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A mother prepares a meal in Malawi

Introduction

Global progress in reducing the scale of hunger in the world has slowed and levelled off since 2007, leaving the number of undernourished in the world at around 870 million (*State of Food Security in the World* [SOFI] report from IFAD, FAO and the WFP, 2012). In the same five-year period, the world experienced its third food commodity price spike. The question that follows is whether there is a causal link or simply a correlation between these two events. In this briefing, we will examine to what extent households with children suffering from acute malnutrition, the most severe type of hunger, feel the impact of rising international food prices and whether the world has done enough to mitigate their plight.

Key findings

- Progress in reducing the number of hungry and malnourished people in the world has slowed since 2007. This coincides with increased international food commodity prices. Households in low income countries are already under huge pressure due to seasonal food price fluctuations and can become adversely affected by global food price volatility.
- Actual links between international price increases and undernutrition are not well understood because of a lack of systematic monitoring at the local level. Current indicators used for monitoring the prevalence of undernourishment focus on calorie counts and production. They are therefore ineffective in capturing the impact on the composition of healthy daily diets. Early Warning Systems (EWS) must introduce indicators that can capture the impact of price increases on diets, livelihoods and the decision-making processes of the most exposed households in order to better prioritise responses.

Action Against Hunger | ACF International is an international humanitarian organisation committed to ending child hunger. Recognised as a leader in the fight against malnutrition, ACF works to save the lives of malnourished children while providing communities with sustainable access to safe water and long-term solutions to hunger. With 30 years of expertise in emergency situations of conflict, natural disaster and chronic food insecurity, ACF runs life-saving programmes in over 45 countries helping nearly 7 million people each year.

In 2007–08, the spikes in food prices and violent food protests catapulted hunger to the forefront of the political agenda. World leaders at the G8 in Japan promised resources and policies to reverse stagnating progress in reducing hunger. On the 10th of July 2009 the G8 Leaders presented the L'Aquila Declaration for Responsible Leadership for a Sustainable Future which aims to put an end to hunger. In 2011, the world feared the worst when food prices spiked again. However, the consequences proved not nearly as severe as four years earlier. In 2012, there were steep increases in the price of many staple grains once again, causing concerns of a fresh crisis and more pressure on the hungry and malnourished. Three food price crises and five G8 summits later, we aim to assess the evidence on the intersection between global price volatility and impacts on child undernutrition from a household level: what lessons have been learnt since 2007 and what has proven effective at the household, country and global level? We argue that while there seem to be observable links between increases in international food prices and worsening food access for those who live in countries with a high degree of price transmission, there has been little systematic monitoring of the impact of food prices at the household level and thus a causal relation between the two has yet to be definitively proven. This is made more complex by the nature of nutrition secu-

Key findings (continued)

■ There has been much high-level discussion of increased price volatility since the global food crisis in 2007–08, but little implementation of measures to tackle the problem. International actors must take steps to improve household resilience to volatility as well as tackle volatility at its root through greater regulation of financial speculation, larger food stocks and limiting loss due to agricultural production for non-food consumption.

rity, which is broader than economic access to food; issues such as governance, gender, power relations, access to healthcare and water and sanitation, as well as access to productive assets, are equal determinants of local food access and availability.

Analysis of the dynamics of global policy and consequent country action leads us to the conclusion that the current system for monitoring the consequences of food price increases at the household level in low income countries is ineffective in helping us to understand impacts because of a lack of regular monitoring and use of adequate indicators. Hence, information to prioritise and target policy interventions is scarce and of limited relevance to interventions to support effective resilience to nutrition insecurity. Five years

Figure 1: Trends in staple food prices since 1990

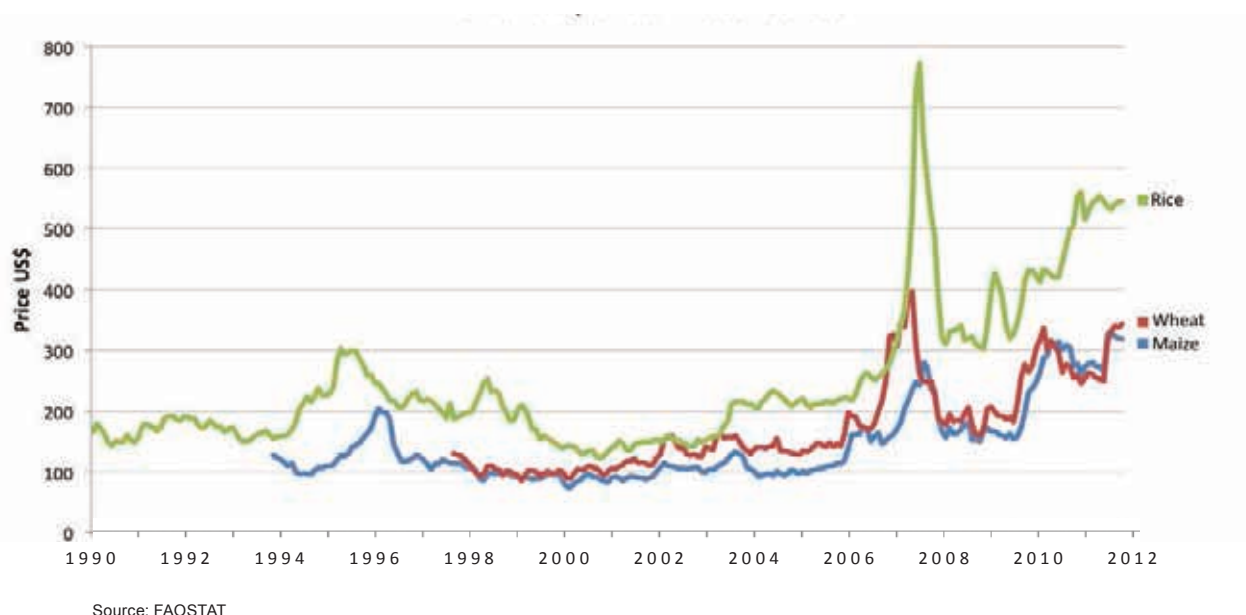




Photo: © ACF / S. Hauenstein Swan

Market traders in a pastoral zone near Gao, Mali

into the debate about how best to support hungry communities, policy discussion is still overly concerned with calorie counts and production, largely discounting issues such as nutritional quality, utilisation and access to food. Food price volatility affects households depending on their income and share of budget food expenditure. Furthermore, the income needed by a household for a satisfactory calorie counts versus a healthy and adequate diet can differ greatly. This briefing draws on some lessons to achieve a more meaningful monitoring tool for policy and programming, such as Dorward's Food Expenditure Ratio, and methodologies to capture the impact on the composition of daily diets. If such indicators and monitoring systems were put in place to detect the true extent of impact on a household, the information would be available to be acted upon in a timely manner by government and humanitarian actors.

This paper examines the current trends in international food prices, outlining some key lessons learned since the crisis in 2007 in terms of household impact and the factors that contribute to increased price volatility. It looks at the vulnerability of developing countries to price volatility, using Liberia as a case study. National and international responses in 2007/08 will be set out, after which the paper will turn to the future, providing

recommendations for donors, national governments and NGOs for improving household resilience to price volatility, implementing early warning systems and tackling international food price volatility itself.

Assessment of current trends in global food prices

In July 2012, there were sharp increases in international prices of wheat, maize and soya beans, triggered by poor harvest forecasts in the USA, Russia and Eastern Europe. Data from July 2012 showed international wheat prices increasing by an above-normal 50%, maize by 45% and soya by 30% since mid-June of 2012 (World Bank, 2012). In November 2012, prices of maize were almost at their 2008 peak level, with an increase of 18% on the previous year, whilst wheat prices were up 25% on November 2011 (FAO, 2012), see Figure 2. Also worrying is the current US stock-to-use level of maize, which is actually projected to decline next year (ODI, 2012), see Figure 3. Stock-to-use ratio indicates the level of carryover stock for each commodity as a percentage of the total use of the commodity. Low stocks leave the market more vulnerable to shocks.

