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Managing Food Price Inflation in South Asia

edited by
Sadiq Ahmed and Hans G. P. Jansen

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Preface

The surge in global commodity prices of the past few years has presented a tremendous development challenge to South Asian countries. On a net basis, South Asia is estimated to have suffered a cumulative income loss equivalent to some 9.6 percent of GDP between January 2003 and April 2008. Although much of the income loss resulted from the hike in petroleum prices, the surge in food prices between January 2007 and April 2008, especially of staple food — wheat and rice — created tremendous adverse social impact in South Asia. All countries witnessed unprecedented surge in food prices, although India was largely able to limit this increase through a combination of timely interventions using stock management and public food distribution. Net food importing countries like Afghanistan, Sri Lanka and Bangladesh have suffered the most from the food price crisis.

The adverse effect of the rise in global commodity prices on macroeconomic balances has been substantial. South Asian countries have seen a sharp increase in fiscal deficits and a worsening in the balance of payments. The rate of inflation surged and for the first time in South Asia's history all countries simultaneously experienced double digit inflation rates, with 20 plus rates in Afghanistan, Pakistan and Sri Lanka. Economic growth is showing signs of slowdown as countries are trying to arrest the deterioration in macroeconomic imbalances and rising inflationary pressures through demand management measures. The emerging global financial crisis is adding fuel to the fire, with further adverse consequences for macroeconomic balances and growth.

In all countries, the immediate political economy concern has been to stabilize domestic food prices and lower inflation. This concern is easy to see when one looks at the adverse consequences for poverty reduction. The share of food consumption in total consumption is extremely high in South Asia, averaging nearly 50 percent as compared to 17 percent in USA. It is even higher for the poor, who as a result have been hurt most by the increase in food prices.

While much of the immediate policy focus has been on food price stabilization, especially for the staple food — wheat and rice — the

implications of the various policies used for short-term price stabilization for longer-term supply response, growth, economic efficiency and fiscal sustainability have not always been analyzed or thought through. South Asian countries have also intervened to put in place various safety net programs to protect the poor. This has been a combination of activating or expanding existing schemes and introducing new schemes. The efficiency and effectiveness of these schemes in terms of outcomes and consistency with fiscal sustainability in an environment of external shocks and very tight fiscal space require much more thought, analysis and review.

Against the background, the main objective of the conference was to provide a forum for exchanging experiences and analysis to help policy makers to position themselves on how to respond effectively to the global food price crisis over the longer term. Representatives from six of the eight South Asian countries — Afghanistan, Bangladesh, India, Nepal, Pakistan and Sri Lanka — participated in the conference held in Dhaka, Bangladesh on November 15-16, 2008. Bangladesh as a host country participated with full strength including high level policy makers, political representatives, intellectuals, business, media and the donor community. In addition experts from the World Bank and International Food Policy Research Institute (IFPRI) participated in the conference as resource persons. The conference was jointly sponsored by the World Bank Institute, the South Asia Region of the World Bank and the Bangladesh Power and Participation Research Center (PPRC). The latter served as the local host for the Conference.

The papers included in the volume are a subset of what was presented in the conference. The ones that are excluded are those not completed as a full paper. The book is divided into two parts. Part 1 provides the regional context of the key issues in managing food prices in South Asia. It consists of three chapters with the first chapter by Sadiq Ahmed providing the macroeconomic context of the food price inflation challenge and implications for policy reforms. This sets the stage for the remainder of the conference. The second chapter by Tara Vishwanath and Umar Serajuddin discusses the all important issue of poverty impact of rising food prices, drawing on a detailed review of the Bangladesh experience. Chapter 3 written by Mansoor Rashid and Céline Ferre lays out the issues in designing sound safety net programs in South Asian countries based on experiences within the region and elsewhere. Part 2 looks at six country studies prepared by local scholars: Mir Haroun on Afghanistan, Mahabub Hossain on

Bangladesh, Mahendra Dev on India, Champak Pokharel on Nepal, Saman Kelegama on Sri Lanka and Sohail Malik on Pakistan (co-authored with Hans Jansen). Part 2 also provides an epilogue by Hans Jansen that cautions against the unrealistic optimism that the recent decline in food prices implies an end to the global food management problems and the related policy agenda.

Several institutions and individuals contributed to the success of this conference. We will like to express our gratitude to the conference sponsors — the Power and Participation Research Center (PPRC) Dhaka, The South Asia Regional Programs World Bank Washington DC, and the World Bank Institute Washington DC. Additionally, special thanks are due to the staff of the World Bank office in Dhaka, to the authors and all participants who worked tirelessly to make this conference deliver the intended results. Coverage in the media and responses from participants suggest that this conference was well appreciated and timely. We hope the book will be helpful in informing the policy debate. In closing, we will be remiss if we don't acknowledge the special contributions made by Mildred Gonsalvez and Marjorie Kingston in helping us put together the conference and the book, respectively.

Washington DC

Sadiq Ahmed
Hans G.P. Jansen

Part 1: Regional Context

Chapter 1

Global Food Price Inflation: Implications for South Asia, Policy Reactions and Future Challenges

*Sadiq Ahmed***1.1 INTRODUCTION**

The surge in global commodity prices of the past few years has presented a tremendous development challenge to South Asian countries.¹ On a net basis South Asia is estimated to have suffered an income loss equivalent to some 9.6 percent of GDP between January 2003 and April 2008. Although much of the income loss resulted from the hike in petroleum prices, the surge in food prices between January 2007 and April 2008, especially of staple food — wheat and rice — has created tremendous adverse social impact in South Asia. All countries have witnessed unprecedented surge in food prices, although India was able to limit this increase owing to good harvests and timely interventions using stock management and public food distribution. Net food importing countries like Afghanistan, Sri Lanka and Bangladesh have suffered the most from the food price crisis.

The adverse effect of the rise in global commodity prices on macro-economic balances has been substantial with South Asian countries experiencing a sharp increase in fiscal deficits and a worsening in the balance of payments resulting in rising rates of inflation. For the first time all South Asia countries have simultaneously experienced double digit inflation rates, with 20 plus rates in Afghanistan, Pakistan and Sri Lanka. Economic growth is showing signs of slowdown as countries seek to arrest the deterioration in macroeconomic imbalances and rising inflationary pressures through demand management measures.

¹ Due to data limitations, this Chapter does not cover Bhutan and Maldives.

The emerging global financial crisis is adding fuel to the fire, with expected future adverse consequences for macroeconomic balances and growth.

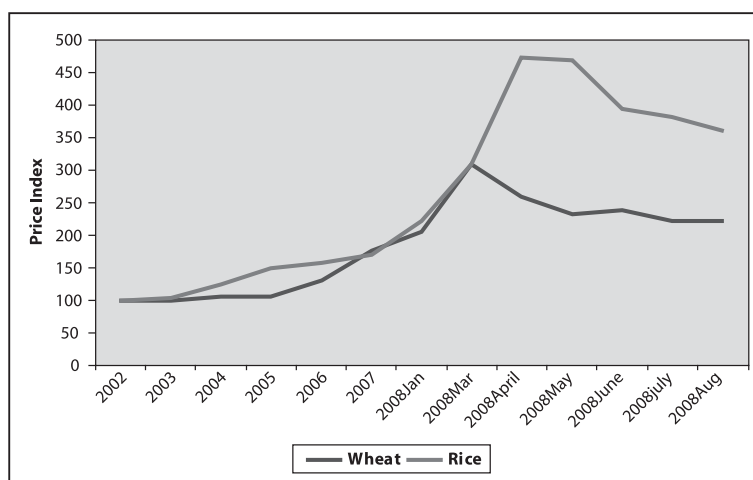
In all countries, the immediate concern has been to stabilize domestic food prices and lower inflation. This concern is easy to appreciate when one looks at the adverse consequences for poverty reduction. The share of food consumption in total consumption is extremely high in South Asia, highest amongst the poor, averaging nearly 50 percent as compared to 17 percent in the USA. The problems of the poor have been further compounded by the recent rise in food prices.

While much of the immediate policy focus has been on food price stabilization, especially for the staple food — wheat and rice — the implications of the various short-term price stabilization policies for longer-term supply response, growth, economic efficiency and fiscal sustainability have rarely been adequately analyzed. South Asian countries have also intervened to put in place various safety net programs to protect the poor which has included a combination of activating or expanding existing schemes and introducing new schemes. The efficiency and effectiveness of these schemes in terms of outcomes and consistency with fiscal sustainability in an environment of external shocks and very tight fiscal space also need much more thought, analysis and review.

The main objective of this Chapter is to provide an input to the policy debate and analysis of how South Asia needs to position itself to respond effectively to a new environment of higher food prices. To put this debate into its appropriate context, Section 1 provides a brief analysis of the nature of global food price inflation focusing on the two staple food items—wheat and rice — that occupied the primary attention of policy makers. It shows the strong positive link between the prices of food and energy, which emphasizes the need to look at them together. Section 2 also looks at the supply, demand and price situation in South Asia for these staple food items, explaining why prices have diverged so much between countries within the region and in comparison with global prices. In Section 3, the Chapter reviews the impact of food and fuel price inflation in South Asian countries in terms of income, macroeconomic balances, inflation and poverty while Section 4 looks into the various policy responses. Section 5 looks at the longer-term issues and challenges, including the consistency of short-term actions with the longer-term agenda and Section 6 provides concluding observations.

1.2 GLOBAL FOOD PRICE INFLATION

The period from 2005-2007 saw rising global food prices with accelerated food prices from 2007 onwards. Based on the World Food Price Index developed by FAO, international food prices in April 2008 were 60 percent higher than the previous twelve months, which was further driven by rising grain prices. Two staple food grains of special importance to South Asia are wheat and rice. The international price of wheat more than tripled between 2002 and 2008 (Fig. 1.1). The price of wheat was relatively stable with a surge in 2007 and early 2008, reaching a global peak in March 2008 but as of August 2008 it remained 70 percent higher than the average price in 2006. The price of rice increased nearly fivefold between 2002 and May 2008, when it reached a global peak. The international rice price began to increase from 2004 resulting in rapid increase in price within a five-month period in 2008 when prices doubled but this flattened from May that year. Despite the reduction in the price increase the international price of rice in August 2008 was 128 percent higher than the average price in 2006 adversely impacting the poorest members of society.



Source: IMF International Financial Statistics and World Bank's Global Economic Monitoring Database.

Fig. 1.1: Global prices of rice and wheat (2002 = 100)

Global food prices have increased because of a combination of factors including rising population, rapid economic growth in emerging markets, high energy and fertilizer prices, increased use of food crops for bio-fuels, rapid demand increase for some food crops, depreciation of the US dollar, and declining global stocks of food grains due to changes to buffer stock policies in the US and the European Union. Back-to-back droughts in Australia, and growing global demand for grains (excluding for bio-fuel production) have been modest contributors and on their own would not have led to large price increases. Commodity investors and hedge fund activity also seem to have played a role even though they contributed more to extreme price spikes than to the fundamentals of upward price trends. Although empirical evidence is scarce, the prevailing consensus among market analysts is that fundamentals and policy decisions are the key drivers of food price rises, rather than speculative activity (World Bank 2008).

Global supply-demand imbalance: Table 1.1 provides details of the world production and consumption trends for wheat, rice and foodgrain over the past 10 years. The period between 1999-2008 world food consumption grew faster than production causing a substantial drawdown of stocks (Fig. 1.2). Wheat production faced difficulties over the 2005-2007 periods, there has been a strong recovery in 2008-2009. In contrast to wheat, rice production increased significantly during 2005-2008 and overall production has exceeded consumption.

To what extent can these trends explain the rising prices? The drawdown of reserves during 1999-2008 is a clear indication of a global tightening of food markets with obvious implications for rising prices. The acceleration of wheat price increases during 2006-2008 is partly explained by the large imbalance between supply and demand in this period, accentuated by adverse market expectations and the generally low short-term supply-demand elasticities. But the behavior of rice prices and its acceleration in 2007-2008 cannot be explained by demand-supply imbalances.

As noted earlier, unlike wheat, overall rice production exceeded consumption during 2006-2008 but prices exceeded expectations. One needs to look at other factors including trade policies and cost of production.

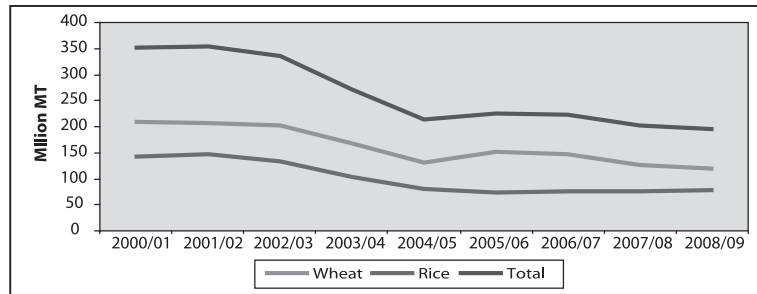
Adverse effects of trade policy bans: The introduction of export restrictions and bans — such as those imposed by India and China on rice, and by Argentina, Kazakhstan, Pakistan, and Russia on wheat — has further restricted global supply and aggravated shortages. Initial

Table 1.1 World foodgrain demand and supply, 1999-2009

(million MT)

Year	Wheat		Rice, milled		Food Grain	
	Production	Consumption	Production	Consumption	Production	Consumption
1999/00	586.7	585.0	408.9	399.8	1,873.60	1,867.60
2000/01	582.9	585.0	398.9	395.3	1,844.80	1,864.80
2001/02	583.1	587.1	399.7	413.4	1,877.90	1,908.00
2002/03	568.7	605.3	378.3	408.0	1,822.80	1,917.20
2003/04	553.8	588.6	391.9	414.0	1,862.40	1,948.10
2004/05	625.7	606.9	401.3	409.3	2,043.60	1,995.60
2005/06	620.9	624.4	418.3	415.8	2,018.90	2,033.60
2006/07	596.3	616.9	420.2	420.6	2,005.30	2,053.50
2007/08	610.5	622.1	429	426.6	2,115.50	2,114.90
2008/09	670.8	649.8	430.8	427.7	2,190.60	2,170.60

Source: USDA.



Source: United States Department of Agriculture (USDA) database.

Fig. 1.2: Global wheat and rice stocks

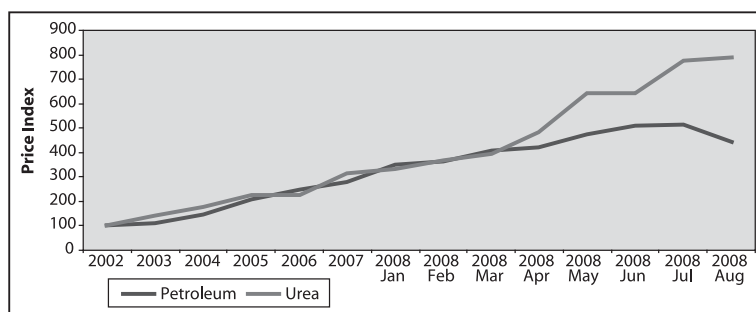
actions by a few large exporting countries prompted others to quickly follow suit, undermining trust in the market resulting in a self-reinforcing price spiral (see Brahmabhatt and Christiaensen, 2008). The decision to ban rice exports by the Indian Government (except for 'Basmati' rice) was quickly followed by export restrictions placed by Vietnam and other major rice producing nations resulting in an immediate impact on prices. This was further aggravated by the actions of large rice importers, such as the Philippines, which organized large tenders to import rice against a background of shrinking traded supplies (see Fig. 1.3).



Source: Brahmabhatt and Christiaensen (2008).

Fig. 1.3: Rice prices (US\$/metric ton) and recent policy responses; January 2004-April 2008

Surge in cost of production: A determining and longer term factor lies with the rising cost of production with an increase in the price of key inputs including fertilizer, diesel and transport which has been further compounded by higher energy prices (Fig. 1.4). The increase in fertilizer prices is particularly telling, rising by more than four times between 2002 and 2008 with the sharpest increase in 2006. This increase in cost of production is an important structural factor that explains the increase in rice and wheat prices during 2006-2008.



Source: IMF IFS Yearbook, World Bank Commodity Prices.

Fig. 1.4: Global fuel and fertilizer prices

While short-term fluctuations in food production compounded by trade restrictions had a negative impact on short-term food prices, the near-term prices received a positive response through the bumper global harvests for wheat in 2008-09 which complimented the rise in rice production. As a result, stocks are being replenished placing downward pressure on global prices which would be further enhanced through the removal of trade bans. Yet, it is clear that the underlying economics of food markets have changed substantially and unless energy prices were to fall substantially to the levels found in 2004, global prices of rice and wheat will not likely return to the pre-crisis prices of 2004. The expected outlook for prices in the near to medium term is shown in Table 1.2. These projections show the substantial reduction in projected annual average oil and fertilizer prices from the peak levels in 2008. While these projected input prices are significantly lower than the local peak (especially for oil that reached a monthly average of \$134/per barrel in July 2008), they are substantially higher than average prices in 2004 reflecting the realities of world

Table 1.2 Projected average global commodity prices, 2007-2010

Commodity	2007	2008	2009	2010
Oil (\$/barrel)	72.5	101.2	74.5	75.8
Rice (\$/MT)	326.4	660.0	446.0	459.0
Wheat (\$/MT)	255.2	330.0	255.0	262.0
Fertilizer (\$/MT)	309.4	544.0	388.0	299.0

Source: World Bank Prospects for the Global Economy (November 2008).

demand and supply. Also, as the global recession eases commodity prices are likely to rebound.

Domestic supply and demand factors: Tables 1.3 and 1.4 show the trends in rice and wheat production and consumption in South Asia over 2000-2008.

The inverse relationship between consumption and production in South Asia has meant total food production grew at one percent per annum with consumption growth at 2.3 percent which exceeded the global consumption rate (Table 1.5). This is partly due to a faster pace of expansion of South Asia's population, but also reflects a positive income elasticity and relatively high income growth.

There are significant differences at the country level but average food consumption has exceeded production during 1999-2008 for all South Asian countries. In India, South Asia's largest grain producer for both rice and wheat accounting for 71 and 76 percent of production, respectively, wheat production has barely expanded during 1999-2008 although rice production has shown a positive trend. In Pakistan, a primarily wheat consuming country, accounting for 21 percent of wheat production in South Asia, there have been annual fluctuations in production but from 2000-2008 productions levels have remained negligible similar to India. The other large foodgrain producer, Bangladesh, which is primarily a rice consuming country and accounts for 20 percent of South Asia's rice production, has registered a production growth of two percent per year in rice. In sharp contrast to the production pattern, the rate of growth of food grain consumption in all three large producing countries has outstripped production.²

² Surprisingly, however, Pakistan's consumption growth for foodgrain is substantially lower than the population growth rate suggesting a negative income elasticity. This could alternatively reflect data problems.

Table 1.3 Foodgrain production in South Asia (1000 MT)

Countries		2000/2001	2001/2002	2002/2003	2003/2004	2004/2005	2005/2006	2006/2007	2007/2008	2008/2009
Rice	Afghanistan	169	157	260	174	312	315	362	335	168
	Bangladesh	25,086	24,310	25,187	26,152	25,600	28,758	29,000	28,600	29,400
	India	84,980	93,340	71,820	88,530	83,130	91,790	93,350	96,430	96,000
	Nepal	2,808	2,774	2,752	2,752	2,968	2,857	2,804	2,810	2,850
	Pakistan	4,802	3,882	4,479	4,848	5,025	5,547	5,200	5,500	5,600
	Sri Lanka	1,940	1,820	2,058	1,900	1,974	2,100	2,145	2,200	2,300
	South Asia	119,785	126,283	106,556	124,356	119,009	131,367	132,861	135,875	136,318
	World	398,902	399,700	378,318	391,861	401,298	418,313	420,164	428,989	430,751
Wheat	Afghanistan	1,469	1,597	2,686	3,480	2,293	4,265	3,200	3,800	2,500
	Bangladesh	1672	1610	1510	1253	976	820	740	1200	800
	India	76,369	69,680	71,810	65,100	72,150	68,640	69,350	75,810	78,400
	Nepal	1,184	1,157	1,258	1,344	1,387	1,442	1,394	1,395	1,400
	Pakistan	21,079	19,024	18,227	19,183	19,500	21,612	21,277	23,300	21,500
	South Asia	101794	93088	95511	90380	96326	96,799	95981	105325	103620
	World	582,899	583,078	568,708	553,838	625,738	620,851	596,273	610,537	670,751

Source: USDA Database.

Table 1.4 Foodgrain consumption in South Asia (1000 MT)

Countries		2000/2001	2001/2002	2002/2003	2003/2004	2004/2005	2005/2006	2006/2007	2007/2008	2008/2009
Rice	Afghanistan	385	427	440	369	455	516	550	485	343
	Bangladesh	24,958	25,553	26,100	26,700	26,900	29,000	29,764	30,600	30,600
	India	75,960	87,611	79,860	85,630	80,861	85,088	86,940	90,760	93,000
	Nepal	2,828	2,793	2,762	2,756	3,029	2,859	2,863	2,870	2,910
	Pakistan	2,615	2,540	2,545	2,595	2,550	1,896	2,257	2,450	2,420
	Sri Lanka	2,020	2,075	2,100	2,075	2,139	2,150	2,152	2,287	2,376
	South Asia	108,766	120,999	113,807	120,125	115,934	121,509	124,526	129,052	131,349
	World	393,291	412,455	405,681	411,615	406,545	411,629	417,017	421,962	425,519
Wheat	Afghanistan	2,043	2,597	3,186	3,930	3,293	4,765	4,250	4,700	3,800
	Bangladesh	2866	2950	3000	3050	3000	2950	2800	2900	2850
	India	66,821	65,125	74,294	68,258	72,838	69,971	73,358	75,850	77,600
	Nepal	1,194	1,158	1,266	1,361	1,407	1,462	1,408	1,415	1,420
	Pakistan	20,500	19,800	18,380	19,100	19,600	20,900	21,900	22,400	22,600
	Sri Lanka	850	801	875	931	950	1,000	817	825	850
	South Asia	94,294	92,451	101,028	96,655	101,118	101,078	104,563	108,120	109,150
	World	583,564	587,816	603,659	581,173	605,943	618,197	618,703	619,007	647,079

Source: USDA database.

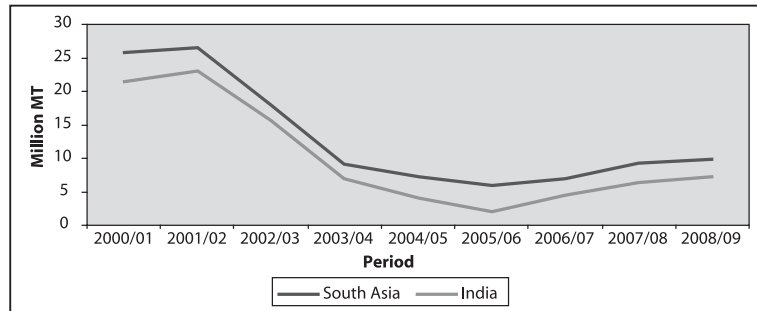
Table 1.5 Annual growth rates in production and consumption of food in South Asian countries, 2000-2008 (percent)

Countries	Production growth			Consumption growth			Population growth
	Wheat	Rice	Total	Wheat	Rice	Total	
Bangladesh	-8.8	2.0	1.5	0.0	2.6	2.3	1.6
India	0.3	1.5	1.0	1.9	2.6	2.3	1.7
Nepal	2.1	0.2	0.8	2.2	0.4	0.9	2.3
Pakistan	0.3	1.8	0.8	1.2	-1.0	1.0	2.6
Sri Lanka	0.0	2.2	n.a.	2.0	0.0	1.6	0.9
South Asia	1.6	0.2	1.0	2.2	2.4	2.3	1.9
World	1.8	1.0	1.5	1.3	1.0	1.2	1.1

Source: Production, Consumption growth rates calculated from Tables 1.3 and 1.4. Population data from World Bank World Development Indicators.

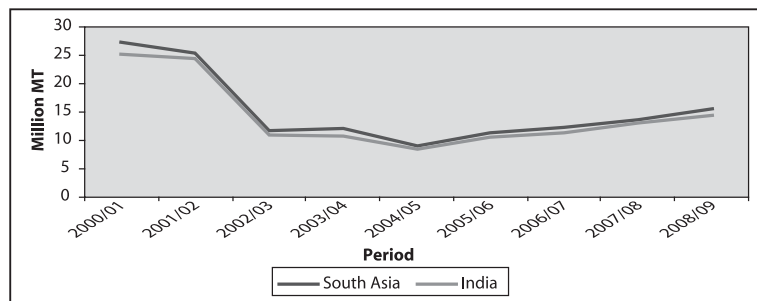
The story is similar in the smaller countries of Afghanistan, Nepal and Sri Lanka. The data are not very reliable for Afghanistan, but it is a food deficit country and reliant on wheat imports mostly from Pakistan. Nepal's rice production has stagnated but wheat production has expanded; overall foodgrain consumption growth exceeds production. In Sri Lanka, which is primarily a rice consuming country, growth in rice production has exceeded consumption growth, which has provided the scope for a reduction in imports.

What are the implications of these production and consumption trends for food availability and prices? In 2000 South Asia had a production surplus of almost 11 million MT of rice and 7.5 million MT of wheat. By 2008 the wheat surplus had had converted into a deficit of about 6 million MT and rice surplus fell to around 5 million MT and production shortfalls in wheat were ameliorated by reserves (Figs. 1.5 and 1.6). India, South Asia's largest grain producer, had stockpiled foodgrain stocks, partly for food security and price support for farmers. Thus in 2001-02 India had accumulated stocks of 25 million MT of rice and 25 million MT of wheat. These reserves were drawn down over the following years, mostly to meet the consumption gap in wheat but also to reduce fiscal cost and physical wastage through rice exports. By 2005/06 the wheat stock had fallen to only two million MT and rice stocks also started rising in 2004/05 recovering from the low levels of 9.5 million metric tons (MT). The fall in wheat production had resulted in a reversal of the policy to stockpile and by 2008/09 stocks had recovered to 8 million MT for wheat and 15 million MT



Source: USDA Database.

Fig. 1.5: End of year wheat stocks



Source: USDA Database.

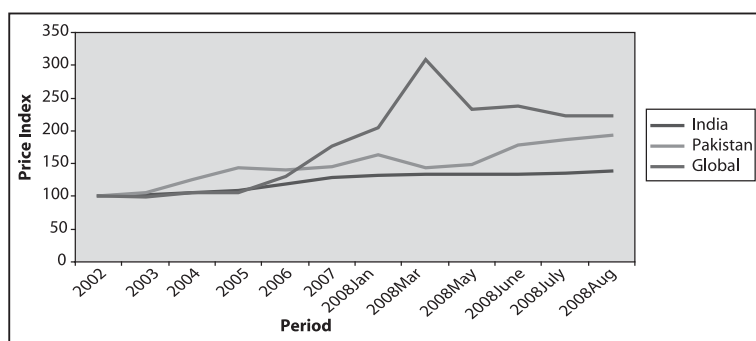
Fig. 1.6: End of year rice stocks

for rice which added to the demand pressure for both wheat and rice. Thus, India imported 6.7 million MT of wheat in 2006/07 and two million MT in 2007/08 as compared with almost zero imports in the past six years. Regarding rice, exports declined from a peak of 5.5 million MT in 2006/07 to only two million MT in 2008/09. These developments in domestic supply-demand balances suggest that similar to the global experience, domestic food shortages are an important factor underlying food price pressures in South Asian countries.

At the country level, foodgrain prices moved differently from global prices and prices within the region. In terms of staple food 90 percent

of wheat consumption in South Asia is concentrated between three countries while rice is consumed in every South Asian nation, therefore in order to understand price trends a clearer understanding of consumption needs to be taken into account.

The trend in wheat prices in South Asia's major wheat consuming countries is shown in Figure 1.7; comparable data for Afghanistan was not available at the time of writing thus fragmented data will be used. Figure 1.7 shows that wheat prices in both India and Pakistan increased in response to the global pressure, but the increases were much less intense, especially in India. Indeed, India managed to maintain a fairly stable wheat price that increased by only 33 percent between 2002 and March 2008 and 12 percent between 2006 and March 2008.



Source: Compiled from various data sources of concerned authorities.

Fig. 1.7: Wheat prices in South Asia (2002 = 100)

Pakistan experienced sharper increases which occurred over two phases. The first phase was between 2003 and 2005 and the second phase between March and August 2008. In total, the wheat price increased by 98 percent between 2002 and August 2008 and it increased by 37 percent between 2006 and August 2008.

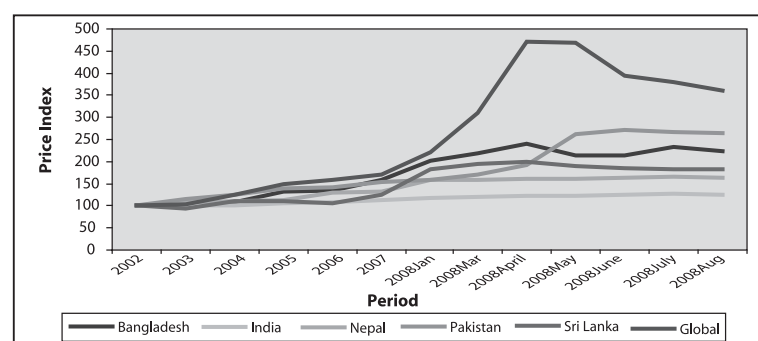
Afghanistan has been adversely affected by price and production fluctuations although longer term trend data are not available, short term data shows that the wheat price increased between 157 to 259 percent between May 2007 to 2008 (Table 1.6). These increases are higher than global standards and marked regional variation in price increases in Afghanistan suggests the low mobility of food grain within the country due to poor trade logistics and security problems.

Table 1.6 Wheat prices in Afghanistan

Region	Prices (Afs/kg)		Percent Change from May 2007
	May 07	May 08	
Kabul	13.3	39.0	193%
Kandahar	12.0	35.8	198%
Jalalabad	11.2	35.8	221%
Heart	11.7	34.0	190%
Mazar	9.9	35.5	259%
Faizabad	17.3	44.4	157%

Source: Data from Afghanistan Ministry of Finance.

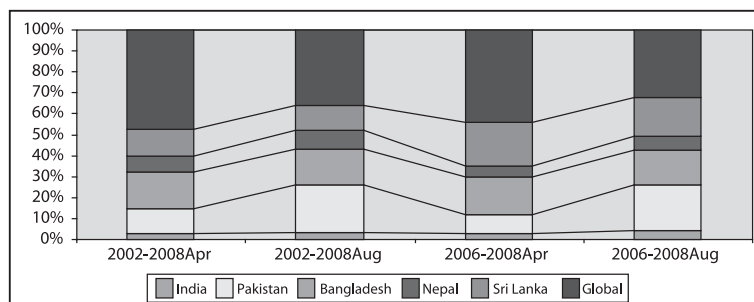
In comparison to wheat, rice prices, on average, rose less than in the global market with marked across countries (Fig. 1.8). For the period as a whole, Pakistan witnessed a rapid increase followed by Bangladesh, Sri Lanka, Nepal and India (Fig. 1.9). India experienced the lowest price increase in the region, which is strikingly lower than the global price rise and the rest of the region.



Source: Compiled from various national data sources.

Fig. 1.8: Trends in rice prices in South Asia (2002 = 100)

There are two interesting questions: Why did South Asia experience substantially lower price increases of wheat and rice than the global market? And secondly, how did India manage to virtually insulate its economy from higher global rice and wheat prices? The answer to the first question lies in that all South Asian countries, except



Source: Authors' calculations.

Fig. 1.9: Comparative rice price increases

Afghanistan, largely rely on domestic grain production. The dependence on trade is low and most countries use trade restrictions and fiscal policy interventions that put a wedge between international and domestic prices, especially during an upswing. In the case of Afghanistan, domestic production on average substantially falls behind consumption needs, leading to a relatively large reliance on trade, especially from Pakistan.

So the combined effects of higher global wheat prices and Pakistan's export ban caused wheat prices in Afghanistan to surge much higher than elsewhere. Regarding the second question, there are a number of factors that helped India insulate its economy from global price increases. First, India experienced a good wheat and rice harvest in 2007-2008. Second, the authorities were better informed and equipped to anticipate and respond to the price rises along positive government policy to stockpile. Third, India tightened export restrictions with a view to protecting domestic consumers. India's policy response on the trade front has led to a major political economy debate in South Asia about the role of trade in agriculture. This will be discussed later in the chapter.

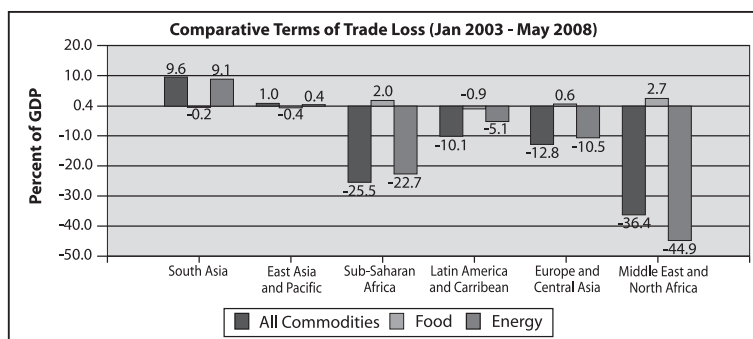
1.3 HOW HAS THE FOOD AND FUEL CRISIS AFFECTED SOUTH ASIA?

Macroeconomic impacts

Severe terms of trade loss: South Asia relies relatively less on grain imports but significantly on imports of petroleum and other commodities. As a

result, given the sharp increase in commodity prices, the region has experienced severe terms of trade losses, deterioration in the external and internal balance, and adverse economic and social impacts on the poor. Figure 1.10 shows the effects of the terms of trade shock in South Asia relative to other regions and Fig. 1.11 shows the impact by countries within South Asia. On a net basis South Asia has suffered the highest loss of income as a percentage of GDP among all developing regions.

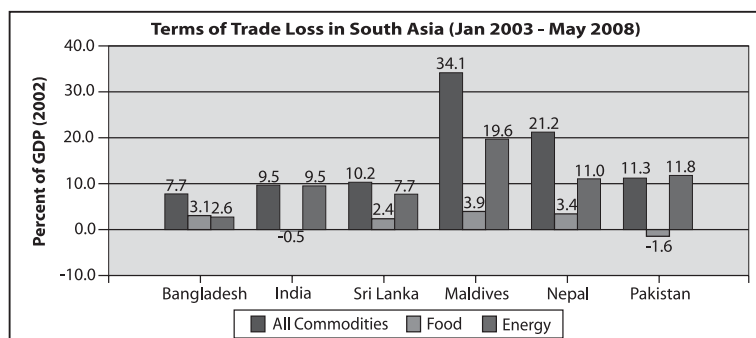
Within South Asia, the picture at the country level is quite divergent (Fig. 1.11). Losses range from 34 percent for the small island country of Maldives to 8 percent for Bangladesh. The rising cost of petroleum has adversely affected all South Asian countries in varying degrees. In the food sector, Maldives, Nepal, Bangladesh and Sri Lanka have been negatively impacted as a result of global price hike. Although reliable data is not available for Afghanistan, the loss from oil and food price crisis is likely to be substantial, and the country is especially vulnerable on the food account and has experienced the steepest price increases in the region.



Source: DECPCG, The World Bank.

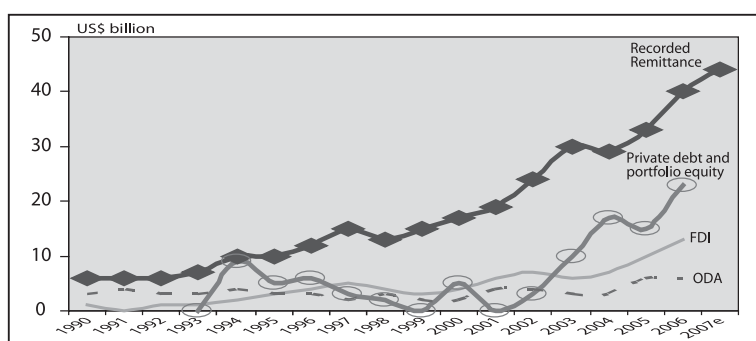
Fig. 1.10: Comparative regional income losses from terms of trade shock

Deterioration in fiscal and external balances: The large loss of income from terms of trade shock was partially compensated by rising remittances (Figs. 1.12a and 1.12b). Nevertheless there has been a negative impact on the external balances of most South Asian countries (Fig. 1.13). Pakistan suffered the most rapid deterioration in its current account



Source: DECPG, The World Bank.

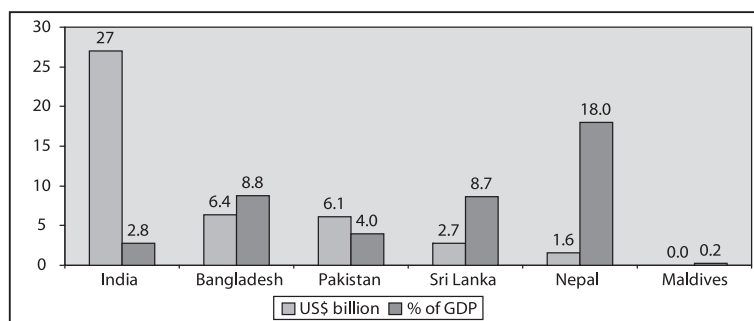
Fig. 1.11: Income losses from terms of trade shock in South Asian countries



Source: DECPG, World Bank.

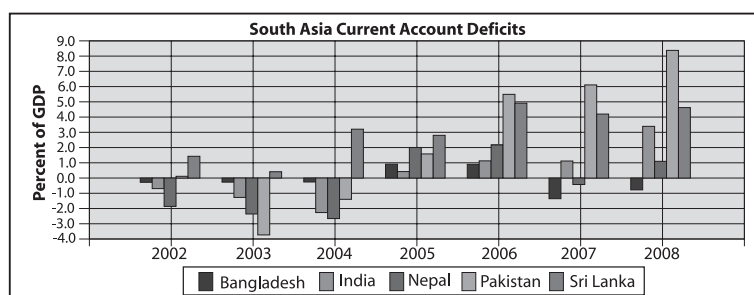
Fig. 1.12a: Trend in remittance and other capital inflows in South Asia

balance, which turned from a surplus of around 4 percent of GDP in 2003 to a deficit of over 8 percent of GDP in 2008. Sri Lanka similarly experienced a substantial increase in its current account deficit with India experiencing a current account surplus of more than 2 percent of GDP in 2004 to a deficit of over 3 percent in 2008. A similar story unfolded in Nepal: from an extended period of food surpluses the country experienced a food deficit in 2008. Bangladesh also lost on the trade account, but continued to enjoy a surplus in its current balance



Source: Data from country authorities.

Fig. 1.12b: Remittance inflows in South Asian countries in 2007

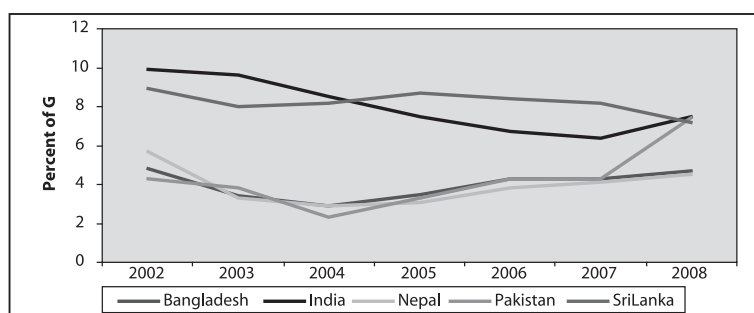


Source: Data from country authorities.

Fig. 1.13: South Asia current account deficits

owing to remittances. These differential effects reflect a number of factors including: the relative magnitude of terms of trade shocks, the differences in compensating growth of remittances, and policy responses. Bangladesh, in particular, benefitted tremendously from the growth in remittances and along with India took measures to tighten demand. Pakistan and Sri Lanka were already facing balance of payments pressure from expansionary fiscal and monetary policies; the terms of trade shocks accelerated the deterioration.

Concerning fiscal balances, all countries except Sri Lanka registered a large deterioration (Fig. 1.14). The fiscal deficit widened most in Pakistan, rising from 2.4 percent of GDP in 2004 to 7.4 percent in 2008.



Source: Data collected from concerned government authorities.

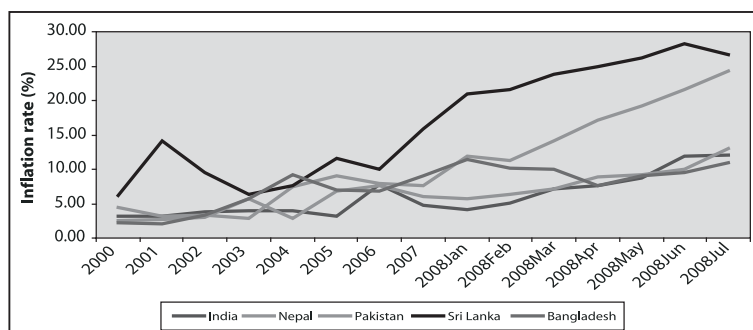
Fig. 1.14: Fiscal deficits in South Asia

India had made good progress in reducing its fiscal deficit between 2003 and 2007. This progress was reversed in 2008 due to a sharp increase in the fuel subsidy (growing from 1 percent of GDP in FY2007 to an estimated four percent of GDP in FY2009) that threatens to wipe off the gains made so painfully over the past few years.

Bangladesh took steps to contain the fiscal deficit. Even so, the budget deficit widened to almost 5 percent of GDP in 2008 and is projected to grow further, mostly due to increases in food and petroleum subsidies and spending on safety nets.³ Nepal's fiscal deficit has also grown from its low level in 2004 owing mainly due to fuel subsidies while Sri Lanka is the only surprising exception, suffering from high fiscal deficits linked to the ongoing civil war. As a result, it had little space to expand further the deficit and instead, Sri Lanka passed on most of the global price increases in petroleum to consumers.

Impact on inflation: Rising food and fuel prices have been a major source of inflationary pressure in South Asian countries (Fig. 1.15). In Afghanistan, Sri Lanka, Pakistan, Bangladesh and Nepal, food prices made a bigger impact on inflation than fuel prices. In India, however, the main surge to inflation came from fuel price increases. Pakistan experienced the most rapid change in the rate of inflation, rising from 8 percent in 2006 to 25 percent in July 2008. This is in part due to the global food price hike, but also due to domestic demand

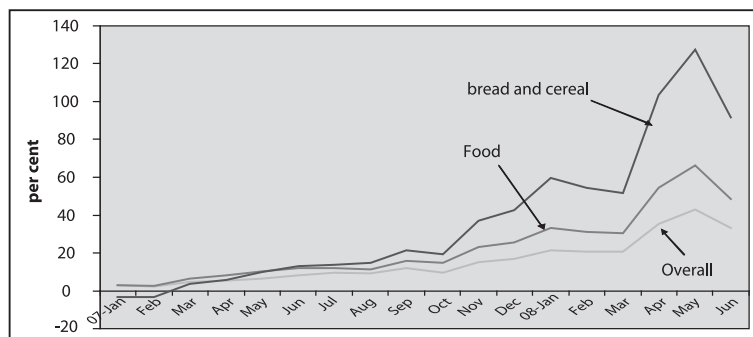
³ Includes off-budget subsidies. Recent reductions in world fuel prices if sustained will help keep fiscal deficit at about 5% of GDP.



Source: IMF International Financial Statistics and government authorities.

Fig. 1.15: Trends in inflation in South Asia

pressure emerging from unsustainable macroeconomic policies. Sri Lanka had already been experiencing inflationary pressure from expansionary fiscal and monetary policies; the surge in food and fuel prices accelerated the pace. Afghanistan's inflation hike came primarily from food prices (Fig. 1.16). With the recent decline in global grain and petroleum prices, inflation rates are coming down in South Asia even though the effects of the decline are partly offset by rapid currency depreciation in India and Pakistan.



Source: Central Statistical Office, Government of Afghanistan.

Fig. 1.16: Food and non-food inflation in Afghanistan, January 07-June 08

Poverty and distribution impacts: The impact of rising food prices on poverty in an individual country depends on several factors including: (i) the extent to which world market prices are passed through to domestic prices; (ii) the initial poverty level and number of people clustered around the poverty line; (iii) the number of net buyers or net sellers of the commodities in question; (iv) the share of poor people's budgets devoted to food overall and key staples in particular; (v) the extent of own-consumption relative to market purchases; and (vi) the effect of food price increases on real wages of poor people (World Bank, 2008).

A recent study on eight countries estimated that the rise in food prices between 2005 and 2007 increased poverty by three percentage points on average. Extrapolating these results globally suggests that, as a result of the rise in food prices, total world poverty may have increased by 73-105 million people (World Bank 2008).

For three South Asian countries, an analysis of how the food price increase affected poverty taking account of both direct effects and secondary effects arising from adjustments in consumer and producer behavior is included in a forthcoming World Bank publication.⁴ Results from this work indicate that the net effect will be to increase poverty significantly. First, the South Asian poor on average spend between 25-60 percent of their total income on staple food; this share rises when compared with expenditure/income scale. Second, there are many more poor households who are net buyers of staple food than net sellers. Third, availability and access to official safety net programs is hugely limited by inadequate fiscal space and weak institutions.

Among all South Asian countries, Afghanistan arguably is most vulnerable to increases in staple food prices. Unfortunately, as noted, Afghanistan also suffered the highest increase in prices in the region. Afghanistan's sensitivity to food prices can be gauged from the fact that poverty estimates range from a low of 33 percent in the normal food season to 42 percent in the lean season. Some 35 percent of Afghan households do not meet their minimum daily calorie intake and 46 percent are classified as having very poor dietary diversity and poor food consumption.

For Pakistan, another World Bank simulation study based on the 2005/006 PSLM suggests that the 73 percent food price inflation between January 2007 and July 2008 would lead to a 3.2 percentage point increase in the national poverty headcount rate.

⁴ *Food Price Increases in South Asia: National Responses and Regional Dimensions.*

In the case of Bangladesh, a simulation study assessed the impact of a nearly 40 percent increase in the retail price of rice between May 2007 and April 2008. In the short run, most households are adversely affected by the rice price increases because only 17 percent of Bangladeshi households are net suppliers of rice. In the absence of any wage adjustment, the increase in rice price reduces real household expenditures by an average of 5 percent. The impact is larger for urban (5.5 percent) than for rural households (4.6 percent). However, the impact is much worse for the bottom quintile, where average income declines by 10.5 percent as compared with less than 2.5 percent for the top two quintiles. Among different occupation groups, only households headed by farmers (24 percent of all households) benefit from rice price increase. But even among farmers those with landholdings less than 1.5 acres maybe adversely affected. The adverse effect is highest for households headed by agricultural or non-agricultural day laborers, and lowest among households headed by salaried workers. With a 5 percent increase in nominal wages, average income declines by 3 percent for the population and 7.7 percent for the bottom quintile. Regarding poverty impact, using the 2005 HIES, the rice price hike is estimated to increase the poverty headcount rate by 5 percentage points in the absence of any wage increase and by 3 percentage points assuming a 5 percent nominal wage increase, compared to what the poverty rate would have been in the absence of the price shock.⁵ The simulation also suggests an increase in income inequality since the poorest of the poor absorb a greater share of the burden of price increase in view of their larger share of expenditure on staple food in the consumption basket.

In Sri Lanka, according to the World Bank's Poverty Assessment, a large share of the population is clustered around the poverty line, implying that relatively small changes in per capita consumption can lead to relatively large changes in poverty rates. Simulations based on the 2006-07 HIES indicate that a 83 percent increase in rice price between June 2007 and May 2008 would lead to a 5 percentage points increase in the poverty head count. Moreover, adverse effects

⁵ These estimates do not imply that the poverty headcount rate in 2008 would be 5 or 3 percentage points higher than that in 2005. Such an interpretation would be incorrect since that would ignore the poverty reduction that would have occurred between 2005 and 2008 due to economic growth. Rather, the poverty impact estimated here is a comparison with what would have been the case had there been no rice price shock in 2008.

on calorie consumption per day, which is already low, would be expected.

As examined earlier in the chapter, India experienced lower food price increases than other South Asian countries. Nevertheless, the prices of wheat and rice increased faster than normally between 2006-2008. Given that only about a fourth of all households are net sellers of these cereals, a majority of households would be adversely affected by these price increases. Among farmers also not all benefit: a majority of marginal and small farmers appear to be hurt by price increases, with the benefits of price increases remaining largely limited to large farmers. Among non-farm households, rural poor households lose the most (a 10 percent decline in total consumption), followed by rural non-poor and urban poor households.

1.4 HOW HAS SOUTH ASIA RESPONDED TO THE FOOD CRISIS? SHORT-TERM RESPONSES

Given the adverse implications of the food price increases for the poor and the political transition, it is understandable that South Asian policy makers were willing to take steps to stabilize domestic prices despite the potential long-term effects. Hence, much of the immediate actions were focused on stabilizing prices and not on supply response or other dimensions of policy management, including the fiscal impact. The types of policy actions taken in each of the countries fall into four broad categories: trade policy measures; stock management and public distribution; pricing policy measures; and safety net measures (Table 1.7).

Trade policies: Almost all countries reduced import duties on food items. For example, India lowered import duties/tariffs on edible oils, wheat flour, milled rice, maize, butter and asked states to impose legal limits on stocks of food commodities under the 'Essential Commodities Act'. Bangladesh similarly lowered import duty on a range of food items and initiated a crack-down on domestic hoarding, which failed to bring about the expected impact and later was abandoned. Afghanistan lowered the import tariff on wheat and wheat flour from 2.5 percent to zero. Nepal also lowered import duties on food while Sri Lanka used a 35 percent tariff on rice imports to keep domestic rice prices high for producers. When domestic rice prices started rising the government initially waived the tariff, but re-imposed it for fiscal reasons. However, Sri Lanka lowered duties on a range of other food items like lentils and edible oil.

Table 1.7 Country policy responses to the food crisis

Country	Economy-wide Policies				Social Protection Programs			
	Reduce taxes on food-grains	Stock management	Export restrictions	Pricing policies	Cash transfer	Food for work	Food ration/stamp	School feeding
Afghanistan	√					√		
Bangladesh	√	√	√ Imposed ban on rice exports	√	√	√ Long history and being expanded	√ Food Rations eliminated but millions of poor households get Vulnerable Group Feeding (VGF) cards which entitle them to 15 kg. grains per month.	√ Was replaced by cash grants but is being restarted.
Bhutan	√	√		√	√			√

(Contd.)

(Table 1.7 continued)

Country	Economy-wide Policies				Social Protection Programs			
	Reduce taxes on food-grains	Stock management	Export restrictions	Pricing policies	Cash transfer	Food for work	Food ration/stamp	School feeding
India	√	√	√ Imposed ban on wheat and non-Basmati rice exports, and high taxes on Basmati rice exports	√		√	√ Maintains an active public food distribution system	√
Maldives	√	√		√	√ For especially vulnerable groups			√
Nepal			√ Imposed ban on rice exports			√		√ Limited coverage

(Contd.)

(Table 1.7 continued)

Country	Economy-wide Policies				Social Protection Programs			
	Reduce taxes on food-grains	Stock management	Export restrictions	Pricing policies	Cash transfer	Food for work	Food ration/stamp	School feeding
Pakistan		√	√ Imposed ban on wheat exports	√	√		Food ration/stamp programs have not been implemented	√
Sri Lanka	√		No explicit ban on rice exports although trade protection and other measures have kept domestic prices above international prices.	√	√		√	School feeding program has very limited reach.

Source: Country authorities.

In a further effort to control domestic food prices, most South Asian countries also clamped down on food exports by imposing export taxes or other levies or, worse, choked off food exports altogether through export bans, thus making the situation in neighboring food-deficit countries particularly dire. India, for example, put a stop on all non-Basmati rice exports and wheat and imposed a prohibitive tariff on Basmati exports. Pakistan banned wheat exports as well as restrictions on domestic inter-provincial wheat transport.⁶ Bangladesh and Nepal followed suit and imposed export bans on rice.

Buffer stocks and public distribution: India has the highest public food grain distribution system in South Asia, covering some 600 million consumers, believed to be the largest in the world. India's food stocking policy has a multiplicity of objectives: manage crisis situations; provide incentives to farmers; and provide low-price supply to consumers. Pakistan maintains food stock basically for price support but also to keep prices low for consumers. But unlike India, Pakistan sells off most of the procured wheat to millers at subsidized prices and the price effect for consumers is indirect. Bangladesh had gradually lowered its food stocks for public distribution and moved to market transactions based on private sector involvement. Publicly held stocks were kept at low levels mainly to meet emergency situations and normal supply shortages are met through imports while Sri Lanka, Nepal and Afghanistan remain reliant on the market for supply decisions. Nepal benefits from open-access to India's food market and as such has not seen the need for public distribution. Sri Lanka regulates domestic foodgrain production, supply and prices through price controls and import duties.

Section 2 of the chapter identified that India had rapidly drawn down its reserves between 2000 and 2007 due to rising fiscal costs and waste from stock-piling. But anticipating food shortages, India quickly moved to build up the stocks of wheat through imports and rice through public procurement. These food market interventions on the supply side then enabled India to use the public distribution system to stabilize domestic grain prices very successfully.⁷ Other large South Asian countries also moved, although less successfully

⁶ There is clear evidence that export bans imposed by India and Pakistan have aggravated the food crisis in South Asia, and this issue is much debated.

⁷ However, as Dorosh (2008a,b) has pointed out this was not without cost in terms of lower earnings from rice exports.

than India, to build up stocks and stabilize domestic prices. Bangladesh traditionally had maintained a low food stock and relied much more on private imports to meet domestic shortfalls. The global food price crisis, accentuated by crop losses from floods and cyclones, and trade bans by India reduced the effectiveness of this strategy and exposed Bangladesh to far more rapid increases in domestic rice and wheat prices than in India. However, the government intervened by importing food, even though at rising cost and distributing some 0.5 million MT of coarse rice the market through official channels, Open Market Sales (OMS), as well as through authorized dealers at subsidized prices. It also sought to build up its stock from a low of 0.4 million MT of rice in June 2007 to 0.9 million MT in June 2008 through imports as well as domestic procurement once the crops recovered from the external shocks.

Pakistan is a wheat-exporting country and as international prices started rising, there was an initial surge in wheat exports. To stem the domestic price increase the government banned exports and accelerated release of wheat from its stocks. From September 2007 to March 2008, the Government released around 4.3 million MT of wheat from its strategic reserve and distributed to flour mills at subsidized rates. However, while the government succeeded in lowering the rate of increase of domestic wheat prices, the wedge between domestic and international prices caused a huge amount of wheat smuggling as well as private stock piling. In response to domestic shortages, the government also imported about 1.7 million MT of wheat. In addition, the government raised the procurement price of wheat from US\$163/MT to US\$240/MT to narrow the difference between domestic and international prices to create an incentive for farmers to sell to the domestic market and to discourage smuggling and hoarding.

In Sri Lanka, the Government capped the retail price of Samba rice at Rs 70 per kilo, about 30 percent lower than the prevailing market price. With respect to buffer stocks, there is a long legacy of state intervention in the domestic paddy market. During the 2007 Maha season, the Government purchased about 90,000 MT of paddy, equivalent to 4.5 percent of the total harvest. However, Government intervention is primarily aimed at securing a minimum price for farmers, and since farm gate prices have been rising rapidly since 2007, the Government has not made any purchases during the 2007 Yala harvest, or the 2008 Maha harvest. Recent reports suggest that the Government is

considering the establishment of a strategic rice reserve to better control price swings.

Nepal traditionally maintains very low strategic reserves (less than 10,000 MT) and very limited public distribution. But it also intervened to augment supply through public distribution, especially after the imposition of the trade ban by India. The only country where an active stocking arrangement and public distribution does not exist is Afghanistan. However, the World Food Program (WFP) has played an important role in augmenting domestic availability through imports and so have (illegal) wheat exports from Pakistan.

Pricing of inputs and outputs: Maintaining low food prices have been a key policy objective in most South Asian countries. Since low prices tend to discourage production, a complex system of subsidies, production controls, public procurement and distribution has emerged in South Asia with the twin objectives of maintaining low grain prices for consumers while also providing incentives to farmers through input subsidies and price support based on public procurement. On the input side, almost all farm inputs (water, power and fertilizer) are subsidized to varying degrees in most countries. Thus, in India, most states heavily subsidize power consumption by farmers ranging up to 100 percent subsidy (zero power tariff) with a view to subsidizing irrigation. Power tariffs for farmers have not been adjusted despite the substantial increase in fuel costs. All countries subsidize diesel to lower transport cost as well as to reduce irrigation costs. In response to an effort to contain the unsustainably large increase in budget subsidy, countries have taken steps to partially adjust diesel prices. The largest adjustment happened in Sri Lanka, which has passed on the international oil prices to consumers. Bangladesh, India and Nepal have also adjusted domestic fuel prices, but diesel remains heavily subsidized. Pakistan did the least adjustment in passing on the increase in fuel price increases. Regarding fertilizers, whose prices surged more than four-fold between 2002 and August 2008, much of the cost increase is absorbed by the government budget including in Sri Lanka. Indeed, along with the diesel subsidy the growing cost of fertilizer subsidy is a key factor underlying the expansion of fiscal deficits in South Asian countries.

On the output side, policy intervention has sought to reduce prices for consumers in Bangladesh, India, Nepal and Pakistan through augmentation of domestic supply based on open market sale and public distribution, and through a price cap in Sri Lanka while Afghanistan

does not have an active government intervention program. To offset the adverse effects on farmer incentives, governments in India and Pakistan have tended to provide support prices to farmers through public procurement. Thus, India raised the Minimum Support Price (MSP) for wheat from Rs. 850 per 100 kilogram in 2007 Rs. 1000 in 2008. Similarly, the procurement price of rice was raised from Rs 650 to 775 per 100 kg. In Pakistan, the government raised the procurement price of wheat from US\$163/ton to US\$240/ton to narrow the difference between domestic and international prices and to create an incentive for farmers to sell to the domestic market rather than resort to smuggling and hoarding. Bangladesh set a procurement price for rice that is about 15 percent lower than the prevailing market price. In effect, this has provided a floor on the domestic rice price. Sri Lanka did not see the need to intervene to provide additional incentives to farmers as the producer price of rice was some 70 percent higher than the price last year despite the ceiling imposed by the government.

Safety nets: South Asian countries intervene to provide some kind of safety net protection to its most vulnerable citizens. Sri Lanka has an extensive social safety net programs particularly in the form of cash transfer programs targeted towards the poor and vulnerable groups. On the other hand, Afghanistan has hardly any safety nets and is naturally most vulnerable to exogenous shocks. These safety net interventions include generalized public food distribution, targeted food distribution including food for work, school meals, conditional and non-conditional cash transfers, and employment guarantee schemes.

Public food distribution systems: As noted, India has the most extensive public food distribution system (PDS) in South Asia. This has come under serious criticism for corruption, inefficiency and high fiscal cost. Various reforms have sought to address these concerns but problems remain. The contribution of the PDS to stabilizing food prices quickly in the face of the global food price turmoil is seen in India as an important success for public policy and has presented a challenge to conventional thinking on the merits of the role of the public sector in food distribution in countries with a large number of poor, high political sensitivity to food price increases, and administrative capacity constraints to implementing well-targeted safety net programs. Public food distribution in Pakistan has helped stabilize prices somewhat, although it is indirect and has been much less effective than in India.

Targeted food distribution: A wide range of targeted food distribution programs exist in South Asia. In Andhra Pradesh (India) rice is being made available at the hugely subsidized price of Rs. 2 per kilogram to 18.7 million families Below the Poverty Line (BPL) through a ration card system. Each family will be entitled to 20 kg of subsidized rice every month supplied through government-run fair price shops. The government of Bangladesh has authorized Open Market Sales (OMS) of coarse rice in urban townships at subsidized rates. The approach here is to use self-targeting, given the relatively low quality of rice and the long lines. Additionally, Bangladesh has intensified the use of the Vulnerable Group Feeding Program (VGF) to reach out to the poorest of the poor. All South Asian countries, except Afghanistan, have used school feeding programs to reach children who are among the most vulnerable to food price shocks. Several countries (Afghanistan, Bangladesh, Nepal and India) have expanded their food for work programs to provide a safety net for the unemployed. In the case of Nepal and Afghanistan this expansion has been through the WFP food for work program, while Bangladesh in particular has a long history of using similar types of programs.

