Global Food Prices Trends Behaviour and Managing Food Inflation in India: Strategic Policy Options and Key Issues

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Introduction

The rapid rise in food prices has been a burden on the poor in developing countries, who spend roughly half of their household incomes on food. There are various factors behind the rapid increase in internationally traded food prices since 2002. The large increase in biofuels production in the U.S. and the EU has recognized as major driver of food prices. Hence, without these increases, global wheat and maize stocks would not have declined appreciably, oilseed prices would not have tripled and droughts would have been more moderate. Recent export bans and speculative activities would probably not have occurred, because they were largely responses to rising prices. This has recently emerged has an important policy issue and Government policies that provide incentives to biofuels production, and biofuels policies which subsidize production has reconsidered in light of their impact on food prices.

Global Food Prices Trends and High Food inflation Behavior

For the first time since 1973, the world is being hit by a combination of record oil and food prices. Such record oil and food prices are a destabilizing element for the global economy because of their potentially severe growth, inflation and distributional effects. In terms of their impact on income distribution, inflation and poverty, high food prices are of greater and more immediate concern than high fuel prices. However, the challenge of crafting appropriate policy responses to the food crisis is made much harder in a context of rising oil prices and ensuing fiscal and balance of payments pressures. The next few months will be critical for stemming this joint crisis and avoiding any potential ripple effects. Compared to the earlier price increase in oil that

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occurred between 2003 and 2005, developing countries are more vulnerable to the recent increases. The terms-of-trade effects of the combined food and energy price increases since January 2007 are in excess of 10% of GDP in more than 15 countries and the room to maneuver on the macroeconomic front is limited. Continued high and volatile food and fuel prices will aggravate inflationary pressures, constrain fiscal expenditures for vulnerable groups and further endanger the poor. As underscored by G8 Finance Ministers, the high food and energy prices pose a serious challenge to global economic stability and growth, and risk reversing years of progress in many poor countries

Grain prices have more than doubled since January 2006, with over 60% of the rise in food prices occurring since January 2008. Individual grain staple prices have increased even more, with monthly average wheat prices doubling since January 2006. Rice prices more than tripled between January and May 2008, with a slight price reduction in June. Grain prices are starting to dip as the 2008 crop is harvested, but poor weather conditions in the US and Australia (mainly affecting maize and wheat output) and skittish commodity markets have kept prices relatively high, including in futures markets. Prices have risen due to a number of individual factors, whose combined effect has led to an upward price spiral. Underlying structural factors contributing to rising food grain prices include high energy and fertilizer prices; the continuing depreciation of the US dollar; sharply increased use of both cereals and vegetable oils in bio-fuel production; 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 minor role. In fact, the prevailing consensus among market analysts is that fundamentals and policy decisions are the key drivers of food price rises, rather than speculative activity. The effects of these underlying structural factors have been accentuated by the use of counterproductive policies on the part of key exporters and importers. The introduction of export restrictions and bans — such as those imposed by India and China on rice or by Argentina, Kazakhstan, and Russia on wheat has restricted global supply and aggravated shortages. Unilateral actions by exporting countries prompted others to quickly follow suit, undermining trust in the market and leading to worse outcomes for all. The result has been a self-reinforcing price spiral. The thinly-traded rice market has been especially vulnerable. India's recent decision to ban rice exports (except for 'Basmati' rice) was quickly followed by export restrictions placed by Vietnam and other major players with an immediate impact on

prices. Actions by large rice importers, such as the Philippines, which organized large tenders to obtain needed rice imports against this background of shrinking traded supplies, have further aggravated the problem.

The pass-through of rising global prices does not translate into an immediate and proportionate rise in domestic price levels, due to various factors such as a weakening dollar, domestic infrastructure, and price stabilization policies. While the extent of global price transmission varies, over the past year there have been significant surges in domestic food price inflation in countries such as Sri Lanka (34 percent), Costa Rica (21 percent), and Egypt (13.5 percent). In many countries and regions, food price inflation is higher than aggregate inflation and contributing to underlying inflationary pressures**.** For example, in Europe and Central Asia overall inflation in 2007 averaged 10 percent, food inflation 15 percent, and bread and cereals inflation 23 percent (Alam and Vybornaia, 2008). This compares to 6 percent overall inflation and 6.4 percent food inflation.

Table.1. Indices of Primary Commodity Prices, 1999-2009 (2005=100, in terms of US dollars).

