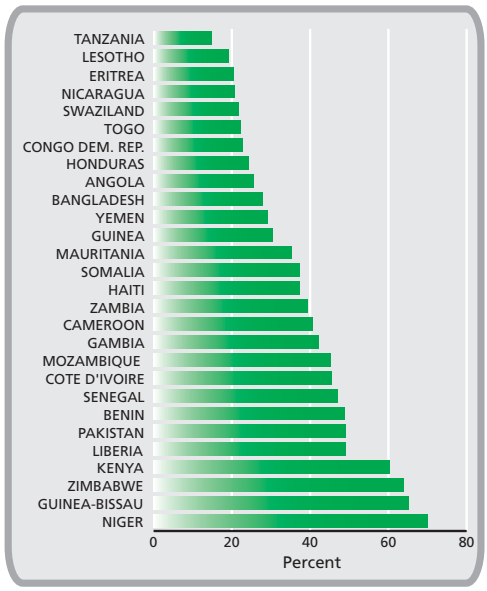


Forecast changes in global food import bills by type (2008 over 2007)



[7] LIFDCs on average have significantly lower GDP per capita, USD 2,213, when compared to other developing countries, USD 7,453 (averages calculated over the period 2000-2004)

Forecast changes in food import bills of selected LIFDCs (2008 over 2007)



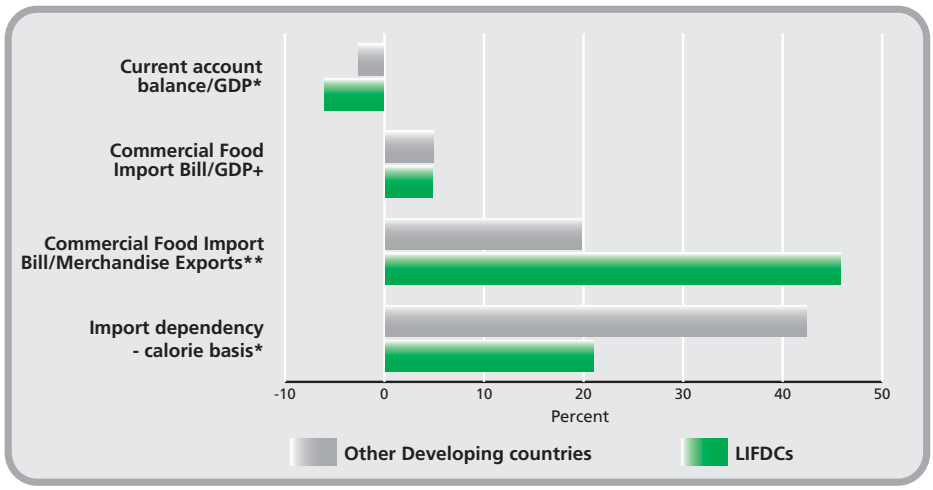
has further increased the cost of their food imports. These countries find themselves under economic pressure from all sides.

In addition, the financial crisis could have serious implications for food security in many developing countries. The tight credit situation may restrict access by poor countries to finance, thus limiting their ability to import food. LIFDCs in particular can have difficulty financing their cereal import needs through debt and may face increased fiscal pressure.

Consumers lose but do producers gain?

Clearly, the impact of high food prices on consumers is unequivocally negative. But, after years of lamenting low world prices for agricultural commodities, high prices should in principle have been good news for farmers around the world. Higher food prices stand to improve the incentives for those producing the particular products concerned. In principle, higher food prices increase the funds available to producers for investment, leading to increased agricultural growth and poverty reduction. In that sense, higher food prices might be considered an opportunity – at least for windfall gains for some. Access to means of production and assets like land is a critical factor in determining who reaps the benefits of higher food prices. Large landholders will benefit most. Households highly specialized in agriculture are also likely

Vulnerability of LIFDCs according to risk factors



Differences in group means are:
* significant at 5% level
** significant at 10% level
+ not statistically significant

winners although these constitute a rather small proportion of the population, relative to the rest. But will producers respond by increasing supply? It appears that the high food prices have not been an opportunity for most developing country farmers and a supply response has not materialised. As noted earlier, in spite of enormous increases in prices, developing countries increased their cereal production by less than one percent in 2008 and in the vast majority of them production actually decreased. The hoped-for supply response simply failed to materialise. Understanding the reasons for that and hence what needs to be done to promote supply response are crucial strategic and policy issues. These are addressed in detail in the next part of this report.

PART 2: WHY WERE HIGH FOOD PRICES NOT AN OPPORTUNITY FOR POOR FARMERS?

Producers in developing countries have faced real decline in prices in most of the last fifty years. The result has been lack of investment in agriculture and stagnant production which were the background to the recent problems in international food system and which made it more difficult for developing countries to deal with. So, the high food prices and the possibility that they might persist, even if not at the peak levels reached in early 2008, on the face of it looked like an opportunity for small poor producers. But was it? Would producers invest and increase productivity and production in response and generate agricultural growth? Most developing country producers are far distanced from what happens on international markets, so increasing food prices there do not necessarily mean higher prices for poor producers. For this to be the case, those high international prices need to be transmitted across national borders and through marketing chains. But higher prices alone are still not sufficient. Incentives to invest and produce depend on how much costs of inputs such as seeds and fertilizers have risen as well as prices of outputs. Producers need to have access to affordable inputs. They also need to have access to affordable credit. Even where adequate incentives are in place, a positive supply response from producers can be blocked by a range of supply-side constraints, especially lack of transport and market infrastructure to get any increase in production to market. In many developing countries, none of these conditions are adequately met. As a result higher prices on international markets have not triggered a positive supply response by smallholder farmers in developing countries.

DO WORLD PRICE INCREASES REACH DEVELOPING COUNTRY PRODUCERS?

Food prices increased sharply in many countries in line with the international price boom. In others, domestic food prices did not follow the increase in world prices or were slow to adjust. Unless higher prices actually reach agricultural producers in developing countries, those producers will not benefit from increasing prices on world markets and will have no incentive to increase productivity and production. There are two questions to consider: first, do international price changes lead to price changes at national level; and secondly, if national prices do change, do they filter through to producers?

In theory, prices in a country which is linked to the world market in a free trade environment will move together with international prices expressed in the same common currency. If the national price is above the international price, imports will take place until the national price becomes equal to the international price after allowing for any transport costs. Increased exports fulfil the same equilibrating role if the national price is below the international price. Under these conditions, "price transmission" is complete: the price of a commodity sold on competitive world and national markets can only differ by the cost of transporting it. Commodity analysts view fast and complete price transmission as an indication of the efficient functioning of a market. However, in practice a number of factors can limit the extent to which world price changes "pass-through" to the national level[8].

Policies at the border affect the extent to which world price changes pass-through to national markets. For example, export restrictions, or taxes hinder the transmission of price signals. *Ad valorem* import tariffs, unless they are prohibitively high, allow world price changes to be fully transmitted to domestic markets in relative terms. Therefore, an increase

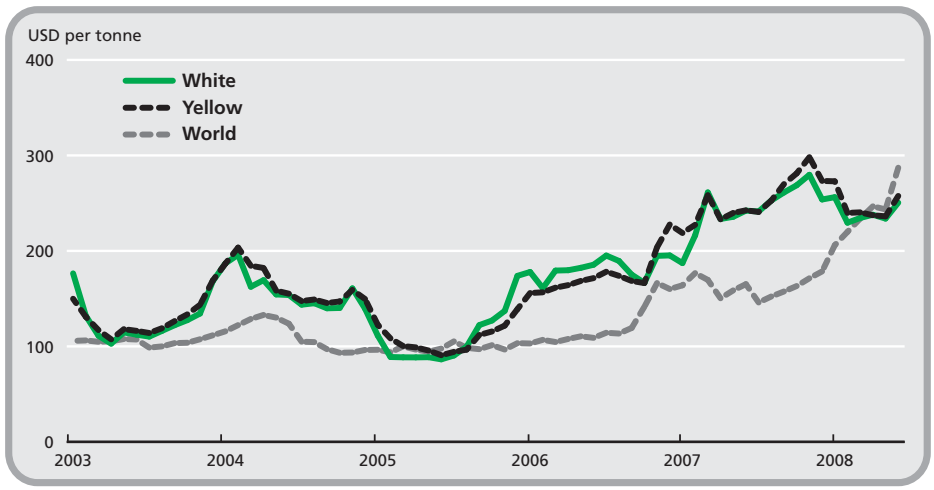
[8] Rapsomanikis, Hallam and Conforti (2004) provides a comprehensive review of issues surrounding price transmission

in the international price will result in a proportional increase in the domestic price, at all points in time provided that tariff levels remain unchanged. Domestic markets can also be insulated by large marketing margins that arise due to high transport costs. Especially in developing countries, poor infrastructure, transport and communication services give rise to large marketing margins due to high costs of delivering the locally produced commodity to the border for export, or the imported commodity to the domestic market. High transport costs and marketing margins hinder the transmission of price signals, as they may prohibit arbitrage. Other factors, such as consumer preferences for specific attributes of locally produced food or quality differences between domestic and internationally traded commodities determine the extent to which domestically produced food can be substituted by food purchased in the world market and thus affect price transmission. The distinction between short run and long run price transmission is also important. Changes in the price in one market may need some time to be transmitted to other markets for a number of reasons such as policy interventions, adjustment costs, complexity of the marketing chain, contractual arrangements between economic agents, storage and inventory holding or delays in transportation or processing or even simple inertia. As a result, price transmission is rarely complete or rapid.

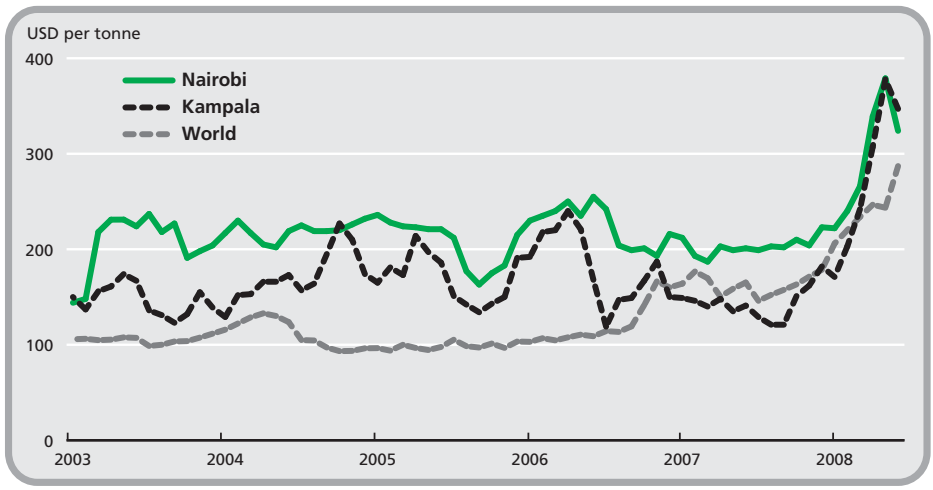
In the case of maize in Africa, transport costs, a weakening US dollar and consumer preferences hindered the transmission of price signals from the world market and domestic prices responded slowly. White maize is not readily substituted in consumption with internationally traded yellow maize. Nevertheless, increases in the volumes of maize traded, both formally and informally, across the Eastern and Southern African regions, mean that national markets are integrated with one another. Statistical analysis utilizing monthly maize price data for 1998-2008 suggests that both yellow and white maize prices in South Africa, the leading maize exporter in the region, respond slowly to changes in the world market price, but that world market price signals do pass-through across countries in the region. Between June 2006 and June 2008, the average monthly rate of increase of the world market price for yellow maize amounted to 3.9 percent, compared to white and yellow maize average increases of 1.2 and 1.6 percent per month respectively on domestic markets.