Conditional and unconditional cash transfers: Public cash transfer programs exist in Bangladesh, Pakistan, Sri Lanka, Nepal, and the Maldives. Conditional cash transfers (e.g. stipends) exist in many countries too (Nepal, Pakistan, and Bangladesh). The programs are still evolving but hold the prospects of providing effective safety net cover if these are well designed and administered. The use of cash transfer programs is limited by the lack of proper institutional arrangements. New programs for the poor are being piloted in Nepal, Bangladesh and Pakistan.

Rural Employment Guarantee Schemes: One of the earliest rural employment guarantee schemes in South Asia was started in Maharashtra in the early 1990s. In 2007 India initiated a similar program at the national level called National Rural Employment Guarantee Scheme (NREGS) as a means to address the poverty problems of the ultra-poor that do not have any alternative job opportunities. In September 2008 Bangladesh also introduced a rural employment guarantee program, estimated to cost about Tk.24 billion (2 percent of GDP) for providing employment to the rural poor in economically depressed areas during the lean agricultural seasons.

While the global food price crisis has helped South Asian countries to refocus on the safety net issues, which is overall a weak area of

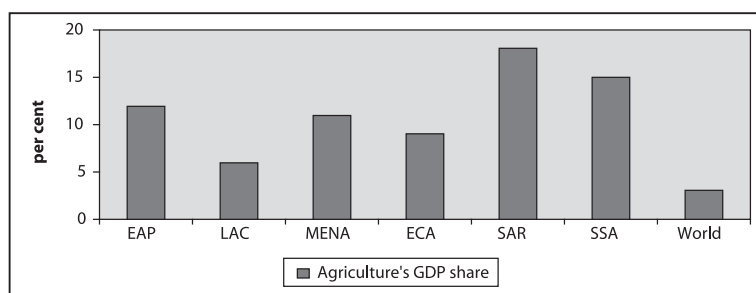
policy, there are major issues relating to efficiency, corruption, and fiscal cost that need careful research and analysis. For example, safety net reviews that evaluate public safety net programs have now been conducted in Pakistan, India, Maldives, Sri Lanka, Bangladesh and Nepal. These show that some schemes work well, but that their efficiency could be improved via investment in their capacity to target, deliver benefit, improve accountability, and improve monitoring and evaluation. Many of the schemes are relatively new (cash transfer programs, employment guarantee schemes) and require careful review in terms of design and implementation before wider replication. Moreover, the lack of a central strategic body which coordinates the myriad of safety net programs currently in place is a serious weakness given large unmet needs and finite resources. Limited fiscal space in particular requires focus on the few schemes that have worked well in South Asia and other developing countries.

1.5 LONGER-TERM POLICY ISSUES AND CHALLENGES: MOVING FORWARD

The large magnitude of the terms of trade shock along with the acceleration of food prices, especially the staple food grains of wheat and rice, have clearly imposed a tremendous burden on South Asian countries, especially on the low income economies of Afghanistan, Bangladesh and Nepal. Governments have responded in varying ways to contain the rise in prices as well as to mitigate the adverse effects on the poor. Yet, the negative impact remains substantial and further efforts are needed to respond more effectively to the external shocks. While the recent decline in food and fuel prices are a welcome development for South Asia, this gain is being clouded by the onslaught of the global financial crisis that is threatening to substantially lower exports, investment and economic growth. Continued high food prices and supply shortages will aggravate the situation. Policies taken by governments in the first round were aimed at stabilizing food prices. Some of the policies like trade bans, price controls and subsidies may have been justifiable as short-term responses on political economy grounds, but they have adverse implications for efficiency and resource allocation over the longer term. As well, the fiscal space is scarce and the magnitudes of the subsidies entailed are not likely to be sustainable. Similarly, the efforts of governments to initiate safety net programs are laudable; yet there is a need to

examine the programs carefully to ensure their effectiveness and fiscal sustainability. Finally, the longer term agenda of addressing the supply problems in agriculture remains to be fully tackled. At the heart of South Asia's supply response is the challenge of farm productivity. Issues related to farm productivity, trade policies, stock management, input-output pricing and safety nets are briefly reviewed below.

Agricultural productivity: Despite rapid economic growth since about 1980, South Asia's dependence on agriculture remains substantial. While agriculture's contribution to value added has declined rapidly, it still remains higher than in most other regions (Fig. 1.17). More importantly, between 35-50 percent of the labor force remains reliant on agriculture for their livelihood, suggesting low average productivity (Fig. 1.18).⁸



Source: World Bank 2007.

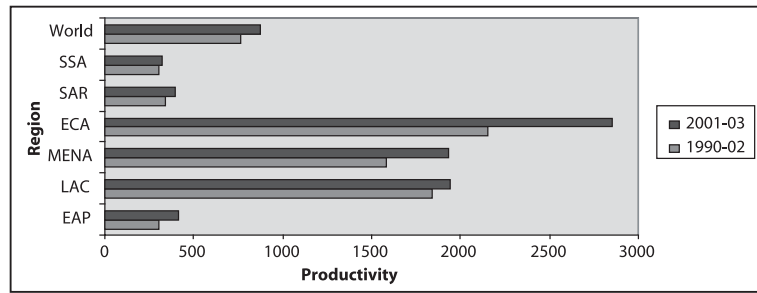
Fig. 1.17: Agriculture's share of GDP

Since world prices of energy and fertilizer are likely to remain substantially higher than the levels seen before 2005, the only sustainable way of reconciling higher input costs with low and stable prices of wheat and rice is to pay attention to farm productivity. This should be the most urgent policy focus for South Asian governments.

The scope for productivity improvements is clear from Fig. 1.18, but this can be seen more specifically from the productivity comparisons of the two major food crops, wheat and rice. The trends in productivity

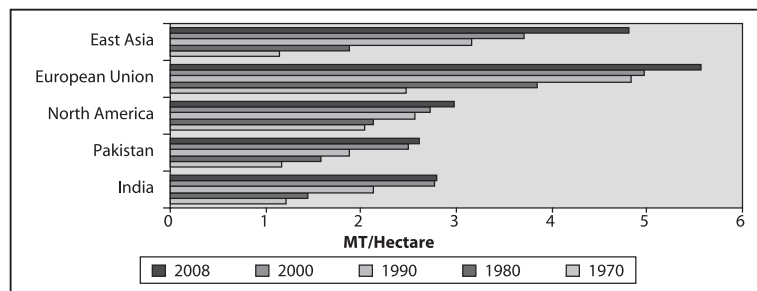
⁸ Employment shares range from a low of 35 percent in Sri Lanka to a high of 50 percent for Bangladesh (World Bank 2007).

improvements in South Asia and global comparators for wheat and rice per hectare of land cultivated are shown in Figs. 1.19 and 1.20.



Source: World Bank 2007.

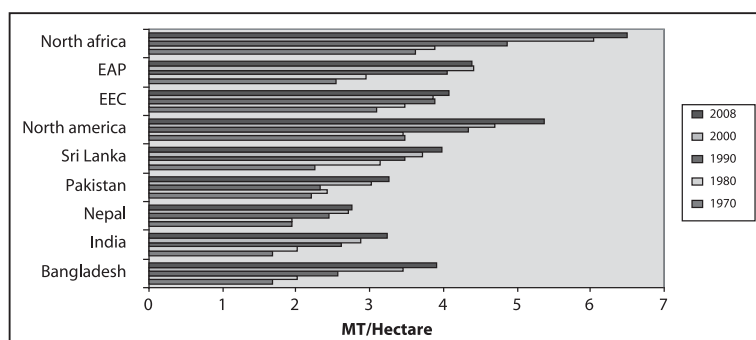
Fig. 1.18: Agriculture productivity (2000US\$/worker)



Source: USDA database.

Fig. 1.19: Trends in wheat productivity

Focusing on land productivity is particularly important in South Asia where land endowment is likely to emerge as a binding constraint. Regarding wheat, the two major South Asian wheat producing countries (India and Pakistan) achieved substantial gains in productivity between 1970 and 2000, but since faced stagnation. Productivity improvements and yield per hectare compare positively with North America but yield remains significantly behind EEC countries and East Asia. For example, India faces a wheat productivity gap of 40 percent with East Asia and 50 percent with the EEC. Concerning rice,



Source: USDA database.

Fig. 1.20: Trends in rice productivity

South Asian countries show significant gains since 1970, especially in Bangladesh and Sri Lanka. Yet the productivity gap with most of the world (except Sub-Saharan Africa) is large. For example the average per hectare yield in the better performing South Asian countries of Sri Lanka and Bangladesh is still 40 percent lower than the yield in North Africa, 25 percent lower than North America, and 10 percent lower than in East Asia. The rice productivity gaps are larger for India and Pakistan, and the largest for Nepal.

The yield gaps in South Asia for both wheat and rice are substantial and suggest the need for urgent policy attention to find ways to catch up with the performance in high-yielding countries. This entails addressing issues relating to technology, inputs (especially water, fertilizer and energy), and pest control and farmer incentives. The range of policies that impact on productivity include incentive policies for farmers (pricing policies, ownership and tenancy issues), timely availability of key inputs, farm credit, crop insurance and public expenditure. The rising cost of energy, emerging water shortages, and the increasing frequency of natural disasters especially from flooding and drought, also point to the need to pay attention to global public goods such as climate change, cross-boundary water sharing arrangements and regional energy trade. More and better regional cooperation can be an effective way to manage the farm productivity challenge and ought to be a key element in the design of future food policy strategies in South Asia (Ahmed 2008).

Trade policies: There remains a strong economic case for reforming agricultural trade policies to enhance global welfare with concerted and coordinated efforts in both developed and developing countries. A concise summary of the trade reforms at the global level is contained in Chauffour (2008). In practice, agriculture trade policies tend to get enmeshed in political economy issues and using purely economic rationale for advocating trade policies for agriculture is fraught with risk of being ignored by policy makers. This is partly because of the huge reliance of the labor force on agriculture for income, but also because of the objectives to maintain food prices low for consumers and avoid the kinds of disruption illustrated by the global food price crisis. All South Asian countries are engaged in substantial domestic production of food items, especially food grains. Food self-sufficiency is also a driving force in policy making in the area of agricultural strategy and trade policy while reliance on trade is subsidiary. On balance India and Pakistan are net exporters of food while Afghanistan, Bangladesh, Nepal and Sri Lanka are net importers (Table 1.8).

Table 1.8 South Asia trade balance for raw food

Country	Net Imports (US\$ million)				Net Imports (as % of all imports)			
	1980/ 81	1990/ 91	2000/ 01	2004/ 05	1980/ 81	1990/ 91	2000/ 01	2004/ 05
Sri Lanka	-73	-110	-167	-248	-5	-5	-3	-3
Bangladesh	-224	-196	-317	-674	-13	-7	-4	-6
India	31	313	1,214	1,865	0	2	3	2
Nepal	13	6	1	-53	7	1	0	-4
Pakistan	155	0	512	465	4	0	7	3
Afghanistan	23	12	-53	-82	9	3	-8	-3

Source: UN COMTRADE Statistics.

Note: Food is defined as raw food, excluding all cash crops, processed food products and seafood.

While the first best arguments against trade protection in terms of comparative advantage and efficiency of resource allocation are often well known at the policy level, from the political economy perspective the real policy choice is how to balance these concerns with the issues of protecting the incomes of farmers and avoiding supply disruptions for consumers. The sharply adverse consequences

of extreme trade policies, such as a ban on exports employed during the crisis by many countries including in South Asia are illustrative of the importance of drawing the right balance in the policy choice. The evidence is clear that these restrictions accentuated price volatility, especially in the thinly traded rice market, and created added uncertainty facing food importing countries. Trade restrictions also increase the cost of food security as countries tend to build larger food stock reserves than necessary to counter uncertainty in trade.

On average trade policies for agriculture are more restrictive in South Asia than in other regions (see Table 1.9) suggesting the scope for lower protection. The efficiency loss from these high trade restrictions needs to be carefully evaluated against the gains. Importantly, trade barriers among neighbors are not very effective over the medium to long term, given physical proximity and informal trade opportunities. Trade cooperation with neighbors would appear to be a more potent way of managing food security than trade bans because such bans simply fuel high-cost informal trade and rent seeking at the expense of both the farmers and the consumers.

Table 1.9 Trade restrictiveness in agriculture in 2006

	Overall Trade Restrictiveness Index	Tariff Trade Restrictiveness Index
East Asia	26.6	8.7
Europe and Central Asia	25.9	10.3
Latin America & Caribbean	28.1	6.6
Middle East and North Africa	32.3	12.1
South Asia	46.4	31.4
Sub-Saharan Africa	24.9	13.8

Source: Kee et al. 2006.

Public food Stocks and distribution systems: This is another area of controversy as many countries maintain some kind of a stock to respond to supply shortages in a crisis situation. Some countries also maintain stocks to support a public distribution system. The goal here is to reconcile the twin objectives of giving farmer appropriate incentives through higher prices but moderating the effects on consumers by providing subsidized supplies to low income groups through the public distribution system.

The subject of food stocks has been studied at length. Dorosh (2008b) has recently undertaken a review of South Asian food stock system. The key questions that have emerged from the experience of South Asia and elsewhere include: multiplicity of objectives; efficiency of public distribution versus markets; corruption and wastage; role of trade; and fiscal costs. India's experience best illustrates these various issues and the challenges of trying to reconcile them. Historically, the growing cost of production has forced the government to accumulate a huge stock of rice and wheat at increasing prices. In particular, wheat prices until 2006 were higher in India than internationally owing to the incentive policy, raising issues about efficiency of domestic supply. At the same time, the government's objective to keep prices low for consumers calls for subsidies, contributing to a growing fiscal cost of public food distribution. Concerns also emerged about losses from theft and corruption, and wastages from storages. Despite these costs, India nevertheless feels vindicated by the ability to manage the global food price crisis much better than most other countries of the world based on its food stocking and public distribution policies.

Even so, there is a need to rethink the right balance between food stocks and trade. Maintaining some level of stocks to meet emergency situations and global crises such as during 2007-08 is a sound policy decision. Participating in the global food market through trade with appropriate safeguards on domestic availability through food stocks is a better policy option than to impose trade bans or prohibitive tariffs.

Input-output pricing policies: The complex system of pricing interventions have distorted incentives, reduced the efficiency of farm production and added to the fiscal burden. Importantly, this has tended to divert attention away from addressing the productivity challenge. The key to resolving South Asia's food challenge is to raise productivity. Importantly, the recent price increases for food crops provide policy makers a golden opportunity to revisit their food policies. The improved terms of trade in favor of agriculture resulting from the global commodity price boom allows South Asian governments to let farmers benefit from these higher output prices while lowering the fiscally expensive and inefficient subsidies. The resources thus saved could be redirected to areas that support farm productivity including spending on rural infrastructure (roads, irrigation, and rural electricity), farm technology, research and extension. Food security concerns on the supply side are possibly best addressed

by focusing on farm productivity rather than through subsidized inputs.

Safety nets: An effective safety net system is a key aspect of tackling food security on the demand side.⁹ The immediate response of South Asian governments to use existing safety net programs involving public food distribution is an understandable response to the food price crisis. However, South Asian governments are also well advised to carefully consider how to make existing programs more efficient while designing new programs for the medium and longer term. A review of international experience suggests the following broad guidelines to build upon in developing comprehensive safety net programs:

- The root cause for poverty should not be overlooked in designing safety net schemes. The most sustainable way of reducing poverty over the long-term is to ensure that policies protect economic growth and promote employment.
- The design of an effective public expenditure program that supports economic growth and employment needs to be a key component of a comprehensive strategy for safety nets. Thus, for example, a public expenditure program that links safety net programs with creating rural infrastructure and ties cash transfers with basic health and education (i.e. conditional cash transfer programs) is likely to yield better outcomes in terms of social protection than those which provide generalized subsidies.
- Reduction of various vulnerabilities emerging from natural disasters and lack of access to credit would need to be a key component of an effective safety net strategy. Microcredit schemes, for example, have played an important safety net role in a number of South Asian countries, especially Bangladesh. Formal insurance schemes for ex-ante risk reduction can also be very helpful, but they are almost non-existent in South Asia. Most importantly, South Asia is yet to develop a comprehensive strategy to address the vulnerabilities emerging from climate change and lack of cross-boundary water cooperation.
- Cash transfer programs are preferred to food or other in-kind transfers because cash increases the purchasing power of households and provide households with choices of how they meet

⁹ For a useful review of the role of safety nets in poverty reduction strategies, see Ravallion (2006).

their most pressing needs. Examples of conditional cash transfers that have worked well include the Food-for-Education Program in Bangladesh, Mexico's PROGRESA program and the Bolsa Escola in Brazil.

- The development impact of food based programs can be strengthened with the use of nutritionally fortified grains. A small share of food based safety net programs use fortified grains and a recent evaluation in Bangladesh by the International Food Policy Research Institute (IFPRI) highlights their potential. Estimates show that providing vitamin A and zinc supplements are a highly cost-effective intervention when one takes into account the longer term development benefits of a well nourished child.
- A common difficulty of implementing targeted programs during crises arises especially in countries which do not have a well designed and effective program in place. In such cases, it may be more feasible to focus on existing self targeted programs that can be scaled up relatively quickly. Well known examples of these programs in South Asia are the food for work programs and the employment guarantee schemes. Food for works programs target unemployed workers to support the creation of infrastructure such as rural roads or irrigation schemes. On average these programs have worked well, although their monitoring of administration and accountability needs to be strengthened.
- Concerning employment guarantee schemes, the best known example in South Asia is Maharashtra's EGS. In 2007, India initiated an even more ambitious National Rural Employment Guarantee Scheme (NREGS). Bangladesh has followed suit by announcing a similar program in 2008. These programs can be an effective way of reducing vulnerability and supporting the poor provided they are designed well. The fiscal cost of these schemes also needs to be watched and managed with the most important issue remaining the wage level. The experience with the Maharashtra scheme suggests that wages were set too high, resulting in employment rationing (Datt and Ravallion 1993). Self targeting will work only if the wage is set at a relatively low level so that the non-poor have no incentive to enter into the program. The other important aspect is community involvement

in the choice of projects to ensure that the work program creates assets that are useful to the community.

1.6 CONCLUDING REMARKS

The surge in global commodity prices of the past few years has presented a tremendous development challenge for South Asian countries. The large loss of income from the terms of trade shock has worsened macroeconomic balances, fueled rapid inflation and hurt growth. While commodity prices have come down recently, the benefits are being clouded by a severe global financial crisis. The adverse consequences of the food price hike for the poor are large; the global financial crisis could further worsen the situation due to falling economic opportunities and government revenues. South Asian countries need to accelerate reforms to avoid facing a serious downturn in economic activity, investment, exports and income.

Governments in South Asia have responded by attempting to stabilize domestic food prices through a range of short-term measures, tightening monetary policy to reduce inflation, and increasing spending on a range of safety net programs for the poor. Some of the policies employed, such as export bans, are not consistent with long-term welfare objectives of the country or the region. Safety net interventions need to be made consistent with longer term poverty reduction strategies and fiscal sustainability. Most importantly, policy attention now needs to shift towards efforts to increase farm productivity, improve rural infrastructure, and lower the vulnerability of the poor. In this regard, the increase in food crop prices provides an opportunity to policy makers to re-examine the complex system of input-output pricing interventions, reduce spending on input subsidies and instead refocus public spending on areas that will raise farm productivity (irrigation, rural roads, rural electricity) and move towards strengthening their safety net systems, both to address chronic poverty but also respond to provide basic needs in times of economic shocks and natural disasters. Public policy also needs to focus on reducing the vulnerabilities resulting from climate change and inadequate attention to cross-boundary water management. More and better regional cooperation can be an effective way to manage the farm productivity challenge and lower the vulnerability of the poor and ought to be a key element in the design of future food policy strategies in South Asia.

References

- Ahmed, Sadiq. 2008. *Regional Cooperation for Food Security in South Asia*, Mimeo, South Asia Region, Washington DC: World Bank.
- Brahmbhatt, M. and I. Christiaensen. 2008. "Rising Food Prices in East Asia: Challenges and Policy Options," Mimeo, East Asia and Pacific Region. Washington DC: World Bank.
- Chauffour, Jean-Pierre. 2008. "Global Food Price Crisis — Trade Policy Options," *PREM Notes*, Number 120, June 2008, Washington DC: World Bank.
- Datt, G., Martin Ravallion and Shubham Chaudhuri. 1993. "Does Maharashtra's 'Employment Guarantee Scheme' Guarantee Employment? Effects of the 1988 Wage Increase," *Economic Development and Cultural Change*, vol. 41, January 1993, pp.251-75.
- Dorosh, Paul. 2008a. "Food Price Stabilization and Food Security: The International Experience," *Bulletin of Indonesian Economic Studies* 44(1): 93-114.
- . 2008b. *Public Foodgrain Stocks and Price Stabilization in South Asia: Historical Experience and Policy Options*. Mimeo. South Asia Region, Washington DC: World Bank.
- Kee, Hiau Looi, Marcelo Olarreaga and Alessandro Nicita. 2006. "Estimating Trade Restrictiveness Indices." *World Bank Policy Research Working Paper* No. 3840.
- Ravallion, Martin. 2006. "Transfers and Safety Nets in Poor Countries: Revisiting the Trade-Offs and Policy Options," in Abhijit Banerjee, Roland Benabou and Dilip Mookerjee (eds) *Understanding Poverty*, Oxford University Press.
- World Bank. 2007. *Agriculture for Development: World Development Report 2008*. Washington DC: World Bank.
- . 2008. *Double Jeopardy: Responding to High Food and Fuel Prices*. Washington DC: World Bank.

Chapter 2

Welfare Impacts of Rising Food Prices in South Asian Countries

Tara Vishwanath and Umar Serajuddin

2.1 INTRODUCTION

The primary purpose of this Chapter is to examine the short run welfare impact of recent food price increases on households in sample South Asian countries. The analysis relies on consumption and production data from the latest available nation-wide household surveys. Drawing from analysis of several individual country studies, the Chapter attempts to identify groups that lost and groups that gained from key food price increases, and to estimate the purchasing power losses and gains to various groups. The work also estimates the impact of food price changes on poverty. The focus is not on predicting the national or sub-national poverty rates after the price shock, since poverty rates can be influenced by many factors other than the increases in food prices. Rather the attempt is to estimate the additional number of households or individuals, as a share of the population, who are likely to have become poor as a result of a food price shock, and how the depth and severity of poverty may have increased as a result of the shock.

Prices of internationally traded food items increased almost two and half times between January 2002 and February 2008. The increase in major grain prices (mainly corn, rice, wheat, soybeans) was particularly drastic since 2006; nominal global rice prices more than tripled between January and May 2008 while wheat prices doubled between January 2006 and May 2008 (World Bank 2008a).

While the transmission of global price increases to domestic prices was markedly different across countries due to the differential nature of domestic markets and policies, almost all South Asian countries, with the notable exception of India, faced tremendous surges in food

prices during this period. For example, between January 2007 and June 2008 the food price index in Sri Lanka and Pakistan rose by more than 40 percent, with a bulk of those increases resulting from increases beginning toward the latter part of 2007 (Fig. 2.1).

In particular, the prices of staples like rice and wheat rose dramatically. Between mid 2007 and mid 2008 wheat prices had risen by about 70 percent in Pakistan and between 157 percent and 259 percent across different regions in Afghanistan. During roughly the same time rice prices in Sri Lanka rose by about 80 percent and in Bangladesh by about 40 percent. While food prices in South Asian countries have dropped since their June 2008 levels, they continue to remain at levels higher than their January 2007 levels.¹ Price increases of such magnitude likely had a major impact on the purchasing power of a large number of households across South Asia, especially the poor and vulnerable.

Table 2.1 Index of projected real world food price increases (2004=100)

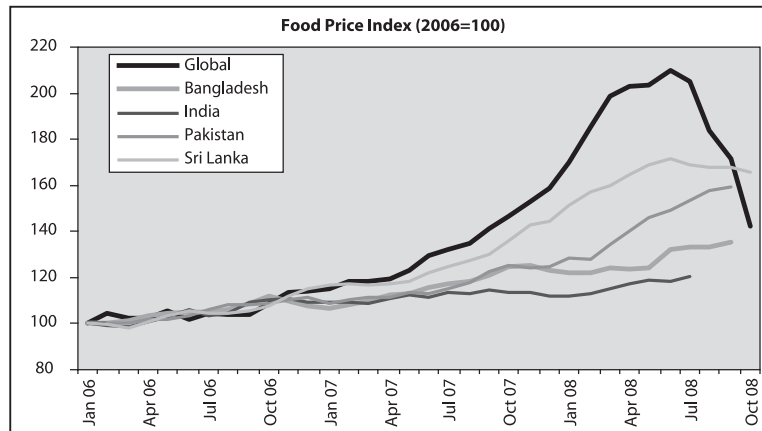
Real Prices	2007	2008	2009	2010	2015
Rice	130	243	208	183	160
Wheat	154	215	191	166	140

Source: World Bank DECPG method of projection: macro modeling based on using historical price data and based on projections on production and stock amounts.

While global food prices appeared to have stabilized and in fact declined moderately in the latter half of 2008, prices of most food crops are likely to remain at high levels in the medium term. World Bank projections suggest that prices of corn, wheat and rice in real terms would be 40 to 60 percent higher in 2015 compared to their 2004 levels (Table 2.1). These figures are broadly consistent with projections of organizations such as USDA and FAO-OECD (World Bank 2008a). While the recent food price crisis might have been unusual, high food prices are likely to remain an important issue in the years to come.

In South Asian countries food inflation can be especially serious because the budget share of food is very high across countries; for example, the food budget share is about 75 percent in Afghanistan,

¹ These inflation estimates are gathered from figures available at national statistical offices or the central banks.



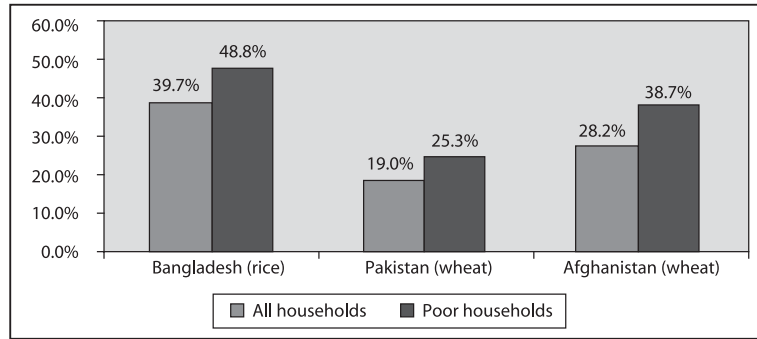
Source: World Bank's DECPG database and individual country databases.

Fig. 2.1: Food price increases in select South Asian countries and globally

60 percent in Bangladesh and 50 percent in Pakistan.² Expenditure shares of key staples such as rice and wheat are also very high, and for poor households the shares are even higher (Fig. 2.2). For example, in Bangladesh almost half of all food expenditures (and a third of total expenditures) of the poor are spent on rice alone.

Expenditure patterns, however, provide only a partial picture of food inflation impact, albeit an important one particularly for the poorer households. Our examination of the impact of the recent food price increases on households in South Asian countries follows a methodological approach which takes into account the special nature of food price increases (Deaton 1989; Ivanic and Martin 2008). Since households may produce food items as well as consume them, implications of food price increases would depend on both the consumption and the production behaviors of households. Higher food prices can have dramatically divergent effects across different groups depending on their food expenditure patterns and income sources. Households that are net producers (i.e., who sell more than

² According to the Afghanistan National Rural Vulnerability Assessment (NRVA) survey of 2005, the Bangladesh Household Income and Expenditure Survey (HIES) of 2005, and the Pakistan Social and Living Standards Measurement Survey (PSLM) of 2005-06.



Source: Calculations by World Bank staff from Bangladesh HIES (2005), Pakistan PSLM (2005-06), and Afghanistan NRVA (2007-08).

Fig. 2.2: Expenditure shares of key food items across South Asian countries (as % of total food expenditures)

they buy) would benefit from the improved terms of trade; conversely, net food consumers would be adversely affected. Exactly how increased prices would affect poor households would depend on the distribution of net buyers and sellers among them.

In the longer term, the welfare impact of food price increases would depend on adjustments households make over time and on other changes in the economy induced by the price changes. For example, household welfare would depend on how responsive wages are to such increases (Ravallion 1990); if wages were to increase sufficiently, they would lessen the adverse impacts of price increases on households that are net buyers of food items. However, the induced wage responses of staples are often small and are unlikely to dwarf the direct impacts on purchasing power of price increases.³ Also, such responses, even when strong, are likely to be very sluggish (Datt and Olmsted 2004).⁴

³ For example, Ravallion (1990) estimates the short run wage elasticity for agricultural wages in Bangladesh to be 22 percent and the long run wage elasticity to be 47 percent. While this suggests only partial wage adjustment, using more recent data from Bangladesh, Rashid (2002) argues that since the mid 1980s changes in rice prices have had a negligible impact on agricultural wages.

⁴ Datt and Olmsted (2004) estimate that in Egypt while nominal wages do adjust over time to food price increases, the adjustment process is sluggish. For example, the short-run nominal wage elasticity is estimated to be 45 percent over a two year period; for wages catch up fully it would take over 5 years.

For example, wages of many urban households, including fixed (low) wage employees, such as in the manufacturing (including garment) sector in Bangladesh and Sri Lanka, tend to adjust upward slowly. Thus, the assumption of no nominal wage adjustments is quite reasonable in the short run and is used in our analysis.

Apart from induced wage responses, induced production responses could also impact welfare in the longer run (Minot and Goletti 1998). This is also an issue excluded from the analysis. Supply responses, like induced wage responses, tend to take time. Importantly, they are unlikely to affect a majority of households, especially poorer ones who for the most part are limited to demand side responses to adverse welfare shocks (Barret and Dorosh 1996). Despite ignoring concerns such as induced wage responses or supply responses, our analysis remains useful for examining welfare impacts on households, especially for those living near or below the poverty line.

Our work follows the net buyer-seller methodology of Deaton (1989) to examine welfare impacts of food price increases for several South Asian countries. This chapter presents detailed results for Bangladesh, Pakistan, Nepal and Sri Lanka. These countries have nationally representative surveys with both consumption and production data needed for such estimation. Given their pre-eminence as key staples, this chapter focuses on the impacts of wheat price increases in Pakistan and rice price increases in Sri Lanka and in Bangladesh during a 12-month period in 2007-2008. Estimates indicate that in these three countries the sharp increases in wheat and rice price appeared to adversely affect the purchasing power of a majority of households. Poorer and more vulnerable households were more seriously affected and poverty incidence was projected to increase in the short term. What is interesting is that estimates show that a majority of rural households were adversely affected by the price increases. This is because while most rural households are tied to agriculture, a much smaller fraction of them are net sellers. We also observe a significant regional variation in impact within countries—a result that has important implications for designing safety net measures to help affected households. For Nepal simulations were conducted to estimate the impact of rising cereal prices. The estimates indicate that households in Nepal did not face strong unfavorable welfare impacts like most other South Asian countries, which is interesting since Nepal is one of the poorest countries in the region. Rural households in Nepal are predominantly subsistence farmers, buying or selling very limited

amounts in the markets. For this reason cereal price increases had limited impact on them. For urban households on the other hand, expenditures on cereals were a relatively small fraction of overall expenditures, limiting their vulnerability to price increases.

In the absence of necessary production related data, estimates of welfare impact for Afghanistan cannot be provided. However, from whatever data is available one can infer that a majority of Afghan households faced a strong adverse impact of wheat price surges (the main staple). Price increases in Afghanistan were by far the highest in the region.

Unlike Bangladesh, Nepal, Pakistan or Sri Lanka, India does not have one nationally representative dataset that includes information on both production and consumption of food items. Therefore, to follow the net buyer-seller method, evidence must be pieced together across datasets, which is a challenge. Under these circumstances it is difficult to directly estimate purchasing power impact of food price increases for India. However, the actual impact on purchasing power was likely limited in India because of the relatively moderate increase in food prices. The Government of India intervened to contain price rises through trade and stocks policies, and through increased subsidies to fertilizers, pesticides, electricity and diesel. Instead of doubling, as in the world market, cereal prices in India increased by only about 16 percent between 2006 and 2008. While actual estimates of impact on purchasing power are not available for India, the net buyer-seller approach was useful in identifying the potential gainers and losers from cereal price increases across different groups. Gains from price increases would be limited to a relatively small proportion of rural households with larger land holdings, while majority of farming households would not gain.

The results reported above are projections of welfare impact based on household income and expenditure surveys that predated the food price shock. For example, the Household Income and Expenditures Survey (HIES) of 2005 was used to carry out welfare analysis for the food price increase in 2008 in Bangladesh. In order to get a rapid contemporary assessment of the impact of high food prices in Bangladesh, particularly on the poor, and to address some of the critical information gaps in the welfare analysis based on HIES 2005, the World Bank conducted a survey of 2,000 households in July 2008. Unlike the nationally representative household survey of 2005 with a detailed expenditure and income module, this survey used simple and easily

collected proxies of household welfare. The objective of the rapid survey was not to estimate the quantitative impact of food price increases on poverty rates, but rather to enrich the quantitative impacts estimated earlier with the HIES 2005 data. Instead of estimating how much purchasing power had declined for households as a result of a price shock, the rapid survey gave insights on how households coped with the food price increases (e.g., what sort of social assistance programs they made use of) after the increases had taken place. Findings from the rapid survey are discussed in this Chapter, especially in terms of how they complement the analyses based on HIES 2005.

Finally, the chapter concludes with providing a few suggestions to mitigate the fallout from such a crisis, ranging from short run safety nets policies to long run policies such as encouraging increases in agricultural production.

2.2 METHODOLOGY

To understand how food price changes affect household purchasing power in the short term, we apply Deaton's (1989, 1997) non-parametric approach. Exploiting household level survey data, this method was used to estimate the welfare impact of rice price increases in Thailand. Deaton (1989) developed a model incorporating the dual role of households as consumers and producers of food items and linked the benefit (loss) to a household from increased rice prices with how much the household's production of rice exceeded (fell short of) its consumption.⁵

Formally, the first-order welfare effect of a price change of a food item is proportional to its Net Benefit Ratio (NBR), which is the difference between the production share of the food item and its consumption share in total expenditures. The net benefit ratio can be interpreted as the elasticity of expenditures (or real income) to price change. For this chapter total expenditures have been used as a proxy for income as expenditures data tend to be a more reliable indicator of household welfare (Deaton 1989; Budd 1993; Barret and Dorosh 1996). A household with positive NBR, i.e., whose production ratio is

⁵ Such partial equilibrium analysis abstracts from economy-wide general equilibrium considerations which require modeling within a multi-market framework. While a CGE framework provides more analytical completeness, it also suffers from uncertainties arising from model parameters and distortions caused by the imposition of substantial modeling structure on the problem (Barret and Dorosh 1996).

greater than consumption ratio, is a net seller and would be a beneficiary of price increases; conversely, a household with negative NBR is a net buyer and would be affected unfavorably by price increases. The NBR reflects the extent to which a household is a net buyer or a net seller.⁶ The instantaneous or short run purchasing power impact on households can be derived by multiplying the NBR with the actual price increase of the food item.⁷

The basic model is:

$$\Delta w = \Delta p (PR - CR)$$

where Δw = Purchasing power change expressed as percentage of total expenditures;

Δp = percentage change in food price;

PR = food production ratio;

CR = food expenditure ratio

The impact of price hikes on poverty can be estimated by comparing households' post-shock expenditure levels with the official poverty line.

Some Caveats. There are some important caveats to this analysis. First, the estimates indicate the purchasing power impact on households had they faced a similar a price shock in the year the survey was conducted. As such, the estimates can be interpreted as the purchasing power impact of food price increases on households after the price shock, assuming that the post-price increase distribution of expenditures was unchanged from that during the survey year. In this approach the levels of expenditures (or income) or production do not matter in estimating changes in purchasing power; as long as the shares of production and expenditure are assumed to remain reasonably stable, the results would apply to households after the price shock (say in 2007-08).⁸

Second, the estimation exercise does not take into account substitution effects of consuming less of the staple whose price has increased (e.g., wheat or rice), and consuming more of other types of food. By

⁶ While a household buys and sells food items at different times in the year, for the year as a whole, a household can be characterized as a net seller or a net buyer.

⁷ The longer run effects arising from induced wage responses to price changes can be estimated by combining Deaton's model with Ravallion's (1990) approach.

⁸ The level of expenditure will, however, matter for the impact on poverty, since that involves comparing the expenditures with a fixed standard (poverty line).

ignoring substitution effects, it is likely that this analysis overestimates the adverse impact of price increases, just because any substitution that would have occurred is likely to have improved the welfare of households (by a simple revealed preference type argument). In general, however, demand elasticities of staple foods appear to be small (Tyers and Anderson 1992), and the extent to which a staple can be substituted is even lower when all prices are rising (Ivanic and Martin 2008).⁹ It can also be argued that because of dietary and cultural reasons, the extent of substitution out of staples such as rice and wheat is likely to be low in the South Asian context.¹⁰

Third, the analysis does not take into account induced wage responses of food price increases. Such responses, as mentioned earlier, however, tend to be partial and slow (Ravallion 1990, Datt and Olmsted 2004). Our results show how much the total wage response would have to be for a few countries for the direct impact to be neutralized and the levels appear quite high. Fourth, the work does not take into account any supply response to the food price increases. Supply responses are less likely to be relevant in the short-run, but in the long-run they could be important. Fifth, this analysis estimates the impact of wheat, rice or cereal price changes only, and does not estimate the impact of changes in price of other food items in the consumption basket. While estimating the impact of particular food items the analysis excludes any ripple effects that may have occurred in other food and non-food products. Finally, any mitigating steps taken by the government, such as cash transfers, the direct sale of limited quantities of food at lower prices, are not taken into account in the analysis.

Most caveats of the present analysis deal with issues that could potentially arise in the longer run. All caveats notwithstanding, our approach is useful in examining welfare impacts on households in the short run, particularly in an environment where post-shock household level consumption and production data are unavailable due to

⁹ For example, while rice prices rose about 40 percent in Bangladesh during mid 2007 to mid 2008, wheat prices increased by 30 percent, limiting the likelihood of substitution of one staple grain for the other.

¹⁰ For instance, the dietary patterns in Bangladesh indicate rice consumption to remain remarkably stable over time. HIES 2000 indicates that households spend 24.7 percent of their total expenditures on rice, roughly equivalent to figures from 2005 (24.3 percent); for poor households the figures are very similar as well (33 percent in 2005 as opposed to 31.7 percent in 2000). This stability is noteworthy since during 2000-2005 real per capita expenditures rose at an annual rate of 2.4 percent.

the sudden nature of the shock and owing to the time it takes to field such a survey (a household survey typically spans an entire year to adjust for seasonality effects). An advantage of the analytical approach followed in this Chapter is that impacts can be measured quickly using existing surveys (conducted prior to the price shocks). The net seller-buyer classification identifies potential gainers and losers from food price increases. Prediction of purchasing power impacts for the short term for different groups highlights which groups are particularly vulnerable to food price increases and to what extent they are vulnerable. This in turn can provide governments and policy makers with insights into who should be targeted for assistance and potentially by how much. This is a useful contribution in designing safety net programs to aid those perceived to have been affected adversely by food price increases.

2.3 DATA

The data for the analysis in this chapter has been sourced from the most recently available household surveys across South Asian countries. Information on household production and sales of agricultural commodities, and consumption expenditures (from purchases, own production, transfers, etc.) are needed for our analysis. For Bangladesh, Pakistan, Sri Lanka and Nepal both expenditures and production data were available in the latest household surveys in a form where they could be linked together easily to estimate the proportion of net buyers and net sellers in each case. The analyses for these countries are based on the Bangladesh Household Income and Expenditure Survey (HIES) of 2005, the Pakistan Social and Living Standards Measurement Survey (PSLM) of 2005-06, the Sri Lanka Household Income and Expenditure Survey (HIES) of 2005-06, and the Nepal Household Income and Expenditure Survey (HIES) of 2004-05.¹¹

Two exceptions where the model could not be replicated exactly were for Afghanistan and India. The Afghanistan National Rural Vulnerability Assessment (NRVA) survey of 2005 did not have detailed production data. Accordingly, some basic inferences on household level impact were made using the available consumption information.

For India there is no nationally representative dataset with both expenditures and production data. Consequently, two separate datasets

¹¹ Calculations from the Sri Lanka HIES (2005-06) were conducted by staff at Department of Census and Statistics (DCS), Sri Lanka in consultation with World Bank staff.

were used to examine welfare implications of higher food prices; one of the datasets examined the welfare implications of price increases to farm households while the other examined the welfare implications to non-farm households. For households involved in agriculture, production and expenditures data from the "Situation Assessment Survey of Farmers" (NSS 59th round, carried out in Jan-Dec 2003), was used to estimate welfare impacts.¹² This survey had no information on non-farm households. For non-farm households, welfare impacts were analyzed employing the 2004-05 Consumption-Expenditure Survey (NSS 61st round), which was nationally representative of all households.¹³ Due to the complexities associated with the India data the study was limited to identifying households who would potentially stand to lose or gain from price increases, and refrain from providing welfare estimates.

Lastly, the data for key staple price or composite cereal price increases came from national statistical departments or from the central banks. The focus remains on the impacts of price increases of specific staples, namely, rice price increases in Bangladesh (rural 36.8 percent and urban 38.8 percent) and Sri Lanka (83 percent), and wheat price increases in Pakistan (73 percent) and in Afghanistan (where prices more than doubled). For Nepal simulations were done for a 24 percent increase in cereal prices.¹⁴

¹² The NSS 59th round was a 'thin' round and in place of a comprehensive consumption module a shortened consumption module was administered to households. The expenditures of farm households were compared with the production information to project welfare impacts.

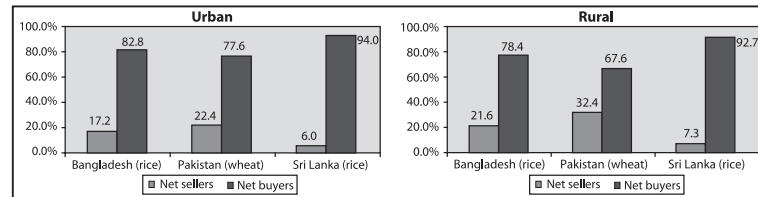
¹³ The NSS 61st round was a 'thick' round and contained a detailed expenditures module. The sub-sample of non-farming households were extracted from this survey and the welfare impacts for those households were estimated based on the budget shares of different food items. As this round of the NSS had no information on agricultural production it was not useful for estimating the welfare impact of higher food prices on farm households.

¹⁴ Sources and times for food inflation figures: Afghanistan: CSO (Central Statistics Office); Regional price data during May 2007 to 2008. Bangladesh: BBS (Bureau of Bangladesh Statistics); National CPI from April 2008 to March 2007; Pakistan: FBS (Federal Bureau of Statistics); Monthly Review of Price Indices from September 2007 to August 2008. Nepal: NRB (Nepal Rastra Bank — Central Bank of Nepal); Year to Year inflation figures of grains and cereals from October 2007 to Sept 2008. Sri Lanka: DCS (Department of Census and Statistics); Wholesale Colombo rice prices from June 2007 to May 2008. India: India Wholesale price index from April 2006 to March 2008.

2.4 RESULTS: WHO GAINS AND WHO LOSES FROM HIGHER FOOD PRICES?

The household surveys examined indicate that for key staples net sellers appear to be much fewer in number than net buyers. The left-hand graph in Fig. 2.3 illustrates this point for Bangladesh, Pakistan and Sri Lanka. Since net sellers would benefit from price increases while net buyers would lose, this suggests that far more households were adversely affected due to the recent price increases than benefited from them.

Unsurprisingly, since urban areas have hardly any net sellers most urban households were negatively affected by large price rises. What is, however, more interesting is that even in rural areas net buyers appear to vastly exceed net sellers as illustrated in the right-hand graph in Fig. 2.3. For example, in Pakistan while 2.4 percent of all households were net sellers of wheat, even in rural Pakistan only a third of all households were net wheat sellers. In rural Bangladesh around 21 percent of households were net rice sellers, while in Sri Lanka fewer than 10 percent of rural households were net rice sellers.



Source: Calculations by World Bank staff from Bangladesh HIES (2005) and Pakistan PSLM (2005-06), and by Department of Census and Statistics (DCS), Sri Lanka staff from Sri Lanka HIES (2005-06).

Fig. 2.3: Distribution of net sellers and buyers across South Asian countries

The distribution of net sellers and buyers in rural areas are intricately linked to the distribution of land. Many rural households are either landless, or are subsistence or marginal farmers and such households are mostly net buyers of food. In Bangladesh for example (see Fig. 2.4), according to calculations based on HIES 2005, almost two-thirds of all rural households are either landless or marginally landless (those with less than 0.5 acres of cultivable land). Of rural households that are landless (about half of all rural households), only about 5 percent are net sellers of rice; of functionally landless households (16 percent

of all rural households) only 17 percent are net sellers of rice. Thus, most rural households were hurt by the rice price increases. Taken as a group, only households with more than 1.5 acres of cultivable land — small, medium and large landholders who are roughly 17 percent of all rural households — were expected to benefit from the rice price increase.

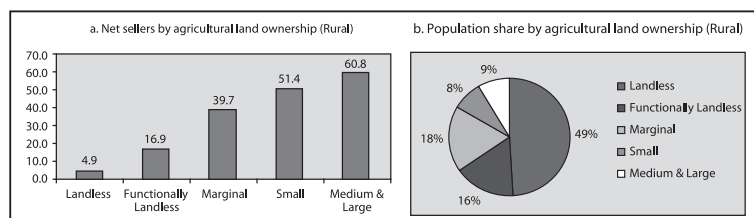
The findings for Bangladesh are echoed in other South Asian countries as well. Data from India's NSS of 2003 (59th round) suggests that only about a quarter of all rural households and only 44 percent of farming households were net sellers of main crops (rice, wheat, maize and other cereals). Gainers and losers of price rises can be explained quite clearly along land holding patterns. According to the NSS about 24 percent of farming households were marginal farmers (with less than 1 acres of land holdings), 50 percent were small farmers (with between 1 to 2.5 acres of land), and the rest were large farmers. A very small fraction of marginal farmers, less than 20 percent, were net sellers of the main crops. Among large farmers, 51 percent were net sellers of main crops. Thus a food price increase would hurt a vast majority of marginal (86 percent) and small (73 percent) farmers. Even among large farmers many would be losers (49 percent).

The discussion in this section highlights a critical issue: in the short run a majority of South Asian households would be adversely affected by a food price shock. This is true for rural households as well. While most rural households produce food items, most of them produce less than they consume.

2.5 IMPACT ON HOUSEHOLD PURCHASING POWER

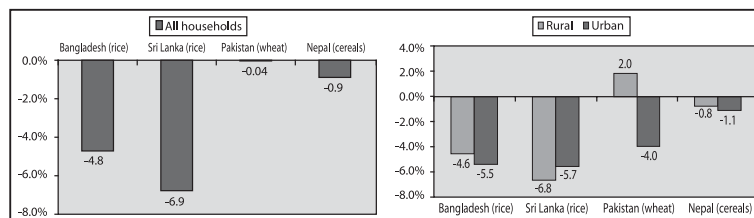
While the previous section focuses on which households would gain or lose from increases in prices of certain staples, this section discusses estimates of the extent of gains and losses to households from those increases. The purchasing power impact is derived by multiplying the NBR (difference between the production share of the food item and the consumption share of the item in total expenditures) with the price increase.

Figure 2.5 shows the estimates of the short run purchasing power impact of rice price increases in Bangladesh and Sri Lanka, wheat price increases in Pakistan, and cereal price increases in Nepal. The estimated aggregate purchasing power impact is almost zero in Pakistan. In Nepal, average per capita expenditures were estimated



Source: Calculations by World Bank staff from Bangladesh HIES (2005).

Fig. 2.4: Net sellers across land groups in Bangladesh



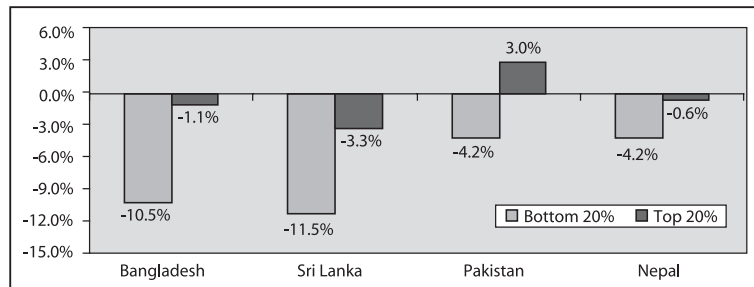
Source: Calculations by World Bank staff from Bangladesh HIES (2005), Pakistan PSLM (2005-06), and Nepal HIES (2004-05), and by Department of Census and Statistics (DCS), Sri Lanka staff from Sri Lanka HIES (2005-06).

Fig. 2.5: Purchasing power changes (%) across all, rural, and urban households in Bangladesh, Sri Lanka, Pakistan and Nepal

to fall modestly, less than 1 percent. This contrasts the sharp declines faced by both Bangladesh and Sri Lanka; on average, in Bangladesh purchasing power fell by about five percent and in Sri Lanka by about seven percent. Interestingly, the relative impact in Sri Lanka was higher than in Bangladesh though rice constitutes a much smaller fraction of household budget (according to the household surveys rice is about 10 percent of total household expenditures in Sri Lanka vis-à-vis about 25 percent in Bangladesh). However, the share of income coming from rice in Sri Lanka is much smaller. This makes the net benefit ratios across the two countries quite close. Furthermore, in Sri Lanka rice prices rose at almost twice the rate as in Bangladesh during 2007-08. Since the purchasing power impact is the net benefit ratio multiplied by the price change, the adverse impact in Sri Lanka gets accentuated.

The average impact among urban households was negative and considerable across all countries, with the exception of Nepal. While rural households in Bangladesh and Sri Lanka faced high purchasing power losses, on average rural households in Pakistan were estimated to gain (2 percent). Nepalese rural households experienced very small declines in purchasing power (0.8 percent). Interestingly, in Sri Lanka average losses among rural households (6.8 percent) appear slightly larger than among urban households (5.7 percent).¹⁵ This is likely due to the higher budget share of rice in the rural areas, which are also relatively much poorer than urban areas.

In general, poorer households are affected far more severely than the relatively better off households, due to their larger budget share of staples, often coupled with low income from staples. The differences in impacts between the top and the bottom expenditure quintiles are typically stark across countries. The adverse effect on the poorest was particularly acute in Bangladesh and Sri Lanka. In both these countries the bottom 20 percent of households lost over 10 percent of their purchasing power to the 2007-08 price increases (Fig. 2.6).



Source: Calculations by World Bank staff from Bangladesh HIES (2005), Pakistan PSLM (2005-06), and Nepal HIES (2004-05), and by Department of Census and Statistics (DCS), Sri Lanka staff from Sri Lanka HIES (2005-06).

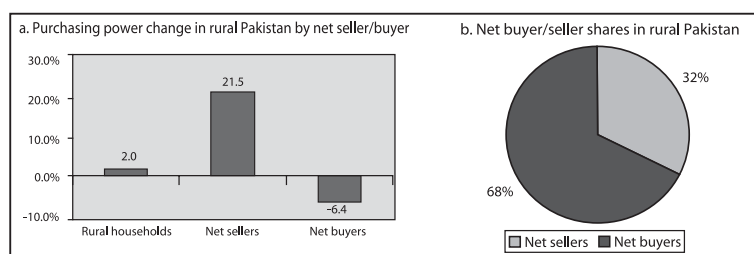
Fig. 2.6: Purchasing power changes (%) across the bottom and top quintile households in Bangladesh, Sri Lanka, Pakistan and Nepal

The above discussion on purchasing power impact can perhaps be understood more intuitively by calculating the nominal wage adjustments

¹⁵ In Sri Lanka the average loss of purchasing power was even higher among households living in estates or plantation areas (11.4 percent), which tend to be poorer than both urban and rural areas.

needed to neutralize household losses from price increases.¹⁶ For example, on average, nominal wages would have had to rise by 14 percent for Bangladeshi households and 15 percent for Sri Lankan households for them to suffer no losses in purchasing power due to the rice price increases. For poorer households nominal wages would have had to increase by even more; in both Bangladesh and Sri Lanka nominal wages of bottom quintile households would have had to increase by about 20 percent on average to maintain their pre price shock expenditure levels.

The purchasing power estimates quite clearly show households in Bangladesh and Sri Lanka to have experienced significant declines in purchasing power due to rice price increases. However, the estimates of virtually no purchasing power impact of wheat price increases among all Pakistani households and of positive purchasing power impact among all rural households provides a partial and potentially misleading picture of impact. The net seller-buyer classification in rural Pakistan suggests that a majority of households were in fact negatively affected by the price crisis. The positive aggregate impact in rural areas stems from the fact that large gains to a small group of net sellers outweighed the losses faced by a large group of net buyers. Figure 2.7 shows that in rural areas 68 percent of households were net wheat buyers and the wheat price increase on average reduced the purchasing power of these households by 6.4 percent. Conversely, the purchasing power of net seller households on average rose by about 21 percent.



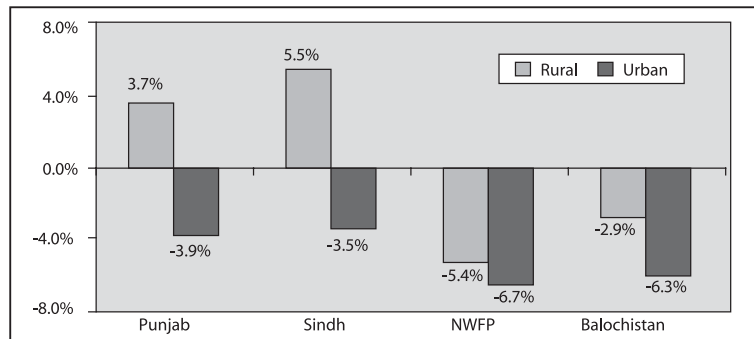
Source: Calculations by World Bank staff from PSLM (2005-06).

Fig. 2.7: Purchasing power changes (%) across net sellers and buyers in Pakistan

¹⁶ Due to data limitations this exercise could be carried out for Bangladesh and Sri Lanka only.

The estimated impacts for Nepal, which is one of the poorest countries in South Asia with a large number of food insecure households, might appear a bit unexpected in the face of cereal prices rising by about 25 percent. However, upon examining the household survey data, the results are not surprising. The Nepal HIES 2004-05 suggests that as many as 86 percent of rural households in Nepal produced cereals. Most of these rural households were subsistence farmers who had access to small amounts of land and who bought or sold very limited amounts of cereal in the market. As such, a majority of these households had very small net benefit ratios for cereal (positive or negative), and thus were not affected seriously by cereal price changes. Urban households in Nepal tended to be far more affluent than rural households, with average per capita expenditures being almost three and a half times as large as the rural average. Cereals made up less than 10 percent of urban household expenditures, limiting their adverse exposures to cereal price increases.

While estimated purchasing power impacts vary across countries, impacts often exhibit marked regional disparity within countries as well (Fig. 2.8). For example, in Pakistan the average impact of the wheat price increase is estimated to be negative and large across urban areas in all provinces, with Balochistan and NWFP suffering strongly



Source: Calculations by World Bank staff from PSLM (2005-06).

Fig. 2.8: Purchasing power changes (%) across provinces in Pakistan

(declines in the average purchasing power were a little over 6 percent in both provinces). On the other hand, among rural areas, while Balochistan and NWFP were adversely affected, on average Sindh and

Punjab appeared to gain (with average gains of 5.5 and 3.7 percent, respectively). Regardless of aggregate level impact, however, in all these provinces a clear majority of households were net wheat buyers and hence unfavorably affected by the price increases.

We were unable to apply the net seller-buyer approach to Afghanistan since production data was not available. However, Afghan households on average likely faced severe declines in purchasing power due to increases in wheat prices. Wheat prices more than doubled between May 2007 and May 2008, and the NRVA 2005 suggests that wheat constituted about 20 percent of total household expenditures. This would imply a potentially enormous adverse impact on the purchasing power of households on average, an impact that could be larger than in other South Asia countries. While quantities produced by Afghan households are unavailable it is possible to tell whether they produced wheat or not. According to NRVA 2005 only a minority of all Afghan households (36 percent) produced wheat, and among rural households fewer produced wheat (45 percent) than not. Though there exists no direct evidence, judging by the trends in its neighboring South Asian countries, an even smaller proportion of those wheat producing households were likely to be net sellers of wheat. Thus, a clear majority of Afghan households are expected to have been adversely affected by the wheat price increases.

While estimates for India are not available, it would appear that the purchasing power impact of cereal price increases was relatively small due to the low increase in cereal prices. The India study, however, points out that the households that would stand to lose from price increases clearly outnumber households who would benefit (only around a quarter of all rural households are net sellers of cereal). Thus, it provides evidence that the Government of India's policies to maintain relatively stable prices benefited a majority of households in the short run.

2.6 POVERTY IMPACT

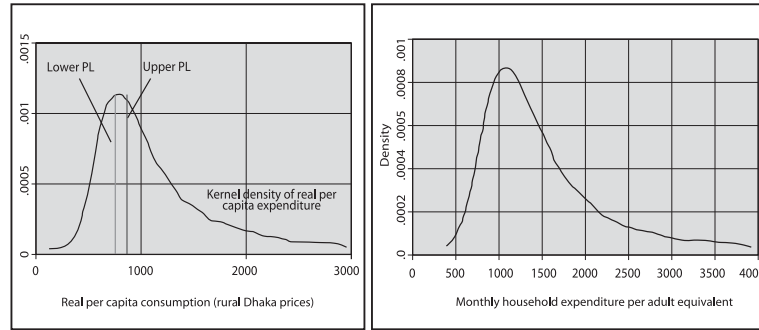
The purchasing power impact of the recent wheat and rice price hikes across different countries in South Asia likely had serious consequences for poverty in the region. There are two reasons for which the poverty impact would be expected to be substantial. First, estimates across countries show that relatively poorer households were affected more adversely by the price increases. Second, for several

countries in the region like Bangladesh, Pakistan and Afghanistan, the size of the vulnerable population — those at risk of falling into or falling deeper into poverty — is large. Even a small adverse shock would change the poverty status of many households in those countries.

This is evident for Bangladesh from cross sectional data from HIES 2005 as shown by Figure 2.9a, which depicts how per capita consumption expenditures are distributed across households. The figure shows a high concentration of consumption expenditures around the upper poverty line, implying that relatively minor economic shocks can cause large movements in poverty rates. Furthermore, the relative positions of the upper and lower poverty lines and the density curve indicate a large population in Bangladesh to be consuming between the upper and lower poverty line levels, which suggest that even a small negative shock can send a large number of individuals who are already poor, into extreme deprivation (World Bank 2008b). Figure 2.9b suggests a similar story for Pakistan which also has a large concentration of households with expenditures around the poverty line.

The calculations of poverty impacts arising from the food price shock need to be interpreted with care. What the figures essentially indicate is how much poverty estimates would have changed had the price shock taken place when the surveys were conducted. They do not take into account the fact that between the survey dates and the time of the price shock, poverty could have declined as a result of economic growth; the reference point for poverty impact is not precise. Nevertheless, these figures provide approximate magnitudes of how poverty incidence could change in response to price changes. It should be noted that impacts calculated in this Chapter are from price increases of specific food items and not from food price inflation *per se*.¹⁷

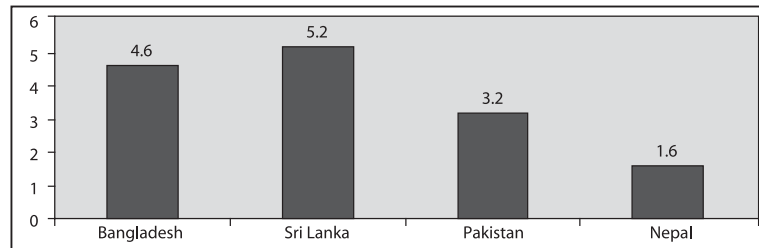
¹⁷ The poverty impacts for each country are calculated in this chapter keeping the poverty lines fixed (at their levels at the time of the surveys), and by comparing the post-shock consumption levels with the original poverty lines. There is debate in the literature as to whether it is more appropriate to adjust poverty lines to account for the fact that expenditure patterns could change in response to price changes. While the two approaches could yield different estimates of the household level purchasing power impact due to rising prices, there would likely be little difference in the estimated impact on the poverty rates. The main difference between the two approaches rests on the measured welfare impact on those who were poor before the price shock. Since these households are likely to continue to remain poor following the price shock, their welfare changes would not affect the estimated impact on the poverty headcount rate.



Source: Calculations by World Bank staff from HIES (2005) of Bangladesh and PSLM (2005-06) of Pakistan.

