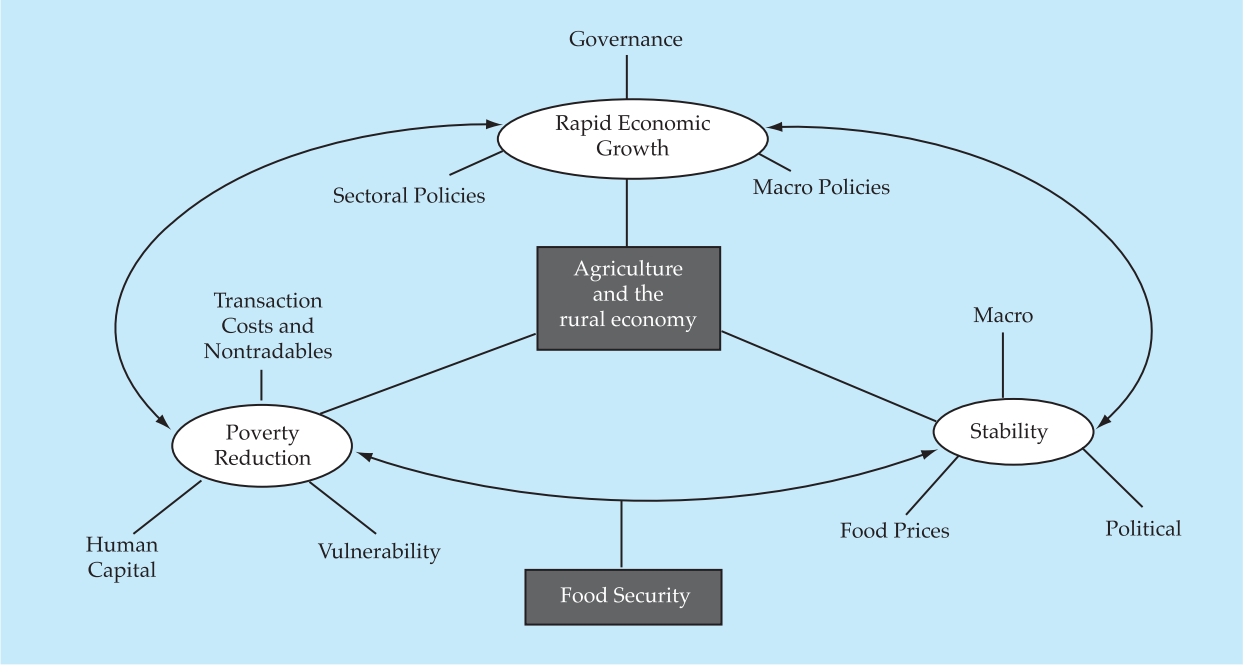
Figure 3: A macro perspective on the determinants of food security
Three virtuous circles of activity, held together by agriculture and the rural economy



Source: Adapted from Timmer, 2004.

Given Malaysia's enviable economic position as well as rapid globalization and technological change, it would seem more relevant to focus on food self-reliance than on food self-sufficiency, which has often been linked to food security. While Malaysia is a small, open economy, it is a large trading nation, ranked in the top 20 (WTO, 2008); its total trade exceeded RM1 trillion (US$284.9 billion) for three consecutive years since 2006. In 2008, Malaysia was ranked 19th on the World Competitiveness Scoreboard and 18th in the A.T. Kearny/Foreign Policy Globalization Index. That same year Malaysia enjoyed a healthy trade surplus (i.e. balance of trade) of RM108.46 billion. Malaysia was also ranked 20th out of 181 economies surveyed in the 2008 World Bank Doing Business Report.

Malaysia does not envisage serious problems in sourcing and importing the balance of its food requirements in the future, given its extensive trade links, excellent international relations and healthy trade surplus and the absolute quantity and types of food demanded. In other words,

Table 2: Malaysia's self-sufficiency levels in food commodities, 2000–2010
(in percentage)

Commodity	2000	2005	2010
Rice	70	72	90
Fruits	94	117	138
Vegetables	95	74	108
Fisheries	86	91	104
Beef	15	23	28
Mutton	6	8	10
Poultry	113	121	122
Eggs	116	113	115
Pork	100	107	132
Milk	3	50	5

Source: Ninth Malaysia Plan.

Table 3: Malaysia's food exports and imports, Ninth Malaysia Plan (2000–2010)

Commodity	RM million			% of Total			Average Annual Growth Rate (%)	
	2000	2005	2010	2000	2005	2010	8MP Achived	9MP Target
Exports	**5 268.6**	**7 986.8**	**15 501.0**	**100.0**	**100.0**	**100.0**	**8.7**	**14.2**
Live Animals	357.4	425.1	467.0	6.8	5.3	3.0	3.5	1.9
Meat and Meat Preparations	64.6	85.9	2 895.0	1.2	1.1	18.7	5.9	102.1
Dairy Products	410.2	413.2	520.0	7.8	5.2	3.4	0.1	4.7
Vegetables	278.4	491.6	614.0	5.3	6.2	4.0	12.0	4.5
Fruits	512.4	471.9	2 153.2	9.7	5.9	13.9	-1.6	35.5
Sugar, Sugar Preparations and Honey	353.7	479.2	474.6	6.7	6.0	3.1	6.3	-0.2
Cereal and Cereal Preparations	610.8	916.6	576.5	11.6	11.5	3.7	8.5	-8.9
Fish, Crustaceans, Molluscs and Preparation thereof	1 263.3	2 265.9	4 624.7	24.0	28.4	29.8	12.4	15.3
Feeding Stuff for Animals	375.3	547.1	531.0	7.1	6.9	3.4	7.8	-0.6
Others	1 042.5	1 890.3	2 645.0	19.8	23.7	17.1	12.6	6.9
Imports	**10 543.5**	**15 435.0**	**14 276.9**	**100.0**	**100.0**	**100.0**	**7.9**	**-1.5**
Live Animals	154.6	177.4	127.0	1.5	1.1	0.9	2.8	-6.5
Meat and Meat Preparations	771.4	1 054.6	1 262.0	7.3	6.8	993.7	6.5	3.7
Dairy Products	1 176.5	1 745.1	1 533.0	11.2	11.3	121.5	8.2	-2.6
Vegetables	1 023.6	1 620.2	670.0	9.7	10.5	43.7	9.6	-16.2
Fruits	561.6	694.9	812.1	5.3	4.5	121.2	4.4	3.2
Sugar, Sugar Preparations and Honey	1 085.8	1 406.0	1 216.0	10.3	9.1	149.7	5.3	-2.9
Cereal and Cereal Preparations	1 839.1	2 267.1	1 464.8	17.4	14.7	10.3	4.3	-8.4
Fish, Crustaceans, Molluscs and Preparation thereof	1 085.8	1 851.9	841.0	10.3	12.0	5.9	11.3	-14.9
Feeding Stuff for Animals	1 928.4	2 838.2	4 303.0	18.3	18.4	30.1	8.0	8.7
Others	917.3	1 779.6	2 048.0	8.7	11.5	14.3	14.2	2.8

Malaysia is and will continue to be quite comfortably food self-reliant. Consequently, it is not surprising that the country has elected to remain a net importer for rice and other food items as spelled out in the Ninth Malaysia Plan (Tables 2 and 3).

VIII. Innovative work and ideas

Two highly innovative works and ideas are thought-provoking and inspiring. The first is that of Ambler-Edwards *et al.* (2008) working out of Chatham House[49] while the second stems from Tay (2008).

