

Food Price Watch



THE WORLD BANK



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Global food prices have increased by 8% in the last four months, since December 2011, and in March 2012 were only 6% below their February 2011 historical peak. All key food prices have increased, except for rice. Volatile international oil prices, adverse weather conditions, Asia's strong demand for food imports, and the persistent European financial crisis have contributed to this increasing, notwithstanding the projected bumper harvests of rice and coarse grains and the corresponding increase in ending food stocks. Domestic prices remain high in many parts of the world, with the magnitude of increases typically exceeding price declines across countries. If the current production forecasts for 2012/13 do not materialize, global food prices could reach higher levels, underscoring the need to remain vigilant and improve the monitoring of early signals of global and regional crises.

Global Price Trends

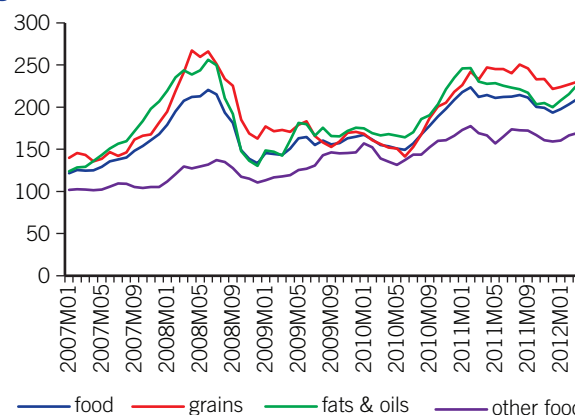
After four months of consecutive price declines, the World Bank's Food Price Index increased by 8% from December 2011 to March 2012. The price indices of grains, fats and oils, and other foods all increased in each month since January 2012 (figure 1). Fats and oils increased the most, with a quarterly increase of 13%, followed by an increase of 6% in the global price of other foods and 4% in the price of grains. The fertilizer index remained almost unchanged in the recent quarter, halting the strong decline observed during the last quarter of 2011 (table 1).

The prices of all key staples increased, except for rice. Maize prices increased by 9%, soybean oil by 7%, wheat (U.S. HRW) by 6%, and sugar (world) by 5%. These price variations were the largest increases observed since June and July of 2011. The price of rice (Thai, 5%) declined in the same period by 6%, adding to the price decline of 2% observed in the fourth quarter of 2011. Both abundant supply and strong competition among exporters have caused the international price of rice to decline.

Global food prices remain high, and only 6% below their February 2011 historical peak. The price of grains is

only 5% lower than in February 2011, fats and oils 8% lower, and other foods 5% lower. With respect to March 2011—that is, the yearly variation—prices remain only 1% below their levels 12 months ago (1% lower for grains, 2% for fats and oils, and 0% for other foods). Despite this tick in year-on-year prices, the sustained increase in the recent

Figure 1. World Bank Food Price Index



Source: World Bank, DECPG.

Note: The Food Price Index weighs export prices of a variety of food commodities around the world in nominal U.S. dollar prices, 2005 = 100.

Table 1. Price Change of Key Food Commodities

Indices	Dec 2011– Mar 2012 (%)	Feb 2011– March 2012 (%)	Mar 2011– Feb 2012 (%)
Food	8	-6	-1
Fats and oil	13	-8	-2
Grains	4	-5	-1
Other	6	-5	0
Fertilizer	-1	13	16
Prices			
Maize	9	-4	-3
Rice (Thai, 5%)	-6	5	11
Wheat (US HRW)	6	-18	-10
Sugar (world)	5	-18	-8
Soybean oil	7	-6	-2
Crude oil, avg.	13	20	8

Source: World Bank, DECPG.

quarter after a period of sustained decreases underscores the volatility of food prices.