Fig. 2.9a: Distribution of per capita household expenditures in Bangladesh

Fig. 2.9b: Distribution of household expenditures per adult equivalent in Pakistan



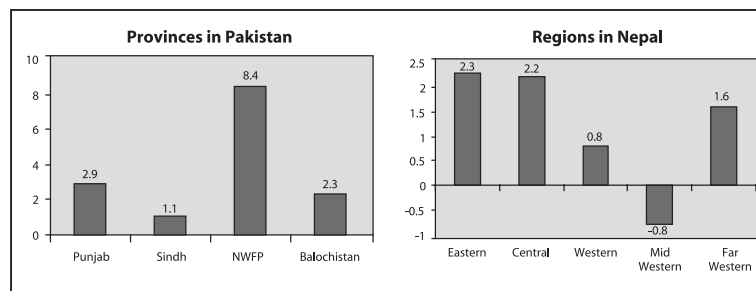
Source: Calculations by World Bank staff from Bangladesh HIES (2005), Pakistan PSLM (2005-06), and Nepal HIES (2004-05), and by Department of Census and Statistics (DCS), Sri Lanka staff from Sri Lanka HIES (2005-06).

Fig. 2.10: Increases in the poverty headcount rate across South Asia countries (percentage points)

Estimations suggest that the impact of food price increases on poverty can be quite large. For example, for Bangladesh the poverty incidence is expected to increase by 4.6 percentage points, for Sri Lanka by 5.2 percentage points, for Pakistan by 3.2 percentage points. For Nepal the increase is relatively modest (1.6 percentage points). The increase in Sri Lanka is particularly strong as the estimated 5.2 percentage point increase reflects the poverty headcount increasing by about a third

(from 15.3 percent to 20.4 percent). Also, it is noteworthy that in Pakistan while the estimates of the aggregate purchasing power impact of the wheat price increase is close to zero, the estimated poverty impact is high. A large number of households were distributed right above the poverty line and the negative shocks they received pushed them into poverty.

Similar to estimates of purchasing power impact, estimates of poverty impact exhibit considerable variation at the sub-national level, and Fig. 2.11 illustrates this variation for Pakistan and Nepal. In Pakistan, poverty incidence increased dramatically in NWFP, while Punjab also experienced a large increase in the number of poor. The poverty impact of wheat price increases is not necessarily higher in provinces with higher incidences of poverty. For example, according to PSLM 2005-06 Baluchistan had a far higher incidence of poverty (50.8 percent) than did Punjab (18.1 percent), Sindh (21.3 percent), or NWFP (27.3 percent). Yet the poverty incidence rose less sharply in Baluchistan, attributable largely to fewer households with expenditures around the poverty line. Urban poverty was projected to increase across all provinces (with at least a 20 percent increase in the urban poverty headcount) due the increased wheat prices. The differential poverty impact across provinces arises mainly from differences in poverty impact among rural households across provinces.



Source: Calculations by World Bank staff from Pakistan PSLM (2005-06) and Nepal HIES (2004-05).

Fig. 2.11: Poverty impact at the sub-national level (percentage point changes)

While a sizable number of people were expected to have fallen below the poverty line, many existing poor became even poorer due

to the food price shocks. One can get a sense of the impact of the food price crisis on the depth of poverty experienced by households by examining the poverty gap — the average distance of poor households to the poverty line. Unlike the poverty rate, the poverty gap captures increased deprivation among the poor. Intuitively, it is a useful way to measure “resource” needs for moving people out of poverty. The estimates made as a result of this study indicate substantial increases in the poverty gap across countries. For example, in Bangladesh the poverty gap is estimated to have increased by about 32 percent (from .09 to .12) due to the rice price increases, while for Pakistan it is estimated to have increased by 30 percent (from .038 to .049) due to wheat prices rising. These increases are greater in magnitude than the estimated increases in poverty incidence (for Bangladesh the estimated poverty rate increased by 11 percent and for Pakistan by 14.5 percent). The levels of increases in the poverty gaps clearly suggest that the poverty impact is stronger than what the headcount rate suggests.

The data also suggest that inequality among the poor has increased. For example, the estimated squared poverty gap, which captures distributional changes within the poor, increased by 50 percent in Bangladesh and 48 percent in Pakistan.¹⁸ Consistent with this, the Gini index of inequality in per capita expenditures would also be expected to increase. For example, for Bangladesh it is estimated to increase by about five percent (from 0.33 to 0.35). This happens as the welfare impact is skewed against the poor and the positive benefits of price increases go in favor of relatively better off farmers (especially those with land in excess of 1.5 acres).

The discussion of purchasing power impact and poverty impact clearly suggests that the poorer households bore the brunt of the adverse impact of the food price increases. The poverty gap and squared poverty gap reinforce the point that the existing poor and the poorest households suffered the most.

¹⁸ In addition to the head count and poverty gap indices, a measure that better reflects changes in the severity of poverty is the squared poverty gap. Its definition is similar to the poverty gap, except that the poverty gaps are squared and poorer households (whose distance from the poverty line is greater) are given greater weight. This measure captures distributional changes within the poor, which the poverty gap may not. The squared poverty gap goes up if there is a transfer from a less poor to a poorer person, which leaves both the head count rate and the poverty gap unchanged. In this sense it is a measure of inequality among the poor.

2.7 A SPECIAL SHORT SURVEY ON THE FOOD PRICE CRISIS IN BANGLADESH

A rapid survey of 2,000 households was conducted by the World Bank in July 2008 to address some of the critical information gaps of the analysis already completed using HIES 2005. The survey was also intended to get a more direct sense of the impact on the ground by asking households to provide information regarding factors that would likely be affected by a price increase. The rapid survey had three main themes. First, a set of questions were asked to discern the pattern of household food consumption from December 2007 (when the inflation appears to have rapidly accelerated) to June 2008 (the most recent period for which information could be collected). Second, the survey looks at other impacts on households by analyzing the coping strategies households adopted in response to the food crisis. Finally, the survey looked at the extent to which government assistance programs were utilized by households (Fig. 2.12).

2.8 SAMPLE DESIGN AND SURVEY INSTRUMENT

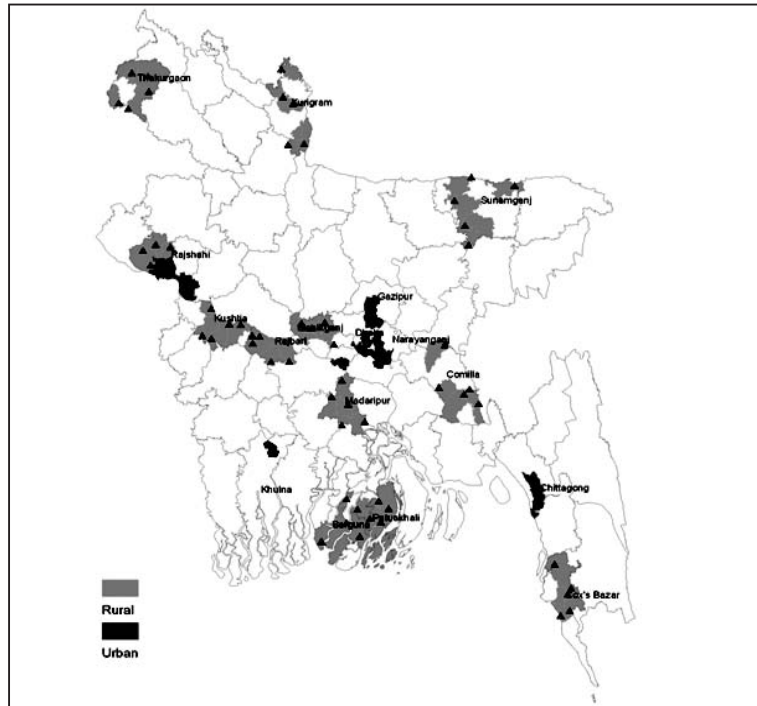
The survey data comprise 2,000 households from 100 primary sampling units (PSUs) nationwide, with 20 households per PSU. Of these households 1,200 were selected from rural and 800 from urban areas. The rural survey was conducted in all six divisions in the country, and included 12 out of 64 districts from the whole country. The urban survey included six districts in four divisions of the country. The sample was designed to ensure that the survey responses captured a wide swathe of the Bangladeshi society (including some of the poorest rural areas) and allowed disaggregated analysis of certain groups of special interest (e.g., daily wage labor and salaried workers in the manufacturing and garments sectors).

The survey included a brief questionnaire administered to rural and urban households. In addition, a community questionnaire was administered to key respondents in rural communities. The survey started on June 11, 2008 and was concluded within a span of two weeks, before the heavy monsoon rains arrived.

2.9 FINDINGS FROM THE RAPID SURVEY IN BANGLADESH

Consumption patterns across time

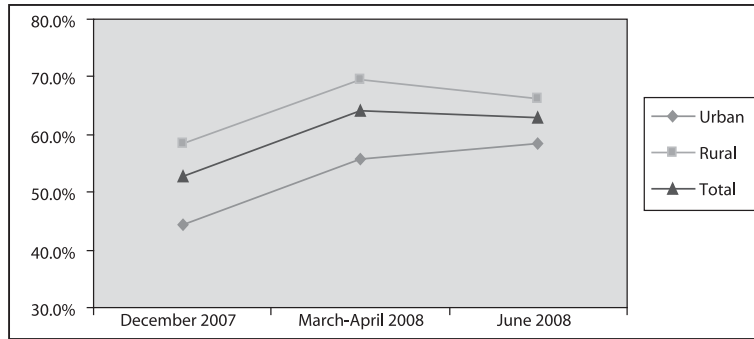
Figure 2.13 illustrates self-reported consumption patterns of households across the months of December 2007, March-April 2008 and June 2008.



Note: Areas highlighted are upazilas/thanas (sub-district entities) from which survey PSUs were chosen.

Fig. 2.12: Map of Bangladesh showing the survey areas of the rapid survey for food price impact

The figure points to a substantial worsening of consumption levels across December 2007 and March 2008, when the price of food items, and rice in particular, had peaked. While 53 percent of all households reported that they had skipped a meal or ate less in a meal at least once a month in December 2007, this figure rose to 64 percent in March 2008. Interestingly, the situation in June, immediately after a major harvest in May, remained more or less unchanged from March-April in both rural and urban areas. Prices continued to remain high in June and the high food prices caused consumption to decline for a majority of households as depicted in Fig. 2.13.



Source: World Bank Rapid Survey of Food Price Impact, Bangladesh (2008).

Fig. 2.13: Share of households skipping meals/eating less in a meal at least once a month

How did households adjust to the food price shock?

While the HIES 2005 estimates show that there were substantial adverse impacts from the food price hike, the rapid survey reveals richer details of how households were affected. In the absence of safety net mechanisms that adequately cushion households from such shocks, households are likely to rely on informal coping mechanisms that may have adverse long term impacts.

The rapid survey reveals that almost all households (over 95 percent) claimed to have been adversely affected by the price shock and most had to adopt some coping mechanism or the other. An overwhelming majority of households reduced their food intake (76 percent) and non-food intake (86 percent) as well as switched to lower quality food (88 percent) — actions that could result in poor nutrition levels if prolonged for an extended period.

A relatively low percentage of households received help from their community members, which is not surprising given the covariate nature of the price shock. Help from community members was, however, more frequent in rural than in urban areas, despite rural areas having higher levels of consumption shortfalls. Slightly over 40 percent of all households reported to have used their savings to meet the higher prices and an even larger number had taken out loans (about 55 percent). A third of all households also attempted to cope with higher prices by increasing their work effort (Table 2.2).

Table 2.2 Household responses to increased food prices (%)

Type of response	Urban	Rural	Total
Reduce quantity of food intake	72.3	77.9	75.7
Switch to lower quality food	86.9	87.8	87.5
Reduce nonfood expenditures	86.0	86.5	86.3
Spend savings/sell or pawn belongings	43.5	46.5	45.3
Take out loans	46.3	59.9	54.5
Gifts/help from community members	0.9	9.3	6.0
Take children out of school	6.5	8.8	7.9
Decrease education expenses	32.5	43.2	39.0
Work more/increase production	24.6	39.8	33.8
Stop loan payment	3.1	6.1	4.9

Note: Two indicators — Taking children out of school and decreasing education expenditures — are presented as a proportion of households with school age going children.

Source: World Bank Rapid Survey of Food Price Impact, Bangladesh (2008).

Signs of rising prices exacting possible long term costs on society appear when education related data are examined. Almost 40 percent of all households with school going children cut education related expenses during this period. A smaller but significant proportion of households with school going children — eight percent — pulled their children out of schools in response to higher food prices, and most of these children took up jobs (Box 2.1).

These statistics capture the short run responses of households to the price increases. It would be important to monitor whether these responses persist over time, which would then have far more damaging consequences.

Government assistance

Traditional government safety nets programs are based mainly in rural areas and were not set up as a response to the food price crisis. In direct response to the food crisis the Government of Bangladesh set up Open Market Sales (OMS) outlets, where key food items, mainly rice, were sold to the general public at subsidized rates.

The government's OMS operation was a self-targeted food subsidy program aimed mainly at reaching urban households. Rice prices at

Box 2.1: Coping with higher food prices: Responses from the field

A household head with a fixed salaried income living in an urban area reported: "My family cannot afford anything. I reduced the education related expenses of my child by letting go off the private tutor ... bus fares have gone up, food prices have gone up ... How can we manage with our fixed income?"

A rural household head lamented: "We sent our daughter to another person's house as a servant to cope with the (price) situation."

Ms. Nasima, an enumerator for the rapid survey, reported: "While I was interviewing a household in Kurigram, I saw a child crying for a long time. I asked the interviewee as to why the child was crying. The interviewee told me that the child was crying to have some curry with rice for his meal as he cannot eat rice by itself."

A beggar woman complained: "Many people no longer give any alms and I need to walk a long way to collect at least one meal's worth rice. People no longer give rice as alms; instead they give small sums of money. I often skip meals."

A manual worker reported: "I went to Dhaka (capital city) from my village and pulled a rickshaw. I skipped a few meals and had only parched rice and cheap biscuits to eat."

the OMS outlets were typically 20 to 30 percent lower than the free market price and households could purchase a maximum of three or five kilograms of rice a day based on the location of the OMS outlet. A combination of long lines, lower quality rice, and the limited price differential with the market were used for self-targeting the program (Table 2.3).

Data from the Rapid Survey indicates that OMS operations were successful in reaching the relatively poorer and more severely affected segments of the population, particularly in urban areas. This becomes clear from Table 2.3 which shows OMS use along occupational categories. Compared to other occupational groups, 43 percent of urban households with income coming mainly from daily labor (on average the poorest occupational category according to HIES 2005) purchased food items from OMS outlets; only 12.5 percent of urban households receiving government salaries purchased food from there.

While effective in reaching the poorer households through its self-selection mechanism, the OMS was not accessed by most of the households who were severely affected by the food price increases.

Table 2.3 OMS use by main income source of households (%): March-April 2008

Main Income Source	Urban	Rural	Total
Agriculture	22.7	6.7	7.6
Self-employment	26.2	19.0	22.0
Business/trading	19.6	16.3	18.4
Government	12.5	8.6	11.2
Private Service	21.2	16.7	19.9
Day Labor	43.4	17.5	24.1
Non-earned	12.9	9.9	11.3

Source: World Bank Rapid Survey of Food Price Impact, Bangladesh (2008).

For example, only 16 percent of rural households who ate less or skipped at least one meal a month had used OMS outlets in March/April 2008, while only 32 percent of similar urban households had used OMS outlets then. A large number of the poor and more severely affected households did not use the OMS.¹⁹ Recognizing the limitations of existing safety nets programs in responding to household needs during the ongoing food price crisis, the Government of Bangladesh designed a new program called the “100-Day Rural Employment General Program.” Initiated in September 2008 this program aims to assist the ultra poor population in rural areas to retain their purchasing power in the face of high food inflation by providing them with employment during lean periods.

Addressing the caveats in the analysis based on HIES 2005

Observations from the rapid price survey of 2008 helped gain more incisive insights from the analysis based on HIES 2005 by demystifying some of the caveats of that study. The analysis based on HIES could project poverty impacts for price increases during 2007-08 based on expenditures data from 2005. In comparison, the Rapid Survey allowed

¹⁹ It could be the case that some poor households simply lacked the money to purchase rice from OMS outlets. In addition, rice prices in OMS outlets were taka 8 to 10 per kg lower than free market prices and for many households this differential might not have exceeded the opportunity cost of using OMS outlets. Some anecdotal evidence supports this argument. For example, a survey respondent stated: “My husband wanted to buy rice from the OMS outlet but could not do so as there was a long line there. To get rice from there he would need to sacrifice work for that day.”

a contemporary, albeit less sophisticated, look at impacts felt at the household level. Also, while the HIES based study could only project the welfare impact on households of rice price increases, the rapid survey covered the impact of all food price increases. Reassuringly, the rapid survey reinforces the findings from the 2005 household survey, suggesting that household welfare was affected sharply as a consequence of the food price increases.

A qualification concerning the estimates of welfare impact based on HIES 2005 was that they did not account for substitution away from rice, and thus likely exaggerated the adverse impact of rice price increases. The rapid survey gives us some insight into this, although it must be conceded that it is difficult to judge the extent to which the impact estimates based on HIES 2005 are biased because of the omission of substitution effects.²⁰ According to the rapid survey, 63 percent of all households reported to have reduced their consumption of rice. Of households who had reduced rice consumption two-thirds had increased the consumption of other food items, mainly potato and maize; very few households increased the consumption of wheat. However, the increased consumption of other items did not fully make up for the reduced consumption of rice as three-fourths of all households reported to have reduced their overall food intake.

A critical contribution of the rapid survey was to show that rising food prices were not accompanied by proportionally increasing wages or salaries that would offset the declines in purchasing power caused by the price increases. The rapid price survey indicated that nominal wages increased by about five percent or less for sample households, suggesting that wage adjustments were not sufficient to eliminate the strong negative effects of the price increase estimated using HIES 2005. Households in both urban and rural areas faced declines in welfare, with day laborers, and landless and marginally landless households suffering particularly acutely.

The rapid survey indicates the various means households employed to respond to the price rise, another important gap in the HIES 2005 based projections. Apart from reducing both their levels of food and non-food consumption and the quality of food consumed, households used their savings, took out loans, and increased work effort in

²⁰ However, another World Bank study ("Food Price Increases in South Asia: National Responses and Regional Dimensions") is analyzing these so-called second-round effects of price changes on poverty headcount levels.

response to the crisis. Households also sought assistance from government safety nets programs like the Open Market Operations (OMS). These responses notwithstanding, households appeared to face serious adverse consequences due to food price increases, which suggest the inadequacy of these coping mechanisms.

Finally, using HIES 2005 data it was not possible to elicit households' supply response.²¹ From the rapid survey we get a mixed picture regarding this. While aggregate national level data indicates the rice harvest in 2008 to have been higher than the 2007 harvest, the rapid survey suggests that 38 percent of households produced more rice in 2008 than in 2007 and an almost equal number (35 percent) produced less. Interestingly, while 37 percent of households report to have sold more rice from the 2008 Boro harvest in May-June (the major harvest of the year) than from the previous Boro harvest, 46 percent claim to have sold less. This could be explained in part by some farmers holding back selling their harvest in the market in the expectation of further price rises.

Data from the rapid survey implies a rather nuanced supply response. While the aggregate production of rice went up in the country, this might have resulted from existing net sellers producing more rice rather than from an increased number of households producing more rice. The rapid survey indicates that an overwhelming majority of households remain net buyers of rice, and continued to be adversely affected by price increases, echoing findings of the HIES 2005 data.

2.10 CONCLUDING REMARKS AND SUGGESTIONS FOR DEEPENING SAFETY NET REFORMS

Our findings suggest that most countries in South Asia experienced substantial adverse welfare impacts due to the recent food price increases; the poor and vulnerable households were affected disproportionately. Although food prices have recently been declining and the worst impacts are likely to be over, prices are likely to remain well above the levels in 2004. High food prices thus could be expected to remain an important concern in the years to come.

To minimize the impacts of sudden unexpected (and prolonged) shocks like the food price crisis, policies for dealing with crises, especially public safety nets programs, should be developed. For safety

²¹ However, also the effect of higher prices on supply response of farmers is analyzed in the World Bank study "Food Price Increases in South Asia: National Responses and Regional Dimensions".

nets programs to be effective when shocks hit, they should be in place before a crisis starts (Ferreira et al. 1999). Countries that invest in effective safety net programs (e.g., direct and indirect transfers, complementary health and education programs) would be able to adapt quickly to crises by expanding their current systems, thereby minimizing the severity of impacts on the poor and the vulnerable. Transfer programs like Mexico's PROGRESA or workfare programs like Argentina's Trabajar are examples of programs already in place that could be "turned on and off, or expanded, based on indicators of crisis" (Ferreira, Prennushi and Ravallion 1999).

In the absence of safety nets, governments have to rely on alternative approaches to deal with crises such as reducing taxes or increasing subsidies. Such approaches can often be costlier than developing a good safety nets system and can have unwanted efficiency and fiscal impacts (World Bank 2008c). However, many countries do not have effective safety nets in place and have had to rely on less efficient policy instruments.

Most countries in South Asia (Afghanistan, Bangladesh, Nepal and Pakistan) did not have effective and well targeted national safety nets programs that could be scaled up rapidly to reduce the hardships that poor and vulnerable households faced during the recent food crisis. Following the food price crisis, many countries in the region have taken encouraging policy decisions to strengthen their safety net programs.

Realizing the inadequacy of its existing programs to tackle adverse events like the food price crisis, Bangladesh implemented its largest safety nets program called the "100 day Employment Guarantee Program (EGP)" in September 2008, targeting about 2 million 'ultra-poor' households. Program members are entitled to 100 days of work per year at Taka 100 (US\$1.45) per day. Earlier, during the price crisis the Government of Bangladesh conducted open market sales (OMS) for three to five kilograms of rice per person at below market rates, drawing poor consumers through self-targeting. This program was successful in reaching poor households but its coverage and extent of assistance appeared limited. The government had also scaled up its existing Vulnerable Group Feeding program (VGF) to target poor women.

Like Bangladesh, largely in reaction to the food price crisis, Pakistan has initiated the Benazir Income Support Program (BISP). The BISP is the largest safety nets program in Pakistan, almost doubling the Government

of Pakistan's safety nets expenditures. The program targets the bottom 25 percent of the population to deliver cash grants in the amount of Rupees 12,000 annually to about 5 million families.

Provided the new safety nets initiatives in Bangladesh and Pakistan are well designed, they should help the countries deal with challenges of similar future crises better. Early indications suggest that the 100 day EGP in Bangladesh is reasonably well targeted to extreme poor households although there are challenges on design and administrative issues. The BISP in Pakistan initially faced problems with flawed targeting of poor households. Subsequently, an objective instrument based on a poverty scorecard has been accepted as the basis for targeting the poorest households. The implementation of the BISP through the scorecard is at a very preliminary stage and will take time to be completed.

Unlike Bangladesh and Pakistan, India already had in place the National Rural Employment Guarantee Act (NREGA), which provides a legal guarantee for one hundred days of employment per year to adult members of any rural household that is willing to do public work-related unskilled manual work at the statutory minimum wage. This act was introduced with the aim of improving the purchasing power of people living below the poverty line in rural India. While India did not face sharp increases in food prices, in the context of a similar crisis, this program could be scaled up. Sri Lanka has in place an extensive nationwide safety nets program called Samurdhi. This program is very large, assisting almost half of Sri Lankan households, mainly through cash transfers. However, the program assists many non-poor households, as well as failing to reach many poor households.²² Consequently, the benefits are spread too thinly and the small size of transfers has little impact on poverty (Narayan et al. 2006; Glinskaya 2000). This program would need substantial reforms to be more effective in the face of crises.

In addition to safety net programs, broader reforms that support agriculture and encourage supply response would be essential as complementary policies to address such shocks in the medium/long term. The recent crises witnessed understandable yet myopic policies

²² Samurdhi misses almost 40 percent of households ranked in the lowest expenditure quintile, while a substantial number of households with higher relative welfare receive Samurdhi consumption grants and other forms of Samurdhi assistance. For example, around 44 percent of Samurdhi's transfer budget is spent on households in the top three expenditure quintiles (Glinskaya 2000).

implemented by governments like export bans and increased tariffs or price floors that may have been justifiable in the short run but are counterproductive to induce supply response in the longer term. Without compensating policies through effective safety nets and other complementary policies that induce supply response of food grain production, South Asian countries may risk reversing the progress they have made on poverty reduction as well as improvements in nutrition and other human development outcomes.

References

- Barret, C.B. and P.A. Dorosh. 1996. "Farmers' Welfare and Changing Food Prices: Nonparametric Evidence from Rice in Madagascar," *American Journal of Agricultural Economics* 78 (3): 656-669.
- Budd, J.W. 1993. "Changing Food Prices and Rural Welfare: A Nonparametric Examination of Côte d'Ivoire," *Economic Development and Cultural Change* 41 (3): 587-603.
- Datt, G. and J. Olmsted. 2004. "Induced Wage Effects of Changes in Food Prices in Egypt," *Journal of Development Studies* 40 (4): 137-166.
- Deaton, A. 1989. "Rice Prices and Income Distribution in Thailand: A Non-Parametric Analysis," *Economic Journal* 99 (395): 1-37.
- . 1997. *The Analysis of Household Surveys: A Microeconometric Approach to Development*, Washington DC: World Bank and John Hopkins University Press.
- Ferreira, F. G. Prentiss, and M. Ravallion. 1999. "Protecting the Poor from Macroeconomic Shocks: An Agenda for Action in a Crisis and Beyond," World Bank Policy Research Working Paper No. 2160.
- Glinskaya, E. 2000. "An Empirical Evaluation of the Samurdhi Program," Background paper for the Sri Lanka Poverty Assessment. The World Bank, Washington DC.
- Ivanic, M. and W. Martin. 2008. "Implications of Higher Global Food Prices for Poverty in Low-Income Countries," World Bank Policy Research Working Paper No. 4594.
- Minot, N. and F. Goletti. 1998. "Export Liberalization and Household Welfare: The Case of Rice in Vietnam," *American Journal of Agricultural Economics* 80 (4): 738-749.
- Narayan, A., T. Vishwanath, and N. Yoshida. 2006. "Sri Lanka: Welfare Reform," In *Poverty and Social Impact Analysis of Reforms: Lessons and Examples from*

- Implementation*, ed. Aline Coudouel, Anis A. Dani, and Stefano Paternostro, 149–212. Washington, DC: World Bank.
- Rashid, S. 2002. "Dynamics of Agricultural Wage and Rice Price in Bangladesh: A Re-examination," MSSD Discussion Paper No. 44, International Food Policy Research Institute.
- Ravallion, M. 1990. "Rural Welfare Effects of Food Price Changes under Induced Wage Responses: Theory and Evidence for Bangladesh," *Oxford Economic Papers* 42 (3): 574-585.
- Tyers, R. and K. Anderson. 1992. *Disarray in World Food Markets: A Quantitative Assessment*, Cambridge University Press, Cambridge.
- World Bank. 2008a. *Double Jeopardy: Responding to High Food and Fuel Prices*, Prepared for the "G8 Hokkaido-Toyako Summit."
- 2008b. "Poverty Assessment for Bangladesh: Creating Opportunities and Bridging the East-West Divide," World Bank Bangladesh Development Series, Paper No. 26.
- 2008c. "Guidance for Responses from the Human Development Sectors to Rising Food and Fuel Prices," Policy Note, Human Development Network, The World Bank.

*Annex 1***Purchasing Power Impacts for Key Food Price Increases Across South Asian Countries****Table A-1.1 Bangladesh (rice price increase of 40 percent between April 2007 and March 2008)**

	Rice consumption as % of total expenditures (CR)	Rice production as % of total expenditures (PR)	Net Sellers of rice (NBR > 0)	Net Benefit Ratio (NBR)	Estimated purchasing power Impact (%)— without wage response	Wage increase (%) needed for welfare neutrality
All	24.3	11.7	17.2	-12.7	-4.8	13.6
Rural	26.7	14.8	21.6	-11.9	-4.6	14.4
Urban	17.2	2.3	4.2	-14.9	-5.5	11.5
By expenditure quintile						
Quintile 1	36.1	8.8	8.8	-27.3	-10.5	19.9
Quintile 2	30.4	13.1	15.3	-17.3	-6.6	17.4
Quintile 3	25.3	13.6	19.4	-11.7	-4.5	13.8
Quintile 4	20.2	13.6	22.1	-6.5	-2.5	8.6
Quintile 5	12.1	9.0	19.1	-3.1	-1.1	5.3

Source: Calculations by World Bank staff from Bangladesh HIES (2005).

Table A-1.2 Sri Lanka (rice price increase of 83 percent between June 2007 and May 2008)

Household category	Rice consumption as % of total expenditures (CR)	Rice production as % of total expenditures (PR)	Net Sellers of rice (NBR > 0)	Net Benefit Ratio (NBR)	Estimated purchasing power Impact (%)—without wage response	Wage increase (%) needed for welfare neutrality
All	10.1	1.8	6	-8.3	-6.9	15.4
Urban	6.9	0	0.3	-6.9	-5.7	12.4
Estate	13.7	0	0	-13.7	-11.4	23.9
By expenditure quintile						
Quintile 1	16.4	2.5	5.8	-13.8	-11.5	20.1
Quintile 2	12.1	2.4	6.9	-9.6	-8	18.7
Quintile 3	9.7	1.9	6.7	-7.8	-6.5	16
Quintile 4	7.6	1.5	6.2	-6.2	-5.1	13.2
Quintile 5	4.6	0.7	4.2	-4	-3.3	9.8

Source: Calculations by Department of Census and Statistics (DCS), Sri Lanka staff from Sri Lanka HIES (2005-06).

Table A-1.3 Pakistan (wheat price increase of 40 percent between September 2007 and August 2008)

Household category	Wheat consumption as % of total expenditures (CR)	Wheat production as % of total expenditures (PR)	Net Sellers of wheat (NBR > 0)	Net Benefit Ratio (NBR)	Estimated purchasing power Impact (%) — without wage response
All	9.3	9.2	22.4	-0.1	-0.04
Rural	10.6	13.3	32.4	2.7	2.0
Urban	6.6	1.0	2.6	-5.5	-4.0
By expenditure quintile					
Quintile 1	13.8	8.0	17.4	-5.8	-4.2
Quintile 2	11.2	9.1	21.1	-2.0	-1.5
Quintile 3	9.5	9.9	25.4	0.5	0.3
Quintile 4	7.5	10.5	26.8	3.1	2.2
Quintile 5	4.4	8.4	21.2	4.0	3.0

Source: Calculations by World Bank staff from Pakistan PSLM (2005-06).

Table A-1.4 Nepal (cereal price increase of 24 percent between November 2007 and October 2008)

Household category	Cereal consumption (from market purchases) as % of total expenditures	Cereal sales as % of total expenditures	Net Sellers of wheat (NBR > 0)	Net Benefit Ratio (NBR)	Estimated Welfare Impact (%)— without wage response
All	10.0	3.5	21.5	-6.5	-0.9
Rural	10.2	4.1	24.2	-6.2	-0.8
Urban	8.8	0.6	6.2	-8.2	-1.1
By expenditure quintile					
Quintile 1	18.7	2.1	11.1	-16.6	-4.2
Quintile 2	11.0	3.8	21.7	-7.2	-1.9
Quintile 3	9.0	4.4	25.2	-4.6	-1.1
Quintile 4	6.8	5.4	31.8	-1.4	-0.4
Quintile 5	4.8	1.9	17.6	-2.8	-0.6

Source: Calculations by World Bank staff from Nepal HIES (2004-05).

*Annex 2***Impacts of Key Food Item Price Increases on Poverty Indicators Across South Asian Countries****Table A-2.1 Impact of key food item price increases on poverty indicators (% change)**

	Bangladesh	Sri Lanka	Pakistan	Nepal
Poverty headcount	11.4	34.2	14.4	5.0
Poverty gap	31.6	–	30.2	10.1
Poverty gap squared	50.5	–	48.2	14.0

Source: Calculations by World Bank staff from Bangladesh HIES (2005), Pakistan PSLM (2005-06), and Nepal HIES (2004-05), and by Department of Census and Statistics (DCS), Sri Lanka staff from Sri Lanka HIES (2005-06).

Chapter 3

Reforming Safety Nets in South Asia: Improving Regional Responses to Chronic and Transient Poverty

Mansoor Rashid and Céline Ferre

3.1 INTRODUCTION

South Asia has experienced rapid economic growth in the past decades and realized major declines in poverty, but this progress is vulnerable on several fronts (World Bank, 2002c). First, the absolute number of poor remains very large in South Asia — a function of the overall large population size. Second, economic growth has been accompanied by increasing inequality, reducing its poverty impact. The growing divide between rich and poor brings the sustainability of income growth in question. Third, growth prospects have recently been adversely affected by aggregate economic shocks: the food and fuel crisis, and remain hostage to the financial crisis. Fourth, South Asia is also repeatedly affected by other aggregate shocks, such as natural disasters. In the past five years, South Asian countries have experienced the Tsunami (Maldives, Sri Lanka and India), a major earthquake (Pakistan), cyclones (Bangladesh) and major floods (Nepal and Bangladesh). These agro-climatic shocks are expected to increase in frequency and intensity from global warming. Aside from aggregate shocks, growing evidence suggests that South Asian households are also affected by idiosyncratic risk, such as unemployment, sickness, disability, injury, and death of the main bread earner that also impose considerable costs on households. Thus, despite recent income growth, South Asia's growth prospects are vulnerable to growing inequality and to current and future shocks.

Although shocks affect both poor and non-poor households, it is the poor — those with few assets, both physical and human — that

are often the hardest hit. Compounding the problem, the poor often resort to inefficient risk management strategies (e.g. reducing food consumption, increasing labor supply, withdrawing children from school, distress sales of assets, or borrowing from usurious lenders) that lead them to deplete their meagre assets, fall deeper into poverty, and also perpetuate inter-generational poverty. In Bangladesh, as a result of the recent price shocks, nearly eight percent of households took their children out of school. While informal safety nets exist in the form of community and kinship networks and their ability to protect households from aggregate shocks is often limited.

How can South Asian governments promote more inclusive growth and prevent major hardships faced by households in the aftermath of shocks? Economic growth and accompanying structural reforms to ensure its sustainability will be the main drivers of poverty reduction. However, global evidence suggests that social protection programs, if financially sustainable and effectively designed and implemented, can also help the poorest population groups cope with chronic and transient poverty, including the aftermath of shocks. For example, in the recent food and financial crisis, countries with safety net systems (Colombia, Mexico, and to some extent, Bangladesh) expanded these to cover affected populations.¹ Most recently, safety net programs have also been designed to more actively promote growth, link the poor with activation programs and provide incentives for the poor to invest in the human capital of their children to promote movement out of poverty. These programs are also important for support dynamic efficiency, protecting those adversely affected in the short term from structural reforms that are essential for growth.

Most South Asian countries implement social protection programs (Table 3.1), with the objective of providing basic income support (cash or in kind) to the poor, but their effectiveness could be improved. South Asia provides insurance protection, such as pensions and health, and also provides employment protection in the form of labor and employment legislation to workers. Barring the new health insurance program in India (RSBY) for the poor, this protection is mainly for formal sector workers that comprise a very small share of the population. The main instrument for providing protection the poor in South Asia are public safety nets programs. These programs exist

¹ Social security programs that protect households from falling into poverty as a result of an idiosyncratic shock are very limited in South Asia.

Table 3.1 Selected social protection programs in South Asia

Country	Program	Description	Benefit (US\$ unless specified)	Coverage ^a	% pop ^b	Budget ^c (% GDP)	Targeting	Administration	Year
Food and cash									
Afghanistan	Food Relief	Returning refugees	150kg wheat/HH		13% rural		Self-Targeted		2003
		Internally displaced	150kg wheat						
Bangladesh	VGD	Food for the poor	30 kg wheat/month, training, microcredit	(216,675 MT wheat)		41.7 (0.06)	<15 acres, hhinc<Tk300, seasonal emp, women (18-49), lack of productive assets	GoB, WFP, EC, CIDA, MWCA	2008
Bangladesh	VGF	Food for the poor after disaster	10kg rice for 8 months	5 mln (149,138 MT)	4%	82.3 (0.1)	Disaster victims	GoB, DPs, MFDM	2008
Bangladesh	Test Relief (TR)	Food for the working age group	5/6kg wheat /day of work	1.7 mln (124,508 MT)	1.4%	44 (0.06)	Targeted location		
Bangladesh	Gratuitous Relief (GR)	In-kind emergency relief for those affected by natural disasters	10 kg of rice for variable period	6.4 mln (20,324 MT)	5.2%		Disaster victims		
India	PDS, TPDS	Subsidized food and fuel	max=10kg Subsidy = 61% of price (wheat) 53% (rice)	221 mln	19.5 %	533 (0.05)	BPL		2007

(Contd.)

(Table 3.1 continued)

Country	Program	Description	Benefit (US\$ unless specified)	Coverage ^a	% pop ^b	Budget ^c (% GDP)	Targeting	Administration	Year
India	AAY		max=35kg Subsidy =4.4c (wheat) 6.6c (rice)	28 mln	2.5%	64.5 (0.005)	BPL		2007
Maldives	Absolute Poverty Scheme	Cash transfer to the poorest	39 per month	1,026	0.34%	0.47 (0.06)	PMT	Social Security section of MHEESS	2004
Maldives	Tsunami Relief	Targeted cash transfer	39-117	63,000	21%	3.9 (0.5)	Victims of Tsunami	Security Forces	2004
Maldives	Zakat	Cash transfers		60,000	20%	0.58 (0.07)		Zakat	2002
Pakistan		Food, water, gas, fertilizer, wheat subsidies				134 (0.14)			2004
Pakistan	Bait-ul-Mal (BPM)	Cash transfers, stipends, training	Av=32.5 + emergencies	1.25 mln	1 %	75 (0.06)			2004
Pakistan	Zakat	Cash transfers, stipends, training	61.6/year	1.6 mln	1.2%	98.5 (0.10)		Zakat	2004
Sri Lanka	Flood and Drought Relied	Natural disasters, climatic shocks				14.9 (0.07)			
Sri Lanka	Samurdhi		1.4-100/month	7.6 mln	40%	0.12 (0.62)	Mixed		2004

(Contd.)

(Table 3.1 continued)

Country	Program	Description	Benefit (US\$ unless specified)	Coverage ^a	% pop ^b	Budget ^c (% GDP)	Targeting	Administration	Year
Social Pensions, Health									
Bangladesh	Old Age Allowance		3.2 /month	1.7 mln	1.4%	65.6 (0.1)	>65 y.o., inc<2000/year, not worked in private sector, 50% beneficiaries women	GoB, MSW	2008
India	NOAPs	Cash benefits for destitutes under NOAPS, state schemes for widows and disabled			8.3 % HH within elderly	31.5 (0.002)			2007
India	NSAP, Annapurna	Benefit for death of breadwinner, birth of children up to 3 (BPL), free grain for elderly (w/o social pensions)			(Anna p.) 1.6 % HH within elderly		Mixed		2007
Maldives	Health Benefits	Assistance to seek medical treatment in the Maldives	120	2,093	0.7%	0.25 (0.03)			2004
Maldives	Health Benefits	Assistance to medical treatment abroad	596	1,173	0.4%	0.70 (0.09)		Social Security section of MHEESS	2004

(Contd.)

(Table 3.1 continued)

Country	Program	Description	Benefit (US\$ unless specified)	Coverage ^a	% pop ^b	Budget ^c (% GDP)	Targeting	Administration	Year
Maldives	Health Benefits	Assistance for disabled		317	0.1%			MHEESS	2005
Nepal	Old Age Allowance								
Targeted housing programs									
India	IAY	Subsidies for rural BPL for housing construction		18 mln HH	9% (12.8 % rural)	57.8 (0.005)	Rural BPL		
India	VAMBAY, SISRY	Housing construction, slum upgrading, public work for under/unemployed		2 mln HH	1% (2% urban)	7.2 (0)			
Human capital related schemes									
India	Midday meals	School feeding program				Rs. 5,348	Government/ aided schools		
Bangladesh	PESP	Stipend	1.5-1.8	5.5 mln	4.4%	41.7 (0.06)	Destitute women-headed HH, day-labor occup, low income, <0.5 acres	GoB, MPME	2008

(Contd.)

(Table 3.1 continued)

Country	Program	Description	Benefit (US\$ unless specified)	Coverage ^a	% pop ^b	Budget ^c (% GDP)	Targeting	Administration	Year
Bangladesh	FSSAP	Female secondary school assistance program	4.4 (G6) - 10.5 (G10) Free tuition, book allowance, examination fees	3 mln	2.4%	35 (0.05) (2004)	Unmarried girls, secondary school	GoB, DFiD, DSHE, MoE	2008
Maldives	Stipends	Vouchers to defray textbook costs, one uniform, shoes, and socks		921	0.3%		Discretion of local offices	Mo Education	2005

Note: ^atotal number of beneficiaries (mln= million); ^bshare of total population unless specified; and ^cUS\$ '000,000.

in all countries except Bhutan and Afghanistan. Pakistan, Nepal, Sri Lanka, Maldives have 1-2 main programs while India and Bangladesh have multiple programs, comprising both cash and in-kind transfers and workfare programs.

The objective of this Chapter is to review safety net programs in the region and to suggest policies for improving their effectiveness, including increasing their responsiveness to disasters. The main arguments put forward draw heavily from the findings of recent studies on social protection in the region, some of which have used primary data (see Table 3.2) to evaluate the performance of safety net programs (World Bank 2005a,b; 2006a,c; 2007a,b,d,e; 2008a,b,c). The Chapter is organized as follows: The following section briefly reviews the emerging pattern of poverty and vulnerability in the region. The third section describes the scope and performance of safety net programs in the region and the final section suggests policies for improving their effectiveness. While social security programs, employment promotion/protection programs are also important elements of a social protection system, complementing safety net programs, these are not extensively covered in this chapter.

Table 3.2 Datasets used

Country	Dataset	Description	Year	Coverage
Afghanistan	NVRA-03	National Risk and Vulnerability Assessment	2003	Rural
	NVRA-05	National Risk and Vulnerability Assessment	2005	National
Bangladesh	HIES	Households Income and Expenditure Survey	2000	National
	HIES	Households Income and Expenditure Survey	2004	National
	BSNS	Bangladesh Safety Net Survey	2003	National
India	SNS	Selected Safety Net Surveys	2006	Karnataka
			2006	Madhya Pradesh
			2006	Orissa
		Living Standards	2005	Jharkhand
Maldives	VPA-1	Vulnerability and Poverty Household Survey	2004	National

(Contd.)

(Table 3.2 continued)

Country	Dataset	Description	Year	Coverage
Nepal	NLSS-II	Nepal Living Standard Survey	2003	National
Pakistan	PSNS-I	Phase I of Pakistan Safety Net Survey	1999	National
	PSNS-II	Phase II of Pakistan Safety Net Survey	2004	National
Sri Lanka	SLIS	Sri Lanka Integrated Survey	1999/ 2000	National

The Chapter finds that while many countries in South Asia are reforming safety nets, current safety net programs in the region have considerable room for improving their ability to protect the poor. South Asian countries are increasingly recognizing the importance of safety net programs, both to ensure inclusive growth, but also to protect the poor against transient poverty — a result of economic shocks and natural disasters. Spending on safety net programs has increased in the region. Pakistan, Nepal, India and Bangladesh have all invested in new programs or expanded spending on existing safety net schemes. Despite increases in spending, the large number of poor and inefficiencies in targeting mean that many people remain outside the protection of safety nets. For those who receive them, benefits are often low and uncertain. The reasons for poor performance include absence of modern administrative systems. Most countries lack effective and transparent national targeting systems, lack of beneficiary registries/MIS systems and well governed and timely payment systems. Program evaluation is virtually non-existent and there is limited information for evidence-based policy formulation. There are also major political hurdles to reform. Once in place, poorly performing safety net programs are difficult to reform or phase out.

Going forward, countries will need to invest in modern and well administered safety net systems in order to protect their populations against chronic and transient poverty. To ensure that scarce resources reach the poor, it will be important for countries to invest in safety net systems that effectively deliver benefits to the poor. What is needed are improved coordination of social protection and safety net policy, increased consolidation or at the very least improved coordination of safety net programs under an agreed strategic framework; a unified national targeting system; modern administration systems

using MIS system for benefit registration; and eligibility determination and payment. Strong measures for control and accountability of benefits, public information, and grievance redressal systems, and strong use of monitoring and evaluation to inform policy are also required. Investment in the local capacity, both staff and equipment, to implement reforms will also be critical. Linking program beneficiaries to graduation strategies, such as conditional cash transfers, and increasing their access to micro finance and training/skill development will help transform safety nets into safety ladders for the poor. A sound safety net system can also help governments cope with disasters, and measures to ensure that this flexibility is inherent in safety net systems, will be important facet for any safety net reform effort.

Safety net programs enhance the capacity of households to cope with risks, but in the longer term a more comprehensive approach to poverty alleviation will be required. This approach would include appropriate mechanisms to reduce ex ante risks for households—through closing the coverage gap in social security/insurance particularly for the informal sector. Designing and implementing insurance programs in low income countries with a large informal sector will not be easy. However, recent introduction of health insurance to the poor in India and the extensive coverage of microfinance in Bangladesh that can serve as a base for providing households with insurance coverage, are promising efforts in this direction.

3.2 POVERTY AND VULNERABILITY: INCIDENCE, IMPACT AND COPING STRATEGIES

Incidence of shocks

Over the past decade and a half, the South Asia region posted positive economic growth and realized significant declines in poverty. From 1990 to 2000, South Asian countries experienced average economic growth of five percent per annum. Growth rates realized by the region in the following five-year period (2001-2005) albeit with some variations across countries, were equally positive (Fig. 3.1). Based in part on these past trends, economic growth for South Asia was forecast at a very positive nine percent per annum in 2006. Responding to positive economic growth trends, poverty rates also declined across the region (Fig. 3.2) and South Asia was considered well on the way to meeting the MDG goal of halving the poverty rate by 2020.

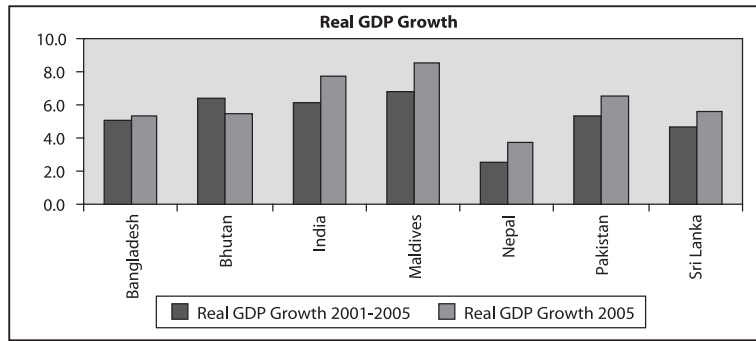


Fig. 3.1: Real GDP growth

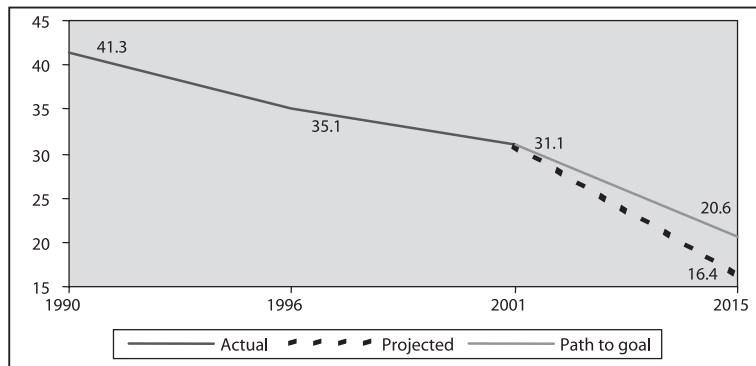


Fig. 3.2: South Asia: Share of people living on less than US\$1 a day

Despite these positive developments, economic growth in South Asia remains vulnerable to several underlying factors. First, growth has been accompanied by growing income disparities in the region that have the potential to fuel conflicts and social unrest. In virtually all South Asian countries, economic growth was accompanied by growing inequality. The Gini coefficient, a measure of inequality, increased by 20 percent in Nepal (1995-96 to 2003-04); by 10 percent in India (1993-94 to 1999-2000); by 18 percent in Bangladesh (1992-2000); and almost eight percent in Pakistan (between 2001-02 and 2004-05).

There are two implications of the combination of growth with increasing inequality. First the poverty impact of growth would have

been far larger had inequality remained unchanged. For example, if inequality remained unchanged between 1992-2000, poverty would have declined by 17 percentage points in Bangladesh. Second and related, growth has re-enforced differences in income across space and social groups. In most countries, consumption growth was higher in urban vs. rural areas — by almost by 50 percent or more for India, Nepal and Sri Lanka. Consumption growth was also higher in already wealthier relative to lagging areas. In India, between 1980 and 2004, state-level growth rate averaged 2.2 percent in the northern state of Bihar and 7.2 percent in the southern state of Karnataka. These widening income disparities reflect underlying differences in endowments (e.g. human capital) and access to services and markets that in turn constrain future income growth and these are particularly onerous for particular ethnic groups. While income inequalities in South Asia are lower than for China, Mexico or Brazil, the high levels of poverty and illiteracy in the region suggest that these widening income gaps can fuel conflicts or other social unrest — that have the potential for undermining or reducing growth prospects. The recent conflict in Nepal and the on-going conflict in Sri Lanka are recent examples.

The second factor that makes poverty reduction vulnerable is the region's vulnerability to global and community wide income shocks. The region has just undergone a major food and fuel price shock; and most recently, South Asia has been confronted by the financial crisis. Not surprisingly, growth forecasts for the region declined from the bullish nine percent to a mere five percent, and actual growth rates may well turn out even lower. While their impact is not as large, economic and agricultural shocks are not new to the region. In the 2004 survey, in Afghanistan, nearly 46 percent of households surveyed reported that they had experienced an agricultural shock in the year preceding the survey; with 26 percent reported experiencing a food price increase. In Sri Lanka, 18 percent reported crop failure as a major shock affecting their income. In Pakistan, about 30 percent of a safety net survey reported experiencing an economic shock in the previous three years. In India, eight, 13 and 17 percent of household surveyed in Karnataka, Orissa and MP, respectively, noted that they had experienced crop failure in the previous year.

The region is also very vulnerable to natural disasters. Over the past five years alone, several natural disasters (Fig. 3.3), including the Pakistan earthquake, the Bangladesh cyclone, and the Tsunami have ravaged the region. Indeed, South Asia has one of the highest

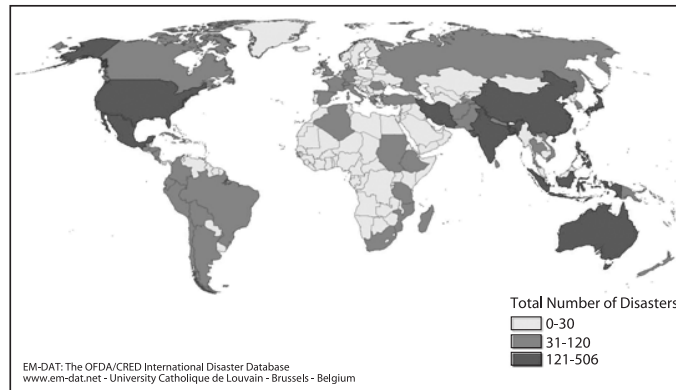


Fig. 3.3: Total number of natural disaster events by country: 1974-2003

incidences of natural disasters worldwide; and the frequency and severity of these shocks may well increase due to global warming. Climatic change models indicate major increases in the frequency and intensity of river erosion, droughts and cyclones in Bangladesh alone over the next 40 to 50 years. Household surveys reveal that these shocks are not infrequent:

- In Afghanistan,² a rural household survey found that 80 percent households reported experience one or more community wide shocks during the year preceding the survey. Conditional on experiencing shocks, over half (55 percent) identified drought as the major shock; while nearly half (46 percent) noted indicated experiencing agricultural shocks; almost a third experience an increase in food prices (26 percent) while almost a fourth report a decrease in farm-gate prices.
- Bangladesh indicates that 13 percent of households had experienced flood shocks in the previous 10 years. The northwest districts in Bangladesh, which cover seven percent of the population, experience seasonal fluctuations that result in near famine situations called the Monga with disturbing regularity.

² National Rural Vulnerability Assessment (NRVA) 2003.

- Evidence from a Sri Lanka microfinance survey³ also shows that during the course of a year, 23 percent of households responding to the survey experienced income shocks due to natural calamities (Fig. 3.4). In MP, Orissa and Karnataka, natural calamities account for upward of one-third to one-half of all households' shocks.

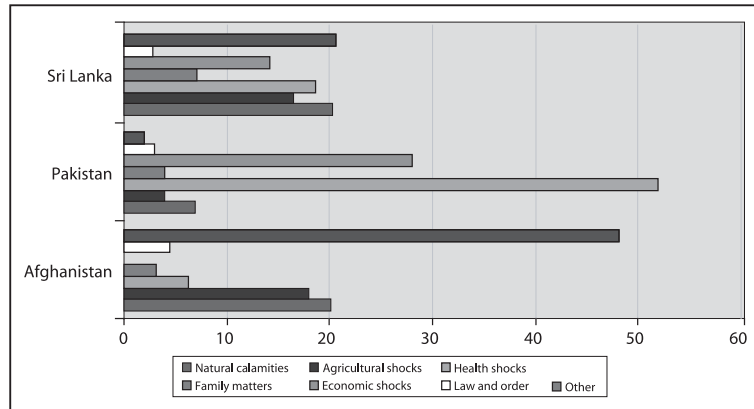


Fig. 3.4: Incidence of aggregate shocks, selected South Asian countries

- In Pakistan, only 10 percent of a sample of safety net recipient/applicant households experienced a natural disaster over the past three years. A broader survey found that nearly 60 percent of all villages had experienced drought within a five-year period (World Bank, 2002b).
- In India (Fig. 3.5), a three state survey of Karnataka, Orissa, and MP found that 38, 39 and 58 percent of households, respectively, reported experiencing a natural disaster in the year previous to the survey.
- Some countries have pockets or regions that are more severely affected by seasonal fluctuations in climate. Bangladesh, for example, is affected by seasonal downturns (Monga) in the Northwestern region with devastating regularity.

Households in South Asia are also subject to idiosyncratic shocks (e.g. unemployment, disability, sickness, accidents/injury, death of main

³ Tilakaratna and Wickramasingha (2005).

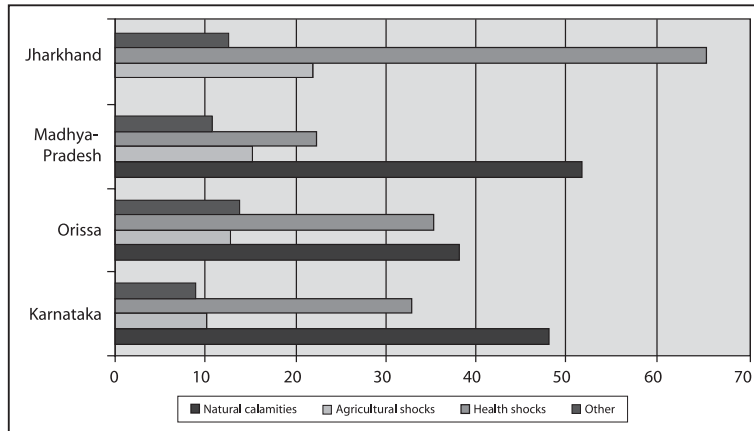


Fig. 3.5: Incidence of aggregate shocks, selected Indian states

earner) with health shocks being the most frequently cited most countries. In some countries, health related shocks actually dominate all shocks experienced by households. Conditional on having a shock, over half of all surveyed households in Pakistan reported experiencing health related shocks in the previous three years, while about 40 percent reported aggregate shocks. In the Maldives, in a survey conducted before the Tsunami, revealed that in three years previous to the survey, over 50 percent of all households experienced health-related income shocks and 20 percent of all households reported the death of a household member as the major income shock; but only a fifth reported experiencing income loss due to other crises. In Bangladesh, more than half of all households reported experiencing an income shock in the previous 10 years, but conditional on the shock, health related shocks were the most frequently reported by households (22 percent reporting). In other countries, such as Sri Lanka, the share of households reporting idiosyncratic shocks (22 percent) is about the same as for aggregate shocks. Still, health shocks are still the most frequently reported among the former. In India, 19, 20, and 28 percent of households report a health shock in the previous year in Karnataka, MP and Orissa, respectively, dominating all other idiosyncratic shocks (Fig. 3.5). In contrast, in Afghanistan, a very small share of households (six percent) report idiosyncratic shocks, and conditional on the

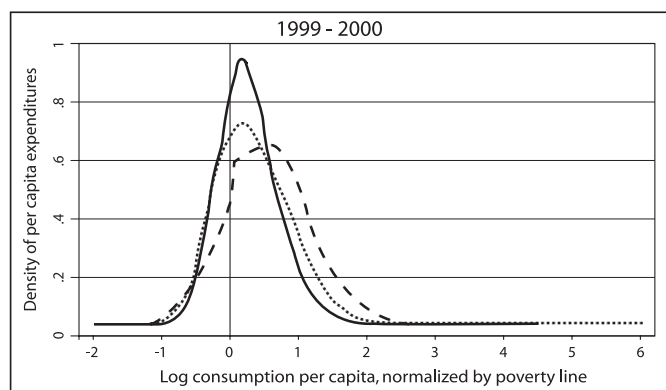


Fig. 3.6: Distribution of log monthly consumption per capita, normalized by poverty line (India)

shock, the frequency of health related and economic shocks is about the same (11-12 percent).⁴

The income and non-income impact of shocks

These shocks can have a major impact on poverty in South Asia — a result of the underlying structure of the income distribution prevailing in the region. Many households in Bangladesh, Sri Lanka, Pakistan and India (see Fig. 3.6) are clustered around the poverty line, indicating that even a small shock to consumption — at the individual or the community level — can push a large section of the population below the poverty line or deeper into poverty. In India, a shock resulting in a fall in monthly per capita consumption by as little as 10 percent of the national poverty line (by less than US\$1.50) uniformly for all households would increase the poverty headcount by six percentage points. This finding is consistent with recent studies that show that poverty in the region has both a chronic and transitory element, with the latter being a function of shocks. For example, ICRISAT in a nine-year panel survey of households in south Indian villages gathered

⁴ It should be noted however, that health shocks can also present covariate risks because of the wide ranging impact of epidemics. In Afghanistan almost 30 percent of all households reported experiencing an epidemic during the year preceding the survey. In India 5 percent of the population in Karnataka and MP and 11 percent of the population in Orissa also noted that they had experienced epidemics in the past year.

household data from 1975 to 1985 and shows that although no more than 22 percent of the population was poor throughout the period, 88 percent of the population experienced at least one period of time below the poverty threshold.⁵ Indeed, half of this burden stems from vulnerability to chronic poverty (i.e., low consumption), while the other half is associated with vulnerability to transient poverty (i.e., exposure to risk and variation in consumption levels). These findings confirm other panel analyses of vulnerability.⁶ In Pakistan, a cross sectional estimation of vulnerability also found that almost 60 percent of poverty was a result of transient poverty.⁷ This finding is consistent with the result of the 2001 drought in the Sindh, when a sizable movement from the middle part of the distribution to the lower end had occurred from 1998-99 to 2001-02.

The finding that shocks — particularly health shocks — tend to impose hardship on households is also evident from household data. In Pakistan, the safety net survey found that households reported losing about two thirds of their income as a result of a shock. Adjusting for both frequency and costs, and taking into account both direct and indirect costs, Pakistani households spent 51 percent of total expenditures on health related shocks, followed by economic shocks (20 percent) shocks and natural disasters (14 percent). In the Maldives, the total cost (both direct costs and indirect costs) are highest for households who lose fishing assets, followed by health and other crisis. In Bangladesh, studies report that the costs of illness and expenses related to the death of the main earner were the most costly to households relative to other shocks (e.g. floods). Evidence from Andhra Pradesh, India, suggests that low frequency shocks, such as natural disasters, surgery, and unemployment tend to be more costly relative to high frequency shocks, such as sickness. Thus, while the aggregate shocks adversely impact the income of a larger share of the population — and have larger total costs on the economy — the average cost of idiosyncratic, particularly health shocks can be significant for each affected household.

The evidence on the impact of the food price shock as well as other studies from the region suggests that the poor are often the hardest hit,

⁵ Jalan and Murgai (2006), based on NSS 47th and 55th rounds. Poverty lines in 1993/94: Rural = Rs. 205.84; Urban = Rs. 281.35. Poverty lines in 1999/00: Rural = Rs. 327.56; Urban/mega-urban = Rs. 454.11.