Ambler-Edwards *et al*. (2008) contend that over the next few decades, the global food system will come under renewed pressure from the combined effects of seven fundamental factors: population growth, the nutrition transition, energy, land, water, labour and climate change. Consequently, the United Kingdom, which is an elected net importer of food like Malaysia, cannot afford to take its food supply for granted. They further posit that:

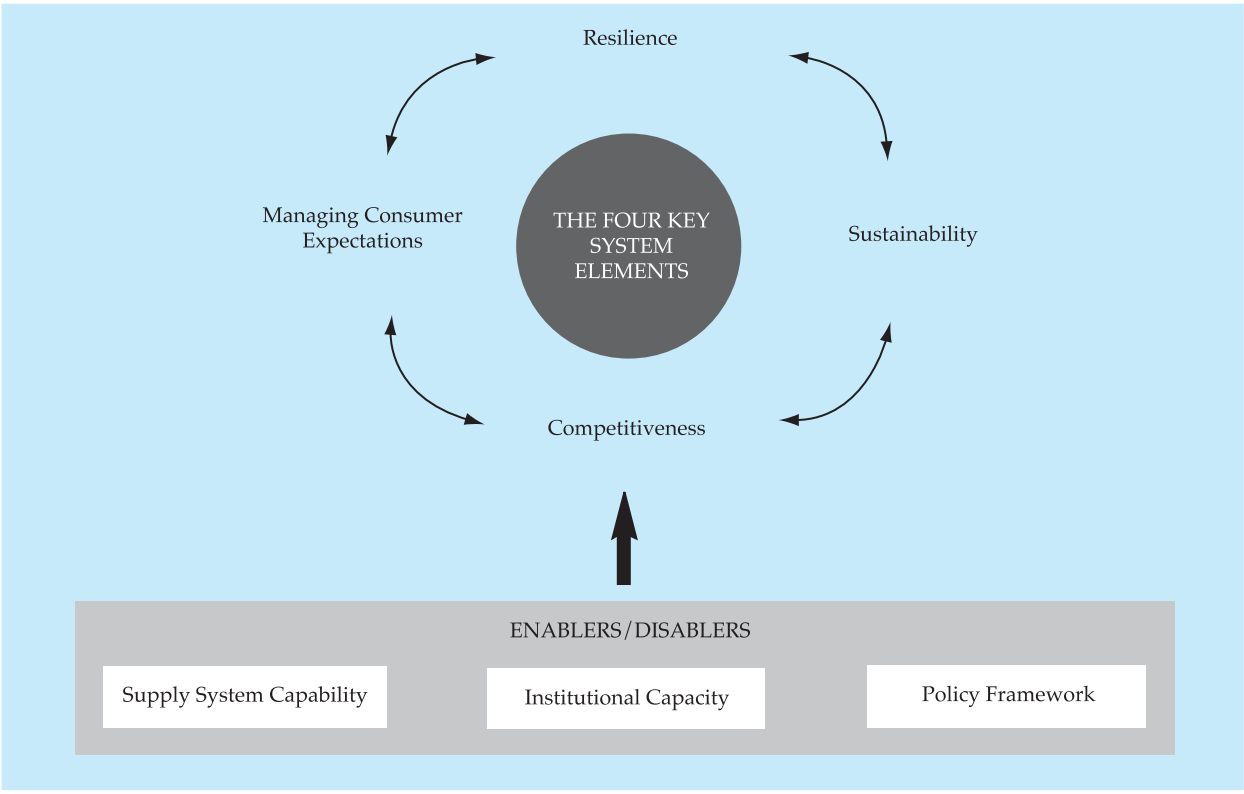
[49] Chatham House has been the house of the Royal Institute of International Affairs for over eight decades. Its mission is to be a world-leading source of independent analysis, informed debate and influential ideas on how to build a prosperous and secure world for all.

- in light of emerging trends, "business as usual" models could "at worst fail and at best be poor preparation for the coming period";
- food supply arrangements in the United Kingdom will be required to operate profitably around a significantly higher price norm, one that increasingly reflects the true cost of resources and incorporates wider social and ecological considerations;
- a system that is able to reconcile the often-conflicting goals of resilience, sustainability and competitiveness and that is able to meet and manage consumer expectations will become the new imperative;
- new capabilities, policy frameworks and institutions will become the cornerstone of the new system.

Ambler-Edwards *et al*. provide the framework and basic considerations for developing a strategic vision for the new system. It may be beneficial to highlight some of them because they should be relevant, with necessary modifications, to many Asian countries. In relation to the new supply framework, they identified four characteristics as being of increasing importance in a future food supply system (see Figure 4):

- resilience – a system able to assure longer-term availability in light of increasing global uncertainties;
- sustainability – a system that can supply safe, healthy food with positive social benefits and low environmental impacts;
- competitiveness – a system capable of delivering affordable food around a potentially higher baseline of costs;
- managing consumer expectations – a system which shapes and responds to consumer preferences in line with societal needs.

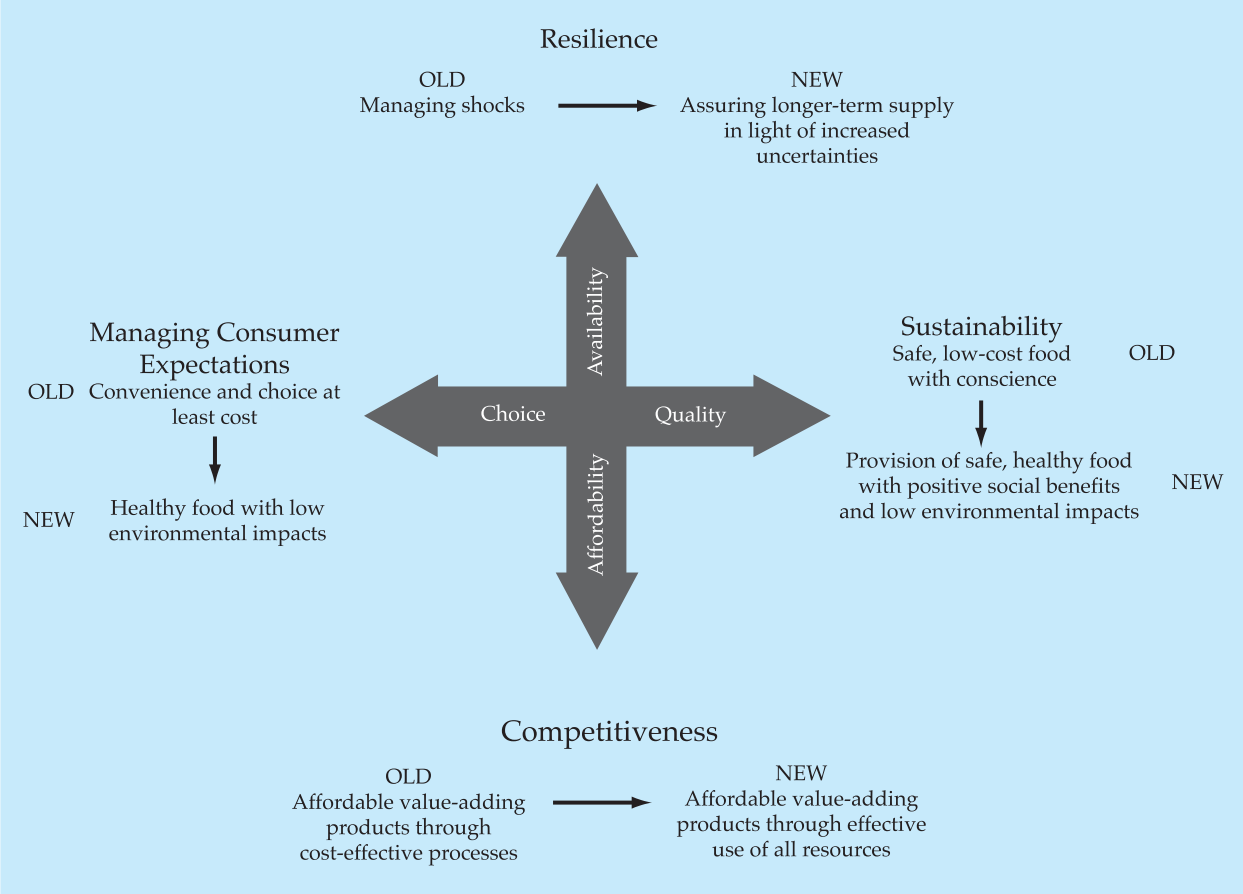
Figure 4: The new supply framework



Source: Adapted from Ambler-Edwards *et al.* (2008).