The price of crude oil has also increased steadily since December 2011, after six months of volatile movements. Prices of oil affect food prices through their effects on the prices of fertilizers, transportation costs, and incentives for the diversion of food production into biofuels.¹ The price of a barrel of crude oil averaged US\$117 in March, 13% higher than its average in December 2011, and 8% higher than a year ago in March 2011. Uncertainty over supply conditions explains most of the oil price increase. Geopolitical tensions have limited supplies from South Sudan, the Syrian Arab Republic, and the Republic of Yemen.² The announced EU embargo and U.S. sanctions on companies dealing with Iranian banks will be implemented in July this year, putting pressure on European and Asian buyers to identify alternative sources of oil. It is expected that sanctions could reduce Iranian oil exports up to 1 million barrels per day.³ Nonetheless, it is hard to predict at this point the extent and persistence of those increases, although experts consider that crude oil supply disruptions typically cause a rather small and mostly transitory increase in the real price of oil (different from larger and more persistent increases in world prices from both precautionary and actual demand increases from a strong world economy).⁴

Factors other than turbulent oil markets have also contributed to the increase in food commodities' prices.

Weather conditions have affected key exporters; extreme cold in Europe, the Russian Federation, and other countries from the Commonwealth of Independent States (CIS) has had an impact on wheat prices,⁵ while excessively hot and dry conditions in South America—especially in Brazil⁶—have contributed to price increases for sugar, maize, and soybeans. The unseasonably dry conditions in the southwest of the United States has also affected cereal prices.⁷ A weaker U.S. dollar vis-à-vis major currencies, lower freight prices, and strong demands from Asian importers (especially for maize) have all bolstered import demand and put upward pressure on prices. Seasonal factors have also contributed to price increases, because the main winter cereal

crops in the northern hemisphere and the main summer season crop in the southern hemisphere do not begin until March–April.⁸

A number of other factors have kept upward pressures on prices at bay. Should these factors stick for a while, they might prevent a continued food price upsurge. The slowdown in maize use for ethanol production in the United States (unchanged for 2011/12 after years of double-digit annual growth⁹) and downward pressures from weak global demand due to the persistent euro crisis are factors keeping upward price pressures under control. **Record prices in late 2010 and early 2011 led to increased production of major crops worldwide**, and are a key factor in the strong projections for the 2012/13 season. The Food and Agriculture Organization (FAO) projects an increase of 4% in world cereal production between 2010/11 and 2011/2012, while the Agricultural Market Information System (AMIS) forecasts a global 1.9% increase in cereal production into the 2012/13 season.¹⁰

Maize production prospects in China have improved, and Brazil's planted maize area for the second growing season is also anticipated to exceed that of previous years. This is also the case for India and Pakistan's rice crops, with new record highs expected for April 2012 rice and wheat crops. A large spring harvest is also expected in Vietnam.¹¹ However, large purchases of rice by China and Nigeria and the government of Thailand's recent extension of its rice price support scheme have led to a slight increase in the

export price of Thai rice between February and March 2012.¹² Winter wheat planting in Russia and the United States is also expected to increase,¹³ but declines forecasted for production in Australia and the Black Sea region may lead to a 1.4% decline in world wheat production in 2011/12.¹⁴ The U.S. Department of Agriculture (USDA) and the FAO have recently forecast increases in the ending stocks of wheat¹⁵ and rice and a decline in the stocks of maize for 2011/12.¹⁶ Altogether, these changes are expected to increase the stock-to-use ratio of all cereals to 22.1 percent, up from 21.7 percent in 2010/2011.¹⁷

Domestic prices remain high, especially in Africa. In countries with large food imports, higher global food prices get passed through to domestic prices. But local and regional factors are also in play in many countries. Specific factors such as trade restrictions between Sudan and South Sudan; farmers and traders hoarding stocks in anticipation of higher prices in Ethiopia and Nigeria; and civil unrest in northern Mali and northeastern Nigeria along with high fuel and transportation costs and weather conditions have all contributed to maintaining high domestic food prices.¹⁸ However, notwithstanding their high levels, factors such as the lifting of the export ban in Tanzania; the resumption of trade flows between Nigeria and the Sahel; and good weather conditions in Central Asia have kept downward pressures on prices in some domestic and neighboring markets.