Maize prices in important markets in Eastern African countries such in Kenya and Uganda also move together with the world price. On average during 2003-2008, world

South Africa maize prices



Eastern Africa maize prices

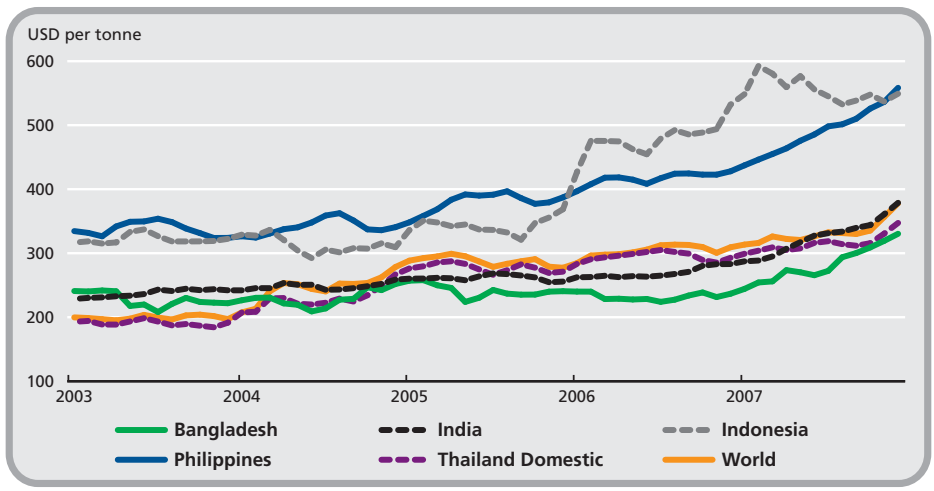


price changes filtered across these markets relatively slowly, with maize prices in Kenya and Uganda adjusting fully to world price changes after about 7 months. Nevertheless, the big increase in the world price of maize from July 2007 onwards is reflected in both countries, suggesting that adjustment to world market price changes can be fast, especially when such changes occur simultaneously with low stocks, or shocks in regional food supply or demand. During this period, the average monthly rate of growth of maize prices in Nairobi and Kampala amounted to 3.7 and 7.1 percent respectively, as compared to a world price monthly rate of 4.3 percent.

In the case of rice in Asia, the impact of world market price changes has varied from country to country, again depending upon exchange rates against the dollar, trade and market policies and the domestic demand and supply situation.

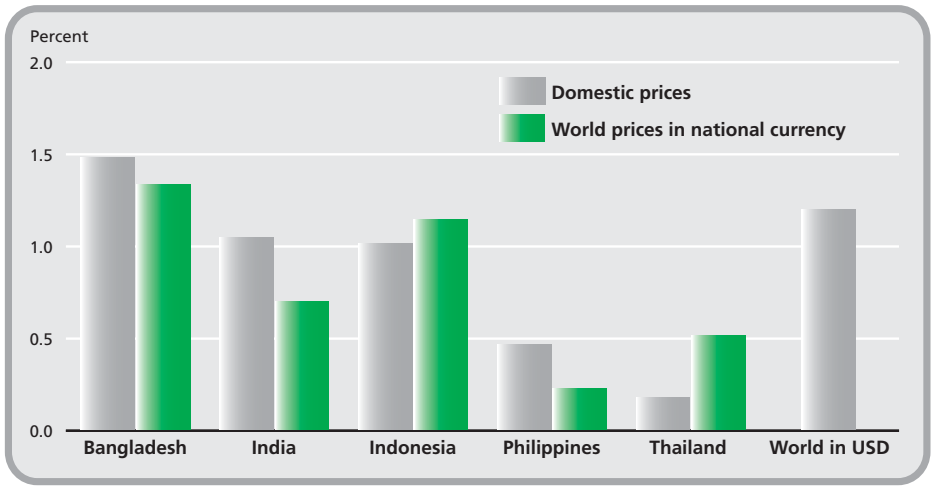
On average, the weakening of the USD during 2006-07 partly offset world price increases for a number of Asian countries. For example, in India, the Philippines and Thailand, the

Rice prices in selected countries



appreciation of the national currencies vis-à-vis the US dollar blunted world price increases at the border resulting in different patterns of domestic price behaviour, mainly due to national market fundamentals and, in some cases, policy response to the international rice price boom. In India, a major exporter of rice, domestic prices increased at a moderate rate due to increased production in the marketing season 2007-08 in conjunction with policy measures, implemented in the last quarter of 2007 that effectively banned most rice exports. In net importing countries, the larger part of the increase in domestic prices took place in 2007 and in most cases coincided with increased rice imports. In the case of Bangladesh, food shortages due to a cyclone and floods in 2007 contributed to significant increases in the domestic price of rice, while in Indonesia and Philippines, rice imports increased in order to meet the increasing demand for food.

Average monthly changes in domestic and world rice prices, 2006-2007



Even if there is transmission of international price changes to national level, this does not necessarily mean that price increases will reach all producers or consumers, although consumers in urban areas may be more quickly exposed to price increases. How much producers are affected depends on the extent to which they participate in local markets and the extent to which local markets are linked with broader national, regional, or international markets. It cannot be assumed that there is strong spatial price transmission and significant smallholder market participation in well integrated markets. In many developing countries these assumptions simply do not hold.

Smallholders are generally engaged in a different value chain from more commercial farmers who may be linked to large grain trading, processing, and retailing firms, commodity exchanges, networks of integrated silos, millers, and supermarket retailers, sometimes with transnational firm ownership, accessible market information, large transaction volumes, well-specified grades and standards, and legal systems that accommodate more sophisticated contracting arrangements. This contrasts with more informal chains in which smallholders are typically involved and which are characterized by spot market transactions, small percentages of production sold off the farm, weak road and communications infrastructure, weak information systems and limited coordination between input delivery, credit and sales.

There is a lot of evidence that smallholders in East and Southern Africa are only entering local level markets as sellers of grain to a rather limited extent. Throughout the region, the

FAO case study evidence on levels of smallholder market participation

Common to all the countries studied is the significant heterogeneity of household status with respect to maize production and sales.

In Kenya the proportion of maize sold is relatively high at 46 percent of total production. However, whilst 98 percent of households cultivate maize, only 36 percent sell the product, with 20 percent of households accounting for the majority of sales

In Zambia, about 80 percent of farm households grow maize, but less than 30 percent sell the product. Of the total sales, 40 to 45 percent were from 5 percent of farm households in the smallholder sector. These households tend to have incomes that are significantly higher (8-9 times) and are located in areas more accessible to markets than those households that do not sell.

In Mozambique, production and sales are also highly concentrated. Ninety percent of households in the central region produce maize but only 24 percent sell it. In the Southern region, 59 percent produce, but only 4 percent sell maize, and the average amount sold is only 150kg per household per year. Five percent of households account for 80 percent of sales nationally.

In South Africa, 18,000 commercial farmers account for 90 percent of grain production, with the remaining 10 percent accounted for by 3 million smallholders.

The differentiation across households is likely to become more distinct as average landholding sizes continue to fall. In Malawi, smallholdings have been reduced in size from an average of 1ha to less than 0.7 ha over the past 30 years. In an "average" year, only 20 percent of maize production is marketed.

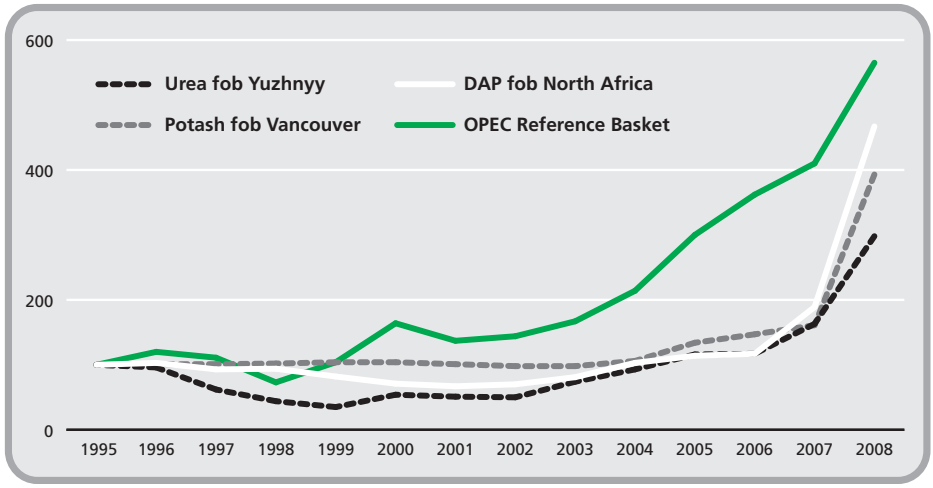
proportion of maize producers who are actively selling maize into local markets is low and often there is a greater level of participation of producing households as *purchasers* than as *sellers* of maize.

Given the limited market participation by smallholders, it follows that price increases may not have much effect on production incentives for many rural households who are not participating in markets to any significant extent as sellers. Compounding this is the fact that many producers are effectively isolated from regional or international markets as a result of weakly integrated markets. In such cases, price increases at those market levels will have no effect on the situation of smallholders. Econometric studies of market integration and price transmission in Africa tend to confirm this view.

PRICES INCREASED BUT SO DID COSTS

Whatever improvement higher product prices might have made to the incomes of producers, increases in input costs have worked against it or even cancelled it out. Input costs have been increasing steadily for some years and many farmers saw rising output prices as a temporary respite from diminishing margins over costs until input prices shot up dramatically in 2007, outrunning output prices.

Indices of crude oil and fertilizer prices, 1995=100



Source: International Fertilizer Association; OPEC (www.opec.org/home/basket.aspx)

Changes in output and input prices for selected products and inputs

	Meat	Dairy	Cereals	Oils	Sugar		Food price index[1]
(Jan-Apr)	%	%	%	%	%		%
2008-07	9	49	80	94	23		52
2007-06	5	35	32	29	-39		12
	Ammonia	**Urea**	**CAN**	**NPK**	**DAP**	**IRAC Crude Oil[2]**	**Input price index**
(Jan-Apr)	%	%	%	%	%	%	%
2008-07	82	31	85	213	163	70	**99**
2007-06	4	29	15	41	33	-3	**19**

[1] Food price index: butter, cocoa, beans, corn, cottonseed oil, hogs, lard, steers, sugar and wheat. Input price index: Ammonia, Urea, CAN, NPK, DAP and IRAC Crude Oil

[2] Imported Refiner Acquisition Cost (IRAC) of Crude Oil in USA.

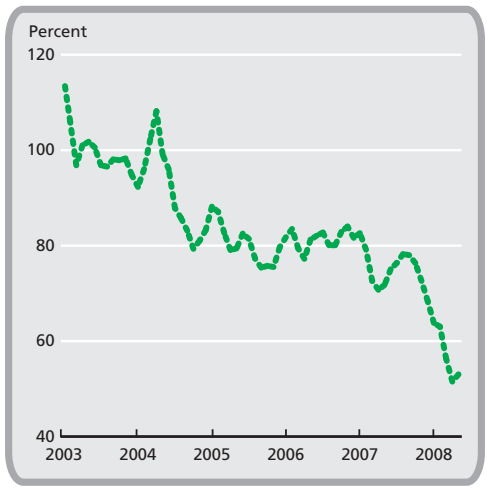
Sources: For food items: FAO-EST for meat, dairy, cereals, oils and sugar composites, and FAO-EST and Commodity Research Bureau for the food price composite index. For input items: FAO-AGP, Yara and Energy Information Administration.

The dramatic increase in oil prices beginning in 2003 has had a profound effect on all economic sectors including agriculture. Increases in fuel prices have raised the costs of producing agricultural commodities both directly by raising the cost of farm power and transport, but also indirectly since oil is an important cost item in fertilizer production. The increase in energy prices has been both rapid and steep, with the Reuters-CRB energy price index more than tripling since 2003.

