Price Volatility in Food and Agricultural Markets: Policy Responses

Policy Report including contributions by

FAO, IFAD, OECD, WFP, the World Bank, the WTO, UNCTAD, IFPRI and the UN HLF

Draft and Confidential
This is the second draft of the consolidated response from the international organisations to the G20 request to “FAO, IFAD, IMF, OECD, UNCTAD, WFP, the World Bank and the WTO (to) work with key stakeholders to develop options for G20 consideration on how to better mitigate and manage the risks associated with the price volatility of food and other agriculture commodities, without distorting market behaviour, ultimately to protect the most vulnerable.” This report has been prepared by the listed organisations, with the addition of IFPRI and the UN HLTF, in response to the G20 request.

This version of the report will be discussed by all the associated IOs at a two-day meeting in Rome on 7-8 March with a view to it being finalised. We, OECD and FAO, would be very grateful to receive initial comments or remarks from you prior to that date in order to help us to prepare for the meeting.
# Table of Contents

1. Introduction ..........................................................................................................................................4
1.1 Scope..................................................................................................................................................4
1.2 What is volatility?...............................................................................................................................4
1.3 Trends in volatility..............................................................................................................................5
1.4 Volatility in global versus national markets ....................................................................................7

2. Price volatility in food and agriculture, potential developments and impacts ...............................7
2.1 The determinants of future increases in food prices and of volatility .............................................8
2.2 Why does agricultural price volatility matter?.................................................................................10
2.3. Lessons learned from recent experiences.....................................................................................11

3. Policy options to reduce price volatility..........................................................................................13
3.1 Market information and transparency .............................................................................................13
3.2 International food stocks ..................................................................................................................14
3.3 Futures markets..................................................................................................................................15
3.4 Domestic and trade policies ............................................................................................................17

4. Policy options to deal with the consequences of price volatility, particularly for the most vulnerable .................................................................20
4.1 Coping with volatility in the short run: buffer stocks, emergency food reserves, international and national safety nets .................................................................20
4.2 Coping with volatility in the long run: market-based mechanisms to protect producers against price and other risks and to stabilize food import bills .........................................................23

5. Measures to increase productivity, sustainability and resilience of agriculture ............................26

6. Global governance in relation to food price volatility: process of information and coordination of actions to avoid crisis ...........................................................................................................29
6.1 Proposed process of information and coordination of actions to avoid food crisis .........................30
6.2 Establishment of a Market Transparency team (M2T) ...................................................................30
6.3 Establishment of a Global Food Situation and Outlook Advisory Group supporting the M2T......31
6.4 Establishment of a Response Committee (RC) ..............................................................................31

Annex A. A Proposal for a joint organizations data initiative for food security (JODI-Food Security) ......37
Annex B. A Code of conduct for responsible emergency food reserves management ..........................40
1. Introduction

1.1 Scope

1. Under the Food Security pillar of the Seoul Multi-year Action Plan on Development, the G20 “request that FAO, IFAD, IMF, OECD, UNCTAD, WFP, the World Bank and the WTO work with key stakeholders to develop options for G20 consideration on how to better mitigate and manage the risks associated with the price volatility of food and other agriculture commodities, without distorting market behaviour, ultimately to protect the most vulnerable”. This report has been prepared by the listed organisations, with the addition of IFPRI and the UN HLTF, in response to the G20 request.

2. The approach taken in this report reflects the view of the collaborating international organisations that price volatility and its effects on food security is a complex issue with many dimensions, agricultural and non-agricultural, short and long-term, with highly differentiated impacts on consumers and producers in developed and developing countries. The report begins with a discussion of volatility and of the ways in which volatility affects countries, businesses, consumers and farmers. Lessons learned from recent experiences are briefly reviewed as well as the factors determining likely levels of volatility in future. This report aims to develop a blueprint for a systematic and internationally coordinated response in place of the largely ad hoc and uncoordinated responses which characterised the 2007-2008 crisis.

3. It is important to distinguish between policy options designed to prevent or reduce price volatility and those designed to mitigate its consequences. Both types of intervention are explored in detail. Scope is identified for actions at individual, national, regional and international level. Some would help to avert a threat, others are in the nature of contingency plans to improve readiness, while still others address long-term issues of resilience. Finally, the report explores the implications of the policy options put forward for mechanisms and institutions of international cooperation and outlines ways in which they might need to be adapted in order to be able to effectively implement this report’s recommendations.

1.2 What is volatility?

4. In a purely descriptive sense volatility refers to variations in economic variables over time. Here we are explicitly concerned with variations in agricultural prices over time. Not all price variations are problematic, such as when prices move along a smooth and well-established trend reflecting market fundamentals or when they exhibit a typical and well known seasonal pattern. But variations in prices become problematic when they are large and cannot be anticipated and, as a result, create a level of uncertainty which increases risks for producers, traders, consumers and governments. Variations in prices that do not transmit the correct information to the different agents in the agro-food system are also problematic as they can lead to incorrect decisions. These implications of volatility will be explored in detail in Chapter 2.

---

* The evidence base for the analysis and recommendations put forward in this report is extensive. Endnotes throughout the text will draw the reader’s attention to the main sources. In addition, when the report has been finalized, a website will be created where all the referenced material and other relevant research papers will be made available for consultation by those seeking a deeper understanding of the issues and the analysis underpinning this report.
5. Behind concerns about volatility lie concerns about price levels and behind both, lie concerns about food security. While producers benefit (or at least those who are net producers and whose asset base and knowledge enable them to respond effectively), consumers, especially poor consumers, are severely adversely affected by high prices. Food accounts for a very high share of the total budget of the poorest households. And because poor households consume foods that are less processed the effect of rises in commodity prices is felt more strongly. These households find their nutrition status, as well as their capacity to purchase education, health care, or other basic needs compromised, when food prices are high.

6. Producers are more concerned about low prices, which may threaten their living standards as well as their longer term viability when income is too low to provide for the farm family or for the operational needs of the farm. Uncertainty may result in less than optimal production and investment decisions. In developing countries many households are both producers and purchasers of agricultural products. For this group the impacts of price volatility are complex, with net outcomes depending on a combination of many factors. The available evidence suggests that when prices rise, smallholders more often experience increases in poverty and food insecurity than a reduction. One reason for this is that lack of storage facilities compels many of them to sell their crops immediately after harvest when prices are low and to buy the same and other products later when prices are high.

7. No attempt is made here to define extreme or excessive price volatility. Suffice it to say that volatility becomes an issue for concern and for possible policy response when it induces risk averse behaviour that leads to inefficient investment decisions and when it creates problems that are beyond the capacity of producers, consumers or nations to cope. What constitutes excessive volatility depends very much therefore on the situation of the individual or nation. Poor consumers in less developed countries without access to adequate social support are most immediately affected by price surges. Small resource limited farmers face particularly severe problems when prices fall. Even in the face of rising prices, uncertainty may prevent them from benefiting. The episode of volatility that occurred during the 2007-2008 period, resulted in poor, vulnerable consumers and producers and poorer developing countries dependent on food imports experiencing severe economic, social and political stress because of high prices and fears of scarcity. It is again the case with many commodity prices increasing as we enter 2011.

1.3 Trends in volatility

8. When looked at in the long term there is little or no evidence that volatility in international agricultural commodity prices, as measured using standard statistical measures is increasing and this finding applies to both nominal and real prices. Volatility has, however, been higher during the decade since 2000 than during the previous two decades. Another conclusion that emerges from the study of long term trends in volatility is that periods of high and volatile prices are often followed by long periods of relatively low and stable prices. Finally, it is well established that agricultural markets are intrinsically subject to greater volatility than other markets, for reasons that are outlined in the introduction to Chapter 2.
International commodity prices since 1970 are presented in Figure 1 and commodity price movements during the past decade as shown in Figure 2.

Figure 1. Agricultural commodity prices in real terms (2005=100)

Figure 2. Monthly commodity price indices (2002-04=100)

Figure 3 presents a visual indication of whether volatility has been increasing, estimated using monthly data since 1970 for a selection of important food commodities.

Figure 3. Average volatility computed as standard deviation of price in difference (SDD)

Irrespective of any conclusion that might be drawn concerning the long term trends, there is no doubt that the period since 2006 has been one of extraordinary volatility. Prices rose sharply in 2006 and 2007, peaking in the second half of 2007 for some products and in the first half of 2008 for others. For some products the run-up between the average of 2005 and the peak was several hundred percent. On the rice market the price explosion was particularly pronounced. The price rises caused grave hardship among the poor and were a major factor in the increase in the number of malnourished people to more than one billion. Prices then fell sharply in the second half of 2008, although in virtually all cases they remained at or above the levels in the period just before the run-up of prices began. Market tensions emerged again during 2010 and there have been sharp rises in some food prices. By early 2011, the FAO’s food price index was again at the level reached at the peak of the crisis in 2008 and fears emerged that a repeat of the 2008 crisis was underway.
1.4 Volatility in global versus national markets

12. The trends and fluctuations described in the previous paragraphs relate to international prices. Domestic price movements can be different. The extent to which global prices are transmitted to domestic markets depends on how strongly integrated the latter are with the former. Measures such as import duties, export taxes, non-tariff barriers or domestic policies such as price support all influence the extent to which price changes in domestic markets mirror those on international markets. Market structure is also important. In monopsonistic markets, whether private or state controlled, higher international prices may not always result in better prices for producers. Countries that insulate their own markets export instability onto international markets, especially if they are major players in terms of consumption or production. The degree of processing of final consumption goods also affects the pass through of prices. Lack of domestic infrastructure and generally undeveloped or inefficient market structures can also significantly obstruct price transmission due to high transport and transactions costs.

13. Developing country markets often lack the capacity to absorb domestic shocks, and can be subject to high domestic price volatility even during periods of calm international markets. Attention also needs to be paid to volatility at local and national level, and to its consequences for poor rural people including small farmers. The causes may relate to climate shocks, pests or other natural calamities, exacerbated by the fact that farmers may have poor access to technologies and generally poor management of soil and water. Poor infrastructure, high transport costs; absence of credit or insurance markets and various policy and governance failures may compound the initial difficulty. A relatively minor climatic incident in these conditions can become a serious food crisis at local or regional level. Again those most affected will be poor consumers and rural dwellers, mainly smallholders in less developed countries or regions, heavily dependent on their own production.

14. During the 2007-2009 price spike and subsequent decline, there were quite significant differences among regions and products in the speed and degree to which world price movements were felt in regional or local markets. Research shows that for wheat the extent to which a 10 percentage point increase in price is felt in bread prices varies from 0.74 in Bangladesh, to 0.41 in Pakistan, 0.20 in Latin America and 0.11 in Vietnam. Price transmission is generally quite strong for rice where countries are strongly integrated with global markets but some countries that heavily support and protect rice, did not experience any price rise during 2007-08. A number of countries taking exceptional measures managed to stabilise prices significantly relative to international movements and others did not. In some countries, the downside of the price spike coincided with a depreciation of their currencies against the USD which meant that domestic prices fell less sharply than world prices that are denominated in USD. These differences are important because they suggest that both price levels and degrees of volatility may differ significantly from place to place at any given time and therefore that the level of hardship and disruption being experienced may also differ. The international community needs timely and differentiated information about the situation in different places in order to respond appropriately.