Price increases in domestic markets have been substantial when they occur, and have been larger than price declines across countries. Wheat price increases between March 2011 and March 2012 (table 2) reached 92% in Belarus and 56% in Moldova, while they declined by 30% in El Salvador, 19% in Kyrgyzstan, and 16% in South Africa. The price of maize rose by 82% in Malawi, 80% in Ethiopia, and 71% in Mexico. The largest maize declines occurred in Honduras (31%), Somalia (20%), and El Salvador (19%). Rice prices in the same period rose by 125% in Uganda, 54% in Tanzania, and 38% in Rwanda. In turn, Bolivia saw its rice prices decline by a more modest 21% and Bangladesh's declined by 18%. Similarly, from December 2011 to February 2012, there were larger price increases (than price declines) for maize and rice, as reported in table 2.

Toward a New Crisis?

In addition to the three months of consecutive increases of global food prices and high domestic prices in many

countries, food security alerts and above-average assistance projections have been issued recently in parts of East and West Africa.¹⁹ **This evidence paints a gloomy picture, but are we heading toward a new global food crisis?** Production outlooks remain strong for 2012/13, but to answer this question, we need a clear definition of what constitutes a global food crisis. Unfortunately, that definition is elusive, and coming up with a consensus remains a challenge (box 1). Consequently, there is no generally accepted, comprehensive mechanism to identify the onset of a global food crisis. This is not a purely academic exercise, because the lack of consensus may affect the timing and the nature of responses and, ultimately, impacts of the crisis. For example, adequate responses may well differ in situations of severe transitory food insecurity compared to those of chronic hunger, or in predictable and cyclical situations compared to those of unpredictable or unseasonal shocks affecting food security.²⁰

To address this gap, the World Bank is currently developing a **monitoring framework** that defines, identifies, and monitors food price crises at both global and national levels. This framework focuses on global prices and does not directly include other factors that are also relevant from a point of view of global food security crises (such as food access, distribution, and regional and country-specific vulnerabilities). In fact, rather than developing a conceptual definition of crisis as those reported in box 1, the exercise seeks an operational definition, or indicator, that will monitor how close global food prices are from a level considered at crisis. In concrete, to choose that indicator, the analysis compares the capacity of a number of triggers for global food prices to predict the global price hikes of June 2008 and February 2011. The analysis then compares when those triggers would have sounded an alert about the crisis (that is, how early with respect to the crisis peak), and how long the alerts would have been active. The best performing trigger (see box 2) is then used to monitor where current global prices stand with respect to the selected crisis threshold.²¹

Based on the best performing trigger (the 3SD criterion), figure 2 shows that the detrended Global Food Price Index in March 2012 is still below the crisis threshold. However, current high food prices are not far from the high global food price levels observed in 2008 and 2011, stressing the need to remain vigilant.