The US dollar prices of some fertilizers (e.g. triple superphosphate and muriate of potash) increased by more than 160 percent in the first few months of 2008, compared to the same period in 2007. This rate of increase in the price of fertilizer was greater than the rate of increase in prices for agricultural products.

The output to input price ratio provides a broad indication of how farm profitability is changing. The steady increase in input prices over the last decade led to a declining trend in the output to input price ratio. Increasing productivity can offset the negative income

Output to input price ratio - food vs. inputs (2003=100)



Note: Output and input price indices are un-weighted geometric means of the relative nominal prices of the individual commodity prices. The relative price of each commodity is the nominal price over the base period price.
Sources: For food items: FAO and Commodity Research Bureau. For input items: FAO, Yara and Energy Information Administration.

consequences of a declining ratio, but this did not happen in most developing country agriculture, especially in Africa. The ratio deteriorated sharply with the sudden major increase in fertilizer prices in 2007. Furthermore, there is some evidence that while output price increases are not completely and rapidly transmitted to producers, increases in the prices of inputs, especially where these are imported, are passed on fully and quickly.

SUPPLY-SIDE CONSTRAINTS

If price incentives do materialize, the lack of integration into markets of many small producers prevents them from responding. The structure of smallholder agriculture in many developing countries has a significant impact in constraining supply response and it is changing – land-labour ratios are declining as population increases - in a way that could further lower smallholder producers' capacity to respond to higher prices. Evidence from East and Southern-Africa shows that there is a high concentration of marketed maize among a small number of households (in some countries, two percent of households supply fifty percent of the total volume of marketed maize) and other smallholders are not making the investments needed to generate surpluses for sale on even moderately sized 3 to 4 hectare holdings. In Uganda smallholder agricultural production dominates, with farmers with an average land holding of less than 2 hectares producing more than 90 percent of total food production. Smallholder farmers account for about 80 percent of agricultural production in Ghana.

Throughout Africa, smallholder agriculture is often characterized by low productivity, rudimentary technology, minimal use of inputs including fertilizers, problems with marketing systems, and high crop losses. Agricultural yields have remained relatively unchanged, with much farming conducted by the aged with little or no knowledge of modern farming practices. The incentives for investment in terms of adequate and stable levels of profitability have been lacking, but there are also significant constraints to the adoption of improved technologies, such as shortage of locally improved seeds, planting materials and other inputs. Although in some countries access to inputs has improved with reforms with more licensed dealers and smaller quantities available for purchase, input use by smallholders remains low and constrains productivity.

The small quantities of products available to sell and a frequent lack of organization amongst smallholders to bulk these together into more economic volumes, together with the high cost of marketing due to weak infrastructure and communications, means it is not surprising that supply response to better prices is weak. Yet without that supply response, funds are not generated for investment. Throughout the production and marketing chain, a lack of access to affordable credit further limits the feasibility of productivity-improving

investments. These constraints need to be overcome to allow a significant supply response, and policy interventions are needed to break out of this vicious circle which traps small producers in poverty.

Development of physical infrastructure appears to be of particular importance in most developing countries. Well-developed transport, communication, storage and marketing infrastructure can facilitate the selling of output and the buying of inputs. Numerous FAO case studies from all over the developing world show that deficiencies in transport infrastructure are a major constraint, limiting access to domestic, regional and international markets.

Credit markets facilitate production, consumption smoothing, and the development of new enterprises. They are an important mechanism to assist the poor in adjusting to a new economic environment. Limited access to financial services (both credit and savings) has exacerbated vulnerability to shocks. However, most Structural Adjustment Programmes have reduced the availability of credit to rural households and raised its cost.

FAO studies report widespread difficulties for farmers in accessing credit. Small-scale farmers in Cameroon have little access to credit. Micro finance institutions were set up in 1992, but they remain poorly distributed throughout the country and sometimes lack good managerial practices. Smallholder farmers in Malawi face credit constraints, with micro finance institutions tending to emphasize finance for off-farm business activities, and much of the available agricultural credit is confined to the tobacco sector. Small- and medium-scale traders in Tanzania cannot access the credit that would enable them to purchase stocks of produce and sell out of season at higher prices. Some farmers shifted away from the production of cash crops such as cotton because food crops can more easily be sold on cash terms. In Uganda, the only source of credit for rural dwellers is the micro finance industry, which favours non-agricultural activities. Attempts are currently underway in Uganda to develop financial services that meet the needs of the rural population and integrate them into the national financial system. In Guatemala, agricultural credit availability is low and declining. Most available credit is channelled towards export products (traditional and non-traditional) with little support for basic grains production. Guyana attempted to overcome the problems in obtaining acceptable forms of collateral security faced by many small farmers. The Institute of Private Enterprise Development Limited (IPED) was established in 1986 as a local NGO to provide loans to small entrepreneurs. It uses a cross guarantee system, whereby each member of a small group is liable for the debts of the others. IPED has been instrumental in facilitating output increases for a number of small producers. On the other hand, the experience with government credit provision schemes in Peru was not positive, with massive losses in capital reported. Most of the credit to the agricultural sector now comes from commercial banks and there was a dramatic reduction in the number of small farmers supported by the formal financial system during the 1990s.

CAN DEVELOPING COUNTRY FARMERS RESPOND TO HIGH FOOD PRICES?

It is claimed that the recent high food prices present an opportunity for the agricultural sector in developing countries to increase production and raise incomes and re-establish itself as an engine of growth. Whilst there is some evidence that output responds positively to real price increases and negatively to decreases, this is not always found to be the case. A wealth of FAO case study evidence shows that price increases alone are not enough to increase

productivity and supply. In a review of 150 episodes of price and production changes in the recent past, FAO found that in only 66 percent of cases was the response in the direction expected, with 34 percent of cases either reporting an increase in production when prices were falling, or a decrease in production when prices were increasing. Overall, the picture is mixed regarding how developing country farmers are likely to react to high product prices.

What is clear is that higher output prices alone are not sufficient to encourage a significant expansion in food supplies. A significant supply response requires investment to increase smallholder productivity. Expanding production into new land will not be enough to meet future food needs. In order to match the global demand for affordably-priced food by 2050, annual food production must increase more than one percent annually, and an estimated 80 percent of the increase will have to come from growth in yields. Also, productivity-led increases in food and agricultural production will increase not only farm incomes, but will also stimulate backward and forward linkages in the rural economy and lead to a reduction in poverty.

Significant supply response based on productivity improvement requires a favourable and stable incentives environment in which higher commodity prices are transmitted to the farm level and producers have access to affordable inputs and can get their output to market. This call for addressing the various structural constraints that limit smallholder productivity – rudimentary technology, lack of access to modern inputs and credit, poor marketing and transport infrastructure and ineffective rural services and institutions. Effective government policies have a role in ensuring that these conditions are met. Successes in transforming agriculture in India, for example, were based on state support to credit, inputs and irrigation infrastructure, which the market had failed to provide. However, the wrong policy choices can block the transmission of higher prices to producers, stifle incentives and discourage supply response.

PART 3:
WHAT SHOULD BE THE POLICY RESPONSE?

WHAT ARE THE POLICY PROBLEMS?

Faced with rapidly increasing food prices, many countries made policy changes or introduced new policy measures. High food prices pose a series of inter-related policy challenges. Most obviously, there is the short-run emergency of ensuring affordable food supplies for poor consumers to avoid increasing incidence of malnutrition. While this can be achieved to some extent at least with available food supplies, there may also be some scope for measures to increase food production and moderate prices even in the short-run. However, the main potential for a significant supply response and more stable prices is in the medium to longer term. The current problems reflect the continuing underlying precariousness of the food security situation in some countries and this needs to be rectified. High prices provide an incentive and an opportunity to producers in developing countries but, as indicated earlier, there are many constraints to be overcome if a significant supply response in the medium to longer-term is to materialise. Actual policy interventions by governments around the world have emphasised a limited range of easy, fast acting and cheap measures, especially trade policy measures, to secure food supplies for domestic markets and to moderate the cost to consumers. This short-termism, while entirely understandable in view of the emergency situation, means that in many cases medium and longer-term needs to raise production have been neglected. Efforts to protect consumers from higher food prices need to be balanced against maintaining incentives for producers to achieve productivity and production increases which are necessary to stabilize prices and supplies. Some of the short-term measures introduced by governments to address the immediate food security needs of poor consumers have held down prices for producers and hence incentives to invest in increasing productivity and production. There is a need for policy measures to be targeted, non-distortionary and positive towards agricultural investment.

Policy problems are not confined to the agricultural and food sector. High food prices also have macroeconomic impacts. For food importers these include balance of payments problems resulting from higher food import bills and increased inflationary pressure since food is such a big element in the consumer's basket of goods. Food exporters enjoying higher earnings from higher food prices on world markets, may need to consider how best to manage increased export earnings to ensure that they are channeled into productive investments to stimulate long-run growth.

HOW HAVE DEVELOPING COUNTRIES RESPONDED?

National policy responses to high food prices have varied in nature and effectiveness. In many cases governments have used existing policy measures already in place. The policy responses made can be grouped into three broad categories, targeting respectively consumption, trade and production. There appears to have been relatively little action on longer-term measures.

SAFEGUARDING FOOD CONSUMPTION

Many countries, especially least developed countries, have intervened to safeguard poor consumers' access to food though a variety of emergency and 'safety-net' measures. This includes distribution of basic food staples (grains, bread, and milk), cash to buy food or food for work to the most vulnerable groups – the poorest in urban and rural areas, schoolchildren or the sick in hospitals. Consumer price subsidies especially for the main food staples are widely-used. Simultaneously with the provision of consumer price

Policy Responses to Rising Commodity Price in Selected Countries

	SUB SAHARAN AFRICA																
	Angola	**Benin**	**Burkina Faso**	**Burundi**	**Cameroon**	**Cengral African Republic**	**Chad**	**Dem. Rep. of Korea**	**Eritrea**	**Ethiopia**	**Ghana**	**Guinea Bissau**	**Guinea**	**Ivory Coast**	**Kenya**	**Lesotho**	**Liberia**
Policies																	
On consumption																	
Emergency & targeted food aid				Main staple (grain; maize) to the vulnerable	Main staple (rice; other grains) to the vulnerable		Main staple (grain; to the vulnerable)	Main staple (grains) to the vulnerable		Cereals (tef) to the vulnerable					Food (corn, milk) to poorest		
Cash transfer										To the vulnerable							
Food for work										Food (tef cereals) to the vulnerable					Basic meal (based on corn, milk)		
School/hospital feeding	Basic meal		Basic meal												Basic meal		
Consumer price subsidy										Cereals							
Consumer price control & stabilization		Wheat	Most staple food		Rice; wheat; bread												
Reduction/elimination of consumption taxes			Grains & other staples foods														
On production																	
Producer price control																	
Reduction of producer taxes			Grains & other staple foods	Grains & other staple food	Rice					Grains					Grains	Grains	
Production subsidies																	
Input subsidies															Agric production; a government loan		
On trade																	
Input export ban																	
Export ban																	
Export quota/control			Staples							Cereals			All agric (incl livestock) commodities				
Raising export taxes																	
Reduction/elimination of import tariff & quota		wheat flour	Staple food														
Other policies																	
(With long-term effects)			Partial payment of poor household's enery & water bills	Improving ag productivity		Improving ag productivity		Improving ag productivity		Food for assests. Improving ag productivity					Improving agric productivity (Kenya vision 2030)		

Policy Responses to Rising Commodity Price in Selected Countries (Cont)