The reconciliation of these characteristics or elements will create the central challenge of the next decade. This will require a different approach with the development of a new framework of policies, institutions and supply system capabilities. For the sake of exposition and completeness, the transition path from the old to the new goals is presented in Figure 5.

Figure 5: Transition from old to new goals



Source: Adapted from Ambler-Edwards *et al.* (2008).

Closer to home, Tay Kheng Soon (see Tay, 2008), a distinguished architect and Asian visionary, has convincingly argued that in Asia's mad dash to urbanization, the countryside has been all but completely forgotten. He argues to conceive of the city and countryside as one space – not two – to foster and support social, cultural and environmental justice. In short, he presents an Asian form of sustainable development and an opportunity for the East to lead the world in ideas.

Among other things, Tay highlighted a Mechai Viravaidya-driven, Thailand People and Community Development Association (PDA) initiative started four years ago in Limplaimat, one of the poorest areas in Northeastern Thailand. The PDA built a primary school where 180 students were enrolled through a lucky draw, most of them coming from very poor rice-farming families from surrounding villages. The school's teaching philosophy is a mix of Montessori, Waldorf and Buddhist educational ideas. Each class has 20 students, one teacher and two trainee teachers and is equipped with two internet-linked computers.

Adjacent to the school is a village community centre (designed and built by Tay) which accommodates, among other things, the Rice Academy, where the villagers and children learn about new rice varieties, growing methods and other agricultural knowledge. It also houses a craft shop, internet café, library and radio station, where every afternoon the primary school students broadcast stories

and lessons to surrounding schools. This prompted Tay's question: "If ten-year old kids can be empowered to do this, what might they not do when they grow up?"

Limplaimat now has a village bank that provides microcredit. A secondary school (to eventually accommodate the primary school students and which Mechai terms "the poor man's university") is under construction. Besides the usual curriculum, the secondary school will have a business programme, a design school and courses in hygiene and bare-foot medicine. It will be a green school with every classroom and teaching space generating its own electricity through roof-top solar panels. All rainwater will be collected, filtered and reticulated. All solid and liquid wastes will be processed on-site for biogas and compost.

The entire superstructure of the buildings will be made of treated bamboo. Although the author has yet to visit this project, he has had the privilege of viewing some slides and plans. They are impressive and heart-warming because they underscore what is possible when people learn to live their Asian values and, in so doing, forge their own brand of sustainable development. Some projects are in various stages of discussion in a couple of countries in the ASEAN. Tay's clarion call is, "Cities of Asia, behold the countryside and imagine the possibilities. See one space, not two!"

At this juncture, it's worth recalling Moisi's (2008) sentiments mentioned earlier regarding the East. In this regard, it is perhaps appropriate to add Tay's (2008) suggestion that "new satisfactions in life are necessary to wean people from the present environmentally destructive tendencies in the economic pattern of production and consumption. However, shifting from the individualistic and materialistic value system, implicit in the development model of the West, needs fundamental innovation incorporating traditional Asian values of responsibility for family, environment and community."

IX. Moving forward

Crucial elements from this discussion can be distilled and incorporated into immediate and longer-term plans and goals. Countries should consciously strive to get the balance right as they respond, as individual nations and as a region, to weather the storm wrought by the combined effects of the financial and food crises and to seek the opportunities accompanying these crises. They should also garner the resolve and master the discipline to transform and develop new supply systems incorporating various aspects of the refreshing ideas and innovations outlined above.

More focused and holistic studies should be conducted as a basis for strategic government interventions and public-private partnership initiatives. Such studies will facilitate sustainable development and management of new supply systems and networks, innovative applications of the promises of biotechnology advances and incorporation of innovative strategies, policies and programmes. Ultimately, all these efforts should support an appropriate, balanced response to the food and financial crises and the need to put the house in order in relation to food self-reliance, optimum public-private partnerships, productive and equitable sectoral linkages and the interests of stakeholders along agrifood supply chains.

X. Conclusion

There are well-founded reasons to be guardedly optimistic about Malaysia's and Asia's prospects and their ability to weather the storm and harness and exploit opportunities from the current financial and food crises. However, the increasing need to "get the balance right" should be underscored. The dynamic interplay between agrifood supply systems, agribiotechnology and evolving innovative work and ideas can and should be harnessed to generate wealth, income and stability and to ensure food security at the local, national, regional and global levels.

A key challenge is to continuously address the fundamentals of population growth, the nutrition transition, energy, land, water, labour and climate change, as well as emerging trends, new ideas and innovations. Another challenge is to mount multidisciplinary empirical studies to better understand the interplay and impacts of these factors and to guide policy so that future development and progress can be more balanced and sustainable.

It is important to recall Moisi's (2008) sentiments and Tay's (2008) passionate plea to shift from the individualistic and materialistic value system implicit in the development model of the West to one driven by updated traditional Asian values of compassion, humility, care for others and the environment. It is blindingly clear that Asians stand at a moment of considerable risk and great opportunity to try and shape their collective destiny in the twenty-first century.

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Chapter 8

Global food and financial crises: experiences and perspectives from India

by
Dr Ramesh Chand[50]

I. Introduction

The global economic scene witnessed dramatic changes after 2005, taking almost everyone by surprise. Crude oil prices remained below US$30 per barrel for more than two decades until 2003 and then started moving up in 2004. Prices averaged US$54 per barrel during 2005 and increased further to US$65 during 2006 and US$72 during 2007. Goldman Sachs analysts predicted on 5 May 2008 that crude prices seemed likely to peak at around US$150–US$200 per barrel over the next 6–24 months. Increases in crude prices were followed by unprecedented increases in commodity prices, including the prices of most food commodities. Indices of food prices increased by more than 50 percent between 2005 and early 2008.[51] Prices of food staples (e.g. wheat) crossed the US$400 per tonne mark, while rice prices crossed US$1 000 per tonne in the first half of 2008. These peaks were more than double the peak level seen in the global food crisis of the early 1970s. The steep increase in food prices caused worldwide concerns and many countries faced food emergencies during 2007 and 2008. A large proportion of the low-income population, particularly in developing countries, has been adversely affected by the food price increases. This has caused a big setback in the fight for reduction of global hunger and poverty (FAO 2008 and UNDP 2008a and 2008b).

Crude oil prices reached their peak level of US$133 per barrel in July 2008 and then suddenly started declining. Quite contrary to the forecast of crude prices moving towards US$200 per barrel, they nosedived to US$45 during December 2008 and January 2009. The decline occurred much more drastically than the earlier increase in crude oil prices. Prices of staple foods also declined sharply after mid-2008, but this decline was modest compared to the decline in crude oil prices. The world had hardly recovered from high crude oil and commodity prices when it was hit by the global financial crisis. These changes have created a lot of global uncertainty and anxiety.

Several factors influence how different countries have been affected by the food crisis and how they will be affected by the current global financial crisis. The experience of the last two years shows that some countries have very effectively protected themselves and managed their food situation in the wake of abnormal increases in global food prices, while other countries have been hit badly. In India, the month-on-month rate of inflation for wheat and rice in any month from 2007–2008 remained below 11 percent, while global prices showed more than 100 percent inflation for wheat and more than 200 percent inflation for rice during the early months of 2008 (Figures 1 and 2). Similarly, food price inflation in India did not exceed 11 percent but global food price inflation exceeded 40 percent in the early months of 2008.