Table 2. Domestic Price Movements

Quarterly Price Movements: December 2011 – February 2012			
Wheat	% change	Maize	% change
Dem. Rep. of Congo, Kinshasa, wheat (flour), retail (franc Congolais/kg)	16	Malawi, Mzimba, maize, retail (kwacha/kg)	74
Bangladesh, Dhaka, wheat (flour), retail (taka/kg)	10	United Republic of Tanzania, Dar es Salaam, maize, wholesale (US\$/ton)	31
India, Delhi, wheat, retail (Indian rupee/kg)	6	Ukraine, natl. average, maize (bid EXW processing), wholesale (hryvnia/ton)	19
Ukraine, natl. average, wheat, 3rd class (bis EXW, processing), wholesale (hryvnia/ton)	5	Honduras, San Pedro Sula, maize (white), wholesale (US\$/kg)	11
El Salvador, San Salvador, wheat (flour), retail (US\$/kg)	-13	Costa Rica, natl. average, maize (white), wholesale (US\$/kg)	-15
Sudan, Khartoum, wheat, wholesale (Sudanese pound/local)	-12	Panama, Panama City, maize, retail (Balboa/kg)	-14
Georgia, natl. average, wheat (flour), retail (Lari/kg)	-6	Kenya, Nairobi, maize, wholesale (US\$/ton)	-12
Rice	% change	Sorghum	% change
United Republic of Tanzania, Dar es Salaam, rice, wholesale (US\$/ton)	34	Haiti, Port-au-Prince, sorghum, retail (gourde/local)	24
Uganda, Kampala, rice, wholesale (US\$/kg)	19	Sudan, Khartoum, sorghum (feterita), wholesale (Sudanese pound/local)	18
Nicaragua, Managua, rice (3rd quality), wholesale (cordoba oro/kg)	11	Ethiopia, Addis Ababa, sorghum (white), wholesale (Ethiopian birr/local)	4
Pakistan, Karachi, rice (basmati), retail (Pakistan rupee/kg)	8	Somalia, Baidoa, sorghum (red), retail (Somali shilling/kg)	-46
Cambodia, Phnom Penh, rice (mix), wholesale (riel/kg)	-18	El Salvador, San Salvador, sorghum (Maicillo), wholesale (US\$/kg)	-21
Somalia, Mogadishu, rice (imported), retail (Somali shilling/kg)	-14	Togo, Lomé, sorghum, retail (CFA franc/kg)	-5
Dem. Rep. of Congo, Kinshasa, rice (imported), retail (franc Congolais/kg)	-11		
Annual Price Movements: February 2011–February 2012			
Wheat	% change	Maize	% change
Belarus, national average, wheat (flour), retail (Belarussian ruble/kg)	92	Malawi, Mzuzu, maize, retail (kwacha/kg)	82
Moldova, Chisinau, wheat (flour), retail (Moldovan leu/kg)	56	Ethiopia, Addis Ababa, maize, wholesale (Ethiopian birr/local)	80
Ethiopia, Addis Ababa, wheat (white), wholesale (Ethiopian birr/local)	22	Mexico, Guadalajara, maize (white), wholesale (Mexican peso/kg)	71
Dem. Rep. of Congo, Kinshasa, wheat (flour), retail (franc congolais/kg)	19	Kenya, Kisumu, maize, wholesale (US\$/ton)	66
Bhutan, Trashigang, wheat (flour), retail (ngultrum/kg)	19	South Africa, Randfontein, maize (white), wholesale (rand/ton)	53
Bolivia, La Paz, wheat flour, wholesale (boliviano/kg)	10	Rwanda, Kigali, maize, wholesale (US\$/ton)	49
Cape Verde, Santiago, wheat (flour, imported), retail (escudo/kg)	10	United Republic of Tanzania, Dar es Salaam, maize, wholesale (US\$/ton)	39
El Salvador, San Salvador, wheat (flour), retail (US\$/kg)	-30	Panama, Panama City, maize, retail (balboa/kg)	32
Kyrgyzstan, Bishkek, wheat flour (1st grade), retail (Som/kg)	-19	Honduras, San Pedro Sula, maize (white), wholesale (US\$/kg)	-31
South Africa, Randfontein, wheat, wholesale (rand/ton)	-16	Somalia, Mogadishu, maize (white), retail (Somali shilling/kg)	-20
Georgia, national average, wheat (flour), retail (lari/kg)	-11	El Salvador, San Salvador, maize (white), wholesale (US\$/kg)	-19
Ukraine, natl. average, wheat, 3rd class (bis EXW, processing), wholesale (hryvnia/ton)	-9	Togo, Lomé, maize (white), retail (CFA Franc /Kg)	-12
Rice	% change	Sorghum	% change
Uganda, Kampala, rice, wholesale (US\$/kg)	125	Sudan, Khartoum, sorghum (feterita), wholesale (Sudanese pound/local)	102
United Republic of Tanzania, Dar es Salaam, rice, wholesale (US\$/ton)	54	Ethiopia, Addis Ababa, sorghum (white), wholesale (Ethiopian birr/local)	82
Rwanda, Kigali, rice, wholesale (US\$/ton)	38	Burkina Faso, Ouagadougou, sorghum (local), wholesale (CFA franc/local)	35
Pakistan, Karachi, rice (basmati), retail (Pakistan rupee/kg)	26	Haiti, Port-au-Prince, sorghum, retail (gourde/local)	24
Mali, Bamako, rice (local), wholesale (CFA franc/local)	25	Niger, Niamey, sorghum (local), wholesale (CFA franc/local)	15
Indonesia, natl. average, rice, retail (rupiah/kg)	15	Somalia, Baidoa, sorghum (red), retail (Somali shilling/kg)	-72
Bolivia, Cochabamba, rice (grano de oro), wholesale (boliviano/kg)	-21	El Salvador, San Salvador, sorghum (Maicillo), wholesale (US\$/kg)	-11
Bangladesh, Dhaka, rice (coarse), retail (taka/kg)	-18	Togo, Lomé, sorghum, retail (CFA franc/kg)	-7
Haiti, Port-au-Prince, rice (imported), retail (gourde/local)	-14		
Dem. Rep. of Congo, Kinshasa, rice (imported), retail (franc Congolais/kg)	-9		