⁶ See de Janvry et al. (2006).

⁷ See Mansuri and Healy (2002).

exacerbating income inequality. A recent study (see Chapter 2 in this book) on the impact of the food price crisis found that the high share of food in the expenditure of the poor, the predominance of net buyers of rice (vs. sellers) in the country; and the possible lagged effect of the price increase on wages estimated that this income shock was likely to have most adversely impacted the poor. The study simulated the impact of the rice price increase in Bangladesh (39 percent in rural areas; and 37 percent in urban areas) and found that the food price increase reduced real income by five percent for the average household and 11 percent for the poor.⁸ The income loss was higher in urban than rural areas. Households headed by farmers benefited, while agricultural daily workers and owners of marginalized or small land holdings — characteristics correlated with poverty — were adversely affected.

The disproportionate impact of income shocks on the poor has also been found by other studies in the region. A survey of shocks affecting Bangladeshi households found that those most affected by shocks were the poorly educated (in the case of livestock losses) and those with limited land (in case of dowry deaths) — both characteristics correlated with the poor. The Pakistan safety net survey referenced above found that ultra poor respondent households reported expenditure losses amounting to 54 percent of total expenditure as a result of a shock as compared to only 18 percent for non-poor. The evidence from Andhra Pradesh, India, noted above also suggests that the poor are only able to cope with high frequency low cost shocks (common illness) but less able to cope with low frequency and high cost shocks (natural disasters; catastrophic health shocks). Finally, poorer households are less likely to recover from shocks than non-poor households from shocks. In rural Afghanistan, nearly 76 percent of households in the lowest quintile noted that they had not recovered from a recent drought relative to 60 percent of the highest percentile — a pattern that is repeated for all reported shocks.

Coping strategies

Recent evidence indicates that poor households are relatively more likely to follow behavioral strategies (reducing food consumption or increasing labor supply) while the non-poor rely relatively more on

⁸ This result assumed no increase in wages. If wages are increased, then the poverty impact is lower by 3 percentage points for the average household and 8 percentage points for the poor.

asset based strategies (depleting savings, selling assets or taking out loans) to cope with shocks. This is not surprising. Poor households often have very few physical or human capital assets, and are often no access to financial or insurance markets. Our studies show that Pakistani households with no land constitute 60 percent of the rural population, but 76 percent of rural population in the bottom quintile; in contrast households with more than 1 hectare of land account for 27 percent of the rural population and only 14 percent of the bottom rural quintile. Livestock is another important asset that correlates with rural poverty. Again taking Pakistan as an example, in 2001-02, while the bottom quintile accounted for 10 percent of the total estimated value of livestock, the 4th and 5th (top) quintiles accounted for 23 and 36 percent, respectively.

Most poor rely more heavily on behavioral coping strategies, while the non-poor rely more on asset based strategies. A recent study from India (based on a four state survey referenced above) shows that the strategies for coping with shocks vary across states, but the dominant strategy is asset based. Most households, both rich and poor, borrow to smooth consumption. However, the non-poor are more reliant on borrowing relative to the poor. In MP, nearly 25 percent of the non-poor report borrowing as a coping strategy relative to only 12 percent of the poor. In contrast, the poor are relatively more reliant on behavioral strategies than the non-poor. For example, in MP, 45 percent of the poor report that they increase labor supply relative to only 28 percent of the non-poor. These results are consistent with other studies for India, for rural areas of Andhra Pradesh and Rajasthan and urban centers, such as Bangalore and Delhi. Recent studies in Pakistan also find that the main coping strategy for households is asset based, followed by behavioral strategies, such as a reduction in labor supply, and reducing consumption. The poor and non-poor both rely on asset based strategies, but the composition was slightly different. The ultra poor (30 percent) were more likely to borrow than the non-poor (23 percent). In contrast, and not surprisingly, a higher share of the non-poor (28 percent) relative to the poor (23 percent) relied on asset sales. In contrast, a relatively higher share of the ultra poor (14 percent) increased labor supply relative to the non-poor (eight percent). Very few poor and non-poor households reported a decrease in food consumption as a risk coping mechanism; but the share of poor reporting this type of strategy was slightly higher than the non-poor. In contrast, in Afghanistan, a much higher share of

households reduced food consumption to cope with income loss in response to droughts; but this share did vary systematically across income groups. However, in Afghanistan as well, the non-poor relied more on asset sales (22 percent) relative to the non-poor (13 percent).^{9 10}

The risk coping strategies followed by the poor have an adverse impact on human development of their children, perpetuating poverty across generations. In other words, the coping strategies of the poor are often poorly managed leading them deeper into poverty. Reducing the quantity and quality of food consumption has adverse impact on the growth and cognitive development of children. In Pakistan, households also increase labor supply by pulling their children out of school and asking them to work. Eight percent of households with children took their children out of school; and 10 percent of households had to put their child to work. In Bangladesh, more than a third of households with school-going children report reducing education-related expenditures, and a similar nearly eight percent of such households took their children out of school. However, the source of borrowing between poor and non-poor differed, with the poor relying more on landlords (potentially more usurious) as a source of loans. Again, the asset sales of the poor, who own much fewer assets, are likely to be distress sales, leading them deeper into poverty.

Poor households rely on informal vs. formal networks, but informal assistance can be lumpy and not forthcoming in times of aggregate shocks. In Afghanistan, the poor rely more on informal networks (friends and family) as coping strategies (14 percent poor relative to five percent non-poor); only a negligible number of households participate in largely donor funded programs. In the Maldives, poor households also mainly rely on informal support systems to cope with shocks, followed by their own resources, and then lastly (only 10 percent of households) on public support. In Pakistan, conditional on a shock, only 10 percent of households turned to outside assistance (Fig. 3.7). The ultra poor (14 percent) were more likely to use assistance than the non-poor (10 percent), but the majority relied on private assistance (75 percent), while the remaining share relied on public support. Investigating more deeply the role of private assistance, the Pakistan safety net survey found that transfers from family and friends

⁹ This pattern was similar across other aggregate and idiosyncratic shocks.

¹⁰ In all countries, a significant share of the population reported that they did nothing in response to the shock.

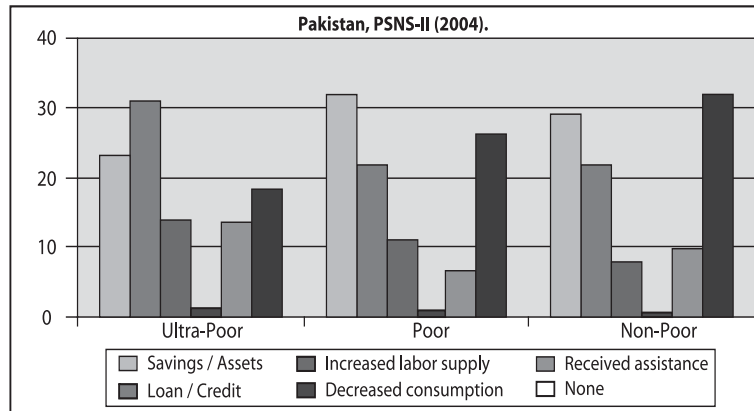


Fig. 3.7: Coping strategies in Pakistan

can be substantial (20 percent in the last 12 months) share of household expenditures. However private transfers are mainly from family and friends (not charities), are also received by the non-poor, are often in kind, and are lumpy--donated at the time of Ramadan or Eid. Moreover in aggregate shocks, most informal mechanisms break down, making it difficult to share risk across communities to smooth household consumption. Other studies have also found that South Asian households are not able to smooth consumption against shocks and that informal mechanisms are not effective in times of aggregate shocks.

The results above indicate that shocks can have an adverse impact on households, on both current and future consumption—the latter through reduced investment in children's education and health. While private transfers can help households to smooth consumption, these transfers have been found to be ineffective at the time of aggregate shocks. Thus, many countries use some mix of public social protection programs that can re-distribute or pool resources to help households mitigate or cope with chronic and transient poverty. The next section provides a brief overview of these programs, discusses the types of social protection programs that prevail in South Asia, and then details the performance of safety net programs in the region.

3.3 SOCIAL PROTECTION MECHANISMS: RESPONDING TO POVERTY AND VULNERABILITY

Overview

Economic growth has been the main driver of poverty reduction in the region and policies to promote sustained economic growth will remain the critical force for reducing poverty over time. However, well designed social protection programs that address both chronic and transient poverty can promote more inclusive growth. By promoting graduation from poverty (e.g. through conditional cash transfers), by reducing uncertainty from income shocks, and by easing the social impact of structural reforms, social protection—that are incentive compatible, fiscally sustainable and well administered—can also contribute to dynamic efficiency and growth (WDR, 2006).

Safety nets are one part of an overall social protection system that contributes to poverty alleviation. The main focus of this Chapter is on safety nets, but it is important to note that these programs are one of the three main elements of social protection programs. The other two elements are: (i), social security/insurance; and (ii) employment protection/promotion. Together, these three programs comprise a social protection system that helps households address chronic poverty and vulnerability (WDR, 2006).

- Social insurance (or social security) programs are mandatory contributory programs for workers that mitigate risks—such as loss of income due to ill health, unemployment, disability, or death of main earner. These programs help mitigate risks and prevent households from falling into poverty as a result of idiosyncratic shocks. Other insurance programs that have the same objective are insurance programs related to agricultural shocks or disasters.
- Employment promotion/protection programs also both protect workers on the job and help them in times of job loss. Active labor market programs (ALMPs)¹¹ help facilitate job matching for unemployed/laid off workers through the provision of job

¹¹ Passive labor market programs include unemployment insurance and other benefits, such as severance, etc. A complementary set of labor market policies are employment protection legislation (labor and employment laws), unions and collective bargaining arrangements that provide workers benefits and protection during their time on the job but also when they are laid off.

information and job counseling services, worker training and skill development programs. Active labor market programs also include workfare programs that provide unemployed workers with short term employment (workfare can also be considered a safety net program; and a type of unemployment insurance program as well). ALMPs are publicly financed, sometimes through contributions, but not necessarily publicly delivered.

- Safety nets are therefore a protection of last resort provided to those households and workers who fall outside, or exhaust, the protection provided by social security/insurance programs and active labor market programs. These programs comprise cash and in kind transfers that are targeted to particular groups or the poor. Recently, safety net programs are not just passive, but provide some links to graduation strategies for households. For example, conditional cash transfers provide cash transfers to the poor provided that households send their children to school and for health care.

All South Asian countries provide social protection to their populations, but such protection is skewed mainly to the formal sector. Social security/insurance programs exist in all countries in the region but are mainly provided to formal sector workers, such as civil servants and the formal private sector. Similarly, employment protection legislation is also in place in all countries in South Asia, but again is largely relevant for the formal sector; active labor market programs (outside of workfare) are limited. The main form of social protection for the informal sector is public safety nets but their provision varies across countries. Bhutan and Afghanistan have no public safety net. Nepal, Sri Lanka, Pakistan, and Maldives have between 1-3 safety net programs, while India and Bangladesh have multiple programs, both cash and in kind. Bangladesh has more than 30 government safety net programs implemented, while India has about 11 main centrally financed and administered schemes, including mid-day meals and subsidized housing.¹²

South Asia's social protection expenditures are very low in comparison to other regions, with social security/insurance spending exceeding safety net spending for most countries. South Asia's spending on

¹² The number of programs included here are federal programs and do not include provincial safety nets.

social protection — about 1 percent of GDP on average — is lower than for middle and higher income countries and comparable to social protection spending in Sub Saharan Africa — a region with much lower average GDP/capita (Figs. 3.8 and 3.9). In higher income countries, safety net spending increases to 2-3 percent of GDP, and further increases in spending represent the provision of mandatory social security/insurance programs (health, pensions, disability and life insurance).

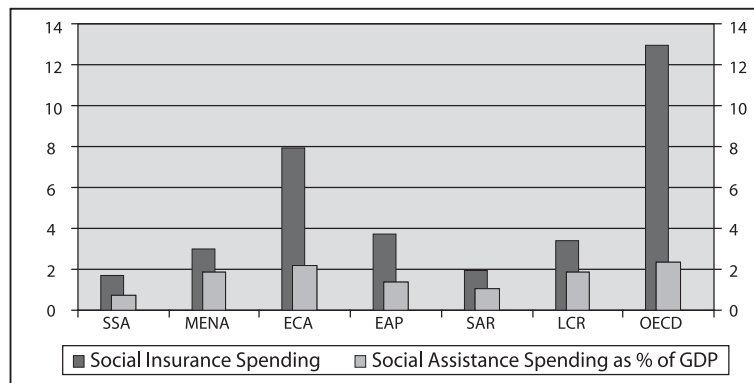


Fig. 3.8: Global social protection spending in spending (% of GDP)

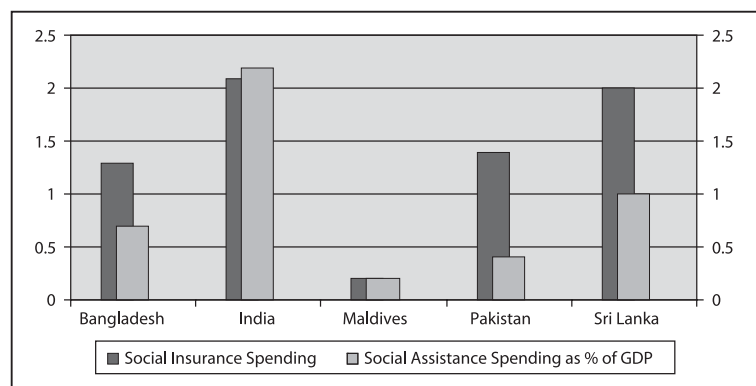


Fig. 3.9: Social protection spending in South Asia (% of GDP)

Spending on social protection (pensions and safety nets) varies across South Asian countries, from a high of four percent of GDP for India

to less than 1 percent of GDP in Maldives.¹³ Across the region — with a few exceptions: Maldives and India — social insurance (mainly pension) spending is the largest component of social protection expenditures. It should be noted that explicit spending on social insurance is a lower bound and does not include the implicit pension debt which comprises a major share of GDP for most South Asian countries. For example, in Sri Lanka, the implicit pension debt amounts to nearly 60 percent of GDP. Given that the majority of expenditures on social protection accrue to pensions, which are received by the formal sector, most social protection expenditures are received by the non-poor. Spending increases in social protection are also not always pro-poor. For example, social protection expenditures remained about 3-4 percent of pro-poor PRSP spending between 2004/05 and 2006/07, before sharply increasing to 13.4 percent in 2007/08. However, this increase reflected an increase in social security expenditures and a significant increase in food subsidies, both likely targeted to the non-poor.

The main safety net programs

Safety nets programs in the region comprise mainly unconditional transfers and workfare.¹⁴ The region mainly implements unconditional transfers to the poor. These transfers provide income support to the poor or other groups without proposing any change in their behavior (e.g. increased attendance of children in school) and are usually targeted to the poor or to particular population categories, e.g. the elderly or widows, or the disabled, considered vulnerable.

India, Nepal, Sri Lanka and Bangladesh provide ‘social pensions’ or categorical cash transfers, to elderly, disabled, and widows; and Maldives has recently introduced a similar program. Some programs provide transfers to elderly based on a particular age threshold. For example, until it was recently lowered, the social pension in Nepal was provided to all elderly over 75 years of age. Maldives also proposes to provide pensions to the elderly on age characteristics alone. However, some categorical transfers are also means tested. For example, the

¹³ Social security spending is also an underestimate, because it does not capture implicit pension debt (future pension obligations owed to workers).

¹⁴ Safety nets also comprise indirect transfers, such as fee waivers and subsidies; and safety nets can also comprise social welfare and care services, e.g., adoption and foster care, community based rehabilitation of the disabled etc. However the discussion of these safety net programs is out of the scope of this chapter.

Nepal social pension is means tested for widows and disabled, while the Indian National Old Age Pensions Scheme provides means tested benefits to all recipients, including the elderly. In Sri Lanka, the social pension is also means tested. However, the objective of these programs is not always to reach the poor. In the case of Nepal, the Government has implemented the social pensions program to ensure that individuals that have contributed to society are not impoverished in their old age.

South Asian countries also provide unconditional transfers that are targeted to the poor, with the poor defined by a particular targeting method (e.g. proxy means test, community based targeting). For example, India's Public Distribution System, (PDS) comprising about half of total safety net expenditures of that country provides food based transfers to 'BPL' (or households that are identified by a particular method as falling 'below the poverty line'). Pakistan has recently introduced a new program called the Benazir Income Support Program (BISP) that provides cash transfers to the poor as identified by a proxy means test. Sri Lanka's main cash transfer programs, Samurdhi and the Maldives's Absolute Poverty Benefit (APB) are targeted to the poor through community based targeting.

Some countries are attempting to introduce conditionality in the provision of transfers to reduce inter-generational poverty, but this effort is still in its infancy. Pakistan and Bangladesh are piloting conditional cash transfer programs and India has recently formed an inter-ministerial commission to examine their suitability to the Indian context. Safety net programs are increasingly including graduation strategies for recipients worldwide, and South Asia is gradually following this trend. Conditional cash transfer programs provide cash to poor households that also then have the obligation of sending their children to school or to receive adequate nutrition or health care. These programs are mainly being implemented in Latin America but have gained considerable currency worldwide, given that they have very strong positive impacts on both poverty and enrollment.

South Asian countries also implement workfare programs, permanently or in times of disasters. As noted above, workfare programs fall somewhere in between safety nets and active labor market programs, and can even be considered a form of unemployment insurance. These programs have the ability of expanding in times of crisis to provide temporary employment to the poorest households. If wages are kept low, workfare programs can self-target the poor. In 2007,

India has introduced the National Employment Guarantee Scheme that guarantees 100 days of work to all eligible workers. Bangladesh also has a rich history of implementing workfare programs. Most recently, in response to the food crisis, the Government has introduced a 100-day Employment Program that provides temporary employment to eligible workers. Pakistan had earlier instituted a workfare program for Afghan refugees. Afghanistan has also implemented workfare programs to provide temporary employment for the poor in rural areas. Nepal has implemented workfare programs since 1995 and has recently announced the introduction of a national workfare program.

Program performance: Fiscal costs, coverage, adequacy, targeting efficiency

Safety net programs are generally evaluated based on their ability to provide adequate benefit i.e. benefit levels that provide minimum income support without distorting incentives to work, that are delivered effectively to eligible populations and are fiscally affordable. This section provides an overview of the safety net programs in South Asia along the above dimensions. Where data permits, the section also compares program effectiveness across countries and within programs.

Fiscal costs

There is considerable variation in safety net spending across South Asian countries. Comparative estimates of safety net spending (as a share of GDP), based on the most recent data available across countries, shows that until most recently, when program expenditures in several countries have increased, safety net expenditures varied from nearly two percent of GDP in India and 1 percent in Sri Lanka (Fig. 3.10) to 0.6 percent of GDP in Bangladesh (Fig. 3.11) and 0.3 percent of GDP in Pakistan. Afghanistan and Bhutan do not spend any resources on safety nets.

There are also variations in spending trends across the region and over time. Safety net spending was stagnant or declined in real terms in some countries in recent years. For example, safety net spending on the two main safety net programs in Pakistan (Zakat and Bait-ul-Mal) declined from 0.4 percent of GDP in 1991/92 to less than half of this level or 0.14 percent of GDP in 2004/05. Fiscal allocations for Bait-ul-Mal have increased in recent years, from 0.02 percent of GDP

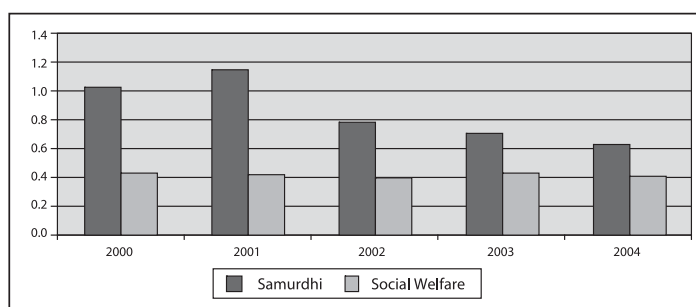
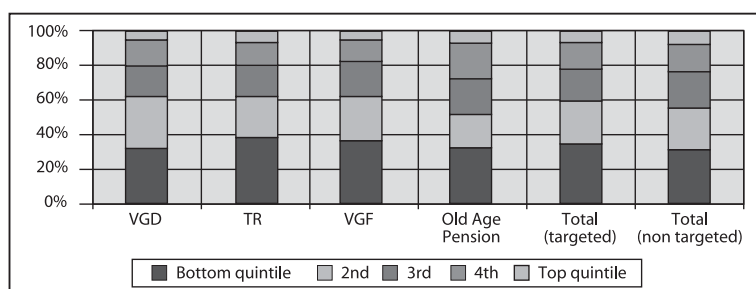


Fig. 3.10: Expenditures of the Ministry of Samurdhi and the Ministry of Social Welfare (percent of GDP)



Source: HIES (2005).

Fig. 3.11: Distribution of beneficiaries across consumption groups: Bangladesh

in 2002/03 to roughly of 0.04 percent of GDP in 2006/07, but this increase did not compensate for the decline in Zakat expenditures. Safety net spending has also declined in Sri Lanka since 2001 from almost 1.6 percent of GDP to only 1.1 percent of GDP in 2004. In other countries, such as Bangladesh, total public spending on social safety net programs was stagnant at less than 1 percent of GDP till the late 1990s.

However, safety net spending has increased in recent years in India, Pakistan, Nepal and Bangladesh. For example, spending on safety nets in Bangladesh increased to 1.6 percent of GDP in the allocations for 2007/08. In 2009, allocated safety net expenditures were 2.8 percent of GDP. India has also increased spending on safety nets, putting in place a new National Rural Employment Guarantee Scheme (NREGS). A health insurance scheme for the poor (RSBY) has also been introduced.

Nepal has also increased safety net allocations by almost 400 percent — albeit from a small base of about 0.3 percent of GDP. Pakistan has recently increased safety net spending from 0.3 percent of GDP in FY 07/08 to 0.6 percent of GDP in FY08/09 and plans to increase allocations to one percent of GDP in FY09/10. These recent increases in safety net spending reflect country responses to protect the poor as a result of the recent economic crisis but also indicate governments' focus, given the past positive growth performances, and associated increases in fiscal space, for promoting inclusive growth.

In all South Asian countries, there is a heavy reliance on centrally designed and financed social assistance interventions. While central financing is appealing in terms of spatial redistribution objectives, the experiences in some countries raise doubts about the appropriateness of a centrally-determined program mix and design features, which limit flexibility to local conditions including the capacity for implementation. One example would be the appropriateness of centrally designed food-based transfers in areas where food security is not an issue, but household expenses such as medical care or education of children are. On this issue, there is typically a tension between central authorities wanting some control on spending priorities and relative ease of program oversight, with the desirability for local control and the economic rationale for less tied block grants for programs. These issues are being brought into sharper relief by the trend in countries such as India to increased decentralization of service delivery responsibilities.

Coverage: Region, income, group

Coverage of safety net programs in South Asia is low by international standards, but varies considerably by program and country. Given recent stagnant or declining program expenditures and the large populations of poor, safety net programs cover only a fraction of poor households. For example, 13 percent of Bangladeshi households benefit from at least one safety net program, with targeted programs covering eight percent of households. In Pakistan, Zakat and Pakistan Bait-ul-Maal's Food Support Program (FSP) together cover approximately 3.2 million households in 2006/07, corresponding to about 13 percent of the population.¹⁵ The recently introduced Benazir Income

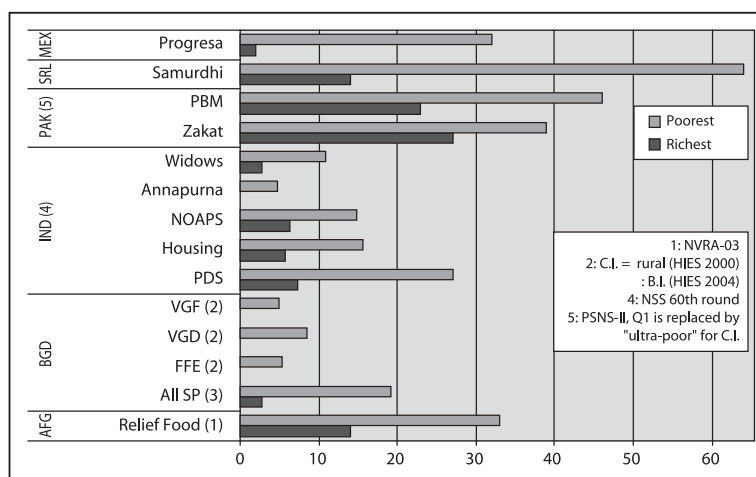
¹⁵ Both PBM and Zakat also administer various other programs, such as social welfare rehabilitation, selected health sector programs, rehabilitation centers for children and vocational training centers.

support program, intended to replace the FSP over time, will expand program coverage to ultimately reach seven million families in all provinces in the country (about 25 percent of the population). In India and Sri Lanka, the coverage of the main programs is relatively higher. The main safety net in India (PDS) covers 37 percent of the population, and the NREG covers nearly 30 percent of rural households; while Sri Lanka's Samurdhi program reaches 41 percent of the population.¹⁶

Coverage varies across programs. In Bangladesh, the overall coverage of programs is progressive, with coverage rates higher for lower (vs. higher) income groups. However, a sizeable share of benefits still goes to the non-poor. For example, 41 percent of the beneficiaries of targeted programs are non-poor (i.e. top three quintiles — see Fig. 3.12). Given the very low rate of coverage of safety nets in the population, these errors of inclusion (of non-poor beneficiaries) are quite high. As in the case of Bangladesh, overall coverage of Sri Lanka's Samurdhi program and India's safety net programs is progressive, but leakage and under-coverage are not insignificant. In 1999/2000, 44 percent of households in the top three quintiles received transfers, while 60 percent of households in the bottom quintile (Glinskaya 2000). In India, too, poorer quintiles more likely to participate in safety net programs than the reference richest quintile. In India, for several programs (NOAPS, housing, BPL and AAY holding), the significance levels for the fourth quintile remain very high, and for all programs, significance levels for the third quintile are high or very high. As noted by Glinskaya (2000), well targeted programs should not exhibit such patterns, given the overall poverty rate.¹⁷

¹⁶ The PBM Food Support Program delivered cash transfers to 1.46 million households in 2006/2007. When all PBM programs are considered (FSP, individual financial assistance, national centers for rehabilitation of child labor, vocational training centers and institutional rehabilitation) then the total number of beneficiary households is estimated to be 1.7 million in 2006/2007. Similarly, "regular" Zakat programs (guzara allowance, educational stipends, stipends for students of Deeni Madaris, health care, social welfare rehabilitation and marriage assistance to unmarried women) covered 1.7 million households but this number increases to 2.5 million when other Zakat programs are considered (eid grant, leprosy patients, emergency relief operations, national level health institutions, national level Deeni Madaris, technical educational stipends and permanent rehabilitation scheme).

¹⁷ While no household survey based evidence on India's NREG program exists, studies on the Maharashtra Workfare program indicated that the program was progressive, at least as long as wage levels remained below market wages to target the poor (Ravallion, 2006).



Source: Afghanistan (World Bank 2005a), Bangladesh (World Bank (2008b), India (World Bank 2008), Pakistan (World Bank 2007a), Sri Lanka (Glinskaya (2000).

Fig. 3.12: Coverage incidence of the poorest and richest quintiles in selected social protection programs

Coverage rates can differ by program. In Bangladesh, The Test Relief program appears to have the most progressive coverage (39 percent of its beneficiaries are from the bottom quintile), followed by Vulnerable Groups Feeding (36 percent). Recent evidence on the Government's new 100 day program also indicates that coverage is progressive, though errors of inclusion and exclusion remain to be addressed.¹⁸ Program coverage rates by income groups also differ across programs for both India and Pakistan.

Aside from wealth the incidence of coverage varies by other socio-economic variables. Poorer households in irrigation colonies, urban middle income neighborhoods and estates were less likely to receive Samurdhi than those in a traditional village. Party political affiliation also plays a significant role in determining one's chances of getting the transfer. For example, families identified as traditional

¹⁸ Estimates from surveys other than HIES (2005) suggest a somewhat better targeting performance with two thirds of VGD program participants coming from the bottom 30 percent of the population (Ahmed et al 2007).

UNP voters were less likely to have been granted Samurdhi benefits. However, households with disabled or chronically sick members, living in poor housing conditions, and with heads that were farm laborers and members in the military vs. government and private salaried employees and retirees were more likely to receive benefits. In India, looking at other socio-economic characteristics, the results on program participation are not strong, with the exception of rural location. Most of the indicators which are significant are in line with what would be expected, e.g., household size mattering (though very weakly) for scholarships and social pensions. However, both land and animal ownership are not significant correlates of participation in most programs. In contrast, the results on rural location are more significant, though rather weak in terms of coefficients with the exception of BPL ration card holding. While no household survey based evidence on India's NREG program exists, studies on the Maharashtra Workfare program indicated that the program was progressive, at least as long as wage levels remained below market wages to target the poor.

The coverage of safety net programs can also vary significantly by region, with generally low coverage in urban areas. In Bangladesh coverage does not vary positively with division level poverty rates. For example, Sylhet with a poverty rate significantly lower than the national average has the highest coverage of safety nets among all divisions. In contrast, Khulna, which has the second-highest poverty rate in the country, has the lowest coverage of safety nets in the country. In India, also, coverage of programs varies by region. Coverage of safety net programs is more limited in urban areas. In Bangladesh, 15.5 percent of the rural poor are covered by SN compared to 5.5 percent of the urban population. The Indian TPDS (or the targeted PDS) has recently changed from an urban to a rural bias and the new NREGA program only covers rural areas. Thus, there is an emerging gap in safety net coverage in urban areas. This is particularly worrisome given that the recent financial crisis is considered to affect especially urban populations (Table 3.3).

Benefit: Type, adequacy, timeliness

Safety net programs in South Asia provide benefits in both cash and food based transfers, although there is a shift towards cash transfers in recent years. The main public safety net programs in Pakistan (PBM, Zakat and BISP), Maldives (APB), Sri Lanka (Samurdhi, social

Table 3.3 Program participation determinants by wealth quintile, India, 2004/05

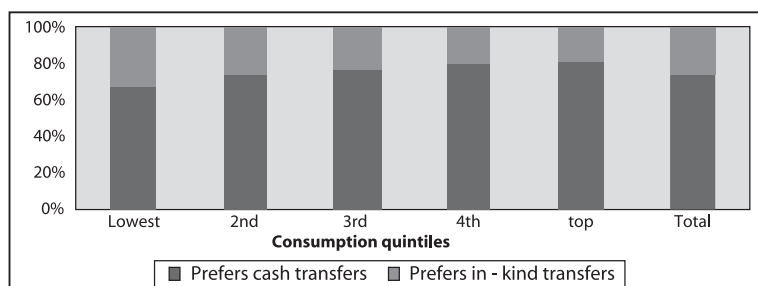
Wealth quintile	NOAPS		Widow pensions		Annapurna		Housing support		BPL card holders		AAY card holders		BPL Ration card used last 6 months	
Quintile 1	0.0341	***	0.0133	***	0.0126	***	0.0845	***	0.3536	***	0.0481	***	0.022	***
Quintile 2	0.0279	***	0.0079	**	0.0157	***	0.0988	***	0.3455	***	0.0472	***	0.0207	***
Quintile 3	0.0172	***	0.0115	***	0.0116	**	0.0683	***	0.273	***	0.0298	***	0.0142	**
Quintile 4	0.0105	***	0.0037		0.0061		0.0453	***	0.1714	***	0.0211	***	0.0126	*

Source: Ajwad (2007). Quintile 5 used as reference group.

Note: *** = significant at 1 percent level; ** = at 5 percent level; * = at 10 percent level.

pensions) and Nepal (social pensions) are targeted cash/voucher based transfer programs.

However Pakistan continues to use the wheat subsidy as a poverty alleviation program and the program comprises a significant share of its PRSP expenditures. Bangladesh's safety net programs are mainly food based, comprising 70 percent of total safety net expenditures. Similarly, India's main safety net, the PDS comprises half of total safety net expenditures of the country.



Source: HIES (2005).

Fig. 3.13: Beneficiaries preferences for cash vs. food: Bangladesh

That said South Asian countries have been shifting from food based to cash based safety nets. Sri Lanka has shifted from a food based program to one comprised of food stamps/cash transfers (Samurdhi). India's new National Rural Employment Guarantee Scheme is cash based. Bangladesh has been gradually shifting from food-based to cash-based safety nets. The country replaced the Food for Education (FFE) with the Primary Education Stipend Program (PESP) in 2004 and introduced another cash-based Employment Generation Program in 2008. It is also experimenting with transforming other programs like Food for Work (FFW) to Cash for Work and food based Test Relief program to food convertible to cash TR. As a result, the share of cash-based programs has increased from 20.7 percent in FY08 to 32.7 percent in FY09. Nevertheless, the majority of safety net spending in India (PDS) and Bangladesh is allocated to food based safety nets. Given that large cash based safety net programs do not exist, countries like Bangladesh and India tend to use these programs to reach the poor during emergencies. However, according to a recent survey, beneficiaries also appear to prefer cash over in-kind transfers, most

likely because cash provides flexibility in spending (Fig. 3.13). About 75 percent of all beneficiaries prefer cash over kind although the preference for cash declines gradually for poorer beneficiaries. That said, even though administrative costs of cash based transfers are lower than food based programs given the problems associated with procuring, storing and distributing grain, cash based system do require investment in their administration, including efficient payment systems. Moreover, food based transfers are relevant where there is a chronic or temporary shortage of food.¹⁹

Benefit levels tend to be low relative to the poverty line given fiscal constraints. For example, Pakistan's PBM's Food Support benefits are equivalent to 11 percent of household income/consumption among the ultra-poor, and to eight and five percent among the poor and the non-poor respectively. Pakistan's BISP program now provides benefit levels of 25 percent of the poverty line — a major increase in benefit. In Sri Lanka, the average size of the total Samurdhi transfer is 14 percent of total household food expenditure (and 21 percent of this expenditure for the recipients in the lowest income decile) or roughly translated, five to seven days of food per month (SLIS 1999/2000 data). In the Maldives, the most recent data available indicates that benefit levels were 25 percent of the poverty threshold expenditure level of a family of four. In Bangladesh, the food benefit from VGF and the standard benefit from cash transfer programs are 21 and 30 percent of the lower poverty line, respectively. Even the benefit from the VGD program — three times the amount of wheat provided by VGF — amounts to only 62 percent of the lower poverty line²⁰ and benefits are often not adjusted with inflation. The real value of Samurdhi benefits has eroded over time (Glinskaya 2000). However,

¹⁹ A recent IFPRI evaluation of safety net programs in Bangladesh shows that the choice of food versus cash distribution also depends upon the outcome which one wants to affect and the type of household which joins the program (Ahmed et al. 2007). While the cash-based program (RMP) had a greater beneficial impact on household savings and female empowerment measures, the food ration program (IGVGD) has a greater impact in increasing household income and a combined food- and cash-based program (FSVGD) appeared more successful in raising women's caloric intake. Moreover, the type of food provided appears to have intra-household gender implications. The IGVGD and FFA programs provide rice, which has a greater impact on male calorie intake, while the female benefit more when wheat flour is provided in the FSVGD program.

²⁰ The population weighted average of stratum level lower poverty lines for Bangladesh is Taka 718/person/month, at 2005 prices.

in Bangladesh, the benefit amount for cash transfer programs has increased marginally in real terms over the past decade.²¹ In some countries, benefits of cash transfer programs have recently been increased. The NOAPS benefit in India is one example, while the disability and old age pension in Bangladesh is another. In comparison, conditional cash transfer programs in Mexico and Nicaragua provide benefits that amount to 21 percent of average household consumption.

Beneficiaries often receive benefit payments that are much smaller than the stipulated grant. Samurdhi recipients are eligible for food stamps, and participate in savings/micro credit, social security, and other schemes. For this reason, compulsory savings stamp, social security stamp, and a housing lottery stamp are deducted from the transfer at the time of receipt. After deducting forced savings and social insurance, benefit levels are very small relative to the stipulated amount. Sometimes, benefits are not received on time reducing their effectiveness. In Pakistan, for the twelve month period prior to the survey, the average Zakat Guzara cash transfer beneficiary received a benefit that was equivalent to five-six monthly installments, rather than the stipulated 12, and payments occurred in six-eight months intervals.

Low levels of benefit in South Asia may not cause work disincentives and leakage. In countries with more generous levels of benefits, safety net programs can induce work disincentives whereby beneficiaries may find it more beneficial to stay on program rolls rather than look for employment. However, Glinskaya (2000) suggests that despite low level of benefit in Sri Lanka, the possibility of a household to lose eligibility upon earning above Rs. 2,000 per month can distort incentives for taking a job (for reference, the statutory minimum daily wage rate in 2005 for workers in the tea, rubber and coconut sectors was Rs. 121, Employers' Federation of Ceylon 2005). In practice, this criterion has been universally ignored, thus making work disincentives less plausible.²² While benefits are low, most programs in South Asia

²¹ For example, the size of the Old Age Benefit has increased from Tk. 100 per beneficiary when it was launched in 1997-1998 to Tk. 220 in 2007-2008, which is also an increase in real terms. Taka 220 is the standard benefit for all major cash programs.

²² While no rigorous analysis has been done regarding the incentive effects of the Samurdhi program to date, it should be noted that adverse incentive effects were found for other welfare programs in Sri Lanka. For example, participation in the food stamps program in Sri Lanka (in the early 1980s) was found to have reduced labor supply by two to three days per month (Sahn and Alderman 1996). However, smaller benefit amounts also reduce leakage.

do not force re-certification of benefit recipients; and benefits are provided to individuals without any restraint on benefit duration. The low level of benefit may also make diversion of benefit less attractive. Recent studies from Pakistan and India find that programs with smaller benefit amounts tend to be better targeted relative to programs with larger benefits (see below).

Other than a few programs, safety net program recipients are not linked to income earning opportunities or access to education and health services. The exceptions are the Vulnerable Groups Development (VGD) and the stipend program. Under the VGD program, the beneficiary saves money over the program cycle, while NGOs provide program participants with skills training and access to credit. In Andhra Pradesh, where labor market opportunities exist the state is considering using central government support for its training and job placement program under the Employment and Marketing Mission, an autonomous government agency which promotes employment for youth in remote areas by linking them with formal sector employers and financing short-course training. There are also proposals in Pakistan to help the poor avail micro-credit programs or skill development programs to help them graduate out of poverty, but these initiatives are in their early stages.

Globally, there is a trend for cash transfer programs to include incentives to help children in beneficiary households acquire human capital and avoid inter-generational poverty. These conditional cash transfers have successfully increased enrollment, improved health outcomes and reduced child labor. Conditional cash transfers have two components: a poverty benefit that is targeted to the poor; and an additional benefit that is provided to poor households with children to attend school or health care programs. Pakistan is piloting and evaluating similar programs: (i) provincial stipend programs, including the Punjab Secondary School Stipend Program targeted to girls; (ii) Bait-ul-Mal's Child Support Program — a pilot conditional cash transfer program targeted to the poorest households; and (iii) a cash transfer program that targets improvement of health status (TB) alone. Bangladesh's secondary school stipend program is also an example. Only secondary school girls are eligible for the FSESP stipend and continue receiving it — conditional on attendance and satisfactory academic performance — until they complete secondary school.

Targeting efficiency (benefit incidence)

The targeting efficiency of safety net expenditures is measured by the share of benefit expenditures received by the poor (Fig. 3.14). If targeting were perfect, all program benefit expenditures would reach the target group, but this is hardly ever the case, and also not possible as no targeting system is perfect. Still, in some high performing Latin America or Eastern European countries (e.g. Romania), a large share of program benefit does reach the poor. For example, 80 percent of expenditures on conditional cash transfers reach the bottom 40 percent of the population in Honduras; and 62 percent of total expenditures reach this group in Mexico.

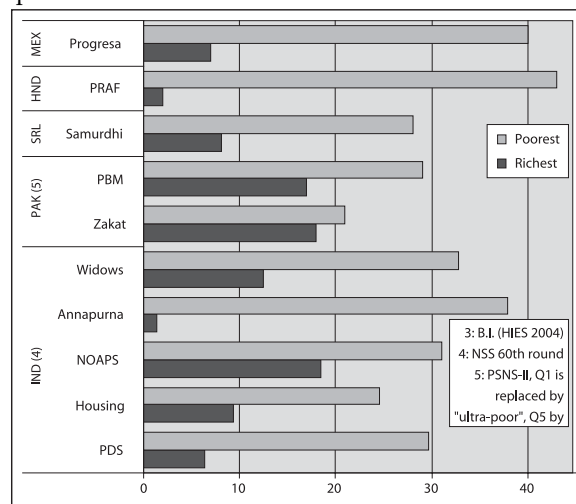


Fig. 3.14: Targeting efficiency

In South Asia, benefit incidence is weak, but better for programs which provide a small level of benefit. The Samurdhi social assistance program in Sri Lanka covers 41 percent of the population, but excludes about 40 percent of households in the poorest consumption quintile, while spending 44 percent of the total budget on households from the top three quintiles.²³ In Pakistan, a sizeable share of benefits reaches the non-poor while many of the rejected applicants are poor. Nearly

²³ See Glinskaya (2000).

46 percent of total benefit expenditures of Bait-ul-Mal reach the poorest 40 percent of the population, while 43 percent of total Zakat expenditures reach the same population group. However, the targeting performance of programs in Pakistan that provide a higher benefit is considerably worse. About 37 percent of those receiving the larger rehabilitation grants are not poor and these households receive 45 percent of the resources distributed under each category. In India, as well, safety net programs paying smaller benefits perform better in terms of benefit incidence than larger benefit paying schemes. For example the NOAPS in India can be considered among the better targeted programs in India.²⁴ Social pension benefits reported by households indicate a very low level of benefit leakage among those receiving benefits. For most states, the reported annual benefits are close to the level of social pensions being paid in 2004/05. These findings are also supported by the dedicated Rajasthan and Karnataka surveys of social pensions, which find benefit payments over the previous year close to 100 percent of those due, and HP where beneficiaries report timely and proper payment. The PDS program on the other hand performs poorly in terms of benefit incidence, and has significant leakage rates. For example, in terms of benefit incidence, the average levels of offtake are quite similar across quintiles among those accessing PDS (Table 3.4). The high rates of PDS leakage is accepted by the Government of India — and is estimated in the most recent evaluation at 58 percent of BPL grains (the underlying data are from 2001).²⁵ The total leakage is a combination of outright diversion of grains (due to ghost BPL cards and diversion in the supply chain), and APL households benefiting from grains subsidized at BPL prices. Based on the NSS the leakage from the PDS nationally is approximately 65 percent, wheat leakage under 50 percent and rice an extremely high 84 percent. Moreover, in several states — including Bihar, UP, West Bengal, Delhi, Jharkhand, Punjab and Rajasthan — leakage is well over 90 percent.²⁶

The above discussion suggests that while South Asian countries implement safety net programs to protect chronic and transient poverty; and many countries are increasing resources to safety nets, program

²⁴ Dev et al, 2007.

²⁵ See PEO of Planning Commission, 2005.

²⁶ Note that Bihar from early 2007 has switched to a food coupon system for PDS which in states (such as AP) which have done so previously has helped to control leakage somewhat.

Table 3.4 Share of PDS grains captured by quintile, 2004

Group	Average offtake (kg)	Share of total beneficiaries	Share of total offtake captured
Poorest	20.4	28.1	29.7
2	19.4	25.0	25.1
3	19.1	22.9	22.7
4	18.1	16.7	16.2
Richest	16.7	7.2	6.3

Source: Umali-Deininger and Deininger (2006), estimated from NSS 60th round. Bank staff estimates.

performance could be significantly improved in terms of coverage, benefit adequacy, and targeting efficiency. The following section discusses some of the constraints that need to be addressed in order to improve program performance — and to ensure that safety net programs effectively deliver benefits to the poor to help these groups both cope with and escape poverty. The next section explores some reasons for poor performance.

3.4 CONSTRAINTS TO PROGRAM PERFORMANCE

Lack of social protection or safety net strategy/unique safety net agency

A review of studies that evaluate program performance of safety nets identifies several constraints that explain poor performance. These include: (i) lack of a social protection strategy that prioritize and rationalize programs (ii) multitude of agencies delivering sometimes overlapping safety net programs; (iii) low and uncertain spending on safety nets; (iv) lack of uniform and transparent and effective targeting criteria; (iv) weak governance and administration of safety net programs; (v) lack of flexibility to respond to disasters and (vi) lack of graduation strategies for safety net beneficiaries.

One of the key constraints to program performance has been the absence of a strategic approach to safety net programs and a unified policy administration and program implementation. There has historically been no single policymaking authority for safety net programs in South Asian countries.²⁷ Safety net programs have generally been

²⁷ The only exception is Afghanistan that has a single agency that administers safety net programs (the Ministry of Labor and Social Affairs), a legacy of its links with the former Soviet Union.

introduced post elections in response to promises to the electorate, or otherwise in an *ad-hoc* fashion. Attention to how these new programs fit into an overall social protection framework is lacking and their compatibility with existing safety net programs is often not considered. The result, over time, is a set of multiple and sometimes duplicative safety net programs, with overlapping benefits with little or no attention paid to program effectiveness or outcomes.

There is also considerable overlap in programs across Ministries. For example, while Maldives has a central safety net program, it still provides other types of safety nets through separate agencies e.g. vouchers to defray textbook and uniform costs for low income families, with eligibility determined locally. The program is administered by the Ministry of Education but the selection of eligible children is made by the island and atoll offices. In addition the government provides two types of medical assistance, assistance to disabled and *ad-hoc* petitions for special assistance. Any citizen can also petition the President's Office for assistance under special family circumstances. In Bangladesh, programs are planned and implemented by thirteen ministries making it difficult to determine the accountability of the implementing agencies. For example, three separate Ministries implement education stipend programs; the Ministry of Social Welfare implements the social pension program while several ministries are involved in rural safety net programs and emergency- or disaster-related programs. In India, the central government provides for 11 separate safety net programs that are administered by separate agencies at the central level; and states also provide for their own, often duplicative programs. Similarly, Sri Lanka's has two cash transfer programs administered by two different agencies. In Pakistan, the Ministry of Religious Affairs, the Bait-ul-Maal administered Food Support Program and for a time the BISP all administer cash transfer programs targeted to the poor. Needless to say, there is little coordination among the ministries in planning, targeting and implementing safety net programs; leading to limited administrative efficiency and compromising scarce fiscal resources.

However, several countries have started to develop social protection strategies, and there are steps being taken to rationalize and coordinate safety net program policy formulation and delivery. Afghanistan, Pakistan and Sri Lanka have developed social protection strategies as stand-alone documents (Pakistan) or part of their national development strategies (Sri Lanka, Afghanistan). Nepal is developing a social protection strategy as part of its national development strategy. These

strategies outline the key vulnerabilities and priority needs in the social protection area, including safety nets. In a marked shift for the region, Pakistan has established a single social protection/safety net authority to serve as a platform for implementing its safety net programs. The state of UP in India is considering a similar safety net authority to coordinate diverse safety net programs; and Delhi is similarly considering approaches to promote the convergence, or rationalization, of safety net programs. Maldives is also considering establishing a National Social Protection Agency to administer social insurance and safety net programs.

Safety net spending: Level and efficiency

A key constraint in the effectiveness of safety nets in the previous decade has been the small amount of resources allocated to safety nets, often much lower than the approximately 1 percent of GDP which is consistent with levels found in other countries at South Asia's level of development. While Afghanistan and Bhutan still allocate insignificant resources to public safety nets and Sri Lanka has seen a decline in safety net resources in recent years, other countries such as Pakistan, Bangladesh and Nepal have increased resources to safety net programs in recent years. The former two countries are spending between one and two percent of GDP on safety nets in recent years. India already allocates a significant share of resources to safety nets almost commensurate with higher income countries. Therefore, while for some countries ensuring that minimum resources are available for safety nets remains an issue, for India, Bangladesh, Pakistan, the main challenge is to improve the efficiency of fiscal spending on safety nets. Greater efficiency of public expenditures through improvements in targeting and administration (see below) will allow safety net programs to both increase coverage and benefit levels within these existing resources. However, outside of Pakistan—where a new national targeting system has been launched—the increase in, or in the case of India (the high level of), resources has occurred without major improvements in the administration of safety net programs. Although India has started to shift its programs from food to cash, introduced social audits, smart cards, and increased experimentation with vouchers rather than food transfers, these reforms remain limited. The recent decline in safety net spending in Sri Lanka reflecting, in part, the Government's policy to reduce resources to a poorly performing

program could be revisited along with investment to improve its targeting efficiency. Earlier estimates (World Bank, 2007c) showed that if targeted perfectly, Samurdhi could have moved 60 percent of the poor out of poverty with a budget one and a half times as much as was actually spent that year.

Even though central funding may allocate resources, these resources may be diverted or delayed. The transfer of NOAPS funds through state treasuries (in contrast to earlier transfer through DRDAs), combined with weak central monitoring, has resulted in some states in diversion of transfers for other purposes, and in others in significant payment delays. Even rich states such as Gujarat have used the NOAPS transfer for other purposes (and made no NOAPS payments at all in 2003-05), while poorer ones such as Jharkhand and Orissa in the early 2000s ceased to make social pension payments for whole budget years. Even states which have not used the transfer for other purposes frequently have had delays in payments of 2-6 months, as reports of states to the Supreme Court Commissioners in 2005 indicate for states such as Bihar, Jharkhand, West Bengal and Manipur. Even rich states such as Gujarat have used the NOAPS transfer for other purposes (and made no NOAPS payments at all in 2003-05), while poorer ones such as Jharkhand and Orissa in the early 2000s ceased to make social pension payments for whole budget years. Even states which have not used the transfer for other purposes frequently have had delays in payments of two-six months, as reports of states to the Supreme Court Commissioners in 2005 indicate for states such as Bihar, Jharkhand, West Bengal and Manipur.

Absence of uniform targeting criteria

Unlike many middle or higher income countries, most South Asian countries do not use a uniform and well performing targeting criteria to target the poor. In the Maldives, the targeting of benefits is undertaken using ad hoc eligibility criteria, use of petitions, and lack of program information for those poor living some distance from Male' or an atoll capital. Sri Lanka uses a community based system where households are selected for eligibility for Samurdhi based on their level of income at the community level and community based ranking; however rigorous selection criteria are lacking. While Samurdhi Development Officers (Niyamakass) select the poor in most areas using for example household characteristics such as quality of housing and

household assets as a means to identify the poor, no specific method was established as to how this should be done, and much was left to Niyamakas' discretion. In Bangladesh, targeting criteria are not uniform and programs use different criteria for targeting benefits. Programs such as VGD, VGF, and Old Age Allowance target income poverty but use different sets of criteria. The starting point of how targeting is done is a guideline prepared by the implementing ministry, which sets the targeting criteria, the total number of beneficiaries (including upper limits on the number of male and female beneficiaries), the distribution by district or union parishads (UP), and the amount and duration of transfer per beneficiary.

Usually the criteria include income level, asset, and household structure, and demographic features. Based on such criteria, local bodies (UP), in consultation with other local agencies and communities, identify beneficiaries. India does have uniform criteria that identify households as 'Below the Poverty Line' for targeting benefits. However, this method has not proved to be very effective in reaching the poor. In contrast, in India's NOAPS, targeting rules can sometimes be applied too strictly. For example, Karnataka and Rajasthan studies on social pensions found that a high proportion of social pension beneficiaries did not qualify according to a literal application of all the exclusion rules, despite the fact that they were considerably poorer than average. Pakistan has recently adopted a national targeting formula — a first in the region — based on a proxy means test — for its new national safety net program. However, both Zakat and Bait-ul-Mal target the 'deserving needy' and poor, but no objective targeting tool is used, and the lack of an operational definition of poverty or targeting mechanism leaves eligibility decisions in the hands of the chairmen and members of the local Zakat committees or of local authorities in the case of Bait-ul-Mal. In the case of workfare programs, targeting to the poor has proved to be effective when wages are set below market wage as this allows self-selection of the poor into the program (Ravallion, 2006). However, when wages are then raised, for example, as a result of political reasons or to meet labor laws, program targeting can be compromised.

Weak administrative/governance systems

Aside from a national targeting criteria, most countries lack modern administrative and targeting systems for safety net programs. Thus,

transparent enrollment processes, eligibility determination systems, well governed and timely benefit payment systems are largely absent. Most programs still rely on paper based record keeping. Modern MIS systems, including beneficiary registries and payment records are non-existent. Control and accountability of cash transfers including, e.g. spot checks, operational and financial audits, grievance control mechanisms are also weak or lacking. Finally the use of monitoring and evaluation of programs to feed policy formulation is virtually absent.

Many programs rely on a large number of intermediaries involved in the delivery system programs, which reduces efficiency and increases opportunities for leakage. In Bangladesh for example, the funds allocated for the VGD program flow through four separate layers before they reach the IGVD beneficiaries in the form of food. In addition, VGD and other food transfer programs depend on the public food distribution system, with food being loaded and unloaded at a number of points before finally being delivered to beneficiaries. However, even PESP, a cash based system involves a large number of intermediaries involved in selecting students, disbursing stipends, and monitoring the program. Leakages from programs show a strong correlation with the number of intermediaries in the transfer program. In Bangladesh, leakage of the FFW program has been estimated at 26 percent, FFE about 16-20 percent. Interestingly, the removal of intermediaries, e.g. the ban on contractors under NREGA appears to help to reduce leakage.

Programs also suffer from the weak capacity of local governments or representatives to implement and oversee the program. District offices in Pakistan receive 10,000 applicants on a regular basis but have been staffed with one PBM officer, one data-entry operator and a few support personnel. The location of program offices is also limited. In Pakistan, Zakat has extensive field presence, but program offices tend to be located in relatively better-off municipalities, making it difficult for those living in the most remote and often poorest areas to access Zakat. In Bangladesh, local government capacity to implement safety net programs is weak, although the Government is making efforts to improve their effectiveness in service delivery. In India, the role of panchayats in improving the accountability of safety nets remains to be seen. Aside from local governments and panchayats, the role of communities and civil society in promoting more effective poverty reduction outcomes from spending has not been fully tapped.

In India, there is greater acceptability of the role of communities and other stakeholders to engage in improving accountability of SP systems, through reforms such as the Right to Information Act, and program specific, such as the anticipated role of social audits in NREGA, and new roles for community groups such as self help groups (SHGs) in delivery of some social protection services (e.g., running Fair Price Shops). However, the success of these actions is yet to be seen. There is likely to be a lot of pressure on Panchayats from various political and administrative actors at the local level not interested in promoting greater accountability in program delivery.

Poor staffing, weak administration, lack of oversight and poor controls on payments also mean that obtaining benefit payments can be onerous for beneficiaries. Zakat and PBM's clients face long response time for payment activation. While 20 percent of all applicants received their first payment within a month of their application, 50 percent had to wait one-six months and eight percent had waited more than a year. One in 10 households had difficulty getting their funds. Beneficiaries on average made 1.6 visits to the payment center to obtain funds; one in 20 had to go three times or more. One in 10 beneficiaries of the FSP program in Pakistan declared to have paid a bribe to get their benefit at some point, with bribes averaging 10 percent of the transfer. The same situation prevails in for availing PDS benefits in India. The Fair Price Shops (or FPS) in many areas do not open for more than two-three days in a month, and card holders are not allowed to lift their quota of previous months. While this is improving in a number of states with transfer of FPS to PRIs, SHG and cooperatives, SFC and Departmental officials in many states exercise very weak oversight of the system.

Eligibility determination can also prove difficult. For example, in the NOAPs in India, basic documentary requirements for proving eligibility such as birth certificates, are often not available to beneficiaries or are very demanding in terms of time and sometimes are costly to obtain. Survey and field work reveal that proof of eligibility is often cited as a burdensome process by potential beneficiaries, e.g., with almost half of current social pension beneficiaries in Rajasthan reporting difficulties in documents and procedures in the application process, and a third of those who may have otherwise applied citing complex procedures as the main reason for not doing so. The status of beneficiaries is not kept up-to-date and once in the system beneficiaries continue to stay on program rolls. For example, in India

evidence from some states indicates that elderly pensioners continue to “receive” transfers after death, or are otherwise untraceable. A survey in Delhi for example found around 6.5 percent of NOAPS “beneficiaries” were dead, and a further 17 percent untraceable. In the more detailed exercise conducted for Karnataka, around six percent of elderly and widow pension records were found to be likely duplicates (with wide variation across taluks), and nine percent of pensioners could not be traced due to movement or death.

Despite these major structural problems, there are attempts to improve program administration. Pakistan has separated the enrollment, eligibility determination and payment process to reduce governance problems during the targeting process. The MIS systems are being developed and strong controls on the enrollment and payment processes are being instituted, including grievance mechanisms. Sri Lanka is developing a modern information system to implement the Samurdhi program. India has also initiated reforms of its safety net system. The southern states as usual have led the way on many reforms intended to address the issues above, and increasingly even poorer states — notably MP and Orissa — have introduced changes in policies and implementation mechanisms to address the problems of PDS. India’s new NREG scheme has eliminated private contractors to reduce governance issues in the new scheme. Bangladesh’s Ministry of Food and Disaster Management commissioned a review of the performance of the new 100 day employment program and is considering options to improve its performance. Improvements in business processes, such as payment of beneficiaries through banking and postal systems, with adequate controls, and innovations in use of ICT, such as the use of smart cards or mobile banking can improve safety net delivery.

Safety nets to cope with shocks

South Asian countries have responded to protecting the poor as a result of natural disasters and the recent economic crisis largely by instituting new short term or permanent programs. During the recent earthquake, Pakistan provided cash transfers for a short duration to affected populations. Given the large populations involved and limited resources, transfers were targeted to the poorest affected groups. While the transfers were well targeted — there were few grievances or complaints — developing and implementing a new emergency transfer scheme in

difficult geographic setting, meant that the first transfers reached affected households in six months after the earthquake. In the Maldives, the response was quicker as transfers were not targeted, but differentiated by the amount of property damage sustained by households, and eligibility was open to all families whose homes were damaged by the tsunami. The program covered 63,000 beneficiaries and disbursed approximately Rs. 50 million. In late 2004 and early 2005, the Sri Lankan government, aided by multilateral agencies, launched several Tsunami relief initiatives to prevent chronic poverty and help restoring the livelihoods of the affected population. The main programs included cash transfers and the provision of loans and grants for microenterprises via microfinance institutions and numerous public works projects.

In response to the recent economic crisis, Pakistan in the fall of 2008 established a new national safety net system, the Benazir Income Support Program, to help households cope with the adverse social impact of the crisis. This program is intended to be the national safety net program, will eventually replace the Bait-ul-Mal FSP program, and will be the main platform for delivering rationalized safety nets for the country. It is also proposed that the program will be expanded to assist households affected by disasters.

Given its extensive safety net programs and considerable experience in protecting affected populations during natural disasters, Bangladesh has mainly expanded existing programs to help disaster affected households cope with poverty. However, to address the recent food crisis, the Government of Bangladesh instituted a new 100 day Employment program in 2008 (despite the existence of other workfare programs in the country). The program entitles eligible individuals to work or to receive unemployment benefits for 100 days a year. To address poverty in urban areas, Bangladesh also set up Open Market Sales (OMS) outlets in urban areas which sold rice at subsidized rates to self-target the poor. Other countries also scaled up poverty alleviation programs. Nepal has expanded its public workfare program during the recent food crisis, while Afghanistan has relied on donor financed programs, such as the WFP to help respond to disasters.

With few exceptions, the impact of the programs in helping households cope with the crisis are unknown. Initial results from the incidence of the OMS program in Bangladesh indicates that while many urban poor claimed they were affected by the crisis benefited

(relative to those who were only mildly affected), nearly two thirds of the urban population who were adversely affected by the poor crisis did not avail the subsidized grain. The evaluation of the first phase of Bangladesh's 100-day program is also encouraging. While administrative problems exist and remain to be tackled (e.g. selection of better works, need to reduce delays in fund release to sites, and works selection), the program has a high coverage of the poor.

Developing new short term or permanent programs to address the crisis may be needed if existing programs are not able to reach the poor. However, given that new systems are difficult to establish and cannot immediately deliver benefits, it is most effective to have an existing well functioning safety net system that can be expanded to the poor. For example, Latin American and Eastern European countries with existing safety net programs have been able to expeditiously expand safety net programs to protect the poor affected by the recent food, financial and fiscal crises.

