



COMMITTEE ON WORLD FOOD SECURITY

Thirty-sixth Session

Rome, 11-14 and 16 October 2010

**POLICY ROUNDTABLE
MANAGING VULNERABILITY AND RISK
TO PROMOTE BETTER
FOOD SECURITY AND NUTRITION**

Table of Contents

MATTERS TO BE BROUGHT TO THE ATTENTION OF CFS	Page 1
I. CHALLENGES	Paragraphs 1 - 4
II. KEY ISSUES	5 - 21
A. CLIMATE CHANGE	5 - 15
B. PRICE VOLATILITY	16 - 21
III. POLICY RECOMMENDATIONS	22 - 39
A. RISK REDUCTION	23 - 34
B. SOCIAL PROTECTION AND SAFETY NETS	35 - 39
IV. PRICE VOLATILITY RESPONSE MEASURES	40 - 43

This document is printed in limited numbers to minimize the environmental impact of FAO's processes and contribute to climate neutrality. Delegates and observers are kindly requested to bring their copies to meetings and to avoid asking for additional copies. Most CFS meeting documents are available on the Internet at www.fao.org/cfs. Delegates will be given an electronic copy of all documents on registration.

V. FOOD RESERVES

44 - 51

The Committee is invited to:

- Commission the HLPE to put forward proposals for appropriate and coherent policies, actions, tools and institutions to effectively manage the risks linked to price volatility in agriculture. This should include the prevention and remediation actions for producers and consumers, appropriate to different levels (domestic and international) based on a review of existing studies analysing the information systems, causes and impacts of price volatility on food security both for producers, for net-food importing countries, and for consumers, and analysing response measures taken at different levels.

- Commission the HLPE to make proposals on the best design of a range of interlinked policies for the adaptation to climate change of the actors along food chains (agricultural policies, nutrition, research and development policies, institutional framework, economic aspects, financial aspects), based on a review of assessments of the impacts of climate change on food security and the ways for agricultural systems and food chains to adapt. This should include identifying ways to ensure that food security and climate change policies and agendas are harmonized and the outcomes of the negotiations in both fora are mutually supportive.

- Create a CFS working Group which will have two tasks:

i) to identify the linkages to be made between existing institutions as well as the gaps to be addressed to effectively tackle vulnerability and risks related to price volatility

(ii) to analyse the report made by the HLPE, discuss the proposed recommendations in view to make proposals for the 37th Session of CFS.

- Engage in policy advocacy and technical support to countries to ensure that comprehensive risk and vulnerability assessments are undertaken. Based on these assessments support countries with design and implementation of a social protection strategy inclusive of safety net instruments that protect the rights of the poor to food, health, education, and a basic standard of living.

I. CHALLENGES

1. Life is an inherently risky business - each one of us is exposed to an array of risks¹ every day. These risks range from the likely to the unlikely, from the immediate to the slowly developing threat. Risks range from eating unsafe food to crossing a road and being hit by a vehicle; from being in the epicentre of an earthquake to living in a remote rural area reliant on subsistence rainfed agriculture where the rains never arrive. When the risk becomes a reality, the key question is how vulnerable² are we to the shock – to the new reality?

2. While we may all face the same risks, we do not share the same vulnerability should the risk become a reality. Poverty is a fundamental determinant of the level of vulnerability, not only to any shock, but also to the ability to reduce the risk, or mitigate or cope with the consequences.

¹ Risk is defined to include shocks and stresses which could affect, in different ways, the state of systems, communities, households or individuals.

² Vulnerability reflects the degree of exposure of systems, communities, households or individuals to any given risk. It comprises three dimensions: the nature of the risks (“vulnerable to what shocks?”), the impact and level of impact on systems, communities, households or individuals (consequences of the shock – is it idiosyncratic or covariate), and the responses of systems, communities, households or individuals (which include the resilience, capacity to cope with shocks, as well as both ex ante strategies and ex post responses).

Gender is another determinant – men and women, boys and girls have different exposure to risk and different vulnerabilities. Only a woman faces the biological risk of pregnancy and child birth, but this becomes a gender issue in countries where women’s low social and economic status leads to poor provision of ante natal care and health services for safe deliveries. In many households when food is scarce women sacrifice their own consumption for the sake of their husbands and children. For the world’s poor and food insecure their poverty not only increases but magnifies their vulnerability. The poor person who ate unsafe food, has no access to health insurance, takes medical care where it can be obtained leaving them vulnerable to unqualified medical provision and possibly counterfeit drugs.