Source: FAO, Global Information and Early Warning System (GIEWS).

Box 1. Defining a Global Food Crisis

Although the concept of food insecurity is widely acknowledged as a situation in which not all people, at all times, have physical and economic access to sufficient, safe, and nutritious food for a healthy and active life,^a there is no similar definition of what constitutes a global food crisis. For example, the **World Bank's** framework for crisis responses does not differentiate between "crises" or "emergencies"^b and specifically uses the term "disaster" to refer to "an event that has caused, or is likely to imminently cause, a major adverse economic and/or social impact associated with natural or man-made crises or disasters."^c Nor does the **World Food Program** talk about "food crisis": it speaks of "emergency," defined as urgent situations in which there is clear evidence that an event or series of events has occurred that causes human suffering or imminently threatens human lives or livelihoods and for which the government does not have the means to remedy. "Emergency" is also described as a demonstrably abnormal event or series of events that produces dislocation in the life of a community on an exceptional scale.^e **FAO-GIEWS** (Global Information and Early Warning System) does not have a definition for "food crisis" either, but does identify three factors by which to determine whether a region is in a food crisis situation: (i) lack of food availability; (ii) limited access to food; and (iii) severe but localized problems.^f The **Integrated Food Security Phase Classification (IPC)** defines at the national and subnational level an "acute food and livelihood crisis" as: "Highly stressed and critical lack of food access with high and above usual malnutrition and accelerated depletion of livelihood assets that, if continued, will slide the population into Phase 4 [(i.e. Humanitarian Emergency)] or 5 [(i.e. Famine/ Humanitarian Catastrophe)] and/or likely result in chronic poverty."^g To determine the level of food insecurity in a given country, the IPC uses indicators such as crude mortality rate, acute malnutrition, stunting, food access/availability, dietary diversity, water access/availability, hazards, civil security, livelihood assets, and structural factors.

