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FOOD AND FINANCIAL CRISES: IMPLICATIONS FOR AGRICULTURE AND THE POOR

Joachim von Braun
Director General, IFPRI

High food prices from 2007 through mid-2008 had serious implications for food and nutrition security, macroeconomic stability, and political security. The unfolding global financial crisis and economic slowdown have now pushed food prices to lower levels. Yet the financial crunch has also decreased the availability of capital at a time when accelerated investment in agriculture is urgently needed. The food and financial crises have strong and long-lasting effects on emerging economies and poor people. A synchronized response is needed to ease the burden on the poor and allow agriculture to face new challenges and respond to new opportunities. Three sets of complementary policy actions should be taken: (1) promote pro-poor agricultural growth, (2) reduce market volatility, and (3) expand social protection and child nutrition action. Agriculture requires strategic investment action, and the food-insecure poor need a “bailout” now.

LINKS BETWEEN THE FOOD AND FINANCIAL CRISES

Both new and ongoing forces had driven up the prices of food commodities, causing a major food crisis in 2007–08. Income and population growth, rising energy prices and subsidized biofuel production, have contributed to surging consumption of agricultural products. At the same time, productivity and output growth have been impaired by natural resource constraints, underinvestment in rural infrastructure and agricultural science, limited access to inputs, and weather disruptions (for details, see von Braun et al. 2008a). The financial crisis in the second half of 2008 stemmed from fundamentally different causes—flawed regulatory regimes and subprime mortgage lending—but the two crises have fed on each other. Fueled with capital diverted from the collapsing housing market, speculation in agricultural futures, as well as ad hoc market and trade policies, the level and volatility of commodity prices further increased.

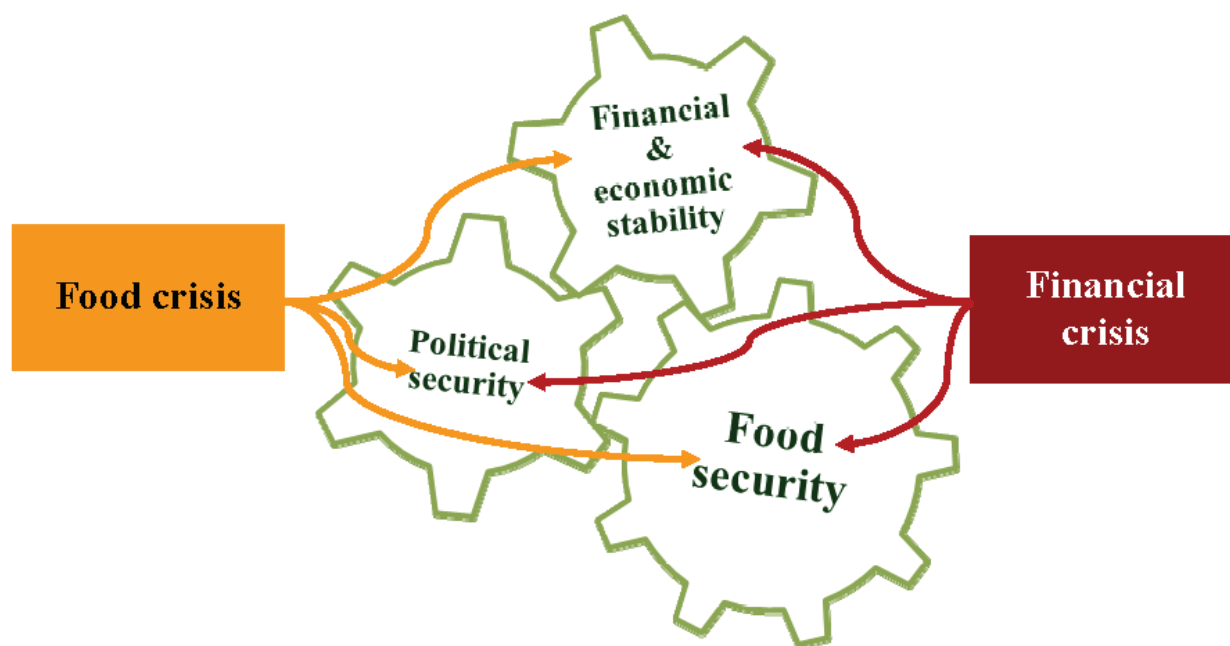
Although the food and financial crises developed from different underlying causes, they are becoming intertwined in complex ways through their implications for financial and economic