	All Primary Commodities 2/	Non-Fuel							Energy 4/	
			Edibles			Industrial Inputs				
				Food	Beverages		Agricultural Raw Materials 3/	Metals		Petroleum 5/
(weights)	(100.0)	(36.9)	(18.5)	(16.7)	(1.8)	(18.4)	(7.7)	(10.7)	(63.1)	(53.6)
1999	49.9	76.4	81.4	80.2	92.7	71.3	93.4	55.4	34.4	33.7
2000	63.3	79.6	81.5	82.1	75.7	77.7	98.6	62.7	53.7	52.9
2001	58.3	75.8	79.0	80.5	65.6	72.6	95.2	56.3	48.0	45.6
2002	58.3	77.3	83.2	83.3	81.6	71.4	95.0	54.3	47.2	46.8
2003	65.0	81.8	88.3	88.6	85.5	75.3	95.6	60.7	55.2	54.2
2004	80.5	94.3	99.4	100.9	84.7	89.2	99.5	81.7	72.4	70.8
2005	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
2006	120.7	123.2	110.3	110.5	108.4	136.3	108.8	156.2	119.2	120.5
2007	135.0	140.6	126.9	127.3	123.3	154.3	114.2	183.3	131.7	133.3
2008 6/	172.1	151.0	156.5	157.0	152.0	145.5	113.3	168.7	184.5	181.9
06 Q3	126.7	126.9	111.7	111.9	109.1	142.2	110.7	165.0	126.6	128.9
06 Q4	118.2	130.7	113.2	113.3	112.0	148.3	111.4	175.0	110.8	110.6
07 Q1	118.0	134.5	117.6	117.6	117.3	151.5	117.4	176.2	108.3	107.2
07 Q2	130.4	143.5	120.9	120.8	121.2	166.4	117.6	201.6	122.8	123.9
07 Q3	137.4	141.1	129.6	130.0	125.8	152.7	109.6	183.8	135.2	137.9
07 Q4	154.1	143.2	139.7	140.8	128.9	146.8	112.3	171.7	160.5	164.2
08 Q1	171.6	160.8	162.6	163.7	152.7	159.0	115.9	190.1	177.9	178.9
08 Q2	202.9	167.2	173.3	174.8	159.3	161.1	118.5	191.9	223.8	227.0
08 Q3	196.7	158.7	165.5	165.7	163.9	151.9	118.9	175.7	218.9	216.4
08 Q4	117.4	117.4	124.7	123.9	132.0	109.9	100.1	117.0	117.3	105.1
09 Q1	98.9	109.8	127.6	126.1	141.4	91.8	86.4	95.7	92.6	82.9
09 Q2 6/	114.7	120.5	139.8	139.2	145.0	101.1	86.9	111.3	111.2	110.9
Aug-07	133.0	138.4	128.0	128.6	122.0	148.9	105.8	179.9	129.8	131.4
Sep-07	140.9	141.5	134.3	135.1	127.4	148.7	112.5	174.8	140.5	144.1
Oct-07	148.0	143.4	136.4	137.2	129.1	150.4	109.6	179.9	150.6	154.0
Nov-07	157.8	143.0	138.0	139.3	126.5	148.1	113.9	172.8	166.4	171.1
Dec-07	156.6	143.2	144.5	146.0	131.2	141.9	113.4	162.6	164.3	167.6
Jan-08	162.4	151.8	151.6	153.0	139.0	151.9	115.3	178.4	168.5	170.2
Feb-08	171.3	162.3	164.9	165.5	159.2	159.6	116.3	190.8	176.6	175.7
Mar-08	181.2	168.4	171.3	172.5	160.0	165.4	116.0	201.1	188.7	190.9
Apr-08	189.5	167.4	169.9	171.6	154.5	164.8	117.6	199.0	202.4	204.4
May-08	203.8	166.0	171.5	173.2	156.2	160.3	118.6	190.5	225.9	230.1
Jun-08	215.4	168.4	178.5	179.7	167.3	158.2	119.4	186.3	243.0	246.5
Jul-08	219.0	168.8	177.2	178.3	167.2	160.3	122.0	188.0	248.4	248.4
Aug-08	195.2	158.1	164.9	164.8	165.6	151.2	118.2	175.0	217.0	214.7
Sep-08	175.7	149.3	154.5	154.0	159.0	144.1	116.4	164.1	191.2	186.1
Oct-08	139.2	126.4	130.4	129.8	135.2	122.4	109.9	131.5	146.6	136.2
Nov-08	114.9	116.8	123.0	122.4	128.3	110.6	102.9	116.1	113.7	101.3
Dec-08	98.0	108.9	120.9	119.6	132.5	96.8	87.6	103.4	91.7	77.8
Jan-09	101.0	111.7	129.4	127.9	143.0	93.9	89.8	96.9	94.8	82.3
Feb-09	96.5	108.9	126.5	124.6	143.6	91.1	87.6	93.7	89.2	78.3
Mar-09	99.3	108.7	127.0	125.8	137.6	90.3	81.7	96.5	93.7	88.0
Apr-09	103.2	114.3	132.8	131.9	141.2	95.6	82.3	105.2	96.8	94.2
May-09	113.8	121.2	142.3	141.9	145.9	99.9	85.7	110.1	109.5	108.9
Jun-09	127.0	126.0	144.3	143.8	148.0	107.7	92.6	118.5	127.5	129.6
Jul-09 6/	121.1	124.8	137.7	136.1	152.2	111.8	97.4	122.2	118.9	121.2

Source: IMF

While forecasts in the current environment are subject to considerable uncertainty, we expect food prices will remain high in 2008 and 2009, before they begin to decline. Prices are likely to remain well above 2004 levels through 2015 for most food crops (Table 2)

Table.2. Index of projected real food crop prices (2004=100)

	2007	2008	2009	2010	2015
Real Prices					
Maize	139	175	165	155	148
Wheat	154	215	191	166	140
Rice	130	243	208	183	160
Soybeans	119	156	147	139	115
Soybean oil	136	187	173	160	110
Sugar	133	157	167	176	182

Source: **World Bank, DEC Prospects Group**

These forecasts are broadly consistent with those of other agencies such as USDA and OECD-FAO. While world grain production is forecast to grow, increased utilization is expected to lead to a decline in stocks in the 2007/2008 crop year. FAO predicts that total grain end stocks will reach a 25-year low by the end of 2008 (see Annex 1 for detailed production forecasts

Nature of Food Prices Inflation in India

India has been entangled in rising headline inflation and indeed, in terms of duration, the present price spiral is the longest since 2000-01. Several domestic and international factors have been identified as the causes of the present inflationary situation in India. A major one among them has been high food prices worldwide, caused due to the strengthening of global food demand against falling production [RBI 2008].