It would be highly useful to share the experiences of different countries in dealing with the global food crisis of 2007–2008 to draw policy lessons for food management in the future. It would also be interesting to explore how the global financial crisis will affect the food and agriculture sector and

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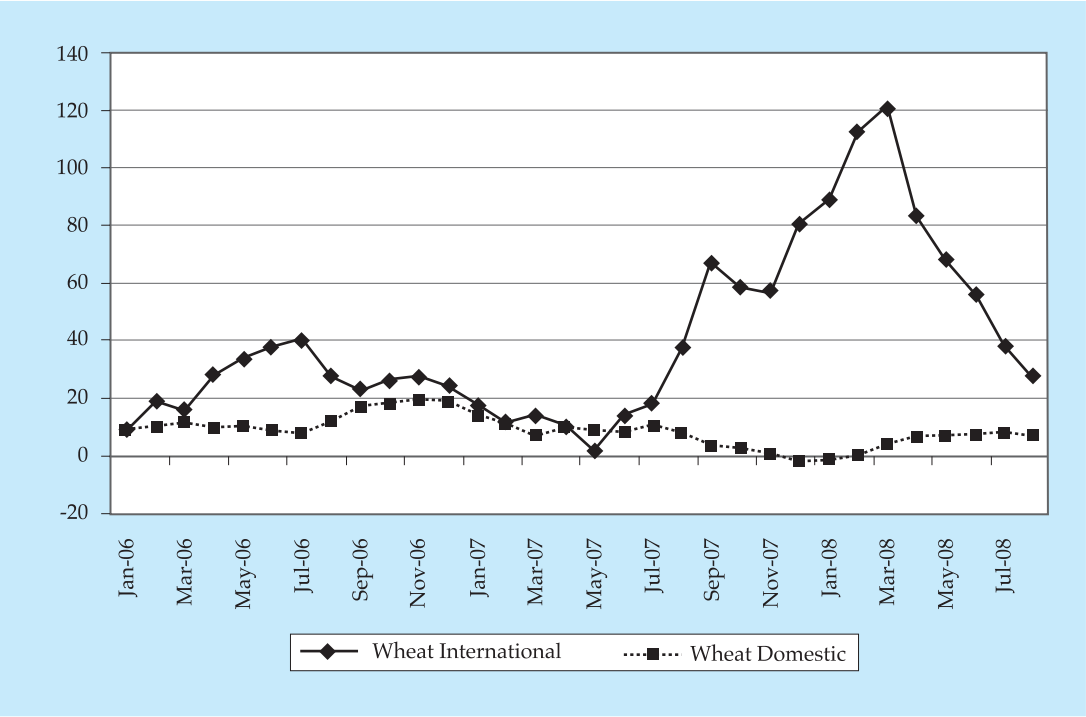
[51] Refers to IMF index of food prices base 2005 = 100.

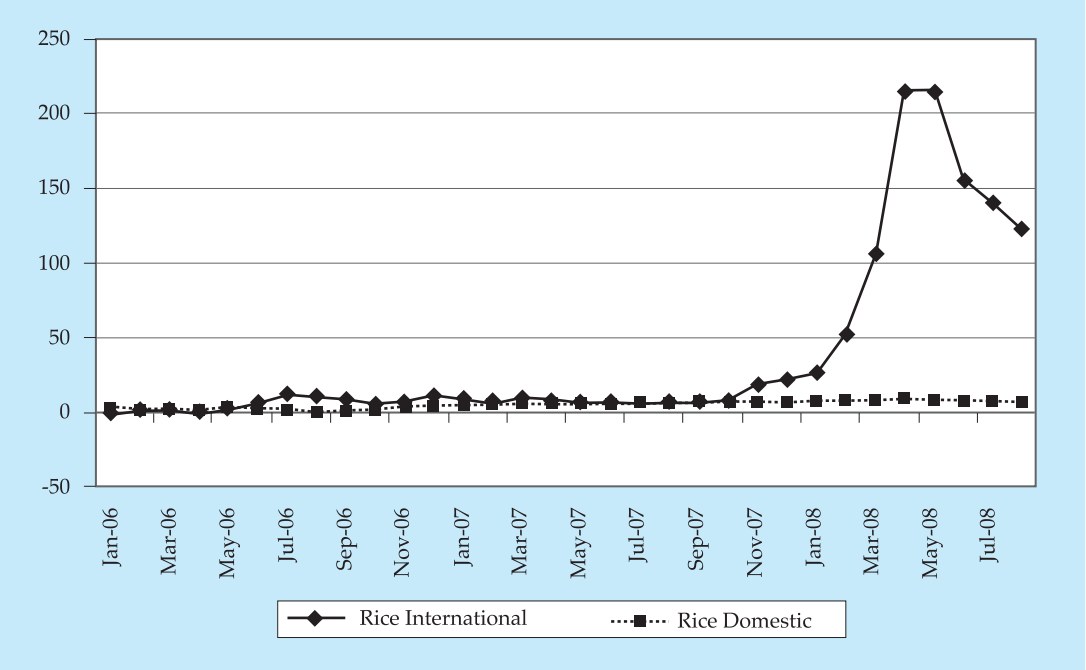
food security. This paper looks at India's experiences during the global food crisis, focusing on the staple foods of wheat and rice. It also presents a viewpoint on dealing with situations arising out of events like the global food and financial crises.

Figure 1: Annual rate of inflation (%) in wheat prices, month to month



Note: Domestic prices are in local currency and international prices are in US$

Figure 2: Annual rate of inflation (%) in rice prices, month to month



Note: Domestic prices are in local currency and international prices are in US$

II. India's food policy

Before discussing India's experience with the global food crisis, it is pertinent to know the salient features of the country's food policy. Since the beginning of the green revolution in the mid-1960s, the government has been intervening strongly in foodgrain markets. The main objectives of this intervention have been to achieve the goals of raising foodgrain production to match domestic demand, to make basic food available to consumers at affordable prices and to maintain inter- and intra-year price stability. These objectives have been achieved by three types of interventions including:

- statutory regulations and legal provisions in food markets;
- direct price intervention;
- trade policy.

The first type of intervention involves acts governing movement, storage, processing and sale and purchase of farm produce. Central and state governments institute and revise legal instruments from time to time. The most important regulations are the Essential Commodities Act (1955) (ECA) enacted by the central government and the Agricultural Produce Market Regulation Act (APMRA) enacted by the states. The ECA applies to any commodity declared as essential by the central government and it provides for instruments like licenses, permits, regulations and orders for price control, storage, stocking limits, the movement of produce, distribution, disposal, sale, compulsory purchase by government and sale to government via levy. Apart from the ECA and APMRA of various states, several other legal instruments are used to regulate activities of market functionaries.

The main components of direct price administration during the last four decades have been:

- price support and procurement;
- maintenance of buffer stock and operational stock;
- a Public Distribution System (PDS);
- open market operations.

The country started the system of minimum support prices (MSP) for wheat and paddy in 1965 to ensure that the prices received by farmers for their produce did not fall below a threshold level. Each season each year, the government announces the level of MSP based on the advice of the "Commission on Agricultural Costs and Prices". Then, targets for procurement by public agencies to meet PDS and buffer stock requirements are fixed. Once the harvest starts, the FCI and other public sector agencies procure paddy and wheat from grain surplus states at MSP. Procurement is not strictly limited to the target; it can go higher or lower. If actual market prices go below MSP, then public agencies procure the entire quantity of produce that comes into the markets in the states where procurement operations are in place. The produce procured by public agencies is added to the buffer stock of grains maintained by the government. Food grains procured by the government are used in three ways: for the PDS and other government welfare programmes at a subsidized rate, for open market sales to stabilize prices and for exports.

This system of foodgrain procurement and distribution has been criticized repeatedly for its inefficiency, for being a burden to the state exchequer and for distortions in the market. The PDS system has been attacked for leakages and pilferages, high cost of delivery and diversion of supplies meant for PDS to the open market. Alternatives, such as food stamps, have been suggested to replace the PDS. Similarly, some researchers find that trade is a better option than buffer stocking for inter-year price stabilization (Jha and Srinivasan 1999) whereas some others assert that price stabilization through procurement and buffer stocking is more beneficial than trade for farmers and consumers in the long run (Chand, 2003). It also has been felt that government regulations and intervention in foodgrain markets have discouraged private investments in this sector. Private investments could improve much needed efficiency in the market (Gulati *et al.,* 2000).