3. This vulnerability of the poor was made all too visible by the recent crises, often referred to as the three Fs – food, fuel and financial. High fuel prices not only led to higher production costs, to changing production incentives for some food crops given increased demand from the bio-energy markets, but to increased costs of importing foods for low income food deficit countries. Climate related issues not only impaired production of some food staples, such as wheat, in key production areas for the global market but devastated national staple harvests of rice in parts of Asia leaving countries import dependent at a critical time. The financial crisis led to high degrees of liquidity in financial markets and fuelled speculation in agriculture commodity markets exacerbating price volatility. Between May 2007 and May 2008 the volume of globally traded grain futures and options contracts increased substantially, along with the monthly volume of futures trading to open interest³.

4. There is widespread recognition that, beyond market fundamentals, a ‘new’ set of forces are in play. Greater linkages between the agricultural, energy, financial and currency markets together with the wider macroeconomy, render agricultural markets much more vulnerable to external shocks.⁴ What made the 2007/08 price spike exceptional was the concurrence of so many of them, on the back of climatic disturbances to crop production around the world. For the world’s food insecure it became the perfect storm that resulted in more than 100 million additional people becoming poor and hungry, a global total now in excess of 1 billion people⁵.

II. KEY ISSUES

A. CLIMATE CHANGE

5. Climate related events are always a major source of risk for the agricultural sector – too much rain, too little rain, rain too early, rain too late. For the world’s poor farmers these risks are greater as they have few opportunities to reduce and/or manage their risk exposure through irrigation, insurance, access to appropriate improved seeds, fertilizers and pesticides. Climate change magnifies the threat to food security and livelihoods by increasing the frequency of climate hazards, diminishing agricultural yields and production in vulnerable regions, expanding health and sanitation risks, and increasing water scarcity. The potential for intensifying conflicts over even more scarce resources will likely lead to new humanitarian crises, as well as increasing urbanization, migration, and displacement (IPCC, 2007).

³ Open interest is the total number of future contracts for a particular commodity that have not yet been delivered or offset by the opposite position. Robles, M., M. Torero and J. Von Braun, 2009. When Speculation Matters, IFPRI.

⁴ At the onset of the surge, FAO’s Food Outlook identified a number of causes: low levels of cereal stocks; crop failures in major exporting countries; rapidly growing demand for agricultural commodities for bio-fuels; and rising oil prices. As the turmoil deepened, other reinforcing factors emerged; e.g., export restrictions, a weakening US Dollar and a growing appetite by speculators and index funds for wider commodity portfolio investment on the back of large global excess liquidity.

⁵ State of Food Insecurity 2009. FAO

6. Climate change will disrupt the balance in fragile ecosystems, acting as a stress multiplier, ultimately affecting the livelihoods, food security, and way of life of billions of people. Women, the key food crop farmers with the least access to better inputs and services, and children are likely to bear a disproportionate burden of climate change⁶.

7. Many countries are already confronted with the impacts of climate change including increasingly irregular, unpredictable rainfall patterns, increased incidence of storms and prolonged droughts (IPCC, 2007). According to the Centre for Research on the Epidemiology of Disasters (CRED), “In recent decades, the number of reported hydrological disasters has increased by 7.4 percent per year on average. Furthermore, we have witnessed a strengthening of the upward trend in recent years, with an average annual growth rate of 8.4 percent in the 2000 to 2007 period.” Water resources do not respect country boundaries, and as availability declines conflict and war can be the result. Between 1946 and 1999 close to thirty percent of international water related issues were conflictual (von Braun, 2009⁷).

8. In July and August 2010 abnormal levels of monsoon rain triggered massive flooding in the North West of Pakistan which moved south over time, flooding an area the size of Italy. The floods have so far killed more than 1500 people, affected close to 20 million, and destroyed hectares of crops. Estimates of the costs of crops losses range from US\$1 billion to close to US\$ 3 billion. Russia is experiencing the worst drought in decades, the hottest temperatures on record, and about 25% of the wheat harvest destroyed. It has imposed a wheat export ban, and given its 13% share of the global wheat trade, this has triggered a significant increase in wheat prices, to the highest level in 2 years. Devastating fires over large tracts of forested areas will contribute to a negative spiral of climate change. China has been impacted by more heavy rains, triggering landslides, and lives lost and devastated following similar events earlier this year. By 2015 the number of people affected by climate-related disasters is expected to reach 375 million per year (ISDR, 2008). By 2050 the risk of hunger is expected to increase by 10 to 20 percent while the number of malnourished children is expected to increase by 21 percent (or 24 million children) more than without climate change.⁸

9. The projected impacts of climate change are unevenly distributed geographically, with some of the most severe impacts affecting the most food insecure regions. Countries in the Southern hemisphere are expected to suffer the greatest share of the damage in the form of declining agricultural yields and greater frequency of extreme weather events (IPCC, 2007; FAO, 2009). Climatic fluctuations will be most pronounced in Sub-Saharan Africa and South Asia, the regions with the highest levels of chronic undernourishment and poverty (ISDR, 2008). One study of five key African food security crops – cassava, groundnut, maize, millet, and sorghum – showed that it is highly likely that yields of these crops, with the exception of cassava, will decline 7%, and there is a 5% likelihood that the decline could be as high as 27%. It appears that the more developed the agriculture system, the greater the impact - those with the highest yields showed the highest proportional declines⁹.