It is pointed out that as India imports many food items, rising world food prices have been transmitted to domestic prices. However, an understanding of the nature and intensity of such "globally transmitted" food price inflation in India remains vague. Important questions which remain unanswered are: Which category of food items has been causing damage to domestic food prices? Has the price increase occurred in a

wide range of food items or only a few? Compared to the past, is the present food price inflation as critical as projected in the media? Although during a major part of 2007 (May to December) India experienced low to moderate headline inflation, inflationary pressures slowly started building up from December 22, 2007. After that point of time, point-to-point inflation has increased by 8.89 percent, from 3.74 per cent to 12.63 per cent in the week ending August 9, 2008. On an average basis, the inflation rate recorded, period-on-period, during this 35- week period was 8.39 per cent, which is the highest among the seven instances of inflationary pressures that have struck the Indian economy in the last 10 years. It appears that the price spiral was triggered by the rising prices of primary articles and manufactured products groups. Later on, with the upward revision of the prices of petroleum products on two occasions (mid-February and June first week of 2008), mineral oils group (cost-push element) has added momentum to the overall price run. The fact that the overall inflation and the inflation of primary articles and food products (in the manufactured products group) started climbing even before the first fuel price revision in mid-February shows that the present inflationary pressure stemmed from supply side rigidities. All the major product groups have contributed significantly to the current inflationary spiral implying that the price increase has occurred in a wide range of commodities. In terms of the average inflation (average of the 35 weeks), the fuel group emerges as the largest contributor of inflation followed closely by primary articles and manufactured products (Table 3).

Table3: Average Wholesale Price Index 2007 -2008

Items	Average Inflation Rate (Period –on – Period basis)
Overall	8.39
Primary articles	8.79
Food Articles	5.01
Non-food Articles	13.52
Fuel, power ,light and lubricants	9.38
Coal Mining	9.49
Mineral oils	14.13
Manufactured Products	7.85
Food Products	10.05
Beverages and tobacco products	8.6
Rubber and plastic products	6.63
Chemicals and chemical products	8.05
Non- metallic minerals products	6.27

Basic Metals alloys and metal products 15.62

Source: Central Statistical Organisation (http://eaindustry.nic.in/).

The fuel group inflation, year-on-year, has increased up to 14.63 percentage points during the last eight months or so compared to over 8 percentage points for primary articles and over 7 percentage points in the case of manufactured products . Acceleration was also witnessed in inflation as measured by the consumer price index or CPI. Between December 2007 and June 2008, the year-on year overall inflation according to the CPI has increased for all the consumer groups. Rural labourers (RL) and agricultural labourers (AL) groups recorded up to a 3.2 percentage point increase in the inflation rate during this period, followed by industrial workers (IW) (2.4) and urban non manual employees (UNME) (2.2). Significantly, the increase observed in food group inflation was the largest among all the product groups and for all the consumer categories

As in the case of WPI inflation, food and fuel groups emerge as the major drivers of the surging CPI since December 2007. The most affected consumer groups appear to be RL and AL. This is not surprising considering that food articles, which witnessed the largest increase in CPI, have relatively high weights in CPI-RL and CPI-AL [GoI 2008].

Table.4: Yearly Wholesale Price Index (Food Articles) (Base Year 1993-94 = 100)

Financial Year	**2000-01**	**2001-02**	**2002-03**	**2003-04**	**2004-05**	**2005-06**	**2006-07**	**2007-08**	**2008-09**
Index	170.5	176.1	179.2	181.5	186.3	195.3	210.5	222	239.8

Source: Central Statistical Organisation

Primary Food Articles

Though the rising prices of both food and non-food articles group are responsible for the sharp increase in the WPI inflation of primary articles, it transpires that the non-food articles have caused more damage than food articles. The peak inflation rate, year-on-year, of non-food articles was over 17 per cent, against over 7 per cent for food articles. On an average, the non-food articles have recorded inflation, period-on-period, of 13.52 per cent during the current price spiral against 5.01 per cent for food articles, which is much lower than the average overall inflation of 8.39 per cent. Interestingly, the period-on-period average inflation rate of 9.05 per cent recorded for food articles between December 23, 2006 and August 18, 2007 was much higher than in2007-08 Since the end of December 2007, inflation, year-on-year, of non-food articles has increased by up to 8.21 percentage points against 5.7 in the case of primary food articles. Except milk, in the case of all other food articles the average inflation rate, period on- period, has been much lower at present than it was a year ago. To take the case of the much talked about food grains it recorded an average inflation rate of 8.54 per cent during the first eight months or so of 2007 compared to 4.64 per cent registered during the same period in 2008. In this context, it is interesting that, compared to the past experiences with respect to WPI inflation in primary food articles, the present situation is not as precarious as perceived. If we analyse the weekly trends in inflation, year-on-year, during the last decade we find two periods that have witnessed inflation in prices of high primary food articles. One is a 37-week period in 1998 (the second week end of April to the third week end of December). During this period inflation in prices of the primary food articles, year-on-year, increased by a whopping 20 percentage points from 2.22 per cent in the week ended April 11, 1998 to a peak of 22.45 per cent on November 7, 1998, with the overall period- on-period average inflation being 14.73 per cent.7 The other occasion which witnessed high food article inflation (average 9.66 per cent) was between December 2, 2006 and April 28, 2007. During this period the inflation of this product group reached a peak of 10.99 per cent. This clearly shows that the high prices of primary food articles including food grains are not the principal factor responsible for high overall and food price inflation currently witnessed in India. Interestingly, estimates of food grains production for 2007- 08 show no sign of shortfall over the previous year.