2. Price volatility in food and agriculture, potential developments and impacts

15. In view of the developments the most important question concerns the future. Are recent events random – resulting from an unusual coincidence of different factors – or are there reasons to believe that the world is entering into a period of recurrent episodes of excessive price volatility? It is not possible to have a view on the appropriate policy responses to volatility without first exploring this question in some detail. In this context too, it is worth recalling that behind the expressed concerns about volatility is a concern about price spikes, and particularly the impact of high prices on the food security of the most vulnerable households and countries.

16. Most agricultural commodity markets are characterized by a high degree of volatility relative to other goods. Three major market fundamentals explain why that is the case. First, agricultural output
varies from period to period because of natural shocks such as weather and pests. Second, demand elasticities are relatively small with respect to price and supply elasticities are also low, at least in the short run. In order to get supply and demand back into balance after a supply shock, prices therefore have to vary rather strongly, especially if stocks are low. Third, because production takes considerable time in agriculture, supply cannot respond much to price changes in the short term, though it can do so much more once the production cycle is completed. The resulting lagged supply response to price changes can cause cyclical adjustments (such as the often referenced ‘hog cycle’) that add an extra degree of variability to the markets concerned. Business cycle fluctuations in demand for agricultural non-food commodities (such as cotton) from rapidly growing, industrializing economies may also be contributing to increased volatility.

2.1 The determinants of future increases in food prices and of volatility

17. Growing population and affluence will add significantly to the demand for food in the coming decades. By 2050 the world’s population is expected to have reached about 9 billion people and the demand for food to have increased by between 70 and 100%. This alone is sufficient to exert pressure on commodity prices. According to the latest FAO/OECD medium term outlook projections, prices of crops and most livestock products will be higher in both real and nominal terms during the decade to 2019 than they were in the decade before the 2007/08 price spikes. More generally, if the rate of growth of agricultural production does not keep pace with demand, upward pressure on prices will result. A demand or supply shock in a situation where the supply-demand balance is already tight, can, for the reasons explained in the previous paragraph, result in extremely volatile prices around the upward trend. The demand for food crops for the production of biofuels is another significant factor. During the 2007-2009 period biofuels accounted for a significant share of global use of several crops – 20% for sugar cane, 9% for vegetable oil and coarse grains and 7% for sugar beet. Most projections suggest that biofuel production will exert considerable upward pressure on prices in the future – according to OECD international prices for wheat, coarse grains, oilseeds and vegetable oil could be increased by 8%, 13%, 7% and 35% respectively (OECD 2008, Biofuel support policies – An economic assessment). Moreover, as long as governments impose mandates (obligations to blend given quantities of biofuels with fossil fuels, or binding targets for shares of biofuels in energy use), biofuel production will aggravate the price inelasticity of demand that contributes to volatility in agricultural prices. All of the adjustment has to occur in food markets as biofuel demand does not adjust to higher prices.

18. Agricultural commodity prices are becoming increasingly correlated with oil prices. Oil prices affect agricultural input prices directly and indirectly (through the price of fuel and fertiliser, for example). In addition, depending on the relative prices of agricultural crops and oil, biofuel production may become profitable (without government support) in some OECD countries. Financial investment in commodities may also have contributed to an increasing correlation between oil and non-oil commodity prices because of the significant share of such investment that tracks indexes containing a basket of different commodities. High and volatile oil prices (if that is what is expected) could therefore contribute to higher and more volatile agricultural prices, through higher input costs, higher demand for the commodities used in the production of biofuels (sugar, maize, vegetable oils), through competition for land with commodities that are not used directly for the production of fuel, and possibly through financial investment in commodity baskets.

19. Low stocks relative to use, and uncertainty about stock levels in some parts of the world contributed to the 2007/2008 price spike. Stocks can be drawn down in response to a supply or demand shock, but once they have been depleted, supply can no longer be increased until new production comes on board. Even expectations of depleted stocks may lead prices to rise sharply. The low stock levels observed in recent years have been attributed to the partial dismantling of price support and intervention purchase schemes in some OECD countries, as well as to correction of the quality of information on private and government held stocks in important producing and consuming countries. Stocks were rebuilt
during 2009 and the first part of 2010 but currently stocks are again being depleted. If stock levels remain low in major markets, and projections based on existing knowledge of market conditions and policy settings suggest that they may, the risk of volatility in prices will remain high.

20. Climatic factors have indisputably contributed to the price rises in 2007/2008 and again in 2010. In 2008, an already tight market situation for wheat was aggravated by drought in Australia, which is an important supplier of wheat to world markets. Canada, another important supplier, also experienced weather related low yields for several crops. More recently, drought followed by fire in the Russian Federation, fears about the Australian and Argentinian crops, and several downward revisions of US crop forecasts in late 2010 and early 2011 have brought strong market reactions and soaring prices. It is not clear whether these weather-related events are transitory in nature, cyclical (El Nino and La Nina) or the harbingers of long term climate change. Experts concur broadly that climate change will, in the longer term, lead to worsening conditions in arid and semi-arid regions where agricultural production is already difficult, while temperate regions may benefit. It is also thought that climate change will lead to more frequent extreme events such as droughts, heat waves and floods. Clearly, climate change will provoke some adjustment of production patterns around the world, as well as increased risks of local or regional supply problems that could add to future volatility.

21. Stronger demand for food crops and animal products in conjunction with slow growth in agricultural productivity and low stocks results in upward pressure on prices. Recent years have also seen some shift in production patterns, particularly of food and feed grains, and world markets are more dependent on supplies from the Black Sea region and other, newer, agricultural production regions than in the past. Yields in these regions are less stable and overall supply more variable than in some other parts of the world where natural conditions are better and where application of the most up-to-date technologies and management practices have increased and stabilised yields. As the geographical distribution of production changes, supply may therefore become more variable, in turn leading to increased price volatility.

22. The same underlying factors that are leading to increased demand for food – growth in population, affluence leading to increased demand for animal protein, urbanisation, biofuels – are also increasing pressure on finite resources such as land and water. While such resource constraints are, thus far, more local than global in nature, growing concern is evident and the associated uncertainty may imply upward pressure on prices and continuing or increased volatility.

23. During the 2007-2008 period, some policy measures put in place by a number of governments contributed directly and indirectly to the crisis (export restrictions, hoarding), increasing the amplitude of price movements and in some cases provoking price increases that were otherwise inexplicable in terms of the market fundamentals. Inappropriate policy responses also contributed to volatility and could continue to do so unless the international community is able to take steps to avoid such actions. Additionally, private and public actors responding to the general nervousness of the markets, or for speculative reasons, engaged in hoarding or precipitated purchases in an already tense market situation. How to avoid repetition of these types of damaging private and public reactions is addressed later in this report.

24. In addition, trade in many agricultural commodities is denominated in USD. A depreciating USD, as occurred in the years before and up to the peak of the price rises, causes dollar denominated international commodity prices to rise, although not to the full extent of the depreciation. The opposite occurs when the dollar appreciates as was the case from mid-2008 onwards. These currency movements clearly added to the amplitude of the price changes observed. (They also help to explain why demand remained strong in countries where the currency was appreciating against the dollar and why falling prices were not fully felt in the same countries once the dollar began to appreciate again). Exchange rate
volatility \textit{per se} is beyond the scope of this report but if the future is marked by increased exchange rate volatility clearly this will have repercussions for the volatility of international prices of commodities.

25. There is no doubt that investment in financial derivatives markets for agricultural commodities increased strongly in the mid-2000s, but there is disagreement about the role of financial speculation as a driver of agricultural commodity price increases and volatility. While analysts argue about whether financial speculation has been a major factor, most agree that increased activity in financial markets probably acted to amplify short term price swings and could have contributed to the formation of price bubbles in some situations. Against this background the extent to which financial speculation might be a determinant of agricultural price volatility in the future is also subject to disagreement. It is clear however that well functioning derivatives markets for agricultural commodities, could play a significant role in reducing or smoothing price fluctuations – indeed, this is one of the primary functions of commodity futures markets. This topic will be taken up in more detail in Chapter 3.

26. This catalogue of factors points to a likelihood of higher real prices and a risk of increased volatility in future years. While it is not possible to forecast future prices or future volatility, there may be ways in which the international community could be alerted to a risk that a period of excessive volatility is in the offing. Various tools and mechanisms that could assist in this respect are described in later sections.

27. There are also a number of factors that could act to mitigate volatility. Most important will be the supply response? Analysts have consistently underestimated the capacity of producers to respond to positive market signals (hence the adage, “the best cure for high prices is high prices”), as well as the potential for higher yields and increased acreage. Successful conclusion to the WTO Doha Development Agenda negotiations would be an important step, along with complementary policies that improve supply capacity and ensure the benefits of open and competitive markets are widely spread. Deeper integration of global and regional markets, better defined safeguard mechanisms and improvements in the competitive environment will bring increased trade volume and more suppliers and buyers to markets that are currently very shallow. Local or regional supply shocks could more easily be absorbed leading to lower volatility on domestic and international markets and food could more easily flow from surplus areas to rapidly urbanising food-importing areas.

28. The extent of potential future volatility cannot be estimated accurately, but the risks are sufficiently large to warrant serious reflection about what can be done to mitigate it – when the nature of the underlying causes makes mitigation possible – and to manage the consequences, when, as is inevitable, episodes of high volatility occur. The remainder of this report takes up this crucial topic.

2.2 \textbf{Why does agricultural price volatility matter?}

29. Mention has already been made in the opening paragraphs of the ways in which price volatility impacts on different participants in the agro-food system. It has also been recalled that behind concerns about price volatility per se lie concerns about excessive price spikes, and that consequences of unusually high (or low) and volatile prices are very different for producers and consumers. This section explores in more detail the ways in which volatile agricultural prices impinge on nations, developed and developing, and on individuals.

30. At the macro level it is useful to distinguish between long and short run effects of commodity price volatility and between importing and exporting countries. The assumption is that countries likely to be most concerned by macro-economic impacts of agricultural price volatility are developing or emerging economies that are dependent on agricultural commodities for a large share of their export revenues, or whose food imports are significant in balance of payment or government finance terms. For exporting countries heavily dependent on agricultural commodities, exceptionally low prices will have
immediate balance of payments impacts, but beyond that, uncertainty may curtail investment and affect capacity utilization and there is some evidence of long-lasting significant negative effects on growth. Importing countries faced with exceptionally high prices may also experience deterioration in the balance of payments and deterioration in their public finances. Food price increases can have major repercussions on the whole economy. For low-income food-importing countries, high food prices can result in inflation and high import bills which in turn worsen the current account balance. As countries have to export more to pay for imports, such deficits may result in the depreciation of the exchange rate. Fiscal measures, such as cuts in import tariffs and in taxes on food and the subsidization of food consumption, entail increased budgetary costs that will have to be met by increased government borrowing and budgetary discipline.