10. Africa alone hosts a total of more than 650 million people who are dependent on rain-fed agriculture in environments that are already affected by water scarcity and land degradation, which will be further accelerated by climate change. Two-thirds of the region’s arable land could be lost by 2025 (FAO, 2009) – and with that the livelihoods of millions of small farmers. By the end of this decade, climate change could cause significant decreases in crop yields in some rain-

⁶ Raworth (2008).

⁷ von Braun, J. 2009. *Threats to Security Related to Food, Agriculture, and Natural Resources – What to Do?* Paper presented at ‘Strategic Discussion Circle’ EADS, Berlin, March 26, 2009.

⁸ Parry et al (2009).

⁹ Schlenker and Lobell, 2010. *Robust Negative Impacts of Climate Change on African Agriculture*. Environmental Research Letters. 5 014010.

fed agricultural systems in Africa. Scarce environmental resources such as land and water, and increasing food insecurity trigger conflict. Many of the world's fragile states are in Sub-Saharan Africa and most of these would be classified as agriculture based according to the World Development Report 2008. Thus climate change, increasing food insecurity and conflict are likely to be intertwined in an increasingly downward spiral. Declines of 40 to 90 percent of grassland productivity in semi-arid and arid regions, high levels of desertification and soil salinization, and increasing water stress are expected in some areas in Asia, Sub-Saharan Africa and Latin America (IPCC, 2007).

11. Crop and animal productivity will not only suffer as a result of climate change impacts on land and water resources. Climate change will alter ecosystems including interactions between crops and pollinators and between crop pests and their natural enemies. The changing environmental conditions in terms of temperature and humidity will change the distribution, incidence and intensity of animal and plant pests and diseases. It will also result in the emergence of new pests.

12. Countries that experience drops in agricultural production will need to offset these declines by increasing food imports, increasing their vulnerability to food price shocks such as the recent food price crisis. Decreases in production, on average and during protracted episodes of climate stress, coupled with growing demand and growing competition over agricultural outputs, are likely to lead to price increases of the most important agricultural crops – rice, wheat, maize, and soybeans – of 25 to 150% by 2060 (Parry et al., 2009). Food price fluctuations, discussed later in the section on Price Volatility, already represent a systemic source of risk that is expected to increase with climate change (World Bank, 2010).

13. At the same time, local production declines will significantly impact the income opportunities and the purchasing power of developing countries. Worldwide, 36% of the total workforce – in Sub-Saharan Africa two-thirds – is employed in agriculture and depends on productivity growth within smallholder agriculture to improve their incomes and food security (FAO, 2009). Low-income countries with limited financial capacity to trade, high dependence on their own production to cover food requirements and high demand growth are hence likely to face difficulties in ensuring that their populations will have access to food that would be available on global markets (ibid.).

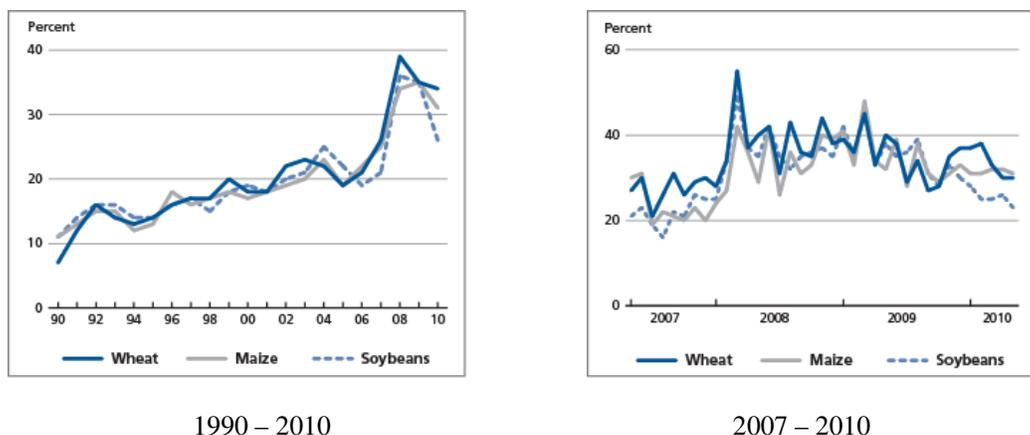
14. Climate change is also likely to affect the utilization of food. Decreasing availability of food and water, high food prices, as well as more frequent extreme events will increase malnutrition as well as sanitation and health risks. Diseases may spread into geographical areas where they have not previously been present. In turn this could initiate a vicious circle where infectious diseases, including water-borne diseases, cause or compound hunger, which, in turn, makes the affected population more susceptible to those diseases. Malnutrition and illness lead to declining labour productivity and incomes. Calorie availability in 2050 is likely to have declined relative to 2000 levels throughout the developing world: 24 million additional malnourished children, 21% more than today, are anticipated – almost half of them, 10 million, in Sub-Saharan Africa (Parry et al. 2009).