3.5 POLICY OPTIONS

While economic growth will be the main driver of poverty reduction in the region, this Chapter suggests that social protection instruments, including safety net programs have a very important role to play in South Asia, both to protect households against chronic poverty and transient poverty — a result of the high incidence of aggregate and idiosyncratic shocks that affect households in the region. As the above sections demonstrate, these shocks can have major adverse impacts on current consumption and poverty, and together with idiosyncratic shocks (e.g. health, unemployment) can also negatively impact human capital outcomes, compromising the future welfare of South Asian populations. All the more so, given that a large share of South Asia's population lives close to the poverty line, so that small changes in income have a large adverse impact on poverty rates. Global evidence suggests that countries with effective safety net programs in place are better able help households avoid the adverse impacts of chronic poverty and shocks. These programs can also help governments make difficult structural changes that are essential for growth, and if suitably designed, can also help the poorest beneficiary households graduate from poverty status.

Past economic growth, which has been accompanied by growing inequality, and the recent food, financial and fuel crises have combined

to make safety nets an important development priority in the region. Not surprisingly, safety net spending has increased in many countries in South Asia. Many countries have expanded old programs or initiated new programs. However, despite the increases in spending, the coverage of these programs is low, and combined with weak administration and poor targeting efficiency, both at the household and spatial level, imply that many of the poorest households are excluded from any assistance. Thus, there is considerable scope for improving the effectiveness of current programs in reaching the poor both under normal conditions but also in times of disasters. Some of the areas for improvement suggested by the analysis presented in this Chapter are noted below:

- Adequate levels and efficiency of fiscal spending: An effective program requires adequate resources, but these resources also need to be well targeted to the poor. South Asian countries spend from none (Bhutan and Afghanistan), or very little resources on safety nets (Maldives and Nepal) to almost the regional (Pakistan) or the middle income norm (India, and, most recently, Bangladesh). In some countries, safety net spending has been declining (Sri Lanka). In countries with no or declining spending on safety nets, policy makers may consider the development of efficient safety nets to address chronic poverty and shocks. Afghanistan, for example, is developing and pilot testing safety nets suited to a conflict based and low income environment. In countries such as India, Bangladesh, Pakistan, the efficiency of spending, rather than its level will be the main challenge. In Sri Lanka, it may be important to contain the decline in spending and improve the efficiency of spending to the poor. Improving the efficiency of public expenditures on safety nets, through e.g. better targeting and administration, will ensure that scarce fiscal resources will provide adequate benefits and reach a larger number poor.
- Countries can improve the governance of safety net programs by investing in modern administration systems for their effective implementation. Improving the efficiency of public spending on safety nets, including program governance, within existing budget envelopes would benefit from greater attention to design and administration of programs. Developing a modern safety net system involves improvements in design: targeting methods and modalities (household/regions), eligibility determination

processes, monitoring and verification of claims, public information and outreach, payment systems, but also strengthening the capacity for program implementation and oversight, both at the central and local levels. This could be achieved by investing in staff, equipment, and monitoring systems, financial controls/spot checks and audits. The use of IT in identification (smart cards) and payment systems (e.g. mobile banking) is particularly promising. Efforts to improve program administration are already underway in several countries, e.g. India (e.g. NREG) and Pakistan (BISP), and in Bangladesh (100 Day Workfare program), Sri Lanka (Samurdhi), and will need to be strengthened and considered by other countries.

- Improving the effectiveness of targeting systems is one of the key areas for strengthening program governance. South Asian countries do not have unified and transparent targeting criteria for reaching the poor, limiting the effectiveness of programs to reach their intended target groups. While there is no blue-print for the 'right' targeting system, several different types of targeting systems are possible — and systems can be either national or regional and can differ by program. Transparent targeting systems, together with strong implementation of these criteria (with the measures noted above) would be an important element to ensure that public safety net programs reach the poor. Transparent targeting criteria, underpinned by an effective targeting and administrative system (see above) would help countries improve targeting and coverage even within the existing fiscal envelope and strengthen program governance. Given the diversity of targeting criteria, it will also be important to pilot and evaluate the impact of alternative targeting methods prior to assessing their performance and selecting the main criteria to be used to target the poor.
- The need to move from *ad-hoc* overlapping safety net programs to a safety net system is closely associated with the political economy of reforms. In most cases, the overlapping schemes in the region (in Bangladesh, India, Pakistan and Nepal) are the result of the desire of each new Government at both the federal/central and provincial/state levels to initiate safety net (or other social protection programs) that are distinct from those of the previous government. In most countries, once the program is in place, scant attention is paid to its implementation and

evaluation to ensure that it reaches the poor. The use of a 'program' vs. systems based approach to safety nets and social protection systems as a whole will take time to change.

- In several South Asian countries, a particular challenge will be to expand coverage of safety nets to urban areas. Safety net expansion to urban areas is difficult even in middle income countries given difficulty of administering benefits to mobile urban populations, but will be challenging in South Asia as well. However, the large migrations of populations to urban areas, on-going and expected in the future, and the adverse social impacts of urban poverty, mean that the expansion of coverage of safety nets to urban areas will be very important. All the more so as countries with many programs, such as India and Bangladesh, only cover rural areas.
- The lack of an overall coordinating authority constrains a coherent approach to poverty-targeted programs. As a first step, the development of an integrated social protection strategy (e.g. as in the case of Pakistan), adopted by the Prime Minister or President or suitably high public official, and supported by a wide swath of stakeholders including various Federal/Central agencies, provincial and local governments, parliamentarians, academics and civil society stakeholders, may help countries prioritize and coordinate programs. The strategy should be a living document — updated to reflect emerging conditions and priorities; and should be supported by an implementation plan, outlining the roles of various agencies, both federal/central and state/provincial local in supporting the overall social protection program. The development of a unified safety net or social protection authority charged with developing and implementing programs may also be a solution. This authority can take several forms: unified safety net authority to implement all its main cash transfer programs, as well as other SP programs (e.g. employment and social insurance)-the case of Pakistan or have as its objective mainly program coordination (as in UP, India).
- The widespread lack of graduation strategies and exit provisions calls attention to the question of how to move from safety nets to safety ladders. Many countries are concerned that safety net programs beneficiaries may become dependent on benefits. For example, households can avoid looking for work, even if it

becomes available, if benefits are too high, or lobby for the program to continue even if it has served out its purpose. Households eligible for the program may also continue to stay on benefit rolls, because they have no further options to improve their income status. To address work disincentives, countries use several methods, e.g. keep benefits lower than wages, terminate benefits after a certain period of time, or re-certify beneficiaries to assess whether they are still in poverty status. To help households move out of poverty in this generation, households are sometimes provided training, access to micro finance, or saving possibilities. Programs such as IGVGD, which link safety nets with longer run income generation opportunities, illustrate the benefits of investing in these linkages. In higher income countries with large formal sectors, active labor market programs are an important component of a social protection system — and help individuals laid off from work access programs that include job counseling/information, training/retraining. To reduce inter-generational poverty, many countries link children from poor households that benefit from safety net programs to education and health services. There is growing international evidence that these programs not only help reduce poverty, but also improve attendance and enrolment of children, and sometimes nutritional outcomes, particularly for the poorest households. In South Asia, developing these programs—often called conditional cash transfers — also need to pay attention to supply side constraints which may stymie children from availing program benefits.

- Develop greater flexibility to respond to community-wide shocks. In South Asia, insurance against catastrophic risks is often not available, and safety net programs have to be rolled out to compensate households for loss of income experienced from natural disasters or other economic shocks. Countries sometimes expand existing programs, e.g. Bangladesh and India, develop new permanent programs, e.g. Pakistan, Bangladesh, or resort to temporary safety nets that are not linked to existing safety net programs. However, often existing programs lack coverage, or are not geared to expand in response to shocks. However, new programs (both permanent and temporary) tend to have long start up times. International evidence shows that having an effective safety net system in place, with built in flexibility to expand in times of shocks are critical for effectively protecting

the poor in these circumstances. Therefore, South Asia will need to ensure that safety net programs are designed from the start to respond to emergencies. Ensuring this flexibility exists will also help ensure that programs do not proliferate in times of disasters or crisis. Other than providing built-in flexibility in standard targeted cash transfer programs, one possibility is developing workfare programs, used widely in India and Bangladesh, and also Sri Lanka in time of the Tsunami, that are able to expand in times of disasters.

- As countries grow, demand for risk mitigation/insurance programs will increase and social insurance will become a major gap. In middle and higher income countries, social protection, together with health and education is an essential element in a wider package of human development services provided to the population. The importance of social protection programs, in terms of coverage and corresponding increases as income levels rise. In general, safety net spending stays at two-three percent of GDP, while spending on social insurance increases sharply with income. Thus, going forward for South Asia, a major challenge will be to develop innovative models of social insurance, particularly for the informal sector. For example, the Indian Government's RSBY program provides subsidized insurance to households who fall below the official poverty line, with households able to choose between public and private health providers. Interest in insurance programs, including for the informal sector is growing in the region, with Pakistan, Nepal and Maldives interested in providing health, pension, and coverage to the informal sector. As in the case of conditional cash transfers, ensuring high quality supply of services, e.g. health, can constrain the provision of insurance. While unemployment insurance also does not exist in South Asia, workfare programs are a means of providing 'unemployment' insurance to the poor, combining immediate poverty relief with income smoothing.
- Finally, it is critical that existing programs are monitored and evaluated to assess their performance, and new programs are piloted and evaluated to inform social protection policy design. As with other programs, it is very important for policy makers to use evidence on program performance to inform safety net policy decisions. This will allow policy makers to phase out programs that are not working well or fine tune program design

to make existing programs more effective in reaching their goals. Piloting and evaluating pilot interventions prior to scaling up programs will also help ensure that resources are spent on programs that have been tested as being viable in reaching their target groups. Improving the monitoring and evaluation of programs, particularly their ability to target, is critical for improving the governance and accountability of programs as well.

References

- Ahmed, A., A. Quisumbing, and J. Hoddinott. 2007. "Relative efficacy of food and cash transfers in improving food security and livelihoods of the ultra-poor in Bangladesh." Project report prepared for the U.N. World Food Programme. Washington, D.C.: International Food Policy Research Institute.
- Ajwad, M.I. 2007. "Performance of Social Safety Net Programs in Uttar Pradesh." Social Protection Discussion Paper No. 0714. The World Bank.
- de Janvry, A., F. Finan, E. Sadoulet and R. Vakis. 2006. "Can Conditional Cash Transfers Serve as Safety Nets in Keeping Children at School and from Working when Exposed to Shocks?" *Journal of Development Economics* 79, pp. 349-73.
- Dev, Mahendra Smdev, S. Mahendra Dev, and Ajit Ranade. 2007. "Cash Versus Food for Relief Programs: Further Observations." Unpublished paper, New Delhi.
- Glinskaya, E. 2000. "An Empirical Evaluation of Samurdhi Program." Background Paper for Sri Lanka Poverty Assessment Report No. 22-535-CE.
- Jalan, Jyotsna, and Rinku Murgai. 2006. *An Effective "Targeting Shortcut"? Analysis of the BPL Scheme in Reaching the Poor*. World Bank, New Delhi.
- Mansuri, G., Healy, A. 2002. "Vulnerability prediction in rural Pakistan." Paper presented at IFPRI-World Bank Conference on Risk and Vulnerability: Estimation and Policy Implications, Washington, DC, September 23-24. <http://www.ifpri.org/events/conferences/2002/092302/mansuri.pdf>
- Ravallion, Martin. 2006. "Transfers and Safety Nets in Poor Countries: Revisiting the Trade-Offs and Policy Options," in Abhijit Banerjee, Roland Benabou and Dilip Mookerjee (eds) *Understanding Poverty*, Oxford University Press.
- Sahn, David E. and Harold Alderman. 1996. "The Effect of Food Subsidies on Labor Supply in Sri Lanka." *Economic Development and Cultural Change*.

- Tilakaratna, Ganga and Upali Wickramasinghe. 2005. "Microfinance in Sri Lanka. A Household level Analysis of Outreach and Impact on Poverty." *Poverty and Social Welfare Studies* No. 7. Institute of Policy Studies of Sri Lanka.
- World Bank, The. 2002a. "Bangladesh — Poverty in Bangladesh: Building on Progress." Poverty Reduction and Economic Management Sector Unit, South Asia Region. Report No. 24299-BD.
- . 2002b. "Pakistan Poverty Assessment — Poverty in Pakistan: Vulnerabilities, Social Gaps, and Rural Dynamics." Poverty Reduction and Economic Management Sector Unit, South Asia Region. Report No. 24296-PAK.
- . 2002c. "Poverty and Vulnerability in South Asia." Human Development Unit, South Asia.
- . 2005a. "Afghanistan Poverty, Vulnerability and Social Protection: An Initial Assessment." Human Development Unit, South Asia Region. Report No. 29694-AF.
- . 2005b. "South Asia: Pension Schemes for the Formal Sector. Emerging Challenges and Opportunities for Reform." Finance and Private Sector Development Unit, South Asia Region.
- . 2006a. "Social Safety Nets in Bangladesh: An Assessment." Human Development Unit, South Asia. Bangladesh Development Series Paper No. 9.
- . 2006b. "Nepal Resilience amidst Conflict an Assessment of Poverty in Nepal, 1995–96 and 2003–04." Poverty Reduction and Economic Management Sector Unit, South Asia Region. Report No. 34834-NP.
- . 2006c. "Social Protection in the Maldives: Options for Reforming Pensions and Safety Nets." Human Development Unit, South Asia. Report No. 34818-MV.
- . 2007a. "Pakistan: Social Protection in Pakistan. Managing Household Risks and Vulnerability." Human Development Unit, South Asia. Report No. 35472-PK.
- . 2007b. "Social Protection for a Changing India." Human Development Unit, South Asia. Draft.
- . 2007c. "Sri Lanka Poverty Assessment: Engendering Growth with Equity: Opportunities and Challenges." Poverty Reduction and Economic Management Sector Unit, South Asia Region. Report No. 36568-LK.
- . 2007d. "Sri Lanka: Strengthening Social Protection." Human Development Unit, South Asia. Report No. 38107-LK.

- . 2008a. "Afghanistan: Public Sector Pension Scheme: from Crisis Management to Comprehensive Reform Strategy." Human Development Unit, South Asia Region. Report No. 44408-AF.
- . 2008b. "Bangladesh: Poverty Assessment for Bangladesh. Creating Opportunities and Bridging the East-West Divide." Poverty Reduction, Economic Management, Finance and Private Sector Development Sector Unit, South Asia Region. Report No. 44321-BD.
- . 2008c. "Nepal: Extended Social Protection Note." Human Development Unit, South Asia Region. Draft.

Part 2: Country Perspectives

Chapter 4

Food Crisis and Its Impact on Afghanistan's National Security

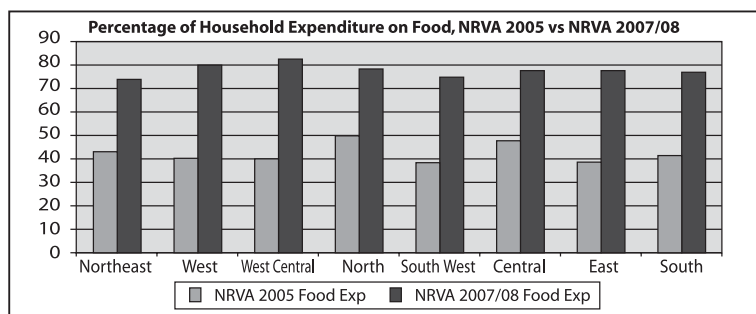
Mir Haroun

Afghanistan, like the rest of the world, has faced considerable increases in food prices, in particular during the period 2007-2008. Poor countries such as Afghanistan especially suffer from increasing food prices since food constitutes a much higher share of a household's budget in developing countries as opposed to developed countries. Thus, even a small increase in food prices could seriously affect poverty reduction efforts and therefore the Millennium Development Goals.

In the last two decades global food surpluses shaped national policies towards agriculture and overall food production. According to the World Bank and FAO, the current shift of equilibrium in supply and demand in the global food market is not due to a temporary shift in supply but rather to different economic and non-economic factors that permanently affect food demand. For example, one study notes that "the increases in grain prices are not caused by short-term supply disruptions, as is the normal case, and it will likely take several years for supplies to increase to rebuild stocks and allow prices to fall" (Mitchell, 2008). Indeed, inflation in energy prices, global warming, fast economic growth in China, India and other emerging economies, and continuing population growth in the developing world are among the key factors which will put further upward pressure on food prices.

In the context of mid to long-term price increases in the global food market, the government of Afghanistan will need to take necessary measures to tackle increasing food prices and shortages which have potentiality to destabilize society. The latest National Risk and Vulnerability Assessment (NRVA) conducted for 2007/08 contains information regarding household expenditure on food in different

regions of Afghanistan. Between 70 to 80 percent of the average Afghan household budget is dedicated to food purchases (Fig. 4.1).



Source: Afghanistan Food Monitoring Bulletin.

Fig. 4.1: Share of food in total household expenditure, by region

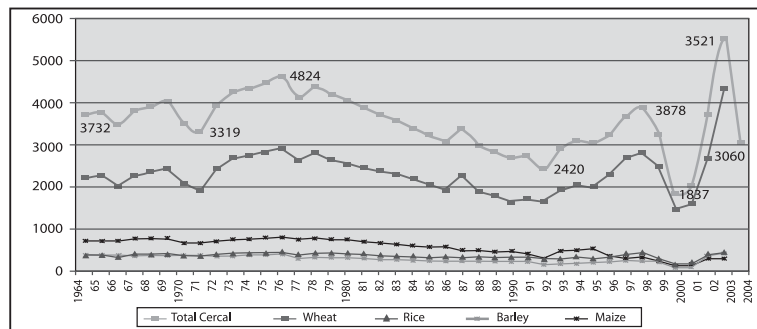
Even a small increase of five to 10 percent in food prices could drain a household's budget and provide fertile ground for social unrest.

4.1 BACKGROUND OF FOOD PRODUCTION IN AFGHANISTAN

A large portion of the national labor force is engaged in the primary sector and concentrated in traditional agriculture. Prior to the military conflict which started some 30 years ago, Afghanistan was self-sufficient in food production with the exception of periods of severe drought. According to government sources, before the start of the conflict the agricultural sector generated 70 percent of total GDP and 80 percent of Afghans found employment in this sector. Today agriculture constitutes 34 percent of GDP but 70 percent of Afghans remain employed in this sector. The share of agriculture in Afghanistan's GDP has decreased not only because of the conflict but also because of an influx of aid money and expenses by coalition forces in the country. Today the service sector, which increased due to this influx of aid and drug money, constitutes 40 percent of Afghan GDP.

There are two types of agricultural production in Afghanistan: irrigated and rain fed production. The total land available for agriculture use in Afghanistan is 7.5 million hectares (MH) but only 2.6 MH is irrigated land and the remaining land is cultivated under rain fed conditions.

During the last three decades, due to civil conflict, food production in Afghanistan has significantly decreased, despite significant increases in population and therefore demand. Fig. 4.2 shows cereal production in Afghanistan over the last four decades.



Source: Afghanistan Food Ministry Bulletin.

Fig. 4.2: Cereal production in the past 40 years

In the 1970s Afghanistan's wheat production was significantly higher than in the 1990s. According to the latest census conducted in 1978, in the 1970s the Afghan population was estimated in the range of 12 million while today the population is estimated at 29 million in the CIA Fact Book.

However, despite the urgent need for investment in agriculture, few resources have been dedicated to this crucial sector of the Afghan economy. For example, out of the total of about US\$15 billion of development and reconstruction money disbursed since 2001, only about \$300 million has been invested in the agricultural sector, which is insignificant because the majority of farmlands have been seriously damaged due to three decades of conflict and consecutive years of drought.

On June 12, 2008, during the Paris Conference on Afghanistan, President Karzai reiterated his government's commitment to invest close to US\$2 billion in the agricultural sector over the next few years. In addition, in the newly agreed Afghanistan National Development Strategy (ANDS), agricultural development is emphasized as the most important pillar on which the national development strategy must rest.

4.2 MAIN REASONS BEHIND THE INCREASE IN FOOD PRICES IN AFGHANISTAN

The sudden rise in food prices since 2007 is an international phenomenon that is affecting the entire world. However, its impact is especially severe in poor and war-torn countries such as Afghanistan. The increase in food prices in Afghanistan has been exceptionally high relative to other countries in South and Central Asia. In addition, there are numerous internal factors which have negatively affected Afghanistan's domestic food production putting further upward pressure on domestic food prices.

Global factors

Wheat is the staple food in Afghanistan and has exhibited significant price inflation. The price of food, in the context of a global and free market economy, is determined by supply and demand in the market. But in many South Asian countries the equilibrium in the food market is heavily influenced by government intervention whose main objective is to protect consumers from sudden and steep price increases. However, this is much less the case in Afghanistan and also not in the US. In the case of the US, which is a major exporter of grains in the global market, the local price of wheat has increased from close to US\$2 to \$6 a bushel during the period 2007-2008. This represents a 200 percent increase, which is much higher than the rate of inflation in the US for the same period, which has been below four percent. Afghanistan faced similar price increases as we will see later in this Chapter.

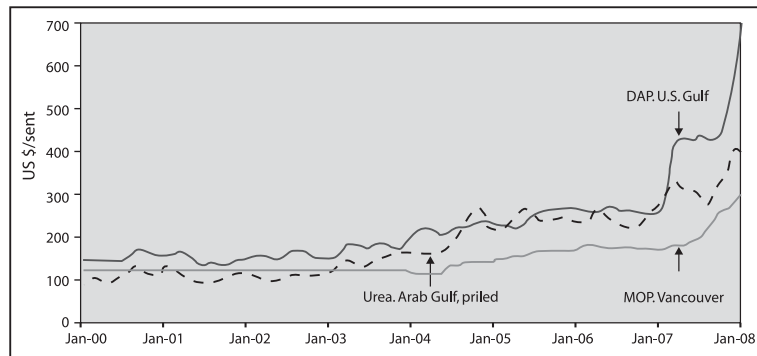
There are a number of factors that exert a significant impact on global food prices.

Energy price: The price of energy is a major factor which has affected food prices in the global market because of increasing costs of production and transportation of food.

Despite the temporary drop in energy prices due to the recent financial crisis, recent predictions about the global energy sector suggest that the prices of oil and natural gas will stay at elevated levels in the coming years. Afghanistan, as a landlocked and mountainous country, without a network of railroads, will bear the heavy brunt of increasing costs of food transportation by road, which will further push upwards food prices in the domestic market.

In addition, increases in fossil fuel prices have also caused a rise in the price of fertilizers. In the case of poor countries such as

Afghanistan, many farmers cannot afford to buy more expensive fertilizers which negatively impacts on their levels of production, further exacerbating the domestic impact of the global food crisis. Fig. 4.3 shows average monthly fertilizer prices from 2000 to 2008.



Source: Mongabay, 2008.

Fig. 4.3: Price of fertilizers in the USA, Canada, and Arab Gulf countries

From June 2004 to June 2008, the global market prices of Di Ammonium Phosphate (DAP), Urea and Muriate of Potash, increased by more than 200 percent. While fertilizers have remained subsidized in many developing countries, in Afghanistan all such subsidies had been removed long before the food and energy crises.

Food used for energy: The increasing energy price has pushed some countries to look for substitutes to traditional fossil fuels by focusing on bio-fuels. For example, there is an increasing trend in the production of bio-fuels from traditional staple crops in many parts of the world but especially in the US and Europe. Table 4.1 shows this expansion in major European countries.

In many OECD countries energy constitutes a larger share in total household expenditure than food. However, in poor countries such as Afghanistan the bulk of a household's budget is dedicated to food purchases. In addition, in most developed countries farmers receive huge subsidies from their governments to shift from crops for food to crops for energy. As a result, there is less food available for export to poor countries, despite their steady and high demand for food.

Table 4.1 Increase in production of bio-ethanol in Europe (GWh)

No	Country	2006	2005
1	Germany	2,554	978
2	Spain	2,382	1,796
3	France	1,482	853
4	Sweden	830	907
5	Italy	759	47
6	Poland	711	379
7	Hungary	201	207
8	Lithuania	107	47
9	Netherlands	89	47
10	Czech Republic	89	0
11	Latvia	71	71
12	Finland	0	77
27	Total	9,274	5,411

Source: Biopact, 2007.

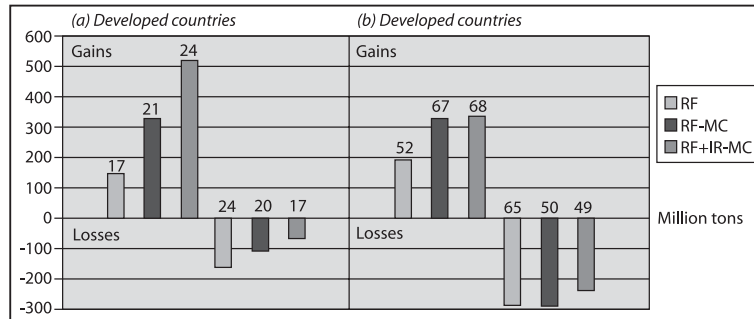
Note: 100 l bio-ethanol = 79,62 kg, 1 MT bio-ethanol = 0,64 toe.

Climate change: There is now sufficient scientific evidence that suggests that global warming and climate change will impact adversely on global agricultural output. Climate change is expected to adversely affect total world food production, even if food production in some countries may actually increase. The chart below shows the projected impact of climate change on food production.

The data show that production losses are considerable in poor developing countries. This is illustrated by the case of India: “Yes, we have a problem,” admits Abhijit Sen, economist and Planning Commission member, “and it can be starkly put in the following way: roughly around 2004-05, our per capita food-grain production was back to the 1970s level” (quoted in *Times of India*, March 31 2008).

The severity of climate change in South Asian countries, which are among the most populated countries in the world, will create additional limitations on food production in the region. Thus, an increasing number of people will be forced to depend on subsidized food or on international humanitarian aid.

Economic growth in emerging countries: The very robust economic growth in emerging countries in general and China in particular is having a profound impact on the global food market. In China the



Source: International Institute for Applied Systems Analysis, 2008.

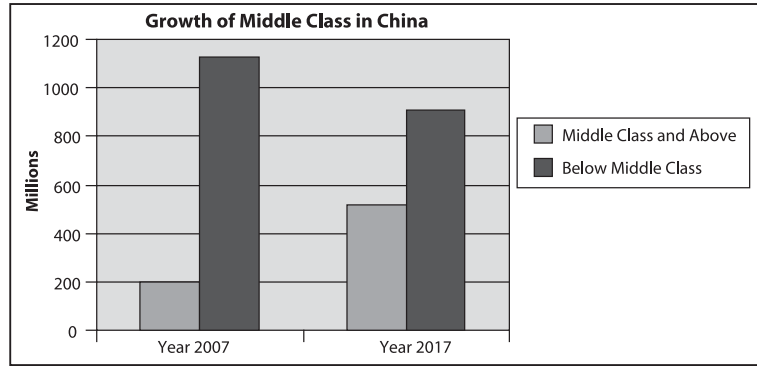
Note: RF = rain-fed cropping, RF_MC = rain-fed multiple cropping, RF + IR_MC = rain-fed and/or irrigated multiple cropping. Numbers refer to Number of countries affected.

Fig. 4.4: Impact of climate change on cereal production potential on currently cultivated land

size of the middle class is growing fast, which has resulted in hundreds of millions of people changing their preferences away from a traditional diet toward a more diversified diet. A growing middle class in China and India have access to diverse choice of food and their growing affluence has resulted in increased levels of wastage akin the habits of the similar socio-economic group in OECD countries. Official surveys indicate that every year more than 350 billion pounds (160 billion kg) of edible food is available for human consumption in the US. Of that total, nearly 100 billion pounds (45 billion kg)—including fresh vegetables, fruits, milk, and grain products are lost to waste by retailers, restaurants, and consumers (Rizvi, 2004).

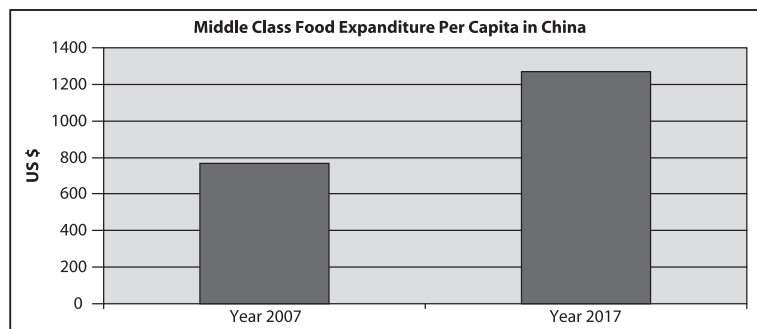
Figure 4.5 shows the growth of the middle class in China. The definition of a middle class person in China today is a person that has a college degree and an approximate monthly income of about \$700.

The demand for food in China will continue to grow in the next several years (Fig. 4.6) which in turn will exert an increasing upward pressure on global food prices. If the Chinese middle class increasingly adopts a Western lifestyle, diet and consumption patterns, it will become harder for poor countries such as Afghanistan to have access to affordable food in regional and international markets.



Source: Kearney, 2007.

Fig. 4.5: Projection of growth of middle class in China 2007-2017

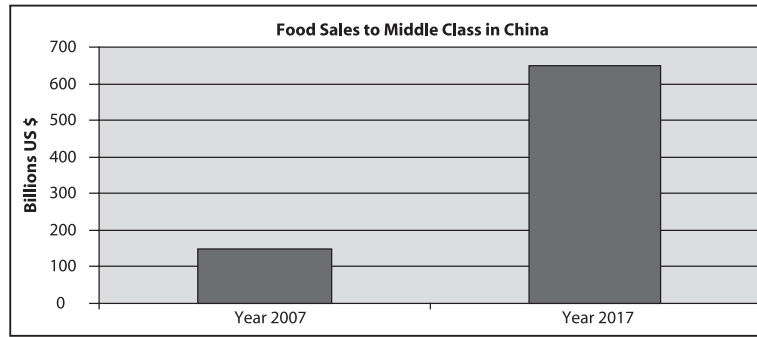


Source: Kearney, 2007.

Fig. 4.6: Projection of per capita food expenditure by Chinese middle class in 2017

The amount of food sold to China will increase considerably during the next several years. A twofold increase in food expenditure per capita in China alone, which will have close to 500 million citizens in its middle class by 2017, would create enormous strains on the global food market. Fig. 4.7 shows that China will spend more than US\$600 billion on food by 2017.

In addition, China will reach a limit in its ability to increase its own production because of natural constraints and limitations in



Source: Kearney, 2007.

Fig. 4.7: Projection of food sales to Chinese middle class by 2017

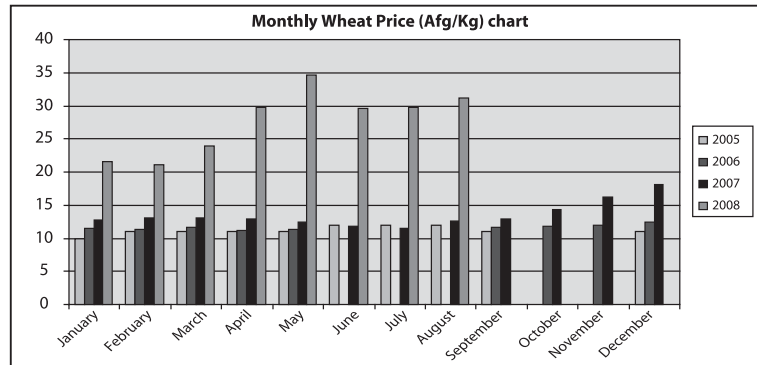
availability of land and other natural resources. The demand for food in China is a key contributing factor that will cause food prices to rise over the next couple of decades. Similar conditions are developing in India both in terms of size, income, and consumption pattern of the middle class.

Restrictions by Iran and Pakistan on food exports to Afghanistan: Since 2006, Iran has been increasing its strategic food reserves by heavily importing food from regional neighbors such as Pakistan, Uzbekistan, and Kazakhstan. Consequently, Iran's actions have put an upward pressure on the price of food in the regional market where Afghanistan normally purchases its food. In addition, Afghanistan had been importing foodstuff such as wheat from Iran. But in the last couple of years Iran has imposed an export tax on main foodstuffs, which makes it very expensive for Afghan traders to import wheat and other food items from Iran. According to an article published in The Washington Post on May 11, 2008, Iran has even imposed a \$300,000 export tax on WFP, forcing it to abandon the purchase of 3,000 metric tons of cereals for western Afghanistan.

In addition, Pakistan had imposed export restrictions to Afghanistan on some of major food items and even introduced a ban on wheat exports. There are no official data available on the impact of these export restrictions to Afghanistan because of illegal trade and smuggling between the two countries. However, there is wide consensus that these restrictions have greatly increased food prices in Afghanistan and the price of wheat in particular.

Domestic factors

Food price inflation in Afghanistan is considerably higher than in other countries in the region. Fig. 4.8 shows the price of wheat in Afghanistan during the past several years.



Source: Ministry of Agriculture, Irrigation and Livestock, unpublished.

Note: One US dollar equals 50 Afg.

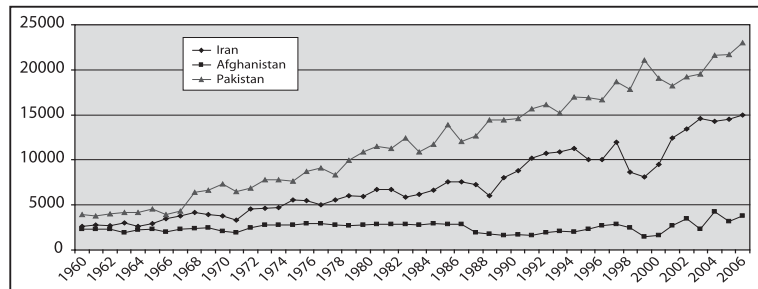
Fig. 4.8: Monthly wheat prices in Afghanistan (Afg/Kg)

In addition to the impact of increasing global food prices on the domestic Afghan market, the latter exhibits numerous imperfections that put upward pressure on the price of food.

Low domestic productivity: During the past three decades, while most developing countries invested in agricultural productivity and increased their domestic production several fold, Afghanistan has seen a reduction in its food production due to continuing military conflicts. For example, Afghanistan's neighbors Iran and Pakistan have increased their agricultural production by more than five times since the early 1960s but Afghanistan's agricultural production has remained constant or even decreased during the same period. Fig. 4.9 shows wheat production in the three countries over time.

Unlike its immediate neighbors, there has been no investment in agricultural productivity improvement during more than three decades in Afghanistan.

The Impact of war: As a result of almost three decades of conflict, a significant part of Afghanistan's farm land and irrigation infrastructure



Source: United States Department of Agriculture (database).

Fig. 4.9: Wheat production in Afghanistan, Iran, and Pakistan from 1980-2006 (1000 MT)

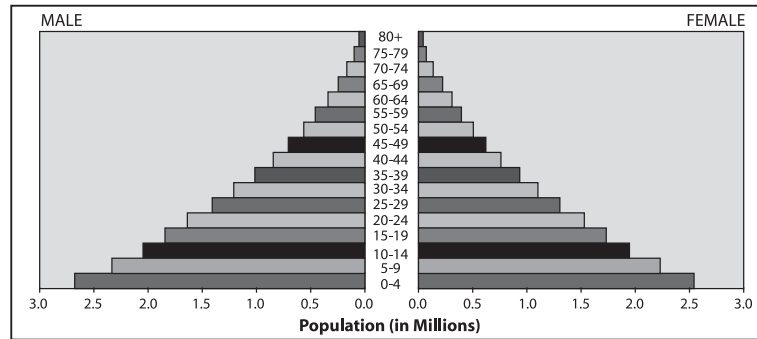
has been destroyed. There are no data available to measure the extent of this destruction. But almost three decades of conflict has left a deep impact on the whole country and particularly in rural areas.

Forced migration of farmers: As a result of the destruction of the economic infrastructure, millions of farmers have left for the relative safety of big cities and neighboring countries (mainly Iran and Pakistan). In fact up to one-third of the total Afghan population was displaced from 1980-90; they either fled the country or moved to big cities within Afghanistan. At the height of the conflict close to three million people migrated to Pakistan and another two million to Iran. In addition, the population of major Afghan cities such as Kabul, Herat, Kandahar, Jalalabad, and Mazar has doubled or tripled. In the early 1970s Kabul's population was estimated at about 500,000 but at the time of the collapse of the communist regime an estimated 2 million people were living in Kabul, and today close to 5 million people are living in the city.

Population growth: The population of Afghanistan has more than doubled from 1978 to 2008, helped by improvements in health care and food donations by the international community. The last census conducted by the Afghanistan government in 1978 estimated the population at 13.9 million. There has been no recent population census conducted in the country but according to the CIA World Fact Book the Afghan population has increased to about 29 million in 2008. The demographic increase in Afghanistan happened at a time when the country faced significant decreases in food production. In addition,

during the period of intensive conflict schools in major parts of the country had been closed and therefore many Afghans grew up without even a basic education. This not only badly impacted productivity because of lack of technological innovation but also may have led to higher population growth than would have been the case if education would have continued its normal course.

Today the population of Afghanistan is very young (Fig. 4.10). Forty percent of Afghans are under 18 years of age and close to 60 percent of the population is younger than 25 years.



Source: US Census Bureau, International Data Base.

Fig. 4.10: Afghanistan population Pyramid: Predicted age and sex distribution in 2010

The current unemployment rate in Afghanistan is estimated at more 40 percent. Many returning refugees from Pakistan and Iran are dwelling in major cities but have been unable to find steady jobs.

In addition, a considerable number of young farmers have migrated to the cities in search of employment and better paid jobs. In 2008 thousands of young farmers, who had been working seasonal jobs, have been converging in the cities because of a lack of jobs in their own provinces due to an exceptional drought that year. For example, in the city of Kabul alone there are close to 50,000 young farmers from the Northern Provinces seeking jobs.

Land fragmentation: A major constraint to agricultural production in Afghanistan is land fragmentation. Agricultural production in Afghanistan is largely based on family labor on relatively small size farms. Large-scale agricultural production never took much foothold

in the country and the Afghan private sector has yet to become interested in industrial agricultural production. In addition, there are no public or private financial institutions which stand ready to provide capital for agricultural investments.

The recent pledges made during the Paris Conference on Afghanistan by a number of Gulf Countries to invest in agricultural production is one possible way to increase agricultural output in Afghanistan and merits further discussion.

Climate change: Afghanistan has significant water resources from melting snow reserves in the high mountains that feed several major rivers and which can be used for agriculture. However, climate change is seriously affecting Afghanistan's agricultural production (2006). According to the latest study on climate change by MercyCorps (2007), Afghanistan is among the most vulnerable countries in the world affected by climate change. During 1998-2007 the mountain snow cover has been below the long-term average each year. Afghanistan has already witnessed the direct impact of climate change through an increasing frequency of droughts. In general in Afghanistan, based on historical observations, regular dry cycles of 15 years are the norm during which one would expect two-three years of drought conditions. In recent years, however, there has been a marked tendency for this drought cycle to occur more frequently than before, and since 1960, the country has experienced drought in 1963-64, 1966-67, 1970-71, 1998-04, 2006 and again in 2008. The situation has been exacerbated by declining rainfall over the same period, and without doubt the drought period 1998-2004 and the 2008 drought were among the worst ever recorded.

During the second quarter of 2006 concern grew following significantly lower snowfall than normal during the winter and a lack of rainfall in much of the country during the critical months of April and May. Mainly because of this, there was a considerable reduction in the yield of wheat. A shortfall of 1.2 million MT of cereals was recorded in 2006, as opposed to the original shortfall projection for 2006 of 500,000 MT.

With water sources drying up, the drought also affected the availability of drinking water, which in certain areas has already forced people to leave their villages and farms.

After several droughts of varying intensities during 1998-2006, large parts of Afghanistan experienced another exceptionally severe drought in 2007-2008, affecting large numbers of people many of whom were still recovering from the severe drought that lasted from 1998-2004.

It is worth bearing in mind that this is the ninth year of drought in the last decade; while 2005 and 2007 were exceptional in that there were good rains, many of the country's coping mechanisms such as underground sources are severely weakened and require several good years of rainfall in order to fully recover.

As an example of the severity of the impact of these climatic occurrences, Afghanistan's livestock numbers have decreased to record levels never seen before even during the heights of military conflict.

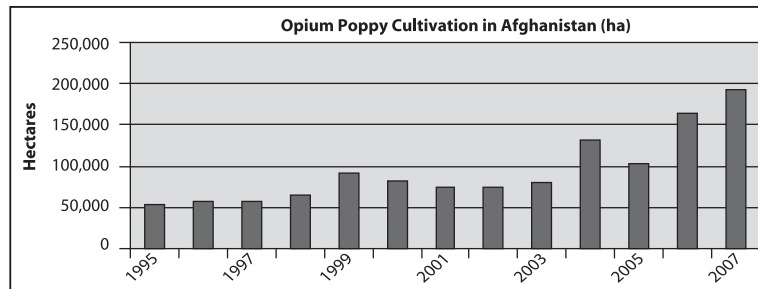
But drought is not the only reason why Afghanistan's agriculture is short of water. Afghanistan uses only about 30 percent of the available water while the remaining flows to neighboring countries such as Pakistan, Iran, Turkmenistan, and Uzbekistan. A lack of water management policies in the country has been the main reason behind this meager use of water in Afghanistan. If the country would have a well-planned water management system, agricultural production could increase by irrigating new lands and increasing crop yields. For example, water from the Amu Daria river has been effectively used in the Central Asian republics of Uzbekistan and Tajikistan but Afghanistan has used only a small amount and only in a traditional way.

Opium poppy replacing traditional crops: Before Afghanistan sank into perpetual conflict in 1979, it had not been the prominent producer of opium among the "Golden Crescent" countries.¹ Iran alone was producing an estimated 600 MT per year of opium gum, Pakistan another 500 MT, and Afghanistan roughly 300 MT (Sadat, 2004). Opium production became more widespread in Afghanistan only after Iran started to curb its production after the Islamic revolution in 1979, and Pakistan introduced the "Hadd Ordinance" during the same year. Today, Afghanistan has become the major producer of opium not only in the region but in the entire world. It churns out an estimated 8200 MT of opium every year — a world market share of over 90 percent.

Indeed, the Soviet invasion of Afghanistan, which was followed by two decades of strife and internal conflict, destroyed Afghanistan's infrastructure and political cohesion, which served as a precursor for the illicit economy of opium production and drug processing to flourish in Afghanistan. According to a UN report, income from opium may have constituted close to half of Afghanistan's GDP in 2007 (UNODC, 2007).

¹ The Golden Crescent is the name given to poppy production in the geographical area shared by Iran, Afghanistan and Pakistan.

Immediately after the terrorist attacks of September 11, 2001 in the US, the world's focus turned back to Afghanistan. Despite the influx of aid money and presence of coalition forces, Afghanistan has become and remained the largest drug producer in the world. The record production of opium in 2007 has alarmed the international community. Currently an estimated 200,000 hectares of fertile land are dedicated to opium poppy instead of traditional food crops such as wheat and maize (Fig. 4.11).



Source: UNODC, 2007.

Fig. 4.11: Opium cultivation in Afghanistan

4.3 MAIN CHARACTERISTICS OF FOOD MARKET IN AFGHANISTAN

The equilibrium in the food market in Afghanistan constantly varies with the vagaries of nature because the Afghan government lacks adequate institutions that are able to predict and handle food shortages. For example, in 2006 the Afghan Ministry of Agriculture, Irrigation and Livestock miscalculated domestic production and therefore the amount of food shortage in the country. They predicted a wheat shortage of 500,000 tons while the real need was in fact close to 2 million tons.

Like many other countries in South Asia, also the Afghan government had been subsidizing food for consumers. However since 2001, Afghanistan entirely depends on the private sector for its food supplies. Traders and business people in Afghanistan are not in a position to function under the norms and standards of a modern market. Market information is generally very poor and not equally available to all actors in the market. As a result many market actors lack the required data to estimate changes in supply and demand

leading to high search costs and sub-optimal functioning of the price mechanism.

Afghan traders mainly import food items from Pakistan for two reasons: first, because transporting food by road from Pakistan is cheaper than from other countries in Central Asia such as Uzbekistan and Kazakhstan; second, the Pakistani authorities provide subsidies for food and fuel to their own citizens. Because of uncontrolled border entry points between Afghanistan and Pakistan and also because of the long history of illegal trade between the two countries, Afghan traders are able to purchase subsidized food items and fuel from markets in Pakistan and import these to the domestic Afghan market at lower prices than those prevailing in the domestic market. In fact, traders who would be willing to import from other regional markets would have difficulties competing with traders importing from Pakistan because of these price differences, and this situation has led to a monopoly situation in the Afghan food market.

In the absence of data on domestic production and demand for imports, it is difficult for the private sector to adopt an import policy based on demand projections. Due to a lack of modernization the structure of the food market in Afghanistan has remained traditional and obsolete. Therefore, a handful of domestic traders with good links to government officials and easy access to markets in Pakistan have established a monopoly in the Afghan market. The number of major suppliers to the food market remains at approximately 20 persons.

The monopoly situation in the domestic food market in Afghanistan has never been a natural one; instead it has been encouraged during the years of conflict. First, the communist regime helped a number of traders create this monopoly because they had close ties to the regime and were willing to supply Kabul, which remained surrounded by Mujahedin forces. Private traders were able to supply Kabul in exchange for a tax paid to Mujahidin commanders who controlled major highways leading to Kabul. After the fall of the communist regime the same practice was continued by the successive regimes that were in power during the past two decades. Only traders who had close ties with the central government in Kabul received valuable support from the Afghan authorities such as monetary and administrative assistance.

Even today, credit to traders is selective and access to government tenders is restricted. The widespread culture of corruption and nepotism has also had its impact on business and trade. Despite advocating

free and competitive markets, there are many artificial barriers to trade in Afghanistan including licensing requirements, credit, and other administrative barriers that prevent free entry in the lucrative food market.

4.4 AN ILLUSTRATION: THE MARKET FOR WHEAT

The food market in Afghanistan has specific characteristics that substantially differ from global and regional markets such as limited access to international markets, excessive transportation costs, lack of security, lack of storage, etc. In order to analyze these important characteristics of the food market in Afghanistan, wheat can be used as an example. Average consumption of wheat flour in Afghanistan is 0.47 Kg per day compared to average per capita daily world consumption of 0.183 kg.

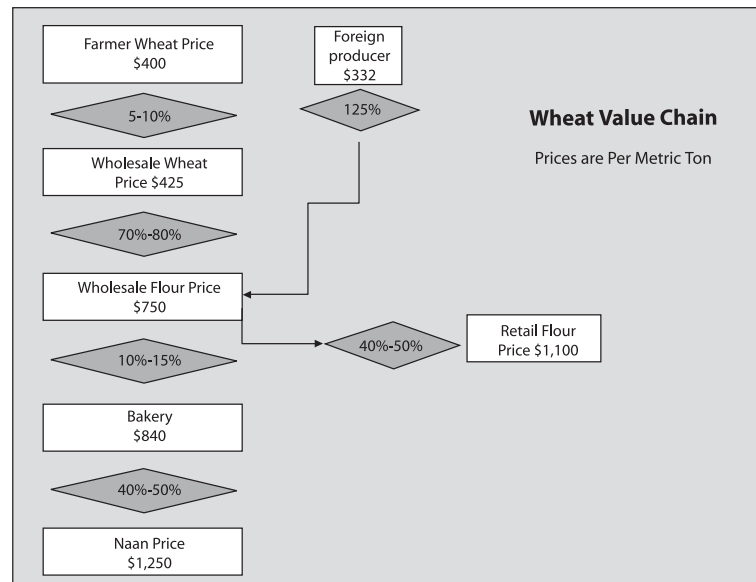
On average Afghanistan needs to import close to 20 percent of its wheat flour consumption each year (Table 4.2). In addition, Afghanistan has relied mainly on Pakistan for the import of wheat and wheat flour because Afghan traders prefer to source from the Pakistan market where it is a subsidized item. Therefore, wheat imported from Pakistan is cheaper relative to imports from other neighboring countries in the region.

Table 4.2 Wheat flour balance, 2008

	Unit	Flour (tons)
Av daily Consumption/capita	kg/day	0.47
Population		35,000,000
Total Consumption	MT	6,004,250
Produced Domestically	MT	4,600,000
WFP	MT	210,000
Market Volume of Imports	MT	1,194,250

Source: Ministry of Agriculture, unpublished data.

In addition, because of limited milling capacity in Afghanistan, traders mostly import flour from the Pakistani market rather than wheat grain. Afghanistan has only five mills that together have a capacity of milling between 500-600 MT a day, whereas daily demand for wheat flour in Afghanistan is more than 5000 MT. Figure 4.12 illustrates the substantial differences between the wholesale wheat and flour prices as well as between wholesale and retail flour prices.

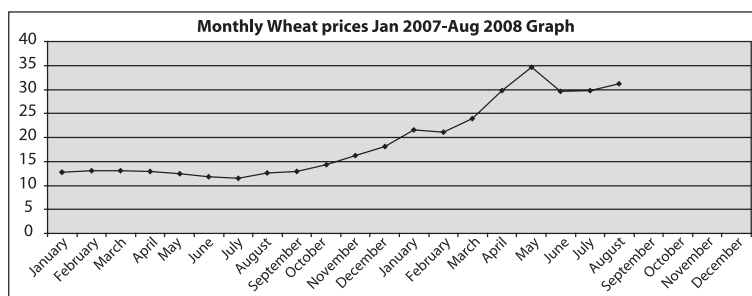


Source: Author's estimates based on information obtained from traders.

Fig. 4.12: Wheat value chain

Traders in Afghanistan have limited storage capacity such as silos; they therefore have to import flour from the Pakistani market on a daily basis in order to be able to meet the demand in Afghanistan's big cities. The lack of storage capacity at the farm, community or even district level hurts farmers because they have to bring their harvest all at once into the market, and the sudden increase in supply reduces the wheat price in the national market for a short period of time and therefore lowers farmers' profits. Figure 4.13 shows that during harvest time, which spans the months of June, July, and August, the price of wheat declines and before increasing again after the harvest ends.

Also, the growing deterioration of security in Afghanistan is affecting daily imports of flour from Pakistan. Because of insecurity on the major highways, traders have to pay 'taxes' to both insurgents and government security forces, which have control over some portion of the highways. The costs of bribing these forces are significant and according to some traders the extra cost for a truck to reach Kabul could be of US\$400 to \$500.



Source: Ministry of Agriculture.

Fig. 4.13: Monthly wheat prices, January 2007-August 2008

Price stability in the markets for wheat, rice, and cooking oil, which constitute the basis of the Afghan diet, is very important. The import of these items mainly from Pakistan makes the Afghan markets for food vulnerable to market disequilibrium in Pakistan itself. The main victims of such inefficiencies in the Afghan food market are consumers and small farmers. Consumers are paying much higher prices relative to prices that would prevail in well developed markets. Farmers are badly affected by the manipulation of prices by traders because they are unable to store their products due to lack of storage facilities. In addition, the Afghan government lacks proper institutions to regulate the market and remove inefficiencies.

4.5 CONSEQUENCES OF HIGH FOOD PRICES

Aside from the economic impact such as increased rates of poverty, inflation, balance of payment deficit etc, higher food prices may cause a further deterioration in the political and security situation given the fragile situation of Afghanistan as a country still mired in conflict. Indeed, food shortage will have a direct impact on national security.

The consequences of food shortages and inflation in food prices are multiple but the following factors pose a particular threat from a national security point of view:

- a. People in remote provinces and districts, which might be cut off from the rest of the country by snowfall will face severe famine risk. Loss of population due to shortage of food would

have grave consequences both for the Afghan authorities and coalition forces present in the country.

- b. Increasing numbers of farmers will move to big cities in order to seek employment. In fact this increase of population in the big cities will create more challenges for local authorities. A number of poor quarters of Kabul city have already turned into ghettos and slums for the poor.
- c. Significant numbers of farmers are leaving for neighboring countries (especially Pakistan and Iran) in search of employment opportunities. In fact Afghan refugees in neighboring countries already have become a source of tension between Afghanistan and its neighbors. Moreover young farmers may be recruited by terrorist organizations and insurgent groups which have established links in the neighboring countries.
- d. Higher food prices would deplete the meager household budget of 90 percent of Afghans and further intensify the cycle of poverty in the country.
- e. Higher food prices will deteriorate Afghanistan's balance of payments. In fact in the absence of own resources, the Afghan government will have to seek more aid money from the international community.
- f. Ultimately, Afghanistan's National Development Strategy (ANDS) would be seriously undermined. An increased cycle of poverty will greatly compromise most development and reconstruction projects in Afghanistan.

One positive consequence of the increase in food prices may be a reduction in opium poppy cultivation. However, there is a need to carefully monitor opium production over the next several years in order to fully understand the substitution mechanism between opium poppy and other crops.

Finally, a significant number of Afghans tended to attribute the recent food and oil price hikes to the failure of the Afghan government to control prices. This perception is erroneous. While the government certainly has an important role to play in improving the functioning of domestic markets, it has no control over global markets. The Afghan government, given the particular stage of security vulnerability and political weakness, should introduce appropriate policies to correct market imperfections as part of a deliberate and wider effort to better

prepare the country for unexpected future crises due to food shortages. For example, in the winter of 2008 the Afghan authorities were powerless to provide even minimum assistance to people in remote and isolated villages who had been cut off from big cities by heavy snow and exceptionally cold weather. As a result of such events, the government lost almost all of its remaining legitimacy when many stranded people and their livestock died because humanitarian assistance was unable to reach them on time. According to official estimates more than 1,000 people and close to 316,000 animals died due to the cold during the harsh 2008 winter.

The harsh winter in 2008 was followed by a severe drought affecting most of the country causing a significant part of the 2008 wheat harvest to fail. The next and final section of this Chapter contains a number of suggestions for the government and its development partners that could help prevent such a catastrophe in the future.

4.6 CONCLUSIONS AND POLICY RECOMMENDATIONS

While a typical role for a government is to help provide solutions for nationwide problems that are in the public's best interest, the government in Afghanistan has been seriously weakened during the years of conflict and has been unable to exercise this role. In most instances, the Afghan people had to rely on themselves or on the international community for their survival. Since the collapse of the Taliban regime in 2001, the international community has had a direct responsibility in Afghanistan because of the presence of the coalition forces in the country. In fact reducing poverty through adequate development and reconstruction projects has become a measurable goal for both the Afghan authorities and the international community in Afghanistan.

The domestic price of most food items in Afghanistan, wheat in particular, greatly exceeds prices in the global market. The Afghan government may be able to drastically reduce the price of food in the country by improving domestic agricultural production; removing inefficiencies through adequate market reforms; and introduction and subsequent enforcement of an accompanying legislative and regulatory framework.

Improving domestic agricultural production and productivity: The Afghan government and its development partners must set clear policies which directly or indirectly deal with improving agricultural production

and productivity in the country. A coordinated framework with clearly defined responsibilities is required among key ministries such as the Ministries of Agriculture, Irrigation and Livestock; Rural Rehabilitation and Development; and Energy and Water; Finance; and the local provincial authorities. Meanwhile, development partners also need to coordinate their development work in a concerted manner among themselves as well as with the Afghan central and local authorities.

In fact there exists tremendous potential to increase agricultural output in Afghanistan. For example, of the total of 7.5 million hectares of potentially arable land, only 2.6 million hectares is utilized and the remaining 5 million hectares remain barren. This is mainly due to lack of water facilities; water management is a key factor in the improvement of agricultural output in Afghanistan given that the country is currently making use of only 30 percent of its potential water availability.

Removing market inefficiencies: The food market in Afghanistan is not efficient and is plagued by many imperfections. This is well illustrated by the fact that a small group of traders has been able to establish a monopoly in the food market. In addition, information is not equally available to all participants in the market. Corruption, nepotism, and an inefficient bureaucracy have created many barriers to free market entry. By removing inefficiencies and other distortions, and developing a well structured food market that allows competitive price setting and easy entry, prices can be expected to decrease to levels found in regional markets in neighboring countries.

Recommendations

In the short term, the Afghan government and the international community should consider the following actions:

1. International multilateral agencies should assist the UN and NGOs with additional funds to better prepare Afghanistan for adverse weather conditions which may strike anytime.
2. The Afghan authorities should make an appeal to friendly countries with surplus food to assist in times of adverse weather and poor harvests.
3. Expand the production and distribution of improved wheat seeds to farmers. This activity could be financed from government's regular budget for agriculture supplemented by donor funds.

In the mid to long-term the Afghan government should consider following measures:

1. **Improvements in the agricultural production base:** The government needs to reform and modernize agriculture production in Afghanistan through appropriate public investments and sound agricultural and food policies. For example, crop yields of Afghan farmers are about 50 percent below yields in neighboring and other countries in the region. Currently, Afghanistan's food production is based on smallholder farming, where farmers have little financial resources and lack access to modern technologies to increase production. A number of newly established micro-finance institutions have emerged in the country but the scope of their engagement with smallholder farm households remains insignificant. Also, technical and vocational agricultural schools, which could play an important role in the process of modernization of Afghan agriculture, are non-existent except for a few in a limited number of larger cities. The Afghan government should concentrate its resources and efforts in the three following directions in order to improve agricultural production:
 - Develop an efficient and effective water management investment policy including rebuilding existing irrigation canals and constructing new ones, which would help transform barren lands into productive areas. The Afghan government could use the new pledges made for agricultural development during the Paris Conference in June 2008 to finance a number of such vital water management projects.
 - Attract domestic and international investment in the agricultural sector as part of an agricultural modernization effort with special focus on improving crop yields of Afghan farmers. During the Paris Conference a number of Arab Gulf countries have promised to invest in industrial agriculture production in Afghanistan. Therefore the Afghan government should follow up on their recent pledges and find socially acceptable ways to involve such investors in the modernization of the agricultural sector.
 - Expand the scale of microcredit in rural Afghanistan in order to facilitate farmer's access to affordable rural financial products. The example of Grameen Bank in Bangladesh could be a guide for Afghanistan.

2. Remove inefficiencies and facilitate entry in food markets

- Create legislation and regulations to improve the necessary conditions for the implementation of efficient, transparent and competitive food markets including free entry into these markets. The Afghan government should work closely with Parliament to enact new legislation and regulations including business laws and appropriate legislation to enforce property rights.
- Invest in storage and milling capacity. The Afghan government could attract a number of private investors if adequate incentives and protection for investors are provided.
- Assist Afghan traders to access regional and global food markets and in this way remove Afghanistan's exclusive dependence on Pakistan's market. The Afghan Chamber of Commerce and a number of international development partners could assist Afghan traders in trade diversification beyond neighboring and regional countries and transfer knowledge regarding modern methods and practices of international trade.
- Finally, the Afghan authorities should work to improve security on major highways, reduce corruption, and modernize and improve central administration institutions that regulate trade in Afghanistan.

References

- Afghanistan Food Monitoring Bulletin: www.mrrd.gov.af/nss-vau/FFood%20Security%20Monitoring%20Bulletin%205th%20rounds%20final.pdf
- Kearney, A.T. 2007. "Food Safety in China" http://atkearney.com/res/shared/pdf/Food_Safety_In_China.pdf
- Biopact. 2007. Bioenergy Pact between Europe and Africa: <http://biopact.com/2007/07/study-eu-biogas-production-grew-136-in.html>
- International Institute for Applied Systems Analysis (IIASA). 2008. "Global Agro-Ecological Assessment for Agriculture in the 21st Century." <http://www.iiasa.ac.at/Research/LUC/Papers/gaea.pdf> March 31, 2008.
- MercyCorps. 2007. *Climate Challenges: Bridging the Knowledge Gap*. MercyCorps. The University of Edinburgh. Edinburgh.

- Mitchell, Don. 2008. "Global Food Prices, Country Policy Responses and World Bank Support." Washington, DC. World Bank
- Rizvi, Haider. 2004. "US: Food Waste and Hunger Exist Side by Side." <http://www.organicconsumers.org/corp/hunger090604.cfm>
- Sadat, Mir Hekmatullah. 2004. Chasing the Dragon in the Golden Crescent: Story of Afghan Opium. Lemar Aftaab [afghanmagazine.com](http://www.afghanmagazine.com). http://www.afghanmagazine.com/2004_08/articles/hsadat.shtml.
- Times of India*. 2008. "India Headed for Food Shortage." March 31, 2008. New Delhi.
- United States Department of Agriculture. "World Wheat Production." <http://indexmundi.com/agriculture/?country=af&commodity=wheat&graph=production>; and Agriculture Baseline Projections: US Crops 2008-2017 <http://www.ers.usda.gov/Briefing/Baseline/crops.htm>
- UNODC (United Nations Office on Drugs and Crime). 2007. Afghanistan Opium Survey, 2007. Government of Afghanistan, Ministry of Counter Narcotics. Kabul.