31. Looked at from the demand side, significantly higher food prices are disastrous for the poor especially in developing countries where up to three-quarters of their total income may be spent on basic foodstuffs. Immediate impacts are obvious, but there are also longer term costs imposed on the poorest and most vulnerable as spending is switched to less nutritious foods and away from other basic needs such as education or health. Typically the effects are felt more strongly by women and children. Particularly severe are the effects on children – stunting and cognitive loss often occurring as a result of inadequate nourishment during the first 1000 days after conception. The consequences are tragic for individuals and for future prosperity in the countries where they live. This is not only an issue of concern for humanitarian agencies and affected countries it is also a concern of the international community.

32. Food price inflation can also be a serious issue in middle income countries, where many consumers expend as much as half of their budget on basic foods. Food price inflation has been running at 10-13% in Asian countries in 2010, much higher than non-food inflation. Finally, even in the developed countries significantly higher food prices can create hardship for the least well-off, who tend also to devote a larger share of household spending to food. Nevertheless, consumers in developed countries face wider choices in terms of their ability to adjust spending on different types of foods and most developed countries have safety net mechanisms that are well suited to delivering targeted assistance to the most affected.

33. Looked at from the supply side, producers can benefit from high prices but low or volatile prices may pose significant problems. Farmers and other agents in food chains risk losing their productive investments if price falls occur while they are locked into strategies dependent on higher price levels to be viable. Farmers who have already planted their crop are the classic example. Poor smallholders who do not have access to credit may have difficulty financing the crucial inputs needed to plant again and stay in business. This kind of problem may be particularly severe for the female smallholders who are in the majority in many countries. Many farmers in developing (and even some in more advanced) economies may not be operating on a sufficiently large scale to be able to carry over income from one season to another. Thus, both the welfare of the family and the viability of the farm may be threatened by wide swings in prices and returns. Uncertainty may also result in sub-optimal investment decisions in the longer term.

2.3. Lessons learned from recent experiences

34. It is beyond the scope of this paper to undertake an exhaustive account of the ways in which national governments and international institutions responded to the price volatility during 2007-2008. It is generally agreed, however, that policy responses were mainly ad hoc in nature, that some decisions were taken hastily, and that measures were somewhat inconsistent and largely uncoordinated at international level. The speed and strength of the price rises also took the international agencies by surprise and, they too, had to resort to ad hoc measures. Developed countries relied mainly on already existing safety net mechanisms while developing countries took new measures or adjusted the parameters of existing instruments.
35. Of 81 developing countries surveyed by the FAO, 43 reduced import taxes and 25 either banned exports or increased taxes on them. A large number of developing countries implemented measures to provide relief or partial relief from high prices to consumers – 45 in all. Measures consisted of cash transfers, direct food assistance or increases in disposable income (by reducing taxes or other charges), or some combination of these measures. A significant number of countries also granted support to producers in order to offset rapidly rising input costs, as prices for fertilizer also surged as did feed costs for livestock producers. Several countries went to the international markets to procure supplies of basic foodstuffs for their populations, believing that high prices would persist and that scarcity was imminent, notwithstanding the fact that they did not have any immediate or short term need to do so.

36. The extremely rapid run-up in food prices eroded the capacity of the humanitarian organisations to purchase food for emergency relief in the most hard hit countries and regions. With prices doubling or tripling within a few months, their purchasing power was dramatically reduced. While response to appeals made, for example, by the World Food Programme were both rapid and generous, crucial weeks and months were lost as international organisations and humanitarian agencies scrambled to raise funds or divert monies from other uses to address the crisis. This situation revealed deficiencies in international readiness to deal with such a widespread problem.

37. The different measures taken by individual governments in response to the crisis had different degrees of effectiveness. The scale of the price increases was such that for many countries reducing import tariffs had a relatively modest impact because the initial tariffs were low or the scale of the price increases was so large. In any event, this instrument was quickly exhausted as tariffs were reduced to zero. Some of these countries suffered steep falls in tariff revenues and deterioration in their fiscal situation. Export taxes and restrictions differed between countries in their effectiveness in keeping domestic prices lower and in some cases had only a relatively minor effect. Export restrictions by major food exporters had strong destabilising effects on international markets as more countries followed the first movers, exacerbating volatility and amplifying the upward price movement. They proved extremely damaging to third countries, especially the poorest import dependent countries, and to the efforts of humanitarian organisations to procure supplies, despite various ad hoc exemptions and exceptions which were put in place in order to mitigate the worst of these “beggar thy neighbour” effects.

38. Targeted assistance to those most in need either using cash transfers or direct food assistance may be the most effective and equitable way of reaching those affected by a food price crisis and several countries successfully used this kind of instrument. However, many countries did not have the administrative frameworks in place to be able to implement safety-net measures at short notice. Neither did they have the fiscal capacity. They therefore made blanket market and trade interventions that proved sometimes ineffective or costly or both. Such measures, when they delivered some relief did so irrespective of need. This revealed the importance of contingency planning to better equip countries to be able to deliver targeted assistance where it is most needed.

39. The numbers of malnourished people in the world had rose from 820 million in 2007 to more than a billion in 2009, proof that neither national nor international responses were able to fully cope with the scale of the problem. Deficiencies in information, communication, and in readiness contributed, as did uncoordinated measures that may have actually aggravated the problem for people and countries less well able to cope. The numbers of malnourished people have since dropped to about 900 million. Recent events have drawn increased attention to the fact that a significant proportion of humanity (about 16%) remains chronically under-nourished, even during periods of relatively normal prices and low volatility. The overarching goal of actions with respect to food price volatility should be to ensure that the most
vulnerable people have access to sufficient, nutritious food. All policy interventions should have as their ultimate aim, the elimination of all food insecurity, whatever its cause.

3. **Policy options to reduce price volatility**

40. There are many factors that contribute to high and volatile agricultural prices, making necessary a combination of policy responses. In order to meet their objectives, policies need to be legitimate and broadly owned by relevant stakeholders, particularly those policies that aim to restore trust in markets and avoid panic-driven behaviour. The goal of the policies recommended is not to eliminate agricultural price volatility, but rather to reduce uncertainty, and perhaps also the amplitude of variations by smoothing out the extremes. Most importantly, price volatility should reflect market fundamentals as accurately as possible and not convey incorrect signals as a result of missing or wrong information, speculation, panic or other disruptive factors.

3.1 **Market information and transparency**

41. A lack of reliable and up-to-date information on crop supply, demand, stocks and export availability contributed to recent price volatility. Information on the current situation and outlook for global agriculture shapes expectations about future prices and allows markets to function more efficiently. Lack of accurate information on market fundamentals may reduce efficiency and accentuate price movements. Better information on global and local markets and improved transparency could reduce the incidence and magnitude of panic-driven price surges.

42. Recent events have revealed weaknesses in the capacity of nations and international organizations to produce consistent, accurate and timely agricultural market data, especially in response to weather shocks. Action is needed to increase capacity to undertake more frequent and systematic monitoring of the state of crops, and to develop mechanisms for improved short-run production forecasts, able to translate crop growth, meteorological and remote sensing data into yield and production expectations.

43. For developing countries, enhanced market information and early warning systems would enable both governments and the private sector to plan ahead. Governments would be able to more accurately assess needs, make budgetary provision for producer and consumer safety nets and better position emergency food security reserves. Better market information could reduce uncertainties and assist producers, traders and consumers to make better decisions.

44. Over the last decade a great deal of baseline information on food security vulnerability has been developed. WFP support of national Food Security Monitoring Systems already provides a monitoring and decision support tool to help governments manage and respond to risk related to price, weather or other hazards. The reliability and timeliness of such early warning systems needs to be improved, and capacity to develop and utilise them could be strengthened at both the national and regional level. The focus should be on countries that are particularly vulnerable to price shocks and food emergencies.

45. Information on stocks is an essential component of a global food market information system, yet reliable data on stocks of grains and oilseeds are often not collected or, if collected are not reported publicly. Better information would clarify the overall supply situation, relative to demand, and the likely evolution of international food prices. Generally, international agencies estimate net changes in stocks as a residual on the basis of data on production, consumption and trade. As a result it is not possible to have complete confidence in world food stock estimates. International cooperation could redress this situation and ensure that reliable information on global stocks becomes widely available. This would in turn better inform market participants and help avoid mis-informed panic-induced price surges.
46. Monitoring food prices, both on cash and futures markets, is essential in a food market monitoring system. In a similar manner, assessing changes in oil prices and analysing their impact on food markets is important. Better information about domestic price movements is necessary to better understand how international price changes affect domestic markets in developing countries. Such information is important for early warning systems, such as the FAO Global Information Early Warning System and for Vulnerability Analysis and Mapping of WFP. It is also crucial for designing effective risk management instruments for developing countries.

47. These improvements in market information and transparency could be achieved through a collaborative food data initiative which would improve data reliability, timeliness and frequency. Current practice whereby many countries and commercial enterprises keep such data confidential would need to be changed; strengthening dialogue between exporting and importing countries, commercial enterprises and international organizations would help in this respect. Mechanisms could be developed for the preservation of commercial confidentiality where necessary to ensure that the information needed is forthcoming.

48. This initiative could be built on the model of JODI (the Joint Oil Data Initiative), launched in 2000 to improve information about oil markets and would involve a number of international organizations with capacity to collect, analyse and disseminate information on a regular basis regarding the food situation and outlook. Increased and regular exchange of information and collaboration across market participants could result in more complete and reliable data on consumption, production, trade and stocks, increasing market transparency and curbing food price volatility that is not based on underlying market conditions.

**Recommendations**

To establish a Joint Organizations Data Initiative (JODI) for Food Security encompassing two elements.

- Monitoring and reporting of current conditions in major markets (to be undertaken by FAO, IFAD, OECD, UNCTAD, WFP, and the World Bank) with broad involvement of countries (G20 and selected other major players), commercial enterprises and other major stakeholders, to enhance global food security by encouraging information sharing, improving data reliability and increasing transparency.

- In vulnerable developing countries and regions (defined by WFP), improving national or regional systems to monitor stocks, production, production forecasts (with improved modelling and weather forecasting), and relevant policy developments (Food Security Early Warning Systems, to be undertaken by WFP, IFAD, FAO)

- G20 governments would commit to providing timely and accurate data on food production, consumption, and stocks. Where the mechanisms and institutions are not in place nationally to do so, G20 governments should undertake to create them.

*Concrete proposals on the implementation of this Joint Organizations Data Initiative for Food Security are detailed in Annex A.*

**3.2 International food stocks**

49. International buffer stocks have been an important characteristic of commodity markets in the past. However, the various international commodity agreements which provided for stockholding or supply controls to stabilise prices have either collapsed or been replaced by agreements whose main role is market information provision.

50. Historically, international buffer stock mechanisms are widely judged to have had limited success in reducing the volatility of prices. They have been more effective in moderating downward price
movements than price surges. In the case of a price surge, a buffer stock agency can only release in the market what it has previously bought, and once its stock is exhausted there are no further means to curb price increases.\textsuperscript{14} 

51. Buffer stock stabilisation is potentially very costly. Stabilising world prices around a level either lower or higher than that determined by market fundamentals requires significant resources. Attempts to defend a price ceiling and reduce the average world level of food prices over time can lead to substantial costs. Buffer stocks set to defend against price spikes are also vulnerable to speculative attacks. If speculators perceive that the stocks held by the stabilization agency are insufficient to maintain the agreed lower price level, they will compete to buy the entirety of the stock in order to take advantage of likely profits.\textsuperscript{15}

3.3 Futures markets

52. Futures markets perform two essential functions: they provide the instruments to transfer price risk, and they facilitate price discovery.