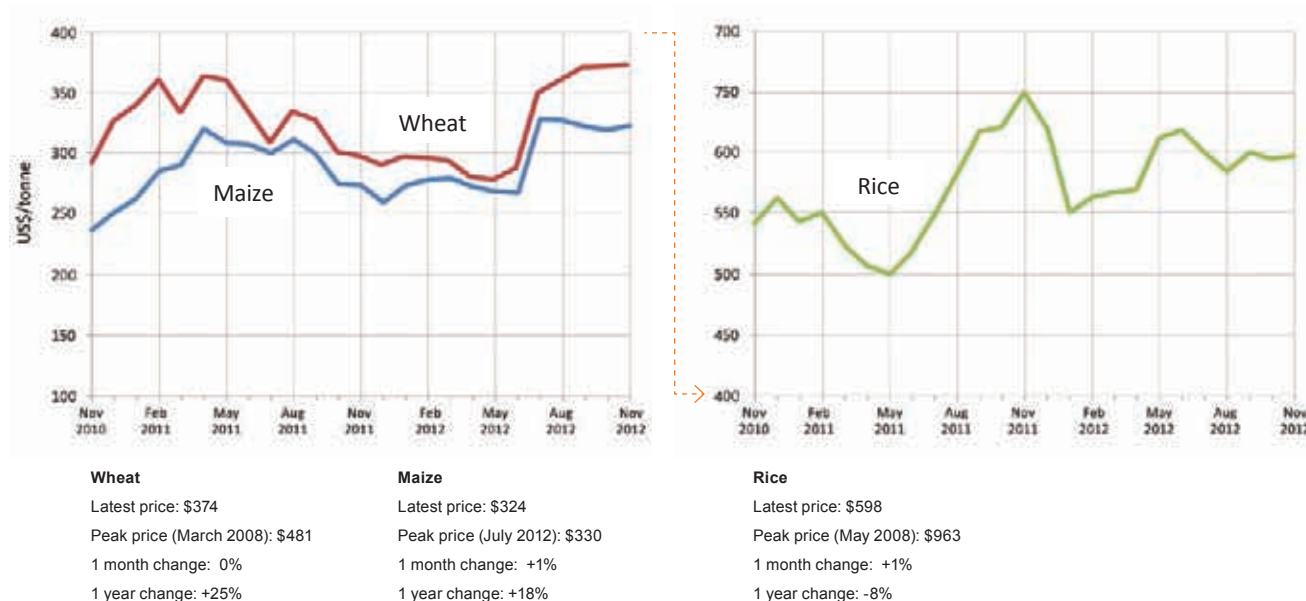
It appears that the international prices have not spiked as dramatically as in 2007/08, as better harvests have been seen by major producers in the southern hemisphere and there have not been the ill-informed export restrictions, import stock buying and fuel price spikes that occurred in 2007/08. However, there is serious concern that higher prices will translate on to domestic markets in countries that rely on wheat and maize as staple foods, are net food importers and already suffer from high levels of hunger and undernutrition. After rice, wheat and maize are the two most commonly consumed staple foods for poor country households and they are the preferred staples in many food and nutrition-insecure countries in West and Central Africa and Central America. In contrast to the last global crisis, rice prices in 2012 have largely remained stable (although still high). Trends in rice prices are of particular importance for those suffering from hunger where rice is a staple, such as Asia and parts of West Africa. Changes affecting rice prices are therefore associated with deteriorating food insecurity in these countries. Because of this, some countries that were badly affected in 2008 may be relatively unaffected by current increases. However, rice prices need to be monitored to ensure this does not change.

Prices of staple foods have fluctuated widely between the last crisis and today. However, for many households in Sub-Saharan Africa in particular, prices have remained high and have not fallen to previous price levels. Studies conducted in the wake of the 2007/08 crisis found that, in general, national economies were able to prevent inflated international prices from penetrating domestic markets completely in the short term, but a higher price response in developing countries existed in the medium term, which was extremely concerning for households in poor countries that spend large proportions of their income on staple foods (HLPE Report, 2011). Whilst this paper will focus on the price increases of staple grains, further studies should be conducted into price trends of other essential foods affected by the food price crisis.

Lessons learned from the 2007/08 food prices crisis

High international food prices in 2007/8 had a consistently negative impact on the quality and quantity of foods consumed by affected populations in exposed low income countries, with more households going hungry, varying according to the specific context and exposure to the increases.

Figure 2: International cereal prices



Source: *Global Food Price Monitor* December 2012, FAO. <http://www.fao.org/giews/english/gfpm/index.htm>





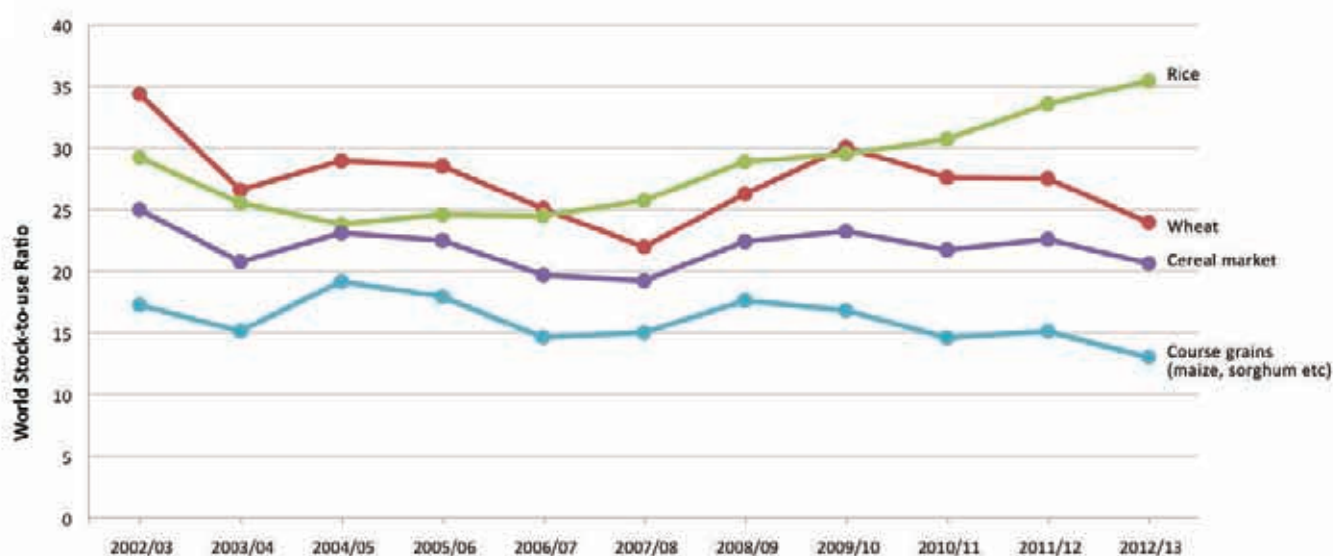
Zara and her family, Niger, displaying their midday meal of wild leaves and peanut balls

Households decrease dietary diversity and quantity of food consumed

Poor households generally respond to increases in global prices that transmit down to the local level in the same manner as seasonal fluctuations in prices, namely through decreasing their dietary diversity (ACF, 2009). The ACF case study carried out in Sierra Leone to assess vulnerabilities to the price increases

indicated that the consumption of micronutrient-rich foods such as meat, vegetables and dairy reduced radically following the increase in food prices, causing fears of a rise in malnutrition stemming from micronutrient deficiencies (ACF, 2009). A similar story was observed for low-income families in Liberia. In the Central African Republic, households also reported a reduction in food consumption, with 50% of the households surveyed eating two or more meals per

Figure 3: World stock-to-use ratios



Source: FAO. <http://www.fao.org/worldfoodsituation/wfs-home/csdb/en/>

day before the crisis, and only 24% afterwards. In Ethiopia, malnutrition rates increased in three regions of the SNNPR region, coinciding with higher food prices. Falling intakes of micronutrients is particularly concerning for children under five, who face future problems with their physical development (wasting, stunting) and face higher risk of illness because of a weaker immune system. It is difficult to make the causal link between increases in child mortality rates and global price trends, not least because increased mortality rates are slow onset and have many potential causes.