III. Move towards liberalization

Government agricultural policies came under severe attack in the post-liberalization period towards the late 1990s. Because the liberalized policy regime, which started in 1991, had helped the non-agriculture sector, it was felt that liberalization could also benefit agriculture by removing various interventions and regulations in agriculture markets and domestic trade. The second criticism was that external trade in agriculture was liberalized without liberalizing domestic trade, i.e. reforms were not sequenced properly. In response, the central government issued the "Removal of Licensing Requirements, Stock Limits and Movement Restrictions on Specified Foodstuffs Order, 2002" on 15 February 2002 under the ECA. This allowed dealers to freely buy, stock, sell, transport, distribute and dispose of any quantity of wheat, paddy/rice, coarse grains, sugar, edible oilseeds and edible oils without requiring any license or permit under any order issued under the Act. This was followed in 2003 by the launch of futures trading in wheat and rice. The central government and various state governments also adopted the Model APMC (Agricultural Produce Marketing Committee) Act which facilitated direct contracts between buyers (i.e. trading firms, processors or exporters) and farmers for the purchase of produce; this was known as contract farming.

The private sector responded to these changes in a big way and many large business firms like ITC, Cargill, Australian Wheat Board, Britannia and AgroCon entered the wheat and rice markets in the country from 2005 to 2007.

IV. Beginning of global food crisis

Soon after India liberalized the rice and wheat markets and international trade to encourage participation of the private sector in these markets, the global food scenario started showing some worrisome developments. When India removed restrictions on the private sector in wheat and paddy markets and allowed exports freely, private trade quickly took advantage of the new freedom. This raised domestic prices of staple foodgrains to levels closer to global prices. Also, futures trading in wheat started moving in tandem with Chicago Board of Trade futures prices. As a result, wheat prices in India during some months in 2005/06 and 2006/07 increased by almost the same percentages as in the global market (US hard red winter wheat price). While prices of wheat during 2005/06 remained under strong upward pressure, the quantity of wheat harvested during March–May 2006 turned out to be lower than normal and lower than anticipated (Table 1). Because of the strong pressure on wheat prices and the poor harvest during 2006, public agencies could procure only 9.226 million tonnes of wheat compared with the target of 15 million tonnes. By paying a little more than the MSP, the private sector succeeded in attracting farmers to sell wheat to it rather than to public agencies. Thus the government's wheat stock on 1 July 2006 was only 8.2 million tonnes (compared with a minimum norm of 17.1 million tonnes) and foodgrain stock was 19.3 million tonnes compared with the norm of 26.9 million tonnes. This decline in stocks and the strain on foodgrain supply (see Tables 1 and 2) coincided with a similar supply situation at the global level.

V. Policy response to deal with global food crisis

In the wake of the rising trend in global food prices and low stocks with public agencies, the Indian government decided to import wheat. The State Trading Corporation (STC), a public sector agency, imported 5.5 million tonnes of wheat on government account during 2006/07 to supplement domestic stocks and supply. Despite this, wheat prices in the country increased by more than 10 percent during fiscal year 2006/07. Official policy planners then felt that two factors were aggravating the rise in the price of food staples: futures trading and market manipulation by the private sector. Therefore, the government imposed a ban on futures trading in wheat and rice in February 2007 and brought back some operational restrictions on the private sector. On 29 August 2006, the central government issued an order to keep in abeyance the 2002 Order on "Removal of Licensing

Table 1: Supply scenario of wheat in India
(in million tonnes)

Year	Production	Public procurement	Export	Import	Average stock
2000/01	69.68	16.36	0.813	0.004	23.23
2001/02	72.77	20.63	2.649	0.001	32.40
2002/03	65.76	19.05	3.671	0.000	32.88
2003/04	72.16	15.80	4.093	0.000	17.73
2004/05	68.64	16.80	2.009	0.000	12.28
2005/06	69.35	14.79	0.746	0.000	8.75
2006/07	75.80	9.23	0.047	6.079	5.50
2007/08	78.40	11.13	0.000	1.793	8.85

Source: Agricultural Statistics at a Glance 2008, Ministry of Agriculture, GOI, New Delhi.

Table 2: Supply scenario of rice in India
(in million tonnes)

Year	Production	Public procurement	Export	Import	Average stock
2000/01	84.98	21.28	1.53	0.013	16.03
2001/02	93.34	22.13	2.21	0.000	23.28
2002/03	71.82	16.42	4.97	0.001	20.50
2003/04	88.53	22.83	3.41	0.001	11.28
2004/05	83.13	24.68	4.78	0.000	10.70
2005/06	91.79	27.66	4.09	0.000	10.20
2006/07	93.35	25.11	4.75	0.000	10.70
2007/08	96.43	26.06	6.50	0.000	10.30

Source: Agricultural Statistics at a Glance 2008, Ministry of Agriculture, GOI, New Delhi.

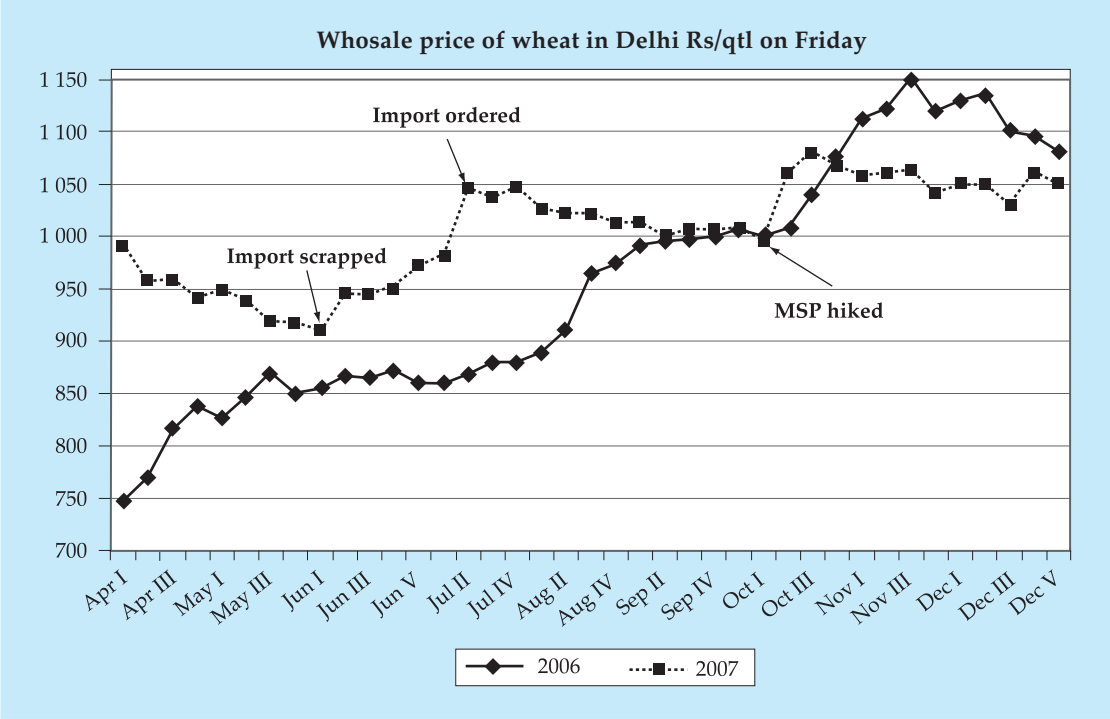
Requirements, Stock Limits and Movement Restrictions on Specified Foodstuffs" for wheat and pulses. The objective was to enable the state governments to tackle the rise in food prices and this permitted state governments to impose stock limits on wheat. This order is still in force. On the trade side, wheat imports were permitted at zero duty effective from 9 September 2006 and the same duty rate has been in force since then.

A more interesting story for wheat developed during fiscal year 2007/08. The government had set a target of procuring 15.15 million tonnes of wheat during 2007/08. From the beginning, there was a fear that procuring that amount of wheat would not be easy given the sharp increase in wheat prices during 2006/07. The MSP for wheat, recommended by the Commission for Agricultural Costs and Prices, was found to be totally irrelevant in the given situation. Because of this, the government announced a bonus of Rs. 100 (US$2.48) per quintal over the MSP of Rs. 750 (US$18.62) for the wheat sold to government agencies during the marketing season of 2007. Despite this incentive, the official procurement was not very encouraging. On 30 April 2007, the STC issued a tender to import one million tonnes of wheat, but it was scrapped on 29 May 2007. Immediately after this, domestic prices shot up and international prices also went up. Another tender was issued for one million tonnes of wheat by the STC on 26 June 2007. On 10 July, the government asked the STC to go ahead with the import of 0.511 million tonnes of wheat at a price much higher than the prevailing domestic price. This stopped the rising trend in wheat prices as can be seen from Figure 3.