53. Commercial participants utilize futures contracts to “hedge”, or insure their crops or inventories against the risk of fluctuating prices. For example, processors of agricultural commodities, which need to obtain inventories, buy futures contracts to guard against future price rises. If the price rose, they use the increased value of the futures contract to offset the higher cost of the physical quantities they need to purchase.

54. Speculators also trade in the futures markets; they buy and sell futures contracts and take on the risk of future price fluctuations to gain a risk premium.\textsuperscript{5} They are “non-commercial” participants as they have no involvement in the physical commodity trade as “commercial” participants, such as farmers, traders and processors have.

55. Since the beginning of the last decade, commodity derivative markets, including those for agricultural commodities, have experienced significant inflows of funds from non-traditional investors, such as commodity index funds, swap dealers and money managers. These financial investors hold large futures positions including in basic food commodities such as wheat, maize and soybeans as well as in cocoa, coffee and sugar.

56. The second essential function of futures markets is to facilitate price discovery. Price discovery is the continuous process by which futures prices are reassessed by buyers and sellers as new information becomes available. Market participants continuously update their expectations as both public and private information become available. They adjust their market behaviour and through their transactions, information is incorporated into the price.

57. Speculators are necessary for the performance of both these functions. They buy and sell futures contracts and take on the risk of price fluctuations to earn a profit on price movements. By doing so, they provide the market liquidity which enables commercial hedgers to find counterparties in a relatively costless manner. Too little non-commercial participation results in low liquidity and potentially in large seasonal price swings.\textsuperscript{16} Too much non-commercial participation can cause frequent and erratic price changes. This is the case when speculators assume that past developments carry information on future price movements, giving rise to trend chasing. This will result in buying after prices rise and selling after prices fall independently of any changes in market fundamentals.\textsuperscript{17}

58. The debate on whether speculation stabilizes or destabilizes prices resumes with renewed interest and urgency during high price episodes. Some analysts purport that the influx of financial investors in commodity futures markets has scant impact on market prices.\textsuperscript{18} Other analysts stress that
the large amount of money invested in commodity futures by financial investors has amplified price movements to an extent which cannot be explained by market fundamentals. \(^{19}\)

59. Despite these differences, there is widespread agreement that for agricultural commodity derivatives markets to function well, and as intended, appropriate regulations need to be in place across all relevant futures exchanges and markets. In particular, there is need for greater transparency of transactions across futures markets and especially across over-the-counter (OTC) markets, where transactions take place off the regulated commodity exchanges. Comprehensive trading data need to be reported to enable regulators and participants to monitor information about the frequency and the volume of transactions to understand what is driving commodity prices. \(^{20}\) Such data exist for some commodity exchanges (though perhaps the quality could be further improved), but are currently unavailable for off-exchange trading.

60. The specific nature of the regulatory framework for futures exchanges and OTC markets, whether for agriculture or other commodities, is an issue best addressed by financial market regulators. In the context of this report consideration should be given to whether or not the following actions would help to increase transparency and improve the function of markets: \(^{21}\)

- Establish a trade depository to register OTC contracts, in line with earlier decisions in the G20 Summit in 2009 in Pittsburgh.
- Use of speculative position limits on commodity futures contracts to ensure control of undue market influence.
- Use of maximum limits to daily price changes to reduce volatility.
- Use of limits on inventories held in delivery warehouses by non-commercial entities.
- Introduction of provisions for high volume and frequency trading into the regulatory regime. \(^{22}\)
- Ensuring that changes in regulation are adopted across commodity exchanges and across countries in order to avoid the migration of participants and regulatory arbitrage. \(^{23}\)

61. Beyond regulatory concerns, new futures instruments for mitigating commodity price risk exposure might be explored. For example, a global wheat contract that would specify export delivery points in the major producing regions has been proposed. \(^{24}\) The potential advantages of a global futures contract with compulsory delivery include: identifying “cheapest to deliver” sources by designating delivery points all over the world; acting as a global signalling system of both price and regional supply availabilities; and attracting well-informed commercial entities while deterring non-commercial entities from investing on such contracts. The development of such new instruments lies with the futures exchanges and the market participants.

### Recommendations

- The G-20 should recognize the need to improve information and transparency in futures markets and encourage appropriate rules to enhance their economic functions paying attention to the need for harmonization across exchanges in order to avoid regulatory arbitrage.
- Proposed changes should be considered in the light of on-going review of regulatory oversight of all financial markets and not solely agricultural commodity markets (e.g. G20 Finance Ministers and Central Bank Governors).
- The G-20 should welcome the progress made by the US Commodity Futures Trading Commission and the European Commission in addressing transparency and efficiency issues in futures markets.
3.4 Domestic and trade policies

Reducing import barriers, trade distorting domestic support, and all forms of export subsidies

62. Price volatility may originate from either domestic or international markets (OECD, 2010c). Trade is an excellent buffer for localised fluctuations originating in the domestic market. Though stockholding is a necessary component of a well functioning market, in particular to smooth out seasonal fluctuations and time lags in trade (OECD, 2010c), year-to-year variations in domestic production can be more effectively and much less expensively buffered by adjustments in the quantities imported or exported. To the extent that shocks tend to be specific to individual regions of the globe, and to partly cancel out on a worldwide level, world output of a given agricultural product is far less variable than output in individual countries. International trade is therefore a potentially powerful engine to even out supply fluctuations across the globe, and as a result to reduce market volatility. To fulfil this beneficial pooling function to the maximum degree, trade has to be able to flow between nations and the tendency which has emerged, in recent crises, for countries to try to insulate themselves from international markets needs to be reversed.

63. More generally and in the longer term context, trade is an essential component of any food security strategy. There is significant potential for increased production in many parts of the world, but not all countries everywhere can or should aspire to supplying all their own needs. Doing so is excessively costly, and will reduce choice and quality, without providing the reliability needed to achieve food security. Moreover, the impact that climate change will have on food production is uncertain, but many experts concur that it will lead to a worsening of conditions for agricultural production in some countries or regions already facing difficult climatic and natural conditions (arid and semi-arid zones). Experts also agree that there will be an increase in the incidence of extreme events such as drought, heatwaves, and floods. Only better functioning and deeper regional and international markets for agricultural commodities will allow countries in the most vulnerable zones to overcome these problems.

64. Trade policy restrictions are not the only impediment to the free flow of goods and services. Market and transportation infrastructure, the capacity to meet sanitary and phyto-sanitary requirements and many other factors will determine a country’s capacity to export. Initiatives such as the Aid-for-Trade programme being implemented by the WTO and the OECD and are contributing to overcoming some of these domestic barriers to trade. A stepping up of this effort could bring significant benefits to developing countries with export potential in agriculture.

65. Any and all policies that distort production and trade in agricultural commodities potentially impede the achievement of long run food security, by stimulating or conserving production in areas where it would not otherwise occur and by distorting, obscuring or impeding the transmission of price signals to competitive producers elsewhere. Despite on-going reforms there are still significant barriers to trade in agricultural commodities among developing countries and between developing and OECD countries. They contribute to the “thinness” of international markets that has been blamed for some of the volatility experienced in recent years. Average tariffs on agricultural and food are high for middle income and high income countries, 25% and 22% respectively. 25

66. Protectionism on agricultural products is not only higher than on non agricultural products (by a factor of four), it is also much more volatile. 26 Agricultural trade policies are designed to insulate domestic prices from world markets and lead to pro-cyclical effects: protection decreases when prices are high, increasing demand on world markets, and increases when world prices are low. Therefore, large country trade policies increase world price volatility and create negative externalities for smaller countries. 27 A conclusion of the Doha Round will reduce the scope to implement destabilizing policies on world markets by reducing the bound level of tariffs and subsidies). OECD monitors support and protection of agriculture in its own member countries and in some emerging countries that are major
players in global food production and consumption. While trends in the indicators measuring support and protection all point towards a continuing reduction in the levels and the intensity of distorting interventions, much still needs to be done. Latest data for the OECD countries indicate that government support still accounts for 22% of the total receipts of agricultural producers and that more than half of that support is delivered in ways that are highly distorting of trade and competition.

Clarifying and strengthening provisions concerning export restrictions

67. Under WTO disciplines, quantitative restrictions are generally prohibited by Article XI of GATT 1994 Agreement but an exception allows governments to prohibit or restrict exports on the condition that these measures are "[...] temporarily applied to prevent or relieve critical shortages of foodstuffs or other products essential to the exporting contracting party".

68. Export prohibitions or restrictions relating to foodstuffs must also conform with the provisions of the Agreement on Agriculture, that requires WTO Members to give due consideration to the effects of such prohibition or restriction on importing Members’ food security, give notice in writing, as far in advance as practicable, and consult, upon request, with other WTO Members. These provisions do not apply to a developing country Member, unless the measure is taken by a developing country Member which is a net-food exporter of the specific foodstuff concerned.

69. These disciplines are considered to have been insufficient and weak during the 2007-2009 period, when export restrictions exacerbated or even, according to most experts, caused severe disruption and a collapse in confidence on international markets. Export restrictions have also contributed to the price increases and general market nervousness currently being experienced. It has been estimated that if countries are free to implement export taxes a 10 percentage point increase in world prices can be amplified to between 20 and 50 percentage points. In addition, the risk of export restrictions, and the asymmetry between international disciplines (e.g. in WTO agreements) on export restrictions (unbind) and import restrictions (bound) is a severe barrier to increasing trust in international markets. To be sure that international trade is a reliable source of food supply net food importers should benefit from much stronger guarantees from their trading partners. The “first best option” would be to ban on export restrictions instead of which countries would address domestic food security issues with direct and targeted support; however, it is most unlikely that a ban on export restrictions would be agreed and, even if agreed, that it would be enforced during a food crisis. On the other hand, reinforced rules, in particular in terms of transparency, are both possible and useful.

70. On the other hand, nations have agreed to commit to make humanitarian exemptions, first, at the G8 Summit in L’Aquila in July 2009, and then at the World Summit on Food Security in Rome in November 2009, where all FAO member states agreed to “remove food export restrictions or extraordinary taxes for food purchased for non-commercial humanitarian purposes, and to consult and notify in advance before imposing any such new restrictions”. If honoured these commitments would allow food to be shipped rapidly to where it is needed in an emergency.

71. Some nations that imposed export restrictions during 2008 and 2010 made exemptions for purchases of humanitarian food, including those by the WFP. However, others have not made such exemptions, forcing humanitarian agencies to purchase food from more distant sources. And most exemptions, if made, are on a case-by-case basis, after concern has been raised and the exemption requested. Valuable emergency response time and resources are lost, as procurement teams have to spend time negotiating, or find alternative suppliers from other regions.

72. As agricultural markets become more open alternative policies are needed to ensure that the potential new opportunities created can actually be exploited by competitive suppliers. In the case of less
developed countries in particular, investments in improving supply capacity, including Aid for Trade will be important, (see Recommendation 9).