	SUB SAHARAN AFRICA																
	Madagascar	**Mal-awi**	**Mozam-bique**	**Namibia**	**Niger**	**Nigeria**	**Senegal**	**Sierra Leone**	**Somalia**	**South Africa**	**Sudan**	**Swaziland**	**Tanzania**	**Tunisia**	**Uganda**	**Zambia**	**Zim-babwe**
Policies																	
ON CONSUMPTION																	
Emergency & targeted food aid	Rice; wheat flour; biscuits																
Cash transfer			To vulner-ables							To vulner-ables							
Food for work	Basic meal; food stamp																
School/hospital feeding	Basic meal (rice; bread; milk)														Meal (including corn and milk)		
Consumer price subsidy							Rice; wheat										
Consumer price control & stabilization	Rice				Cereals	Cereals	Rice; wheat										Corn; sor-ghum; wheat
Reduction/elimination of consumption taxes	Rice																
ON PRODUCTION																	
Producer price control																	
Reduction of producer taxes			Grains		Grains	Grains				Grains	Grains				Maize		Grains
Production subsidies						Rice											
Input subsidies	Rice pro-duction		Under consideration for food grains	Rice production: free seeds and ferilizers												Corn	
ON TRADE																	
Input export ban																	
Export ban	Rice		Maize										Corn and other ag commodities			Corn (on news contriartc)	
Export quota/control																corn	
Raising export taxes																	
Reduction/elimination of import tariff & quota	Rice				Rice	Rice	Rice	Wheat flour									
Other policies																	
(With long-term effects)	Improving ag productivity; Diversifying staple sources & preparations (e.g. plan to expand sorghum production)		Improving ag pro-ductivity		Improving ag pro ductivity	Improving ag productivity	Improving ag pro-ductivity	Improving ag pro-ductivity	Improving ag pro-ductivity			Raising the interest rate to reduce inflation	Improving ag productivity		Increase investment in agriculture	Increase invest-ment in agric.	

Policy Responses to Rising Commodity Price in Selected Countries (cont)

	Middle East and North Africa									Latin America and the Caribbean					
	Angola	**Egypt**	**Iraq**	**Jordan**	**Lebanon**	**Mauritania**	**Morroco**	**Saudi Arabia**	**Yemen**	**Argentina**	**Bolivia**	**Brazil**	**Chile**	**Cuba**	**Dominican Rep.**
Policies															
ON CONSUMPTION															
Emergency & targeted food aid												Food to the vulnerable			
Cash transfer		To vulnerables										To vulnerables			
Food for work															
School/hospital feeding															
Consumer price subsidy		Wheat, bread and other food			Wheat				Wheat						
Consumer price control & stabilization															
Reduction/elimination of consumption taxes															
ON PRODUCTION															
Producer price control															
Reduction of producer taxes							Grains				Grains	Grains			
Production subsidies							Feed (for livestock production)								
Input subsidies															
ON TRADE															
Input export ban															
Export ban		Rice								Corn	Grains, soy, meat				
Export quota/control		Key ag commodities (staple, daries)													
Raising export taxes										Grains, soy, oilseeds					
Reduction/elimination of import tariff & quota		Dairies, edible oil, rice				Food in general	Wheat	Dairies, vegetable oil, wheat			Corn, rice, soybean oil, wheat, wheat products, meat	Wheat			
Other policies															
(With long-term effects)	Long-term investment on agric	Raising the wages of some civil servants									Improving ag productivity		Rising wheat flour imports from Argentina		

Policy Responses to Rising Commodity Price in Selected Countries (cont)

	Latin America and the Caribbean								East and South Asia			
	Ecuador	**El Salvador**	**Guatemalsa**	**Haiti**	**Honduras**	**Mexico**	**Nicaragua**	**Peru**	**Afghani-stan**	**Bangla-desh**	**Cambodia**	**China**
Policies												
On consumption												
Emergency & targeted food aid	Food to the vulnerable			Rice to the vulnerable			Wheat and other food		Rice to the vulnerable	Food to the vulnerable		
Cash transfer												To the vulnerable
Food for work										Basic meal to the vulnerable	Basic meal (especially rice to vulnerable)	
School/hospital feeding					Meal (incl. corn)	Meal (incl. corn)						Food
Consumer price subsidy	Wheat, wheat flour, bread									Rice		
Consumer price control & stabilization				Rice			Wheat					Rice, wheat, milk, eggs, bread
Reduction/elimination of consumption taxes												
On production												
Producer price control										Rice		
Reduction of producer taxes					Grains			Grains	Grains	Grains		Grains
Production subsidies												Rice, livestock
Input subsidies												
On trade												
Input export ban												Ag. production
Export ban					Corn					Palm oil, soybean oil	Rice	Rice, maize
Export quota/control											Key ag commodities	Ag. commodities
Raising export taxes												Grains
Reduction/elimination of import tariff & quota	Wheat, wheat flour from neighbouring countries	Wheat flour from neighbouring countries	Wheat flour from neighbouring countries		Wheat flour from neighbouring countries	Corn						
Other policies												
With long-term effects						Plan to cut fertilizer prices by a third, Allowed experimental planting of genetically modified crops including corn)	Innovation in food preparation, potato bread to replace wheat bread					Risk mitigation and compensation to avian flu losses for poultry production

subsidies, some governments have also reduced consumption taxes. Price controls, for example, through sales from public stocks at pre-set prices or simply freezing retail prices by decree, have also been used.

An FAO survey of 77 countries showed that 55 percent of them used price controls or consumer subsidies in an attempt to reduce the transmission of price increases to consumers. While such measures can be effective in controlling prices in the short-run, they are expensive in terms of scarce budgetary resources and can distort food markets. Price controls can lead to rationing and suppress incentives to producers. Income transfers are less distortionary than subsidies on food and can be targeted on the poor and vulnerable whereas non-selective blanket subsidies and price controls benefit the rich and poor equally. This also applies to other safety-nets such as food and nutrition programmes.

Encouraging food imports and discouraging food exports

Many countries have introduced trade policy measures to curtail price increases and ensure adequate supplies on domestic markets. These include reduction of tariffs to facilitate imports and export bans and taxes to divert supplies onto domestic markets. Over half of the 77 countries in the FAO survey had reduced grain import tariffs and a quarter had imposed export controls of some kind – either taxes or physical controls such as bans and quotas. In the short term these trade measures are feasible, cheap and easy to implement but they may have adverse effects on incentives to expand food supplies through increased domestic production and on world markets by further restricting supplies and pushing up prices even further. While imposing export taxes raises some additional government revenues, a number of exporting countries have reported that export controls and hence low output prices coupled with high input prices actually led to decreased planting of cereals. Reducing import tariffs also incurs a loss of tariff revenue which may make an important contribution to overall budgetary resources for development.

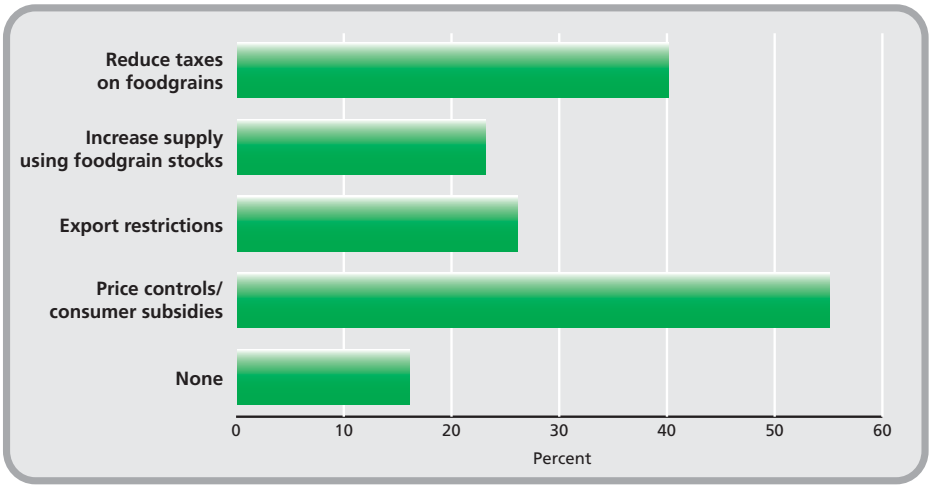
Boosting agricultural production

Reduction of producer taxes especially on grain production has been a widely-used policy to boost production in both low and middle income countries. Production subsidies, especially on grain production, have been used to reinforce incentives. Subsidies on inputs such as fertilizer and seeds have also been common. While such subsidies and distribution of productive inputs such as seeds and fertilizers can provide a short- or medium-term stimulus to production such schemes can be costly and may lead to sub-optimal use of these inputs especially if they are maintained over a long period. In spite of a preceived need to secure adequate food supplies, some countries continue to

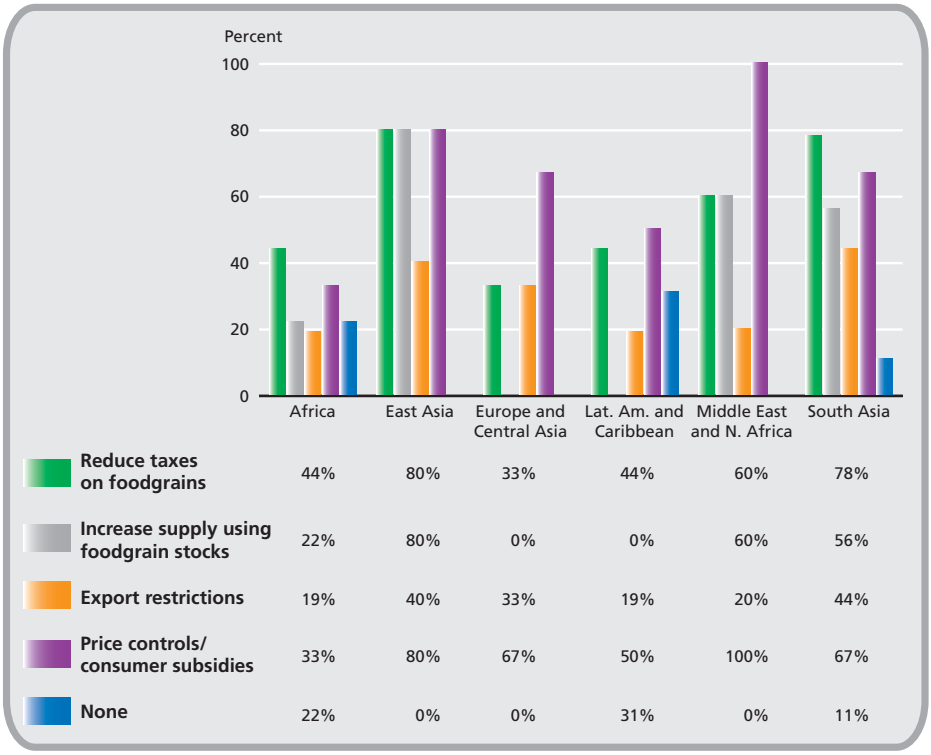
FAO survey of policy responses

A survey of policy responses for 77 countries undertaken in May 2008 showed the following: reduction or elimination of cereal import duties in about half of the 77 countries; price controls or consumer subsidies in 55 percent of the countries; some form of export restrictions, including taxes, in one-quarter of the countries; and roughly the same proportion took measures to increase supply, drawing on cereal stocks. On the other hand, only 16 percent of countries surveyed took no policy responses whatsoever.

Policy actions to address high food prices (sample of 77 countries by type of action)



Policy actions to address high food prices (sample of 77 countries by region)



	Africa	East Asia	Europe and Central Asia	Lat. Am. and Caribbean	Middle East and N. Africa	South Asia
Reduce taxes on foodgrains	44%	80%	33%	44%	60%	78%
Increase supply using foodgrain stocks	22%	80%	0%	0%	60%	56%
Export restrictions	19%	40%	33%	19%	20%	44%
Price controls/ consumer subsidies	33%	80%	67%	50%	100%	67%
None	22%	0%	0%	31%	0%	11%

control producer prices, setting the price lower than the free market price or procure grains from domestic suppliers at low prices for stockholding. Moreover, the release of grain stocks at low prices puts downward pressure on prices discouraging increases in domestic production.