One crucial aspect missing in our concern about food price inflation has been the prices of “food products” which come under the major group, namely, “manufactured products”. This product category was subject to a sharp increase in prices in recent times. The WPI inflation of food products, year-on-year, increased from a mere 3.17 per cent in the week ending December 22, 2007 to 15.02 per cent in the week ending June 21, 2008, an increase of about 12 percentage points. On an average basis, food

products have registered an inflation, period-on-period, of 10.05 per cent during the current price spiral against 5.01 per cent in the case of primary food articles. More importantly, during the corresponding period last year the average food products inflation, period- on-period, was only 3.76 per cent (Table 5)

Table 5: Average Wholesale price Index Inflation –food items in (%)

Commodity	2006-2007	2007 - 2008
All Commodities	5.55	8.39
Primary articles	10.27	8.79
Food articles	9.05	5.01
Food Grains	8.54	4.64
Fruits and Vegetables	11.29	2.20
Milk	7.82	8.43
Eggs, Meat and Fish	7.09	2.40
Condiments and spices	18.56	6.28
Non- food articles	13.30	13.52
Fibres	8.36	23.29
Other Non- food articles	28.65	18.53
Oil seeds	3.29	1.92
Food products	3.76	10.05
Dairy Products	5.56	9.38
Grain Mill products	13.37	4.87
Sugar, khandsari and gur	-12.89	-4.03
Edible Oils	14.28	14.82
Oil cakes	21.33	41.47
Tea and Coffee Processing	6.89	2.56

Source (Basic Data): Central Statistical Organisation (http://eaindustry.nic.in/).

Significantly, unlike primary food articles, the year-on-year inflation of food products has increased unabated. These findings suggest that the key reason behind the high food price inflation in India at present is the rising prices of food products and it has not much to do with the prices of primary food articles. Among food products, the blame should fall mainly on the three subgroups, namely, oil cakes, edible oils and

dairy products for the current food price spiral. The inflation of oil cakes, year-on-year, hovered between 26.29 per cent and 53.47 per cent during the current price spiral (Table6).

Table 6: Wholesale Price Index Inflation Food Products (2007 - 2008)

Items	Average Inflation Rate (Period –on – Period Variation %)	Range (Year –on - Weekly Variation in %)
Dairy Products	9.38	6.23 to 11.29
Grain Mill products	4.89	-1.22 to 9.46
Sugar, khandsari and gur	-4.03	-14.08 to 6.26
Edible Oils	14.82	8.87 to 21.42
Oil cakes	41.47	26.29 to 53.47
Tea and Coffee Processing	2.56	-0.61 to 9.24

Source (Basic Data): Central Statistical Organisation (http://eaindustry.nic.in/).

In particular, oil cakes inflation witnessed a sharp increase from end-March 2008 onwards. It increased from 26.3 per cent on March 22, 2008 to 53.5 per cent on June 21, 2008 and remained close to 50 per cent level thereafter. Edible oils inflation, year-on-year, increased from a high of 9.70 per cent on December 22, 2007 to 21.42 per cent in the week ended March 15, 2008. Subsequently, it declined gradually13 to reach about 10 per cent in the week ended May 10, 2008, but climbed again to touch over 18 per cent by the beginning of July 2008. Dairy products inflation soared from 7.93 per cent at the beginning of the present price spiral to 11.29 per cent on May 24, 2008. After remaining at the level of close to 11 per cent till July 19, 2008 dairy products inflation declined to reach about 7 per cent by August 16, 2008.

Role of Oil Seeds and Edible Oils

The root cause of high inflation of oil cakes, edible oils and dairy products can be traced from the domestic output of oil seeds, a non-food article. Oil seeds are the primary source of edible oils and oil cakes production. Oil cakes are used as animal/ livestock feed. Over the years, India has emerged as one of the largest consumers and importers of edible oils in the world. Presently, India accounts for 10 per cent of the world edible oil consumption and 14 per cent of world imports. The per capita consumption of edible oils, which was around 7.5 kg per annum in mid-1990s, is now over 11 kg. Alarmingly, our dependence on imports has increased considerably over the years from 17 per cent of the consumption requirements in mid-1990s to nearly 40

per cent now. And this import dependency level is projected to continue till 2015. A look at the trends in the past 10 years reveals that a fall in the domestic production of oil seeds has always necessitated higher imports of edible oils and vice versa (Table 7).

Table 7: Edible Oil Inflation

Oil year (November to October)	Year –on – Year growth of Oil Seeds Production	Edible Oil Imports (in Million Tonnes)	Year –on – Year growth of Imports	Annual Average WPI Inflation Rate (%) of Edible Oils	International Export Price of vegetable Oils
1998-99	16.09	4,393,421	Not Applicable	Not Applicable	77
1999-2000	-16.32	4,494,953	2.3	-17.15	74
2000-01	-10.96	4,833,808	7.5	-2.49	71
2001-02	12.04	4,425,182	-8.5	17.81	83
2002-03	-28.17	5,114,449	15.6	20.61	98
2003-04	69.74	4,306,587	-15.8	4.98	114
2004-05	-3.33	5,041,607	17.1	-6.24	102
2005-06	14.91	4,416,833	-12.4	-1.58	103
2006-07	-13.22	4,714,760	6.7	12.94	NA
2007-08 (Nov. 07-July 08)	-	3,629,012	10.04*	14.11**	NA