**Recommendations**

G20 governments should demonstrate leadership in on-going WTO DDA negotiations, moving immediately to strengthen international disciplines on all forms of import and export restrictions, as well as domestic support schemes, that distort production incentives, discourage supply in response to market demand, and constrain international trade of food and agriculture products. Specifically,

- substantially improve market access, while maintaining safeguards for developing countries, especially the most vulnerable ones;
- substantially reduce trade distorting domestic support, especially in the most developed countries; and
- eliminate export subsidies

Taking existing WTO rules into account and the state of play in the DDA negotiations the G20 should consider:

- The development of an operational definition of the food price or food shortage situation that would justify consideration of an export restricting measure and the establishment of a list of low-income countries eligible to use such measures. An export ban would be defined as a time-limited measure of last resort, allowed only when other measures, including triggering domestic safety net measures for the poorest, have been exhausted.

- A widening, strengthening and enforcement of consultation and notification processes currently in place at the WTO. The intention to impose an export restriction would have to be notified in advance of the action being applied and a “fast track” consultation process could be put in place to discuss whether the measure can be avoided and how. Consultation should be on-going and regular with a view to ensuring that the measure, once in place, is removed at the earliest possible moment.

- A reaffirmation of the commitments made at the L’Aquila and Rome Summits; calling on all nations to allow purchases of humanitarian food, including food purchased by WFP, to be exempted from food export restrictions and/or extraordinary taxes, so that humanitarian food can be purchased, exported and/or transited regardless of any prohibitions, restrictions or extraordinary taxes imposed; and resolving to bring this commitment and call to the UN General Assembly.

**Reducing policy conflicts between food and fuel**

73. Between 2000 and 2009, global output of bio-ethanol quadrupled and production of biodiesel increased tenfold; in OECD countries at least this has been largely driven by government support policies (OECD, 2008a). Moreover, trade restrictions by favouring domestic sources of raw material for biofuels do not maximise expected environmental benefits. Biofuels overall now account for a significant part of global use of a number of crops. On average, in the 2007-09 period that share was 20% in the case of sugar cane, 9% for both oilseeds and coarse grains (although biofuel production from these crops generates by-products that continue to be used as animal feed), and 7% for sugar beet. (OECD-FAO, 2010). With such weights of biofuels in the supply-demand balance for the products concerned, it is not surprising that world market prices of these products (and their substitutes) are substantially higher than they would be if no biofuels were produced. Biofuels also influence products that do not play much of a role as feed stocks, for example wheat, because of the close relations between crops on both the demand side (because of substitutability in consumption) and the supply side (due to competition for land and other inputs).

74. Production of biofuels will undoubtedly continue and contribute to reduced reliance on fossil fuels. There are reasonable prospects for improved environmental performance from second generation
biofuels. But existing policies that support biofuels production when it would not otherwise be viable, and in so doing divert commodities from food to fuel uses, warrant reconsideration.

**Recommendations**

- To undertake in-depth studies of the environmental and economic parameters determining the viability of first generation biofuels and roll-back provisions providing support to production where it is neither economically viable nor environmentally advantageous.
- Failing a roll-back of support, to develop contingency plans to adjust (at least temporarily) policy parameters that stimulate biofuel production (in particular, mandates) when markets are under pressure and food supplies are endangered.
- To accelerate research on alternative paths to reduced carbon emissions, and to improved sustainability and energy security,
- To open markets so that renewable fuels and feed stocks can be produced where most economically and environmentally feasible to do so, and traded.
- To encourage energy demand reduction, so as to achieve energy efficiencies without drawing on finite resources, including those needed for food production.

4. **Policy options to deal with the consequences of price volatility, particularly for the most vulnerable**

4.1. **Coping with volatility in the short run: buffer stocks, emergency food reserves, international and national safety nets**

**National buffer stocks**

75. Buffer stocks are an important policy instrument in a number of emerging economies and developing countries, though they have been virtually abandoned in developed countries. Some rice producing Asian countries rely on a combination of rice reserves, import or export monopolies, and domestic procurement to stabilise prices within a pre-determined band. These measures aim to stabilise domestic rice prices and, in some cases, stimulate agricultural growth. In Africa, the experience with maize buffer stocks is mixed.

76. The operational costs of buffer stocks are significant. Appropriate storage infrastructure is extremely costly to acquire, and buying the food stock and holding it is even more expensive. Domestic procurement, food releases from buffer stocks and trade programmes require continuing budgetary allocations to cover any operational losses occurring in the domestic and international trading. Losses incurred on behalf of policy-dictated objectives for price stabilization may be viewed as direct subsidies. From a WTO point of view, such price stabilisation mechanisms could also be considered as trade distorting support. In times of price increases, such costs can escalate to significant levels, rendering buffer stocks ineffective in containing price surges.

77. Poor management makes buffer stocks ineffective. There is repeated evidence that releases are made too late to influence food prices or to safeguard food security. Abrupt and unpredictable changes in buffer stock operations raise market risk significantly and discourage private investment. Often poor storing practices lead to large and costly physical stock losses. Holding food in reserve can also have a negative impact on the market as reserves have to be rotated in order to avoid deterioration in quality. This practice often affects the market price, sending the wrong signals to producers and consumers.
78. As attempts to stabilize food prices have proved either costly or ineffective, market based initiatives may be superior in countering food price volatility and enhancing food security in developing countries. Private storage, such as village granaries, can help communities to better match local supply and demand. Private sector storage investments in developing countries, either on-farm, in villages or regionally, are constrained by poor policies and a poor enabling environment generally. At the farm level, capital costs of new storage and storage technology are prohibitively high. At the village level, there are clear advantages to collaboration in storage in order to aggregate sufficient amounts of produce to attract traders as well as to share storage and transport costs.

79. Policies that would facilitate access to credit for storage improvements by farmers, cooperatives and private traders should be considered. Producer organizations are critical to food storage development. There is also need for training to build specialized storage management skills both for farmers’ association and cooperatives as well as for the private sector.

*Emergency food reserves*

80. Relatively smaller food security emergency reserves can be used effectively and at lower cost to assist the most vulnerable. Unlike buffer stocks that attempt to offset price movements and which act as universal subsidies benefiting both poor and non-poor consumers, emergency food reserves can provide targeted subsidized or free food to vulnerable population groups in times of crisis. In addition, emergency reserves of relatively small quantities of staple foods will not disrupt normal private sector market development which is needed for long term food security.

81. Governments in vulnerable countries should integrate such emergency food reserves in their national food security strategies. The effectiveness of such reserves could be improved if national emergency food reserve agencies operated independent of political process, with well-defined and clear triggering mechanisms supported by effective early warning systems. Emergency reserves should be integrated with social and food security safety nets and other food assistance programmes, to increase their effectiveness in benefiting the vulnerable. Finally, emergency reserves ought to be adequately resourced and financed, whether by governments, the international donor community, or both.

82. Some developing countries may not have the capacity to operate national emergency reserves and small, strategic food reserve systems at regional level could fill the gap. In regions, where food crises are likely to recur and transport infrastructure is weak, such food emergency reserves can provide food to the hungry fast. In 2008, The World Food Programme (WFP) through a pilot Forward Purchase Facility scheme, implemented at a regional level, achieved rapid and cost-effective food delivery to beneficiaries across countries in East and Southern Africa region. A regional system could also provide the foundation for an eventual transition to national ownership and control.

83. Global food security can also significantly benefit from adequate emergency provision of food and resources from the international community to meet future needs:

- Improving humanitarian access to existing national stocks will help meet immediate food assistance needs.
- Providing sustained support for WFP’s use of forward purchase contracts and risk management instruments would allow the agency to maximize efficiency and effectiveness and ensure a secure and predictable pipeline.

84. The above proposals, can be part of a framework of principles which could set out how already established and well-functioning national stocks and regional emergency food reserves can operate more effectively together in order to mitigate the negative effects of food price surges in the future without distorting market behaviour.
Recommendations

- The G20 calls on the World Food Programme to implement a cost-effective system of small regional humanitarian food reserves by the end of 2011. The system should be guided by a code of conduct that could be drawn up by FAO, WFP and the World Bank and which would be designed to enhance responsibility and transparency, strengthen the global food security architecture and avoid negative effects on the market.

- The G20 should put in place sustained support for the efforts of humanitarian agencies to come to the assistance of countries and populations facing crises by ensuring that they have predictable and reliable access to the financing needed, (for example for forward purchasing facilities).

Annex B provides suggestions as to how the proposed code of conduct would operate.

International safety nets: import financing facilities

85. In times of crisis, compensatory facilities are important mechanisms assisting countries to avoid major fiscal deficits, and lower the cost of imported food, while maintaining key social assistance programmes. One of the major international responses to commodity market volatility in the past has been compensatory financing, such as that provided through the European Union’s Système de Stabilisation des Recettes d’Exportation (STABEX) to ACP countries and the Compensatory Financing Facility of the International Monetary Fund (IMF). Both programmes aimed to provide compensatory finance to help countries avoid a negative impact on growth from sharp commodity price changes. Neither has been used extensively probably because of insufficient funding in the first instance and excessively high interest rates in the second.

86. During the recent price surge, a number of countries which experienced significant increases in their food and fertilizer import bills resorted to the Exogenous Shock Facility (ESF) of the IMF. ESF provides for liquidity to mitigate the negative impact of exogenous shocks on developing countries’ balance of payments, international reserves position and inflation. Such facilities could be expanded to enable a country to finance food imports when the need arises, rather than to compensate balance of payment losses after the fact. Mechanisms, such as the Global Food Crisis Response Programme (GFRP) of the World Bank which is targeted to the poorest and most vulnerable countries and efforts for a broader crisis window under the International Development Association should be supported.

For completion later - a paragraph relating to the proposals to be developed by Pierre Jacquet for new financial insurance instruments to enable the poorest countries to protect themselves from price rises or from harvest failures.

National consumer and producer safety nets

87. Food price surges, as well as increased prices of inputs such as fertilizers reduce the incomes of poor and vulnerable households, and put stress on family budgets. Households undertake distress sales of assets, take children out of school or jeopardize their nutritional status with consequences that last long after the price surge recedes. Such temporary and long-lasting impacts provide both a humanitarian and economic rationale for interventions that mitigate the impact of the shock, maintaining the purchasing power of vulnerable consumers and the profitability of smallholders through safety nets.

88. For poor consumers, scaling-up existing safety nets is a viable option in countries where these are already in place. This is achieved by adding new beneficiaries and/or by increasing transfers made to beneficiaries. Where countries have conditional cash transfer programs in place, linking these higher transfers to certain conditions, for example, supporting pregnant and lactating women and children under two years of age, provides a mechanism for both mitigating the short term impact of the shock while
simultaneously reducing long term adverse consequences. While safety nets remain relatively uncommon in very poor countries, there are often school feeding programs which can be scaled up relatively easily.\textsuperscript{38}

89. A critical issue in the context of price surges is whether assistance should be provided in the form of cash, food vouchers or food. Each has advantages and drawbacks. Where markets are well functioning, cash may be a more cost effective means of providing assistance. However, cash transfers leave the poor exposed to price risks. When food markets function poorly, or where prices are increasing rapidly, food transfers may be a more effective means of mitigating the effect of price surges.\textsuperscript{39}

90. Budget requirements present significant difficulties – especially for low income developing countries which do not have the ability to accommodate counter-cyclical expenditures in times of crisis. Foreign support will have to be mobilized to enable these countries to meet the increased demand on their budgets, at a time when such budgetary outlays can have major repercussions on their economy. There is also need to design safety net mechanisms \textit{ex ante}, even if funds are not sufficient to implement them at first. Having pre-identified the vulnerable, the safety net could be activated with funds from the international community.