Chapter 5

The 2007-08 Surge in Rice Prices: The Case of Bangladesh

Mahabub Hossain

5.1 INTRODUCTION

In recent times the world has witnessed an unprecedented increase in the price of major staple foods, including rice and wheat. As a net importer of food grains, Bangladesh has been seriously affected by the surge in prices especially that of rice, the dominant food staple in the country, whose consumer price increased by 65 percent during 2007-08. The food inflation led to considerable erosion in the purchasing power of the poor who spend over half of their income on rice, and this concurrently eroded the ability of Bangladesh to achieve the MDG targets on reducing hunger and poverty.

This Chapter is organized as follows: Section 5.2 provides a background behind the surge in rice prices highlighting Bangladesh's achievement in production and availability of food grains. Section 5.3 compares the national and international trends in the price of rice. Section 5.4 describes the government's response to the crisis. Section 5.5 provides the conclusion positing the question on the travails of low prices.

5.2 PRODUCTION AND AVAILABILITY OF FOODGRAINS

Bangladesh reached the land frontier in the 1960s with the Agricultural Censuses reports highlighting a continuous decline in arable land of about one percent per year due to alternative use for housing, industrialization and infrastructure development. Bangladesh has made good progress in reducing population growth. The 2001 population census recorded a growth of 1.4 percent per year compared to about 3.0 percent in the 1970s but due to the expanded base, the population

is still growing by about 2 million per year. This has translated into greater emphasis to increase rice production by 0.5 million metric tons (MT) every year.

Bangladesh has made commendable progress in increasing production of staple food grains despite extreme scarcity of land resources. The rice area has increased only marginally from 9.6 million ha in 1970-72 to 10.5 million ha in 2007-08, but production has more than doubled from 15.6 to 40 million tons of paddy rice over this period. Progress has particularly been notable since the late 1980s when the government introduced a policy of gradual deregulation of markets and liberalization of trade in agricultural machinery and inputs. The change in policies promoted massive private sector investment in ground water irrigation that fueled rapid diffusion of high-yielding rice varieties. The growth in rice production accelerated from 2.2 to 3 percent per year covering the periods from 1970-1990 and 1990-2007 respectively. Over 80 percent of the growth in production came from the increase in yield due to technological progress.

Most of the increase in production and productivity has been on account of an expansion of *boro* rice, a fully irrigated crop grown during the dry season. Traditionally, *boro* rice used to be grown in low-lying lands in depressed basins. The area expanded from less than 1 million ha in 1969-70 to 2.55 million ha in 1990-91 and further to 4.26 million ha in 2006-07. The yield of *boro* rice increased marginally from 3.2 to 3.7 t/ha during 1970-91, but then substantially to 5.45 t/ha by 2006-07. The recent increase in yield was due to gradual adoption of second generation modern varieties (MVs), BRRI *dhan* 28 and 29, which have 1- 1.5 t/ha yield advantage over the first generation MVs. However, the adoption of these varieties has almost reached the ceiling. The expansion of *boro* area and increases in yield contributed to the nearly 85 percent increase in rice production during the 1980-2006 period.

Boro rice is a highly input intensive crop. During cultivation the crop requires nearly double the volume of fertilizer required for other crops; almost 20 percent of the input cost is expended for irrigation; the rising cost of diesel to operate the shallow tube wells along with rising cost of non-nitrogen fertilizer has led to overall significant rise in the unit cost of production of *boro* rice. This has made *boro* less profitable than *aman* rice, the traditional monsoon-season rainfed crop.

In order to ameliorate the financial short-fall farmers began adopting hybrid rice in the *boro* season to further increase yields and reduce the unit cost of production. This has resulted in a yield advan-

tage of 1.5 tons/ha compared to inbred rice varieties. But the adoption of rice varieties has been slow due to the inferior grain quality, lower market prices and higher cost of seeds, which is 10 times the cost of inbred rice varieties.

Rice grown in the monsoon season, *aman*, accounted for nearly 60 percent of the rice production in the 1970s. But due to the slow yield growth in *aman* rice relative to *boro* rice, the average yield for modern varieties (MVs) in farmers' fields is about 4 metric tons (MT)/ha in the *aman* season compared to 5.5 MT/ha in the *boro* season. Yields of *aman* rice are lower because of high cloud cover and low sunshine which affect photosynthesis. The high humidity in the monsoon season also exposes the *aman* plant to insect and disease pressure. The monsoon is becoming more erratic in recent years due to climate change, exposing the crop to submergence from heavy rains, droughts and floods causing substantial yield reduction. Due to the high risk of cultivation, subsistence farmers are discouraged to adopt input-intensive improved varieties and use inputs in sub-optimal amounts further leading to low yields. Development and diffusion of MVs tolerant to submergence, drought and soil salinity would be needed to further increase rice production in the *aman* season.

Food availability is augmented by domestic production and imports of wheat, a relatively minor food staple in Bangladesh. At the time of independence wheat consumption was low with a level of production of only 65,000 MT per year. The production of wheat expanded rapidly since the mid-1970s due to: (a) availability of high yielding MVs and (b) low cost of irrigation. Wheat production reached a peak of about 1.84 million MT in 1999-2000. Since then, wheat has given away to hybrid maize, another new crop in Bangladesh which is more profitable and suitable for Bangladesh's agro-ecological conditions. Maize also has the advantage of an assured market due the rising demand for feed in the fast growing poultry industry. Wheat production had decreased to only 740,000 MT by 2005-06.

Bangladesh used to get substantial amounts of food aid from developed countries in the form of wheat. The availability of food aid fluctuated from 1.5 to 2 million MT during the 1970s and 1980s, mostly in the form of wheat. Food aid has declined substantially since the early 1990s in response to the critique that food aid depresses domestic food prices and provides disincentives to farmers to increase production. The private sector has however started importing wheat to meet the growing demand from urban consumers which has partly

offset the availability from the decline in food aid. In recent years, the import of wheat by the private sector has reached about 1.8 million MT per year.

Despite the favorable trend in domestic production, Bangladesh is not yet self-sufficient in cereal grains. Besides the import of wheat, the deficit in domestic production is met through commercial imports of rice. Rice imports increase substantially in years following poor harvests resulting from floods or droughts. Bangladesh imported over 3 million MT of rice and wheat during 1987-88, 1998-99, and 2004-05; all these periods followed devastating floods. Rice imports received a boost from a change in government policy in 1993 by the removal of the ban on rice and wheat imports by the private sector. In 1998-99 imports of rice by the private sector reached a peak at 2.6 million MT (nearly 10 percent of domestic consumption), and fluctuated widely from year to year depending on the size of the rice harvest.

The availability and access of food grains, major elements of food security have improved substantially over the last two decades. In 2005, the level of rice consumption was 477 grams (gm) per person per day in rural areas and 389 gm in urban areas, approaching the level required for balanced nutrition. The gap in rice intake between the bottom 20 percent and the top 20 percent of consumers on the income scale was only marginal. Indeed, in urban areas per capita rice consumption has declined during 1991-2005 indicating that the middle and high income groups have started reducing rice consumption in favor of a more diversified diet for balanced nutrition. Nevertheless average per capita rice consumption in Bangladesh remains one of the highest in Asia.

5.3 TREND IN RICE PRICES

The domestic price of rice in Bangladesh has traditionally exceeded world market prices. During the first oil crisis in the early 1970s, the world experienced a similar surge in food prices. The price of rice in the world market increased from US\$147 per ton in 1972 to \$542 in 1974. The price in the Bangladesh market increased much faster; from \$316 in 1972 to \$826 in 1974. The rapid surge in prices led to severe food insecurity culminating into famine during late 1974. A positive supply response however allowed prices to come down to around \$250 per ton in 1976, both in the global and the Bangladesh markets. Since then the rice price in the world market has been fluctuating at

around \$300 per ton with a cyclical downward trend during the early 1980s and in the late 1990s. The rice market in Bangladesh followed the same trend as in the world market, with prices remaining higher by an average of 40 percent in the 1980s, and by 20 percent during the 1990s. Only in two years — in 1991 and 2001 — was the domestic rice price in Bangladesh on par with the world market price. These are the years when the government declared achievement of self-sufficiency in rice production. The other notable feature of the price trend is that the fluctuation of prices around the trend was less pronounced in Bangladesh than in the world market.

The rice price in the world market reached the bottom at \$174 per MT in 2001. Since then the price has been rising due the slower growth in rice production. As technological progress reached the plateau in the irrigated ecosystem, the major rice growing countries in Asia experienced a drastic decline in rice yield growth. Since the demand for rice continued to grow, the deficit in demand was met by depleting rice stocks. By 2004, global rice stocks reached their lowest levels since the food crisis in the 1970s. This depletion in stock led to an upward movement in prices. The export price (F.O.B) of 25 percent broken rice increased from \$176 2003 to \$305 in 2007 in Thailand, the world's largest exporter of rice. In Vietnam, the second largest rice exporter of Asia, the price increased from \$167 to \$294 within the five year period. In the domestic Bangladesh market the increase in price was relatively moderate, from \$286 to \$323.

Bangladesh remained substantially deficit in food grains when the country experienced the price hike in 2007. Technological progress in the irrigated system was approaching the ceiling with irrigation coverage reaching about two-thirds of cultivated land, and complete adoption of MVs on lands with access to irrigation. The expansion of rice production under the rainfed system was constrained by an unfavorable growing environment, high risk in rice farming due to frequent exposure to natural disasters, and non-availability of varieties tolerant to climatic stress. In 2007, rice deficits in Bangladesh substantially increased due to two successive floods in July and September, and a devastating cyclone that hit the South-western coast in mid-November of the same year. It is estimated that the loss in rice production from these natural disasters reached nearly 2.5 million MT, or 10 percent of domestic consumption.

A loss of similar magnitude also occurred during the devastating flood of 1998 but during that year the private sector was allowed to

meet the deficit by importing rice from across the border in India. At that time India had accumulated substantial stocks of food grains and was eager to offload some of these by encouraging traders to export. The Indian situation with regard to food surplus was different in 2007. Due to frequent natural disasters Indian rice and wheat production had remained almost stagnant since 2001, while demand had been growing due to rapid population growth, particularly in the Eastern Indian states. The stock of food grains depleted quickly and reached a level that affected the operation of the public food grain distribution system. Domestic prices of food grains started increasing and the government became concerned about the food security of the urban and rural poor. The government was importing wheat at a time when the price of wheat was increasing in the world market.

In the backdrop of these developments it made economic sense for India to build up stocks with surplus rice available from commercial farmers in the Punjab and Andhra Pradesh, rather than exporting rice and importing wheat. Further increases in the price of food in the domestic market became a political issue in India with the apprehension that the government might become unpopular during an election year. The government decided to discourage exports by setting an export price above the level prevailing in the world market, which was followed by Thailand and Vietnam. Food importing countries such as the Philippines started panic buying from the world market which fueled further price increase and speculative behavior across the world. The Indian government responded by further raising the minimum price for rice exports, and eventually imposed an outright ban on exports of non-aromatic rice. As a result, within a period of eight months the price of rice in the world market exploded from about \$350 per MT to nearly US\$1000.

The ban on rice exports by India and the rapid increases in rice prices in the world market affected imports by the private sector in Bangladesh. Traders were apprehensive on the profitability of importing rice at such high prices, especially given the government's policy of keeping prices under control through participation in the food market and subsidizing food distribution to low income groups. Traders in Bangladesh began importing small amounts through informal channels from Myanmar where the price was still low. The stock of food grains held by the government decreased to below 500,000 MT due to a number of relief operations in the aftermath of the floods and cyclone. The government of Bangladesh undertook a special agreement with

the Indian government to import 500,000 MT, but this required an extended period for negotiation on the import price. The agreement between the two governments meant the first batch was delivered in April 2008 but the resulting scarcity led to a series of increases in rice prices in the domestic market.

The price of rice in the domestic market increased slowly from Taka 18 to 19 per kg from January to July 2007, but experienced rapid increases reaching Taka 29 by January 2008. During this period the Indian government announced a minimum price for rice exports by the private sector. The rice price in Bangladesh reached its peak at Taka 35 per kg by early April 2008. While the upward trend in prices in the world market continued unabated, it halted in Bangladesh in late April when the *boro* harvest started coming to the market. During the financial year 2007-08, the rate of increase in the rice price was 62 percent.

While adversely affecting the consumer the rise in the price of rice benefited the farmer. The 'farmgate' price of paddy increased from Taka 12 to 18 per kg from June 2007 to January 2008. This provided incentives to farmers to increase rice production through the expansion of sown area and increased adoption of improved varieties including hybrid rice. The increase in the profitability of rice farming led to a bumper *boro* harvest of 17.8 million MT of milled rice in 2008 compared to 15 million MT in 2007. Although the consumers' expectation of a rapid decrease in price due to the favorable supply did not materialize, the bumper *boro* harvest was able to stem the price increase. In July 2008, when the rice price reached its peak in the world market, the retail price in the domestic market in Bangladesh was about 50 percent lower.

Since rice is a major item in the consumer basket, the rapid surge in price contributed to substantial inflationary pressure in the economy. The average annual inflation rate in Bangladesh increased to 10 percent in March 2008 compared to 6.9 percent in March 2007. As food prices rose at a much higher rate than the non-food prices, food inflation stood at 12.9 percent and non-food inflation at 5.6 percent. A report prepared by a private sector think-tank based on current period weights showed a rate of food inflation of about 15 percent in general, and over 20 percent for the poor population.

The inflationary pressure has had an adverse impact on food security through reduced purchasing power and income erosion. Particularly affected were fixed income groups, mainly low-paid government servants

and industrial workers in urban areas. Other low-income groups, such as transport operators and petty traders in the informal market and agricultural laborers were initially adversely affected since they spend almost half of their income on rice. But later they were able to adjust their earnings somewhat through increases in wages and margins. For example, the agricultural wage rate increased from Taka 100 to 130 per day from June 2007 to April 2008. As a result Bangladesh was able to avoid serious food insecurity and famine that many influential civil society personalities apprehended. On the other hand, several studies have shown that the increase in food prices contributed to a set back in achieving the MDG targets for reduction in poverty and malnutrition rates.

5.4 POLICY RESPONSE

The government has taken several fiscal and monetary measures to tackle food price inflation. These include active participation and intervention in the food grain market, expanded operations of the existing safety net programs, and provision of incentives to farmers for increasing rice production.

The government has traditionally been participating in foodgrain marketing in order to reduce price fluctuations and to provide safety nets to food insecure people. The government typically declares a minimum support price for rice and wheat at which it procures grains from the market. It used to import wheat and rice from the world market to build up food stocks with which it operated a public food grain distribution system aimed at providing relief during natural disasters, subsidized food to targeted groups while operating a safety net program for the poor. During the 1980s, the government developed a public storage capacity of nearly 1.8 million MT for this operation. Over time, the government has scaled down these operations through elimination of the rationing system, reducing the size of the public works program, and transferring the responsibility of commercial imports of food grains to the private sector. However, several safety net programs and social protection programs remain in operation, and the government still participates in open market sales at times of abnormally high prices. On the other hand food stocks were reduced from about 1.5 million MT in the 1980s to about 0.6 million MT in recent years. Obviously, the government's capacity to influence the market with such relatively small stocks remains limited.

To ensure food security for the lower income groups who were hard hit by the price hike, the government's main strategy was to increase the allocation of rice and wheat under the public food grain distribution system. Because of limited stocks the government could increase the allocation by only 10 percent during 2007-08 compared to the previous year. The amount allocated during July 2007 to May 2008 was only 1.43 million tons. This amount did not have an impact in the market. The estimated national consumption is about 27 million MT of which 12 million MT is transacted in the market. The government allowed the para-military force to operate open market sales (OMS) of essential commodities including rice at subsidized prices to urban consumers. But also the OMS did not have a significant effect in containing the price rises due to their low amount in relation to demand. The amount sold through OMS was 265,000 MT in 2007-08 compared to 408,000 MT in 2006-07.

Much more effective was the government's proactive policy to boost agricultural production and productivity. The Bangladesh Bank issued a directive to commercial banks to increase disbursement of agricultural credit to meet the working capital needs of small and marginal farmers, particularly targeting areas affected by the floods and cyclone. Many private sector commercial banks (which did not have branches in rural areas) channeled agricultural credit through NGOs engaged in micro-credit operations. The disbursement of agricultural credit increased by nearly 57 percent in 2007-08 compared to 2006-07. The government also maintained subsidy on chemical fertilizers and diesel for irrigation despite the rapid rise in the price of these inputs in the world market. All these measures along with favorable weather contributed to a nearly 18 percent increase in the production of rice during the *boro* season; the latter now accounts for 55 percent of total annual rice production in Bangladesh. The additional production in the *boro* season more than compensated the loss in *aman* production in the previous season.

In view of the apprehension that food prices are likely to remain at high levels during the present fiscal year, the government has decided to scale up the PFDS operation in fiscal 2008-09 and has kept adequate allocation for this purpose in the budget. In an effort to increase public foodgrain stocks, the government aims to procure 1.2 million MT of rice and 300,000 MT of paddy from the domestic market, and also import of wheat from the world market. The procurement price for 2008-09 was fixed at Taka 18 per kg for paddy and Taka 28 for rice.

Although the cost of production of rice has increased substantially due to higher price of fertilizers, irrigation and labor, the paddy price at this level should provide sufficient incentives for farmers to expand production. The government has already procured more than 1.0 million MT of rice from rice millers, but procurement from farmers remains limited.

5.5 CONCLUSIONS

The huge surge in the price of rice in the world market during the period October 2007-April 2008 cannot be explained by purely economic factors alone. A large part of the increase was due to speculative behavior of traders operating in what is traditionally a thin rice market. While the abnormal increase in the price of rice has been a burden for low-income consumers, it has been a boon to the rice farmer who has long suffered from unfavorable terms of trade. Rice farmers in Bangladesh have responded positively by increasing the adoption of improved technologies and by exploiting excess capacity, thereby increasing production despite operating in an unfavorable market for inputs. In the expectation of good harvests in most major rice producing countries, rice prices have already come down substantially in the international market. Bangladesh has experienced successive good harvests in the dry season *boro* and the pre-monsoon *aus* rice, and is expecting a bumper harvest in *aman*. Those who held rice stocks in the expectation of benefiting from further price increases have started releasing their stocks to prevent further losses. But if rice prices would drop abnormally from the pressure of excess supply in the market, it may create the reverse problem of how to provide incentives to farmers to sustain growth in production in future. The familiar cobweb problem points towards the role of public policy in carefully balancing the interests of low-income consumers and farmers.

Chapter 6

Food Prices in India: Trends and Policy Reactions

S. Mahendra Dev

6.1 INTRODUCTION

Over the past few years, global food prices have seen significant increases due to several factors. These increases have raised serious concerns regarding poverty, food and nutrition security in many countries, particularly in developing countries. High food prices have different effects on net sellers and net buyers. However, net buyers are larger in number including all urban poor and a majority of the rural poor. Some of the small producers who have a marketable surplus could become worse off with higher prices. This is because typically a small producer sells the surplus immediately in the post harvest season, when prices are low, and buys food during the lean season (after depleting his own stock) when prices are high. It is a challenge for policy makers to provide remunerative prices for farmers and low prices for consumers. The literature on poverty in India clearly shows that food prices, particularly relative food prices, are one of the most important determinants of poverty. The decline in poverty in India during the period 1999-2005 was faster than that during the period 1993-2000. Lower relative food prices are one of the factors responsible for faster reduction in poverty during the period 1999-2005. Recent increases in food prices are a cause of concern for the Indian poor. In this context, this Chapter examines trends in food prices and policy reactions in India over the past few years.

6.2 TRENDS IN FOOD PRICES

In examining the trends in food prices in India as compared to world food prices, this section begins with trends in all commodities, foodgrains and primary food articles.

Trends in prices of all commodities and food

At the global level, food prices have increased significantly over the past two to three years. FAO's food price index increased more than 80 percent during the period 2005-2008 (Table 6.1). However, India is mostly insulated from the global trends in cereal and food prices (Tables 6.1 and 6.2). The wholesale price index for foodgrains and food articles increased only 20 percent and 18 percent, respectively, over the three year period 2005-2008. In fact, the increase in the price of foodgrains was only 10 percent in the year 2006-07. The price rise in primary food articles (which include food grains) was less than five percent in the year 2007-08 and less than seven percent in first half of 2008-09. Average annual inflation for all commodities in India varied between 4.4 to 5.4 percent during the period 2005-08. However, it increased to over 12 percent during July–September 2008. Compared to an inflation rate of 12 percent for all commodities, the increase in the prices of foodgrains and food articles was less than seven percent.

Table 6.1 Wholesale price indices for food items: World and India

Years/month	Grains (cereals and Pulses)		Food		Fats and Oils	
	World	India	World	India	World	India
2005-06	4.9	5.3	2.8	3.3	-5.0	-5.7
2006-07	21.1	10.2	10.0	5.9	11.1	5.9
2007-08						
April	15.8	8.5	10.5	8.2	40.8	14.0
May	12.6	7.2	9.2	6.5	44.9	13.1
June	18.5	6.5	20.4	4.1	52.3	13.3
July	14.5	7.7	22.0	7.2	52.2	14.7
Aug	22.1	7.3	25.3	6.3	50.0	12.1
Sept	33.9	4.4	32.8	4.2	62.0	10.3
Oct	28.0	2.7	34.0	3.2	69.0	10.0
Nov	23.9	2.2	34.1	2.6	70.2	10.5
Dec	35.8	1.2	37.2	3.2	69.7	8.4
Average	22.8	5.3	25.1	5.1	56.8	11.8

Source: Economic Survey, Ministry of Finance, Government of India.

Table 6.2 Changes in wholesale price indices for all commodities and food in India

Year	All Commodities	Foodgrains	Food Articles
2003-04	5.5	1.1	1.3
2004-05	6.5	0.7	2.6
2005-06	4.4	5.4	4.8
2006-07	5.4	10.2	7.8
2007-08	4.7	4.7	5.5
2008-09			
May	8.9	5.6	5.7
June	11.8	6.0	5.9
July	12.3	6.6	6.0
August	12.6	6.0	6.9
September	12.0	6.7	7.0

Source: Office of the Economic Adviser, Ministry of Commerce and Industry, Government of India.

Trends in prices of wheat and rice

International prices of wheat increased significantly during 2006-2008 although they started declining in the second half of 2008. Wheat prices (US HRW) rose from US\$152 per MT in 2005 to \$412/MT in January-March 2008, an increase of about 170 percent (Table 6.3). Similarly, rice prices (Thailand five percent broken) showed a nearly three-fold increase from \$288/MT in 2005 to \$855/MT in April-June 2008. Rice prices increased by 47 percent during January-March 2008 as compared to the 2007 annual average. Compared to January-March 2008, rice prices increased by 79 percent during April-June 2008.

India is to a large degree insulated from the global impact of high prices of wheat and rice. But this does not mean that increases in the prices of these two commodities in international markets are insignificant for India. Wheat prices in India increased significantly in the year 2006-07 (by about 13 percent) and between 18 percent and 20 percent during October-December 2006. From January 2007 onwards wheat prices started declining again and the annual average increase for 2007-08 was only 4.3 percent (Table 6.4). Wheat prices increased by between five and eight percent during April-September, 2008. Between January 2007 and January 2008, global prices of wheat increased by

Table 6.3 International prices of wheat and rice

Year	Wheat		Rice	
	US HRW in US\$	% change over previous year	Thailand 5% in US\$	% change over previous year
2005	152	--	288	--
2006	192	26.3	304.9	5.9
2007	255.2	32.9	326.4	7.1
Jan-March 2008	411.8	61.4	478.1	46.5
April-June 2008	346.5	--	855.3	78.9
July 2008	328.2	--	731.8	--
August 2008	329.3	--	693.5	--
September 2008	294.5	--	686.3	--

Source: FAOSTAT (various years).

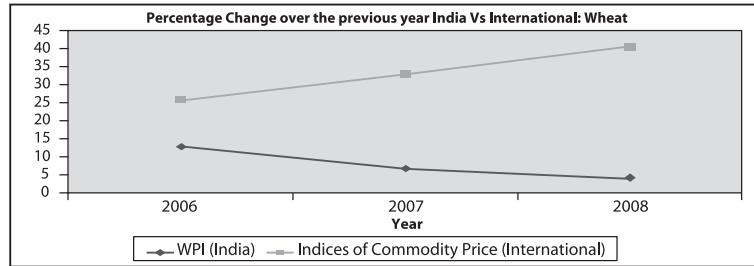
Table 6.4 Trends in prices of wheat and rice in India (% change over previous year/month)

Year	Wheat	Rice
2005-06	4.0	3.8
2006-07	13.0	2.9
2007-08	4.3	6.8
2008-09		
June	7.7	7.6
July	8.2	7.8
August	5.1	6.6
September	7.8	5.3

Source: Office of the Economic Adviser, Ministry of Commerce and Industry, Government of India.

90 per cent. In the case of India, however, wheat prices even declined somewhat (–1.3 percent) during this period (Fig. 6.1).

There are several reasons for the increase in wheat prices during January 2006 to January 2007 in India. Wheat production increased significantly from 66.3 million MT in 1997-98 to 76.4 million MT in 1999-2000. But production more or less plateaued since then and came to 69.4 million MT in 2005-06. The decline in wheat output to 69.4 million MT in 2005-06 coincided with a bad international wheat year. World wheat production was estimated to be around 587 million MT



Source: (1) International prices: FAOSTAT, (2) India: Economic Survey, Ministry of Finance.

Fig. 6.1: Percentage change in wheat prices: India and international

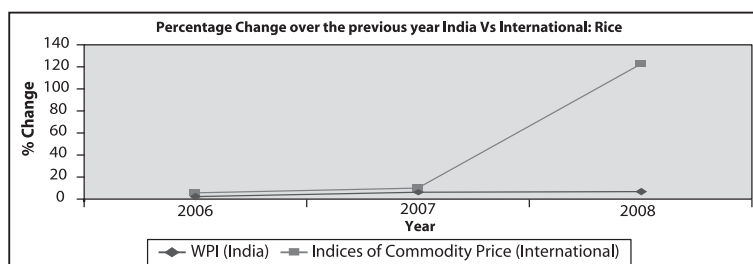
against a total production of 628 million MT in 2004-05 (corresponding to India's agricultural year of 2003-04) leading to sharp increases in international wheat prices. This is one of the reasons for higher wheat prices in India in 2006. In a reaction to the wheat price inflation the Government took several measures to stabilize the price of wheat including: (a) release of adequate quantities under the targeted public distribution system (TPDS) and other welfare schemes, (b) increasing domestic supplies through the Open Market Sales Scheme, (c) ensuring adequate stocks in all regions of the country together with supplementing domestic availability with imports of 5.5 million MT through the State Trading Corporation, and (d) by permitting private traders to import at zero duty. However, higher international prices continued to push the landed cost of the imported wheat in each successive tender (Government of India, 2007).

Because of a perceived supply-demand mismatch and private traders offering wheat at prices above the minimum support price (MSP), Government procurement was lower than the target fixed for 2006-07 (rabi marketing season corresponding to the agricultural year of 2005-06). Public wheat stocks (with the Food Corporation of India (FCI) and State agencies) stood at six million MT in November 2006, much below the 10.3 million MT recorded in October 2005. The upward trend in year-on-year inflation in wheat prices commenced in August 2006 (12 percent) and reached 20 percent in November 2006, before receding to 12 percent in January 2007.

In 2007-08, there was record harvest of wheat of around 78.4 million MT. The Government of India also procured a record amount of

22.6 million MT in that same year. As a result, wheat prices were relatively low in the year 2007-08.

In contrast to wheat, the rice price increase was very low at 2.9 percent in the year 2006-07. Only in 2007-08 did rice prices increase by around seven percent and increases hovered around five to eight percent in 2008-09. The price increase for rice in India was very low compared to global price increases (Fig. 6.2).



Source: (1) International prices: FAOSTAT, (2) India: Economic Survey, Ministry of Finance.

Fig. 6.2: Percentage change in rice prices: India and international

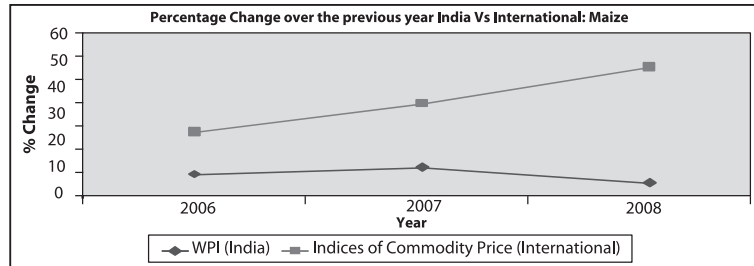
Trends in other commodities

Maize

The international price for maize increased by more than 100 percent in the past two years (Fig. 6.3). In contrast, the price increase in India for maize was only around 10 percent in 2006-07 and declined to five percent in 2007-08. In August-September 2008 maize prices increased by another 10 percent (Table 6.5).

Pulses

The price of pulses in India rose significantly (30 percent) in the year 2006-07 (Table 6.5). The chronic demand-supply imbalance for most pulses in the last decade has continued. With rising incomes, domestic consumption of pulses in India is estimated at 15-16 million MT per year and steadily increasing. Because of relatively small price elasticities, the price of pulses tends to be highly sensitive to shortfalls in supply. Domestic production of pulses, after its peak of 14.9 million MT in 2003-04, decreased to 13.1 million MT in 2004-05 and to 13.4 million MT



Source: (1) International prices: FAOSTAT, (2) India: Economic Survey, Ministry of Finance.

Fig. 6.3: Percentage change in maize prices: India and international

Table 6.5 Percentage changes in wholesale price indices for maize, pulses and oilseeds

Year	Maize	Pulses	Oilseeds	Soybean	Edible Oils	Soybean oil
2005-06	9.1	11.8	-7.6	-16.1	-6.6	-0.5
2006-07	9.8	30.4	5.2	-8.0	5.9	-3.6
2007-08	5.0	-4.3	24.1	29.6	13.3	8.4
2008-09						
April	-1.1	-2.4	18.1	29.1	14.2	14.3
May	1.0	-2.9	19.0	29.5	12.3	8.0
June	4.9	-1.3	21.3	36.5	17.5	10.1
July	4.9	1.4	19.6	40.2	17.4	13.1
August	10.1	5.9	18.4	35.6	--	--
September	9.5	8.9	15.3	30.9	--	--

Source: Ministry of Commerce and Industry, Government of India.

in 2005-06. In the current year, production is estimated to recover to 14.5 million MT. International availability of pulses is limited with few exporters (mainly Australia, Canada, Myanmar and Turkey). During 2005-06, 1.6 million MT of pulses were imported by India as against 1.3 million MT in 2004-05. The price index of pulses decreased in 2007-08 (by 4.3 percent) due to an increase in domestic production and higher imports. The same trend continued in 2008-09 except for the recent increases in August and September 2008.

Oilseeds and edible oils

Compared to other commodities, oilseeds and edible oils recorded higher inflation in 2007-08. The price of oilseeds increased by 24 percent in 2007-08 and remained high in 2008-09 despite a slight decline (Table 6.5). The continued increase in oilseed prices can be attributed to strong demand, a smaller estimated Rabi crop and rising global prices. Global prices of oilseeds rose by 70 to 90 percent in March 2008 over March 2007. The surge in demand (including demand for bio-fuels), low stocks and higher oil prices all contributed to the price rise. The price of soybean seeds at the global level showed an increase of 78.6 percent in March 2008 over March 2007. In India, soybean seeds recorded a 30 percent increase in 2007-08 and this price rise continued in 2008-09. In spite of record production of 10 million MT, soybean prices showed high inflation partly because of high global prices.

Domestic consumption of edible oils in India is estimated at over 10 million MT per year, while domestic production has been hovering around six million MT. Imports of edible oils (mainly soybean and palm oil) which bridge the gap between domestic demand and supply, were 4.7 million MT and 4.3 million MT in 2004-05 and 2005-06, respectively. There was a decline in domestic production of edible oils from 27.98 million MT in 2005-06 to 24.28 million MT in 2006-07. As a result, imports increased to 4.7 million MT. Because of higher global edible oil prices, domestic prices also increased in 2006-07. The same situation continued in 2007-08. Global prices of edible oils increased by over 100 percent in March 2008 over March 2007. Price inflation for edible oils in India was 14 percent and 20 percent respectively in March 2007 and March 2008. Thus, price increases in India are much lower than price inflation in global markets. Similarly, global soybean oil prices rose by more than 100 percent in March 2008 as compared to March 2007. Soybean prices in India increased by eight percent in 2007-08 but more than 10 percent in the first few months of 2008-09. In the case of processed food products, inflation in the prices of oil cake and dairy products was high in 2007-08, with the price of oil cake rising by 40 percent, leading to substantial increases in dairy prices as well.

Consumer price indices

Generally, the wholesale price index (WPI) is used in India for looking at trends in price inflation. There are, however, four consumer price

indices (CPIs) that are specific to different groups of consumers, i.e. CPI-IW for industrial workers; CPI-UNME for urban non-manual employees; CPI-AL for agricultural laborers; and CPI-RL for rural laborers.

A comparison of consumer price inflation shows increases in 2008 for all indices (Table 6.6). However, the year-on-year inflation remained generally high for CPIAL–agricultural laborers and CPIRL–rural laborers as food articles have relatively high weights in these indices. For example the CPIAL was 9.1 percent in May 2008 as compared to 7.8 percent for the CPIIW and 6.8 percent for the CPI-UNME. This is a matter of concern as agricultural and rural laborers face higher prices.

Table 6.6 Consumer price inflation (year-on-year variation in percent)

Year	CPI-IW	CPI-UNME	CPI-AL	CPI-RL	WPI
March 2005	4.2	4.0	2.4	2.4	5.1
March 2006	4.9	5.0	5.3	5.3	4.1
March 2007	6.7	7.6	9.5	9.2	5.9
June 2007	5.7	6.1	7.8	7.5	4.4
Sept. 2007	6.4	5.7	7.9	7.6	3.4
Dec. 2007	5.5	5.1	5.9	5.6	3.8
March 2008	7.9	6.0	7.9	7.6	7.7
May 2008	7.8	6.8	9.1	8.8	9.3
June 2008	7.7	7.3	8.8	8.7	11.9

Source: Economic Survey, Ministry of Finance, Government of India.

Note: IW: Industrial Workers; UNME: Urban non-manual employees; AL: Agricultural Labourers; RL: Rural Labourers; WPI: Wholesale price index.

To conclude, the trends in food prices in India and at the global level show that the impact of global food price increases on India is limited. Domestic production shortfalls in wheat and maize, and dependency on imports of pulses and edible oils, did transmit some of the international price shocks to domestic prices. However, the increase in food prices in India was much lower as compared to the sharp increase in global prices. Food prices in India, particularly those for wheat and pulses, showed substantial increases already in 2006-07, before the sharp increase in global prices in 2007-08. In fact price inflation for foodgrains and food articles in India was lower in 2007-08

than in 2006-07. In the case of oilseeds and edible oils, the impact of global food price inflation on India seems to be much stronger than for other commodities. A comparison of consumer prices indices shows that price inflation is relatively high for agricultural and rural laborers.

6.3 WHAT ARE THE REASONS FOR LOWER RISE IN FOOD PRICES IN INDIA?

India is almost insulated from the global rise in food prices. What are the reasons for the much lower rise in food prices in India as compared to the sharp increases in global prices since mid-2007?

The reasons are basically four: (a) huge oil and fertilizer subsidies; (b) fiscal measures; (c) administrative measures (d) increases in domestic production.

Domestic production of foodgrains has increased significantly in the last three years. It increased from 198.4 million MT in 2004-05 to 208.6 million MT in 2005-06 to 217.3 million MT in 2006-7 and to 230.7 million MT in 2007-08. In other words, production increased about 16 percent over three years. Although there were problems in wheat procurement in 2006-07, higher production led to better food management in the last few years.

But the most important factor relates to oil and fertilizer subsidies. One of the factors responsible for the increase in global food prices relates to increase in crude oil prices and its impact on the cost of fertilizer and other agricultural inputs. India imports large amounts of crude oil and fertilizers at huge costs. But the increases in prices of crude oil and fertilizers have not been passed on to farmers and consumers. For example, India's fertilizer subsidy in 2007-08 is estimated at Rs. 1.3 trillion (US\$28 billion). Similarly, only small part of increase in diesel prices has been passed on to farmers. Food subsidies for buffer stocks and PDS also increased since the issue prices for PDS have been kept constant.

6.4 POLICY REACTIONS

The anti-inflationary policies of the Government include strict fiscal and monetary discipline; rationalization of excise and import duties of essential commodities to ease the burden on the poor; effective supply-demand management of sensitive items through liberal tariff

and trade policies; and strengthening the public distribution system (Government of India, 2007).

During 2006-07, the Government initiated the following measures to contain the price rise of primary commodities:

- a. The State Trading Corporation tendered overseas for imports of 5.5 million MT of wheat to supplement domestic production.
- b. Permission was given to private traders to import wheat, first at five percent duty from June 27, 2006 and then at zero duty from September 9, 2006 as against the normal applicable duty of 50 percent.
- c. Imports of pulses were permitted at zero duty from June 8, 2006 and a ban on export of pulses was made with effect from June 22, 2006.
- d. Close monitoring of prices of each and every essential item on a weekly basis.
- e. Regulatory measures were initiated by the Forward Markets Commission (FMC) to contain volatility in the futures prices of wheat, sugar and pulses and a ban on futures trading in some pulses was imposed to reduce speculation.
- f. A reduction in the import duty on palm oils by 20-22.5 percentage points was effected in two phases, first in August 2006 and later in January 2007. Further, tariff values of these oils were frozen at levels prevailing in July 2006, thus reducing the impact of increases in international prices.

Policy reactions to rising food prices continued along the same lines in 2007-08:

1. In order to improve wheat availability, public sector agencies such as STC and MMTC imported wheat during 2007-08 (about 1.8 million MT until January 2008).
2. Export bans on wheat, non-basmati rice and pulses.
3. Import of wheat and pulses by private traders permitted at zero duty. The customs duty on semi-milled or wholly-milled rice was reduced from 70 percent to zero in March 2008.
4. To maintain price stability, the central issue prices of rice and wheat have not been revised since July 2002.
5. There have been continuous reductions in the import duties on edible oils. Effective from July, 2007, customs duties on imports

of crude palm oil and soybean oil have been reduced to 45 percent and 40 percent, respectively.

6. Keeping in view the prevailing price situation, the Central Government had issued a Central Order in August, 2006, under the Essential Commodities Act, 1955 to enable State Governments to impose limits on private stock holdings of wheat and pulses for a period of six months.

6.5 FARMER INCENTIVES, PROCUREMENT, STORAGE AND DISTRIBUTION

The major underlying objective of the Indian government's price policy is to protect both consumers and producers. Currently, food security and price policies basically consist of three instruments: procurement prices/minimum support prices, buffer stocks, and the public distribution system (PDS).

Minimum support prices for farmers

In order to provide incentives to farmers, the Government of India (GOI) follows a Minimum Support Price (MSP) policy for 24 major crops including paddy, wheat, jowar (sorghum), bajra (millet), maize, ragi (finger millet), pulses, oilseeds, copra (coconut kernel/meat), cotton, jute, sugarcane and tobacco. The Commission for Agricultural Costs and Prices (CACP) recommends levels at which MSP should be fixed based on several considerations. These include the cost of cultivation, the overall shortage of grains as reflected by the trend in wholesale prices and the need to keep in check the rate of inflation in the consumers' interest. These recommendations take into account variations in these costs across regions while explicitly incorporating cost estimates provided by states.

In order to keep up incentives, the Government has increased the minimum support prices significantly in recent years. As shown in Table 6.7, there were only marginal increases in the MSP of wheat and paddy during 2000-01 to 2004-05. On the other hand, the wheat MSP increased by over the last three years (2005-06 to 2007-08). In the case of paddy, this increase was nearly 50 percent over the three year period 2006-07 to 2008-09.

Procurement and buffer stock policies

The government of India procures wheat and rice for buffer stocks and the public distribution system (PDS). During the period 2003-04

Table 6.7 Minimum support prices for wheat and paddy: 2000-01 to 2008-09

Year	Wheat		Paddy	
	MSP (Rs.)/quintal	Percent Change	MSP (Rs.)/quintal	Percent Change
2000-01	610		510	
2001-02	620	1.6	530	3.9
2002-03	630	1.6	550	3.8
2003-04	630	0.0	550	0.0
2004-05	640	1.6	560	1.8
2005-06	750	17.2	570	1.8
2006-07	850	13.3	620	8.8
2007-08	1000	17.6	745	20.2
2008-09	--	--	900	20.8

Source: Ministry of Agriculture, Government of India.

to 2005-06, wheat procurement hovered between 14.8 and 16.8 million MT (Table 6.8). However, procurement was very low at only 9.2 million MT in the year 2006-07. With a perceived supply-demand mismatch and private trade offering prices above the minimum support price (MSP), government procurement was lower than the target fixed for 2006-07 (rabi marketing season corresponding to the agricultural year of 2005-06). As a result, there was a sharp increase in wheat prices during 2006-07 and a similar situation in 2007-08. The decline in wheat procurement in 2006-07 and 2007-08 is attributed to relatively low wheat production, lower market arrivals, high market prices, negative market sentiments due to low stocks of wheat in the central pool, and aggressive purchases by the private traders. To encourage farmers to increase wheat production as well as to enhance procurement, the Government increased procurement prices in the agricultural year of 2006-07 (corresponding to the marketing season of 2007). However, procurement increased to only 11.1 million MT in 2007-08, compared to 9.2 million MT in 2006-07. The government had to import 5.5 million MT and 1.8 million MT, respectively in 2006-07 and 2008-09 at high international prices. The procurement price was increased from Rs.850/quintal in 2006-07 to Rs.1000/quintal in 2007-08 (corresponding to the marketing season of 2008). Private trade was discouraged in the form of stock limits etc. As a result, the government was able to procure a record level of 22.6 million MT in 2008.

Table 6.8 Procurement of paddy and wheat (million MT)

Year	Wheat	Rice
2003-04	15.8	20.8
2004-05	16.8	24.0
2005-06	14.8	26.7
2006-07	9.2	26.3
2007-08	11.2	26.3
2008-09	22.6	--

Source: Department of Food and Civil Supplies.

In the case of rice, there was no major supply problem. Procurement of rice increased from 20.8 million MT in 2003-04 to 26.7 million MT in 2005-06. Rice procurement fell marginally to 26.3 million MT during 2006-07. To stimulate the procurement of paddy rice its MSP, inclusive of bonus, rose for the 2007-08 Kharif marketing season by Rs.125 per quintal and was fixed at Rs.745 per quintal. The MSP for paddy rice was further increased to Rs.900 (including a bonus of Rs.50) in the 2008-09 Kharif season. In fact, the government was importing wheat and exporting rice simultaneously.

Buffer stocks

The importance of building up a buffer stock of food grains (normally consisting of rice and wheat) is to provide food security to the country. The argument in favor of buffer stocks is that where variability of food grains output is large (either due to weather conditions or due to manmade factors) it would be essential for the state to ensure that food security is guaranteed by building adequate buffer stocks from the surpluses in good production years and/or by arranging for food grain imports. Buffer stocks are also needed for targeted PDS and other welfare programs. Various committees have suggested the optimal size of buffer stocks and have come up with estimates that range from 15 to 25 million MT depending on the season in a year.

Table 6.9 shows the actual buffer stocks and the minimum levels needed in July of each year. In 2002 buffer stocks stood at around 63 million MT greatly exceeding the norm of 24 million MT. But stocks gradually declined to 19 million MT in 2006 due to low procurement of wheat. This led to higher wheat prices (including the MSPs) in the

year 2006-07 and again buffer stocks increased to 36.2 million MT in 2008 due to record procurement of 22 million MT of wheat.

Table 6.9 Buffer stocks of foodgrains: 2002 to 2009

Years	1 st July Actual Buffer Stock (million MT)	1 st July Minimum Norm (million MT)
2002	63.0	24.3
2003	35.7	24.3
2004	29.9	24.3
2005	24.5	24.3
2006	19.4	24.3
2007	23.9	24.3
2008	36.2	24.3
2009	60 again!	24.3

Source: Department of Food and Public Distribution System.

Food subsidies

Food subsidies are provided to meet the difference between the economic cost of food grains procured by the FCI and their sales realization at the Central Issue Price (CIP) for the Targeted Public Distribution System (TPDS) and other welfare schemes. In addition, the Central Government also procures food grains for meeting buffer stock requirements. Hence, part of the food subsidy also goes towards meeting the carrying cost of the buffer stock. The food subsidy bill of the Government of India peaked in 2004–05 and declined as stocks declined (Table 6.10). However, with higher MSPs declared more recently, food subsidies have increased again. The food subsidy bill increased from Rs. 238 billion in 2006-07 to Rs. 313 billion in 2007-08 — an increase of 31 percent in subsidy. The increases in MSPs were partly due to increase in global prices.

Food based safety net programs

Rather than introducing new food based safety net programs in reaction to the food crisis, India tried to strengthen existing programs. The Public Distribution System (PDS) is one of the important safety net programs in India. The PDS is a major State intervention in the country aimed at ensuring food security for all, especially the poor. The PDS operates through a large distribution network of around 489,000 fair

Table 6.10 Food subsidies (billion Rs.)

Years	Food Subsidies	Growth (%)
1998-99	87.00	--
1999-00	92.00	5.8
2000-01	120.10	30.5
2001-02	174.94	45.7
2002-03	241.76	38.2
2003-04	251.60	4.1
2004-05	257.46	2.3
2005-06	230.71	-10.4
2006-07	238.28	3.3
2007-08	312.60	31.1

Source: Ministry of Finance, Economic Survey, Government of India.

price shops (FPS) and is supplemental in nature. Under the PDS, the Central Government is responsible for the procurement and transportation of food grains up to the principal distribution centers of the FCI while the State Governments are responsible for the identification of families living below the poverty line (BPL), the issuing of ration cards, and the distribution of food grains to the vulnerable sections through FPSs. In order to improve its efficiency, the PDS was redesigned as TPDS with effect from June 1997. The TPDS envisages identifying the poor households and giving them a fixed entitlement of food grains at subsidized prices. Under the TPDS, higher rates of subsidies are being given to the poor and the poorest among the poor. Families above the poverty line (APL) are also supplied under the TPDS but with lower subsidy. The scale of issue under the TDPS for Antyodaya cardholders (destitute) began with 10 kg per family per month, which has been progressively increased to 35 kg per family per month with effect from April 2002. The off-take under the TPDS (total of APL, BPL and Antyodaya) increased from 24 million MT in 2003-04 to 31.4 million MT in 2005-06 and to 33.5 million MT in 2007-08 (Table 6.11).

Apart from the PDS, other food based safety nets include employment programs and mid-day meal schemes. With the introduction of the national rural employment guarantee scheme (NREGS), cash has replaced food in employment schemes. As a result, there has been a reduction in off-take of food grains under welfare programs from 13.5 million MT in 2003-04 to 3.9 million MT in 2007-08.

Table 6.11 Offtake of rice and wheat under targeted PDS and welfare programs (million MT)

Years	Rice and Wheat BPL	Rice and Wheat APL	Rice and Wheat under Antyodaya	Total under TPDS	Rice and wheat under welfare schemes	Total Rice and Wheat (TPDS +welfare)
2003-04	15.8	4.2	4.2	24.2	13.5	37.7
2004-05	17.5	6.7	5.5	29.7	10.6	40.3
2005-06	15.6	8.3	7.4	31.4	9.7	41.2
2006-07	14.2	8.7	8.7	31.6	5.1	36.7
2007-08	15.1	9.0	9.4	33.5	3.9	37.4

Source: Department of Food and Public Distribution System.

Effectiveness of TPDS

TPDS is the biggest food based safety net program in India. The main problems related to the TPDS are discussed in two recent documents: (1) Report of the High Level Committee on Long-Term Grain Policy (Government of India, 2002a) and (2) Performance Evaluation of Targeted Public Distribution System (TPDS) (Programme Evaluation Organisation, Planning Commission, 2005).

According to these documents, there are basically four problems in the present TPDS: (a) High exclusion errors; (b) non-viability of fair price shops; (c) not fulfilling the price stabilization objective and, (d) leakages.

High exclusion errors

The Programme Evaluation Organisation's study (PEO, 2005) establishes large-scale exclusion errors in most states.

The PEO concludes that —

- “It would be appropriate to do away with the methodology of identifying poor families on the basis of income/expenditure criterion, as identifying sources of income at the household level and measuring them with precision on such a large scale is fraught with many problems.”
- “The proportion of population with food insecurity need not necessarily be identified with Planning Commission's poverty ratio.”
- The Planning Commission should devise an appropriate criterion and method of BPL identification. In this respect, the report suggests that “those families who do not have a secure source of regular income should be netted into BPL category irrespective of their current income.”

Additional criteria based on occupations and assets may be used, and these should be state/region-specific. However, the land criterion is not found to be meaningful, for example, some of the most vulnerable households like *adivasis* may own land.

It is true, as mentioned by PEO, that there are large exclusion errors in TPDS, which also brings into question the BPL methodology used for identification of households at the state level. There are two problems: firstly, the criterion used for allocation of food grains by

the Central Government to states. The Central Government allocates food grains to states based on the narrow official poverty line. There is a need to look at this allocation criterion to states. If the official poverty ratio criterion were to be used, only 28 percent of the population is eligible under PDS at the all India level in 2003-04. However, the proportion of food insecure households may be much higher than the official poverty ratios. For example, under nutrition among children and households is much higher than this figure. The use of BPL estimates to determine Central allocations should be revisited because there is a significant mass of households just above the poverty line. Central allocations can still be a function of BPL population but the eligible households need not be equal to the BPL population but some multiple of it (e.g. 1.5 times the number of BPL households).

A second problem is the use of the BPL method for identifying households by the states. This identification differs from state to state. For example, some of the South Indian states do not follow the official poverty ratio for limiting the ration cards. In Andhra Pradesh, more than 70 percent of the households have ration cards, which is one of the reasons for high inclusion errors in Andhra Pradesh. In any case, one has to keep in mind the criticism of the PEO regarding the BPL method of identification of households.

Viability of fair price shops

An important institutional concern is that of the economic viability of fair price shops, which appears to have been badly affected by the exclusion of the APL population from the PDS. The virtual exclusion of the APL population has led to a big decline in off-take. With fewer ration cards to serve, lower turnover and upper bounds on the margins that can be charged to BPL consumers, the net profits of fair price shop owners and dealers are lower under the TPDS than before. Since there are economies of scale here, for instance, with respect to transport, the distribution of smaller quantities is likely to make many shops unviable. When fair price shops are economically viable, there are fewer incentives to cheat.

Some of the steps suggested by the High Level Committee on Long Term Grain Policy (HLC) to revive the retail network were the following: "Relax restriction on eligibility to be a licensed fair price shop; make NGOs and village level retailers eligible to undertake licensed PDS distribution, and in particular, encourage women; remove

restrictions on the range of commodities that can be sold in a FPS; and allow registered associations of FPS dealers to purchase the grain allocated directly from the FCI”.

Increases in the allocations under TPDS based on new criterion and implementation of measures suggested above by the High Level Committee may improve the viability of the ration shops.

Regional allocation and price stabilization objective

One of the objectives of the PDS has always been to ensure price stabilization in the country by transferring grain from cereals-surplus to cereals-deficit regions. Targeted PDS has reduced the effectiveness of this objective. This is because under TPDS, the demand for cereals is no longer determined by state governments (based on their requirements, and in practical terms on past utilization) but on allocations decided by the central government (based on poverty estimates prepared by the Planning Commission). The new system of allocation, as pointed out by the HLC, has led to imbalances between actual allocations and “allocations necessary to meet the difference between cereals production and requirement.”

Increases in the allocations under the TPDS based on new criterion (say, 1.5 times the BPL) can improve the effectiveness of the price stabilization objective. In addition, the Department of Food can independently direct the FCI to sell grain in specified cities or regions where prices are considered excessive and/or rising too fast.

Leakages and diversion

Undoubtedly, in many parts of India, the current system of delivery has weaknesses resulting in leakages at different stages. As the Government of India (2005) points out, “the share of leakages in off-take from the central pool is abnormally high, except in the states of West Bengal and Tamil Nadu”. Further, “in terms of leakages through ghost BPL cards, there are fewer problems in Andhra Pradesh, Haryana, Kerala, Punjab, Rajasthan and Tamil Nadu than in other States”. At the fair price shop level, leakages were found to be high in Bihar, Punjab and Haryana.

The study goes on to identify the factors associated with relatively low leakages at the FPS level and concludes that “general awareness of the beneficiaries, high literacy and strong grassroot level organizations (particularly PRIs) have helped states like West Bengal and Himachal

Pradesh in minimizing FPS level leakage, which in the case of Tamil Nadu, it is the elimination of private retail outlets". A detailed study of the PDS in Tamil Nadu by A.K. Venkatasubramanian identifies strong political commitment and careful monitoring by the bureaucracy as elements of the success of PDS in the state.

Leakages cannot be lowered by finer targeting using official poverty criteria. They require political commitment and participation of the people in the delivery process. The nexus between officials, illegal actors and ration shop dealers must be broken in order to reduce leakages. Monitoring and accountability of TPDS (food security watch) should be improved in a significant way. The TPDS needs to be strengthened by means of the effective use of information technology including introduction of a unique ID based smart card system.

Are food stamps a viable alternative to the TPDS?

If markets are integrated, one can introduce a food stamps system which is supposed to be more effective than the present system. On food stamps/coupons, the High Level Committee says the following: "In the long run, as markets get better integrated, the PDS function need not remain restricted to designated fair price shops and a food coupon system valid even outside PDS outlets may become possible. Food coupons may allow wider choice for consumers in terms of commodities and outlets. In the Committee's view, this is a course which should be followed with considerable caution in view of the experience of other countries, and the possibility of counterfeiting. However, the more important reason food stamps have not been successful elsewhere has been the erosion in the value of the coupons where it was fixed in nominal terms. If the coupon system is to succeed the PDS suggested above, we recommend that the value of the coupon should be indexed to food inflation. The coupon system should not lead to a dilution of the Central Government commitment to food security" (Government of India, 2002b). A well run food stamp system may be able to avoid many logistical problems of the present distribution system and consumers would have a wider choice in commodities.

Mid-day meal scheme

The Mid-day Meal Scheme (MDMS) was launched in 1995 to enhance enrolment, retention, and participation of children in primary schools,

simultaneously improving their nutritional status. The MDMS was revised and universalized in September 2004 and central assistance was provided at the rate of Rs. 1.00 per child per school day for converting food grains into hot cooked meals for children. The scheme was further revised in June 2006 to enhance the minimum cooking cost to Rs 2.00 per child per school day to provide 450 calories and 12 grams of protein. The number of children covered under the program has risen from 33.4 million in 322,000 schools in 1995 to 120 million in 950,000 primary schools/EGS centers in 2006-07. A review of the MDMS points to the absence of a proper management structure in many States. Even the reported average number of school days on which meals are provided varied widely. The National University of Educational Planning Administration (NUEPA) reports 209 days per annum, while the Ministry of Human Resource Development (MHRD) reports 230 days at the national level. Steering Committees at State/district levels for effective monitoring are yet to be set up in some States. On the whole, despite the prevalence of good practices, a systematic supervision and monitoring of the program and transparency in implementation are lacking in most States. Notwithstanding these shortcomings, the MDMS appears to have had a positive impact on school attendance and nutritional status of children through removal of classroom hunger. The scheme has been extended to upper primary schools from October 2007 to cover 17 million additional children and will be extended to all UPS from April 2008 to cover 54 million children. Thus, the MDMS will cover about 180 million children by 2008-09. The nutritional value of meals for upper primary children will be fixed at 700 calories derived from 150 gm of cereals and 20 gm of protein.

The Five Year document suggests the following action points for improving the MDMS:

- MDMS to be managed by the local community and PRIs/NGOs, and not contractor-driven: civic quality and safety to be prime considerations.
- Sensitize teachers and others involved in nutrition, hygiene, cleanliness, and safety norms to rectify observed deficiencies.
- Involve nutrition experts in planning low cost nutrition menus and for periodic testing of samples of prepared food.
- Promote locally grown nutritionally rich food items through kitchen gardens in school, etc.

- Revive the School Health Program; disseminate and replicate best practices adopted by States.
- Provide drinking water facilities in all schools on an urgent basis.
- Display status regarding supplies, funds, norms, weekly menu, and coverage in schools to ensure transparency.
- Central assistance to cooking cost should be based on the actual number of beneficiary children and not on enrolment.
- Promote social audits.
- Online monitoring.

6.6 FOOD SECURITY OUTLOOK

Many studies on projections of food grains in India conclude that there is no problem regarding food security in terms of availability of food grains in the future. Some forecasts on cereal demand show that 224 million MT (193.5 for food and 30.1 for feed) would be sufficient by 2020 (Dyson and Hanchate, 2000). Other forecasts mention 250 million MT. Thus there appears to be no cause for concern as far as cereal demand outstripping cereal supply in the Indian context is concerned. The Planning Commission estimates for the 11th Plan period based on time series data also indicate that demand for cereals would not exceed supply by 2011-12 (Table 6.12). Only in the case of wheat, there could be a deficit of 3 million MT. Thus, one has to carefully monitor the price of wheat in the immediate future. In the case of rice, the projections show that there would be a surplus of 4 million MT by 2011-12.

Table 6.12 Foodgrain projections for 2011-12

Crops	Demand	Production	Gap
Total Cereals	210.4	211.8	1.4
Rice	95.7	99.6	4.0
Wheat	79.6	76.6	-3.0
Coarse Cereals	35.2	35.7	0.5
Total Pulses	14.5	13.8	-0.7

Source: Planning Commission.

For the immediate future there is no problem regarding food grain availability as India has enough buffer stocks. In fact, India would be

able to export food grains. On the other hand, these conclusions should not draw attention away from the fact that there are a number of unresolved sustainability issues in the cultivation of food grains. For example, rice cultivation in the Punjab and Haryana is leading to serious land, soil and water degradation.

Changing consumption patterns

In spite of the increase in per capita real expenditures during the period 1972-73 to 2004-05, per capita cereal intake declined in both rural and urban areas. However, the fall in cereal consumption was offset by an increase in the consumption of non-cereal food. It is now widely recognized that the food basket is more diversified and dramatic changes in food consumption patterns have taken place in India during the post-green revolution period. The reduction in average cereal consumption may not be of great concern because the decline is mostly driven by reduced consumption among the middle and top deciles of the income distribution. Substitution away from cereals to other foods is to be expected when incomes increase. In recent years, however, a decline in cereal consumption among the poor was observed as well.

As shown in Table 6.13, the share of cereal expenditure in total expenditure has declined over time from 38 percent in 1970-71 to 18 percent in 2004-05 in rural areas. However, in the case of the bottom 30 percent of the expenditure distribution, the share is still substantial at 29 percent in 2004-05. In fact, in rural areas the share of food in total expenditure is 66 percent for the bottom 30 percent as compared to 47 percent for the top 30 percent in 2004-05 (Table 6.14).

Table 6.13 Percentage share of cereals in total food expenditure

Years	Rural				Urban			
	B30%	M40%	T30%	All	B30%	M40%	T30%	All
1970-71	53.65	43.65	29.49	38.15	38.85	28.19	13.37	21.58
1972-73	53.77	46.32	29.99	39.12	39.17	28.62	13.33	21.75
1973-74	52.81	45.07	31.04	39.27	39.63	30.73	15.40	23.83
1977-78	50.75	41.79	25.94	35.03	37.72	26.83	14.89	22.61
1983	45.11	36.38	21.93	30.27	32.26	22.29	11.18	17.59
1986-87	41.42	33.78	20.23	28.04	29.48	20.10	9.73	15.62
1987-88	41.28	32.82	18.91	27.02	30.32	20.54	9.96	16.03

(Contd.)