Source: J. Cuesta, A. Htenas, and S. Tiwari, *A Global Food Price Monitoring Framework for Rapid Response*, forthcoming.

a. "World Food Summit Plan of Action," 1996, <http://www.fao.org/docrep/003/w3613e/w3613e00.htm>.

b. "Framework Document for Proposed Loans, Credits, and Grants in the Amount of US\$1.2 Billion Equivalent for a Global Food Crisis Response Program," June 26, 2008, http://imagebank.worldbank.org/serlet/WDSContentServer/IW3P/IB/2008/06/30/000333038_20080630001046/Rendered/PDF/438410BR0REVIS10and01DAR20081016212.pdf.

c. World Bank Operations Policy 8.00, Rapid Response to Crises and Emergencies, <http://web.worldbank.org/WBSITE/EXTERNAL/PROJECTS/EXTPOLICIES/EXTOPMANUAL/0,,contentMDK21238942~menuPK4564185~pagePK64709096~piPK64709108~theSitePK502184,00.html>.

d. In contrast, "chronic food insecurity" is a "long-term or persistent inability to meet minimum food consumption requirements (FAO/WFP "Joint Guidelines for Crop and Food Security Assessment Missions [CFSAMs], January 2009).

e. "Definition of Emergencies," WFP/EB.1/2005/4-A, <http://documents.wfp.org/stellent/groups/public/documents/communications/wfp228800.pdf>.

f. FAO, *Crop Prospects and Food Situation*, No. 4, December 2011, <http://www.fao.org/docrep/014/al983e/al983e00.pdf>.

g. The IPC was originally developed in Somalia under the FAO Food Security Analysis Unit (FSAU) and by a multiagency partnership of eight major United Nations agencies and international nongovernmental organizations (*IPC in Brief*, http://www.ipcinfo.org/attachments/02_IPCBrief_EN.pdf).

Notes

1. Evidence from the World Bank also shows that the links between crude oil and agricultural markets have considerably strengthened since 2005, with the pass-through elasticity from crude oil prices to agricultural prices increasing from 0.22 for the pre-2005 period to 0.28 through 2009 (J. Baffes, "More on the Energy/Nonenergy Price Link," *Applied Economics Letters* 17: 1555–58 [2010]).

2. In addition, technical problems such as the halting of oil production due to a gas leak in late March at a platform in the North Sea and concerns over the long-term prospects for exploration in the region have also contributed to a tightening of the oil supply (B. Faucon, and S. Kent, "North Sea Oil Shock Keeps Fire Under Brent Price," April 9, 2012, http://online.wsj.com/article/SB10001424052702303299604577325023354407222.html?mod=rss_industry_energy).

3. *Commodity Markets Review*, World Bank Development

Prospects Group, Number 122, April 10, 2012, <http://www.worldbank.org/prospects/commodities>.

4. World Bank, "A Regional Economic Update, Middle East and North Africa Region" (2012); E. Ianchovichina, J. Loening, and C. Wood, "How Vulnerable Are Arab Countries to Global Food Price Shocks?" Policy Research Working Paper 6018, World Bank (2012); L. Kilian, "Not All Oil Price Shocks Are Alike: Disentangling Demand and Supply Shocks in the Crude Oil Market," *American Economic Review* 99(3): 1053–69 (2009).

5. FAO, "World Food Situation: FAO Cereal Supply and Demand Brief," March 8, 2012, <http://www.fao.org/worldfoodsituation/wfs-home/csdb/en/>.