Policy responses also varied considerably by region. Countries in East Asia, South Asia and the Middle East and North Africa undertook significant activities in all four areas of

intervention. In every geographical region except sub-Saharan Africa, 50 percent or more of the countries reported using price controls or consumer subsidies. On the other hand, sub-Saharan Africa and Latin America and the Caribbean regions showed the lowest policy interventions, with roughly 20 percent and 30 percent of their countries, respectively, reporting no activity in any of the policy categories listed above.

WHAT POLICY MEASURES SHOULD BE TAKEN?

As the previous section showed, governments around the world have responded to high food prices with a variety of policy measures. Understandably, these have emphasised a limited range of fast acting measures to secure food supplies for domestic markets and to moderate the cost to domestic consumers. However, the medium and longer term needs to increase food production and the international implications of unilateral national policy choices should not be overlooked. What is the 'best' policy choice depends on a variety of considerations including the cause of the price increases, the severity of their impact, the size of the vulnerable population groups, their location, the policy options and policy space available to the government, the financial and budgetary situation and the administrative and institutional infrastructures to implement policies. This section looks in more detail at the policy options and reviews the pros and cons of the various policy instruments available. These address two basic challenges. The first is to provide direct support to consumers, especially those in vulnerable groups, to help them maintain their food consumption levels. through so-called "safety-net" measures. The second is to increase supplies of food on domestic markets through manipulating food stocks or trade or by stimulating a short-run supply response from the domestic agricultural sector. Ultimately, it is increasing agricultural productivity and production which is the foundation for achieving adequate and stable food supplies and prices in the medium- and long-term and care must be taken to ensure that short-run emergency measures do not compromise that goal.

SAFETY NETS FOR POOR CONSUMERS

Safety net is an umbrella term that covers various programmes aimed at assisting vulnerable population groups, such as targeted food distribution programmes, targeted cash transfer schemes, feeding programmes and employment schemes. Many countries have one or more safety-net programmes with a varying degree of coverage of the population and the extent of assistance delivered. An employment scheme may also be a guaranteed programme, backed by legislation. The case for targeted interventions can be made on budgetary cost grounds or to avoid leakage to non poor populations. Although they can be administratively burdensome, they can be narrowly targeted on beneficiaries without creating distortions in the markets. A food for work programme can also be made self-targeting by the choice of the food distributed, the food that the poor consume, or by targeting an area with most vulnerable population groups.

In the context of high food prices, one of the problems noted is that not all countries have safety net programmes in place because of their budgetary costs and administrative complexity. Where this is the case, it will be very difficult to put in place a scheme in a short period, given the administrative, institutional and other supports required for this. It is only where such a scheme already exists that it can be scaled-up when an emergency arises.

Cash transfers can include the distribution of cash or cash vouchers and can be tied to cash for public works programmes and/or microfinance initiatives. They are appropriate where food markets work and improved access to food is the objective of the intervention. In addition to providing the ability to procure higher priced food, unrestricted cash

transfers allow households to make decisions as to how to spend or invest the cash. For example, some households, in allocating labour to on-farm activities, may have produced sufficient food, but may have limited cash for other consumption or investment needs. Such interventions can also foster local market development in food and other goods by providing greater incentives to the private sector to engage in higher volume, more stable marketing channels.

However, where markets work imperfectly, for example where they are poorly integrated with other markets, or where there is limited supply response to increased prices, such interventions can result in price inflation as the increased spending power bids up the prices of scarce goods. Similarly, the design should be appropriate – in some contexts, increasing public sector wages as a means of transferring cash can assist poorer urban consumers, but in other contexts, the poor are engaged primarily in informal sector activities and may not benefit. Where food prices are increasing rapidly, adjustment to the value of transfers will be needed to maintain purchasing power and this can be administratively difficult.

Other schemes aimed at ensuring that the poor have access to food offer less flexibility than straight cash transfers. Such interventions include food stamps or vouchers, conditional cash transfers (for example, in exchange for attendance at schools or clinics). As with cash transfers, these interventions are appropriate where local food markets work and improving access to food is the objective. Vouchers can become a parallel currency in food and other goods' markets. As such, they can have some of the positive effects of unrestricted cash transfers in fostering local market development, but tend not to be used for investment. The schemes tend to have higher transaction costs than cash based measures and although restricting undesirable consumption may be an objective, this can be difficult. The design of these interventions can be complicated. For example, school feeding programmes can miss target populations, such as poor households without children who attend school. It is important, as with cash transfers, to determine ex ante, any potential disruption to private marketing channels. Approaches such as vouchers, cash transfers and nutritional programmes should only be implemented in combination with targeted food sales through public food stores if private channels are constrained in their ability to scale up distribution. Otherwise, the side benefit of fostering local market development will be diluted.

Local food supplies can also be augmented directly through the distribution of food aid, which is most appropriate where insufficient food supply is the main reason for reduced consumption. In such cases, cash transfers would result in price inflation, particularly where markets are not functioning well, or where food is in short-supply as a result of weakly integrated markets, whether infrastructure- or policy-constrained. Food aid is also more difficult to divert to undesirable consumption and is therefore more appropriate in such situations. In addition, it places a lower budgetary strain on government resources.

Managing markets and stocks to increase food supplies

Governments in many countries also resort to a variety of other measures which may be called "market management policies". These could include measures such as price controls through administrative orders, restrictions on stockholding by private traders, restrictions on inter-district movement of foods, anti-hoarding measures, restrictions on futures trading of basic foods and open market operations selling public stocks of foods with a view to lowering market prices. These measures were fairly widespread in many developing countries in the 1970s and 1980s, but have been discontinued in normal times for not being market-friendly or pro-private sector development. However, the fact that governments resort to such measures during food crises shows that such policies can help the situation to some extent.

Experience has shown that many of these measures may work for a very short period but could also be destabilizing as economic agents often react by hoarding and thus add to further price rises, defeating the basic purpose of such measures. The longer-term solution to this problem is to take measures to nurture various elements that will ensure that food markets are function well and are competitive. The concentration of market power, observed typically for semi-processed or processed agricultural products, is perceived by society at large – as well as by the government - as a major source of the problem. The solution lies in effective pro-competitive policies which are lacking in many developing countries.

An important market management policy is open market operations using publicly held food stocks. Open market operations – the selling of publicly held stocks to lower or stabilize domestic market prices - used to be fairly widespread but many countries have since eliminated such programmes. In Asia in particular, these measures are actively used. Examples are open market operations by the Food Corporation of India, BULOG's operations in Indonesia and the Rice Marketing Board's operations in Viet Nam. The government parastatals maintain the food reserves, through domestic purchases or imports, including food aid, and release the stocks when food prices begin to rise, which could be for seasonal reasons or due to increased prices in the world markets.

The effect of these measures is to check food prices in the short-run. However, food availability can only be augmented and prices restrained by releasing public stocks if adequate public stocks exist. This can be problematic given that maintaining stocks is a high cost operation. Furthermore, releasing public stocks to hold down prices can have a negative impact on incentives for producers and traders, discouraging production expansion and investment. Unlike safety net measures, these operations cannot be targeted and they also benefit rich consumers who may not need the support.

Given the high costs associated with open market operations and the potential for unintended negative effects, most governments have preferred to rely more on trade policy measures to encourage imports or restrict exports for price stabilization and less on stocks operations. Trade measures are discussed next. However, where governments do not perceive trade to be a reliable source of food at short notice, some stockholding and open market operations are still carried out.

Cutting tariffs to increase food imports

Import tariffs raise the price of imported foods, protecting domestic production from international competition and in the process providing tariff revenues for the government. Reducing import tariffs increases the volume of imported food, adding to domestic supplies and slowing the increase in domestic prices. Being a policy that impacts the market as a whole, reducing import tariffs affects all households, food insecure as well as secure, in contrast to the kind of targeted policies described earlier. As prices climbed through 2007 and into 2008, many countries lowered tariffs initially, eventually eliminating them as world prices continued to soar. Obviously, there needs to be scope to reduce tariffs significantly to be able to offset such dramatic price increases so tariffs have to be high enough to begin with to permit this. However, while the tariff rates 'bound' in the World Trade Organization might be high, those actually charged – the 'applied' tariffs – tend to be much lower. Available tariff data show that the majority of developing countries did not have applied tariffs high enough to be able to use them to stabilize domestic prices as prices soared. In a sample of 60 LIFDCs, applied tariffs on cereals and key vegetable oils were already quite low in 2006 - in the range of 8 to 14 percent on average - and tariffs were much lower than these averages for a majority of LIFDCs. This means that reducing

these applied rates, even to zero, was sufficient to stabilize only a small part of the overall rise in the world prices, which were higher by at least 50 percent in 2008 compared with the 2006 levels. Tariff reductions alone therefore could not be relied upon to counter the dramatic increase in food prices. Reducing or eliminating import tariffs also reduces tariff revenues which can be an important source of budgetary funds for many governments. Reducing all food import tariffs to zero would have cost least developed countries around USD 2.1 billion in lost revenues.

Besides reducing domestic prices and therefore the incentives for farmers and food manufacturers to invest and produce more, reducing import tariffs exposes the domestic agricultural and food sectors to greater international competition. Increased competition can provide a challenge to domestic food production to make additional efforts to increase competitiveness for the benefit of consumers. However, in many developing countries the agriculture and food manufacturing sectors are weak and may not be able to withstand competition easily, especially where it is from imports whose production receives support. There is therefore the risk of compromising efforts to develop domestic agriculture and food sectors. Reductions in import tariffs may also have an impact on the country's exchange rate since they increase the incentive to import and reduce foreign currency reserves. This can lead to a depreciation of local currency, especially in the agriculture and food dependent economies. If agricultural inputs are imported and paid in the increasingly high-value foreign currencies, then the risk of high food prices could re-emerge, cancelling out the intended price reduction effects of the import tariff cut.

RESTRICTING EXPORTS TO INCREASE DOMESTIC FOOD SUPPLIES

About one-quarter of the countries in the FAO survey resorted to some form of export restrictions in attempts to ensure domestic food availability. These restrictions range from increasing or imposing export taxes through to outright export bans. They have been perhaps the most controversial of the various policy measures introduced in response to rising food prices although current WTO rules do not constrain policies on export taxes, while those on export restriction and prohibition are also very weak and essentially not binding. By diverting a certain volume of food which would otherwise have been exported to the domestic markets, domestic prices are reduced providing relief to consumers. Where export taxes are used, the government also raises tax revenue which might be used to fund other measures such as safety nets. On the other hand, by reducing domestic prices, export restrictions reduce incentives to producers. Producers may shift resources away from the taxed commodities to other activities. The eventual result could therefore be a decline in productivity and production which might reverse the decline in prices that the policy initially intended to achieve. However, the main criticism of export restrictions is that they make the international market smaller and can exacerbate price instability in world markets, thus hurting consumers in other countries. This is especially so where the country imposing the export restrictions is a significant exporter of the product in question or where internationally traded volumes are small. Export restrictions also have longer-term implications - producers in the exporting countries may be discouraged from investing in agriculture and the price competitiveness of the export products in international markets is negatively affected. For net importing countries the image of the world markets as reliable sources of food supply could be undermined, leading towards a policy of import-substitution. As with cutting import tariffs, export restrictions may also have an impact on exchange rates. As export earnings decline, there will be pressure on the local currency to depreciate, increasing the domestic prices of imported goods including agricultural inputs adding a further disincentive to expand food production.