(Table 6.13 continued)

Years	Rural				Urban			
	B30%	M40%	T30%	All	B30%	M40%	T30%	All
1988-89	39.56	31.79	18.29	26.14	29.28	20.08	10.13	16.03
1989-90	39.49	29.54	17.08	24.98	29.54	19.94	9.21	15.33
1990-91	39.37	30.68	18.22	25.93	27.55	19.13	9.49	15.12
1992	37.94	29.67	16.60	24.21	27.47	18.01	8.50	13.93
1993-94	35.68	27.87	15.72	22.95	25.59	17.14	8.18	13.32
1994-95	36.42	27.94	15.29	22.71	27.03	18.46	8.22	13.64
1995-96	34.04	25.39	13.97	20.93	24.40	16.05	7.01	11.90
1999-00	29.27	22.21	13.35	19.01	20.67	13.46	6.63	10.62
2000-01	28.63	21.56	13.20	18.68	19.69	13.04	6.27	10.13
2001-02	29.37	21.30	12.86	18.35	18.69	12.58	6.22	9.89
2003	27.07	20.58	12.53	17.64	18.89	12.48	6.18	9.83
2004-05	29.34	22.04	12.49	18.28	20.59	13.29	6.29	10.21

Source: National Sample Surveys.

Note: The shares are derived from food expenditures at constant prices (1993-94 prices).

Table 6.14 Percentage share of food in total expenditure

Years	Rural				Urban			
	B30%	M40%	T30%	All	B30%	M40%	T30%	All
1970-71	84.07	81.04	71.29	76.67	79.96	75.01	62.48	68.87
1972-73	82.62	79.73	67.34	73.85	79.09	73.90	59.50	66.78
1973-74	82.00	79.49	67.58	73.94	78.42	74.03	60.69	67.54
1977-78	79.86	76.36	63.77	70.44	76.42	70.74	59.55	66.10
1983	75.95	72.31	59.54	66.30	71.17	64.83	50.09	57.67
1986-87	75.99	72.69	59.48	66.47	72.14	64.87	47.72	56.38
1987-88	73.75	70.39	57.04	64.08	71.08	64.82	49.34	57.14
1988-89	73.53	69.61	55.72	63.16	71.75	65.02	49.44	57.62
1989-90	74.26	68.91	57.91	64.33	71.38	64.40	46.70	55.60
1990-91	73.71	70.41	59.40	65.51	70.69	64.58	48.05	56.55
1992	72.61	68.62	52.51	60.95	68.93	61.75	43.73	52.62
1993-94	69.83	66.47	52.61	59.99	66.35	59.78	43.78	51.82
1994-95	69.93	65.11	48.51	57.26	66.26	59.81	41.38	50.01
1995-96	68.69	63.10	46.47	55.51	65.13	56.90	35.88	45.85

(Contd.)

(Table 6.14 continued)

Years	Rural				Urban			
	B30%	M40%	T30%	All	B30%	M40%	T30%	All
1999-00	61.00	58.59	50.14	54.84	57.99	51.06	37.71	44.57
2000-01	61.78	58.44	50.29	55.04	56.11	49.40	35.44	42.50
2001-02	61.52	57.65	48.83	53.85	54.80	48.62	34.54	41.71
2003	61.33	58.14	48.37	53.81	56.35	48.67	35.01	42.12
2004-05	66.07	61.98	47.48	55.18	59.87	50.40	34.50	42.52

Source: National Sample Surveys.

The share of cereals in total food expenditures was more than 40 percent for bottom 30 percent. Households in this expenditure class still get more than 60 percent of their calories from cereals. Thus, cereal consumption continues to be important for the poor.

According to some projections, household demand for food grains would increase from 155 million MT in 2000 to 240 million MT in 2020; for milk and dairy products from 64 million MT to 166 million MT; and fruits and vegetables from 48 million MT to 113 million MT (Radhakrishnan, 2002). Per capita availability of fruits was 58 grams per day and 179 grams per day for vegetables. Table 6.15 provides data regarding per capita availability and deficit of milk, eggs and meat. It shows the need for increasing the availability of non-cereal food items. Regarding non-cereal foods like fruits, vegetables, milk, meat and fish, India has not achieved self sufficiency in terms of adequate per capita availability.

Table 6.15 Per capita availability and deficit of milk, eggs and meat (2002)

Food Items	Per capita Availability	ICMR dietary guidelines for Indians	Per capita deficit
Milk	216grams/day	300 mill. litre/day	34 grams/day
Eggs	30 eggs/annum	180 eggs/annum	150 eggs/annum
Meat	3.24 kg/annum	10.95 kg/annum	7.71 kg/annum

Source: Government of India, Planning Commission.

Thus, India faces two major challenges regarding food security in terms of availability. First, the bottom 30 percent of the population (based on the food expenditure distribution) still spend more than 40 percent of their total food expenditure on cereals and get two-thirds

of calories from them. Therefore, cereal prices still matter for food security of the poor. Even by the year 2020, the poor are predicted to spend 50 percent of their total food expenditure on cereals and obtain 70 percent of total calories from them. Current policies regarding rice and wheat are unsustainable over time, both from producer and consumer points of view. The question is how to reform these policies and deliver the cereals to poor in a cost effective way.

Secondly, demand for non-cereal food has been steadily increasing and this trend is expected to continue. Therefore, incentives have to be given and institutions have to be established in order to increase production of non-cereal food items.

Other challenges are access to food and absorption of food. Increases in purchasing power are important for improving access to food by the poor. Absorption relates to malnutrition particularly child malnutrition. Many studies have shown that malnutrition can persist even after removal of poverty. For example, income poverty in India is 26 percent while child malnutrition is 46 percent. Thus, reduction in malnutrition is going to be a bigger challenge than income poverty. The decline in child malnutrition rates has been very slow in India, much slower than would be expected on the basis of economic growth performance. Therefore, access to food and removal of child malnutrition are important elements in achieving food security in India.

6.7 CONCLUSIONS

A summary of the major conclusions of the Chapter is given below:

1. While India is not decoupled from the outside world, the Indian economy and its agricultural sector are less exposed to outside world than is the case for most other countries, and to that extent the impact of price fluctuations in the world market will be smaller. This is confirmed by data regarding trends in food prices in India at the global level which show that the impact of global rises in food prices on India is relatively limited. Domestic production shortfalls in wheat and maize, and dependency on imports of pulses and edible oils, transmitted the international price shocks to domestic prices. However, the increase in food prices in India was much lower as compared to the sharp increase in global prices. Food prices in India, particularly those for wheat and pulses, increased in 2006-07 but this happened before the sharp increase in global prices in 2007-08. In fact,

price inflation for food grains and food articles was lower in 2007-08 in India as compared to those of 2006-07. In the case of oilseeds and edible oils, the global impact on India seems to be higher than other commodities. A comparison of different consumer price indices shows that inflation has been relatively high for agricultural and rural laborers in recent years.

2. Food grain prices in the world market have increased significantly in the last two years due to a combination of poor harvests, oil price increases and a shift towards bio-fuels. The latter tendency is bound to accelerate, which suggests that upward pressure on food prices will continue in the near future. This will undoubtedly put pressure on Indian agricultural prices as well. Farmers are likely to gain from higher prices and to the extent to which low profitability of agriculture has been a cause of low farm incomes and inadequate investments in the agricultural sector, the shift to higher food prices could actually boost domestic production and rural incomes. However, it must also be noted that consumers are hurt by higher prices and since most of the poor in India are net purchasers of food, it would be necessary to protect them from excessive increases in food prices. How to balance these conflicting objectives will continue to present a major policy challenge.
3. There are main four reasons why food price inflation in India has been significantly lower than global food price inflation since mid-2007: (a) huge oil and fertilizer subsidies; (b) fiscal measures; (c) administrative measures; and (d) production increases.
4. The anti-inflationary policies of the Indian government include strict fiscal and monetary discipline; rationalization of excise and import duties of essential commodities to ease the burden on the poor; effective supply-demand management of sensitive items through liberal tariff and trade policies; and strengthening of the public food distribution system.
5. Regarding producer incentives, minimum support prices (MSP) of rice, wheat and several other crops have been increased, partly justified by the global increases in food prices. Due to production shortages and lower MSPs, wheat procurement in 2006-07 turned out relatively low. As a result, wheat prices increased significantly. However, due to an increase in the MSP and higher production, the government was able to procure record levels

of wheat in the subsequent year. These high procurement levels have implications for buffer stocks whose levels should not become unsustainable. The increase in the MSP and corresponding high stock levels also sharply increased food subsidies.

6. India has not introduced new food based safety nets but rather is trying to improve the targeted public distribution system (TPDS) and the mid-day meal scheme (MDMS) for school children as well as the Integrated Child Development Scheme (ICDS).
7. Food projections show that India will not likely be facing a significant gap between supply and demand for cereals and pulses in the near future. But regarding non-cereal foods like fruits, vegetables, milk, meat and fish, India is not likely to achieve self sufficiency in terms of per capita availability any time soon. There also remain serious problems regarding access to food and child malnutrition; especially the latter remains worrying high given India's relatively favorable food production statistics.
8. India has sufficient stocks of rice and wheat. There are not likely to be any serious problems regarding availability of food grains in the next few years. However, there is likely to remain upward pressure on the price of edible oils due to increasing demand-supply imbalances.

References

- Government of India. 2002a. Report of the High-Level Committee on Long-term Grain Policy. Planning Commission, Ministry of Finance. New Delhi.
- . 2002b. Department of Food and Public Distribution: High-Level Committee Report, Department of Food and Public Distribution. New Delhi.
- . 2005. Evaluation of TPDS. Program Evaluation Office, Planning Commission. New Delhi.
- . 2007. Economic Survey. Ministry of Finance. New Delhi.
- Radhakrishnan, R. 2002. "Food and Nutrition Security in India." In: Parikh, K.S., Radhakrishnan, R. (Eds). *India Development Report 2002*. Oxford University Press. New Delhi.

*Chapter 7***Managing Food Price Inflation in Nepal***Champak Pokharel***7.1 RELATIVE IMPORTANCE OF THE AGRICULTURAL SECTOR
IN NEPAL**

Nepal has three high potential sectors for economic development — agriculture, tourism and hydropower. Tourism has good potential but can have a direct impact only in a limited number of districts and cities/towns initially as its current share in GDP is only about 3 percent. Nepal is rich in hydropower potential but current investment is limited and its development can only be a medium to longer-term growth strategy. Agriculture is relatively quick yielding with a much broader impact for poverty alleviation and currently contributes 32 percent to GDP (see Box 7.1). More than 80 percent of the people in Nepal are classified as rural and agriculture accounts for 66 percent of national employment. Compared to other sectors of the economy agriculture's investment needs are smaller: the incremental capital output ratio is 2.8 percent in agriculture compared to 6-7 percent in tourism and 18.5 in hydropower.

Elevation in Nepal ranges from less than 300 feet to 29 thousand feet, giving the country a wide range of agro-climatic conditions. Nepal has plenty of permanent rivers and ample ground water resources. Two-thirds of all agricultural land can be irrigated of which 80 percent can be irrigated year-round in the Terai using ground water. But year-round irrigation is currently practiced on only about 25 percent of all agricultural land in the country. As a result cropping intensities are low (average is 1.41). In well-irrigated fields, three crops per year are feasible. Some areas in the Terai are already supplying urban areas with fresh maize for roasted snacks, fruits and vegetables year-round and in this way they substitute for imports from India while also significantly increasing winter season employment in peri-urban areas.

Box 7.1: Agriculture's potential in Nepal

Population pressure in Nepal is as high at 10.4 persons per ha of agricultural land (1,040 persons/km²) and projected average annual population growth for the current decade is 2.1 percent. The 2001 Agricultural Census indicates that 48 percent of the farmers own less than 0.5 ha of land. About two-thirds of all farm families own cattle and 50 percent own buffaloes. The use of modern inputs in Nepal's agriculture is low, e.g. fertilizer use is less than 50 kg per ha compared to 350 kg/ha in neighboring China. As a result agricultural productivity in Nepal is also low as illustrated by average yield data: Cereals 2.2 MT/ha, milk 432 kg per cow/year, eggs 86 per hen/year, potato 13 MT/ha, and vegetables 8-10 MT/ha. However, given favorable agro-climatic conditions in many areas, there exist good prospects for productivity increases given appropriate input use.

Agriculture was the least affected sector during the recently ended civil conflict. While growth in the non-agricultural sectors declined from 6.3 percent per year during the Eighth Plan (1993-97) to 3.8 percent per year during the Tenth Plan (2003-07), average annual agricultural growth remained close to 3 percent during both periods. If there had been no conflict, agricultural growth might have been substantially higher due to the well-known large multiplier effects of such growth. The potential of the agricultural sector is illustrated by past growth rates which have exceeded five percent per year in years with a favorable monsoon, e.g. 7.6 percent in 1994, five percent in 1999, 5.5 percent in 2000, and 5.6 percent in 2007. Agriculture in Nepal may well have the capacity to grow annually up to seven percent with year-round irrigation and complementary inputs.

Demand for higher quality agricultural products is rising fast, especially in the urban areas due to rapid increases in urban incomes. The emerging dualistic structure of Nepal's economy can stimulate agriculture and help alleviate poverty faster given an appropriate policy environment.

7.2 LINKS BETWEEN AGRICULTURE, INDUSTRIES AND TRADE

Average annual agricultural growth during the last five years was 3.3 percent and in 2007/8 it was 5.7 percent (Government of Nepal, 2008). However, growth in edible food grain production was only 1.1 percent per year during that same five-year period. A major part of agricultural growth was contributed by horticultural production

in areas with good road connections. The horticulture sector in Nepal is currently growing at seven to eight percent per year. The agricultural sector's contribution to exports at present is about 20 percent (see Box 7.2). More than 80 percent of total agricultural exports go to India and about 10 percent to China (mostly Tibet). Agricultural exports consist of primary commodities as well as agro-industrial products. Nearly two-thirds of all industries in Nepal are agro-industries based on primary agricultural goods and forest products. Thus, agriculture has strong linkages to other sectors and affects the national economy both directly and indirectly.

Box 7.2: Prospects for agro exports

Nepal is located in between two large countries — China and India, which together hold more than one-third of the world's total population. Open borders with a large country like India makes Nepal a price taker in the international market. Border prices in India have a significant influence on domestic prices in Nepal. Both India and China are growing fast even in the current global economic crisis. Middle class populations in both China and India are rapidly expanding leading to high demand growth for agricultural products. Nepal has certain climatic advantages over bordering Indian states and land productivity in Nepal exceeds that in Tibet. There is good potential of exporting off-season vegetables to India if the production is of commercial scale and post-harvest conditions are appropriate. Tibet also presents good market prospects for fresh vegetables, seeds, sugarcane, tea, high quality rice, herbs, and agro-industrial products of different kinds including high value milk products. Also organic products produced in hill districts have good market prospects in Europe and Japan and foreign investment can be attracted for their production and marketing. Indeed exports of certain types of vegetables like baby peas, some organic products and flowers have already started on a small scale. Thus, markets do not seem to be a problem for quality agricultural products produced in Nepal.

7.3 ECONOMIC LIBERALIZATION AND ITS IMPACT ON AGRICULTURE

Starting in the mid-1990s, Nepal gradually liberalized its economy. Before that time major direct support measures to farmers included a 50 percent subsidy on fertilizer, 40 percent subsidy on shallow tube wells (STW), 85 percent subsidy on deep tube wells (DTW) and

95 percent subsidy on surface irrigation. Also, interest on agricultural credit was subsidized to the extent of 33 percent. Starting with the Ninth Plan (1997), most of these subsidies were abolished except on surface irrigation and DTW as part of the conditionalities imposed by international donors for giving support to the agriculture perspective plan (APP). Transportation subsidies were also removed in several hill districts. While the macro impact of these steps is mixed and much debated, the rather blanket liberalization approach taken penalized especially small farmers, the more since public investments in agricultural research and rural infrastructure suffered significantly.

Nepal is a member of the WTO since 2004 and most parts of the country's service and industrial sectors will have to open up to foreign competition by 2010. Agriculture cannot remain aloof, as Nepal's economy is broadly agricultural. Even though the 'Amber Box' provision of WTO contains certain provisions for price support to agriculture (for developing countries subsidies up to 10 percent of agricultural production are allowed) direct subsidies in Nepal are currently negligible and fiscally would be difficult to implement anyway. Nepal is also a member of both the South Asian Association for Regional Cooperation (SAARC) and the Bay of Bengal Initiative for MultiSectoral and Economic Cooperation (BIMSTEC). Free trade initiatives are being pursued under both of these initiatives but progress is slow. Nepal maintains one of the lowest average tariff rates (average around 9-10 percent) of all South Asian countries.

7.4 DOMESTIC PRICE TRENDS

Degree of recent price increases

Recent price increases of cereal grains in Nepal have been about 10 percent per year over the period 2004/5-2007/8, up from 3.8 percent per year in the previous four-year period (Table 7.1 and Table A.1). The increase in cereal prices exceeded the increase in the overall consumer price index by about three percent per year. Prices of rice, which accounts for one-third of the food and beverage category, rose by 9.9 percent per year during 2004-08. Livestock price increases were about six percent per year during 2004-08. The overall increase in the prices of food items exceeded the increase in the price of non-food items by two percentage points. There exists a high positive correlation (more than 95 percent) between the world and the national price indices of food, cereal grains and diesel (Table A.2).

Table 7.1 Comparative inflation indices of food and non-food items

	2000/1	2001/2	2002/3	2003/4	2004/5	2005/6	2006/7	2007/8	Annual Growth % (2001-4)	Annual growth % (2004-8)	Total Increase % between 2004-8
GDP deflator	100.0	103.9	107.1	111.6	118.9	127.2	137.1	147.8	3.7	7.3	32.3
National urban consumer price index (overall)	100.0	102.9	107.8	112.1	117.2	126.5	134.6	147.4	3.8	7.1	31.5
Food and Beverages (weight 53.4%)	100.0	103.7	108.3	111.9	116.3	125.4	134.4	152.0	3.8	8.0	35.8
Non-food and services Items (weight 46.8%)	100.0	102.1	107.2	112.2	118.0	127.5	134.6	142.3	3.8	6.1	26.8
Grains and cereal products (weight on food & bev. 33.8%)	100.0	102.1	110.5	111.8	116.0	131.6	140.0	163.5	3.8	10.0	46.2
Rice (weight on food & bev. 26.6%)	100.0	101.1	109.8	110.9	114.5	131.5	135.1	161.7	3.5	9.9	45.8
Meat, Fish and eggs (weight on food & bev. 9.8%)	100.0	104.1	107.5	114.9	122.3	126.9	135.2	147.3	4.7	6.4	28.2
Milk and Milk products (weight on food & bev. 7.7%)	100.0	101.2	102.1	103.9	104.4	109.3	117.4	129.8	1.3	5.7	24.9
Price of Petroleum (Diesel)	100.0	100.0	100.0	117.0	154.9	173.6	200.6	264.2	5.4	22.6	125.8

Source: Government of Nepal, 2008.

7.5 ANALYSIS OF DIFFERENCES BETWEEN DOMESTIC AND INTERNATIONAL PRICES

Between 2004 and 2008, the world food price index increased by about nearly 90 percent whereas the cereal grains index rose by 137 percent. The comparative increases in Nepal were considerably lower but still substantial: 36 percent for the overall food index and 46 percent for the cereal index. Thus, the degree of transmission of world market price increases to Nepal was about 40 percent for food in general and about 34 percent for cereal grains. There exists a high correlation (more than 95 percent, see Table A.2) between international prices and domestic prices of food and cereals which suggests a reasonably good integration between world markets and the domestic market in Nepal.

A regression analysis of the domestic price index and the world price index of cereal grains between 2001 and 2008 indicates that 91 percent of the variation in the domestic food grain price in Nepal can be explained by the variation in the world price. The regression also shows that a one percent change in the world price would lead to a change in the domestic price of cereal grains of 0.34 percent. In other words, about one-third of the change in the world market price of cereal grains is transferred to the domestic market in Nepal (Equation 1). Similarly, 95 percent of the variation in domestic food price is explained by the variation in the world food price and a one percent change in the world food price index would lead to a change of 0.42 percent in the domestic food price (Equation 2).

$$\text{DFGPI} = 75.43 + 0.336 \text{ WFGPI} \quad R^2 = 0.91 \quad (1)$$

(t = 7.8)

$$\text{DFPI} = 65.5 + 0.423 \text{ WFPI} \quad R^2 = 0.95 \quad (2)$$

(t = 11.1)

where, DFGPI = Domestic Food Grain Price Index
 DFPI = Domestic Food Price Index
 WFPI = World Food Price Index
 WFGPI = World Food Grain Price Index

Nepal maintains a price control system for petroleum products through a subsidy. The domestic price of oil increased by 125 percent between 2004 and 2008 compared to over a tripling of the international price of oil (from US\$35 per barrel in 2004 to about US\$120 in May

2008). Part of the effect of the international oil price increase was absorbed by the fuel subsidy which helped dampen the impact of changes in world market prices of food and cereal grains on domestic prices. Since Nepal's imports of non-cereal food items exceed its imports of cereal grains, a larger part of the world market price increase of non-cereal food items was transferred to the domestic market compared to cereal grains.

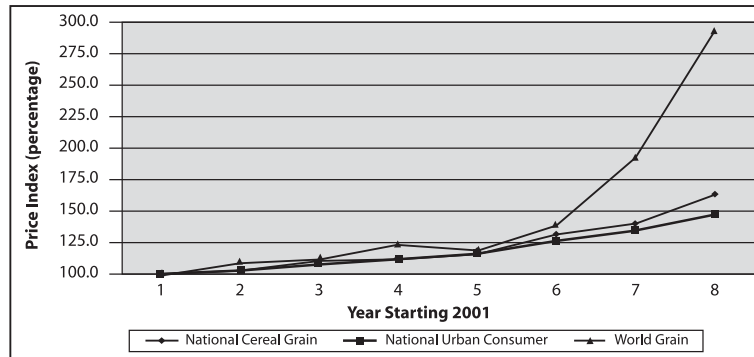
While various policies are responsible for the rise in domestic food prices, the increase in the fuel price of 22.6 percent a year during the period 2004-08 (despite the subsidy by the government) is one of the principle causes of the price rise given the importance of the transportation component in the domestic price of food (about 10 percent in the case of cereals). The impact of fuel costs on other agricultural activities like land ploughing and irrigation by diesel pumps also plays a role. But the impact on the price of chemical fertilizer is particularly stark: given a per hectare use of chemical fertilizer of about 50 kg and a price increase of Rs 21 per kg of nitrogen, fertilizer price increases added about Rs 1,050 to the per hectare cost of cultivation. This works out to about a one rupee per kg rise in the cost of production of rice, equivalent to about five percent of the sales price of rice.

Labor cost is another important factor affecting food prices. Nepalese agriculture has started competing with Middle East countries for labor due to high emigration of young rural laborers from the country — more than 250 thousand a year over the last four to five years. In addition, India's open border also impacts on domestic food prices as Nepal has been importing food from India for the last two years and the price differential between the border areas in India and Nepal are between 10 to 15 percent (see Table A.4).

A comparison between the price of rice in Nepal and in Thailand reflects a difference of about seven rupees per kg in normal years (Table A.5) and this difference closely resembles transportation costs and normal business margins.

7.6 FUTURE OUTLOOK FOR PRICE DEVELOPMENTS

Nepal being a small country with relatively open borders with a large country (India), prices in Indian markets highly influence market prices in Nepal. Since India has a deliberate policy of price stabilization, this has helped stabilizing prices in Nepal as well. In general, as the



Source: Based on data from FAO and Department of Agriculture — Nepal.

Fig. 7.1: Relation between world and domestic cereal grain price index

international oil price is expected to go up in the future, this will affect food grain prices in Nepal as diesel is used for transportation, in tubewell irrigation and for agricultural operations (tractors). The share of transportation costs in total production costs is generally higher in remote areas.

Domestic price differences between hill and Terai areas are affected by road access and fuel prices since food will have to move from surplus regions (Terai) to deficit regions (hills). During the past eight years, about 1,600 kilometers of roads have been constructed and eight more remote districts have been connected by roads. This is expected to result in a decrease in commodity prices in the hill areas relatively to those in the Terai.

Following the recent decrease in the international price of oil, food grain prices are expected to decrease as well. However, the adjustment will not be immediate as the government of Nepal has adopted a policy of gradual price adjustment in an attempt to partially recover previous fiscal losses caused by high subsidies.

Labor flows to foreign countries from rural areas are becoming a serious problem as labor costs have increased by more than 50 percent over the last five years. Moreover, labor during planting time is becoming increasingly scarce in the Terai as India is growing at a faster rate and bordering Indian states attract labor from the Terai during certain periods. If Nepal does not move fast to introduce appropriate mechanization and other support measures to agriculture, the country is

likely to face higher cost of cultivation and a possible loss in comparative advantage compared to bordering India and Tibet. This would then lead to a gradual increase in domestic food prices, particularly in the hills and mountains which are poorly connected to international markets.

7.7 SHORT AND MEDIUM TERM POLICY REACTIONS

Food imports and reductions in import duties and value added taxes

Nepal started introducing liberal economic policies in the mid 1990s. Prior to that, the applied customs tariff rates ranged from five to 130 per cent with intermediate tariff rates of 10, 15, 25, 40 and 80 percent. By 1996-97, the unweighted average customs duty rate for imports fell to 11 percent. Presently the latter is about 9.5 percent and is among the lowest in the SAARC region. Duties and other charges on imports of agricultural products range mostly between 10 to 15 percent with a few products being taxed at only five percent (e.g. food for infant use) but others up to 40 percent (e.g. beverages and fruit juices) (Table 7.2). Nepal also has a 13 percent value added tax (VAT). The average bound tariff rates for agriculture and industry are 42 and 24 percent, respectively, with an average of 26.2 percent. As per the commitments made by Nepal in the WTO, other duties and charges will be eliminated within 10 years from 2004.

Table 7.2 Import taxes on agricultural products, 2008

Cereals (raw or processed), flour and seeds	10%
Products of Infant use	5%
Oilseed, veg. oils, fats	10%
Milk/Cream, fats*	10%
Solid or Powdered Milk, cream, cheese*	15%
Eggs	10%
Fat Mixed Preparations	15%
Meat	10%
Fruits/Vegetables raw or dried (10 % rebate on grapes to SAARC)	10%
Processed fruits including dried grapes	15%
Coffee	10%

(Contd.)

(Table 7.2 continued)

Tea	25%
Animal fat or vegetable extract preparations including jam/jelly/butter	15%
Beverages and fruit juice	40%
Live animals	10%
Honey	10%
Spices	10%
Sugar	25%

Source: Department of Customs, 2008.

7.8 EXPORT RESTRICTIONS AND ROLE OF TRADE

Export duties on cereals are as low as one rupee per kg (Table 7.3) accounting for three to five percent of the price. However, from May 2008 onwards there exists a ban on the export of cereals. Exports of vegetable oil and fats are taxed at four percent and require a license. Export duties on live animals are small at Rs 50 per head (accounting for less than one percent of the sales price) and birds are taxed at five rupees per head (accounting for about 2.5 percent of the average sales price). Exports of other food items are exempt from duties and require only filling in a consignment form for which there is a charge of Rs 500.

Table 7.3 Export taxes on agricultural products, 2008

Cereal and seeds	Rs 1 per Kg
Veg/soyabean Oil	4%
Vegetable/Animal fats	4%
Live Animals	Rs 50/head
Birds	Rs 5 per head
Dry Beans/lentils, peas,	Rs 1 per Kg
Husk dust	Rs 0.5 per Kg
Yarcha-gumba	Rs 1000 per kg
All other food items	None

Source: Department of Customs.

7.9 PUBLIC FOOD PURCHASE, STORAGE AND DISTRIBUTION

The food storage capacity of the Nepal Food Corporation (NFC) is limited at only 95,000 MT. Moreover about one-fourth of NFC's storage

facilities remains in poor condition. The corporation handles about 25,000 to 30,000 MT of food each year of which about 15,000 MT is sold in Kathmandu valley.

From a food supply perspective, 26 districts in the country are categorized as remote districts, most of which are located in mountains and hills. The total storage capacity in these districts is only about eight thousand MT. Nepal has altogether 94 offices/depots for food distribution of which 58 are located in remote districts.

Last year, the NFC sold 26.8 thousand MT of food, mostly rice (Table 7.4). This amount is very small and accounts for less than 0.2 percent of the edible food grain production/requirement in Nepal. Of the total sale of food by the NFC, 11.5 thousand MT (43 percent) was sold in remote districts. Annual purchases of food by the NFC fluctuate between 11 and 13 thousand MT and food aid received is about 5 to 6 thousand MT per year (Table 7.4). Emergency and food stocks amount to less than 10 thousand MT or about 0.1 percent of total food production in the country. This amount is grossly inadequate to meet any food shortage emergency situation.

Table 7.4 Sales of foodgrains by the NFC

Years	Total distribution (Mt)	Food Aid Received (Mt)
2001	18553	–
2002	24171	–
2003	17541	–
2004	21548	7952
2005	14022	9700
2006	20784	8282
2007	27098	5545
2008	26800	

Source: Nepal Food Corporation.

7.10 PRODUCTION INCENTIVES

There are currently virtually no production incentives provided to farmers by the government since most of these were abolished after 1997. However there does exist an electricity tariff rebate of 50 percent on ground water pumping but the effective use is low. As of 2007 only about 253,000 ha are irrigated by ground water and of this only 10 percent are expected to be using the rebate facility due to low rural

electrification and frequent load shedding. There also exists a transportation subsidy on chemical fertilizer and seed but this is provided only in 26 districts classified as remote. A few districts recently initiated some support measures for marketing and processing through a 50 percent capital subsidy to co-operatives and registered organizations of traders and processors under a commercial agriculture project. In 2008, the government has also announced a capital subsidy of 25 percent to co-operatives or other groups engaged in milk processing. In addition, an irrigation project in a number of districts in the eastern Terai provides a 50 percent subsidy on purchases of STW and also some other infrastructure support. However these initiatives are all relatively small from a national perspective and insufficient to develop agriculture at a faster rate.

Between 1996 and 2006, subsidies to farmers fell to the nearly negligible level of Rs 8 million, down from Rs 550 million (in 1996 prices; see also Government of Nepal, various years). Subsidies in 2006 came to about Rs 14 million (in 1996 prices) or a negligible 0.007 percent of agricultural GDP. Bordering India provides subsidies to farmers to the tune of about five percent of GDP. Nepalese farmers have to compete with Indian farmers because of open borders while facing a much weaker infrastructure base than Indian farmers. In this sense the low subsidies to agriculture in Nepal compromise the competitive edge of its farmers vis-à-vis India.

Finally, Nepal does not have any price guarantee scheme for farmers but in practice this would be difficult to justify anyway given the relatively open borders with India. As mentioned before NFC's purchases of food are about 12 thousand MT of rice per year, a negligible amount that represents only about 0.2 percent of the principal food crops produced in the country.

7.11 SOCIAL PROTECTION

Forty-four out of Nepal's 75 districts are classified as food deficit and together they represent about one-third of the total population in the country (Table 7.5). However, food availability is particularly acute in the 26 districts classified as remote and the government sells subsidized food only in those districts. As mentioned earlier, the government's annual sale of subsidized food in these remote districts is on average only about 7,000 MT. Last year this amount was increased to 11,000 MT because of flooding problems. The total transport subsidy provided

Table 7.5 Food deficit districts (2005/06)

Region	Total districts	Population Proportion	Food deficit districts
Mountain	16	7.3	12
Hill	39	44.3	23
Terai	20	48.4	7
Nepal	75	100	42

Source: Department of Agriculture.

Note: Districts not accessible during rainy season = 26.

last year was Rs 260 million or about Rs. 23.6 per kg of subsidized food. The government price is about two-thirds of the prevailing market price. The supply by the government in remote districts amounts to less than three kg per head per year.

The food subsidy budget has hovered around Rs 250-260 million during the past several years and is limited by fiscal constraints. This year the government has increased the food subsidy budget to Rs 310 million. Since supply is relatively small and poverty is high in remote areas, there is always a long queue to obtain the subsidized food leading to frequent issues such as unrests near subsidized food sales depots. The policy of direct subsidized food sales of such a small scale is often questioned from an alternative policy perspective and opportunity cost of view.

The government's budget for social services provision has gradually increased over time. However, Nepal does not have a national social security system, except for a small monthly cash grant to elderly persons above 70 years of age, widows of more than 60 yrs of age, and the severely handicapped. Monthly allowances are Rs. 500 (about US\$6.50) and include all age groups of endangered ethnicities, Dalits, single women and people above 60 years of the Karnali Zone, and senior citizens (above 70 years). Likewise a monthly allowance of Rs. 1,000 is provided to the fully handicapped and Rs. 300 to the partially handicapped and disabled. For the past several years the government has been announcing the provision of selling food grain at cheaper rates to poor groups through co-operatives. However, this has not been implemented yet due to lack of funds.

In 2003 the Poverty Alleviation Fund (PAF) was established by the government in an attempt to increase welfare levels of the extremely poor. The PAF basically focuses on socially excluded groups through

a community approach. The program has been extended to 40 districts as of 2007/8. From the time PAF started operating 222,000 households have been assisted of which 68 percent are classified as ultra poor. Over the past five years, PAF has spent about Rs 2.8 billion. The PAF maintains a strong focus on income generating activities based in agriculture and in this way makes a significant contribution to food security. An independent evaluation of PAF is pending.

As mentioned before Nepal receives about 7 to 8 thousand MT of food aid each year, a relatively small amount which mainly goes to food-for-work programs in remote areas. Some of it is spent provided to school children in 11 districts classified as food deficit.

7.12 FOOD SECURITY OUTLOOK

Nepal as a whole is not (yet) a food deficit country and annual per capita availability of edible food grains is about 190 kg (Table 7.6). Including potato, food availability is about 258 kg per capita per year (Table A.3). However, availability of protein sources such as milk, meat and egg is much more limited. In food grains, the country has been hovering around the border line of self sufficiency for the past few years. During a normal production year, Nepal expects to have a food grain surplus of about 70 to 80 thousand MT. But after a drought the food grain deficit can be up to 200 thousand MT with food import expenditures nearing Rs. 2.5 billion. Since the projected annual population growth for the next decade is about 2.1 percent and annual food production growth is expected to be around 1.1 percent, Nepal is likely to become a net food importing country soon unless there will be significant increases in agricultural productivity.

Based on the Nepal Living Standard Survey (NLS) of 2003, the proportion of people with calorie deficit is estimated to be about one-third in the Terai and two-fifths in the hills and mountains (the deficit being highest in the mountains). However, food deficit districts exist in all regions, i.e. not only mountains and hills but also in the Terai. Three-fourths of the mountain districts, 60 percent of hill districts and about one-third of Terai districts are classified as food deficit areas. Except in drought years, the food security problem is more a matter of poor accessibility and poverty than insufficiency of aggregate national production. Still, there are about 12 districts that are inaccessible by vehicle year round, and about one-third of all districts (mostly in the hills and mountains) are not accessible by vehicles during the summer rainy season.

Table 7.6 Edible foodgrain balance situation (rice, maize, wheat, millet, barley) (MT)

Year	Total production	Total requirement	Balance	Population	Food production per capita
2001	4513179	4430128	83051	23.2	194.5
2002	4543049	4463027	80022	23.7	191.8
2003	4641466	4565820	75646	24.2	191.9
2004	4884371	4671344	213027	24.7	197.8
2005	4942553	4779710	162843	25.2	196.0
2006	4869440	4890993	-21553	25.7	189.2
2007	4815284	4995194	179910	26.3	183.2
Annual Growth rate	1.1%	2.02%		2.1%	–

Source: Department of Agriculture.

Food deficit districts are not, however, always poor in resources and many do seem to have alternate means of increasing income. For example, hill districts have good potential for producing high value crops like citrus and livestock products; and mountain districts have favorable conditions for producing high value herbs, fruits, yak cheese, organic agricultural products etc. Likewise the terai areas are most suitable for cereal and cash crop production. Given Nepal's low agricultural productivity there exists ample potential for increasing food production by adopting modern technologies, investments in rural infrastructure and introduction of appropriate policies.

Given the above perspectives, food security in Nepal can be addressed in three major ways: (a) increasing domestic food production mainly through productivity increases and appropriate policy measures; (b) improving market access; and (c) increasing household incomes of poor families through income generating programs. The following specific measures may be worth consideration in this context.

Increasing investments in non-tradable goods that stimulate agricultural production

Agricultural subsidies are not an option for a country like Nepal because of limited fiscal space and an open border with India. Instead introducing support measures that stimulate the production of non-tradable goods

(and which favor agricultural production) is a much more promising road. Such measures may include investments in rural roads, agricultural research and extension, rural electrification, community mobilization and irrigation infrastructure.

Increases in irrigated area in Nepal have been limited to 20 to 25 thousand ha per year recently and public expenditures on irrigation have declined considerably over the last 10 years, at a rate of about five percent per year (Table A.6). On the other hand in 2008 there has been an increase in spending on irrigation of about Rs 2 billion. Increasing the area with year-round irrigation is a distinct possibility in Nepal as about 500,000 additional ha could be irrigated in the Terai within a short period of ten years through STW technology. This is a much cheaper option than expanding irrigated area through surface schemes which have much higher per ha investment costs (Rs. 200,000 versus Rs. 15,000 for STW). Surface irrigation would be suitable in areas where STW are not feasible, for example, in the hills and some parts of the Terai. Given that most of the support for irrigation development would need to come from the donor community, they would have to buy into these ideas and promotion efforts are therefore required.

The massive installation of STW would need to be regarded as infrastructure investment by the government and therefore as a public good. It could become an integral part of a wider campaign for poverty alleviation. Installation of STW will cost about Rs 5-6 billion for the entire Terai, which is less than two years the current irrigation budget. Good extension, rural electrification and rural road construction should complement investments in STW and follow a cluster approach as applied in some projects at present.

Improving market access would imply the need to scale up investments in rural road construction and rehabilitation. The present pace of constructing 200 km of new roads per year is insufficient given the urgent need to expand feeder roads in order to connect highways to remote agricultural areas. Public expenditure data show that investments in feeder roads declined by about nine percent per year over the last decade while investment in highways increased somewhat, but only by about two percent per year (Table A.9).

Increasing expenditure on agricultural research and extension by focusing on priority commodities and adaptive research is vital. Government expenditure on agricultural research is currently less than 0.15 percent of agricultural GDP (AGDP) and on agricultural extension it is about one percent of AGDP, both of which are much lower than in most other countries.

Increasing the use of modern fertilizer

Increased use of essential inputs like chemical fertilizer is vital for achieving agricultural productivity increases. The so-called organic approach to agricultural production cannot feed the fast growing population of Nepal and seems relevant only in some high hill districts where the cost of transporting products is very high. The current level of fertilizer use of about 50 kg per ha should be increased to at least to 150 kg per ha before getting into any other debates of organic versus inorganic technology alternatives.

Enhancing microcredit

The financial sector is expanding fast in Nepal following a number of financial sector reforms. However, financial institutions operating in rural areas are still limited, mainly due to high transaction costs and high perceived risk. There is need for appropriate policy interventions that encourage the development of adequate financial instruments for rural areas in general and smallholder farmers in particular.

Increasing incomes of poor families through income generating programs

While national food security is an important consideration, the scope at the micro level should be broader. Increasing incomes of poor households from alternative means of production with comparative advantage should be promoted. Stacked cultivation through the use of vertical space may be a useful technology to promote high value products such as vegetables, mushroom, asparagus, sericulture, poultry, livestock with stall feeding, etc. Effective extension and market support is needed for these types of technologies to obtain foothold with an active role for the government, especially where they involve poor smallholder farmers. Likewise contract farming should be promoted through the development and enforcement of adequate legal and institutional frameworks. Labor migrants returning from abroad often bring new idea and skills with them and policies should be in place to harness the potential. Policy makers should look beyond the age-old land-reform approach; the uncertainty of land reform policies have threatened property rights in Nepal for decades and has had a significantly negative influence on investment growth, commercial scale farming and adoption of modern technology.

Encouraging local food production in remote areas

Transport to and from hills and mountainous areas can be very expensive and makes up a high percentage of the purchase price. At present emergency distribution of food to these areas includes rice which belongs to food basket of mostly middle class people. This policy needs a review in order to come up with a selection of the right commodities for distribution focused on hunger relief to the poor. Items that are locally produced and consumed by the poor should receive priority. Connecting remote areas and encouraging local production rather than distribution of subsidized food carried from elsewhere would be the preferred policy for the future. The government may consider providing a temporary support price in the hills and mountains of locally produced food items based on the purchase price of similar items elsewhere plus the transport cost of the subsidized food. In addition, agricultural extension services need to be enhanced. Part of the budget for such efforts could come from the current transport subsidy provided to food items in the remote areas. The support price could be gradually phased out as local production expands.

Continuity of appropriate food and agricultural sector policies

Continuation of policies is often a problem in developing countries but is especially important for agriculture in Nepal as it is the primary driver of the economy. The international community also bears responsibility in this respect as donor policies often lack both continuity and consistency. Nepal's agriculture Perspective Plan (APP) is a valuable document prepared by the government with support from major donors and with wide political consensus. But while political consensus continued, donors lost interest soon after implementation.

The notion of public versus private goods gained popularity in the context of economic liberalization and led to the slashing of agricultural subsidies. The notion was strictly applied even to non-tradable commodities such as shallow tube well installation by small farmers. This has led to a decline in the number of new STW installed from 5,000 per year to 500 per year. But STW are an important component of the APP strategy which therefore collapsed. This also raises the question why surface irrigation schemes are considered a public good and subsidized to the extent of 97 percent while STW are defined as private goods, even if small farmers often do not have the capacity to pay for their installation. As the installation of STW remained depressed

for several years, the subsidy got reintroduced in the name of pump set purchase support (50 percent) on a project basis so some improvement is now on the way.

Finally, both at the government level and among the international donor community, there is a need of developing a culture of analysis and debate in intellectual forums before imposing any conditionality or recommending blanket policy solutions. This is very important in view of the fact that the future consequence of misconceived conditionalities or inappropriate policy solutions can be easily overlooked at the time of negotiations between the government and donors.

References

- Government of Nepal. 2007. Agriculture Marketing Information Bulletin. Special Issue 2007; Department of Agriculture. Kathmandu.
- . 2008. Economic Survey 2007-08. Ministry of Finance, Kathmandu.
- . (various years). Redbook Budget. Ministry of Finance. Kathmandu.
- Yadav, R.P. and S.H. Dhungana. 2006. Nepal Agriculture Sector Review. Kathmandu.

*Annex***Table A.1 Price trends of major cereal grains and food products (price during March); price per kg, mustard oil and diesel per liter**

Commodity	2002/ 03	2003/ 04	2004/ 05	2005/ 06	2006/ 07	2007/08 (March)	Price 2008 (Oct) Lalitpur City
Rice coarse	16.1	20.9	18.5	21.9	23.0	26.1	29.0
Wheat flour	16.9	23.1	20.9	24.2	27.70	27.96	30
Black gram	48.8	47.6	46.2	54.12	71.8	74.1	70.0
Rahar (Pulse)	49.3	56.2	55.2	55.1	64.4	77.1	85.0
Mustard oil	70.4	108.1	97.5	93.8	102	135.2	150
Ghee purified	225.3	238.6	240.5	259.1	275.3	270.9	315
Mutton	175.5	205	210.1	232.5	235.0	248.7	400
Potato	9.11	8.1	11.3	12.2	14.6	15.2	20
Dried Onion	13.6	35.3	21.2	21.13	33.0	30.1	35
Chicken	135.1	135.8	142.7	146.9	156.8	175.0	200
Milk	21.70	22.4	23.0	25.14	24.9	30	33
Eggs	4.7	4.7	5.0	5.0	5.17	6.5	7.0
Diesel	26.5	31.0	41.0	46	53.2	70	70

Source: Government of Nepal, 2008; Food Store Market Prices.

Table A.2 Relation between Nepal and world food price indices

Year	Food Price index		Cereal grain price index		Price of diesel per liter
	World	Nepal	World	Nepal	
2001	94	100.0	87	100.0	100.0
2002	93	103.7	95	102.1	100.0
2003	102	108.3	98	110.5	100.0
2004	113	111.9	108	111.8	117.0
2005	116	116.3	104	116.0	154.9
2006	126	125.4	122	131.6	173.6
2007	156	134.4	168	140.0	200.6
2008	213	152.0	255	163.5	264.2
Price increase during 2004-08	88.5	35.8	136.1	46.2	125.8

Source: Based on data from FAO and Department of Agriculture, Nepal.

Note: Correlation between world food price and Nepal during 2001-08 = 97.6%.
Correlation between world cereal price and Nepal cereal price in 2001- = 95.4%.
Correlation between Nepal food price and diesel in 2001- = 98.6%. Correlation
between Nepal cereal price and diesel in 2001- = 98.1%.

Table A.3 Per capita food availability from domestic production (kg except where specified) (2007)

Edible Food grain	183.2
Potato	73.9
Pulse	10.4
Meat	8.7
Milk	51.5
Fruits	21.9
Vegetable	87.5
Egg (number)	23.4
National Population 2007/8	2628103

Source: Department of Agriculture, Nepal.

Table A.4 Border prices in India and domestic prices in Nepal (2006)

Commodity	Jogbani-I	Morang-N	Difference %	Raxul-I	Parsa-N	Difference %
December						
Rice Coarse	15.0	18.0	16.7	17.5	17.4	-0.6
Wheat Flour	21.5	26.3	18.3	22.5	22.6	0.4
April						
Rice Coarse	15.0	18.5	18.9	16.0	17.3	7.5
Wheat Flour	18.5	21.0	11.9	20.0	20.5	2.4
August						
Rice Coarse	15.0	18.9	26.0	15.2	20.0	24.0
Wheat Flour	19.0	20.0	5.0	19.8	23.0	13.9

Commodity	Nautanwa-I	Rupandehi-N	Difference %
December			
Rice Coarse	16.0	18.0	11.1
Wheat Flour	20.8	23.0	9.6
April			
Rice Coarse	16.0	18.0	11.1
Wheat Flour	19.2	22.0	12.7
August			
Rice Coarse	16.0	17.0	5.9
Wheat Flour	20.8	22.0	5.5

Source: Government of Nepal, 2007; Department of Agriculture.

Table A.5 Price of rice in Nepal compared to international price*

Year	Price \$/ton	Exchange rate (Rs/\$)	Price Rs/Kg (Thailand)	Price Rs/Kg Nepal (Medium-Mansuli)	Price Diff Rs/Kg
2001	173	75	13.0	22.23	9.3
2002	192.0	78.3	15.0	21.03	6.0
2003	198.0	75.0	14.9	21.78	6.9
2004	238	74.4	17.7	23.48	5.8
2005	286.0	70.6	20.2	22.94	2.7
2006	305.0	74.4	22.7	27.08	4.4
2007	326.0	65.1	21.2	28.2	7.0

Source: FAO and Department of Agriculture, Nepal.

Note: *International price for 5% broken rice (Thailand); Domestic price for Mansuli rice.

Table A.6 Public development expenditure on the agricultural sector, 1992/93-2005/06

Year	Total agric. Sector		Agriculture		Irrigation		Land Reform		Forestry	
1995/96 Million Rupees*										
1992/93	6690	(100.00)	2694	(40.27)	2572	(38.45)	218	(3.26)	1206	(18.02)
1993/94	7939	(100.00)	2721	(34.27)	3772	(47.52)	293	(3.69)	1152	(14.52)
1994/95	6938	(100.00)	2922	(42.11)	2864	(41.28)	298	(4.30)	854	(12.31)
1995/96	6480	(100.00)	2292	(35.37)	2989	(46.12)	339	(5.23)	860	(13.27)
1996/97	5657	(100.00)	1817	(32.13)	2614	(46.22)	321	(5.68)	904	(15.97)
1997/98	5256	(100.00)	1900	(36.15)	2170	(41.28)	375	(7.13)	811	(15.44)
1998/99	5223	(100.00)	1556	(29.78)	2329	(44.58)	410	(7.84)	930	(17.80)
1999/00	5324	(100.00)	1624	(30.50)	2345	(44.06)	383	(7.19)	972	(18.25)
2000/01	6132	(100.00)	1776	(28.96)	2958	(48.24)	451	(7.35)	947	(15.45)
2001/02	5828	(100.00)	1949	(33.45)	2241	(38.46)	482	(8.28)	1155	(19.81)
2002/03	4374	(100.00)	1328	(30.35)	1575	(36.00)	366	(8.36)	1106	(25.29)
2003/04	4439	(100.00)	1307	(29.45)	1597	(35.97)	383	(8.62)	1152	(25.96)
2004/05	4521	(100.00)	1435	(31.75)	1442	(31.88)	413	(9.13)	1232	(27.24)
2005/06	4837	(100.00)	1665	(34.43)	1641	(33.92)	447	(9.25)	1084	(22.41)
Average	5688	(100.00)	1928	(33.89)	2365	(41.57)	370	(6.50)	1026	(18.04)
Growth (%)	-3.57		-5.17		-5.55		4.00		1.00	

Source: Yadav and Dhungana, 2006.

Note: *Used CPI as Deflator.

Numbers in parentheses show percentage share in total agriculture sector expenditure.

Table A.7 Public current expenditure on agriculture, 1997/98-2005/06

Year	Agriculture Total		Research		Extension		Subsidy		Others	
1995/96 Million Rupees										
1997/98	1900	(100.00)	226	(11.87)	966	(50.83)	550	(28.92)	159	(8.37)
1998/99	1556	(100.00)	225	(14.49)	882	(56.70)	282	(18.13)	166	(10.68)
1999/00	1624	(100.00)	243	(14.98)	1038	(63.91)	183	(11.28)	160	(9.82)
2000/01	1776	(100.00)	307	(17.32)	1177	(66.31)	21	(1.20)	269	(15.17)
2001/02	1949	(100.00)	307	(15.76)	1317	(67.53)	15	(0.79)	310	(15.91)
2002/03	1328	(100.00)	178	(13.40)	969	(73.03)	18	(1.37)	162	(12.21)
2003/04	1307	(100.00)	186	(14.23)	978	(74.81)	12	(0.91)	131	(10.05)
2004/05	1435	(100.00)	186	(12.94)	989	(68.90)	9	(0.62)	252	(17.54)
2005/06	1665	(100.00)	152	(9.15)	1148	(68.97)	8	(0.45)	357	(21.43)
Average	1616	(100.00)	223	(13.83)	1052	(65.09)	122	(7.55)	218	(13.52)
Growth (%)	-2.50		-5.30		1.20		-42.40	-	6.20	

Source: Yadav and Dhungana, 2006.

Table A.8 Domestic price of fertilizer (Rs per MT)

Year	Urea	DAP
2000	8000	20400
2001	13980	19500
2002	13500	19000
2003	14200	19500
2004	15560	20860
2005	16000	24000
2006	16000	24000
2007	14200	25000
2008	24000	25000

Source: Agricultural Inputs Company, Ltd.

Table A.9 Public expenditure on roads, 1997/98-2005/06

Year	Road Transportation		Highways		Feeder Roads		Rural Roads		Rehabilitation & Maintenance		Bridges		Others	
1995/96 Million Rupees														
1997/98	4448	(100.0)	701	(15.8)	550	(12.4)	54	(1.2)	2657	(59.7)	271	(6.1)	215	(4.8)
1998/99	3769	(100.0)	317	(8.4)	479	(12.7)	61	(1.6)	2488	(66.0)	247	(6.6)	176	(4.7)
1999/00	3303	(100.0)	544	(16.5)	630	(19.1)	52	(1.6)	1415	(42.8)	466	(14.1)	196	(5.9)
2000/01	3651	(100.0)	906	(24.8)	761	(20.8)	72	(2.0)	1153	(31.6)	486	(13.3)	273	(7.5)
2001/02	3384	(100.0)	1065	(31.5)	583	(17.2)	162	(4.8)	897	(26.5)	344	(10.2)	332	(9.8)
2002/03	2763	(100.0)	953	(34.5)	263	(9.5)	98	(3.6)	637	(23.1)	163	(5.9)	649	(23.5)
2003/04	2928	(100.0)	981	(33.5)	407	(13.9)	179	(6.1)	827	(28.3)	242	(8.3)	291	(9.9)
2004/05	2884	(100.0)	563	(19.5)	351	(12.2)	124	(4.3)	1325	(45.9)	331	(11.5)	190	(6.6)
2005/06	2855	(100.0)	493	(17.3)	238	(8.3)	87	(3.0)	1570	(55.0)	260	(9.1)	207	(7.2)
Average	3332	(100.0)	725	(21.8)	474	(14.2)	99	(3.0)	1441	(43.3)	312	(9.4)	281	(8.4)
Growth (%)	-5.03		2.60		-9.80		11.90		-9.00		-2.80		2.90	

Source: Yadav and Dhungana, 2006.

Chapter 8

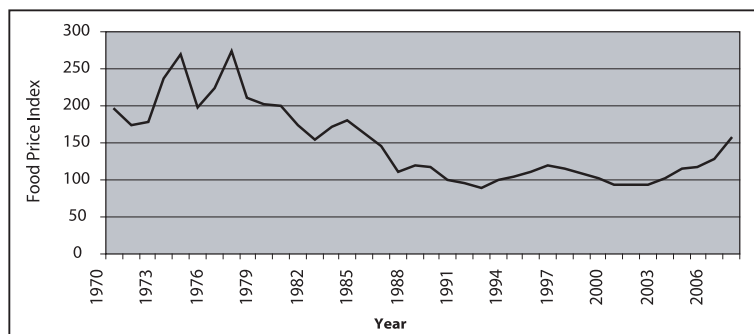
Managing Food Price Inflation in Sri Lanka

Saman Kelegama

8.1 INTRODUCTION

Rising food prices have been a global phenomenon since mid 2000. The year 2008 marked the highest ever increase in world market food prices which started accelerating in 2007, with a nearly 118 percent increase in the price of imported milk powder and 200 percent increase in wheat flour prices within a period of 12 months. The increase in the international price of rice was 250 percent between 2007 and 2008. Developing countries, however, are most vulnerable and hardest hit by the price hike in essential food items, especially countries which are net food importers such as Sri Lanka. The impact of food price inflation is highly regressive causing severe stress on the poor and vulnerable people in developing countries including Sri Lanka. Since food constitutes up to 60 percent of consumption expenditure of the poor, soaring prices can be expected to lead to increased malnutrition and poverty, unless certain short to medium-term policy solutions are identified and implemented (IPS, 2008a).

Owing to the adoption of Green Revolution technologies from the late 1960s onwards, relatively high growth rates of global agricultural production were achieved during the past three decades. As portrayed in Figure 8.1, the Global Food Price Index shows a declining trend since the late 1970s until the year 2006. At the macro level, the fall in real prices of food in the world affects both food importing and food exporting countries. Net food importers gain as their expenditure falls due to the reduction in prices while exporters suffer a loss. At the micro level, net food consumers gain while net producers lose when prices decrease. Yet the real world situation might be different from the aforementioned as gains and losses depend greatly on the bundle of food commodities that a country imports and exports; and

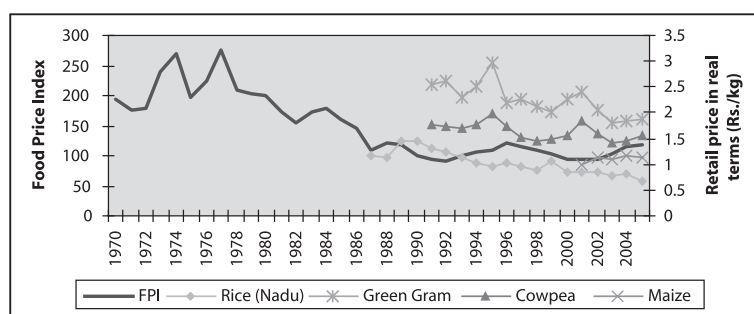


Source: IPS, 2008b.

Fig. 8.1: Global food price trends

the bundle of food commodities that is being consumed and produced at the household level.

As shown in Figure 8.2 real food prices in Sri Lanka also present a declining trend pacing along with the global trend in food prices. The main reason behind the earlier long-term decline in food prices has been the increases in production both globally and domestically, by 24 percent and 39 percent, respectively, during 1970-1990 (IPS, 2008a).

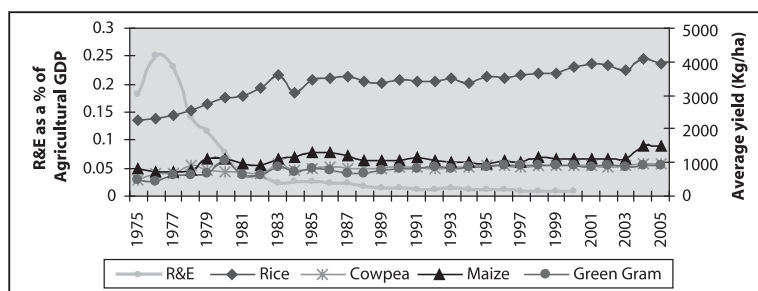


Source: IPS, 2008b.

Fig. 8.2: Global and Sri Lankan food price trends

The main reasons for the recent global food price hike include increasing world population, increasing income in developing countries, increasing urbanization, changing food habits due to income changes

and urbanization, natural disasters, market speculation, surging energy prices and increasing cost of production, expansion of bio-fuel production, constraints on area expansion and irrigation, policy biases towards diversification and value addition, and leveling off of yields due to reduced investment in agricultural research and extension (IPS, 2008). In Sri Lanka investments in agricultural research showed an increasing trend during the Green Revolution period in the early 1970s. Figure 8.3 shows the decline in investments in agricultural research since 1977. Following this the yields of food crops started to stagnate soon after.



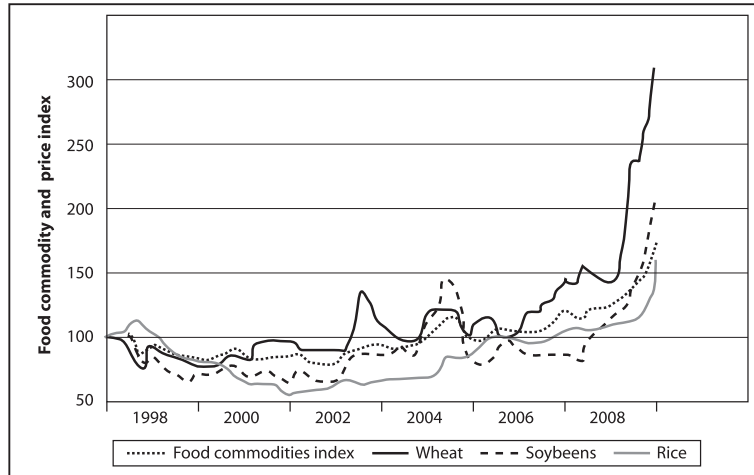
Source: IPS, 2008b.

Fig. 8.3: Investments in food crop research and extension in Sri Lanka and productivity growth

The recent food price hike in Sri Lanka is partially due to the global price escalation of essential food commodities. The increase in the world food price index is mainly supported by grains and dairy products (IPS, 2008a). Sri Lanka's traditional and preferred staple food is rice and currently Sri Lanka imports only about four percent of its total rice consumption. This leaves wheat, corn and dairy as the major contributors to the recent food price inflation in Sri Lanka (Fig. 8.4).

Future outlook for price developments

Significant increases in tea, rubber and paddy production, and growth in fish production after recovery from Tsunami destruction have contributed positively to the growth of the agriculture sector in 2008 in Sri Lanka (Central Bank of Sri Lanka, 2008b). Production of most subsidiary food crops has shown significant growth while vegetable



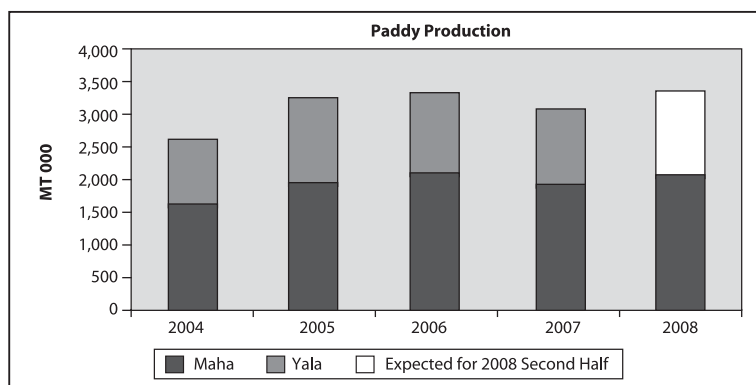
Source: IPS, 2008b.

Fig. 8.4: Changes in world food commodity and price indices

production has also increased during the first half of 2008, compared to the corresponding period of 2007. Paddy production in the 2008 Yala season (minor rainy season of Sri Lanka) recorded an all time high due to favorable weather conditions, subsidized fertilizer prices and relatively higher producer prices. However, coconut production reported a decline due to erratic weather conditions during the first half of last year.

Paddy production in the 2007/08 Maha season (major rains period) recorded an increase over the corresponding period last year. Paddy production increased by 7.8 percent due to higher rainfall received during the North-Eastern monsoon period (Fig. 8.5). Some crop damage has also been recorded in certain parts of the North Central and Eastern provinces, mainly due to floods (Central Bank of Sri Lanka, 2008b). However, overall paddy production recorded a substantial growth over the previous year, mainly due to area increases. Total area harvested increased by 6.3 percent compared to the previous Maha season due to increased producer prices (Central Bank of Sri Lanka, 2008b).