stability, food security, and political security (Figure 1). The food crisis has added to general inflation and macroeconomic imbalances to which governments must respond with financial and monetary policies. At the same time, the financial crunch and the accompanying economic slowdown have pushed food prices to lower levels by decreasing demand for agricultural commodities for food, feed, and fuel. Further, as capital becomes scarcer and more expensive, the expansion of agricultural production to address the food crisis has been cut short. Because the two crises are interconnected, a coordinated response is needed to alleviate the double blow on the poor.

RECENT PRICE DEVELOPMENTS

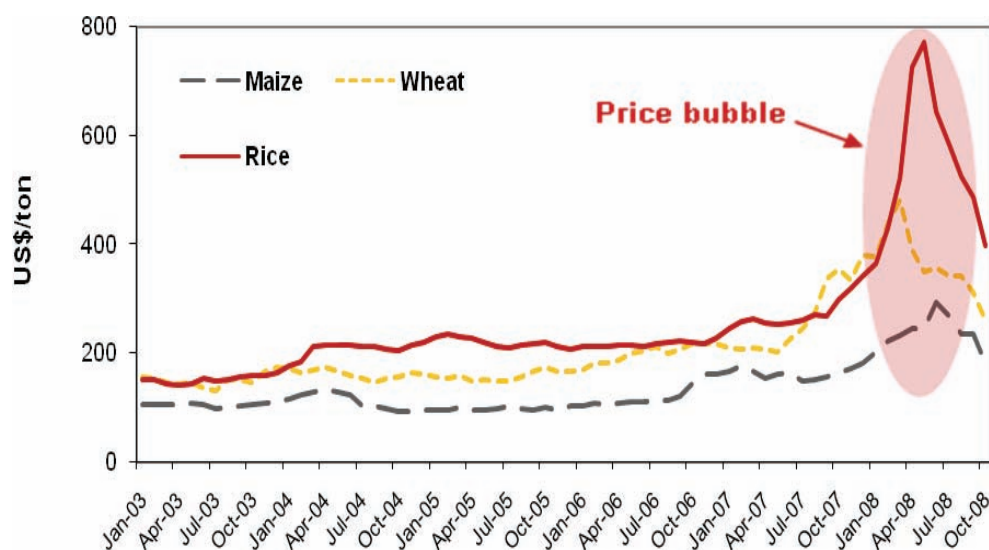
The price of nearly every agricultural commodity sharply increased in the past two years, creating a global food price bubble. At their peaks in the second quarter of 2008, world prices of wheat and maize were three times higher than at the beginning of 2003, whereas the price of rice was five times higher (Figure 2). Dairy products, meat, palm oil, and cassava also experienced sharp price hikes. The prices of butter and milk, for example, tripled between 2003 and 2008, and the prices of beef and

Figure 1—Linkages between the food and financial crises



Source: Devised by the author.

Figure 2—The global food price crisis in 2007–08



Source: Data from FAO 2008a.

poultry doubled. At the country level, these global food price changes have been transmitted to different degrees owing to factors such as transportation costs, domestic policies, and market structure, but most countries show general patterns similar to these global trends.

Food inflation has put upward pressure on general inflation around the globe, hindering future growth by increasing uncertainty and distorting economic planning. Since food accounts for a large share of the consumer basket in developing countries, it has clearly dominated the inflation dynamics. In 2007–08, average food inflation has been higher than average overall inflation in 27 of the 31 countries with a high proportion or number of undernourished people.¹

The current deflationary trends have been preceded by a complex dynamic of food and non-food inflation. Food price increases had driven nonfood and general inflation, with some lag to varying degrees. In China, Madagascar, Uganda, and Vietnam, for example, the correlation between food and nonfood inflation substantially increased in 2007–08 compared with 2005 (Table 1). In Ethiopia and Indonesia the correlation had been initially high and remained high.