Seasonal hunger is exacerbated

Seasonal hunger is a permanent reality for many farmers and households in low-income countries because of seasonal price fluctuations. It is well known that the poorest households – even those relying predominantly on small-scale agriculture for their livelihoods – are reliant on the market to purchase food once their harvest runs out. Seasonal changes in the local market and the cash economy can therefore be critical, pushing vulnerable households closer to a threshold beyond which they cannot afford to cover their basic food needs and access a healthy diet. Research conducted in Niger

Box 1: Factors causing rising prices and greater volatility

Following the assessment of current trends, the question arises as to why food prices are on the rise. There are a complex range of short and long-term factors that are contributing to increased international food price volatility. Some key factors are listed below:

- **Production failures:** reduced harvests of wheat and maize in the USA, Russia and Eastern Europe due to drought are the major cause of the current price increases and were cited as the single most important short-term factor behind the price spike in 2007/08. There is an argument that this is part of a greater trend of more dramatic climate conditions that will make erratic harvests more common.

- **Low investment in agricultural productivity in low income countries**

- **Low cereal reserves:** Low cereal reserves, in part because of policy measures favouring liberalisation of markets, leave countries vulnerable to price shocks from production failures, as countries have less capacity for emergency response and are not able to use reserves as a buffer against high prices.

- **Financial speculation:** Following deregulation of food commodity financial markets in 2000, bankers and traders have increasingly entered markets to speculate on food prices. There is increasing evidence to suggest that such market speculation on commodities such as wheat and corn is causing greater volatility in international prices, even leading to higher prices of food at actual markets.

- **Biofuels policy and land-grabbing:** The 2007 biofuels mandate in the USA has had far-reaching consequences. An increasing proportion of crops are grown for this use, resulting in reduced cultivation of food crops, with 40% of US domestic corn production transformed into fuel. Growing demand for biofuels is contributing to the trend in many African countries of leasing out agricultural land to foreign investors for biofuel plantations (Mousseau, 2011). In Mali, large stretches of agricultural land have been leased out in the last few years, mainly to foreign investors and with more than 40% of these land deals involving crops for biofuels. Mali already has a limited availability of arable land and very high numbers of people suffering from hunger, and the deals contribute little to easing food security and hunger problems in Mali. To put the recent large land deals in Mali in perspective, the areas leased out could sustain 112,537 farm families – well over half a million people. It is uncertain whether employment generation will compensate for the loss of income from not having access to the land (Oakland Institute 2011). Such trends are being repeated across Africa in other highly exposed countries, including Ethiopia, Sierra Leone and South Sudan, to name a few, which will result in clear negative implications for food security in this vulnerable region.

- **Demand-side factors:** The above-mentioned factors are predominately supply-side causes of rising prices. Global trends in demand for cereals such as population growth, urbanisation, changes in diet and increased demand of cereals for animal feeding are also important factors driving sustained higher prices.

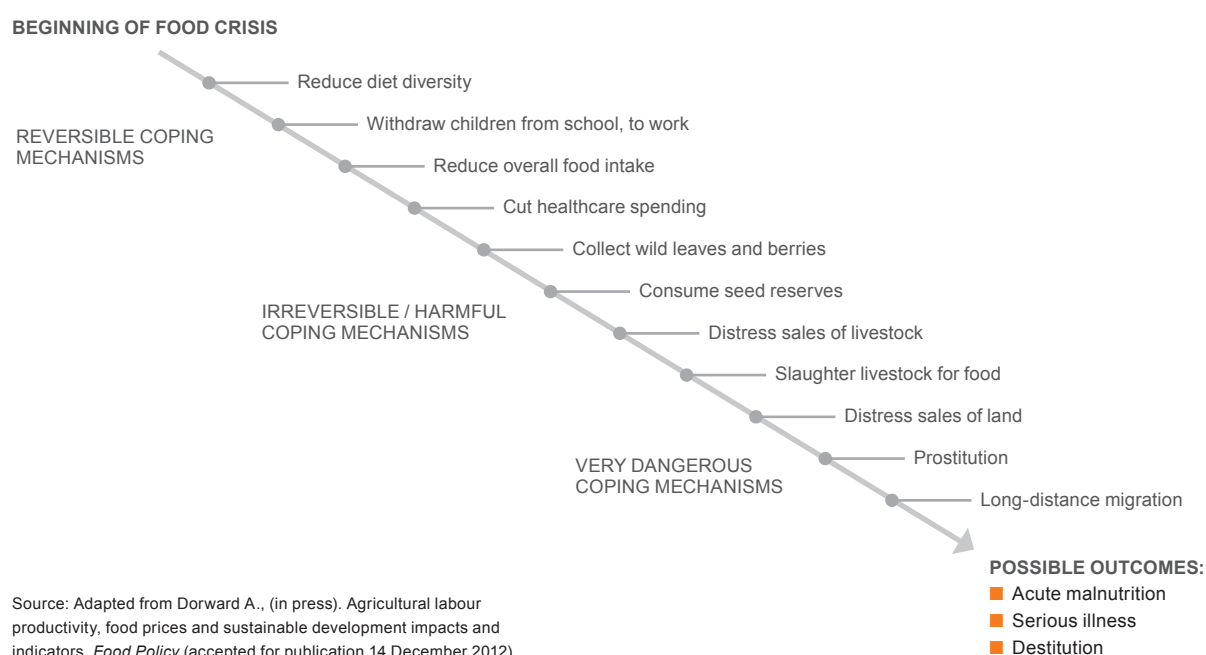
in 2009 demonstrates that, unsurprisingly, there is an increasing dependency on the market while approaching the lean season (Berton *et al.*, 2009). Vulnerability to food price volatility can also be exacerbated by underdeveloped rural infrastructure and storage facilities, meaning that farmers are forced to sell at low prices during the harvest season and buy high during the hungry season (UNDP, 2011). In other words, during the period when prices start to peak as supply dwindles, the poorest households are increasingly reliant on the market, and have no choice but to pay inflated prices. Increased prices prolong and accentuate these periods of hunger, as evidenced by earlier than normal admission rates at ACF's feeding centres in the Central African Republic and Liberia in 2007–08 for example. Analysis of the impact of international food price volatility at the household level must therefore start with the premise that households are already under huge pressure during seasonal hunger gaps and, at this time, can become adversely affected by minor price increases.

Households adopt damaging coping mechanisms

In 2007/2008, adapting to higher food prices meant not only spending more on food (or getting less food

for the same cost), but many households adopting damaging coping mechanisms, from keeping children out of school (to save on schooling fees or to send them to work) to selling assets (such as land, livestock or tools) or borrowing money from informal lenders at high rates of interest and increasing working hours in the informal economy. Work migration is one of the most common factors and should not be forgotten. Whilst high and volatile global food price rises are only a single factor affecting poverty and malnutrition, all four ACF studies conducted at the time show that the impacts on livelihoods are considerable and widespread. The FAO has recently begun to collect data on the income share of food expenditure of the poor, and many of those in poverty can spend up to 50–80% of their income on food (FAO, WFP, IFAD, 2012). These households have little scope to increase spending on food and are therefore highly vulnerable to even the smallest price increases. From observations in Niger, ACF found that diets for some have shifted from the preferred millet to foraged foods with potentially bigger consequences for the nutritional wellbeing of the population. Figure 4 gives an idea of the ranges of coping mechanisms adopted during a food crisis.

Figure 4: Coping strategies employed as food insecurity intensifies



IDS is currently undertaking a series of studies to monitor the impacts of, and responses to, volatile food prices in poor communities in ten developing countries. IDS also undertook similar studies following the 2007–08 crisis by setting up rural and urban listening posts to hear stories from affected households. In most studied countries, poor people were foregoing use of medical services as they could no longer afford the cost of healthcare, and serious physical and emotional stress of both men and women was observed (Heltberg *et al.*, 2012). Studies such as these, which use qualitative data, can help to give an accurate picture of the impact at household level, but more regular and systematic monitoring is also needed.

How will rising food prices affect low income countries in 2013?