91. When prices surge, although many producers benefit, producer safety nets may became relevant for some farmers if there is a also a significant and rapid increase in the international price of fertilizers or other inputs. A significant reduction in the use of fertilizers can have negative longer term effects on the livelihood of smallholders. Targeted input support enhances the ability of smallholders to respond to the increase in food prices and contributes towards household and national food security. However, targeted input subsidies involve high costs, while the management of such programs is difficult, especially during periods characterized by volatile food and input prices. Political pressures for expansion of producer safety nets may lead to an unsustainable fiscal burden that may hinder, rather than promote long-run growth. Therefore, it is important that such programmes are temporary and only target farmers that either have no means to finance input purchases or have no access to credit and stay in place for a limited period only. In the longer term, attention to market structure issues and competition policy could be a more effective means of improving producer access to competitively priced inputs.

**Recommendations**

- The G-20 should establish a working group led by the World Bank and the IMF to define the parameters of an efficient, well functioning international mechanism to assist low income developing countries to meet higher food import bills in times of crisis and to draw up plans for implementation
- The G20 should support the development of appropriate, equitable, cost effective and sustainable safety nets that can be stepped up when needed, ensuring that they are adequately resourced and linked to the proposed regional emergency food reserve architecture.

4.2  Coping with volatility in the long run: market-based mechanisms to protect producers against price and other risks and to stabilize food import bills

92. The nature of the risks facing farmers varies from one country to another. The capacity farmers have to deal with such risks also varies across different farmer categories. In developed countries, large-scale, commercially orientated and better equipped farmers are better equipped to manage price-related risks through market-based instruments. Smaller farmers may lack access to the knowledge, technologies, market instruments and governance structures to adequately manage their risks. In developing countries, smallholders with little capital, and limited access to markets, often have no possibility to insure themselves against a variety of uncertainties which characterise less developed agricultural sectors.
Protecting farmers through market-based solutions

93. For farmers who have access to market-based insurance tools – farmers mainly but not exclusively in advanced countries – normal variations in production and prices do not require any policy response and should be directly managed by them, as part of normal business strategy. Infrequent catastrophic events are, by definition, beyond the capacity of farmers or markets and therefore require government involvement. In between the normal and the catastrophic risks is an intermediate risk level that can be handled through market tools, such as insurance and futures markets or through cooperative/mutual arrangements among farmers themselves.  

94. The following guidelines would ensure a broad and effective approach to risk management in countries and regions with well developed infrastructure, governance and markets:

- Governments should ensure that relevant information and tools are available to enable farmers to manage their own risks. A particular emphasis on information, training, and education is warranted.
- Other agricultural policies, such as price interventions, should not interfere with pro-active risk management strategies that farmers would otherwise adopt. Adjustments to income tax and social security provisions are preferable ways to help farmers to manage risk, by smoothing income for example.
- The use of futures contracts by farmers directly is rather limited in most countries. However, farmers benefit from futures as a price discovery instrument; they also use different kinds of production and marketing contracts with downstream co-operatives and companies. Government can contribute to the development of market solutions through an appropriate regulatory framework that ensures that these markets work as intended.
- Insurance subsidies should not apply to non-catastrophic insurable risks, although some government involvement in insurance provisions might be needed at the outset to provide the enabling environment and create more competitive markets which would enhance efficiency in the insurance industry and could open up possibilities for public-private partnerships.
- Government clearly has a role in the provision of disaster assistance (in the catastrophic risk layer). A clear delineation of responsibility between government and producers and a clear set of procedures, defined as part of a contingency plan, are needed. This *ex ante* policy framework should also include explicit triggering criteria and a clear definition and limits on the type and level of assistance to be granted.

Risk management for the most vulnerable producers

95. In developing and emerging economies, risk management faces numerous challenges. Often, financial and insurance markets do not exist, or are under-developed. The vulnerable population is made up mainly of geographically dispersed, asset poor, smallholders with limited access to knowledge and markets. This leads to high operational costs for risk management programs. Women smallholders typically fare worst, as their access to assets, finance, extension or other risk management or coping instruments is even more limited than for other smallholders.

96. Warehouse receipts systems allow farmers or traders access to a secure warehouse for their products, for which they obtain evidence of ownership. This avoids being forced to sell immediately after harvest. This cooperative system can also help to reduce storage losses, and even facilitate access to finance, as the evidence of ownership can be used as collateral to obtain credit. In this manner, warehouse receipts can promote efficient private trade, and may contribute to reducing volatility while assisting smallholders to better manage risks and participate in markets.
97. Considerable effort and research is being invested in developing innovations such as weather index-based crop insurance particularly suited to the needs of smallholders. The underlying concept is that farmers are paid whenever rainfall or temperature is so high or so low that it is likely to cause a significant fall in crop yields, or whenever droughts, frost, or precipitation cross specific thresholds, but the institutions operating the system do not have to assess the scale of loss on individual farms.

98. Index-based insurance presents a number of additional advantages, as it is based on an independently verifiable weather index that allows insurance companies to efficiently transfer part of their risk to international markets or to re-insurers. This has assisted in the development of proper markets for weather index insurance instruments in some developing countries. However, weather-index insurance requires a number of conditions to be in place. Primarily, the risks being insured should be insurable. For example, the magnitude of potential impacts of climate change may render this type of insurance unviable. The index chosen must be strongly correlated to local yields and there must be a network of local weather stations network and weather data collection systems. Other conditions have to do with overcoming information problems. Farmers and other stakeholders should have a clear understanding of how weather index insurance works. In the medium and long term, these conditions can be put in place with appropriate government intervention.

99. Increased institutional capacity and adequate technical assistance and training are necessary to ensure take-up by smallholders. These are important public goods without which the private insurance sector faces high set up costs and barriers. If index insurance is to scale up, governments and donors will need to intervene more actively to provide an enabling environment and facilitate the development of insurance markets. However, although such insurance instruments have strong potential, additional innovations are required. In general, it has been proven extremely difficult to target smallholders directly in a cost-effective manner for use of financial risk management tools.

Stabilising food imports bills through market-based mechanisms

100. Innovative market-based mechanisms, such as the use of futures markets to guarantee timely food imports at more stable prices, may provide an alternative option to the import financing facilities discussed in an earlier section. However, such market approaches to protection against food price volatility involve the establishment of institutions at national level and the building up of technical expertise.

101. The principal instruments that could be used to stabilise food import bills are futures and options contracts or over-the-counter (OTC) instruments. Financial institutions, usually international banks, intermediate such hedging instruments to governments. By buying futures contracts, a government which wishes to protect itself against a possible grains price surge “locks in” the grain purchase price. Physical option contracts, “lock” price and volume with no obligation to buy if market conditions are favourable for the government. The major advantage to the hedging government is that the cost of food imports is known more or less accurately at the time the hedge is initiated.

102. In practice, futures may not be a useful instrument for governments since there is an unpredictable and potentially large liability associated with taking a futures position each time the government hedges. If market prices move down against a government that has bought futures contracts, the government will be responsible for paying, to the market counterparty, the difference in price movements.

103. An alternative to hedging with futures contracts is hedging with option contracts, which allow a government to secure price protection at a certain level in return for a fixed premium which is usually paid in advance. Call options are physical commodity hedges, which integrate price protection into a physical import agreement. For importers, a call option has the effect of putting an approximate ceiling
price on the contracted food quantities. A ceiling price is particularly attractive if the intention is to hedge against a price. A major advantage of the call option strategy is that it has a market price. Unlike hedging with futures, the cost of protection is known in advance. Purchasers can decide on the level and duration of protection that they require or can decide that the cost is too high.

104. Since food markets in many countries are not well-integrated with established commodity exchanges, financial hedges may not be effective, or are subject to high levels of basis risk (the lack of correlation between exchange-trade prices and local prices). In cases where these hedges are structured on a delivered basis including transport costs, it may be possible to manage basis risk.

105. Significant investment is needed to overcome the lack of technical expertise on the use of hedging instruments in low income countries. Many governments are not focused on \emph{ex ante} management of food price shocks. Although they are aware of the country’s vulnerability, the exposure to food price risk and its fiscal implications are not properly assessed. Many governments are not familiar with commodity hedging products and do not have the institutional framework to support them. Experience has shown that engaging developing and emerging countries on risk management takes a sustained effort to build capacity to the point where decision-makers are comfortable with the use of risk management tools. Globally there is a need to learn lessons from countries such as Mexico that have become sophisticated in developing a framework for analyzing risks and taking innovative steps to manage those risks.

### Recommendations

- The G-20 should support and scale up innovative efforts to provide the most vulnerable households and communities with effective risk management options which are integrated with social protection schemes.
- The G-20 should increase support for technical capacity building through the international financial institutions to encourage countries to use market-based mechanisms to stabilise their food import bills.

5. Measures to increase productivity, sustainability and resilience of agriculture

106. Agriculture is a source of livelihood for about 86% of rural people – 1.3 billion smallholders and landless workers – it provides “farm-financed social welfare” when there are urban shocks, and a foundation for viable rural communities.\textsuperscript{45} Investing in increasing the productivity and resilience of developing country agriculture can contribute to improving food security in two ways. It can actually contribute to reducing food price volatility, for example through improved technical management of production, and it can help farmers and households to cope better with the effects of volatility, once it occurs. Long run projections are fraught with difficulty and estimates can vary widely. According to FAO, the rate of growth in agricultural production is expected to fall to 1.5% between now and 2030 and further to 0.9% between 2030 and 2050, as compared with 2.3% per year since 1961. Population estimates suggest that by 2050 the planet will be home to 9.1 billion persons, up from the current population of 6.8 billion. This represents a 34% increase over the next 41 years.\textsuperscript{46} These particular estimates suggest that in the future, with the supply of food not growing at the same pace with demand, upward pressure on prices could be a principal attribute of world food markets. In addition to high price levels, shocks, due to climatic or other reasons, can create wide price movements, as the food market may lack the capacity to absorb them. This adds to vulnerability and underlines the importance for supply to keep up with growing demand.

107. Investing in agricultural productivity growth and resiliency in low income countries is paramount to addressing local food price volatility. FAO estimates indicate that agricultural production would need to grow globally by 70% over the same period, and more specifically by almost 100% in
developing countries, to feed the growing population. In the medium and longer term only investment in developing countries’ agricultural sectors will result in sustainable increases in productivity, healthy markets, increased resilience to international price spikes and improved food security. Investments in infrastructure, extension services, education, as well as in research and development, can increase food supply in developing countries and improve the functioning of local agricultural markets, resulting in less volatile prices. In this way, markets can work for the poor people who bear the burden of food price volatility.

108. The investments required in developing countries to support this expansion in agricultural output amount to an average annual net investment of USD 83 billion (in 2009 USD). This total includes investment needs in primary agriculture and necessary downstream services such as storage and processing facilities, but does not include public goods like roads, large scale irrigation projects, electrification and others that are also needed.