In the past few months, the prices of major cereals have fallen by about 30 to 40 percent as a result of the economic slowdown and favorable weather conditions, but they remain high compared with three years ago. This short-term price relief is insufficient, however, to ensure that the poor have access to adequate amounts of nutritious food.

THE DOUBLE BLOW AT THE POOR

Even before the world food crisis, the poorest of the poor were significantly left behind (von Braun and Pandya-Lorch 2007). Rising food prices now further undermine the food security and threaten the livelihoods of the most vulnerable by eroding their already limited purchasing power. Poor people spend 50 to 70 percent of their income on food and have little capacity to adapt as prices rise and wages for unskilled labor fail to adjust accordingly. To cope, households limit their food consumption, shift to even less-balanced diets, and spend less on other goods and services that are essential for their health

and welfare, such as clean water, sanitation, education, and health care. It has now become much more expensive to eat nutritious food. For example, the price of a corn tortilla–based diet supplying key recommended micronutrients in Guatemala is almost twice as high as the price of a non-nutritious tortilla and vegetable oil diet (Figure 3). Thus, the cost of feeding just one person is almost three quarters of the total income of a poor household living on one dollar a day. The financial crunch poses additional threats as it further lowers the real wages of the poor, and many are now losing their employment altogether. It also limits the funds available for food aid and social protection, which are essential for helping the most vulnerable people avoid malnourishment or even starvation.

Compared with previous crises, the current ones are likely to have strong and long-lasting effects on emerging economies and the people most in need. Rising food prices and the credit crunch are now spreading to all corners of the world. At the same time, since many more of the poor now depend on wages and are more closely connected to the rest of the economy, they suffer more from economic shocks.

Recent estimates of the Food and Agriculture Organization of the United Nations (FAO) show that the number of undernourished people increased from 848 million to 923 million from 2003–05 to 2007, largely owing to the food price crisis (FAO 2008b). The number of undernourished likely increased even further in 2008 as prices continued to rise and the financial crisis hit. Food price hikes have also raised micronutrient deficiencies, with negative consequences for nutrition and health, such as impaired cognitive development, lower resistance to disease, and increased risks during childbirth for both mothers and children. In Bangladesh, for example, a 50 percent increase in the price of food is estimated to raise the prevalence of iron deficiency among women and children by 25 percent (Bouis 2008). Because good nutrition is crucial both for children’s physical and cognitive development and for their productivity and earnings as adults, the adverse consequences of this price shock will continue even after the shock ends. A 2008 *Lancet* article shows that boys who benefited from a randomized nutrition intervention in their first two years of life earned wages as adults that were 50 percent higher than those of nonpartici-

¹ This author analysis is based on publically available government statistics.

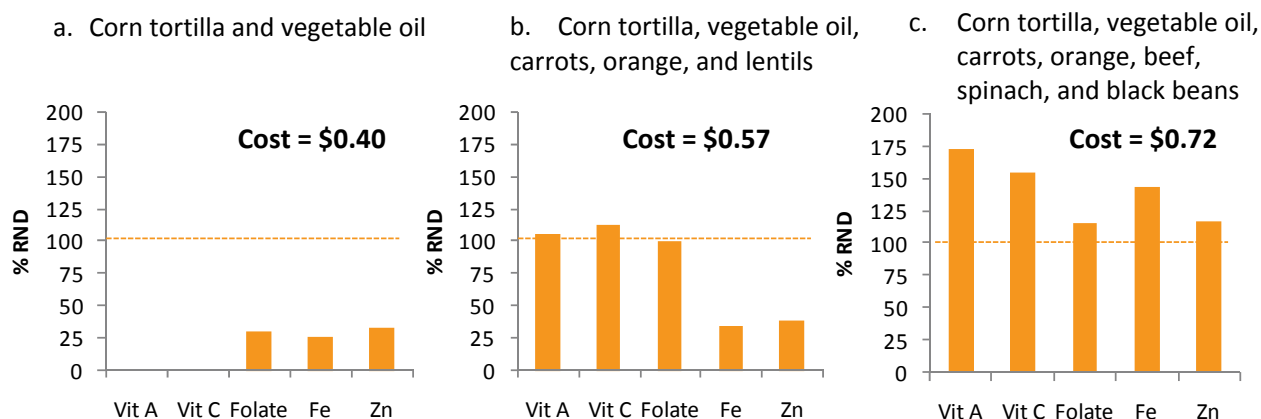
Table 1—Food and nonfood price correlation in countries with a high proportion or number of undernourished