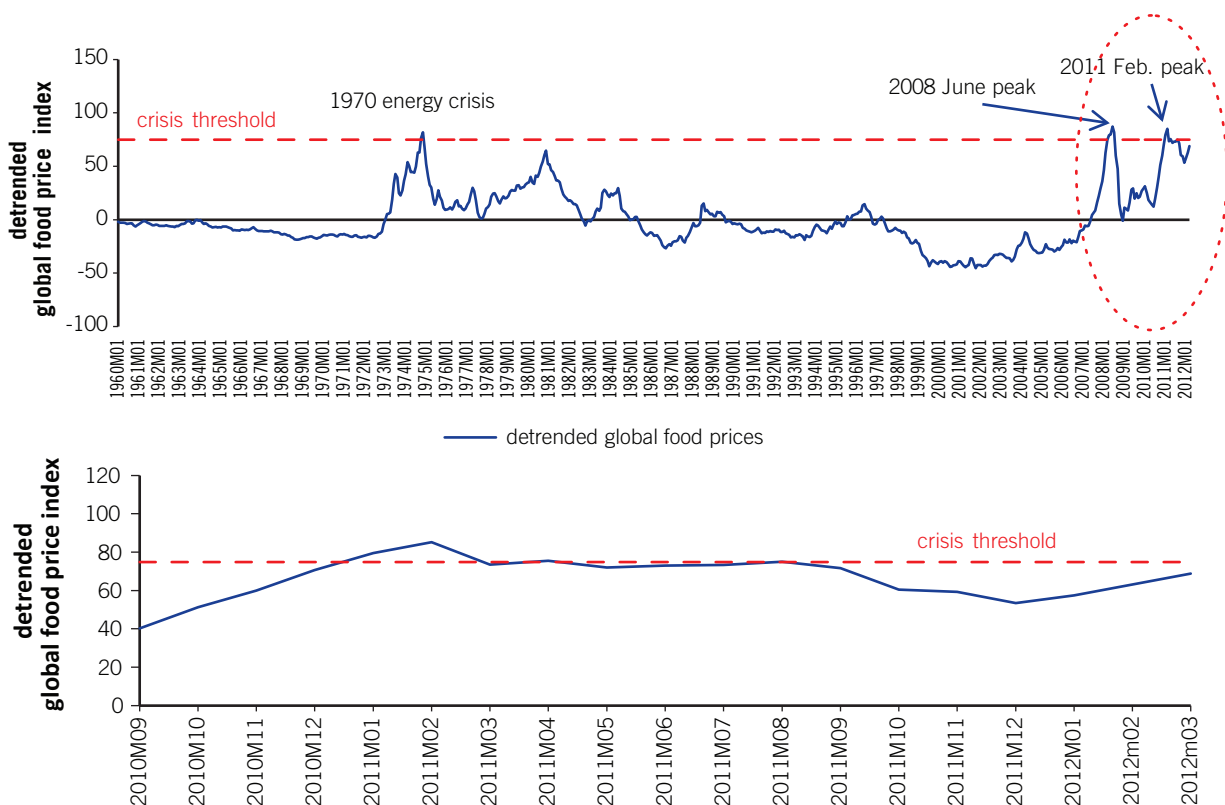
6. FEWS NET (Famine Early Warning System Network), Price Watch: February Food Prices, March 30, 2012.

7. FAO, *Crop Prospects and Food Situation*, No.1, March 2012.

8. FAO, *Crop Prospects*.

Source: FAO, GIEWS.

Figure 2. Global Food Prices and the Crisis Threshold (1960-2012)



Source: J. Cuesta, A. Htenas, and S. Tiwari, *A Global Food Price Monitoring Framework for Rapid Response*, forthcoming.

9. FAO, Food Outlook, Global Market Analysis, April 2011. Furthermore, the USDA World Agricultural Supply and Demand Estimates (WASDE-505, April 10, 2012) reports that ethanol production during February and March has fallen.

10. FAO, *Crop Prospects*; AMIS, “Current Market Situation and Outlook,” presented by A. Abbassian, AMIS Secretary, at the AMIS First Meeting of the Rapid Response Forum, Mexico City, April 11, 2012.

11. FEWS NET, *Price Watch*.

12. FAO, “Food Prices Remain Nearly Unchanged in March,” FAO Media Centre, April 5, 2012.

13. USDA, WASDE-504, April 10, 2012; FEWS NET, *Price Watch*.

14. FAO, *Crop Prospects*.

15. However, USDA revised downward its previous estimates for the 2012 ending stocks in its April WASDE report.

16. AMIS also reports that these ending stocks will increase in 2012/13 by 6% for all grains (8.8% for wheat, 1.6% for

coarse grains, and 7.8% for rice [AMIS, “Current Market Situation and Outlook”]).