Overcoming supply side constraints and institutional weaknesses

In the medium- to longer-term, increased productivity and production are seen as the structural solution for stable food supplies and prices. High agricultural prices in principle provide producers with an incentive to expand production. In this sense, the high food prices can be seen as an opportunity. However, in many cases, realising this supply response will require overcoming a variety of supply-side constraints. These include not only high input costs and a variety of infrastructural obstacles, but also institutional weaknesses which lead to problems of access to inputs, credit, technology and inefficient marketing systems. Institutional weaknesses are a major cause of poor performance of developing country agriculture and especially in food production in Africa.

In general, these supply-side constraints cannot be addressed and overcome in the short-run, although there may be some scope for immediate action to improve access to necessary inputs such as seeds and fertilizers which can enhance food availability in the following growing season. If implemented effectively, such immediate interventions can increase the income of small producers and may reduce price increases in local markets, thereby contributing to improvements in the nutritional status of net food-buying families. However, the budgetary costs of programmes to improve access to inputs can be high. Such programmes might include productive safety nets (for example, seed and fertilizer distribution), smart subsidies to selectively reduce the cost of fertilizers and seeds, and support to finance institutions to help alleviate credit constraints. Efforts to improve access to inputs in the short-run need to be carefully designed to avoid any potentially adverse side-effects, taking account of the availability of additional inputs and the possible impact on private sector distribution networks. Where input markets are working and inputs are available, although producers do not have the cash to buy them, voucher systems are appropriate, as free distribution could undermine input markets. Where input markets are not working, starter packs could be distributed. However, if local output markets are not well integrated, such interventions, in promoting increased production, could result in a fall in local food prices to the detriment of producers and wage labourers.

Short-term measures to improve access to inputs need to be supplemented and supported by longer-term actions to address institutional weaknesses, including facilitating the development of the private sector. These actions include research and dissemination of improved technologies through more effective extension systems, development of market and credit infrastructure and capacity building. Support needs to focus particularly on enabling poor rural producers – those least able to respond to changing market signals – to expand their production and market their supply. Often, they do not have even the basic information necessary to make rational choices and efficient choices about what to produce and how. They need information on market opportunities, price trends, appropriate input packages and production and marketing alternatives. Agricultural research needs to focus on the needs of these poor rural producers and their capacity to take advantage of research results needs to be strengthened through more effective extension networks. The scope of individual smallholders to contribute to increased food supplies is limited by the economics of marketing outputs and buying inputs which require a certain scale of operation to be viable. There are significant economies of scale in transportation of fertilizers, for example, and it may be uneconomic to supply individual smallholders whose needs are small. However, individual smallholders can benefit from these economies of scale if they organise themselves to collaborate in accessing inputs, including credit, and marketing outputs. Organising themselves into groups to market their outputs collectively can reap economies of scale in storage and in transporting products to market. Farmers' organizations, cooperatives and producer associations can all help smallholders to access inputs and market outputs more efficiently and on better terms. However, many producer

organizations are weak. They also need support to strengthen their capacity to fulfil these roles.

Managing increasing food prices for investment

While high food prices can be seen as an opportunity to kickstart agricultural growth, the agricultural sector and commodity producing households may fail to benefit in the long run if the high price windfalls are consumed right away instead of invested. Unless the institutional environment in a country assists in the creation of investment opportunities, high prices will have no permanent impact on the sector. Governments play a crucial role even if the sector is not protected or characterised by price or trade policies. Commodity price booms have to be appropriately managed by producers, consumers, as well as by governments if they are to result in sustained benefits for commodity producing countries and minimum costs for importing countries. Policies need to be put in place to provide incentives to private agents and promote favourable economic conditions for investment that would lead to long run sustained growth and poverty reduction. This involves macroeconomic as well as sectoral policy measures.

Can the risk of high prices be managed?

Volatility in agricultural commodity prices creates risks for market participants whether as producers facing revenue and export earnings risk, or as consumers facing food import bill risk. Increasing international food prices prompt the interesting question of the extent to which commodity-dependent and net food importing developing countries might benefit in the future from an increased use of market-based risk management tools to hedge against world market fluctuations. Futures, options and other forms of derivative contracts can be considered as tools to hedge against unpredictable changes in both import and export prices. However, such instruments are not designed to stabilize export revenues or import bills, but only to make them more predictable. This can be beneficial to the extent that it allows proper planning of financial and other resources. In theory, the unpredictability of import bills and export revenues of developing countries might be reduced through appropriate hedging. However, in most countries, a number of institutional obstacles need to be overcome before hedging the national import or export positions with the aim of promoting food security would be feasible.

Policy choices and complementarities: the need for a twin-track approach

Determining appropriate policy solutions to the problems caused by the recent sustained high food prices is not straightforward given the needs both for immediate action to protect the food security of vulnerable groups and for establishing a foundation for more stable prices and supplies in the future. There is a potentially strong relationship between measures to protect consumers against higher food prices, and the enhancement of agricultural productivity. Well-designed complimentary policy measures can encourage risk-averse food staples producers to take the risks necessary to invest in improved technologies, and can stimulate local market development, increasing volumes and reducing volatility. However, if poorly designed or implemented, they can distort incentives, discourage investment and be unsustainable in terms of budgetary resources. Clearly, this kind of policy conflict needs to be avoided. What is required is non-distorting safety-net measures to address the immediate food security problems of the vulnerable poor coupled with incentives and support for the investment and productivity growth needed to ensure continuing food security in the longer-term. Such a twin-track approach provides a coherent policy strategy that avoids the policy conflicts warned against above. . However, budgetary costs can be prohibitive for some governments and the scope for financing such

schemes through internal or external borrowing can be limited. There is therefore a need for international support.

THE NEED FOR INTERNATIONAL ACTION

There appears to be an expanding consensus that the appropriate policy response to sustained high food prices should be a package of safety net measures to address immediate food security needs and targeting those worst affected, accompanied by measures to encourage and facilitate supply response to stabilise supplies and prices in the medium- and longer-term. However, it is also recognised that not all developing countries will have the resources, institutions or know-how to design and implement such policies. Safety nets have a high budgetary cost and are administratively burdensome. Policies aimed at sustainable expansion of food supplies are also demanding in budgetary terms requiring a reversal in the downward trend in investment in agriculture. As a result, many have resorted to cheaper and more readily implemented policies which aim to boost food availability and restrain prices on domestic markets but which may compromise incentives to producers to increase production and productivity and may have adverse effects on trading partners. Many countries therefore need international support in the form of resources and technical assistance. The domestic policy problem also has an international dimension in that, most strongly in the case of export restrictions, policies introduced by one country to increase local food availability and restrain prices can reduce availability and increase prices to other countries. There is therefore also a need for at least international discussion of policy choices to promote coordination and avoid these negative side-effects. The issues of high food prices and the impacts of policy are not only the preserve of developing countries. Developed country policy choices, in relation to biofuels, for example, are also relevant to the discussion of what should be done. More generally, many aspects of international food markets developments and policy are the concern of the World Trade Organization and under negotiation in the Doha Round. Disciplines agreed in the WTO have a bearing on the choice of policy responses to high food prices.

High food prices are an issue of global dimension and therefore a matter for international debate and international action. The international community mobilised to deal with what was seen as an international food crisis through actions to mitigate the negative impact of high food prices on the poor and food insecure and to help millions of poor farmers around the world seize the opportunity provided by greater demand for their products. The immediate food needs of the poor are being addressed through short-term actions which include increasing resources for food aid and safety nets in developing countries, providing more balance of payments and budget support to help meeting increased food and energy bills, and financing emergency programs aimed at increasing agricultural production in food deficit countries. In the medium-term, efforts are being made to put agriculture back in the centre of the development agenda, reversing the long-term decline in agricultural investment to ensure that it can continue to meet the demands of a world population that is increasing, becoming more urbanized and richer. In addition, greater policy coordination is being promoted to assist countries in making efficient policy choices and to maximize synergies in responding to high food prices and to avoid situations where one country's market intervention hurts others.

INTERNATIONAL SUPPORT TO MEET IMMEDIATE FOOD NEEDS

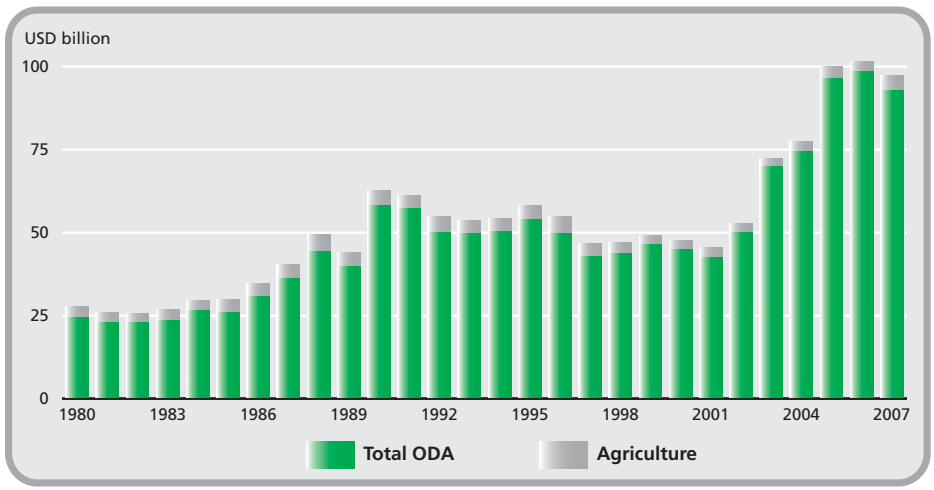
The top immediate priority is to ensure access of the most vulnerable to food, and expanded safety net programmes along the lines described above are seen as the most effective way of achieving this. Those would include assistance in the form of food, vouchers or cash

transfers, employment programmes (food or cash for work), school feeding and insurance schemes. Targeted programmes, addressing the most vulnerable groups need to be scaled up. However, safety net programmes involve significant budgetary costs which many developing countries will require international support to meet. For food deficit countries, increasing food prices push up their food import bills which together with higher energy costs lead to a need for balance of payments support. The International Monetary Fund (IMF) and the World Bank have an important role to play providing balance of payments and budget assistance to those countries. Failure to do so runs the risk of jeopardizing important developmental programmes and projects as scarce national resources are diverted to meet immediate food import requirements.

Food aid has been declining even as the need for it is increasing rapidly. Aid agencies found food more costly to procure as food prices increased. This prompted requests from aid agencies such as the World Food Programme for additional funding even to maintain their current levels of assistance. Their difficulties were further compounded by increasing transportation costs. Given the high food prices, the declining trend in food aid needs to be reversed with greater international support for relief agencies, particularly WFP and UNICEF. High food and fuel prices mean that food aid can reach fewer people with the same resources. Food aid deliveries from WFP declined almost continuously from 15 million MT in 1999 to 7 million MT in 2006. The cost for WFP to deliver food to beneficiaries increased by more than 70 percent over the period 2002-07. Further increases between the end of 2007 and early 2008 meant additional costs to simply maintain the current low levels of assistance. WFP and UNICEF have extensive experience in the development of safety-net programmes, and targeting them to the most vulnerable especially women and children. But they require additional resources in order to respond effectively to the current situation.

Some scope exists for increasing food supplies from domestic production in the short-run. Support needs to focus particularly on enabling poor rural producers – those least able to respond to changing market signals – to expand their production and seize the opportunity offered by higher commodity prices. In fact, cereal production by LFIDCs (excluding China and India) declined by 2.2 percent in 2007 as international prices were rising. Yields in many LFIDCs continue to be much lower than the rest of the world as they lag in the use of fertilizers, high yielding varieties, irrigation, integrated nutrient and pest

Official development assistance



FAO's Initiative on Soaring Food Prices

FAO's Initiative on Soaring Food Prices (ISFP), launched in December 2007, targets current problems to avoid further deterioration. The ISFP has put in place emergency measures worth USD 40 million in 57 countries. Much of the work carried out by FAO implies the scaling-up of existing programmes to support agriculture and rebuild the livelihoods of the rural poor, 80 percent of whom make their living in farming. FAO is working closely with UN partners, especially WFP and IFAD, as well as the World Bank, the International Monetary Fund, regional organizations and development banks. The ISFP measures provide essentially start-up funds; they cover only the most immediate needs of small farmers in LIFDCs and aim to enable them to boost agricultural production for the upcoming planting seasons.