		2007–08 correlation		
2007–08 correlation compared with 2005		Low	Medium	High
	Significantly smaller	Cambodia	Philippines, Zambia	
	No change	Nigeria	Malawi, Mexico, Yemen	Angola, Botswana, Colombia, Ethiopia, India, Indonesia, Tajikistan
	Significantly larger		China, Guinea-Bissau, Tanzania, Vietnam	Dominican Republic, Madagascar, Niger, Uganda

Source: Based on data from publically available government statistics.

Note: The correlation between food and nonfood inflation is considered high if the coefficient of correlation is larger than 0.8, medium if larger than 0.4 and smaller than 0.8, and low if smaller than 0.4. The correlation is considered to have significantly changed if the coefficient of correlation changed by 0.4 or more.

Figure 3—Costs per person per day of corn tortilla–based diets in Guatemala at different micronutrient levels



Source: Erick Boy, IFPRI, based on Guatemala City market prices in November 2008; and data from FAO/WHO 2002.

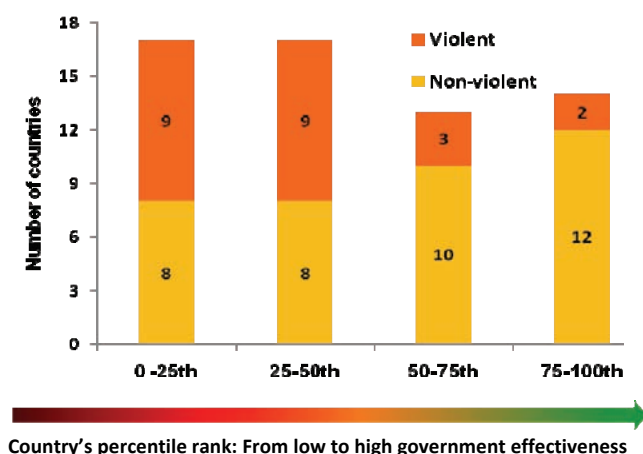
Note: RND = recommended nutrient density.

pants (Hoddinott et al. 2008). Food price shocks have the reverse effects.

Food insecurity can be a key source of conflict and with increasing food and general living costs, people have turned to the streets in protest. Social and political unrest has occurred in 61 countries

since the beginning of 2007, with some experiencing multiple occurrences and a high degree of violence. Although this unrest has occurred mostly in countries with low performance in governance, other countries have also been affected (Figure 4).

Figure 4—Food protests by type and government effectiveness, 2007–08



Sources: Compiled by IFPRI; food protest data are from news reports; government effectiveness data are from Kaufmann, Kraay, and Mastruzzi 2008.

Notes: Food protests are defined as strikes, protests, or riots on food or agriculture-related issues since January 2007. A violent food protest is defined as one that involves the use of physical force, results in casualties, or both.

NEW CHALLENGES AND OPPORTUNITIES FOR AGRICULTURE

Agricultural growth is a crucial element in resolving food price crises, enhancing food security, and accelerating pro-poor growth. After decades of policy neglect and underinvestment in public goods such as agricultural science, rural infrastructure, and information and monitoring, high food prices have provided some positive incentives for policymakers, farmers, and investors to increase agricultural productivity. The variability of food prices, however, has been an obstacle to long-term planning. At the same time, farmers in developing countries who took advantage of rising agricultural prices to invest in expanding production may now find themselves unable to pay off their debts because of falling output prices. As banks cut lending because of the financial crisis, it is harder for small farmers to make new investments. Broader plans for investment in agriculture, especially in low-income and emerging economies, are also at risk of being scaled back.

High prices and favorable weather encouraged agricultural expansion in developed countries in 2007 and 2008, but the production response in

developing countries remained slow. Cereal output grew by 11 percent in developed countries between 2007 and 2008 and by only 0.9 percent in developing countries (FAO 2008c). If Brazil, China, and India are excluded, cereal production growth in developing countries actually fell by 1.6 percent. Even before the crisis hit, global cereal stocks had been at their lowest levels since the early 1980s. Just to bring stocks back to these very low levels, cereal production would have to increase at a much higher rate—by 40 percent in 2008 (FAO 2008c).