As already described, countries that rely principally on international markets for maize and wheat and that already have high levels of hunger and under-nutrition in children under five are particularly vulnerable. In some cases the fall-out from the 2008 price crisis is still being felt at the household level. Those countries that rely on rice as a staple may be relatively unaffected because of lower volatility this year. The Liberia case study shows one way in which food prices increases are affecting poor households in the country.

Liberia: Case study country: ‘Eat and worry’

There are several ways the real increases in prices of food commodities have impacted on the Liberian market. In many cases, households that purchase their food from the market do not have to deal directly with increased prices, but rather with less food for the same amount of money. The key staples of rice, flour, sugar etc. are sold in cups (i.e. 400g cup). When there is an increase in the wholesale price of commodities, retailers maintain the retail price but secretly alter the size of the cup in the following ways:

- compressing the sides of the cup, thereby reducing the volume
- adjusting its height by cutting and fitting, thus reducing the volume
- fixing pieces of paper/card to the bottom of the cup
- for other commodities that are tied: putting small quantities in plastic bags and filling them with air.

These measures put in place by retailers are unknown to consumers, and as a result, if a family purchased 2 kilograms of rice they might only receive 1.5 kilograms for the same price. In the case of produce sold in bundles, e.g. greens, the changes are visible because the size of the bundles is reduced. Buyers



Bundles before and after increases in food prices at a market in Liberia



Photo: © ACF / S Hauenstein Swan

A typical lean season meal for a poor household in Gao, Mali, of millet with salt and water

are therefore forced to either buy twice the quantity to meet the needs of the household – not an option for the lowest income families – or buy the intended quantity but reduce household members' share. In the case of produce sold in piles – e.g. tubers, roots, palm nuts – retailers reduce the size of the pile when the wholesale price is increased (see photos). In some cases, they mix bigger tubers with few smaller ones to attract buyers.

When food prices increase and retailers employ the aforementioned strategies for items sold in cups, many households in Liberia are no longer able to meet their daily food requirement with their existing budget. Better-off households are able to double the intended quantity of items to be bought (e.g. if they intend to buy two piles of palm nuts or two bundles of greens, they buy double the quantity). However, this option is not available to the poorer households who already spend a large share of their income on food. In more extreme cases, poorer households must resort to purchasing extra food on credit, commonly termed as 'eat and worry' in Liberia. Portion sizes are reduced in most households as they are unable to purchase the quantity of food needed for the family. The distribution of food within households is also affected when price rises are witnessed and meal frequency is often reduced.

Country vulnerability to food price shocks

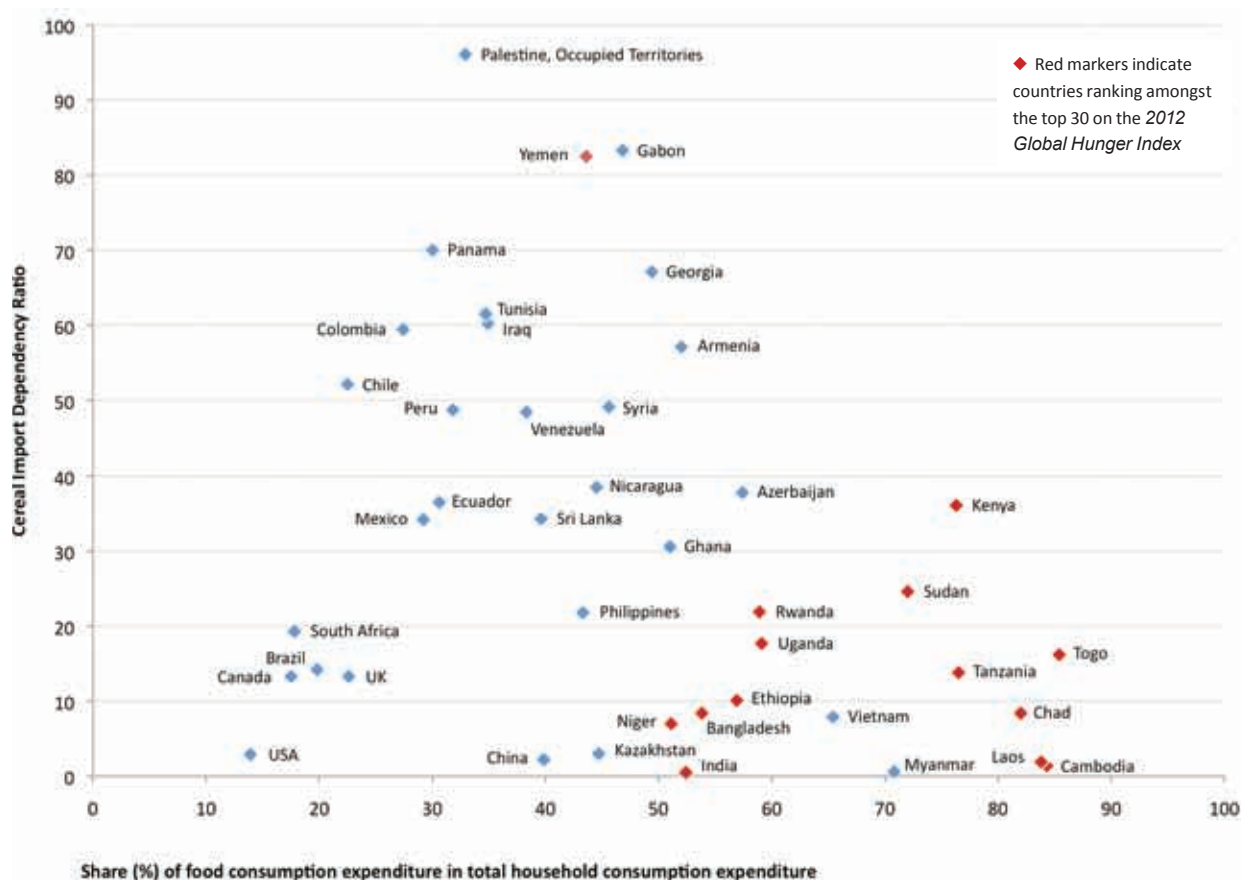
Whether or not international prices have filtered down significantly to the local level, local prices remain very high and the Sahel in particular remains a very vulnerable region because of the number of people already malnourished and the high child mortality rates. International grain markets are tightening and regional grain stocks are becoming dangerously low, with Niger, Mali and Mauritania particularly vulnerable. ACF Sierra Leone reports that although prices in the country have not been affected by the international price increases because of its reliance on rice and cassava (rice prices have remained stable in 2012), its existing safety net system would be unlikely to meet needs should a new food crisis arise. Many countries in East and Central Africa are also facing increasing food insecurity, in particular DR Congo, Ethiopia, South Sudan, and the Central African Republic because of poor local harvests and domestic instability (*WFP Global food security update, October 2012*). Information from ACF reports that 3.7 million people in Ethiopia will need emergency assistance (as stated in the Humanitarian Requirements Document released by the government), due to the below-average performance of the belg harvest and concomitant increased staple food prices.

Figure 5 gives an indication of some of the countries most exposed to the international food price increases because of their high ratio of expenditure on food at household level and high dependence on cereal imports (although, because of missing data, not all the potentially exposed countries are shown). For the collection of mainly Sub-Saharan African and South East Asian countries in the bottom right corner of the graph with extremely high food consumption expenditures, even the slightest increase in prices can push them over the threshold at which a nutritious diet is affordable. Most of these countries are highlighted in red, indicating that they fall within the 30 countries with the highest scores on the 2012 *Global Hunger Index* (IFPRI *et al.*, 2012) and are already suffering from high levels of hunger. The Palestinian Occupied Territories stand out as being particularly exposed because of their almost complete dependence on imported cereals.