Paddy production in the Yala 2008 season was projected to increase significantly by 35.8 percent, to around 1.57 million metric tons (MT) (Central Bank of Sri Lanka, 2008b). This increase is mainly attributed



Source: Central Bank of Sri Lanka, Monthly Bulletins.

Fig. 8.5: Paddy production in Sri Lanka

to area expansion stimulated by higher producer prices. The government increased the minimum purchasing price of paddy to Rs.28.00-30.00 per kg, an increase of 24.4 percent compared to the previous (2007) minimum price level. Total paddy production in 2008 increased to about 3.7 million MT, an 18.2 percent increase over the paddy output in 2007 (Table 8.1) (Central Bank of Sri Lanka, 2008b).

Table 8.1 Agriculture production indices (1998-2000 = 100)

Item	2007 First Half	2008 First Half ^a	% Change
Agriculture and Fishing	120.2 ^b	129.3	7.6
Agriculture	123.0 ^b	132.5	7.7
Tea	100.0	119.3	19.3
Rubber	130.3	138.8	6.5
Coconut	108.7	92.1	-15.3
Paddy	147.9	159.5	7.8
Other crops	116.5	131.7	13.0
Livestock ^c	145.4	153.6	5.6
Fishing	102.9	109.9	6.8

Source: Central Bank of Sri Lanka, Monthly Bulletins.

Note: ^aProvisional; ^bAmended; and ^cAfter revising the index with data from Department of Animal Production and Health.

Fish production increased by 6.8 percent to 150 million kg during the first half of 2008. This increase was a combined outcome of an increase in marine fish production by 7.5 percent and inland fish production by 1.2 percent. It is noteworthy that marine fish production has leaped past pre-tsunami levels despite escalating fuel costs. This reflects the positive developments in infrastructure facilities as well as improvements in fishing gears. With the liberation of Eastern province and relaxation of security measures, both marine fishing and aquaculture increased fish production in the second half of 2008. Annual fish production was around 314 million kg, a 7.8 percent increase over the previous year. Fish production in 2009 is also projected to increase moderately by 3.6 percent to 325 million kg with gradual removal of restrictions on fishing in the North and Eastern provinces, development of infrastructure and introduction of new policy initiatives by the government (Central Bank of Sri Lanka, 2008a).

8.2 SHORT AND MEDIUM TERM POLICY REACTIONS

Bangladesh has been calling for the creation of a 'Global Food Bank' suggesting that such an institution would allow countries facing short-term shortfalls in production to borrow food grains on preferential terms. Hence, once they overcome the shortfall, these countries would return the borrowed quantities to the food bank. At the 15th SAARC Summit, the leaders of Afghanistan, Bangladesh, Bhutan, India, the Maldives, Nepal, Pakistan and Sri Lanka reiterated their proposal for a regional food bank (SAARC, 2008). The proposal for a food bank comes at a time when most food-deficit developing nations are worried about the impact of the spreading global economic crisis.

The Global Food Bank envisages two operational 'windows' to stabilize world food prices (Deen, 2008). The first window, based on Special Drawing Rights (SDRs) would allow countries to borrow food grains in times of crisis and shortfalls, according to a pre-determined quota system. The individual quota for each country would be determined on the basis of a formula, taking into account the size of its vulnerable population, variability in its food production, dependence on food imports, and other related factors. Borrowing countries would repay in the form of food grains. The food stock would remain dispersed all over the world, but perhaps closer to high-risk locations, and would cross borders only when SDRs would be exercised. The second window of the Global Food Bank, the market window, would create a trading

platform for the food grains futures and options. Governments would be able to buy and sell futures and options, to and from private parties, to smoothen and stabilize prices of food grains over the medium and long run.

In view of the then emerging global situation of reduced food availability and worldwide rise in food prices, a meeting of the Agriculture Ministers of the SAARC member states was convened in New Delhi, India in early November 2008, to develop a short-to medium-term regional strategy supported by a number of collaborative projects that would lead to:

- Increases in food production;
- Investment in agriculture and agro-based industries;
- Agricultural research and prevention of soil fertility degradation;
- Development and sharing of agricultural technologies;
- Sharing of best practices in procurement and distribution;
- Management of climatic and disease-related risks in agriculture;
- Operationalization of the Food Bank;
- Greater cooperation with the international community to improve food availability and ensure nutrition security in South Asia.

Public food purchases, storage and distribution (foodgrain reserves)

Despite the recent declines in the prices of many individual food commodities, global food prices are widely expected to remain at a higher plateau than before the food crisis providing an excellent opportunity for stimulating growth in the agricultural sector. In Sri Lanka, both domestic and plantation agriculture benefited from higher prices during 2007-2008. Paddy, coconut and several other agricultural products fetched higher prices in 2007. Some of the CWE (Cooperative Wholesale Establishment) stores were refurbished and converted into paddy storage facilities.

Fish production fully recovered from the adverse impact of the tsunami, reaching the highest ever level of 291 million kg in 2007, an increase of 16 percent per cent over the previous year. Marine, and inland and aquaculture fish production increased by 17 percent and nine percent, respectively (Central Bank of Sri Lanka, 2008b). Fish prices have remained generally stable during most of the year, mainly due to higher production and intervention through direct purchasing of

fish stocks by the Ceylon Fisheries Corporation (CFC) and fish distribution through the CFC's stalls and trucks with cooling facilities. Several steps have been taken to increase fish production further and to optimally use the marine resources.

New initiatives to minimize post-harvest losses

Guava has become popular as a commercial fruit crop because it can earn high profits. Cordial, jams and jelly-like food items can be prepared using guava as the main ingredient. The Department of Agriculture (DOA) of Sri Lanka has developed new hybrid varieties, i.e. Jambo, Horana sweet, Red giant, and Lanka apple, which are suitable for making the above products due to their good flavor and aroma. These new varieties yield about four MT per hectare with large fruits that have fewer seeds and resistant to pests and diseases. As estimated by the DOA, about Rs. 52,000 of net profits can be obtained from the first harvest and profits can increase to about Rs. 175,000 by the third year. At the same time, a new avocado variety was introduced by the DOA, which has high nutritional value as well as medicinal value. Due to the hardness of the outer skin post harvest losses will be lower. The hybrid avocado has already drawn substantial interest in export markets.

Private sector research and development investment to increase production for exports

Chemical Industries (Colombo) Ltd (CIC) and Cargill (through Food City chain) have made substantial strides to prove that agricultural production and distribution can generate profits. CIC's research and development division, the first of its kind in a Sri Lankan firm, is currently conducting experiments at its paddy fields at Hingurakkgoda and Pelwehera (Dambulla) to grow indigenous varieties of rice aimed at producing high quality and high yielding export products for niche markets overseas (Sirrimanna, 2008). The company already exports fruits (bananas) and vegetables to the Middle East and it has received orders from the US as well. About 200 indigenous varieties of rice have been identified of which only some have the characteristics that offer export potential. The company has had some of its staff trained in China in growing hybrid rice and continues to grow promising varieties at its farms. CIC has invested Rs. 1 billion for the financial year 2007/2008 to diversify its high value agricultural production activities.

Production incentives

There is also a need to consider other instruments to address access to food by poor rural people, including safety nets, cash transfers, investments in increased smallholder agricultural productivity, and creation of sustainable non-agricultural economic activities to increase the capacity of the poor to demand food via the market. New Lak Sathoasa outlets were established in plantation areas to make rice available at a concessionary rate to the communities in plantation and neighboring areas in order to increase their consumption of food grains.

Fertilizer subsidies were further extended, despite the global fertilizer price escalation and the fiscal implications of the subsidy. Since chemical fertilizer can be harmful to the environment and human health, it is proposed to encourage the use of organic fertilizer and Rs. 500 million has been allocated to promote organic fertilizer production. Steps were taken to popularize the use of appropriate carbonic/chemical mixed fertilizer over the longer term, instead of chemical fertilizer only.

With a view to increase domestic food production, the government presented the National Policy on Agriculture in 2007. A national campaign was introduced under the Grow More Food ('Api Wawamu-Rata Nagamu') initiative with the objective of increasing domestic agricultural production and containing the rising cost of goods and services. As part of this initiative, attempts have been made to transfer improved technologies to farmers with a view to improve agricultural productivity.

In order to encourage domestic liquid milk production, the guaranteed price being paid to milk producers for fresh milk was increased from Rs. 30 to Rs. 40 per litre. In addition, credit facilities are provided at concessionary rates for the import of dairy cows, development of animal husbandry and to set up small and medium milk processing centres. Moreover, milk and dairy products are exempted from VAT and concessionary loans were granted to develop over 50,000 livestock farms in the Northern, North Central, Southern and Uva Provinces. A legal framework to prevent the slaughter of milking cows and to increase the associated fine from Rs. 250 to Rs. 50,000 was also implemented and cold storage facilities were set up along with milk collection centres at the provincial level.

As an island nation, Sri Lanka has not yet fully harnessed the potential of its marine resources. Despite various incentives provided by successive governments, the country's fish production still remains

well below its full potential. An effective public fishing sector development strategy with involvement of the private sector is needed in this respect resulting in higher production as well as earning foreign exchange from exports of fish produce. Such a strategy would lead to an increase in sea-based economic activities creating more employment opportunities, especially for youth in fishing communities and would also contribute to increased economic growth. It is important that the fishery development strategy should aim to involve both foreign and local investors to increase the domestic value addition in this sector with the government facilitating the process by developing the necessary public infrastructure and encouraging the use of new technology. The VAT exemption granted to prawn farmers to improve the industry is implemented with retrospective effect from 2004. Moreover, housing construction activities are undertaken under the 'Diyawara Gammana' Program (Housing for fisher-folks). Finally, fishermen are provided with vessels for deep sea fishing through a program of the Fisheries Ministry.

A New Comprehensive Rural Credit Scheme (NCRCS) was introduced in order to address the financial difficulties faced by the farmers (see the Annex for further information about this program).

Social protection: Emergency relief and food-based safety nets

Short term measures to mitigate the impact of food price inflation would include targeted social protection programs like food-based safety nets and food subsidy schemes; reductions in food import tariffs and taxes on food staples; and building buffer stocks. But beyond the immediate term yield-increasing production technologies are of critical importance. Besides higher yields, crop varieties that are more tolerant or resistant to pests, diseases and droughts, and new varieties and hybrids better suited for various agro-ecological conditions, would reduce risk and uncertainty and therefore enhance production sustainability.

Increasing costs of production due to increasing oil prices call for cost effective technologies. Accelerated investments that contribute to productivity growth are the only viable option for meeting future food requirements at reasonable prices without invoking irreversible degradation of the natural resource base. Improved rural infrastructure is needed to facilitate access to markets; local, national and international. Farmers' access to modern inputs such as improved livestock

breeds, crop varieties and hybrids, fertilizers and pest control measures, and credit, technical assistance etc. are all required to meet food production goals. Moreover, management of disaster related risk is needed to minimize the negative impacts of such events.

Acknowledgement of the key role of higher prices as an incentive for farmers to increase production is desirable as well. In order to enable farmers to take advantage of higher output prices, increased funding should be allocated to research, road building and improving access to market information. Priority should be given to agricultural research and while misgivings about genetically modified crops persist, it would be useful to recognize that genetically modified foods could help, especially given the pressure that global warming puts on future agricultural production. Improvements in post harvest technologies are much needed given relatively high post harvest losses.

Some researchers argue that agriculture now needs a complete transformation and that quality food for all in sufficient quantities is only possible through 'ecological agricultural methods' that rebuild the regenerative capacities of nature. Land rights and ownership of land, necessary for food production by farmers engaged in ecological farming should be ensured in a manner that would not compel or encourage them to sell their land under adverse circumstances.

Priority should be given to production of food for the people of Sri Lanka over commercial export oriented agriculture in allocation of land and resources. Reasonable prices for the produce of small scale farmers and fishermen should be fostered by the government. Use of illegal fishing gear should be banned and expansion of tourism zones and large scale industrial fishing that destroys the livelihoods of small scale fishermen should be prevented.

Several initiatives like 'Api Wawamu-Rata Nagamu' were taken in order to motivate and increase the domestic production of staples, vegetables and fruits, along with poverty alleviation programs like "Gama Neguma", "Gemi Diriya" and "Samurdhi Movement."

Revival of the eastern province: "Neganahira Udanaya"

The Eastern Province (EP) of Sri Lanka, which comprises the districts of Trincomalee, Batticaloa and Ampara, is rich in resources, ranging from paddy fields, forests, scrublands, wetlands, bays and lagoons. However, the internal conflict over the past two and a half decades has taken its toll in terms of economic development and stymied the

EP growth rates to about five percent during the period 2002-2006. Although the EP accounts for 15 percent of the country's land area, its contribution to GDP remains very low at 4.7 percent and the EP continues to be a poverty ridden, lagging region (Central Bank of Sri Lanka, 2008b).

Towards the end of 2007, however, the government obtained control of the lands that were being dominated by the terrorist groups and started creating a conducive environment for the resumption of normalcy in the region. The vast potential in the EP suggests that, with time, if the available resources are tapped appropriately, it could unleash a new source of growth that would be a boost to the national economy. Agriculture, fisheries, and forestry in particular have significant potential and can make important contributions to economic growth, thereby improving the living standards of the region's people.

Access to vast stretches of sea offers opportunities to develop fishery resources. Rich soil conditions, high levels of precipitation brought about by the Northeast monsoons and large tracts of sparsely populated areas make the EP an ideal place for high-intensity agricultural practices. In line with this, the government has introduced a "Three-year Eastern Province Development Plan: 2007-2010" ('Neganahira Navodaya' or Eastern Revival), which intends to improve and upgrade the infrastructure and supportive services in the province, enabling a sustainable economic revival. The Neganahira Navodaya (NN) program intends to develop especially the agriculture and fisheries sectors, among others. Special attention will be given to develop the rural areas through the revitalization of the productive sectors of the economy. This includes development of crop agriculture, irrigation, fisheries and livestock through enhancing productivity, improving the quality of products and increasing accessibility to markets, which are expected to stimulate private investments in production, processing and value addition in these sectors.

With respect to the road sector, 17 ongoing projects to rehabilitate and improve the existing roads and bridges network and the proposed new roads and bridges are expected to improve connectivity between consumers and producers, reduce the cost of transport, improve linkages with other provinces, and open up backward areas for economic development public transport services are also expected to be revitalized. A fisheries harbor is being developed at Olivil in the Ampara District through the construction of two breakwaters and the dredging of the harbor basin to accommodate larger vessels. In addition

to these large scale infrastructure projects, the NN also expects to improve water supplies.

The Sri Lanka Army announced granting permission for paddy cultivation to be resumed in 4,000 acres of land adjoining the Kudumpimalai area in Batticaloa District after an interval of 17 years.

8.3 FOOD SECURITY OUTLOOK

A uniquely Asian agricultural revolution is needed to respond to challenges that are profoundly different from those confronted 40 years ago and in recognition of Asia's diversity of agro-ecological contexts and livelihoods. Asian agriculture is dominated by small-scale farmers and their skills, energy, innovations and experience must be harnessed to the fullest extent. Increasingly, higher food, energy and input prices are having significant effects on household food security and purchasing power, especially for net buyers of food. Expanding local, national and regional production and trade are therefore critical priorities in the face of market volatility.

In a country like Sri Lanka food self sufficiency can only be achieved through improvements in agricultural productivity rather than area expansion. Meanwhile the government is advised to get involved in 'mitigation measures' to protect the most vulnerable populations from rising food prices. The government has already taken steps in executing a number of social protection programs and has reduced import tariffs and other taxes on staple foods. The government must also provide a stable operating environment for farmers and businesses to invest in the local agricultural sector which would benefit both consumers and rural farming families. Food and agricultural policies should be carefully designed, executed and monitored in order to provide a stable environment for people to invest in agriculture. If the rural investment climate is unpredictable, there is a higher possibility of investments that could have come into agriculture to go to other sectors.

When India and Thailand imposed export bans on rice, Sri Lanka subsidized fertilizer for rice farmers and imposed price controls on rice retailing. Politicians and policymakers in Sri Lanka have also pointed to the current rice boom to justify the need for expansion of domestic agricultural production, though prices of locally produced rice are higher than imports at present and in the past import tariffs were imposed to keep local prices high. According to the Minister of Agriculture Development and Agrarian Services, a new Agrarian Services Bill will

be introduced soon aiming at improvements in agricultural productivity. Furthermore, the Minister has also declared that productivity improvements will be the main focus of the 'Api Vavamu-Rata Nagamu' initiative, based on the premise that 23 essential food items which are currently imported at a cost of one hundred billion rupees can be cultivated successfully in Sri Lanka. The 'Api Vavamu-Rata Nagamu' cultivation drive aims at self-sufficiency in onions, chillies, soya beans, kurakkan, grapes, oranges and potatoes within the next three years. The Department of Agriculture (DOA) is working towards promoting both production and consumption of organic agricultural products and is carrying out research on new higher yielding varieties.

Irrigation projects such as Moragahakanda, Deduru Oya, Menik Ganga, Rambukkan Oya, Yaan Oya and Uma Oya have been given priority amongst other development projects to facilitate agricultural development. There is a need to encourage farmers to invest in improved technologies to increase productivity. There is also a need to invest in post-harvest technologies and to cultivate unused land. Countries may also need to re-visit issues such as biotechnology and its policies towards genetically modified foods.

The DOA has established an Agriculture Technology Park in Gannoruwa and Hambantota with the following objectives:

- Technology transfer to the farmer through live specimens;
- Demonstration of improved agricultural technologies;
- Promotion of agro tourism for national and foreign tourists;
- Distribution of seeds, plants, leaflets and other technology transfer materials;
- Generation of direct and indirect employment opportunities.

The CIC group has launched a new initiative to transform agriculture into a profitable venture creating awareness on modern agricultural methods for increased productivity. The latest Israeli irrigation technology introduced by the company is proving to be of great benefit to the Sri Lankan farmer and is being widely accepted for cultivation of horticultural crops, cash crops, ornamental crops and vegetables. CIC has four rice varieties for the export market and has already introduced new red rice 'Basmathi' and a new colored rice variety to the international and domestic markets. These two rice varieties are specially targeted at higher income consumers and there is a substantial demand for these types of rice varieties in the international market.

Furthermore, by cultivating the crop CIC hopes to reduce the quantity imported by around 10 percent and benefit farmers by providing technical assistance from the project. CIC also claims that although there is a demand for high quality premium rice in Sri Lanka, the country is currently not in a position to produce such rice due to the poor quality of rice mills. It is this niche area that CIC Agri Businesses has entered with an investment of over Rs. 110 million and the installation of an innovative rice processing facility at Maho under a cooperation agreement with Satake of Japan, rated as the world's leading producer of rice milling equipment. The mill will provide 50 jobs directly and expects to commence commercial operations shortly and nearly 2,000 out-growers will supply paddy to this mill. The company will purchase paddy through a forward purchase agreement with these farmers. The company has developed several traditional rice varieties such as Kalu Heenati, Elvee and Suwadel with attributed medicinal values and improved productivity, aimed at international markets and marketed under the "Golden Crop" brand.

The rapid growth of sales of CIC Fertilizer has led to the expansion of its blending facilities. The main distribution centres of CIC Fertilizers are strategically located in Kurunegala, fertilizer is supplied to the plantation industry, especially to the tea sector in the hills and coconut sector in the Western Province. Peliyagoda caters to the Western, Eastern and Southern Provinces and Maho serves the paddy sector in the Northern part of the country in Wayamba and Rajarata. These locations are supplemented by 24 sales centres to ensure the availability of the products throughout the island. CIC Fertilizer has achieved a sales growth of 500 percent since its incorporation in 1993 and enjoys market leadership in the fertilizer business in Sri Lanka. The company pioneered the use of computerized blending technology, the modern concept of 'Balanced Plant Nutrition' and the introduction of 'Micro-Nutrient Fertilizers'. In 1998, CIC Fertilizers was awarded the management of the largest seed farm in Hingurakgoda on a long-term lease, under the government's privatization program. The company's success in managing the Hingurakgoda farm resulted in the government handing over a seed farm in Pelwehera in February 2000. This was the reflection of the confidence placed by the government in the company's capability and commitment towards improving the productivity and profitability of the agricultural sector in Sri Lanka.

References

- Central Bank of Sri Lanka. 2008a. *Annual Report 2008*. Colombo.
- . 2008b. *Recent Economic Developments: Highlights of 2008 and Prospects for 2009*. Colombo.
- Deen, Thalif. 2008. *Is a Food Bank Answer to the Crisis?* Asian Tribune. Bangkok.
- Institute for Policy Studies (IPS). 2008a. *Does "Foodflation" Call for Agricultural Reforms?* Colombo.
- . 2008b. *State of the Economy*. Colombo.
- South Asian Association for Regional Cooperation (SAARC). 2008. *Colombo Statement on Food Security*, www.saarc-sec.org
- Sirrimanna, Bandula. 2008. CIC "Transforming Agriculture to a Profitable Venture." www.cic.lk

*Annex***New Comprehensive Rural Credit Scheme (NCRCS)**

The NCRCS scheme was introduced in 1986 with several new features and strategies for lending in rural areas for agriculture. One of the objectives at that time was to lower the transaction costs of credit to small borrowers. Since 1994, an interest subsidy at a rate determined by the GOSL and the CBSL has been available to the lending banks for loans granted for cultivation of crops under the NCRCS. The lending banks grant loans out of their own funds.

Eligible activities

1. Cultivation of agricultural crops: Paddy and other field crops as identified and included under the NCRCS.
2. Pre-cultivation activities: Production of planting materials and seeds are also eligible for loans at concessionary rates under the NCRCS. The maximum limit per borrower is Rs. 5.0 million.
3. Post-cultivation activities: NCRCS extends credit to purchasers of crops under Forward Sales Contracts to facilitate the marketing of such produce. The GOSL consented to grant loans to such buyers to purchase produce/harvest directly from farmers under Forward Sales Contracts at the same rate of interest. The maximum loan amount per borrower is Rs.50.0 million.

Scale of finance

The CBSL, in consultation with the Ministry of Agriculture and Lands, works out the scale of finance from time to time. As and when changes occur, the CBSL communicates the new scale of finance to the Participating Financial Institutions (PFIs) with the concurrence of the GOSL.

Scale of finance for applicable crops and pre- and post-cultivation activities under the New Comprehensive Rural Credit Scheme (NCRCS)

Category		Amount
Crop		Maximum loan limit per acre – Rs.
Paddy	Irrigated	18,000
	Rainfed	12,000
	Chilies	50,000
Onions	Red Onions	50,000
	Big Onions	50,000
Pulses	Green Gram	15,000
	Black Gram	15,000
	Soya beans	15,000
	Maize	10,000
Oil Seeds	Ground Nut	15,000
	Gingerly	8,000
	Sun Flower	8,000
Roots & Tubers	Potato	140,000
	Sweet Potato	25,000
	Manioc	25,000
	Kiri Ala	30,000
Vegetables	Brinjal	40,000
	Bandakka	25,000
	Beet Root	50,000
	Cabbage	45,000
	Carrot	50,000
	Capsicum	50,000
	Tomato	35,000
	Leeks	70,000
	Radish	20,000
	Knob Khol	25,000
	Luffa	45,000
	Bitter Gourd	45,000
	Snake Gourd	45,000
	Pumpkin	20,000
	Beans	45,000
Pre-Cultivation		Maximum Loan Limit per Borrower – Rs.
Seed farming, nurseries and planting material		5,000,000
Post-Cultivation		Maximum loan limit per borrower – Rs.
Purchasing of agricultural produce under Forward Sales Contracts		50,000,000

Recovery action

The CBSL does not participate in the credit risk associated with loans under the NCRCs. However, the CBSL administers a guarantee scheme on behalf of the GOSL, which covers 60 percent of losses of the PFIs.

Rescheduling program

The PFIs are permitted to reschedule loans which are in default due to natural calamities, i.e. floods, droughts, pests etc. However, their branch managers are requested to establish personal contacts with the borrowers whose loans are rescheduled in order to recover the installments in time. The advantages of the rescheduling program are:

- i. Enables the rehabilitation of farmers who default repayment by rescheduling their dues for 4 cropping seasons or 32 months.
- ii. Enables the receipt of interest subsidy on rescheduled amounts by the PFIs from the GOSL.
- iii. Permits the farmers to get fresh loans for cultivation for the subsequent season.

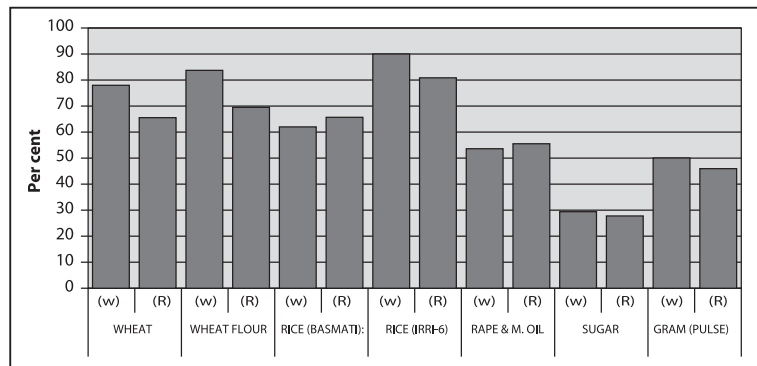
Chapter 9

Managing Food Price Inflation in Pakistan

Hans G.P. Jansen and Sohail J. Malik

9.1 INTRODUCTION

The 2007-08 global food price crises profoundly affected Pakistan. Between February 2007 and February 2008 the price index of the overall food basket (124 items) in Pakistan increased by 16 percent. But prices of certain specific food staple items such as vegetables, edible oil, wheat, rice, and milk have increased by up to 90 percent (Figure 9.1). Since the share of total income spent on food is highest for the poor, food price inflation is the most regressive of all taxes, hurting the poor the most. Food price inflation is also a major contributor to the overall high inflation of the Pakistan economy: in 2008 general inflation exceeded 17 percent.



Source: Compiled from data supplied by the Ministry of Food, Agriculture and Livestock.

Fig. 9.1: Year-to-year increases in prices of major food items in Pakistan

Wheat is the most important food staple in Pakistan and accounts for over 55 percent of total caloric consumption — and this share is significantly higher for the poorest households. The price of wheat is undoubtedly of paramount importance for consumer welfare in Pakistan, a fact that is used by the government as a justification for intervening significantly in the wheat market. Most of this Chapter therefore focuses on wheat.

9.2 WHEAT PRODUCTION IN PAKISTAN

Pakistan accounts for 21 percent of South Asia's total wheat production. Wheat production has fluctuated widely on a year-to-year basis but the trend is more or less flat if one considers the period 2000-2008. This contrasts with wheat consumption which is still growing. In 2008 Pakistan had to import significant quantities of wheat, because of a domestic production shortfall and (especially) illegal exports to Afghanistan (Table 9.1 and see also the discussion below). In contrast the situation regarding rice (another important staple in Pakistan even though much less so than wheat) is quite different: on average rice production is more than double domestic consumption, resulting in sizeable and sustained exports (see Table 9.2).

Table 9.1 Wheat supply and demand in Pakistan, 2008-09 ('000 MT)

Domestic availability	21,900
Production	21,800
Draw-down of stocks	100
Utilization	24,650
Food use	20,070
Feed use	400
Seed use	765
Losses	1,415
Exports (mostly informal)	2,000
Total import requirements	2,750

Source: UNDP, 2008.

9.3 INTERNATIONAL AND DOMESTIC PRICE TRENDS OF WHEAT

Since wheat is the most important staple crop in Pakistan, the international and domestic price trends of wheat reveal a great deal about

Table 9.2 Production and consumption of wheat and rice in Pakistan ('000 MT)

	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09
Wheat production	21,079	19,024	18,227	19,183	19,500	21,612	21,277	23,300	21,800
Wheat consumption	20,500	19,800	18,380	19,100	19,600	20,900	21,900	22,400	22,600
Rice production	4,802	3,882	4,479	4,848	5,025	5,547	5,200	5,500	5,600
Rice consumption	2,615	2,540	2,545	2,595	2,550	1,896	2,257	2,450	2,420

Source: Data supplied by Ministry of Food, Agriculture and Livestock (MINFAL).

the food price situation in the country. In the two-three years before the food price crisis began to take off in the second half of 2007, Pakistan was self-sufficient in wheat production and even managed to export a modest amount. The sudden surge in the international wheat price that started in mid-2007 directly affected domestic wheat prices, supply and demand, and turned Pakistan from a net exporter into a net importer of wheat.

In the international market, the price of wheat had remained relatively stable until May 2007 at around US\$200/metric ton (MT), before rising to US\$481/MT in March 2008 (a 140 percent increase in 10 months) after which the trend has subsided somewhat (see also Figure 1.1 in Chapter 1). Whereas the international wheat price in March 2008 was 65 percent higher than the average price in 2006, this percentage had decreased to 20 percent by September 2008. But in July 2008, the international wheat price was about 76 percent higher than the price level before the crisis. Recent projections (World Bank, USDA, OECD, IFPRI) suggest that the wheat price will remain at relatively high levels in the medium term (i.e. until around 2015).

Both demand and supply side pressures have fueled the sharp rise in the international price of wheat (and other cereals). On the demand side, the increasing needs of emerging economies, such as India and China, for cereals and cereal-based livestock products have depleted stocks and put upward pressure on the international prices of cereal crops. On the supply side, high energy and fertilizer prices, increased demand for bio-fuel raw materials, increased competition for croplands, and weather-related production shortfalls (e.g. droughts and poor harvests in Australia and Europe) have led to further price increases. Speculation in commodity markets by hedge funds and a number of adverse policy decisions by individual countries led to unusually rapid and high price spikes.

Pakistan's domestic wheat price¹ remained stable at around Rs. 12,000 (US\$ 182)/MT until July 2007 after which it started to rise (with occasional short periods of decline) reaching about Rs. 17,000 (US\$ 256)/MT in July 2008, about 41 percent higher than pre-crisis levels (Figure 9.2).

This sustained increase in prices was accompanied by higher volatility and disconnection of domestic wheat markets (Figure 9.3).

There are two main reasons why the magnitude of the domestic price increase for wheat was not as high as the increase in international

¹ The wheat price in Lahore was used for the analysis.

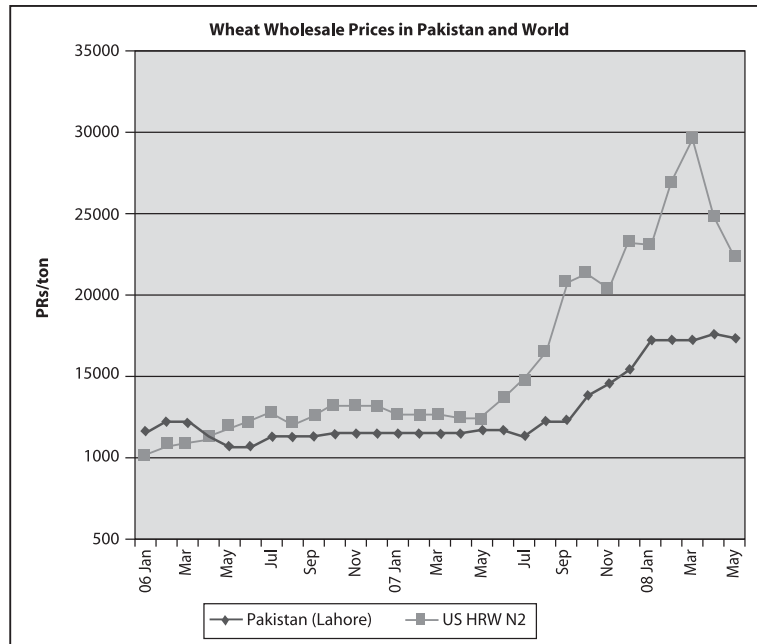


Fig. 9.2: Wheat wholesale prices in Pakistan and the world

wheat prices (even though the increases were still substantially higher than in India, see Figure 1.7 in Chapter 1): (1) Pakistan relies largely on domestic wheat production to meet its consumption needs; and (2) (tariff and non-tariff) interventions of the Government in the domestic wheat market in an effort to control the domestic price.² That is, government policy has the explicit goal of not allowing high international prices of wheat to fully pass through to domestic markets.

As a result, even though the Government has managed to keep wheat prices under control to a certain extent, its interventions also caused a substantial gap between domestic and border (import and

² Government intervention includes procurement targets and price fixing at the federal level; restrictions on inter-province movement of wheat; sale prices to mills that equal procurement prices paid to farmers (high implicit subsidies); and ex-mill flour prices fixed based on milling cost.

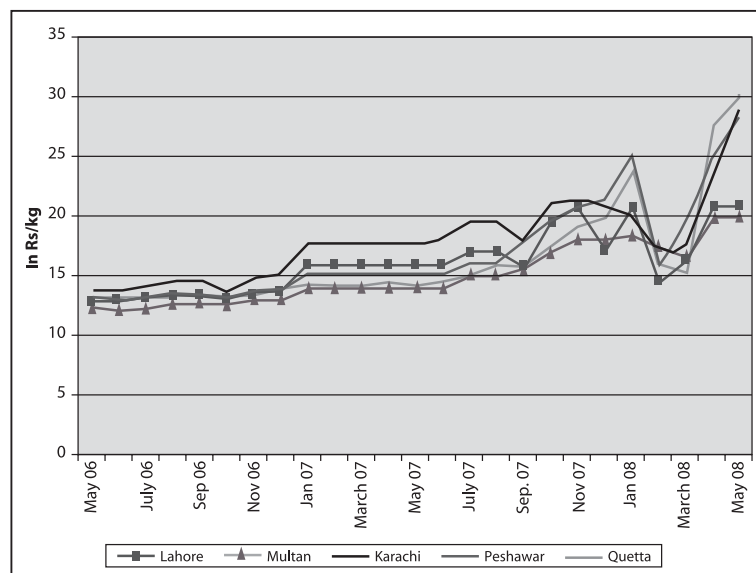
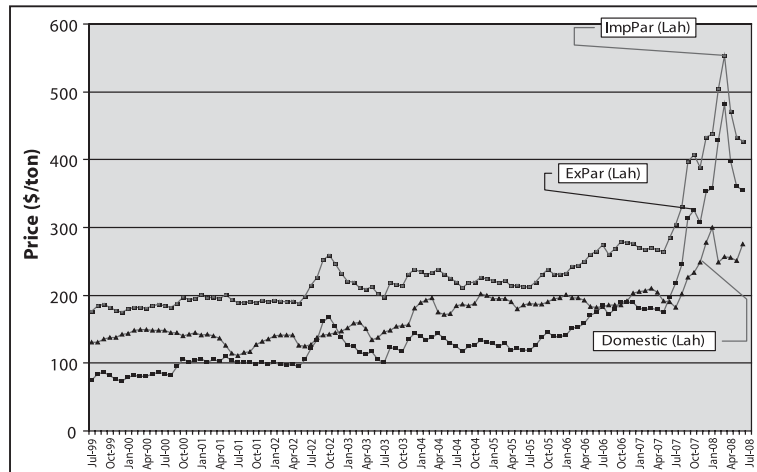


Fig. 9.3: Price of wheat flour in major markets in Pakistan, May 2006- May 2008

export parity) prices.³ In July 2008, the domestic price of wheat was about 21 percent and 36 percent lower than the export and import parity prices respectively (Figure 9.4). This in turn has created a strong incentive for illegal smuggling of wheat to neighboring countries like Afghanistan and Iran where wheat prices are substantially higher (for example, wheat prices in Afghanistan are more than double those in Pakistan).

Thus, wheat prices in Pakistan did not rise because of a domestic production shortfall. In fact, the 2006/2007 wheat harvest (in April 2007) set a new record — 23.3 million MT — and together with its carry-over

³ In a market without distortions one would expect the following relationship: export parity price < domestic price < import parity price. In the case of Pakistan, the domestic price is indeed below the import parity price but the export parity price (mainly determined by Afghanistan) is way above the domestic price (see Fig. 9.4). This is the Pakistani rationale for the export ban; Pakistan has limited capacity to import wheat due to the de-facto import subsidy and precarious situation regarding dwindling foreign exchange reserves and high current account and trade deficits.



Source: Based on data supplied by Paul Dorosh.

Fig. 9.4: Import parity, export parity and domestic wheat prices, Pakistan

stock of 0.4 million MT from the previous year, Pakistan had an estimated 23.7 million MT at its disposal. Against the annual domestic requirement of 22.6 million MT of wheat (which is estimated on the basis of fixed per capita demand for wheat with no responsiveness to prices but does include about 0.9 million MT of legal exports), the country was expected to have around 1.1 million MT of surplus wheat for exports or to raise domestic consumption above the notional target per capita level.

However, the increases in the wheat price in international markets in the second half of calendar year 2007, against the backdrop of controlled and low domestic wheat prices, created an incentive for private traders and farmers in Pakistan to export significant quantity of wheat to Afghanistan and other neighboring countries, initially legally and later illegally as an export ban was imposed. This ultimately reduced domestic availability and led to higher domestic wheat prices. But the difference between domestic and international/regional prices remained significant which also led to hoarding as there were expectations that the prices will further go up. As much as 1.5 million MT of wheat may have been smuggled to neighboring countries where prices were higher, or stockpiled by traders.

9.4 GOVERNMENT INTERVENTIONS

In response to the food price crisis in general and the escalating wheat price in particular, the Government implemented a series of policy and trade measures in an effort to control the price increases and improve the domestic availability of staple cereals. These measures included: (i) a ban on wheat exports and increased border surveillance in an attempt to curb wheat smuggling; (ii) removal of the 10 percent import duty on wheat and allowing private traders and millers to import; (iii) government wheat imports from the international market; (iv) imposition of a minimum export price of rice; (v) subsidies on imported fertilizers (particularly DAP); (vi) supply of subsidized wheat flour to the poor through Utility Stores Corporation outlets;⁴ and (vii) various cash transfer schemes such as the Benazir Card, the Punjab Program and others (see section 6 below). In addition to the Government's efforts, the United Nations system also expanded its activities in the food security, health and education areas.

The Government of Pakistan traditionally uses its public wheat stocks as a tool for controlling domestic prices (Dorosh 2008).⁵ Between September 2007 and March 2008, the Government released around 4.3 million MT of wheat into the local market at subsidized rates. As a result, it was able to reduce somewhat the impact of the international price increase on domestic wheat prices, at least temporarily. However, the fiscal costs of the public wheat procurement and distribution scheme are very high, especially because it provides an untargeted blanket subsidy to the entire population. The fiscal costs were especially high in 2007-08 because of the high costs of wheat imports. Despite the high fiscal costs, the efficiency of the Government's wheat policies is generally considered to be quite low with most of the benefits of the wheat procurement and distribution scheme accruing to wheat flour millers and some traders. The scheme has also created significant excess capacity in the wheat milling industry while crowding out the private sector in wheat marketing.⁶

⁴ The Utility Stores (about 4,500 outlets 33 percent urban and 66 percent rural) were established in a reaction to the food crisis. Together in 2008 they marketed about 1.6 million MT of wheat (about 25 percent of total marketed surplus) but without much targeting. On the other hand the amount allowed per family is only 5 kg/month.

⁵ On average each year the Government procures about 20 percent of the total domestic production, equivalent to about 60 percent of the domestic marketable wheat surplus.

⁶ The private sector handles less than 10 percent of wheat produced — or about one fourth of the marketable surplus (about 2 million MT). Traders and millers (the latter

Despite the shortcomings of the current public wheat procurement and distribution program, the Government does currently not have much choice but to continue with its interventions in the wheat market, at least in the immediate future. However, in the medium-term, an effective and well-targeted social safety net system for the poor would need to be put in place so that the government can reduce its interventions to an essential minimum to achieve its original objective of smoothening seasonal price differences and ensuring emergency food security.

The Government also tried to control private traders by placing temporary restrictions on movement of wheat between provinces in an attempt to curb smuggling. But similar attempts in the past have not worked and only added to the price volatility; the effect of the restrictions imposed in 2008 are not clear.

In October 2007, the Government increased the supply of low priced wheat flour to the poor through the so-called Utility Stores.⁷ However, the geographical coverage of these stores is very limited, and the effectiveness of its targeting system weak.

The Government responded to the (unexpected) wheat shortage by importing 1.7 million MT of wheat (at an average price of more than \$400/MT) which was sold in the domestic market at subsidized rates. Part of the need for imports in 2008 stemmed from the fact that even though the Government had raised the public procurement price of wheat for the 2008 harvest to \$240/MT (up from \$163/MT for the 2007 wheat crop) it delayed the price announcement until April 2008⁸ so the increase had no impact on the 2008 wheat harvest. To give farmers an incentive to grow more wheat and sell to the domestic market (and to discourage smuggling and hoarding) the Government raised its procurement price further to about \$300/MT for the 2009 wheat

to supplement quotas given by the government) buy from farmers only after the procurement target is achieved (usually after June). Since both existing and new flour mills are eligible to receive government quota, the number of flour mills in Pakistan has grown enormously, especially in border areas with Afghanistan where much wheat flour is smuggled. This overcapacity has led to a situation where a large number of mills operate only when subsidized wheat from government stocks available.

⁷ The price of wheat flour at Utility Stores in 2008 was around Rs 13/kg, about 32 percent lower than the prevailing market price at the time.

⁸ The Government is supposed to announce the procurement price for the following year's harvest in September of each year to provide a clear signal to farmers well before planting commences.

crop, alas at a time when wheat prices in the international market had decreased to much lower levels.

9.5 IMPACT ON POVERTY AND MALNUTRITION

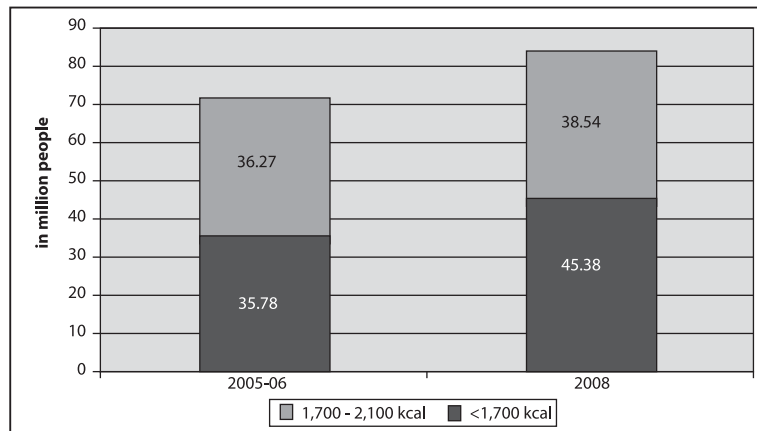
With about 23 percent of Pakistani households being classified as poor, and 56 percent of the total population classified as vulnerable (i.e. poor or prone to becoming poor in the short/medium-term), the current food crisis has a direct and significant impact on the poor and vulnerable people. Estimates based on the 2004-05 Household Income and Expenditure Survey (HIES; see also Chapter 2 of this book) suggest that the national poverty headcount has increased by about 3.2 percent (but with large regional differences, e.g. the increase is as much as 8.4 percent in the NWFP province⁹). These results suggest that an additional 5 million or more people may have fallen below the poverty line as a result of the increase in food prices alone.

However, other estimates regarding the additional number of people who have fallen into poverty as a result of higher food prices are much higher. For example, an analysis carried out by the Asian Development Bank (ADB) for Pakistan found that a 10 percent increase in food prices would result in an additional 7 million people falling below the poverty line, suggesting that an additional 15 million people may have fallen below the poverty line in 2007-08 primarily because of food inflation. According to a recent UN Inter-Agency Assessment (UNDP 2008) and as a result of the food crisis, the share of severely-food insecure population has increased from 23 percent in 2006 to 28 percent in 2008. Also, due to the food price increases the share of total income spent on food by the poorest families has increased to 70 percent which severely constrains their ability to meet other essential needs such as health and education.

Besides their effect on income-related poverty, higher food prices affect household welfare in non-monetary ways as well. Higher food prices involve a serious risk of massive school drop-out which in the case of Pakistan would revert back the gains in primary school enrollment achieved in past years. Poor people are also changing their diets away from protein and micro-nutrient rich foods in an effort to

⁹ This is because NWFP is the province with the largest wheat deficit and therefore most vulnerable to changes in wheat prices. This is exacerbated by porous borders with Afghanistan which makes that a sizeable proportion of the wheat allocated by the Government never reached the intended beneficiaries.

keep up their calorie consumption. These efforts are not always successful: the number of undernourished people in Pakistan may have risen by as much as 12 million according to the UN report (Figure 9.5). The same report also maintains that the price shocks have been most strongly felt in urban areas where two-thirds of the households have been affected. People in rural areas have been affected less severely than the urban poor because each year farmers keep around 60 percent of their wheat crop for their own consumption and also as in-kind payments to agricultural laborers. On the other hand, many rural households in wheat deficit provinces in the west have also been adversely affected. In all provinces wage rate increases have been considerably below the increase in wheat prices (Figure 9.6) with purchasing power of urban people in wheat deficit provinces most affected (Table 9.3).



Source: UNDP (2008).

Fig. 9.5: Changes in numbers of undernourished people as a result of the food crisis

9.6 SAFETY NET PROGRAMS

Pakistan has a number of targeted safety net programs meant primarily to serve the chronic poor, ranging from (unconditional) cash transfers to social care services and microfinance programs. These include (but are not limited to) the Food Support Program (the so-called Bait-ul-Mal scheme) covering 1.8 million households at Rs. 3,000 per household

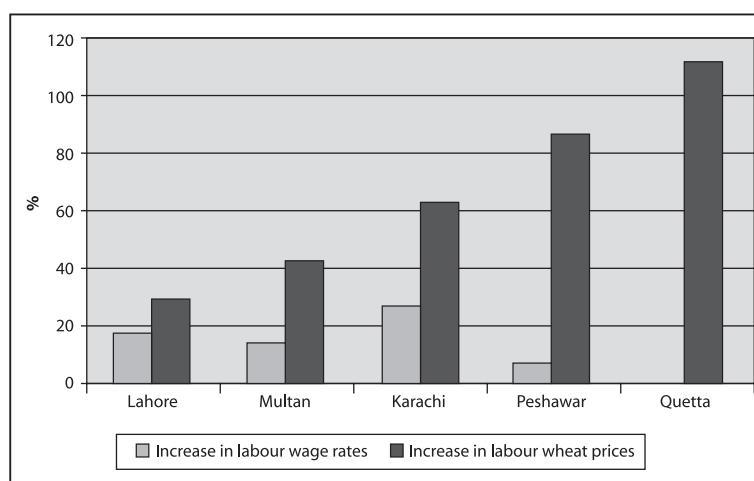


Fig. 9.6: Increases in wheat prices and wage rates, major cities

Table 9.3 Terms of trade between labor and wheat, major cities, June 2008

Cities	Wheat flour in kg/one day wage labour
Lahore	14.5
Multan	10.0
Karachi	12.1
Peshawar	7.4
Quetta	10.0

per annum; the Punjab Provincial Food Support Program covering 1.8 million households with cash transfers of Rs. 1,000 per household per month; and the Zakat and Ushr schemes. The programs are fragmented and duplicative with very low coverage (about five percent of the total population, see also Chapter 3). More importantly they are also poorly targeted and therefore have relatively little impact on poverty and vulnerability. For example, 25 and 32 percent of resources distributed by Food Support Program and Zakat, respectively, the country's largest cash transfer programs, accrue to non-poor households.¹⁰

¹⁰ The World Bank is currently assisting the Government with improving the targeting mechanisms for cash transfer and social safety net programs. A design and pilot strategy for proxy-means testing has already been implemented.

Administrative arrangements for cash transfers, especially for payment systems, are inadequate, and implementation and M&E capacity is low, which negatively impacts program efficiency and quality of service delivery. Beneficiaries face hurdles in accessing funds after being approved for assistance, and at times have to pay bribe to obtain their benefits. Weak human and technical capacity at payment centers often results in delays in payment reconciliation, contributing to overall delays in program payments. Thus, there is a need to adopt an improved targeting tool to raise the efficiency, effectiveness, and transparency of these programs.

9.7 FISCAL IMPACT

The fiscal impact of the food crisis in Pakistan has been very high. In the 2007/08 fiscal year, the Government spent around Rs. 55 billion (US\$ 750 million¹¹) on wheat imports and distribution of subsidized flour to poor people through the Utility Stores Corporation outlets. In addition, the Government has earmarked Rs. 34 billion (about US\$ 500 million) for the Benazir income support program¹² while the total outlays for the Bait-ul-Mal scheme and the Punjab Provincial Food Support Program are about US\$ 100 million and US\$ 350 million, respectively. Fertilizer subsidies also remain a large fiscal burden because of increased world market prices. The fiscal sustainability of such a large spending is uncertain given Pakistan's precarious macro-economic conditions.

9.8 FUTURE PROSPECTS

The future development of food price inflation in Pakistan (and the food security situation in the country in general) depends on a range of factors. Principally among them are international cereal prices, the wheat supply situation in Afghanistan (and India to some extent), domestic wheat policies and prospects for the next wheat harvest (March-May 2009), and effectiveness of planned assistance to affected population groups. Promotion of a more competitive domestic market

¹¹ An exchange rate of 1 US\$ = Rs. 66 was used. The current rate is round Rs. 80 to the US dollar.

¹² The Benazir program (known as the 'Benazir card') is a cash transfer program that eventually is supposed to cover about 7 million households or about one-quarter of Pakistan's total population.

for wheat is essential in this respect, including ensuring fair access to credit, avoiding limits on private storage, and maintaining clear and consistent policy signals to increase the efficiency of both production and marketing and trade. Pakistan's current policies consisting of procuring a large share of the marketed surplus of wheat, maintaining large public grain reserves and selling most of the procured wheat to millers at subsidized prices warrants serious re-thinking.¹³ The experience in Bangladesh has shown that liberalization of private sector international trade, i.e. clear signals to the private sector regarding tariffs and import restrictions while ensuring a level playing field with no special advantages for government agencies, can go a long way in making up for shortfalls in domestic production of staple foods. There is also an urgent need for enhancing the analytical capacity and information sharing; in particular, the Government's capacity to monitor and analyze market developments needs strengthening,¹⁴ through the establishment of systems that more effectively share market and policy change information with the private sector.

Finally, as in other South Asian countries, the only way to lower food prices is to reduce production costs by increasing productivity. This should be achieved by actively supporting agricultural research and extension, i.e. develop improved crop varieties and crop management technologies and promoting these in farmers' fields. Subsidies to adapt and spread certain existing technologies (e.g. fertilizer placement equipment, laser land leveling, drip and pressure irrigation etc.) can be an acceptable strategy in the short-run, especially where small-holder farmers are targeted. But in the medium- and long-run there is no substitute for re-building an efficient, demand-led agricultural research system that can generate a flow of new technologies on a continuous need basis is indispensable for the agricultural sector to maintain its competitiveness. Unfortunately, agricultural research has received very little attention in Pakistan and has been on the back-burner since the early 1990s. Higher food prices present a unique opportunity to start re-investing in agricultural development in Pakistan.

¹³ Reducing the volume of procured wheat and subsequent intra-annual sales would have little adverse effect on consumers — as wheat flour produced from government wheat is typically sold at open market prices anyway.

¹⁴ The presence of an adequate level of analytical capacity could have avoided costly mistakes such as setting the 2008-09 wheat procurement price at the excessive level of Rs. 23750/MT.

References

- Asian Development Bank (ADB). 2008. *Food Prices and Inflation in Developing Asia: Is Poverty Reduction Coming to an End?* Economics and Research Department, Asian Development Bank, Manila.
- Dorosh, Paul. "Public Foodgrain Stocks and Price Stabilization in South Asia: Historical Experience and Policy Options." South Asia Region, Agriculture and Rural Development Unit, World Bank. Mimeographed.
- United Nations Development Program (UNDP). 2008. High Food Prices in Pakistan — Impact Assessment and the Way Forward. UN Inter-Agency Assessment Mission on High Food Prices in Pakistan. Islamabad, July.

Chapter 10

Epilogue

Hans G.P. Jansen

The authors of the previous chapters in this book have convincingly shown the causes and impact of the increasing trend in food prices seen during the past few years with particular emphasis on the uncharacteristically high food price inflation experienced in 2007-2008. Most attention has gone to the negative effects of high food prices: these include not only short term effects where higher prices undermine food security and increase nutritional deficiencies¹; but also longer term effects where high food prices may constrain future earning capacity and welfare through limiting current essential non-food consumption such as health, sanitation and education.

But after food prices reached unprecedented levels during the summer of 2008, world market prices of major food staples started to decline again, largely as a result of the financial crisis that grasped the world in the second half of last year and whose effects are expected to stay with us at least during the next few years. These price declines have caused some observers to argue that food markets would soon return to their pre-2004 status. However, claims that the food and energy crises are over should be considered as premature at best; they may even do longer-term damage by creating a false sense of complacency. As of June 2009, world market prices of soybean, corn and wheat are at their highest level in eight to nine months; soybean prices are up more than 50 percent from their December 2008 lows while wheat and maize both increased by about 17 percent. According to an April 2009 FAO report, domestic food prices in 78 percent of 58 developing countries surveyed remained above early 2008 price

¹ For example according to IFPRI estimates, the elasticity of iron deficiency prevalence with respect to food prices in Bangladesh is 0.5.

levels.² And to the extent that food price decreases do occur, they are not happening to the same extent for all food crops; for example, even though wheat and maize prices in the world market have decreased from their highs in June-July of 2008, they remain higher than four years ago. Rice is still much more expensive (in the order of 75-100 percent) than it has ever been over the past two decades. A return to the era of low and stable food prices seems only a remote possibility, and there is now widespread consensus that the era of cheap food is largely over. Compared to the past food prices will not only stay at higher levels but will also become more volatile. And indeed these effects are already visible: despite the current economic crisis, FAO's food price index rose by about 5 percent between December 2008 and June 2009.

There are a number of reasons why it is likely that food prices have moved to permanently higher levels. First, energy prices are on an upward path again (the international price of oil rose by 100 percent between March and June 2009) and combined with climate change risks the increasing price of oil is exerting an upward pressure on food prices. This is because rising energy costs push up production and transportation costs, and increase the demand for ethanol which starts to be competitive again. The second reason why food prices can be expected to stay relatively high is continued increase in demand for food in general and cereals in particular. This demand increase is due to four main factors. First, there is the cyclical effect of re-stocking. As seen in Chapter 1, cereal stocks greatly decreased as prices increased but now are being replenished. In 2006 and 2007, world cereal stocks fell below 450 million MT or about 20 percent of world wide consumption. Stocks have since risen to over 520 million MT (about 23 percent) and can be expected to rise further since many developing countries are interested in building up their stocks further as an emergency reserve, input into food-based safety net programs, or for price stabilization purposes. Second, the fall in the US dollar has made dollar-denominated food imports cheaper in terms of local currencies. Third, demand for food in general has been pushed up by continuing growth in the largest emerging markets, especially India and China whose economies despite the global economic crisis are still growing at appreciable rates. And fourth, the wave of new cash transfer programs

² For example in Pakistan, the March 2009 price of wheat flour remained 28 percent higher than March 2008 levels, despite a 23 percent decrease from peak price levels reported in August 2008.

for the poor established and/or expanded in many countries after the food crisis acts as a strong demand stimulus.

But are higher food prices unequivocally a bad phenomenon? Not necessarily. The main problem with the 2007-08 food price spikes was the excessive speed at which prices reached unprecedented levels, largely fuelled by unregulated speculation and bad national policy decisions. Prices rose to levels unjustified by economic fundamentals alone which, combined with the associated enormous market volatility, caused many observers to conclude that higher food prices have only negative implications and therefore are by definition undesirable. But whereas higher volatility brings uncertainty which is generally not good for investment decisions, the latter are made largely based on expected profitability. Higher prices benefit farmers who are net sellers of foodgrains and should elicit a supply response.³ As seen in Chapter 1 of this book, past production growth rates for the main grain staples in South Asia have not kept up with consumption growth. This suggests that there will be continuing upward pressure on food prices which in turn could provide farmers with excellent incentives to increase food production. Such increases will largely have to come from higher yields given that land is becoming increasingly scarce and most productive land is already under cultivation. In bio-physical terms such yield increases are entirely feasible given the substantial yield gap in South Asian agriculture (see also Chapter 1). But unfortunately there is relatively little evidence that higher food prices have led to significant yield increases across substantial growing areas in South Asia: despite the occasional exception,⁴ production increases in the 2008-09 season have mostly stemmed from area expansion. Moreover on a worldwide scale, by far the largest share of the increase in cereals output came from developed countries whose combined harvests increased by 11 percent (as opposed to a mere one percent in developing countries) and also mostly due to area expansion.⁵

³ This clearly happened in Bangladesh where the rapid increase in rice prices (from about Tk. 20/kg of coarse rice (retail) in June 2007 to about Tk. 30 in January 2008) caused farmers to produce a bumper harvest of the dry season irrigated *boro* rice crop.

⁴ For example, the record wheat harvest obtained in Afghanistan in 2009 was mostly due to yield increases, but then the previous year's yields were exceptionally low.

⁵ For example, the European Union shelved a program that had obliged farmers to leave 10 percent of their land fallow.

Given the heavy reliance on yield increases for future growth in food supplies, it is important to note that narrowing the yield gap not only has a technical side but also socio-economic and political considerations. Thus, while investments aimed at raising agricultural productivity in South Asia are very much needed and possible, there are at least three necessary conditions that need to be put in place in order for this to happen. First, policy makers should ensure that the global economic crisis does not jeopardize public investment in agricultural research and extension which is required for increased production and productivity. Second, government policies must not stand in the way and allow price incentives to reach farmers. Governments in most South Asian countries do not allow their farmers to get paid the full world market price for their crops and as a result farmers receive distorted price signals. While consumers benefit from most governments' determination to keep domestic prices low, these policies constrain supply response and have high fiscal costs. And third, many farmers in South Asia are constrained in their capacity to respond to price changes, caused by a lack of adequate mechanisms for supplying quality inputs at accessible prices and inappropriate marketing opportunities. Public investment in rural infrastructure is required to boost farmers' supply response capacity.

The importance of policies that raise the productivity of land and labor in smallholder farming was recently illustrated by the results of a number of hypothetical simulations for India by de Janvry and Sadoulet (2009). Contrary to prevailing Indian policies, these simulations allowed changes in world market prices to be fully transmitted to domestic markets in India. The results of these simulations suggest that unlike popular wisdom in India that believes that the urban poor are most at risk, it is the rural poor (both landless and landed) who are the main losers from a rise in the price of staple foods. These results illustrate the importance of promoting access to even tiny plots of land for landless rural households and maximizing the productivity of these plots in order to enable their cultivators to produce more of their own food needs.

Finally, besides potential benefits to farmers higher food prices may stimulate innovative developments in the food aid system (shift from traditional food aid to food assistance through local food purchases combined with cash transfers and vouchers) and trigger beneficial shifts in agricultural trade policies. Sustained higher food prices could also help the implementation of responsible international trade policies

that benefit low-income countries, and help reform developed country agricultural support programs that may remove the remaining barriers to progress on the WTO Doha trade negotiations.⁶

In conclusion, since most of the poor in South Asia are in rural areas and most rural people are poor, and between 35-50 percent of the labor force remains reliant on agriculture⁷, the latter remains crucial to economic growth and poverty reduction. This means that improving agricultural productivity should remain high on the agenda of governments and donors alike. No country that successfully transformed itself from a developing to a developed country has been able to do so without developing its agricultural sector first, including continued emphasis on agricultural productivity and the production of food crops. We cannot afford ignoring the lessons of the past so let us not try to let South Asia become the exception.

Reference

de Janvy, A. and E. Sadoulet. 2009. *The impact of rising food prices on household welfare in India*. Manuscript, University of California at Berkeley.

⁶ The centerpiece of the Doha trade round is freer trade in farm goods which would benefit developing countries disproportionately because the confusing signals that subsidies and protectionist tariff and non-tariff measures provide would be taken away. Since the round was launched in 2001, well before the commodities boom, its main emphasis was on government policies that kept prices artificially low (mainly production and export subsidies in rich countries). Then as of late 2007 the main concern became policies that contributed to the food crisis: unilateral export bans, subsidies for consumers and the pursuit of biofuels. Now that most prices have eased significantly food security concerns have subsided at least in the Doha talks. On the other hand there is also a fear that the EU and the US could revert back to subsidies and other forms of support for their own farmers.

⁷ Employment shares range from 35 percent in Sri Lanka to 50 percent in Bangladesh.

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