Overall productivity growth, however, is not high enough to result in output increases on such a scale. Annual world cereal yield growth declined from about 3 percent in the 1960s and 1970s to less than 1 percent since 2000 (World Bank 2007). Total factor productivity (derived from the ratio of total output growth to total input growth) in developing countries grew by 2.1 percent per year from 1992 to 2003 on average and in some regions, the annual rate of growth was even lower (Table 2). There is also good news, such as the recovery of overall productivity in African agriculture in the past two decades (Badiane 2008). In the future, however, as climate change further increases climate variability, temperature, and the risk of droughts and floods, threats to agricultural productivity and production will rise.

The food price crisis has increased competition for land and water resources for agriculture, and declining capital for long-term investment due to the credit crunch has resulted in revaluation of natural resources. Farmland prices, for example, have been rising throughout the world. In 2007 alone, farmland prices jumped by 16 percent in Brazil, by 31 percent in Poland, and by 15 percent in the Midwestern United States. Constraints in capital have also led to overexploitation and degradation of natural resources. In many countries, developed water sources are almost fully utilized, even as growth in water demand for agriculture is expected to drastically increase in the future. The International Water Management Institute (IWMI) points out that at least an additional 2,000 to 3,000 cubic kilometers of water—the equivalent of 33 percent of current agricultural water use—will need to be found for irrigated and rainfed cropping by 2030 (Global Economic Symposium 2008).

Table 2—Total factor productivity growth in developing-country regions, 1992–2003

Region	Average annual % growth				1992–2003
	1992–94	1995–97	1998–2000	2001–03	
East Asia	5.0	4.5	-1.1	2.5	2.7
South Asia	1.7	-0.2	1.2	1.4	1.0
East Africa	-1.7	2.0	0.2	1.3	0.4
West Africa	1.8	2.5	2.4	-0.1	1.6
Southern Africa	0.4	3.3	3.6	-0.6	1.3
Latin America	1.8	2.0	2.9	4.3	2.7
North Africa and West Asia	-0.1	1.9	1.5	2.8	1.4
All regions	2.8	2.7	0.6	2.5	2.1

Source: von Braun et al. 2008b and Nin Pratt, IFPRI.

The pressures on natural resources, combined with increasing distrust in markets due to the price crisis, have renewed attention to foreign direct investment in agriculture. A number of countries, many with severe natural resource constraints but rich in capital, have turned to overseas investment in agriculture to secure domestic supply. The media report that Egypt and the United Arab Emirates for example have already made such investments in Sudan, Libya in Ukraine, Saudi Arabia in Thailand, and South Korea in Madagascar. China has invested in agriculture in a number of African countries, as well as the Philippines and Russia. In principle, such investments are not to be generally condemned since further investment in agriculture is needed. However, recipient countries need to negotiate contracts wisely and a code of conduct is called for, including rules of engagement ensuring the participation of local producers, respect for customary property rights, appropriate compensation, sustainable management of natural resources, and non-impaired trade policy rules. Enforcement of such a code is needed as well.

RECESSION SCENARIOS

Many developing regions have experienced high economic growth in recent years, with developing countries in Asia and Africa growing at 9 and 6 percent a year on average in 2005–07. In 2008, however, with the onset of the food and financial crises, growth has slowed and optimistic projections have been scaled down. Low economic growth is likely to have negative second-round effects for investment and productivity, with direct

ramifications for food prices and food security around the globe. IFPRI analyses from 2005 to 2020 compare a scenario of continued high economic growth and maintained productivity and investments in agriculture (baseline scenario) with two recession scenarios²:

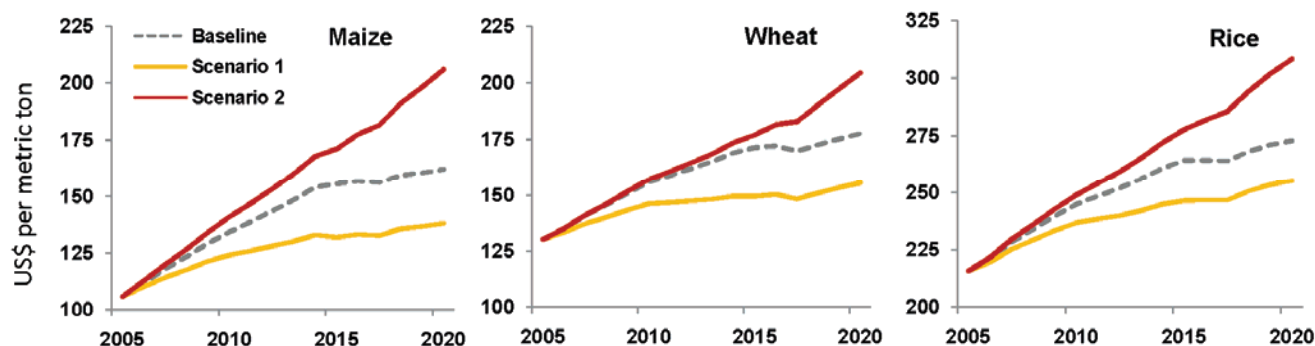
- **Scenario 1:** economic growth is reduced by 2 to 3 percentage points depending on world regions, and agricultural productivity and investments are maintained by wise policy.
- **Scenario 2:** economic growth is reduced as in Scenario 1, and agricultural investment and productivity also decline, in line with the reduced economic growth – the unfortunately more likely scenario.

Under Scenario 2, the prices of major cereals will increase significantly (Figure 5). In 2020, maize, wheat, and rice prices will be 27, 15, and 13 percent higher, respectively than under the baseline scenario.

As a result of a recession, poor people are likely to consume fewer calories. Compared with the baseline, global per capita calorie consumption under Scenario 2 will be 5 percent lower in 2020. In some regions the effects will be even more severe. In Sub-Saharan Africa, for example, per capita calorie consumption would be 10 percent lower in

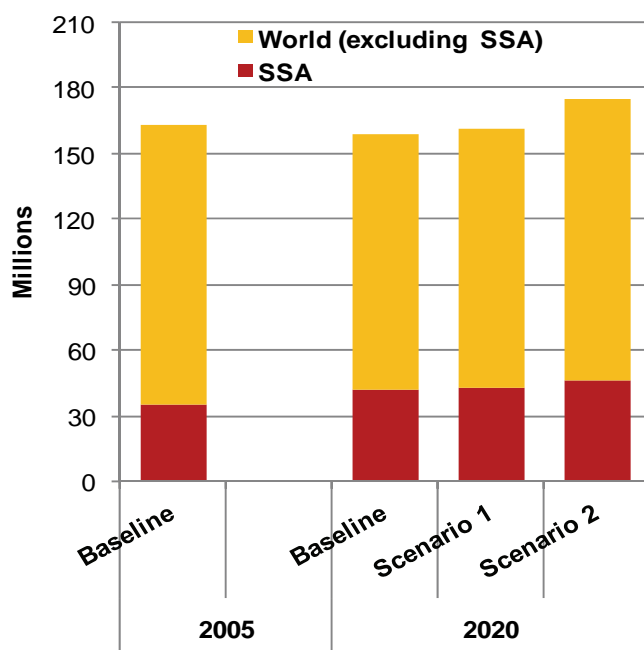
² IFPRI's global scenario analyses are based on the International Model for Policy Analysis of Agricultural Commodities and Trade (IMPACT), which is directed by Mark W. Rosegrant at IFPRI. Tingju Zhu contributed to the scenario analyses.

Figure 5—The implications of a recession and investment for cereal prices, 2005–2020



Source: Results of IFPRI IMPACT scenario analysis, October 2008.

Figure 6—The implications of a recession for child malnutrition, 2005–2020



Source: Results of IFPRI IMPACT scenario analysis, October 2008.

Note: SSA = Sub-Saharan Africa.

2020 under Scenario 2. Globally, 16 million more children will be malnourished in 2020 compared with the baseline scenario (Figure 6). Sub-Saharan Africa's share of the number of malnourished children globally will increase from one fifth in 2005 to one fourth in 2020 under Scenario 2.