Mauritania

Mauritania is an example of one of the countries that exactly fits the high vulnerability criteria that we have outlined above. In a good year, Mauritania imports 70% of its food, and 85% in a bad agricultural year. Half of Mauritania's grain consumption is wheat, and wheat imports represent 75% of Mauritania's total grain imports, by far the largest in the region. This clearly puts the country at risk from international price increases and it is expected that the prices will filter down to domestic markets in the coming months. The country has also seen problems with export bans from Mali and an influx of refugees from the country, and it cannot therefore rely on Mali and surrounding countries for supplies to meet demand because of high import prices. There is therefore potential here for a crisis situation, with food insecurity already high and the region as a whole susceptible to the tighter

Figure 5: Country vulnerability to food price shocks



Data source: FAO Food Security Indicators (Using most recent data available): <http://www.fao.org/publications/sofi/food-security-indicators/en/>



Photo: © ACF / S. Hauenstein Swan

Weeding a millet field, Mao in Chad

global grain markets. Nearly one million people were estimated to be food insecure in 2012: 800,000 in rural areas and 200,000 in urban areas (WFP, 2012b).

In short, the information above highlights the vulnerability of many regions to future transmissions of international food prices down to the local level. There are of course very specific local determinants of prices by country, which explain rising food prices, sometimes more so than international causes. As already discussed, country structural instabilities, partly seasonal in nature, cause fluctuations in prices, as well as weak local stock levels, poorly designed state interventions and local level excess demand over supply. However, if international price increases now filter down to the countries that have been identified as particularly vulnerable, there will be negative impacts on levels of hunger and undernutrition as seen in 2008, and potentially much worse as households have had their resilience to respond to recurrent crises eroded. This represents a serious concern for ACF and other NGOs and international organisations dedicated to overcoming hunger, and is an issue which needs addressing urgently.

National and international responses to the 2007/2008 food crisis

The 2009 ACF report, *Feeding Hunger and Feeding Insecurity*, concluded that both national and international responses to the last major global crisis were too little and too late, with few actions taken by the international community before July 2008. The matrix shown below is a summary of the broad range of country responses, which were an attempt to mitigate price increases. Some 25 governments enforced export restrictions, ranging from taxes to quotas and full bans of cereal exports, as a result of fears over price increases and food shortages (Mousseau, 2010), including major exporters of grain such as India. A study by Headey in 2011 concluded that the export restrictions contributed significantly to the price spike itself, estimating that export bans in India contributed 23% to global rice price increases; Vietnam made up 20%, Egypt 10%, China 8%, totaling 61% of the global price increases in rice. Many development agencies that saw the crisis as a problem of production responded by promoting improved agricultural production, and in some cases took steps to increase cereal reserves (Wiggins *et al.*, 2010).

Table 1: Summary of government policy responses to mitigate or prevent food price rises

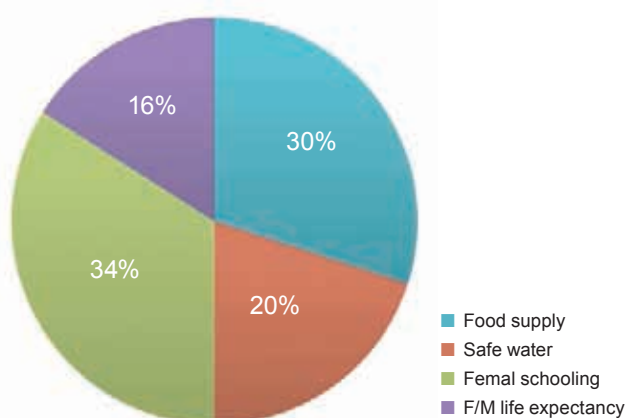
Internal	Border
<ul style="list-style-type: none"> ■ Release stock (public or imported) at low price ■ Untargeted food price subsidies ■ Administrative food price control, often with restrictions on private trade or action against 'hoarders' ■ Price agreements with key traders ■ Reduction of consumer taxes on food, including VAT 	<ul style="list-style-type: none"> ■ Food exports banned / restricted / export quotas ■ Food export taxes raised or minimum export prices ■ Reduction or elimination of import tariffs, quotas and customs fees ■ Monetary and (exchange rate) policies – not consistently reported ■ [Using risk-hedging deals (options / futures / barter)] – not reported

Source: Adapted from Wiggins *et al.* (2010) *Country responses to the food price crisis 2007/08*

A report by Mousseau in 2010 concluded that in the immediate aftermath of the price increases, many of the most vulnerable households were left to deal with the price increases themselves through their own family and support networks. A range of safety nets were used to try and mitigate the impact of high food prices for the poor in low and middle income countries, but this was mainly in countries where substantial cash programmes were already in place (Wiggins *et al.*, 2010) and many struggled to cope with the high prices and were rolled out on too small a scale. Safety net measures such as cash transfers received boosts but still found it hard to keep up with the price hikes, as in Ethiopia, where the value of cash transfers increased by 33%, far from the 300% increases in food-basket

prices experienced in the country (Mousseau, 2010). Many of these measures were temporary, with little consideration of long-term changes to entitlements in seasonal hunger gaps.

The conclusion of ACF and other research at the time is that a lack of international prioritisation of hunger and malnutrition is constraining desperately needed funding, whilst a large proportion of discussions relating to improving household resilience following the price volatility have revolved around improving agricultural productivity. Though there is evidence to suggest that improving agricultural productivity can lead to improved food security and nutritional outcomes, there is also evidence that suggests this is not an automatic mechanism and other multi-sector interventions are needed to deal with uneven distribution of food resources. The pie-chart in Figure 6 demonstrates the improvements in key areas that have most contributed to reducing prevalence of underweight children, showing food supply to be important but not the only factor. Not only that, research suggests that poor households rely heavily on purchasing power to cover their food needs, so the importance of having sufficient cash available within the household is essential. The right kind of agricultural development helps, and programmes such as home gardens are especially effective, but only if these are accompanied by interventions aimed at raising life expectancy of males and females, providing safe water and female education (Smith and Haddad, 2000).

Figure 6: Factors contributing to reduced prevalence of underweight children, 1970 to 1995

Source: Adapted from Smith and Haddad 2000

A need for better surveillance of the impacts of price instability

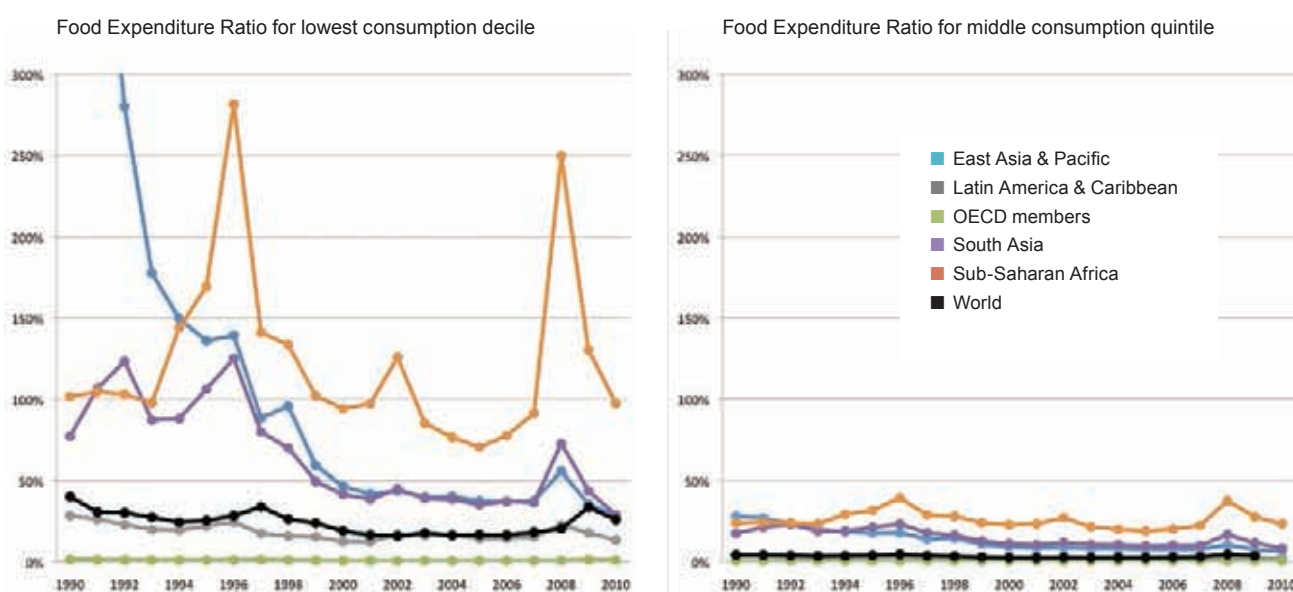
It became clear following the 2007–08 crisis that there was a need for better quality and more comprehensive local and national level surveillance of the impact of rising international prices to inform policy-making. This was also the conclusion reached by the *High Level Panel of Experts on Food Security and Nutrition* report in 2011. This is because of both the substantial delay between the rising food prices and the international response and the assertion that the 2007–08 price spikes were not particularly high in historical terms. Currently, the FAO uses a ‘demand approach’ for its price index which does not consider income level or the share of income going towards buying food. For example, the effect of a food price increase on a high income household that spends 10% of its income on food is far less severe than the effects for a poor household spending 50% or more of its income on food (Dorward, 2011). The poor household has far more limited options to reduce food expenditures and may have to make serious cuts to non-food expenditure such as clothing, healthcare, livestock or housing. Using a simple price index based on the USA CPI can therefore dramatically underestimate the size of price increases as it does not recognise this ‘income effect’ and therefore fails to

evaluate accurately the impact that prices will have on poor households in low income economies.