Sources: (i) The Solvent Extractors' Association Of India (For Oil Seed production and edible imports); (ii) Central Statistical organization (http://eaindustry.nic.in/) (for Inflation); WTO International Trade Statistics (Various Issues)

However, it appears that higher edible oils imports have not always resulted in higher domestic prices edible oils. That is to say, it all depended on the prevailing international price of edible oils. Whenever the ruling international export price of edible oils was low, we were able to meet the domestic shortfall in edible oils availability through higher and cheaper imports with desirable effect on domestic edible oils inflation. On the other hand, whenever the international export price was

ruling high, domestic price of edible oils was also ruling high irrespective of an increase or decrease in imports. Given this past experience, tracing the reasons for high edible oils prices during the current inflationary spiral is not a difficult exercise. In the oil year 2006-07 (November to October), the production of oil seeds declined by 13 per cent from 27.98 million tonnes in the previous year to 24.28 million tonnes. This is the largest shortfall witnessed in the oil seeds production since 2002-03. The record drop in the oil seeds crop has necessitated higher import of edible oils. As the ruling international price of edible oil was high, higher imports have resulted in higher domestic inflation of edible oils. What happened to the prices of edible oils since the end of 2007 is nothing but the continuation of the aforementioned trend witnessed in the oil year 2006-07. The anticipated fall in the production of oil seeds in the 2007-08 rabi season has ensued in higher edible oils imports since November 2007. This is clear from the fact that the total edible oils imports during the period November 2007 to July 2008 was about 10 per cent higher than the corresponding period last oil year. As the higher imports have occurred against rising international prices of edible oils, the result was higher domestic edible oils prices. Since 2002 world edible oil prices have been gathering an upward momentum and during the last one year the prices have hit the roof. A combination of factors – higher demand for vegetable oil from the biofuel industry, an upward movement in crude oil prices and the rising demand from the consumption markets such as India and China – has been responsible for the continuing bull-run in the world vegetable oils market. This is despite the world witnessing higher edible oils output during the last few years. As regards dairy products, it appears that the high inflation of oil cakes has passed through to the prices of dairy products.

The average inflation rate, period on- period, of oil cakes during November 2007-July 2008 was 39.19 per cent, against 18.79 per cent recorded during the corresponding period previous year. The high inflation of oil cakes is reflected in the average inflation, period-on-period, of dairy products (9.25 per cent) during November 2007 to July 2008, which is about 4 percentage points higher than the figure during the corresponding period the year before.

Implications for India

India has almost insulated itself against transmission of the current level of abnormally high global prices of cereals. This does not mean that food prices have not increased in India at all during last two years when the world witnessed a major surge in food prices. Wheat prices in India increased by about 20 per cent between December 2005 and 2006, which is considered quite high. International prices in the same period increased by 24 per cent. What is remarkable is that between December

2006 and December 2007 international wheat prices increased by 80 per cent, whereas domestic prices declined by 1.3 per cent. The annual rate of inflation estimated on a month-to-month basis shows that food price inflation in international markets in recent months has crossed 40 per cent, whereas in India it has remained below 8 per cent .The reason is that food prices in India have not been affected by the abnormal increase in international prices which were witnessed after mid-2007. This was perhaps due to:

- An increase in food production during 2006-07 and 2007-08 in which favourable weather also played an important role,
- Timely and effective government intervention in the domestic market, and
- Almost complete insulation of the cost of crop production from transmission of the increase in crude oil prices in the international market.

As compared to the average between 2003-04 and 2005-06, food grain production in the country increased by 4.5 per cent in 2006-07 and by more than 10 per cent in 2007-08 as per the advance estimates. After the difficulties faced in procuring wheat in the domestic market and importing then from the global market during 2007, the government was later very careful. It banned export of wheat as early as February 2007 and after sensing a spurt in global prices of rice, the export of non-basmati varieties of rice was also banned in October 2007 to prevent transmission of high international prices to the domestic market and to prevent domestic shortage due to export. The bumper food grain harvest in 2007-08 and various direct and indirect restrictions on large-scale purchases by the private sector helped maintain wheat prices at the level of the minimum support price paid by the government. However, the biggest factor that prevented a sharp rise in food prices in India was that fertilizer prices and diesel prices were not increased in response to the increase in international prices. As already mentioned, global crude oil prices between 2004 and 2007 increased by 89 per cent and urea prices (FOB Ukraine) increased by 77 per cent. In contrast to this, the weighted price of nitrogen, phosphorus and potassium (NPK) fertilisers between 2001-02 and 2006-07 increased by less than 6 per cent and urea prices did not increase at all [Chand and Pandey 2008]. Similarly, diesel prices in the country over the last three years have seen only a small increase (Table 8).

Table. 8. Domestic and Global Prices of Diesel and Fertilizer

Year	Diesel: India	Crude Oil: World	Fertilizer price in India Rs/ kg	Urea World

	Rs/Litere	$/Liter	$/barrel	N	P	K	$/Tonne
2003-04	19.84	0.410	28.98	10.5	20.09	7.43	138.90
2004-05	26.45	0.589	42.22	10.5	19.81	7.43	175.29
2005-06	28.45	0.643	58.00	10.5	21.56	7.13	219.04
2006-07	30.45	0.688	64.43	10.5	21.81	7.43	222.95
2007-08	30.25	0.718	82.36	-	-	-	309.40
June2008	34.80	0.813	130.00	-	-	-	-

Source: 1.IMF Financial Statistics

2. Fertilizer Statistics, Fertilizer Association of India, New Delhi, 52nd Edition, 2007

3. Government of India various notifications by ministry of petroleum

It is worth mentioning that about half of the increase in global food prices is due to the increase in prices of crude oil. By providing a subsidy on fertiliser and diesel, India could ensure that the increase in global crude oil prices, which raised global food prices by 47 per cent, does not affect food prices in India. The question now is:

- How long India can control the cost of food production by preventing the rise in fertiliser and diesel prices.
- How it can adjust to the increase in global food prices.