109. Most of the investment, both in primary agriculture and downstream sectors, will have to come from private sources, primarily farmers themselves purchasing implements and machinery, improving soil fertility, etc. For a better functioning agricultural system and improved food security, three kinds of public investments are also needed.

- Direct investment in agricultural research and development particularly on practices that enhance the resilience of small-scale agriculture towards climate change and resource scarcity.
- Investment in sectors strongly linked to agricultural productivity growth and to strengthening the integration of smallholders into markets, such as agricultural institutions, extension services, roads, ports, power, storage and irrigation systems.
- Non-agricultural investment to enhance the rural institutional environment and bring about positive impacts on human wellbeing, like investment in education, particularly of women, sanitation and clean water supply, and health care.

110. Farmers and prospective farmers will invest in agriculture only if their investments are profitable. Many types of public goods, such as the above mentioned, that make private investments financially viable can only be provided by the governments. Private sector investment also needs to be encouraged at all stages in the value chain – upstream of the farm, in seed and fertilizer production and distribution, and downstream in processing, marketing and distribution. Underlying competition problems that have led to the development of cartels or of monopsonistic/monopolistic market structure should also be tackled.

111. However, the capacity of the poorer developing countries to fill the investment gap is limited. The share of public spending on agriculture has fallen to an average of around 7% in developing countries, even less in Africa, and the share of official development assistance going to agriculture has fallen to as little as 3.8%. Commercial bank lending to agriculture in developing countries is also small – less than 10% in sub-Saharan Africa. Private investment funds targeting African agriculture are an interesting recent development but current investments are still small.

112. Investments in agricultural research and development have been shown to have very high rates of return and have an important role to play in fighting hunger and poverty. Bridging the gap between research and development in the main cereals and staples that are most important for small farmers in regions with high prevalence of hunger is an important challenge.

113. Agricultural research is increasingly being delivered by the private sector with technologies being developed for larger, commercial farming operations. The adoption of such technologies requires increased management skills and effective learning, so that small farms too can have access to innovative...
inputs. There is need to improve agricultural technologies specific for, and well targeted to small-scale agriculture and for appropriate production policies and practices aimed at increasing smallholder productivity in a sustainable manner.\(^{49}\)

114. At present, much public research is carried out by the International Research Centres of the Consultative Group on International Agricultural Research (CGIAR). There is general recognition of the utility and benefits provided by this system of international research bodies and affiliated organizations which have enormously contributed to the global pool of available agricultural technology and knowledge. A new CGIAR Multi-Donor Trust Fund is established to harmonize donor investments in key global challenges on agriculture and is being hosted and managed by the World Bank. New results-oriented research programs focus on climate change mitigation and adaptation policies and technologies and include a broad group of partners. There is need to increase and sustain the financing of such bodies in order that may continue to invest today in the techniques and innovations that will be needed to deal with the food security and climate challenges that have been defined elsewhere in this report.

115. Increasing public investment in transport and productive infrastructure, as well as in human capital, is central in stimulating productivity. Improving infrastructure, in particular rural roads and market facilities such as warehouses and cold storage facilities are important in reducing transport costs and integrating smallholders to markets. Investing in, and improving irrigation facilities, storage infrastructure and market institutions and mechanisms will result in increased quantities of food produced, better quality and more stable prices.\(^{50}\) Improving extension, education and health, targeting small producers but also other value chain actors, are key elements of a sound policy approach to increase productivity and enhance food security and the well-being of farmers.

116. All these responses to increase the resilience of agriculture and stabilize prices require public interventions. Government expenditure on agriculture can have a significant positive impact on productivity. Foreign direct investment also has a positive impact on productivity growth, but only if carried out responsibly in combination with efficient bureaucracy, a lack of corruption, and democratic political structures.\(^{51\ 52}\)

117. More and better support for public investment in agriculture public goods will allow private sector actors, including smallholders and small-scale market agents, to respond more profitably to rising prices, both increasing local food supply and boosting the incomes of the poor.

118. Priority interventions include support for generation, adaptation, and adoption of improved technology; improved agricultural water management, tenure security and land markets; and strengthening agricultural innovation systems. Not only must there be far more investment in public goods in these areas to facilitate smallholder and other private sector supply response, but investment must be better.

119. The Global Agriculture and Food Security Program (GAFSP), launched in April 2010 provides an important avenue for public investment. The GAFSP has pledged USD 925 million from a number of donors. To date, investment programmes are assisted by the World Bank, the African Development Bank, the Inter-American Development Bank, the International Fund for Agricultural Development (IFAD) and FAO. However, there are unfunded country proposals to GAFSP, amounting approximately USD 800 million.
**Recommendations**

To establish an Action Plan for strengthening the longer term resilience of the food and agriculture system world-wide, encompassing several elements.

- A commitment by G20 governments to improve their food and agriculture innovation systems, encompassing public and private investments in scientific research and development (including biotechnology), technology transfer, and education, training and advisory services.
- A strengthened CGIAR system to support global dissemination of technology, in particular to improve productivity performance in less developed countries and more broadly to address challenges specific to climate change and sustainable resource use (land and water).
- Increased public (ODA and national governments) investment in developing country agriculture, and in activities strongly linked to agricultural productivity growth, such as agricultural institutions, extension services, roads, ports, power, storage and irrigation systems. On-going initiatives such as the Global Agriculture and Food Security Program (the World Bank) and Aid for Trade for Agriculture (WTO, OECD) should be strengthened. All relevant international organisations should contribute to the Action Plan in light of their particular expertise and established competencies.
- Placing agriculture at the heart of national development strategies in developing countries and giving a voice to the rural poor by removing the political and economic obstacles to the development of the agricultural sector.
- Private sector involvement above and beyond ODA and national government spending will be crucial to achieving the resilience on which long term food security will depend. To elicit the needed level of private sector investment less developed countries in particular will need to support introduction of effective governance systems and institutions, stable macroeconomic conditions, and sound structural policies so that investments perform well; particular attention needs to be paid to education, particularly of women, sanitation and clean water supply, and health care in least developed countries.

6 Global governance in relation to food price volatility: process of information and coordination of actions to avoid crisis

120. The experience of the 2007-08 food price crisis and the current excess volatility in many international food markets have exposed a number of weaknesses in the process of information and coordination of actions in relation to food price volatility. These include:

- lack of reliable and up-to-date information on crop supply, demand, stocks and, especially, export availability;
- lack of clear and comprehensive indicators of current market conditions (by default the FAO food price index and stock to utilization ratios for key cereals are playing this role but are inadequate and incomplete as indicators of overall market conditions;
- uncertainty and lack of transparency concerning availability, stocks and prices that prompts hoarding, panic buying and sub-optimal policy choices;
- lack of an effective and credible mechanism for issuing alerts concerning deteriorating food security situations;
- lack of effective policy recommendations and their dissemination;
- lack of policy coordination; and
- lack of clear links between information, alerts and response.
The result is limited preparedness on the part of governments and the international community to respond swiftly and effectively to threats to food security.

The ultimate objective of such a process is to ensure, through better preparedness, that market turbulence and price volatility do not cause a deterioration of the food security situation. This implies that this process should provide for:

- collection and dissemination of information and analyses on food market developments and their implications, including for particularly vulnerable countries;
- issuing of alerts in cases where market developments are judged to pose a real threat to food security; and,
- promotion of efficient and effective policy and humanitarian responses and promotion of policy coordination to avoid ineffective and potentially damaging policy choices.

It is not possible, nor is it necessary or desirable, that one global institution could or should meet all these requirements for global governance in relation to food price volatility. Furthermore, existing institutions dealing with food security can, with suitable coordination, adaptation and strengthening, contribute to meeting each one of these requirements. There is no need to create new institutions.

To deal with food price volatility all concerned institutions need to emphasise the effective use of technical expertise, experience and knowledge at all stages in a common approach.

The scope for devising more “automated systems” of evaluating food security implications of changing market situations whereby an indicator of different degrees of severity can be calculated routinely and trigger an alert with a prescribed form of response according to a repository of best practice – such as operated by the WHO in relation to monitoring of epidemics and issuing of alerts – is not feasible due to specificities of food markets. Rather, there is a great need for expert judgement at all stages in interpreting information and deciding whether a situation is sufficiently grave to warrant issuing an alert and defining appropriate policy responses at political level.

**Proposed process of information and coordination of actions to avoid food crisis**

This proposed process is based on past experiences showing that decisions at political level need to be fed by a strong and consensual expertise to be agreeable and applicable.

**Establishment of a Market Transparency team (M2T)**

This team is required to gather and disseminate information and analysis on a regular basis regarding food situation and outlook. Given the weaknesses of current provision, this team would also need to improve the quantity, quality and scope of market information, including on futures markets. This may also imply a role in capacity building in countries where information provision is weak. Information and analyses might focus on basic foods markets particularly relevant to world food security – wheat, maize and rice – but would need broader commodity coverage because of substitution between crops beyond cereals such as oilseeds, sugar and cotton that affects cereals markets. It would also be important to monitor developments in energy markets in view of the increasingly close integration of agricultural and energy markets.

A broader and more comprehensive set of indicators need to be defined to summarise available information concerning different facets of food markets including futures and allow an overall assessment of the precariousness of market situations. Threshold values might be defined to indicate progressively increasing levels of threat to food security.
129. Several international organizations have competency in relation to at least some of these tasks. A UN Agency with a specific mandate on food security would be best qualified in terms of experience and technical expertise to host this M2T and develop adequate partnerships with other relevant institutions and with other information providers and market participants including in the private sector along the lines of the Joint Organizations Data Initiative suggested in section 3.1.

6.3 Establishment of a Global Food Situation and Outlook Advisory Group supporting the M2T

130. A Global Food Situation and Outlook Advisory Group should be established to review the information and indicators provided by the M2T concerning the current situation and outlook and issue a statement on the current market situation and its implications for food security.

131. Such an Advisory Group should meet on a regular basis – twice or three times a year – not only to provide for regular monitoring but also to avoid the risk that the very calling of a meeting might provoke alarm. The Advisory Group could meet more frequently in times of crisis.

132. Such an Advisory Group would need to have a membership comprising representatives of relevant international organizations with commodity expertise, representatives of major food importing and exporting countries and representatives of major private sector interests and expertise including major food traders, futures markets and market analysts. To be effective the membership should not exceed twenty and it would be essential that members are experts.

133. In cases where the situation was judged to be threatening to global food security, the Advisory Group would issue an “alert” to the political level of decision and coordination of actions. At this stage, this alert will not be publicly communicated.

6.4 Establishment of a Response Committee (RC)

134. The issuing of an alert by the Advisory Group would trigger a meeting of a response body, the RC, that would consider the information at hand and recommend appropriate policy and humanitarian responses. Given the type of circumstances under which the RC would be convened, it would need to be agile as well as expert. The Committee on World Food Security, with its membership representing relevant international organizations, governments and civil society, would be an appropriate parent body. The RC will be tailored in such a way (and appropriately empowered by the CFS plenary) so that it could be mobilized or respond quickly enough to provide rapid response. The RC might be drawn from the CFS membership or bureau and advisory group members empowered by the full CFS for this purpose and chaired by the chairperson of the CFS bureau.