If, however, developing countries and investors can maintain agricultural productivity and investments under a recession (Scenario 1), they

can avoid many of the negative effects of slower growth. Cereal prices and the number of malnourished children would be much lower, and per capita calorie consumption would be much higher by 2020 compared with Scenario 2.

COPING WITH TURMOIL

Given poor people's diverse sources of income, the same poor people are not necessarily hit by each blow. Yet it is the poor who lose the most either way. That seems to be particularly so for poor women (Quisumbing, Meinzen-Dick, and Bassett 2008). It is essential that the evolving response at national and international levels addresses the immediate challenges poor and food insecure people face. Sound economic and agricultural policies, including significant investments in agriculture, can prevent gruesome outcomes. In view of the financial crisis and the constraints and risk-averse behavior of the private banking sector, much of the investment would have to be facilitated by public sources. At the same time, policy and investment decisions in agriculture should be geared toward exploiting new opportunities and building resilience for future challenges.

International financial institutions—such as the World Bank—are on their way to regaining importance and leverage with deepening shortage of private capital, lack of trust in banks, and increasingly depressed investment climate. It is crucial that these institutions maintain their renewed focus on food and agriculture triggered by the price crisis in the past year and become more involved in

financing research on agricultural science and technology.

Global and regional responses to the food price crisis have included pledges to support food aid, nutrition interventions, social protection activities, and measures to increase agricultural output in affected countries (Table 3). It is important, however, to ensure that all pledged funds are actually released in a timely manner and appropriately targeted. Oxfam estimates that of the US\$12.3 billion pledged at the food security summit held by the FAO in June 2008, little more than US\$1 billion has been disbursed (Oxfam International 2008). Follow-up resource commitments should also be made and fulfilled where needed.

Table 3—Examples of global pledges and national investments to combat the food crisis, 2008

Donor organization / country	Pledge (billions of US\$)	Month
African Development Bank*	1.0	May
Asian Development Bank*	0.5	May
Inter-American Development Bank*	0.5	May
World Bank	1.2	May
European Union	1.6	July
France	1.5	June
Saudi Arabia	0.5	June
Spain	0.8	June
United Kingdom	0.9	April
United States	5.0	June
Increase in public budgets on agriculture and social protection		
Country	Billions of US\$	% change
China	23.2	27
India	6.0	24

Source: News sources and government budgets.

Note: Asterisks indicate commitments made to member states.

At the country level, responses to the crisis have varied widely. It is commendable that China and India, for example, significantly increased investment in agriculture and social protection by 24 and 27 percent in 2008 (Table 3).

More actions are needed to successfully resolve the food price crisis, build resistance to future challenges, and reduce poverty and hunger. Three sets of complementary policy actions should be taken: (1) promote pro-poor agricultural growth, (2) reduce market volatility, and (3) expand social protection and child nutrition action.

Promote pro-poor agricultural growth.

Investments should be made in research and development (R&D), rural infrastructure, rural institutions, and information monitoring and sharing. Even though spending on agricultural R&D is among the most effective types of investment for promoting growth and reducing poverty, such spending has stagnated since the mid-1990s. A recent study by IFPRI shows that if investments in public agricultural research doubled from US\$5 to US\$10 billion from 2008 to 2013, agricultural output would increase significantly and millions of people would emerge from poverty. If these R&D investments are targeted at the poor regions of the world—Sub-Saharan Africa and South Asia—overall agricultural output growth would increase by 1.1 percentage points a year and lift about 282 million people out of poverty by 2020 (Table 4). Expanding agricultural R&D investment would also have a significant impact on international food prices.

International agricultural research projects with substantial payoffs for a large number of beneficiaries should be given investment priority. The centers of the Consultative Group on International Agricultural Research (CGIAR) have identified examples of “best bets” in agricultural research. These “best bets” include programs to revitalize yield growth in intensive cereal systems in Asia, increase small-scale fish production, address threatening pests like virulent wheat rust, tackle cattle diseases such as East Coast Fever, breed drought-resistant maize, and scale up biofortification of food crops (Table 5). Many of these projects give large-scale opportunities for public-private partnerships in planning and execution, with shared costs, risks, and benefits.