It seems that India will ultimately be forced to raise the domestic prices of diesel and fertiliser under the pressure of rising global prices of crude oil and this will become a major source of increase in food prices. It took the first step in this direction by raising diesel prices by about 15 per cent in early June 2008. It would also not be possible for the country, under a liberalised trade regime, to maintain a large gap between international and domestic prices over a long period of time. Once international prices settle at some equilibrium, the producer group is going to put pressure on aligning domestic prices with international prices. Looking at the possible future trend in global food prices, India would do well to strengthen food self-sufficiency and develop technologies which are less energy consuming and are more energy-efficient

Major Causes of Food Crisis

The direct and most important indicator of a food crisis in a market economy is an abnormal and persistent increase in food prices in real terms. This could result from factors on the supply side, on the demand side or both.

Supply-side factors

Supply-side factors are a shortage in food availability caused either by a setback to production or diversion of food for non-food use, and an increase in the cost of inputs that go into food production, such as a rise in prices of crude oil and other sources of energy.

The Demand-Side Factors

The demand-side factors are a higher use of food, which could result from growth in population, improvement in purchasing power, shifts in dietary patterns due to an increase in incomes or changes in tastes. These are all real factors. Prices can also increase due to speculative investments in commodity markets and artificial scarcities created by business firms or other entities. The relevance of all such factors for an emerging food crisis is discussed below.

i. Supply and Demand Imbalances

The long-term trend in global food production shows that with the green revolution, production of cereals, which are a staple food, started rising at a much faster rate as compared to the growth in human population, which led to a significant improvement in food supply. The following table shows trends in per capita cereal production.

Table 9: Trends in Per capita Cereal Production during 1961 - 2007 (kg)

Period	Wheat	Rice/Milled	Maize	Total Cereals
1961-65	67	50	77	271
1966-70	74	54	87	295
1971-75	90	56	81	308
1776-80	98	58	90	324
1981-85	104	63	93	334
1986-90	104	64	90	327
1991-95	100	64	94	317
1996-00	100	66	101	319
2001-05	95	63	104	310
2003-07	94	65	108	314

Source: FAOSTAT and FAO Food Outlook, various issues.

The per capita annual production of cereals in the world increased from 271 kg during 1961-65 to 295 kg during 1966-70, which were the initial years of the green revolution. The uptrend continued for about two decades and per capita cereal production peaked by the mid-1980s at a level of 334 kg per person per year. The growth rate of cereal production decelerated to 1.09 per cent after the mid-1980s, compared to 2.51 per cent in 1961-85. The recent growth rate turned out to be lower

than the growth rate in population even though the growth rate in population was coming down. There are several reasons for the slowdown in cereal production:

- ❖ Firstly, there was the deterioration in the terms of trade for agriculture in almost all the countries after trade liberalization driven by the World Trade Organisation. This caused an adverse impact on private investments in the sector.
- ❖ Secondly, very low international prices of cereals and other foods in the late 1990s created a sense of complacence among policymakers and frustration among the producers. This led to a lower priority for production of staple foods.
- ❖ Thirdly, overseas development assistance (ODA) for agriculture, which was quite important for improving rural infrastructure and for the spread of new technology in developing countries, witnessed very sharp decline. In 2004 US $ prices, ODA declined from $ 8 billion in 1984 to $ 3.4 billion by 2004 [World Bank 2007:41].
- ❖ Fourthly, green revolution technology approached its plateau in many regions towards the end of the last century, and the second generation problems of green revolution marred productivity growth in such areas.

After the high yielding varieties of the late 1960s a technological breakthrough of a similar kind at the global level has not been seen in wheat and rice. Maize is the only cereal crop whose production is rising faster than population. The trend in production and utilization of cereals indicates that the imbalance between demand and supply of cereals has been building up for a couple of years and it has become a real factor in putting pressure on prices to move up.

ii. Increase in Crude Oil Prices

The increase in prices of crude oil, gas and such sources of energy affects almost all sectors. It has a direct impact on food prices in several ways:

- Through an increase in prices of fertilisers and agriculture chemicals used as inputs.
- Through an increase in the cost of operation of farm power and machinery.
- Through an increase in transport cost.