15. In summary, climate change multiplies existing threats and at the same time increases the vulnerability of individuals, communities and countries to food insecurity. Accelerated degradation of natural resources, coupled with more extreme weather events and growing food prices will further deplete the productive assets and income opportunities of the poor (World Bank, 2010). This reduces rural households' ability to produce or buy food as well as to recover from and build resilience to shocks, creating a downward spiral of eroding resilience.

B. PRICE VOLATILITY

16. For many of the major internationally traded food commodities volatility (implied)¹⁰ has been steadily creeping up over the past two decades. Such volatility now appears to be a more permanent feature in markets than was the case in the past. The persistence in implied volatility reflects the continued uncertainty in how market fundamentals and newfound forces shaping markets have unfolded and how they are likely to unfold.

Volatilities (implied)



17. While transmission of international prices to domestic markets can be impeded - by border measures, domestic price supports and infrastructure limitations - the increased openness of international agricultural trade together with liberalisation of domestic sectors, means that changes in world prices are, for the most part, being transmitted more rapidly and more fully to domestic markets. The level of trade and integration in world markets constitutes both the source and the solution to price volatility problems. Open trade regimes result in faster dissipation of market price shocks. For example, while a drought would increase domestic prices this is mitigated for consumers when imports quickly make up the shortfall. Similarly, in the event of a bumper harvest exports limit domestic price declines for farmers. However, when these events occur in a major exporting country, more integrated markets transmit domestic shocks to international markets, affecting prices in all countries. The current drought in Russia is a perfect example. The wheat harvest is expected to decline by 25%, with 10 million hectares of crops destroyed at a value of US\$1 billion. As a major wheat exporter this shock in Russia has led to a 42% surge in the global market price of wheat in July 2010 alone. Domestic price stabilisation policies, often operated in Asian rice economies, may now stabilize domestic markets at the expense of markets in other countries, as happened when export bans in major rice exporting countries were put into effect in 2007/08.

18. Food price volatility can trigger domestic security threats in many countries, and can result in the overthrow of governments. The doubling and tripling of some grain prices from 2006-2008 led to riots and protest in more than 60 countries (Zaman et al 2008¹¹).

¹⁰ Implied volatility represents the market's expectation of how much the price of a commodity is likely to move in the future. It is called "implied" because, by dealing with future events, it cannot be observed, and can only be inferred from the prices of derivative contracts such as *options*. The more divergent are traders' expectations about future prices, the higher the underlying uncertainty and hence the implied volatility of the underlying commodity.

¹¹ Zaman, H., Delgado, C., Mitchell, D., and Revenga, A. 2008. *Rising Food Prices: Are There Right Policy Choices?* Development Outreach, October 6-8.

19. Given the potentially rapid transmission of international price volatility to domestic markets, governments face significant challenges in terms of macroeconomic management, and political stability when consumers are hit by rising prices or farmers are hit by falling prices. But vulnerability to price volatility varies. When grain and fuel prices surge, the major impacts are felt in net food importing countries, often the poorest countries in the world. While the tendency is to believe the impact is worse on urban consumers than rural consumers, the reality is that most poor rural producers are net consumers and so are equally hurt by rising food prices. When food expenditure shares are above 50% and often as high as 70%, and particularly when consumption is focused on one staple such as rice in many parts of Asia, the poor have very little room to adjust their budgets.

20. On the other hand, when prices fall, producers in developed countries often have access to various support schemes including insurance and financial markets to buffer their falling incomes. Producers in developing countries may face significant income fluctuations, particularly when highly dependent on one commodity for their income, with little or no buffer from market mechanisms. Furthermore, the delay between production investment decisions and actual production creates risks for producers, who base decisions on a forecast of future prices, which they are unable to guarantee.