Table 4—Impact of doubling R&D investment on poverty and output growth under poverty minimization

Region	R&D allocation (millions of 2005 US\$)		Change in number of poor (millions) 2008–20	Agricultural output growth (percentage points) 2008–20
	2008	2013		
Sub-Saharan Africa	608	2,913	-143.8	2.75
South Asia	908	3,111	-124.6	2.40
Southeast/East Asia	1,956	2,323	-13.4	0.69
West Asia and North Africa	546	614	-0.2	0.23
Latin America	957	990	-0.2	0.07
Total	4,975	9,951	-282.1	1.11

Source: von Braun et al. 2008b.

Table 5—Indicative “best bets” for international agricultural research: Food, environment, and innovation for people

Approach	Cost (millions of US\$)	Beneficiaries (millions)
Revitalizing yield growth in intensive cereal systems of Asia	150.0	3,000
Ensuring productive and resilient small-scale fisheries	73.5	32
Controlling wheat rust	37.5	2,900
Developing vaccine for East Coast Fever in cattle	10.5	32
Developing drought-tolerant maize for Africa	100.0	320
Scaling up biofortification	125.0	672
Increasing CO ₂ sequestration and improving forest livelihoods	45.0	48
Conducting climate change and adaptation research	127.5	1,200
Combining organic and inorganic nutrients for crop productivity	55.0	400
Promoting sustainable groundwater use	24.0	261
Enhancing germplasm exchange	15.0	Global
Improving market information and value chains	10.5	45
Including women in extension and innovation	30.0	200
Exploiting agriculture-health links to benefit the poor	75.0	Global

Source: von Braun et al. 2008b.

Reduce market volatility. Agricultural commodity markets, not only financial markets, must be part of reformed regulatory systems needed to move out of the crisis and prevent future turmoil. Reduced volatility is essential for avoiding extreme price bubbles and ensuring that the world can respond to emergencies generated by price crises. Two global collective actions are needed: (1) a small physical reserve, to be managed, for instance, by the World Food Programme, must be established to facilitate smooth emergency response, and (2) an innovative “virtual reserve” should be created to help avoid the next price bubble (von Braun and Torero 2008). The virtual reserve could be implemented by the Group of Eight Plus Five and some other large grain-exporting countries. The organizational design could include a permanent high-level technical commission that would intervene in futures markets and a global intelligence unit that would signal when prices headed yet again toward a bubble. Usually, intervention would not be necessary and the whole operation would remain promissory or virtual. These collective actions would protect the poor, improve market efficiency and strengthen long-term investment incentives in agriculture.

Expand social protection and child nutrition action. Actions for stimulating agricultural growth and reducing market volatility are essential, but not sufficient, to achieve food security in the increasingly complex international economic context. Also needed are protective actions to mitigate short-term risks and preventive actions to preclude long-term negative consequences. In

particular, expanding such social protection programs in Africa is feasible and needed (Adato and Hoddinott 2008). Protective programs include conditional cash transfer programs, pension systems, and employment programs. Preventive health and nutrition programs such as school feeding programs and programs for improved early childhood nutrition should be targeted to vulnerable groups and be strengthened and expanded to ensure universal coverage.

The design of specific national strategies must be country-driven and country-owned, with country-specific prioritization and sequencing. Yet there is a lack of credible and up-to-date data on the impacts of food and nutrition insecurity and the effects of policy responses (Benson et al. 2008). Such information would allow international and national decisionmakers to use feedback to adjust their responses and achieve maximum effectiveness. Much more investment and sound coordination are needed in this area. In addition, policy actions should be combined with investments in developing countries’ capacity to implement policy so that they can exploit potential opportunities for agricultural growth. Given that prioritization, sequencing, transparency, and accountability are also crucial for successful implementation, policy and governance practices in many developing countries must be strengthened.

The end of the food crisis should be measured not primarily by declines in food prices, but by the provision of adequate healthy food for all. Building a sustainable and resilient agricultural system with both technological and policy innovation is essential for achieving this goal.

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INTERNATIONAL FOOD POLICY RESEARCH INSTITUTE

2033 K Street, NW, Washington, DC 20006-1002 USA

Tel: +1.202.862-6496 • Fax: +1.202.467-4439 • Email: IFPRI@cgiar.org • Web: www.ifpri.org