In the author's view, the government's stock of foodgrains had a very significant impact on the behaviour of open-market food prices. This can be seen from the interesting movement of wheat

prices in the Delhi market (Figure 3) after the first week of April. The price data refer to Thursday of each week during 2006 and 2007. Wheat prices during 2007 declined to the lowest level of Rs. 910 (US$22.60) per quintal on 30 May, which was the last date for announcing the decision on the import tender. On the same day that news was published about the cancellation of the wheat tender, prices started shooting up. The upward trend continued till 10 July, when the government ordered the import of 0.511 million tonnes of wheat. The prices remained flat in the subsequent weeks during the month of July. This gives a strong indication that wheat prices in wholesale markets are highly sensitive to the government's power to intervene in the market through actual stock held. This is the perception of private trade, though there are other factors which also affect price.

Figure 3: Impact of government policy on wholesale price of wheat in the open market



The government's move to supplement its wheat stock by importing a small quantity at a very high price brought criticism. However, this move equipped the government with enough stock to influence the market. This was very helpful in maintaining wheat prices at a relatively stable level for the whole year, even when international prices more than doubled between May 2007 and March 2008. In order to keep track of the activities of the private sector in the wheat market, an order was issued on 11 February 2008 that required any company, firm or individual purchasing more than 10 000 tonnes of wheat during 2008/09 to report to the government.

Another move that helped insulate domestic prices from global prices was the complete ban on exports of wheat and wheat products imposed on 8 October 2007. The Indian government allowed domestic prices to rise in response to increases in international prices in a calibrated manner. The effective MSP for wheat was raised by 9 percent during 2006, by 21 percent during 2007 and by 17.6 percent during 2008 mainly to align domestic prices with the trend in international prices.

The government also paid attention to rice, which is the most important staple food in India. Due to low procurement of wheat for two consecutive years (Table 1), the government's stock of foodgrains remained lower than normal in July 2007. International prices of rice around that time were attractive for export from India. Meanwhile, the threat of an impending global food crisis loomed. In order to

prevent any adverse impact on India, the government banned exports of rice except high quality basmati varieties. This stopped normal grade rice from leaving the domestic market to go to overseas markets.

Other factors also helped India remain relatively immune to the global food crisis. First, there were bumper harvests of all major foods during 2007/08 because of favourable weather conditions and many policies. One such policy was the launch of the food security mission in 2007 which made concerted efforts to raise foodgrain production in the country. Another factor that helped India avoid the impact of the global food crisis was that only a fraction of the increase in international prices for inputs like fertilizer and crude oil was passed on to domestic users. This helped control increases in production costs and ultimately in output prices.

Safety nets played a major role in protecting India's vast population from global food crises. The country ensured a larger supply of wheat and rice through the PDS during those years when prices of food staples were under pressure (Table 3).

Table 3: Rice and wheat distributed under the public distribution system in India
(in million tonnes)

Year	Below poverty line households*	Above poverty line households	Total
2002/03	17.3	2.8	20.1
2003/04	20.0	4.0	23.9
2004/05	22.9	6.4	29.4
2005/06	23.5	8.0	31.5
2006/07	22.9	8.5	31.4
2007/08	24.6	8.7	33.3

*Includes supply under Antyodya Anna Yojana

Source: *Monthly Food Bulletin*, Department of Food, Ministry of Consumers Affairs, Food and Public Distribution, GOI, New Delhi.

To sum up, the following factors helped India safeguard against adverse impacts of the global food crises:

- active participation of the government in rice and wheat markets;
- institutional mechanisms for dealing with price instability;
- intelligent monitoring of domestic and global prices and the supply situation;
- prompt policy action to maintain price stability;
- frequent changes in regulation to curb profiteering activities of the private sector;
- changes in trade policy in response to global market changes;
- a social safety network.

VI. Global financial crisis

The global food crisis started easing after mid-2008 as prices of food staples in international markets dropped sharply. While there was some relief from the food crisis, another graver crisis struck the world. It started with the sub-prime mortgage crisis in the United States and swiftly engulfed the entire global financial system. This crisis sent some of the largest economies of the developed world into recession. As a result of interdependence among different nations, the global financial crisis and recession in major economies spread to almost all the countries in the world.

India is not insulated from the global financial meltdown. However, the bulk of investment in India is led by domestic growth and the ratio of exports to GDP is not very high.[52] These features are considered to moderate the adverse impacts of the global crisis on the Indian economy. An advanced estimate of GDP for 2008/09 shows that the growth rate in GDP will be 7.1 percent, which is 1.9 percent lower than that achieved during 2007/08. The impact of the global financial crisis is expected to be more severe on India's growth next year.

The impact of the global financial crisis on the agriculture sector is not quite clear. One can expect a decline in the export of high-value food products. There is also conjecture that an economic slowdown would put pressure on public investment in agriculture and support for activities like R&D. On the other side, there may be improvement in the terms of trade for agriculture as the income elasticity of food is generally lower than for non-food products.

VII. Perspective

Government regulation and intervention are necessary to safeguard domestic economies and vulnerable populations from global financial shocks and market volatility. This cannot be done if appropriate institutional mechanisms are not in place. These mechanisms cannot be created in a year or two just to respond to a crisis situation. These mechanisms need to be kept in place permanently.

There is lot of concern about the level at which global food prices will settle and their future behaviour. In this regard, prices of crude oil and technological change are generally considered to be critical factors determining the long-term trend in food prices. If the world goes ahead with biofuel development based on the use of grain and oilseeds, the availability of food staples is likely to fall short of demand and food staples may face a decline in per capita availability. This can be seen from the information furnished in Table 4.

According to estimates prepared by OECD and FAO, ethanol production is projected to rise to 126 billion litres by 2016/17, of which 73.51 billion litres would be contributed from grain. Biodiesel production is estimated to rise to 24.36 billion litres. These levels of biofuel would require 178.6 million tonnes of cereals and 135 million tonnes of oilseeds for feedstock. With this growth in biofuel, the share of ethanol in total gasoline is estimated to increase from 3.78 percent during the triennium 2005/06 to 2007/08 to 10.98 percent during 2016/17 and the share of biodiesel in total diesel fuel is estimated to increase from 0.93 percent to 3.21 percent in the same period. Because cereals and oilseeds are the principal sources of feedstock, growth in the biofuel industry is bound to affect their availability for other uses. In almost all countries, cereals and edible oils constitute staple foods and are crucial for sustaining food security. The issue is whether growth in cereal and oilseed production will keep pace with growth in demand for feedstock without causing adverse effects on the availability of cereals and oilseeds for food, feed and other non-biofuel uses. An answer to this can be attempted by looking at the biofuel scenario and production scenario for cereals and oilseeds presented in Table 4.

Cereal production is projected to increase by 1.41 percent per year during the period 2006/07 to 2016/17 while oilseeds production is projected to follow a 2.28 percent annual growth rate. After allowing for feedstock, the growth rate in cereal production declines to less than 1 percent and is negative for oilseeds. Based on the projected growth in cereal and oilseed supply and the projected production of biofuel, per capita availability of cereals and oilseeds for food and other uses would decline towards 2016/17. The annual rate of decline would be 0.21 percent in cereals and 1.64 percent in oilseeds. The only ways to improve per capita availability of food in this kind of situation is to use raw material other than grains and oilseeds as feedstock for biofuel or to raise growth in food production.

[52] Export to GDP ratio in India is 15 percent compared with 34 percent in China. Import to GDP ratio for India and China are 22 percent and 29 percent respectively (Reference year 2007/08, Key Indicators 2008, ADB).