21. Commodity price volatility threatens farm viability (low prices), food security (high prices), undermines investment decisions, and threatens domestic security and political stability. It is no surprise that governments are increasingly concerned about what policies they should pursue to manage an increasingly unpredictable environment.

III. POLICY RECOMMENDATIONS

22. Two key approaches underpin risk and vulnerability management— reduce the risk that the shock will happen and put in place mechanisms that mitigate or cope with the shock in the event that it does.

A. RISK REDUCTION

23. Many opportunities exist to reduce the impact of shocks that people experience, including exposure to health and nutritional shocks. When food security is the focus, farming systems, crops, livestock and aquatic production, are key factors.

24. There are farming practices and systems that reduce climate induced risks but scaling up in the field requires enabling policies and institutions.

25. Even at farm level up front costs and income foregone during the transition phase requires proper assistance.

26. Generally speaking, diversification both within agriculture and into non agriculture activities, increases resilience at farm and local level.

27. Diversified rotations, including crop varieties and species with different thermal/temperature requirements, better water use efficiency and resistance to pest/disease, and lower yield variability are an effective way to reduce risks and increase efficiency. Responses to increased irregularity of rainfall patterns include expansion of irrigation as well as more efficient use of water, changes of crops or in practices such as sowing/planting dates, cover crop, mulch and conservation agriculture, and use of genetically enhanced, drought tolerant and/or water use efficient varieties.

28. To secure options for the future it is essential to characterise and preserve genetic resources, both animal and vegetal. They are the reservoir from which breeds and varieties that tolerate heat, drought, and pests can be used or developed to face climate change.

29. Improved varieties are needed to increase crop production and to cope with effects of climate change such as drought resistance, shortening of the growing season, increased incidences of pests and diseases. Plant breeding capacities should therefore be improved at the national and regional levels, and this requires the training of more plant breeders and the development of integrated national and regional support systems. Countries need to have policies and legislation to ensure effective development and transfer of adapted varieties, taking into account the needs of small holders. This includes the development of effective seed supply systems, including local seed enterprises, accompanied with a revitalization of the seed sector. Regional harmonization of seed rules and regulations is also important.

30. Improving weather information and downscaling projections on climate change are also key, including for the construction of index based insurances.

31. The establishment of institutions and monitoring systems for early detection and response action is essential to reduce the impact of pests and diseases on crop and livestock production. Programs of eradication of animal diseases have also proved successful, as the Global Rinderpest Eradication Program.

32. Enhancing diet's nutritional quality, especially of children and women, is also a major way to improve resistance to diseases. Preservation of diversified crops and varieties, some of which are naturally rich in various micronutrients is important in that respect. An essential element is the development of horticulture which gives new sources of income and provides for substantial sources of micronutrients. Development of livestock production, especially in Africa, would provide for new sources of iron, especially for women.

33. Pending the availability of good quality diets for the world's poor, micronutrient supplementation, such as the often country wide vitamin A supplement programs operated twice a year in most countries, can improve children's immunity to disease. An additional tool in reducing this risk is biofortification – breeding crops that have higher mineral content, a win – win. Seeds require trace minerals such as iron and zinc from the soils to be healthy, but the soils can be deficient. Breeding seeds containing these trace minerals make for healthier plants and healthier humans who eat the seeds produced. Public health messaging can address both under and over-nutrition reducing the health related risks associated with both conditions.

34. Communicable disease risks, which negatively impact nutritional status for children, can be reduced by immunization programs, such as for measles, diphtheria and polio.

B. SOCIAL PROTECTION AND SAFETY NETS

35. A comprehensive social protection strategy (SPS) is the other element of an extensive plan to address risk and vulnerability. An SPS is based on a complete identification of the various needs and risks to which people are exposed, the level of associated vulnerability for different population groups, and an identification of the different social protection instruments that can be used to reduce the vulnerability of people to shocks that do occur. An SPS can also help address the structural nature of poverty traps and chronic deprivation. While the instruments may be publicly provided or facilitated they are not always totally publically funded. Insurance instruments are often used within social protection strategies, often contributory depending on income level, to mitigate health shocks, unemployment and old age. As such these instruments also feature an element of redistribution where the wealthier are subsidizing the poorer by virtue of paying higher contributions. Other insurance options can be privately purchased on markets, such as weather-based or price-indexed insurance products in Ethiopia, Malawi and India¹².

¹² Vargas Hill, R., & Torero, M. (2009) "Innovations in Insuring the Poor". (Eds.) International Food Policy Research Institute (IFPRI): Washington DC.