An ISFP Programme Document outlines the type of actions countries need to undertake in the short term (between now and the end of 2009) to face the food security crisis arising from high food prices:

- providing seeds, fertilizer and tools together with good extension services to ensure the best possible use of the inputs supplied, which will lay the foundations for sustainable intensification of production in the future;
- work to improve infrastructure such as irrigation systems, market infrastructure, and better rural roads;
- strengthening know-how to add value to smallholder farmers' final marketable product, by growing crop varieties that are higher-quality and higher-yielding, or by utilizing processing techniques to diversify products, and facilitating supply contracts with agricultural companies that are secure and beneficial to farmers;
- reducing losses, sometimes as much as one-fifth of the harvest, through better handling, milling and storage, defending crops and livestock from pests, sickness and disease, for example, through integrated pest management systems; and taking measures to limit the impact of natural disasters.

In all these areas, FAO offers technical and policy assistance and advice, as well as capacity building, along with support in delivery where the Organization already has strong emergency programmes in place. The programme document, complemented by action plans and specific project/programme proposals developed with countries, is now being used to mobilise resources to implement country action plans. The support provided by the ISFP is put in motion at countries' request. Exactly what is needed is determined by needs assessment missions and consultations with governments. These focus on identifying the most vulnerable groups, hardest hit by the food price increases. Possible response options and policy measures are then identified. Individual action areas include: provision of food security programmes, safety nets and social support networks; improving access to essential inputs such as seeds and fertilizer; help to improve water and soil management; technical support in all these areas; and policy assistance which includes assessment of current agricultural and trade policies, tariffs, taxes, price controls, competition and market policies, and food security policies.

The resulting country action plans focus on the food security of the most vulnerable groups and aim at creating new opportunities for small farmers to access inputs, investments and technology and take advantage of high market prices.

FAO has contributed significantly to the development of the Comprehensive Framework for Action (CFA), created through the UN Secretary General's High-Level Taskforce on the Global Food Security Crisis, partnered with other UN agencies and the Bretton Woods Institutions. All activities undertaken under the ISFP are fully consistent with the CFA and aim at achieving the Framework's short-term outcomes.

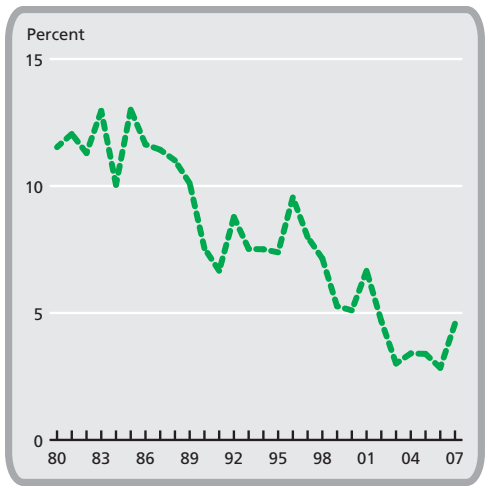
management, and conservation tillage. International assistance can help provide necessary seeds and fertilizers.

Support to investment in agriculture

The high food price episode serves as a reminder of the fragility of the balance between global food supplies and the increasing needs of the world's population, and also of the fact that agriculture has been neglected in global efforts to reduce poverty. Thus, while the immediate need is to prevent human suffering due to hunger and malnutrition as well as to induce a rapid supply response to restore a better balance between food supply and demand, these must be accompanied by actions in the medium term that will result in sustained agricultural growth. There is ample scope for substantial increases in agricultural production and productivity in developing countries. Production and productivity have not grown because resources channelled to agriculture have fallen. There is a need to increase public and private investment in developing country agriculture. Much more investment is required, particularly for water management, rural roads, marketing and storage facilities, as well as research and extension, yet investment in raising agricultural productivity has been trending downwards. Also, there has been a slowdown in investment in international agricultural research centres, even as new challenges such as climate change and increased demand for biofuel feedstocks have arisen.

The fall in resources devoted to agriculture is in large part due to the sharp reduction in external assistance to agriculture. Total ODA (combined bilateral and multilateral flows) has increased sharply from USD 43949 million in 1997 to USD120942 million in 2006 (all values in current USD). ODA directly earmarked for expenditure in the agriculture sector has also risen, albeit more slowly, from just over USD3000 million to about USD4000 million in 2006.

Proportion of total ODA on agriculture



As a proportion of total ODA however, ODA for agriculture has continued to decline, falling from 7 percent in 1997 to less than 4 percent from 2002 onwards. However, 2006 suggests a slight increase in the proportion of total ODA allocated to agriculture.

Donors need to increase the share of official development assistance going to agriculture. Many donors expressed their willingness to provide additional funds and made pledges to address the immediate and longer-term agricultural and food security problems of developing countries at the High Level Conference on World Food Security organised by FAO in June 2008. It is important that these commitments be maintained in spite of the financial crisis and global recession. More generally, the international community needs to take concrete steps to increase its capacity to respond in a coordinated and expeditious way to requests from developing countries not only for financial support but also for technical assistance to revive agricultural growth over the longer term. However, developing country governments also need to act on their part by allocating additional resources to agriculture

from their national budgets, and to put in place policies that are conducive to private sector investment in agriculture.

Improving the policy environment

Besides the need to ensure access to key productive inputs, a conducive policy environment is crucial if producers are to respond to the opportunities offered by high food prices and make the necessary investments to increase productivity and production. However, as noted above, some policy measures introduced by developing countries to cope with increasing food prices have militated against a significant supply response. At the national level, therefore, there is a need to promote greater policy coherence. In some cases, poor policy choices have been made simply because of a lack of reliable information concerning key market variables such as available supplies, prices and especially stocks, both public and private. There is an urgent need to establish a comprehensive and reliable international market information system to provide a stronger basis for more efficient policy choices.

International organizations can provide policy advice and support to developing countries to mitigate the impact of high food prices, improve the food security situation, protect productive assets – including land - of rural poor households and enable them to benefit from the opportunities that high food prices create. The UN system can disseminate experiences and best practices to help countries prepare their policy frameworks and strategies. This could include: helping design food insecurity and vulnerability monitoring systems; identifying and assessing the effectiveness of alternative measures that could enhance the ability of producers to respond to improving market signals; assessing the impact of changing support to, and taxes on, food commodities; analyzing how to use existing food distribution systems effectively and determining the most appropriate targeting criteria for food sales to vulnerable groups; assessing the appropriate role of food reserves for reducing intra-annual price fluctuations and emergency shortfalls; and determining the most effective means of enabling the private sector to participate more fully in agricultural development and in particular play a critical role in trade of food and supply of agricultural inputs.

The use of trade policy measures to increase domestic food supply may also have implications for other countries, notably in the case of export restrictions. Clearly, this implies a need for better coordination of policy internationally, which the international organizations might facilitate. International trade policies fall under the jurisdiction of the World Trade Organization whose rules, currently under negotiation in the Doha Round, provide the context for trade policy responses to high food prices. WTO rules are discussed further below.

It is not just in poor developing countries that policy changes might be introduced to increase food supplies and slow the increase in prices. If, as appears to be the case, biofuel production is commanding outputs and resources that would otherwise have contributed to food production, then reduction of subsidies or usage targets would correct for any market distortions. As was described above, the emerging biofuels market is a new and significant source of demand for some agricultural commodities such as sugar, maize, cassava, oilseeds and palm oil that are also basic foods. A considerable part of the diversion of food commodities to biofuel production is considered to be policy driven, notably by subsidies. One issue being debated actively is the WTO-compatibility of the biofuel subsidies. The other related issue is the indirect effect on food prices due to subsidies on biofuel production, and whether this amounts to cross-subsidization from the standpoint of the WTO Agreement on Agriculture or other Agreements. Aside from these legal aspects, there is also the ethical viewpoint: whether subsidies that are perfectly legal from the WTO

perspective should be removed if such subsidies have a negative impact on food supplies, poverty and food insecurity.

Ensuring that the WTO rules are supportive of policy measures to respond to future food crises

One of the problems addressed by the Uruguay Round Agreement on Agriculture (UR AoA) was excessive production and the resulting trade distortions due to domestic and export subsidies. The Doha Round is continuing the reform process along similar lines. A question being asked in the context of the high food prices is whether some of the trade rules require rethinking so that governments and the international community can respond better to future food crises. One of these would be rules on export restrictions and taxation on basic foods. While export taxation is not disciplined either by the UR AoA or by the parent GATT 1994 rules, current discipline on export restrictions is rather weak, merely calling upon the exporter to give advance notification and to give due consideration to the effects of the restriction on the importer. One of the dangers of a weak discipline on export restrictions is that it raises doubts about the reliability of the world market as a source of food supplies.

Rules on food aid are likely to be made much tighter if the Doha Round is successfully concluded. While this will prevent circumvention of export subsidies, the draft provisions for food aid during non-emergencies – most probably events like the high food prices episode – may need revisiting so that appropriate triggers are built in to facilitate the provision of timely food aid in such periods also.

A third consideration is the coverage of countries for special treatment. Currently, several special treatments are limited only to the two groups of countries mentioned in the Marrakesh Decision on measures to counter negative effects of trade liberalisation – the least developed countries (LDCs) and the net food importing developing countries (NFIDCs). Aside from the LDCs, there are many other low-income food-deficit countries that are not among the NFIDCs but who also require special treatment or access to food aid, export credit, food financing facility and so on.

The current crisis of high food prices has been used both to argue for a speedy resolution of the Doha Round negotiations, and to argue against any further reductions in protection that might result from a new agreement. Those arguing for a substantive agreement to further liberalization of agricultural markets suggested that current levels of protection and support have depressed global market prices and curtailed incentives for investment in increased food production in many food importing countries, contributing to recent surges in import bills. Those arguing against pointed to evidence that liberalization would result in upward pressure on prices as surplus production in subsidizing countries falls. Perhaps more importantly, they raised concerns that further reducing the policy space available to developing countries to provide adequate protection in promoting the development of their agriculture would result in further reductions in investment in the sector which could leave countries even more susceptible to rapid increases in food import bills in future crises. It was one of the proposed mechanisms for protecting vulnerable agricultural sectors, the Special Safeguard Mechanism, that proved to be the stumbling block which led to the breakdown of the negotiations in July 2008.

In general, it appears that current rules do not constrain policy responses to high food prices, and that the draft agreement that was under negotiation was unlikely to have changed this situation. However, many rules could be improved and strengthened to promote future policy responses that are more appropriate both to implementing countries

and to their WTO partners. The current impasse provides an opportunity for further debate and negotiation on rules and agreements that might reduce the potential negative impacts of future food price crises.

A SYSTEM OF GLOBAL ASSURANCES OF SMOOTH SUPPLIES.

Global food price spikes obviously impact most negatively on those countries that rely on food imports for a large share of their domestic food supplies and among those, they affect even more negatively the many low-income food-deficit countries (LIFDCs). If food security is to be enhanced for the LIFDCs (and FAO's current list includes 82 such countries), and if they are to avoid costly policies of food self sufficiency, a reliable system of assurance of food supplies is needed for these countries on a bilateral and possibly a multilateral basis. Such a system can be built by reference to agreed "protocols for collaboration", much as the International Energy Agency (IEA) has done for petroleum. A system of such protocols could be explored and agreed by all concerned in appropriate international or regional fora. Such protocols would also provide an enhanced form of international collaboration and should lead to a "win-win"situation.

