



Inflation In Food Articles: Causes And Analysis Of Factors During The Post-2008 Crisis Period In India

Dinesh Gabhane, Assistant Professor, Rajeev Gandhi College of Management Studies, Navi Mumbai, India
Dr. S. B. Kishor, HOD, Department of Computer Science, Sardar Patel Mahavidyalaya, Chandrapur, India

Abstract

In India, food inflation is caused by so many factors and which one is significant is a matter of great concern for the economists. It is difficult to arrive at a specific policy decision to contain it. An attempt has been made to analyze the causal factors responsible for high inflation in food articles. The commodity wise analysis of the factors will give new insights in to the phenomenon of high inflation in food articles. The study finds no substantial evidence to support the popular view that, the higher food prices in recent years was the outcome of the structural shift in the dietary pattern. Finally, it has been concluded that, in India, high inflation in food articles during the post-2008 crises period was attributed mainly to the short term domestic supply side constrains and mismanagement of the food grain economy

Keywords: Food inflation, Food Articles, Casual Factors.

Introduction

Food inflation has been a serious cause of concern over the past few years. Price stability of the food articles is crucial for sustainable growth of the economy, as persistent inflation implies higher demand for agriculture commodity relative to supply. Since year 2000 till year 2007, both food and non-food inflation was moderate, in the average range of 6-8%. Food prices in India started soaring up since mid-2008 onwards. The year 2010 witnessed overall inflation rate crossing the psychological threshold of 10% for consecutive five months. Inflation based on year-on year wholesale price index (WPI) of primary food articles rules high at double digits in January 2011. From figure 1, it has shown that, the food inflation rate crossed 20% in December 2009 and again in February 2010.

To understand the nature of food inflation, the total food is disaggregated into primary food articles and manufactured food products with a weight of 59% and 41%, respectively. Primary food articles include cereals, pulses, fruits, vegetables, milk, egg, meat and fish, condiments and spices, etc., whereas the major components of manufactured food products are sugar, dairy products, vegetable oils, prepared food stuff and other processed items. From figure 2, till January 2010 the rates of price rise in food articles and food products were more or less aligned with one another, but later, they followed disparate trends. Though the prices of food products declined sharply afterwards, food article inflation remained in double digit in the late-2010.

Objectives Of The Study

- a) To study the various factors causing high food inflation.
- b) To analyze the factors responsible for high food inflation in food articles.

Methodology

The study is analytical and descriptive in nature. The data has been collected from various secondary sources such as various departments of Ministry of Agriculture, Reserve Bank of India, various rounds of NSSO of Department of Statistics & Programme Implementation, government of India, published research articles, websites etc. Importance is given to the research papers having high relevance to the study.

Literature Review

An attempt has been made by the researcher to understand, acknowledge and extend the work of various researchers in the area of food inflation and its causes.

Factors Causing Food Inflation

There are numerous factors which cause food inflation. Some of the important factors are:

1) Exogenous Factors

These are the significant factors including rise in international food prices and drought condition in the country. For example, in 2008, the international food prices rose to 23% and the deficient south-west monsoon during 2009 resulted in drought situation in most parts of the states in India.

2) Structural Factors

In India, it is believed by several economists that, there are structural factors included in the food inflation; they are:

a) Decelerating Production:

Annual growth of food grains in India has been decelerated from 2.8% in 1980 to 1.6% in 1990 and further 1.2% in 2000 onwards.

b) Growth of Population & Per capita Income:

The population of India rose annually by 1.5% from 2004-05 to 2009-10 and the per capita income showed



robust growth of 6.9% in the same period. In fact, the present level of average nutrition and food intake levels are way below the prescribed levels, which led to accelerated growth for food demand.

c) Changing Dietary Patterns:

With the increase in per capita income, the consumption basket is getting shifted from carbohydrate dominated diet to protein rich diet such as milk, pulses, eggs, fish, mutton etc. and vitamin diet such as vegetables & fruits. The key drivers of the recent trends in food inflation are protein items.