Table 4: Estimates of global production and feedstock of biofuel

Aspect	2006/07	2016/17 projections	Growth rate
1. Biofuel production: (in billion litres)			
Ethanol production from cereals	28.77	74.81	10.03
Biodiesel production from oilseeds	8.48	24.36	11.13
2. Feedstock: (in million tonnes)			
Cereals	69.91	181.78	10.03
Oilseeds	47.13	135.34	11.13
3. Global production: (in million tonnes)			
Cereals	2 048.30	2 356.30	1.41
Oilseeds	299.80	375.70	2.28
4. Balance food and other uses: (in million tonnes)			
Cereals	1 978.39	2 174.52	0.95
Oilseeds	252.67	240.36	-0.50
5. Per capita availability food and other uses: (in kg)			
Cereals	302.09	295.89	-0.21
Oilseeds	38.58	32.71	-1.64

Sources and notes:

Source 1: Computed from information provided in Table 1. Assuming 57.9 percent of ethanol produced from cereals

Source 2: Computed from S. No. 1 assuming grain to ethanol ratio of 2.43 and oilseeds to biodiesel ratio of 5.56.

Source 3: OECD and FAO Secretariats. Base year figure is triennium average of 2005/06 to 2007/08.

There is a need to distinguish between scarcity and shocks. In some places, the recent food crisis is seen as a problem of grain management whereas it was more a problem of food production falling short of utilization for a number of years. Even the best global food coordination and management cannot address persisting scarcity; it can only address short-term shock. Scarcities can be addressed only by production strategies.

The situation in developing countries is different than in developed countries. A large number of people in developing countries live in poverty and there is much opportunity to raise per capita consumption, improve standard of living and improve infrastructure. What is missing is effective demand or purchasing power. This requires creating employment opportunities, particularly in rural non-farm sectors and through rural industrialization.

Governments of developing countries have a special responsibility in this kind of situation to provide income safety to poor households. Millions of working-age persons are living in chronic poverty because they are either unable to find employment or are underemployed. There is ample evidence now that the trickle-down hypothesis has not worked very effectively. Until the normal course of development offers attractive work opportunities to such segments of the labour force, governments should develop comprehensive plans for providing income support through public works programmes. For example, India's National Rural Employment Guarantee Scheme is a major initiative to help households that are below the poverty line to get some minimum employment. Preliminary results from this programme are very encouraging and the scheme is emerging as a major safety net for low-income and impoverished households. This scheme provides at least 100 days in a year of guaranteed wage employment at the stipulated minimum wage to at least one adult member of every rural household below the poverty line, in or around the employee's place of residence (for details see: http://nrega.nic.in/Trans_acc_ablity.pdf).

The impact of the current global economic slowdown has to be addressed by increasing domestic demand. There are only two ways to raise domestic demand: lower prices and increase the income of those who have high income elasticity of demand.

Agriculture is critical for inclusive growth and for reducing poverty and hunger. Experiences from states in India showed that the correlation between the rate of reduction of poverty and agricultural growth was 0.52. With non-agricultural growth, it was -0.13. Further, the level of poverty across states in India from 2004–2005 showed a significant and negative correlation (-0.613) with Net State Domestic Product (NSDP) per worker in agriculture, whereas, the correlation with NSDP per worker in the non-agricultural sector was close to zero (0.058) and positive. These results have important implications for poverty reduction. For economies in which there is a high dependence on agriculture for employment, non-agriculture growth does not help in reducing poverty whereas agriculture growth has a very strong impact on doing so.

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ANNEXES

Annex 1
Agenda

19 February 2009

Opening session

Session one: Three decades of Chinese agricultural policy reforms and performance
Presentations – Agricultural development, nutrition and the policies behind China's success
– China's rural reform: review and outlook
Panel and floor discussion

Session two: Changing agricultural policy landscape in Asia
Presentations – Food and agriculture in the Asia-Pacific region: past performance and future prospects
– Agriculture policy reforms in Asia: an overview of trends, issues and challenges
Panel and floor discussion

20 February 2009

Session three: Agricultural trade liberalization
Presentations – Implications of trade liberalization for agriculture and farmers in China
– Trade negotiations under Doha Development Agenda: state of play
Panel and floor discussion

Session four: Global food and financial crises
Presentations – Global financial and food crises: a Malaysian's perspective
– Global food and financial crises: experiences and perspectives from India
Panel and floor discussion

Session five: Wrapping up
Presentation – Summary of proceedings
Floor discussion

Closing remarks

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Annex 3

Forum summary statement of proceedings

1. FAO and the Agriculture Trade Promotion Centre of the Ministry of Agriculture, China convened the "Policy Forum on Agricultural Reforms in China and Selected Asian Countries: Lessons of Three Decades" on 19–20 February 2009 at the Beijing Asia Hotel. The conveners brought together government policy-makers, development agency officials, academics and the private sector from Australia, Bangladesh, China, India, Indonesia, Republic of Korea, Malaysia, Nepal, Philippines, Sri Lanka and Thailand to share experiences and insights.

2. The Forum had two objectives: to learn from three decades of the region's agricultural policy experiences and to forge ways to strengthen reform. It deliberated on agriculture policy performance, process and prospects and in this context discussed the deadlocked Doha Round of trade negotiations, recent soaring food prices and the current financial crisis.

3. Examining lessons learned, the Forum agreed that agriculture was the foundation for the spectacular 9 percent annual growth in the Chinese economy over nearly three decades. The agriculture sector's contribution was an unparalleled annual agricultural GDP growth of close to 5 percent in the same period. This commendable performance came from far-reaching improvements in the sector's productivity, structure, marketing and capital formation. Agriculture's success brought in its wake significant advances in food security, employment and rural income. Incidence of poverty fell significantly.

4. Supporting experiences from other developing countries and China showed that in order for agriculture and rural development to perform well, there should be a favourable setting for growth. This pro-development and growth-enhancing environment included the following driving forces:

- macroeconomic stability encompassing the interest rate, exchange rate, wage rate and general price level;
- a relatively high domestic savings rate aimed at capital formation and investment;
- a national plan of action for technology transformation;
- human capital with widespread basic (primary) education;
- adoption of integrated competitive marketing systems;
- government commitment towards food security and balanced nutrition;
- openness to FDI.

The Forum noted that these forces may be beyond the control of agricultural policy-makers; however, agricultural policy-makers should certainly consider the strengths and weaknesses in these drivers of development.

5. Taking stock of agricultural policy regimes, the Forum agreed that the outstanding performance of Chinese agriculture and rural development could be attributed to these critical policy elements:

- the HRS and subsequent Rural Land Contracting Law replacing the collective farming system;
- relatively high R&D investment, resulting in comprehensive breakthroughs in agricultural technology, a steady increase in TFP and restructuring towards higher total value product;
- development of physical infrastructure, especially irrigation, rural transport and post-harvest equipment and facilities;

- gradual liberalization of domestic agricultural markets and adoption of policies directed towards favourable output to input price ratios;
- liberalization of international agricultural trade in the process of accession to WTO membership and subsequently;
- promotion of off-farm employment through rural and township enterprises and out-migration to the urban industrial and service sectors;
- subsidization of resource-poor farmers for cost control, adoption of technology, income support, food security and elimination of agricultural fees and taxes.

Based on similar experiences in the region, the Forum inferred that farm incomes were raised by earnings rights, security of tenure, technological advances and efficient marketing. The process freed farm labour for off-farm employment, raising incomes even more.

6. Apart from this winning formula, the Forum highlighted the critical approaches to policy formulation and implementation. In its shift from a planned economy to its current socialist market economy, China gradually undertook major policy changes in four stages. The sequential changes began with adopting the HRS of production. This was followed by liberalizing distribution, establishing the integrated competitive market and reducing regional, urban-rural and household inequities. Other lessons of approach and method included the importance of:

- productivity-driven development;
- farmer-centred reform;
- devolution of authority and empowerment of the farmers;
- commitment to the state's role in market regulation and provision of support services.