The fluctuations in crude oil prices are much higher and bigger than fluctuations in food prices. The food prices are not affected by small fluctuations in crude prices, but a large and consistent decrease or increase exerts a very strong influence on food prices. This is evident from the correlation between crude and food prices in different phases of the trend in crude prices. When crude prices fluctuated around a flat trend

then food prices followed an almost independent trend, affected by other factors. However, when crude prices followed a sharp decline for a couple of years, then, food prices also declined though less sharply than crude prices (1980 to 1986). Conversely, when crude oil prices rise sharply for couple of years, food prices also increase sharply as is evident from the correlation for the period 2000 to 2007, which was as high as 0.95. Based on the carry over effect estimated by Baffes (2007) 47 per cent of the total increase in food prices between 2003 and January-March 2008, can be attributed to the increase in energy prices and the remaining 53 per cent to other factors.

iii. Biofuel Factor

A sharp increase in the prices of fossil fuels necessitated a search for alternative sources of energy, and liquid biofuel is seen as a viable substitute. This has been particularly beneficial for developed countries like the US and EU in more than one way. These countries can give support and subsidies to their producers for producing biofuel crops for domestic use without inviting the ire of other countries or any question at the WTO. The trend towards biofuel production also helps in reducing subsidies and tariff as it leads to higher prices. As mentioned before, diversion of grain as feedstock to produce bio-energy in the form of ethanol triggered a shift in demand for grains and caused a major surge in their prices over the last two years. The magnitude of the impact of the diversion of grain for biofuel can be seen from the fact that this quantity equals one-third of the global trade in cereals and it can increase cereal availability by 12.4 kg for the entire population of the world. If corn alone, used for biofuel in the US, is made available as food, it would increase the availability of cereals used as food by close to 10 per cent for the whole population of the world. Figure 2 shows, how diversion of grain for biofuel production has aggravated the scarcity of cereals for use as food and feed.

iv. India-China Factor

A view is expressed in some quarters that dietary changes and increased food intake in India and China, due to growing prosperity of these two countries, is largely responsible for the increase in global food prices Changes in dietary patterns due to an increase in income has two major dimensions;

- The increase in per capita intake itself.
- The increased consumption of livestock products

The second aspect is that the increased consumption of livestock products that takes place independently or due to a shift from low priced calorie food like cereals to high priced calorie food like meat and eggs requires a much higher increase in the

consumption of cereals or other ingredients. There is wide variation in estimates of the conversion ratio of feed to meat depending upon the type of meat like poultry, beef, pig, etc. The exact impact of the dietary pattern in India and China on the food price surge can be ascertained by looking at the level and pattern of consumption in India and China and comparing the same with the consumption pattern in the US and the world. It is clear that despite high growth in its economy, the dietary patterns in India are not contributing to a shortage of cereals, which are considered staple foods. On the contrary, if the global dietary pattern corresponds to that of India there would be a huge surplus of food.

v. Other Factors

There are a number of factors that have contributed to the rise in food prices. Among these are the increase in energy prices and the related increases in prices of fertilizer and chemicals, which are either produced from energy or are heavy users of energy in their production process. This has increased the cost of production, which ultimately gets reflected in higher food prices. Other factors, including the decline of the dollar, and the increased investment in commodities by institutional investors to hedge against inflation and diversify portfolios may have also contributed to the price increases. The various other factors are:

i)land use changes due to expanded biofuel's feedstock production have been large and have led to reduced production of other crops, ii)export bans and restrictions fueled the price increases by restricting access to supplies, iii) rice is not used for biofuels, but the increase in prices of other commodities contributed to the rapid rise in rice prices, iv) weather-related production shortfalls have been identified as a major factor underpinning world cereals prices, v) the factors, such as the decline of the dollar contributed to food commodity price increases, vi) speculative and investor activity has also increased and could have contributed to food price increases.

Rising Food Prices and Its impact

i**. Contribution to high food inflation**

The pass-through of rising global prices does not translate into an immediate and proportionate rise in domestic price levels, due to various factors such as a weakening dollar, domestic infrastructure, and price stabilization policies. In many countries and regions, food price inflation is higher than aggregate inflation and contributing to underlying inflationary pressures.

ii. **The impact on country's balance of payments**

The extent of dependence on food imports varies significantly across regions of the world. . The International Monetary Fund (IMF) estimates that on average the balance

of payments effects of food price increases alone are not large, but they can be sizeable when combined with the impact of fuel price rises.

iii. Calls for more investment in agriculture

Countering in part these negative influences, higher food prices should lead to more investment in agriculture production and marketing systems. The increase in prices of agricultural commodities represents an opportunity for farmers to increase their production and productivity and thus their income.

iv. Impact on Human Development

The rising food prices may have a negative impact on human development in four dimensions:

i) Increasing poverty;
ii) Worsening nutrition;
iii) Reducing the utilization of education and health services;
iv) Depleting the productive assets of the poor

The immediate impact of rising food prices on the number of poor and the depth of poverty in each country will depend on the consumption patterns of the poor, their economic activity, their location, and the prices they face. In urban areas, the poor are almost all net consumers, and those on fixed incomes are especially vulnerable. In rural areas, the majority of the poor in most countries are net consumers of staple commodities, including grains. Nutrition and health may suffer, especially among small children (under 24 months of age) and pregnant and lactating women, who are most susceptible to chronic malnutrition or who are already suffering malnutrition and ill health. There is clear evidence from past crises that children suffer long-term health consequences from short-term shocks. Shocks may force poor households with low coping capacity to sell their productive assets. Families that have to disinvest in their livelihoods—eating their seed grain, selling their draft animals or the tools of their small enterprise, or defaulting on rent or mortgage payments and consequently losing their homes, farms, or workshops—will find it very difficult to rebuild their earning capacities.

Policy Responses towards rising Food prices

The overall policy response to rising food prices should be multi-sectoral, with the specifics varying by country. The full package will normally contain elements of at least the following components: Food price policy and market stabilization. Countries may reduce tariffs or value-added taxes on food, albeit at some fiscal cost; or go so far as to use price subsidies albeit with both significant fiscal cost and distortions to markets, and often highly regressive distributional impacts. Countries may seek to

increase grain reserves or release them to stabilize markets, or even go so far as to impose export bans or taxes.