17. By commodity, the world stock-to-use ratio for wheat is expected to increase from 27.4% in 2010/11 to 29.1% in 2011/12, and decline from 29.9% to 22.1% for rice and from 15.0% to 14.2% for coarse grains (FAO, “Food Prices Remain Nearly Unchanged in March”).

18. Other specific causes refer to appreciation of the rand in South Africa, pest attacks in Chad, and the shortage of fertilizers in Kenya (FEWS NET, *Price Watch*).

19. FEWS NET (“East Asia Food Security Alert,” April 6, 2012, and March 27, 2012) reports food crisis alerts in parts of Ethiopia, Somalia, Mauritania, Mali, Burkina Faso, and Niger. The U.S. Agency for International Development (USAID, Food Assistance Outlook Brief, February 2012) projects above-average assistance needs for August 2012 in Burkina Faso, Djibouti, Ethiopia, Kenya, Mali, Mauritania, Somalia, Sudan, and South Sudan. After a devastating drought and crop failure led to food insecurity and malnutrition for many children in 2005, 2008 and 2010,

Box 2. Monitoring Global Food Prices

The comparison of food price indicators in the table below shows that the trigger of 3 standard deviations (SD) around the mean of the detrended historical series from 1960 to 2007 is the best performer.²² This trigger is capable of identifying the two periods of sharp food price spikes in 2008 and 2011. It produces short periods of alerts, close to the global peaks. For the period analyzed, January 2000–December 2011, the monitoring system would have been triggered about 6 percent of the time on account of global food prices, or 9 months out of 144 months between January 2000 and December 2011 (table). The analysis of other indicators shows that they are not very discriminating or fail to predict the global peaks.

Table. Incidence of Food Price Alerts, 2000–2011

Indicator	World Bank Food Price Index			
	Beyond 75% of the 2008 Global Food Price Index peak	5 consecutive months of price increases	15% price increase in 5 consecutive months	3 SD from 1960–2007 mean
Is the indicator's trigger able to identify the:				
...2008 June peak?	Yes	Yes	No	Yes
... 2011 February peak?	Yes	Yes	Yes	Yes
How soon would it have identified the:				
... 2008 crisis?	Oct 2006	Aug 2007	Nov 2007	Mar 2008
...2011 crisis?	Oct 2006 ^a	Nov 2010	Nov 2010	Jan 2011
Length of alert, in # of months,				
... in 2008	63	11	7	4
... in 2011	63 ^a	4	4	5

Source: J. Cuesta, A. Htenas and S. Tiwari, *A Global Food Price Monitoring Framework for Rapid Response*, forthcoming.
a. This trigger would have prompted an alert in October 2006 that would have persisted until 2011.

this time hunger is affecting about 10 million people and threatening to put more than 1 million children into a state of severe malnourishment, according to the United Nations Office for the Coordination of Humanitarian Affairs. Mauritania is structurally food insecure and drought prone, but this year, 700,000 Mauritians are facing hunger, which is triple the number in 2010, or one in four people in rural areas, according to the government Commissariat de la Sécurité Alimentaire and the World Food Programme. Across the region, in parts of Senegal, Burkina Faso, Niger and Chad, people are beginning to run out of food. In some villages in southern Mauritania, the driest months of the year are only just approaching (<http://www.irinnews.org/Report/95198/MAURITANIA-Nothing-left-but-dust-and-sand>).

20. S. Devereux, "Desk Review: Distinguishing between Chronic and Transitory Food Insecurity in Emergency Needs Assessments," IDS, Sussex, UK (2006).

21. As such, this monitoring framework is a complement to early warning systems—such as the Famine Early Warning System Network and AMIS—that focus mainly on forecasting ex ante humanitarian catastrophes and improving market transparency, respectively, especially on stocks.

22. The series are detrended linearly by regressing each series on time during 1960–2007, and then subtracting the trend, which allows concentration on residuals. Then, the mean and standard deviation of the residuals are used to determine the trigger.