A ROLE FOR REGIONAL FOOD RESERVES?

The hike in food prices fuelled partially by low levels of global cereal stocks has prompted discussion regarding the role of regional food reserves to help mitigate food shortages and reduce price volatility. Regional food reserves, if properly coordinated and managed, can assist food import dependent countries in particular to access food at stable prices, especially during times of crisis. Although the concept is well-founded, implementation of such schemes is hamped by the need for *ex-ante* agreement among interested and participating parties in management – something that has proven elusive. Currently only a few such schemes exist and unfortunately the experience with these has not been satisfactory. For instance, experience with IMF's Buffer Stock Financing Facility (BSFF), a mechanism for facilitating creation of buffer stocks, has shown that modest price stabilization achieved in practice by buffer stocks has typically been outweighed by the interest and carrying costs of the stocks[9]. Similarly, the ASEAN Emergency Rice Reserve, a food reserve scheme established by the Association of Southeast Asian Nations (ASEAN), has seen reserves of only up to 87,000 tonnes, which equals 0.4 day's consumption volume (0.1 percent of total demand) of ASEAN countries[10], and hence has not had any influence on rice prices.

Food reserves can perhaps be better utilized for facilitating food availability during severe food shortages as opposed to stabilizing food prices which requires availability of resources to finance imports. Thus, a more feasible approach to deal with food price risks can be the setting up of mechanisms or facilities to assist countries in financing their food imports especially during sudden, sharp emergencies.

[9] *Contingency Financing Facility (CCFF) and Buffer Stock Financing Facility (BSFF)*--Preliminary Considerations, Http://www.imf.org/external/np/ccffbsff/review/ , IMF.

[10] *Toward a World Free of Starvation and Poverty (Introductory Information on the International Food Stockholding Scheme and East Asia Emergency RiceReserve)*, http://www.maff.go.jp/eaerr.pdf, Ministry of Agriculture, Forestry and Fisheries of Japan.

The issue of a global arrangement to guarantee financing of food imports to LDCs and NFIDCs

The issue of possible difficulties in financing normal levels of food imports during food crises has been a recurring concern to net food importing developing countries from the time the Uruguay Round was negotiated, resulting in the *Marrakesh Decision on Measures Concerning the Possible Negative Effects of the Reform Programme on Least Developed (LDCs) and Net Food Importing Developing Countries (NFIDCs)*. One of the response instruments listed in the *Decision* is international food financing facilities. Work by FAO and UNCTAD since the Uruguay Round revealed that one of the most severe constraints facing developing country importers at times of excess food import needs (because of domestic shocks or higher international prices) is credit and exposure limits that export financing institutions (mainly banks) place on themselves for financing destined to various developing countries. In times of excess financing needs, such as those accompanying the recent high food price period, these limits prevent private exporters to LDCs and NFIDCs, and importers in LDCs and NFIDCs from obtaining the appropriate letters of credit to finance exports and imports even if developing country importers have the capacity to pay for them. The idea that has followed from this logic is to create a system of public (nationally or internationally agreed) guarantees to the financial institutions (in both developed and developing countries) to augment the relevant credit ceilings under specific conditions.

In itself, this concept is not revolutionary. In recent years, EBRD, IFC, IADB and ADB have introduced similar "Trade Facilitation Schemes" to add risk capacity to the market, and at a bilateral level, US Exim, USDA and some others have been doing this for years. But little of this has targeted food importers in LDCs and NFIDCs, and these schemes do not have proper capacity-building components for local banks which are often the weakest part in the chain. Moreover, OECD countries have signed a commitment to set up a mechanism of this nature in the run-up to the creation of WTO.

In that context, FAO and UNCTAD proposed in 2005, in a paper that was circulated to delegations in Geneva, the creation of a *Food Import Financing Facility* (FIFF). The FIFF would involve no new institution or additional financial resources, but instead would provide additional guarantees, utilizing existing multilateral facilities, to relevant export and import financing banks of exporting and also importing countries for the cost of excess (additional) food import bills during excess food import bill periods. Financing would be provided to traders via central and commercial banks with the government of the borrowing country providing sovereign guarantee. The facility would utilise donor guarantees to allow banks to extend the relevant credit. Unlike some of the current international financing schemes, lending would not be limited by any conditionality (for example, low balance of payment position of the borrowing country). However, keeping in line with the Marrakesh Decision, priority lending could be accorded to LDCs and NFIDCs facing food crisis. FAO estimated that over the period of 1974-2003, a system of such guarantees would have required to guarantee "excess financing" of only about 2 percent of the total food import costs of NFIDCs and LDCs. Given the reservations regarding the feasibility of maintaining physical food reserves, it may be timely in the context of the recent food price increases to re-examine the rationale for this proposal and explore how it could be implemented in practice.

Mobilisation of international action

The need for international action to assist developing countries suffering the adverse consequences of high food prices and the forms this assistance might take were discussed

at the High Level Conference on World Food Security in June 2008. Representatives of 181 countries, including 43 Heads of State and over 100 Ministers and high-level representatives of international organizations, non-governmental and civil society organizations met to review the issues and address the challenges of high food prices.

The Conference's declaration on world food security called on the international community to increase assistance for developing countries most negatively affected by high food prices through a programme of urgent and coordinated action. Donors and international financial institutions were urged to provide balance of payments and budgetary support to low income food importing countries and to assure the international agencies of sufficient resources to expand and enhance their food assistance and support safety net programmes. The Declaration called for assistance to countries to put in place policies and measures to help producers to increase production. Reaching consensus on the more contentious issues surrounding biofuels and their relationship to food availability and prices proved more elusive and more detailed research was called for.

Although the Conference was not intended to be a pledging event, a number of donor countries and international financial organizations used the opportunity to announce significant additional financial support totalling more than USD 12 billion. Perhaps even more importantly in the medium- and longer-term, the outcome of the Conference indicates a new recognition of the importance of agriculture, putting it back centre-stage on the development agenda, and a commitment to reverse the downward trend in agriculture-focused development aid. The High Level Conference clearly called for increased food production and investment in agriculture in order to ensure food security.

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ANNEXES

Trends in real commodity prices (base year 2000)

	1970's	1980's	1990's	2000-2005	2003	2004	2005	2006	2007	Notes:
Fao food price index (1998-2000=100)	194	129	105	102	101	106	109	116	138	
Bananas	746	675	559	476	351	478	532	578	562	Banana, Ecuador (USD/Ton)
Beef	88	84	117	96	90	104	105	99	98	Beef, Australia, cif USA (US cent/lb)
Butter	164	131	99	68	57	74	85	69	111	Butter, NZ (US cent/lb)
Cocoa	252	154	70	61	75	64	62	62	74	Cocoa, ICCO indicator price (US cents/lb)
Coffee	322	215	109	56	49	57	79	82	89	Coffee, ICO indicator price (US cents/lb)
Cotton	201	121	82	52	64	48	50	51	61	Cotton, United States (US cents/lb)
Hides	104	98	96	70	64	61	58	59	60	Hides, United States (US cents/lb)
Jute	1087	599	380	269	226	256	256	325	277	Jute, Bangladesh (USD/Ton)
Maize	311	191	130	93	98	102	87	104	135	Maize, United States (USD/Ton)
Rice	932	504	329	203	187	224	254	266	278	Rice, Thailand 100% B (USD/Ton)
Soybean	742	431	291	230	248	278	242	228	319	Soybean, Rotterdam (USD/Ton)
Sunflower	1004	470	364	259	269	294	268	258	410	Sunflower, Amsterdam (USD/Ton)
Rapeseed	825	452	287	234	277	276	230	268	355	Rapeseed, Rotterdam (USD/Ton)
Sisal	1578	997	802	693	654	786	780	792	813	Sisal, East Africa and Brazil (USD/Ton)
Sorghum	292	182	124	94	102	102	89	111	143	Sorghum, US No.2, Yellow (USD/Ton)
Sugar	37,27	18,91	12,13	7,51	6,63	6,53	8,72	12,60	8,36	Sugar, ISA (US cent/lb)
Tea	n/a	3,14	1,96	1,52	1,41	1,51	1,44	1,67	n/a	Tea, Mombasa (USD/kg)
Wheat	371	237	153	123	143	128	n/a	135	206	Wheat, Argentina (USD/tonne)

Note:
Base year is 2000.
Basis for prices for individual commodities:
banana, Ecuador (USD/tonne)
beef, Argentina (US cents/lb)
butter, New Zealand (US cents/lb)
cocoa, ICCO indicator price (US cents/lb)
coffee, ICO indicator price (US cents/lb)
cotton and hides, United States of America (US cents/lb)
Jute, Bangladesh (USD/tonne)
maize, United States (USD/tonne)
rice, Thailand (USD/tonne)
rubber, Malaysia (US cents/lb)
sisal, East Africa (USD/tonne)
sorghum, (United States USD/tonne)
sugar, ISA indicator price (US cents/lb)
tea, FAO indicator price (USD/kg)
wheat, Argentina (USD/tonne)
n.a. = not available

Monthly commodity prices, nominal terms

	2007											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Fao food price index (2002-2004=100)	131	133	135	137	140	149	155	161	170	173	180	185
Bananas	639	655	648	648	689	779	734	697	665	659	651	648
Beef	118	119	118	118	117	119	117	118	118	116	118	120
Butter	88	92	94	107	100	116	142	160	168	172	188	184
Cocoa	1702	1814	1924	1977	2005	2017	2153	1902	1938	1915	1967	2113
Coffee	106	104	100	99	100	107	106	108	113	116	114	118
Cotton	59	59	59	57	55	60	64	59	61	64	62	66
Hides	76	78	78	78	77	73	68	67	68	67	68	68
Jute	330	330	325	325	325	325	330	330	330	330	350	370
Maize	164	177	170	150	159	165	146	152	158	163	171	179
Rice	318	322	325	322	325	333	337	336	332	338	358	376
Soybean	306	323	324	320	334	362	374	386	430	445	489	516
Sunflower	338	339	346	368	395	416	456	513	636	697	711	704
Rapeseed	357	349	342	345	360	371	407	440	486	518	560	594
Sisal	920	926	918	928	939	930	1019	1030	1025	1032	1041	1042
Sorghum	175	182	173	148	158	168	159	170	179	174	172	201
Sugar	10,7	10,8	11,1	11,3	11,2	11,5	11,1	11,7	11,4	11,4	12,0	12,3
Tea	1,72	1,64	1,62	1,59	1,53	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Wheat	183	175	187	209	219	239	249	273	325	321	290	310

Monthly commodity prices, nominal terms

	2008							
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug
Fao food price index (2002-2004=100)	193	209	211	208	209	214	208	197
Bananas	689	792	1027	967	923	868	722	799
Beef	122	129	133	137	154	162	176	169
Butter	184	184	181	179	178	182	184	171
Cocoa	2216	2523	2670	2628	2690	3022	2954	2810
Coffee	122	139	136	127	127	131	133	131
Cotton	68	71	83	71	68	69	70	69
Hides	65	65	66	67	67	67	68	
Jute	383	383	410	460	460	460	510	510
Maize	206	220	234	247	242	281	267	232
Rice	385	463	567	853	963	870	835	787
Soybean	536	579	576	556	570	625	634	557
Sunflower	752	826	920	919	785	767	767	589
Rapeseed	645	700	758	709	713	722	679	596
Sisal	1088	1088	1092	1141	1141	1142	n/a	n/a
Sorghum	226	224	230	242	242	277	234	211
Sugar	11,7	10,7	9,8	9,8	9,2	8,0	8,6	8,5
Tea	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Wheat	330	365	395	n/a	n/a	363	329	307

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