3) Institutional Factors

There are several features of the food sector in India that cause food inflation:

a) Inadequate Infrastructure:

In India, food storage capacity is inadequate and even not suitable for keeping food beyond a few months. This is basically true in case of perishable foods. In spite of bumper crop production in any year, the stock cannot be carried over to meet the shortfall in production in the next year (Chand, 2010).

b) Import Restrictions:

In an economy, to meet domestic shortages, imports taken place to augment demand. For the commodity like edible oil the international market is quit big. Large public & private import houses regularly import edible oil resulting in keeping control over the domestic price of edible oil. However, it is not true for other commodities because of the constraints like import restrictions and insufficient availability in the international market.

c) Institutional Limitations:

Government regulations over imports, high import duties on food items like vegetables and fruits and shortage of private import houses in case of certain commodities.

d) Nature of the Market:

The size of international market in case of pulses is small relative to the demand for pulses in India. Presently, India imports 30% of total pulses through international trade.

e) Hoardings:

Due to hoarding, the prices of essential food items shoot up which is clear indication of the failure of the government regulations & policies in respect of food sector.

f) Financialization of Commodities:

Moreover, the speculation of food items in commodity market sometimes artificially raises the prices of the commodity in anticipation of inadequate supply in future.

Commodity Wise Analysis Of Factors

Demand side Factors:

One reason for the higher prices of the food items in recent years is the rising demand for high value food items like, pulses, milk, livestock, fishery, vegetables and fruits which is attributed by the rise in per capita income and structural shift in the dietary pattern. As the supply response to growing demand for these high value food items is inadequate, their prices continued to remain high. Table 1 and table 2 shows the trends in MPCE at current and constant prices based on the surveys conducted by the National Sample Survey Office on quinquennial basis. Over the five year period from 2004-05 to 2009-10, the share of the high value food items namely pulses, milk and milk products, egg, fish, meat and vegetables in the MPCE on food at current prices has increased (Table 1). It is difficult to conclude from the data that, the rising domestic pressures have contributed significantly to the food price spiral and the structural shift in food consumption towards high value food items. This calls for detailed examination of the food expenditure pattern as the demand side explanation for high food inflation reveals many infirmities.

First, except pulses, the increase in the expenditure share on other high value food items in 2009-10 was only marginal and not significantly different than in previous periods (Table 1). Second, the share of expenditure on cereals and fruits exhibit negative growth during 2009-10. Third, there was no new high in expenditure on vegetables in 2009-10. In case of milk, the real MPCE recorded an increase during 2004-10 both in terms of absolute amount and growth (Table 2). Since, the demand for high value food items is income elastic, it is unlikely that India experienced any significant diet diversification during the period 2008-2010, when there was slow down in the economy and GDP.

Supply side Factors:

It is known fact that, the oil prices are administered by the global crude oil prices and government's policy decision on price revision. Fuel prices are partially revised with a time lag in response to the international oil prices (Rakshit, 2009). From September 2007 to Sept. 2008 and November 2009 to July 2010, in surging to the international oil prices, the WPI inflation rate of mineral oil remained high in India during March 2008 to Nov. 2008 and Jan. 2010 to July 2010. It appears that, the escalation in the domestic fuel price coincide with the rising prices of food items. Therefore, it can be revealed that the oil price increase has had an impact on food prices in India. During April 2009 to November 2009, the moderation in the mineral oil price has no effect on the food inflation. This is because of the agricultural supply shocks that occurred in 2008-09 and 2009-10.



Food articles witnessed high inflationary pressure due to supply side factors are rice, wheat, pulses, fruits, vegetables, milk, egg, meat, fish, spices, tea, and coffee.

1) Rice

The production of rice was quite comfortable for the four consecutive Kharif marketing seasons (KMS) (October-September) from 2005-06 to 2008-09. In fact, for the first time in the history the output of rice hovered above 90 million tonnes for four consecutive years since 2005-06 (Table 3).