The Food Expenditure Ratio (FER)

To recognise that prices are different from a household perspective, Dorward suggests using an indicator called the Food Expenditure Ratio (FER) (Dorward, in press). This is defined as the expenditure needed to meet essential calorific requirements divided by resources available for non-staple food after consumption of essential calorific requirements that would be measured for different income brackets of a population, e.g. the lowest quintile and a median one for comparison. Dorward created his own estimations below for the lowest consumption decile in each region of the world and the middle consumption quintile. Figure 7 shows that the indicator demonstrates very different impacts of food prices for different income levels. The graph for low income houses sees a far larger spike in the FER coinciding with the 2008 food crises, indicating what this paper has identified, that food prices hit the poorest the most because of the high proportion of their income spent on food, leaving them with few options but to reduce consumption on important non-food goods and services. This occurs particularly in Sub-Saharan

Figure 7: The Food Expenditure Ratio for each region of the world



Source: Dorward, in press: *Agricultural Labour Productivity and Food Prices: Fundamental Development Impacts and Indicators*

Africa where economic growth and income growth have also stalled during these periods.

Numbers of undernourished

The latest report from IFAD, WFP and FAO, *The State of Food Insecurity in the World 2012* (SOFI), uses a methodology to measure prevalence of undernourishment that does not capture the effects of the rapid increases in price and short term shocks on the numbers of undernourished. Therefore, this is not helpful in assessing the impact of price spikes on nutrition levels of the poor. Additionally, the methodology takes minimum activity levels as a benchmark for dietary energy adequacy, when many poor and hungry are likely to be undertaking manual, strenuous labour. The Annex of the SOFI report shows that when normal levels or intense levels of activities are used as definitions of minimum dietary energy requirements, the calculated number of undernourished in 2010–12 goes up to 1.52 billion and 2.566 billion respectively. This methodology obviously needs to be improved further to provide a more realistic assessment of hunger levels.

The cost of a healthy diet approach

Save the Children has come up with an indicator – the Cost of Diet Approach – that compares the cost of a diet based on energy only requirements as opposed to the cost of a healthy diet for ideal growth of a child (Save the Children, 2007). This shows that a healthy diet can be much more expensive than a calorie one (the measure that FAO, WFP use to measure number of undernourished). A study carried out in 2011 (Headey, 2011b) undertook a simulation of the number who fell into food insecurity during the 2007–08 crisis, using data on self-reported food insecurity. The study found that the number of food insecure actually fell in this period because of the high economic growth in economies such as Indonesia, China and India cancelling out negative changes of higher food prices. The number of food insecure actually increased in Sub-Saharan Africa and Central America where economic growth was sluggish. This contradicted the findings of the World Bank, FAO and USDA at the time, who all found that there was a global increase of between 60

and 100 million approximately. This again suggests the need for better indicators which consider changes to income alongside changes to food price inflation.

Measuring diet by calorific intake only does not take into account the level of absorption of food or of protein, vitamin or mineral intake, and is therefore a highly imperfect measure. It takes different amounts of energy to digest different types of food and release their nutrients, which was not fully taken into account by the original calculations. The stated calorie count can therefore be up to 25% off the real number of calories available (Trivadi, 2010). Manipulation of food can also change the calories available from it – for example, eating food that is cooked or ground makes it easier for calories to be harvested by the body, leading to the conclusion that when there are cases of food scarcity, cooking and grinding can mean more calories from the food available. The use of calories as an indicator of an adequate diet must therefore be treated with caution when determining whether a person is consuming enough. The problems with the existing monitoring indicators used by the international community to measure food and nutrition security suggest there is a need for a different calculation model.

Regular and comprehensive local monitoring

In addition to these more macro-level monitoring issues, nutrition and food security data need to be collected together and all year round, alongside other social and political data to identify vulnerable groups so that interventions can be targeted at those most in need. Nutrition data is generally collected on an ad hoc basis, but can be more reliable as an indicator after a food prices shock, as it measures actual outcomes rather than price changes. The ACF study conducted in Ethiopia in 2009 found malnutrition and under-five mortality rates increasing in the SNNPR region (corresponding with high food prices), but no changes at the national level, showing country level data to be too imprecise for policy-making, as well as understating the extent of the problem. There is also the need for a stronger link between assessment and decision-making, as it is not always a case of a lack of information. For example, USAID's FEWS



Photo: © ACF / S Hauenstein Swan

ACF community workers hold a nutrition-awareness session in Mao, Chad

NET provides data on high food prices to the international community, but it failed to garner a reaction from major donors until the problem became a serious crisis and riots broke out in countries all over the world. There was a large amount of criticism directed towards the slow international response to the famine in East Africa in 2011, demonstrating that this is still an area that needs work. Once more effective indicators and monitoring are in place, a better assessment of the real impact of food prices on poor populations can be made, and the information can be acted upon in a timely manner (although there is, of course, no guarantee that this will happen).

What has the international community achieved since 2008?

Attempts to improve the coordination and coherence of the international response to greater food price instability were one of the major international efforts following the 2007–08 crisis. The UN High-Level Task Force (HLTF) on the Global Food Security Crisis was created with the aim of unifying the global response to deteriorating global food security caused by the crisis, and the Committee on World Food Security (CFS) was reformed to act as the major forum for coordinating efforts on world food security. There were promises

of international aid for dealing with the consequences of global food insecurity, for example the \$22 billion committed by the G8 Leaders in the L'Aquila Declaration in 2009 and the EU €1bn food facility, although the extent to which these funds have been disbursed has varied between donors.

The Agricultural Market Information System (AMIS) was created by the G20 in 2011, with the specific mandate to create greater transparency around crop supply, demand, stocks and export availability for the major food staples of wheat, rice, corn and soya bean and to enhance coordination of policy action when there are worrying market conditions. The Rapid Response Forum (RRF) is a body of international policy coordination, connected to the AMIS, which is designed to promote early discussion of these issues among decision-making officials. These initiatives are intended to encourage policy coordination in order to avoid repeating previous crises which intensified price pressures on the markets. The question is: is this initiative delivering?

It is an important step for the international community to recognise the need for better transparency around food production to help markets function more efficiently and the importance of improved coordination

of international policy, both being important components of international food security. AMIS has also highlighted the importance of not responding to crises with export bans, which may have helped prevent a price spike after the poor harvests in 2012. However, there now needs to be a greater G20 focus on improving nutritional outcomes and improving the equitable distribution of food. In terms of the RRF, it appears that G20 leaders fear that convening this forum could be interpreted by financial markets as an additional signal of crisis which could then become a self-fulfilling prophecy, increasing upward pressure on prices. The G20 have not called an RRF since April 2012 and cancelled one in October 2012, despite recent price increases. Additionally, greater market transparency and response coordination will not lead to less speculation by the major hedge funds and banks involved in commodity markets. Tighter market regulation is therefore essential.