36. Within a social protection strategy, safety nets mainly rely on non-contributory transfers and other interventions to improve access to food and basic essentials, for the poor and food insecure. In essence they are designed to ensure an entitlement to a minimum standard of living for people. Despite citizen's rights to food, for example, safety nets were believed to be a drain on public resources reducing the public budget for investment in productive activities including infrastructure, schools, hospitals etc. It is now increasingly recognized that, well implemented, they are productive investments protecting human capital and asset bases in times of stress. Safety net programs should be an integral part of a social protection strategy, and designed in a way that they can be scaled up in the event of crises, such as those recently experienced, and down as needed. Rapidly deploying a safety net in times of drought or other crises prevents people selling the assets they need to be productive when the crisis ends. It prevents farmers selling production assets such as livestock, farm implements etc and more importantly it protects household nutritional status, particularly pregnant and lactating women and children below 2 years of age. For children, from conception to 2 years of age is a critical nutritional window. It ostensibly determines a child's potential in life with poor nutrition or a nutritional shock in this period leaving a lifetime legacy of reduced opportunity¹³.

37. Numerous safety net instruments are available and selection and design should be sensitive to the context in which they are deployed. The choice of instrument depends on the objective of the program, market conditions, implementation capacity, expected impacts and cost efficiency, people's preference (often sensitive to gender, seasonality and location), and the beneficiaries entitled to the program¹⁴. For example, transfers in food are more appropriate in situations where market access is limited, or for the sick, elderly and disabled who may have more difficulty accessing markets. Food transfers may be more appropriate when special foods are needed, such as severely malnourished children or to address undernutrition associated with HIV infection and enhance Anti-Retroviral treatment adherence.

38. Public works programs are one commonly used instrument, paid in cash or in kind (food, vouchers). They not only provide income to workers but generate valuable community assets, often protecting or rehabilitating environmental assets – planting trees, building dykes and bunds to prevent water runoff and soil erosion, and feeder roads to improve market access to both buy food and sell farm produce. They are increasingly being used for activities related to climate change mitigation and adaptation. Public works programs may be less appropriate in areas of high untreated HIV prevalence, or in some post conflict zones with high levels of disability.

39. Public works programs are good illustrations of productive safety nets in that they also improve community assets. They often operate in the lean season but can also be linked to micro insurance programs such as weather based insurance that pays out in the event of a drought that potentially reduces employment and crop yields. This enables rural households to take on more risk and protect their farm livelihoods.

IV. PRICE VOLATILITY RESPONSE MEASURES

40. The policy challenge, both in the short- and long-run, is complex and multifaceted. Looking back at the 2007/08 crisis, countries responded through a spectrum of policies, but were largely unprepared resulting in ad hoc and short-term mechanisms. Countries maintaining food reserves used these to intervene directly in the market to stabilize domestic prices. Many food importing countries reduced import tariffs, while several surplus producing countries limited, or even banned, exports in order to avoid food shortages and further domestic price increases. The efficacy of some of these interventions has been called into question, especially given that India,

¹³ Alderman, H. & Hoddinott, J. (2009) "Growth-Promoting Social Safety Nets". In J. von Braun, R. Vargas Hill and R. Pandya-Lorch, eds. *The Poorest and Hungry. Assessments, Analyses, and Action*. IFPRI: Washington DC.

¹⁴ WFP (2008), "Vouchers and Cash Transfers as Food Assistance Instruments: Opportunities and Challenges" Rome.

Indonesia and China actually increased their reserves during the crisis as opposed to just stabilizing the market. For whatever actions governments consider taking, it is always important to keep in mind the full set of policy measures, the wider risks and possible responses for the targeted population. The following suggest that choosing appropriate policies requires a deeper understanding of the issues at stake:

41. At the national level:

- In spite of high operational costs, many governments increasingly view **buffer stocks**, both regional and domestic, reinforced by **trade policies**, as a solution to price volatility. Governments in Asia protected well over 2 billion of their domestic consumers through food reserves and export restrictions, but often harmed consumers in other importing Asian countries. However, this approach was less successful in Africa with multiple staples unlike rice dominated Asia.
- The experience with buffer stocks in Asia showed that frequent, discrete and largely unexpected interventions by Governments tended to increase uncertainty and to weaken the incentive for the private sector to engage in trade. This has negative implications for the development of an efficient food marketing system. Accordingly, there are compelling grounds to establish clear and transparent rules for the intervention of governments in these markets. Low income food importing countries could consider the possibility to keep relatively small **strategic reserves** for key staples, thus ensuring food security for the vulnerable while at the same time encouraging private sector development.
- The success in Asia may be regarded as a qualified one. For the implementation of **export bans** by major exporters rendered the international market more expensive and more unreliable as a source of food. The announcement of export bans without clarifying their duration, added more uncertainty to the international market. While the right of sovereign countries to enhance food security is not questioned, the more countries implementing export restrictions, the more world price instability will increase, potentially causing problems for those countries that do not resort to any stabilization policies. Again, more predictable and less discretionary policies on exports would convey clearer information and render panic and hoarding less likely thus resulting in less uncertainty.
- **Price support** for agricultural commodities is an option that has generally been shown in many countries and over several decades to be inefficient and its use has declined. Price support measures tend to mask market signals to producers and to destabilise world markets. They can also act as a regressive tax on the poor by raising prices to consumers. Such measures should be assessed against other less distorting alternatives, such as targeted direct income supports, investments in productivity enhancements, etc.
- **Self-sufficiency policies**, which **diversify** the food staple base against upheaval in global cereal markets, as opposed to fostering self sufficiency in a single commodity, as often practised in Asia, constitute a longer term option. If built on the premise of high competitiveness and high productivity, and strong connections with world markets are maintained, such policies can equip countries to shield food security objectives against international market turbulence.
- Mechanisms to encourage price discovery and tools for hedging of market risks by local agents, such as organised **commodity exchanges**, can be an effective long-term strategy. When regulated properly and with sufficient volumes attracted to avoid monopolistic practices, they have greatly facilitated commodity marketing in many developed and developing countries. However, in recent years, futures markets have witnessed the entry of a new class of traders that traditionally operate in financial markets. These investors, often called 'index-funds', have diversified into agriculture, since commodity returns are negatively correlated with returns to equities and bonds. The role of index funds in the recent price surge has been subject to intense debate,

with some suggesting that the amount of money invested in agricultural futures has distorted prices away from their fundamental value.

- Governments can empower **risk management strategies** of producers by focusing, *ex ante*, on those unpredictable and unavoidable risks that may be rare, but have large consequences, and which farmers cannot manage themselves. Support for market based insurance schemes, often weather linked to avoid moral hazard, and safety nets are some examples.

42. At the international level, the uncoordinated policy actions of governments during the 2007/08 price spike exacerbated volatility and impeded access to markets. Hence there is a need for an international framework of rules and disciplines to assure greater assurance of unimpeded access to global supplies and improve confidence in market functioning. For example:

- International food import schemes, such as **food import financing guarantees**, or systematically hedging import costs on futures and options markets may be effective in reducing the unpredictability of food import bills.
- The same concerns about buffer stocks, especially in their operation, arise for what has been termed “**virtual stocks**” which are designed to alter the fundamentals of the futures rather than the cash markets. Any attempt to publicly influence the prices in futures markets might become extremely expensive and could lead to a withdrawal of the agents who use the futures markets for hedging purposes, thus rendering futures market purely speculative.
- A system of timely advance notice of agricultural **trade policy measures** affecting the supply of agricultural exports and the demand for imports, and possible disciplines on such measures, may foster greater predictability in securing food.¹⁵
- **Multilateral or regional agreements** among major exporters and major importers to assure normal flow of supplies during crises and a reliable system of assurance of supplies for the most vulnerable countries, can promote greater dependability in international markets.
- An enhanced system of **global market information**, in particular more accurate and timely information on national stocks of commodities, especially those held by major exporters, may ensure that prices reflect their fundamental value.

43. It is evident that policy choices and policy coordination have important implications for shaping a more stable market environment, for instilling greater confidence, predictability and assurance in markets, and for guaranteeing access to food by low income developing countries.

V. FOOD RESERVES

44. Among other policy responses, the price surge has led a number of countries in Africa to resort to buffer stock operations in order to lower the domestic prices of maize, in an effort to protect their consumers’ right to food. In Asia, where most major rice producers intervene in the domestic markets, price stabilization was achieved more through export restrictions than using their food reserve operations. Nevertheless, high food prices in conjunction with export bans imposed by important exporters or traditional trade partners have led many governments and international institutions to reconsider the role of food reserves in price stabilization and food security.

45. Price stabilization through buffer stocks rests on the presumption that private sector storage is inadequate, as volatile prices render stockholding very risky, or in some cases is used to

¹⁵ The current Agreement on Agriculture in the WTO does not prevent governments from reducing or banning exports.

address the political risk associated with rising staple food prices. The latter is a particular concern in rice dominated Asia. Missing or incomplete storage, insurance, and futures markets may justify direct market government intervention. Although this may be true for most developing countries, in developed countries the presence of well-functioning futures markets makes private stockholding relatively riskless and public food reserves unnecessary.