135. The RC might also be empowered to call upon outside experts (such as members of the Steering Committee of the High Level panel of Experts) to supplement their capacity where circumstances call for this. The role of this RC would be limited to providing policy guidance and promoting policy coordination when the market situation and outlook as evaluated by the M2T Advisory Group indicates a high food security risk. It would not be tasked with monitoring market developments nor with providing specific policy recommendations. In order to avoid the creation of parallel institutions, the CFS plenary may authorise the CFS bureau (and advisory group in a supporting role) of the committee to play the role of the RC. Steps have already been taken which facilitate such role of the bureau and the advisory group: namely the bureau has asked that information relevant to price volatility, actions and policies by various bodies and the food security situation and threats be collected in one place and that the issue of price volatility and the food security situation be an item on the agenda of all meetings of the bureau and the advisory board.
Recommendations

• The G-20 should request relevant international organizations to set up an institutional system for global governance in relation to food price volatility, emphasising rapid response to food crises through the effective use of technical expertise, experience and knowledge at all stages.

• All G20 members and especially key players should commit to providing timely and accurate data on food production, consumption and especially stocks; where the mechanisms and institutions are not in place nationally to do so G20 members should undertake to create them.

• The G-20 should request the Committee on World Food Security to play a key role in responding to potential food security crisis situations through a rapid response mechanism which will promote policy coherence and coordination and catalyse appropriate policies to prevent and/or deal with deterioration of the food security situation.
ENDNOTES


2. Higher price volatility, however, may also result in higher expected losses for farmers. Using a simple model for producer’s profit maximization with price uncertainty, Martins-Filho, C. and M. Torero (2010) show that the expected loss in profits for a producer is monotonically increasing in the observed volatility in prices.


4. OECD-FAO Agricultural Outlook 2010-2019 (including special Chapter 2 on price transmission and volatility on agricultural markets), and Developments in commodity price volatility [TAD/CA/APM/WP(2010)33].


7. Martins-Filho, Torero and Yao (2010) have developed a model to estimate conditional quantiles (95% quantile) for log returns of future prices of different agricultural commodities. The realized return in a particular day can then be compared to forecasted 95% conditional quantile to detect price abnormalities in specific commodities on the agricultural markets.


12. FAO-GIEWS available at www.fao.org/giews/pricetool; WFP reference necessary

13. By which is meant stocks that are part of a scheme whose purpose is price stabilisation (as opposed to emergency stocks for crisis relief).


27. “Large country” is used here to mean a country that is significant enough in trade terms to affect prices, and the corollary for small countries.


Annex A.

A PROPOSAL FOR A JOINT ORGANIZATIONS DATA INITIATIVE FOR FOOD SECURITY (JODI-FOOD SECURITY)

136. Building on mechanisms and institutions already involved in the collection and dissemination of food market data globally, and the 10-year experience of JODI (Joint Oil data Initiative), this Annex presents a more detailed and concrete proposal outlining the scope and operation of the proposed initiative. Such a collaborative effort will:
   • improve agricultural market outlook and forecasts at both national and international levels; and,
   • strengthen both global and national early warning capacities, thus enhancing food security.

JODI-Food Security - Host organization and coordination of efforts

137. Maximum use would be made of existing mechanisms by mandating an organization such as the FAO that already has capacity in data collection, processing and dissemination, as well as in early warning systems, to host JODI-Food Security.

138. The FAO already collects and analyses market data from member countries and a variety of other sources. It disseminates agricultural information products, such as the Food Outlook, and hosts the Global Information and Early Warning System which, in collaboration with WFP, provides timely and reliable information for countries facing a serious food emergency.

139. Additional capacity can be exploited through collaboration with the International Commodity Bodies, such as the International Grains Council, as well as with IFAD, OECD, UNCTAD, WFP, and the World Bank, making use of their broad expertise and experience, as well as their strong presence within the major players (producers and consumers) and in developing countries.

Participation in JODI-Food Security

140. JODI-Food Security should include major food exporting and importing countries, that are not G20 members. Important rice exporting and importing countries, such as Bangladesh, the Philippines and Viet Nam should participate. The inclusion in the Initiative of Egypt and Nigeria, both major cereal importers, would also be valuable. The participation of the private sector would be important both in terms of improving crop forecasts, as well as in enhancing data collection capacity on stocks.

141. The countries proposed account for the great bulk of world food production, consumption and trade. Participation would be open to all countries but early efforts would focus on the main market players.
JODI-Food Security Actions

142. It is proposed that JODI-Food Security is built on the existing data collection, analysis and dissemination processes in FAO, enhanced by collaboration with other international organizations, countries and commercial enterprises:

- Information on planting intentions, crop development and expected yields, consumption forecasts, as well as the corresponding expected changes in stocks and trade would be collected through questionnaires twice per year, (initially for JODI-Food Security members).
- The scope of information collection would be expanded to include data on agricultural futures prices, prices of other commodities, such as oil; capacity to analyse price relationships between cash and futures prices, as well as between crop and energy prices is strengthened.
- A team would be set up consisting of agricultural market experts from participating countries, international organizations and businesses, and regular meetings organized to discuss market trends, emerging issues and policy changes that may affect agricultural markets.
- Market information products would be disseminated frequently. Existing information products, such as the Food Outlook may be expanded and market situation and reports would be published in a quarterly basis. Brief market and price developments would be disseminated on a monthly basis, providing timely assessments of the global food market situation. This information would be fed into the Market Transparency Team and the Global Food Situation and Outlook Advisory Group supporting the M2T, as set out in section 6 to enhance global early warning capacity and make rapid identification of price surges and policy decisions possible. The information would also be provided to the FAO Global Information and Early Warning System to strengthen vulnerable country assessments.
- A JODI-Food Security manual would be produced, defining best practice and methodology for agricultural market data collection and analysis, aiming at improving data quality and harmonization of the data collection process across participating countries.
- A series of training sessions would be organized by the Initiative to enhance data collection capacity and to assist in the development of early warning capacity in developing countries, focusing on meteorological and crop growth data in crop monitoring.

143. JODI-Food Security could improve commitment to better market data collection and dissemination as a way of enhancing global food security. It could also be instrumental in overcoming difficulties that some governments or commercial enterprises may experience in relation to confidentiality of data on food stocks.

JODI-Food Security Schedule

144. The JODI-Food Security would be launched as soon as the proposal is endorsed by G20 membership.

- Following a consultation process between countries, international organizations and the private sector, a scoping report is delivered by January 2012, detailing the objectives, necessary resources and range of outputs of the Initiative and defining its role in a wider global food security governance mechanism.
- An inception workshop is organized by March 2012 involving countries, international organizations and the private sector to discuss JODI-Food Security composition, data needs, collection methodologies, analytical capacities, questionnaire design, coverage and frequency, market indicators and scheduling; the workshop is followed by the dispatch of the questionnaire.
• Data collection methodologies are identified by April 2012 and assessed across participating countries; training and capacity building needs are identified.

• JODI-Food Security team commences bi-annual meetings by May 2012.

• Global market outlook and situation is published in June 2012 (the main information product of the initiative); market indicators are developed, monitored, and disseminated monthly; JODI-Food Security delivers these information products to the global food security mechanism and FAO GIEWS.

• JODI-Food Security manual is published and training workshops on data collection and methodologies are organized by September 2012. Linkages between JODI-Food Security and national early warning systems are formed and their capacity is enhanced.
Annex B.

A CODE OF CONDUCT FOR RESPONSIBLE EMERGENCY FOOD RESERVES MANAGEMENT

145. Food emergency reserves are put in place in order to respond to food security problems, rather than to try to affect prices in the market. They are a policy instrument which can directly meet humanitarian goals and social policy objectives. The following set of principles and safeguards should govern the design, implementation and impact monitoring of emergency food reserves.

146. It is envisaged that the process of compiling a set of principles and good practices for responsible emergency food reserve management will involve a number of international organisations (FAO, IFAD, WFP, the World Bank), academics, governments and civil society. Collaboration and participation will be achieved by means of conferences and workshops.

1. Emergency reserves should be well-linked to effective information and early warning systems

147. Emergency food reserves operations should be based on sound market information and on effective early warning systems. The less reliable market information is, the greater the degree of uncertainty in assessing market developments. Early warning systems should identify the links between climate and price risks, food security, and livelihoods. They require medium term weather forecasting and enhanced capacity to translate this data into yield expectations in terms of reliability and timeliness. Better early warning would enable governments and international organisations to plan ahead, be pro-active and anticipate needs.

2. The size of the reserve should be carefully determined

148. The size of a food reserve can be determined on the basis of grains requirements of the vulnerable following the recognition of an emergency situation until additional supplies can become available. Governments should consider that food crises do not usually take place from one day to the next. For example, the implications of a drought are known well before harvest; therefore adjustments in the size of food reserves can take place through import programmes in accordance with the needs of the country. Reserves cannot be greater than a maximum size determined by the food requirements of the vulnerable. They cannot be smaller than a minimum level of food, set at one or two months requirements, and are to act as an insurance in emergencies.

3. The reserve should be located strategically

149. The question of storage location for food reserves is complex. There are advantages in having the reserve spread across several locations. However, fragmentation of the reserve increases monitoring costs. A reasonable approach could involve some storage in traditional deficit production areas adequate for the period when production may have been exhausted and transport infrastructure is inadequate, limited additional storage in good-quality stores in nearby small urban centres and larger stores in major urban centres.
4. Food reserve agencies should be credible and operate with well defined rules

150. Food prices are highly politicized and food reserves’ operations are not independent of the political process. This gives rise to credibility problems. Food reserve agencies should enjoy autonomy from the political process similar to that of a central bank. Ideally, a set of clearly defined and transparent rules based on early warning information, such as expected availability, or price triggers are necessary.

5. Food reserves should be linked with safety nets

151. Targeted food release increases the effectiveness of emergency reserves. Compared with cash transfers, in-kind food distribution through safety nets places a lower budgetary strain on government resources, as often foreign assistance is available in terms of food aid in kind. In the absence of well-established safety nets, subsidized grain can be released in areas with a very high proportion of poor. Safety nets can also facilitate the rotation of the reserves in times of calm markets, so that the quality of food will be preserved without distorting the market.

6. Emergency reserves should be established and replenished in a market-responsible way

152. Purchases from local markets and through import programmes should be carried out not only to guarantee the availability of food in the reserve, but also to ensure that private trade is not prevented from developing or harmed. Discrete and unexpected policy responses, increase uncertainty and weaken the incentive for the private sector to engage in trade, especially if the emergency food reserve is large. Sudden export bans, which facilitate domestic procurement by the reserve, may harm traditional trade partners. Purchases for humanitarian food aid should be exempt from export bans to allow rapid food provision where it is needed in times of crisis.

7. Emergency reserves should be linked and have counter-cyclical funding

153. Strong linkages between existing reserves, increasing collaboration and achieving pooling of resources will strengthen the regional food security architecture. Emergency food reserves ought to have a counter-cyclical budget so that operations can be scaled-up as need increases and scaled-down subsequently. Such budget requirements present significant difficulties – especially for many low income developing countries – as when food prices surge or the economy slows down decreases in government revenue and increases in social expenditures happen at the same time.