The narrow focus of the G20 since 2007/08 on market transparency and policy coordination has been insufficient and the AMIS could be criticised for simply documenting the problems of food price volatility and production, rather than dealing with their root causes. The AMIS did not stop prices increasing dramatically in July 2012. The international community should now be working to deal with the price volatility itself and to also build the resilience of those affected by it. Increased funding is needed to put in place interventions which strengthen the resilience of households dealing with expected seasonal changes in prices, together with unexpected spikes in international prices, including scaling up a range of safety nets and social protection measures.

Recommendations: What needs to be done?

Improved local level surveillance and early warning systems

There has been insufficient monitoring of the impact of price volatility on food security and malnutrition at a household level since 2008 and still today in 2013. Hence, the impact of food price rises is difficult to

quantify at the grassroots level. Although it is known that high international prices can push developing country households into poverty and food insecurity when prices transfer to local markets, there has been no systematic collection and analysis of data to give a household level vision of the impact. If we want to address issues of malnutrition and food access, it is essential that updated market information is available and that we develop a more coherent understanding of household level impact of market changes. This surveillance gap needs to be filled, so that interventions can be informed by local level data which identifies those most in need.

More appropriate surveillance indicators are needed for a number of reasons. First, as we have seen, the impact of food price increases differs depending on income group and proportion of household income spent on food (Dorward, 2011). We need, therefore, to develop different price indices that take account of these differences. A more useful tool for measuring a household's vulnerability to increased food prices would define real food prices relative to the expenditure shares of high- and low-income groups within both high- and low-income countries, for example the Food Expenditure Ratio. Another option would be to use the Cost of Diet Approach, which calculates the minimum cost a household will have to spend to meet its full nutritional requirements using locally available food. The added benefit of using this tool is that it can take seasonal variations in food price and availability into account. By combining the Food Expenditure Ratio and the Cost of Diet Approach, the resultant indicator would consider both the critical income effects of changes in prices on the amount of income a household has to spend on goods other than food, and the cost of a healthy, nutritious diet (not based on number of calories alone). Additionally, data should be collected on a wider variety of indicators on a regular basis. Useful indicators could include trends in the number of families reporting food shortage for that time period, monitoring of quality of diet, Individual Dietary Diversity Score (IDDS), school attendance as a proxy for household level spending and the proportion of household budget spent on food. The international community needs to develop surveillance



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A severely malnourished child resting in her mother's arms in Mao, Chad

systems to ensure that effects of rapid increases in prices are detected and early warning triggers early action to prevent rapid deterioration of household food security for the poorest. When more effective indicators and monitoring systems are in place, a better assessment of the real impact of food prices on poor households can be made, and interventions targeted accordingly. With a coherent surveillance system in place, the foundation is laid for detecting and acting upon information in a timely manner.

Action at the household level

This report has highlighted that not enough action against child undernutrition has been taken at the household level and households need to be better prepared to deal with high seasonal and global food prices. ACF's work since 2007 and 2008 has been shown to successfully improve dietary diversity for children, through targeting nutrition interventions at the household level. These relatively simple projects described below and targeted at the household level to improve dietary diversity amongst children and vulnerable populations could be successfully scaled up with the support of donors and national governments and can be used as a tool to protect populations against the negative impacts of price volatility.

An ACF Bolivia fresh food vouchers project, targeted at children under five and pregnant and lactating women, allowed participants to use vouchers to buy local fresh food (fruit, vegetables, dairy, etc.) and included complementary activities. The main result found that average HDDS increased by 2 points, anaemia rates fell from 77% to 66%, and there was increased consumption of micronutrient-rich food. ACF conducted a Low Input Gardens (LIG) project in Zimbabwe. The project evaluation found that participants in the project had better dietary diversity (higher HDDS scores than control groups) as well as social impacts (greater acceptance of HIV/AIDS patients). It is important that the international community considers the importance of household level interventions such as these that have already proved successful at tackling hunger as part of the fight against seasonal hunger, but also hunger driven by external induced food price volatility. Interventions such as seed banks and provision of tools are a method of improving household resilience to price spikes so that households are able to meet their immediate needs.

Box 2: Dietary indicators

Dietary diversity is a qualitative measure of food consumption that reflects household access to a variety of foods. It is also a proxy for nutrient adequacy of the diet of individuals (FAO). It can be used to assess changes in diet before and after an intervention

■ **HDDS:** The Household Dietary Diversity Score (HDDS) is meant to reflect the economic ability of a household to access a variety of foods, and is defined as the number of different food groups consumed over a period (12 different food groups). The potential score range is therefore 0–12 for HDDS.

■ **IDDS:** The Individual Dietary Diversity Score is a proxy measure of the nutritional quality of an individual's diet, and reflects the probability of micronutrient adequacy. The potential score range is 0–9.

 **which is sensitive to seasonal price fluctuations**

Household level action must take seasonality into account, understanding that households do not always need assistance throughout the year. We know that poor households rely on the market for their food after harvests have run out. Seasonal changes in the local market and the cash economy can therefore be critical, pushing vulnerable households closer to a threshold beyond which they are not able to afford to cover their basic food needs. Having an effective surveillance system in place, which uses appropriate indicators (as outlined above) will enable the relevant actors to act quickly when necessary. Discussion and recognition of seasonality at the international level should be given greater priority, particularly in the design of health and food aid interventions, which need to be sufficiently flexible to adapt to seasonal needs. Price indexing of cash transfers, seasonal employment schemes and pre-positioning of resources before the hunger season are some examples of seasonally sensitive nutrition and livelihoods interventions. The LIG project in Zimbabwe described above, for example, helps to ease reliance on

seasonal crop farming by diversifying both sources of income and types of food available. There is evidence that it is almost impossible to create social safety nets quickly enough to deal with the impacts of rapid price increases caused by both seasonal and global factors, highlighting the need for pre-positioning of resources.

 **Limiting production of maize dedicated to non-staple food production**

Biofuels have been highlighted as one of the reasons for increased price volatility because of the United States and European Union use of quotas to incorporate biofuels into conventional fuels which diverts a significant portion of the production of corn towards fuel production (GDAE, 2012). In some cases, buying up land in countries suffering from high levels of food insecurity and malnutrition to use for the production of biofuels (for example in Mali and Ethiopia) is increasing (Horne, 2011). Whilst it is near impossible to put a stop to land-grabbing by private investors, the World Bank should attempt to limit this practice. Furthermore, there needs to be a review of the mandated biofuel quotas, as advised by the Director General of the FAO in September 2012. Voluntary guidelines on the Responsible Governance of Tenure of Land have now been endorsed by the Committee on World Food Security (CFS) on how countries govern rights to land, which should be used as much as possible by governments to prevent further damaging cases of land-grabbing.

 **Regulation of financial speculation on food commodity markets**

There is increasing evidence that short-term price spikes created by speculation can have a damaging impact on developing country households when prices transfer down to local markets. Civil society actors have campaigned extensively on the issue of food price speculation by US and European hedge funds and banks and the impacts on poor country consumers, and are campaigning for greater regulation of commodity markets and speculation. This would mainly mean clearing of derivatives on regulated exchanges instead of private over-the-counter



A village market near Mao, Chad

Photo: © ACF / S Hauenstein Swan

(OTC) deals and introduction of limits to control shares of the market held by financial speculators. The EU and US, identified as primary targets, should take the following action: adopt the MIFID2 legislation (EU) and consider implementation (US) of existing legal framework (Dodd-Frank Act).

🍁 Increasing world grain reserves

As already described, world stock-to-use ratios for maize, wheat and corn have fallen since last year (*Market Monitor*, Oct 2012) and grain and maize stocks are reaching the low levels reached during the 2007–08 crisis (FAO, 2012). Regional grain reserves have fallen out of favour in recent times, mainly because they went against the economic orthodoxy of less state intervention in food markets as promoted by the international financial institutions (Sampson, 2010). The recent food crises, however, have highlighted the limitations of relying on the market to supply food and to address volatile prices, and brought renewed interest in the use of grain reserves, as both a humanitarian intervention and a means to stabilise prices. The IFPRI recommends the creation of regional or global emergency grain reserves to be managed, for example, by the WFP with support from large food exporters such as USA, France and Canada. In this regard,

it is urgent that the proposed pilot emergency food reserve programme in West Africa, supported by the G20 in November 2011, and now being coordinated by ECOWAS (which will include the 15 West African member countries), gets off the ground. It is important that both the mandate and volume of these reserves are adequately set up according to the goals. As for the time being, neither the volumes nor the mandate are proportioned to control market volatility; their main purpose is to mitigate impact over short time periods.