7. The Forum recognized that the process of agricultural reform has been fraught with unexpected issues and unintended consequences. The more significant policy implementation issues encountered include:

- emerging uncertainties of land tenancy stemming from inadequacies of legislation and administration and inequities of distribution;
- slowing growth of off-farm employment because of constraints in domestic and foreign consumer demand, capital and credit, technology and operational and management systems faced by rural and urban enterprises;
- difficulties in assessing the costs and benefits of international trade, especially its impact on the poor, particular sectors and regions and income distribution;
- rising income inequality among households, regions and the rural-urban divide resulting from accentuating differences in resource endowments;
- increasing environmental degradation and water scarcity arising from intensifying production and climate change.

The Forum emphasized the importance of monitoring and evaluating policies to expedite execution, recognize side effects and take corrective action as necessary in a timely fashion.

8. Looking forward, the Forum noted that the region's agriculture faces a number of common problems and challenges. The more difficult among them include:

- global climate change;
- environmental degradation, particularly soil erosion and salinization, air and water pollution, food contamination, deforestation and desertification;

- the looming water shortage, especially in China and India;
- increasing incidence and impact of natural disasters;
- continuing barriers to agricultural trade and the WTO Doha Round stalemate;
- maintaining domestic staple food price stability while promoting international trade;
- persistent underemployment and unemployment in the agricultural sector;
- rising oil prices that eventually escalate costs, inflate prices and threaten food security.

9. The food crisis of 2008 previewed impending disaster in food and agriculture if these problems are not solved. A record spike in food and agricultural prices was caused by a decline in public investment and support to agriculture, weather-related production shortfalls, a decline in global cereal stocks, escalating oil prices, high fertilizer and shipping costs, diversion of food commodities to biofuel production and speculation in financial markets. The international food price index surged 53 percent in the first quarter of 2008 compared with the same period in 2007. The Forum noted that in this crisis, several developing countries, particularly India and China, were able to contain domestic price increases of major food cereals within affordable levels and protect household food security. They succeeded through statutory market regulation, direct price intervention and trade policy. These three types of interventions translated into:

- regulation of private sector procurement, stocking and movement;
- government support price procurement;
- buffer stocking;
- public distribution of subsidized food and open market operations;
- government intervention in international trade through controls on exports, imports and tariffs and direct state trading.

10. The Forum agreed that food crises are likely to occur more frequently because of the formidable challenges to agriculture. It urged developing countries to increase investment in agriculture to enhance their productivity and resilience and to strengthen the early warning system and safety nets to ensure food security of vulnerable households.

11. Underscoring the role of international trade in agricultural GDP growth, the Forum expressed concern over the stalemate in the Doha Round of WTO negotiations. It noted that consensus could not be reached on modalities covering the three pillars of the Agreement on Agriculture (i.e. domestic support, market access and export subsidy). Wide differences continued to prevail among the different interest groups over method, procedure and pace. However, Asian countries' views converged significantly, especially on the important role of agriculture in food security, poverty alleviation and environmental preservation. Such common ground led to the crucial acceptance of the need for special and differential treatment for developing countries in all aspects of the prospective Agreement on Agriculture.

12. Based on the experiences of multilateral and bilateral trade and investment arrangements, the Forum agreed that agricultural trade contributes to agricultural GDP growth in the long term. Opening domestic markets to foreign products can provide an opportunity for a country to restructure its agricultural sector towards those commodities for which it has comparative advantages. It could lead to competition, technology transfer and FDI in agriculture, as happened in ASEAN. Marketable surpluses could be exported to trading partners within the bilateral and regional arrangements and beyond. However, quick, drastic trade liberalization may not be universally beneficial because each developing country has unique natural resources, trade balances and socio-economic circumstances.

13. The Forum also noted that domestic market imperfections (such as fragmentation and lack of competition and transparency) precluded the poor from the benefits of trade liberalization. It stressed that import and export liberalization initiatives should be implemented in tandem with improvements in domestic market efficiency.

14. The Forum urged the reinforcement of regional cooperation in agriculture. Collective action could be taken by:

- strengthening regional groupings on key remaining issues such as SSM, tariff simplification, sensitive products, cotton and NAMA in WTO negotiations;
- promoting regional and preferential trade agreements;
- fostering regional food security arrangements;
- attracting FDI to agribusiness;
- expediting agricultural technology transfer;
- facilitating employment of migrant workers.

15. As the Asian agriculture sector faces these policy challenges, the Forum noted that the ongoing global economic crisis will be the foremost debilitating factor. The IMF has already lowered its predictions for global economic growth in 2009 from 3.5 to 0.5 percent. For most countries, GDP growth for 2008 has fallen far short of expectations and forecasts for 2009 also have been significantly reduced. Other indicators that economies are on a downtrend include falling commodity and oil prices, factory closures, cutbacks in employment and wages and declining stock markets. In some developing countries, state revenues are likely to fall, budgetary allocations for agriculture will be cut and agricultural R&D programmes will be curtailed. As in the last Asian financial crisis of 1997–1998, the absorptive capacity of the sector probably will be additionally strained as unemployed people with rural roots move back to the farms.

16. The Forum noted China's timely four-pronged programme to surmount the impending global recession. This included a fiscal stimulus of four trillion yuan (US$586 billion) (7 percent of GDP) per year over two years, build-up of physical infrastructure, reinforcement and rejuvenation of industry and development of safety nets. Much of the programme is aimed at employment and income generation and protecting the food security of the poor who live mainly in the rural areas.

17. In light of the region's policy experiences, emerging challenges and the ongoing economic crisis, the Forum recommended the following ten-point agricultural policy reform strengthening programme:

- Build institutional infrastructure, especially in the critical areas of property rights, land tenure, farmers' organizations and rural banking and credit.
- Reinforce marketing institutions and services for private trade.
- Promote agricultural trade aimed at creating employment, raising rural incomes and improving food security.
- Raise R&D investment directed at lifting TFP, adapting to and mitigating climate change and overcoming the related problems of water depletion, environmental degradation and rising energy costs.
- Increase investments in physical infrastructure, especially for irrigation, transportation and post-harvest operations.
- Establish comprehensive food quality and safety systems.
- Promote rural enterprises with tax incentives, access to credit, R&D support and market development.
- Build safety nets through food subsidy, welfare payment and work programmes for subsistence farmers, the rural landless, natural disaster victims and the unemployed.
- Upgrade rural human capital through better education, particularly rural primary education.
- Support and protect domestic and foreign migrant agricultural labour.

18. Looking to the future, the Forum stressed the importance of resolving five emerging issues to ensure sound agricultural and rural development policy. These issues may be framed as the following questions:

- Since GDP growth alone is not enough to eradicate hard-core poverty or reduce persistent income disparity, what kind of growth and what other measures are necessary?
- Since the population growth rate of the rural poor has proven to be an important factor in determining progress in alleviating poverty, what can be done to address this issue?
- Since agricultural population and average income data may have been misleading because of the rapid rise of off-farm income, is there a need to review definitions?
- Is it a viable option to move the hard-core poor out of agriculture?
- Are developing countries prepared for the possible re-emergence of protectionism in the ongoing economic crisis?

19. The Forum called for regional cooperation in forging agricultural policy to meet the demands of the next decade. This can begin by concerned countries of the region reinforcing agricultural policy dialogue.

How did the Asia-Pacific region rescue over 700 million people from extreme poverty between 1980 and 2005? What policy lessons can we learn and implement to improve conditions for the nearly 1 billion people in the region who continue to live in poverty? Examining Asia's recent agricultural reform and trade liberalization experiences, in the context of current global crises, presents an occasion to reflect on past achievements and consider future opportunities.

This publication synthesizes the proceedings and presents technical papers from a Policy Forum convened by the Food and Agriculture Organization of the United Nations (FAO) and China's Ministry of Agriculture. The first part summarizes key points from presentations, panel discussions and deliberations, which sought to capture the essence of three decades of Asia's agricultural policy experience in order to inform future reforms that foster growth and alleviate poverty. The second part incorporates eight technical papers which address the forum's main themes: Chinese agricultural policy reforms and performance over the past 30 years; Asia's changing agricultural policy landscape; agricultural trade liberalization; and the implications of the global food and financial crises for food and agriculture.

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