46. In times of price surges, direct intervention through food reserves management can rein in food price increases, reflecting a food price subsidy which benefits all consumers. In the long run, price stabilization also benefits producers. Reduced volatility can enhance investment in agriculture and thus can increase production and incomes. Nevertheless, public food reserve management faces a number of important difficulties. First, the price level at which stabilization may take place may change over time and it is difficult to foresee whether changes are permanent or transitory. Second, the government may lack the financial resources to keep the price within range. Finally, intervening in the market through food reserves requires information, analytical capacity and places significant demands on the governments' management skills. Even where these problems are addressed and public institutions work well - at least in attaining price stabilization goals - it has been argued that state-run markets are an inefficient, costly alternative.

47. During the recent price episode a number of countries resorted to food reserve management in order to lower domestic food prices, attempting to contain food price increases through a combination of import programmes, domestic food procurement and the subsequent release of food into the market at affordable prices.¹⁶ In most cases, such direct market interventions were unsuccessful. The cost of such operations is significant and may also escalate in line with increases in prices. In general, food commodity prices are characterized by a long negative trend punctuated by sharp peaks. This implies that food reserves are an expensive instrument to manage the market, as food stocks have to be held for long periods of time. At the same time, food reserves may be unsuccessful during price spikes if these arise due to low private stocks.

48. Food reserve management can also have unintended negative effects on domestic markets. Public stocks may displace private ones, resulting in the food reserve authority carrying most of the stock the private sector would have held. For example, in East and Southern Africa, food reserve authorities have considerable market power which can affect market participants. Often largely unexpected changes in food reserve management, such as abrupt changes in the pre-determined price level, make private stockholding risky and result in a lack of trust between the public and private sectors. This increases the fragility of the marketing system and has negative consequences for the development of the private sector in the long run.

49. The experience of the recent food price surge provides an opportunity, especially for food importing countries, to reassess the relative reliance on trade and stocks, taking into account the role of the private sector. Food reserves may be viewed as an integral part of policies towards food security especially during price booms and slumps, when the imposition of export bans by others may significantly limit possibilities for imports. Nevertheless, carrying large food reserves is costly and often economically inefficient. A balance is required between trade and stocks as a means of smoothing prices and consumption during domestic or external shocks. A number of measures can result in more effective market management, while assisting in shaping well functioning markets.

- The possibility of governments keeping relatively smaller strategic food reserves aiming at targeting vulnerable population groups, rather than managing the market should be assessed. Strategic food reserves can assure food security while encouraging

¹⁶ A number of countries in East and Southern Africa implemented price stabilization policies through marketing boards. In Kenya, the National Cereals and Produce Board (NCPB) is involved in imports, procurement of domestically produced maize and inventory management. In Malawi and Zambia, the Agricultural Development and Marketing Corporation (ADMARC) and the Food Reserve Agency (FRA) respectively maintain a strong presence in the market.

the private sector to develop. The possibility of holding a combination of food and financial reserves in order to minimize costs should also be examined.

- The establishment of clear and transparent rules for the intervention of governments in the market in terms of price bands (e.g. consumer price ceilings), can provide clear indications to the market participants on when the government will intervene.
- Increases of analytical capacity and improvements in market information systems are also necessary. Greater consultation and better coordination between the government and the private sector in terms of market assessment and the provision of information can enhance the effectiveness of food reserve management.

50. At the international level, policy options to stabilize prices are limited. The complex mechanisms by which world market price surges arise and the individual country reactions render international interventions difficult. International stock management schemes, such as those characterizing the International Commodity Agreements, require continuing commitment and are vulnerable to changing market conditions. Indeed, the experience of international food reserves has not been promising. As one example, the ASEAN Food Security Reserve, established in 1980 with an initial stock of 50,000 tonnes of rice, has been used infrequently, if at all. Moreover, the quantities in the Reserve are very small and would only be sufficient to deal with localized shocks. Thus, it appears that collective action problems have prevented this Reserve from becoming an important component of food security systems in the region. Establishment of a larger scheme, by extending to more countries or holding higher levels of stocks would likely encounter even larger collective action problems, especially in financing - the reason which most of the International Commodity Agreements have collapsed.

51. In general, market regulation policies at national and international levels based on global or regional buffer stocks cannot prevent price spikes. In addition, with the exception of the most well-financed intervention activities, they may be unsuccessful in managing the market during a price surge. The experience with public buffer stocks suggests that, often, such interventions have been disruptive rather than stabilizing. Given the current state of knowledge about markets and previous experiences with collective action problems, it is not likely that such initiatives present practical solutions on a multilateral basis.