🍁 International prioritisation of social protection and nutrition: strong political will

In ACF's *Zero Hunger* series of papers (2010), it was highlighted that '*wherever advances have been made in bringing down rates of undernutrition, strong political will was at the heart of such changes.*' To achieve the recommendations laid out above, the international community's focus needs to move away from increasing agricultural productivity and increasing market transparency as a method of tackling food insecurity and hunger. Bolstering food production is insufficient to tackle uneven distribution of access to food resources, which is the cause of much of the hunger in the world. There needs to be a greater prioritisation of social protection and nutrition-focused interventions from the G20, with

more funding directed towards scaling up this area. Discussion of seasonality should be given greater priority, particularly in the design of health and food aid interventions, and there should be an emphasis on flexibility in order to better adapt to seasonal needs. The recent ACF report, *Aid for Nutrition*, highlighted the issue of lack of funding for nutrition interventions, finding that current investments in the 13 proven direct nutrition interventions are minimal compared to the scale of the problem (ACF, 2012). Money is not flowing to the countries with the highest burden of undernutrition, particularly in Africa, and is often only delivered as a humanitarian response, demonstrating the short term nature of nutrition sector aid. Based on these findings, the report recommended that donors who have committed to the Scaling up Nutrition (SUN) movement should dramatically increase their investments in nutrition, specifically for the full range of proven, direct interventions and for non-emergency, nutrition-sensitive programmes during protracted and seasonal crises.

Conclusion

The 2012 cereal price increases are the latest in a series of spikes in the last five years that have raised concerns over the impact of increased prices on low income country households' welfare and their ability to access food. Sparked by forecast deficit harvests of wheat and maize in the global north pushing prices steeply up at the beginning of the year, end of year stable supplies of rice and an above-average harvest prospect in the south have, however, improved the outlook for early 2013. But far from encouraging complacency, 2012 brought into sharp focus the need to learn lessons to protect the 870 million hungry that are most severely affected by price instability.

Living through food price crises since 2007 has taught us that many households resort to eating less nutritious foods, skipping meals and reducing their spending on other important livelihood areas such as health and education, potentially compromising their children's future for today's need for food (ACF 2009, IDS 2009, HLPE 2010). As with seasonal price increases during the hungry season, studies confirmed that global volatility is linked to eroding household resilience and

ability to access quality diets. The price of a nutritious diet and the comparative purchasing power of individual families is not the sole determinant but certainly a key factor in accessing quality foods throughout the year. Lessons learnt from addressing seasonal hunger can provide us with the means for effective mitigation programming on the local level to tackle hunger accentuated by global price volatility.

We have argued in this paper that a key lesson to come out of the numerous food price spikes is that current surveillance of the impact of food price volatility on the poorest households is insufficient. Linear indicators of prices give too little indication of how different communities are affected. As well as seasonal price changes for different food commodities, the proportion of the household budget spent on food fluctuates greatly between the richest and poorest segments in communities. For example, a two to five percentile increase in price might affect the better-off only marginally, but could push the budgets of the poorest beyond what is feasible without compromising other areas of their household economy and their ability to access food. We argue that such lessons must be learned and EWS must incorporate indicators that capture the relative value of food price rises for the most cash-strapped population. Surveillance must build in indicators that give insight into the composition and nutritional values of foods consumed and go beyond the calorie-driven documentation of price volatility. The series of food price peaks has been linked to the deterioration of diets, even where the calorie count remained unchanged. A reduction of micronutrients will have a long term impact on developing children and their ability to stay healthy.

To document and communicate the real impact of rising food prices, we need to know the ratio of food in relation to its nutritional value and its proportion of the total household expenditure. While detailed analysis of these values might be confined to local studies, simplified but sensitive indicators to adequate food access must be included in our global analysis of the impact of price volatility on the household level. The good news is that there are proven interventions to both prevent and treat hunger and malnutrition that can be targeted



Preparing breakfast of goat's milk yoghurt with millet in Gao, Mali

Photo: © ACF / S Hauenstein Swan

and scaled-up: treatment of severe acute malnutrition, growth promotion programmes, employment guarantee schemes, and index-linked food and cash transfers.

The default reaction by global and country leaders after the first food commodity price crisis was to call for increased production. Whilst the agricultural sector is key to addressing price volatility by increasing yields, diversification and more resilient crops, it cannot create all the preconditions needed for a food system that is more reliable for the poorest farmers themselves; this is the joint task of all sectors implicated in the production and value chain of food, but also the social and power relations that make up availability, access and utilisation of foods. The renewed emphasis on agriculture must give more importance to smallholder investment and enable the rural economy to achieve nutrition security for under-fives and mothers, who are most immediately affected adversely by price volatility.

While impact on household nutrition is a primary concern of this paper, we have found that the international response to volatility of food prices has been insufficient so far at both country and global level. Helpful initiatives such as the AMIS, created as a result of discussions in the CFS, do little to address the problems that longer-term trends of higher food prices create for poor

households, nor do they change the associated trends that are driving food price instability such as growing financial speculation, low food reserves and land loss due to non-human agriculture production, which need more decisive and legally binding measures.

Three food price crises within a decade alongside stalling progress in the global reduction of hunger should be sufficient political impetus for the global community to formulate policies to protect the poor from food price volatility that is passed down to local markets and is responsible for reductions in the quality and quantity of their diets. These actors are faced with many options as to how they can try and tackle this problem. For a poor woman in Liberia who already spends most of her income feeding her family, her only choice for the time being is to 'eat and worry'.

By Samuel Hauenstein Swan and Jennifer Stevenson, with contributions from Sundeep Johal.

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Photo: © ACF / S Hauenstein Swan

A severely malnourished child in Malawi is given therapeutic milk

Box 3: Key terms

■ **Hunger / undernutrition:** The terms *hunger* and *undernutrition* are employed with varying meanings in academic and popular literature. Throughout this briefing, we use *hunger* to mean a general shortage of food at the household level (as compared to needs) and *undernutrition* to signify the physiological condition of nutritional deficiency. The latter is usually used in reference to children assessed by anthropometric measurement, technically referred to as Global Acute Malnutrition (GAM) and Severe Acute Malnutrition (SAM), the stage where the body is so undernourished that the immune system becomes compromised, increasing the risk of infection, and the main internal control systems gradually shut down. Risk of mortality is highest in this phase, and recovery requires urgent use of medical treatment and special therapeutic foods.

■ **Nutrition outcomes:** When we refer to *nutrition outcomes*, we refer to changes in indicators of nutritional status as a result of an intervention. In children, this may refer to changes in the incidence of forms of undernutrition, such as wasting (low weight for height) or stunting (low height for age, a more chronic measure of malnutrition). Other nutritional outcomes may be improvements in intakes of micronutrients or improved individual or household dietary diversity.

■ **Nutrition security:** exists when all household members have physical, social and economic access to sufficient, safe and nutritious food at all times that meets their dietary needs and preferences, combined with a sanitary environment, adequate health services and proper care and feeding practices.

■ **Price volatility:** *Volatility* is the pace at which prices move higher or lower, and how wildly they swing. Food price volatility becomes an issue when it is beyond the capacity of a nation or household to cope with it.

■ **Resilience:** the ability of countries, communities and households to manage change, by maintaining or transforming living standards in the face of shocks or stresses – such as earthquakes, drought or violent conflict – without compromising their long-term prospects (DFID, 2011). An important additional component of this definition is the ability to manage change in the face of such a shock without having to compromise dignity or health.

■ **Seasonality:** Poverty and hunger are not stagnant, but shift and fluctuate, often in predictable, seasonal patterns – annually and inter-annually. In the run-up to the harvest, during the annual ‘hunger season’, food availability is low, work is hard and difficult to find and food prices are high.

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A father and his children on the way home from the field, Malawi

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