The complex causes of the food and agriculture crisis require a comprehensive response. This situation calls for a long term strategy to achieve food and nutrition security with elements of global, regional, and national actions, all of which have shorter- and longer-term dimensions and need adequate sequencing. The types of policy responses vary according to state of the agricultural sector , imports and exporters and the existing economic polices at state and local level. The import sector is concerned involves reducing import restrictions and tariffs, while the latter involves adopting increased taxes and restrictions on exports. This is an important factor in helping to ensure that country with shortfalls will have access to supplies. Safety net programs and policies to mitigate the rise in food prices through subsidies, using stocks to stabilize prices, and providing assistance to farmers to meet rising input costs are widespread. Food assistance programs have been in place for some time in Asia although their impact has been mixed—sometimes helping consumers, other times weakening incentives for producers—with distributional consequences. The adoption of some policies is consistent with objectives such as assisting vulnerable households, preserving incentives for farmers, not imposing costs beyond national borders, good governance, etc. However, clearly some responses such as imposing price controls, trade restrictions, and increasing general subsidies are inconsistent with the objectives and tend to cause more harm than good.

- First, shifting from costly general subsidies to targeted safety net programs such as cash transfers or food stamps, feeding programs for school children, and food-for-work programs can be used in the short run, as can release of stocks to stabilize prices. In the short to medium run, the importance of safety nets to secure food for the needy is demonstrated from the scenarios. But subsidies on a continuing basis are not sustainable. Instead, enhancing access to financial services for the poor and undernourished can help to reduce hunger
- Secondly, medium-term responses such as improving institutional capacities and governance structures in agricultural sector, and investing in improved post harvest facilities are a second route to a sustainable outcome.
- Finally, long-term investment in education in rural areas, agricultural technology, and infrastructure can elicit productivity gains and alleviate the trend of higher rice prices and food prices in general.

Conclusion

Although the current situation poses policy challenges on several fronts, there are effective and coherent actions that can be taken to help vulnerable people through humanitarian aid, trade, investment, and social protection policies. Some of these actions require national and international coordination, including the attention local level work. In view of the urgency of assisting people and countries in need, the policy actions suggested here is listed in two sets: an emergency package of actions to take immediately and a resilience package of actions to phase in now but whose impacts may take time. These actions do not mix general development policy agendas with the needed response to the current food price crisis, but actions that promise longer-term impact are nevertheless highly relevant.

The short, medium and long-run responses to the rise in food price imperative if India is to stay on the path of ensuring inclusive growth. Inclusive growth, in turn, will directly address the challenges resulting from an increase in both the incidence and severity of poverty emanating from rising and high food prices. Appropriate monitoring mechanisms at the global, regional, and national levels will facilitate better responses. Such information must be available for decision makers on a regular basis and not only when a perceived problem has actually become acute. Although the urgency of the current food situation does not permit decision makers to wait for comprehensive information systems to be established before acting, coordinated information collection and sharing is needed to facilitate action.

The Indian economy has experienced robust growth since 2003-04 to date. However, while the first three years in this period showed moderate inflationary pressures, the last two years have experienced relatively high inflation. In terms of wholesale prices, inflation began to firm up mid 2006-07, mainly due to (i) an increase in the prices of wheat, pulses and edible oils because of the shortfall in domestic supply relative to demand and firm international prices; and (ii) an increase in prices of international crude.. In order to combat the inflationary pressures, the government has taken a number of measures. However, much of this may come to naught because of the sharp rise in petroleum product prices that the government was compelled to effect in early June, following the unending rise in global crude oil prices. The complex causes of the food and agriculture crisis require a comprehensive response. This situation calls for a long term strategy to achieve food and nutrition security with elements of global, regional, and national actions, all of which have shorter- and longer-term dimensions and need adequate sequencing. The types of policy responses vary according to state of the agricultural sector , imports and exporters and the existing economic polices at state and local level.

References:

1. Annual Report 2007-08, Ministry of Consumer Affairs, Food and Public Distribution (Department of Food and Public Distribution), Government of India.
2. Economic Survey 2008-09, available at http://indiabudget.nic.in/es2007-08/esmain. htm
3. FAO (2008): Crop Prospects and Food Situation, No 2, Food and Agriculture Organisation of United Nations, Rome
4. Mishra, AR and S Zarabi (2008): 'Inflation Pays the Price of Poor Data Collection', Business Standard, May 15, Mumbai edition.
5. RBI (2007): Macroeconomic and Monetary Developments in 2006-07, Reserve Bank of India, Mumbai, available at http://www.rbi.org.in/scripts/ BS_PressReleaseDisplay.aspx?prid=16462
6. RBI (2008): Macroeconomic and Monetary Developments in 2007-08, Reserve Bank of India, Mumbai, available at http://rbi.org.in/scripts/AnnualPublications
7. RBI (2007): Handbook of Statistics on Indian Economy, Reserve Bank of India, October 1
8. RBI 2008): Annual Policy Statement for the Year 2008-09, Reserve Bank of India, July 29.
9. RBI (2008): *Macroeconomic and Monetary Developments in 2007-08*, Reserve Bank of India, April 28
10. RBI (2008): *Macroeconomic and Monetary Developments: First Quarter Review 2008-09*, July 28.
11. World Bank (2007): 'Agriculture for Development', *World Development Report 2008*, Washington DC.
12. World Bank (2008). "Country Policies and Programs to Address Rising Food Prices" Available: http://siteresources.worldbank.org
13. Central Statistical organization (http://eaindustry.nic.in/)