Despite this bumper crop production, the inflation rate of rice started picking up from November 2006 and touched a peak of 17.23 % in December 2008. The average rate of inflation in 2007-08, 2008-09 and 2009-2010 recorded at 11.30%, 14.83% and 12.31% respectively. The upward movement in rice inflation from November 2006 onwards has coincided with the buffer stock position of the grain. The actual buffer stock of the government was close to the minimum norm between October 2006 and July 2008. The reason for this situation was the higher export of rice during 2005-06, 2006-07 and 2007-08 and the mismanagement of the food grain economy. Starting from 2000, India experienced high mountains of rice stocks due to significant increase in procurement of rice by the government (Table 4).

Due to high minimum support prices (MSP), consumption of rice has fallen drastically (Chand, 2005). In order to bail out of financial burden involved in managing the rice mountain, the government decided to open up the exports from 2001 at heavy discounts (Anwarul Hoda, 2007). However, the export of rice was only a triggered factor but the inflationary pressure has sustained because of two reasons. First, the sharp increase in the MSP of rice for two consecutive KMS 2007-08 and 2008-09 jacked up the price of rice in open market (Table 4).

A high MSP was declared just to incentivize rice procurement in the light of the decline in wheat procurement during the Rabi marketing season (RMS) 2005-06 and 2007-08 (Sthanu R Nair, 2011). Second, due to insufficient buffer stock, the Food Corporation of India (FCI) did not resort to sale of rice in 2007-08 and 2008-09 through open market sales scheme (OMSS). The buffer stock of rice increasing after August 2008 and went beyond manageable limits. The buffer stock of rice was made possible because of the high levels of production and procurement in the Kharif marketing seasons (KMS) 2008-09. The inflation rate continued to remain high in 2009-10. The factors responsible for high inflation in rice despite this favourable condition were (1) a hike in MSP in 2009-10 to Rs, 1000 and (2) deficiency in south-west monsoon in 2009 and unusual heavy rainfall in some parts of the country in late September and

early October 2009. This has resulted in significant fall in rice production during 2009-10 KMS (Table 4).

2) Wheat

Despite positive output of wheat between three consecutive RMS from 2007-08 (April-March) to 2009-10 and negligible export during 2007-08 to 2009-10, the WPI inflation in wheat was ruling high for most of the time during April 2008 to August 2010 (Table 6 and Table 7). The overall average inflation rate in wheat recorded at 8.41% during April 2008 to August 2010. Consequently, the buffer stock of government remained high during this period of high inflation due to the phenomenal increase in procurement in RMS 2008-09 and 2009-10 (Table 8). In order to arrive at the realistic understanding of the causes for high wheat prices during 2008-09 and 2009-10, it is required to examine the circumstances which were responsible for the building up of huge stock and the manner it was accumulated in 2008-09 and 2009-10. The reason for the government to increase wheat procurement and buffer stock in 2008-09 and 2009-10 is the fact that most part of the period between January 2005 and March 2008, wheat stock with the government were below the prescribed buffer norms. However, in order to avoid shortages the stock of wheat procured at higher MSP during 2008-09 and 2009-10 for three consecutive years from RMS 2007-08 (Table 9). Rising price of MSP of this kind was the cause for rising open market price of wheat (Basu, 2011). Also, the historic high levels of procurement in RMS 2008-09 and 2009-10 might have deprived the private trade of adequate wheat, thereby causing an increase in the open market price.

3) Pulses

Poor production of pulses in 2008-09 and 2009-10 witnessed a rise in inflation between August 2008 and July 2010 (Table 11). In response, to this situation India imported higher quantity of pulses during 2009-10 (Table 10). It has been observed from the historical data that, pulses imports do not fulfill the requirements of the supply to the extent of reducing the domestic prices due to predominance of the demand factor. Over the years, the production of pulses in India is highly inadequate as compared to the level of domestic consumption. Also, some of the popular pulses varieties are not produced in other parts of the world thereby limiting the imports.

4) Fruits, Vegetables and Milk

The fall in production was primarily responsible for the rise in inflation rate of fruits and vegetables during 2008-09 and 2009-10. Though, vegetable production picked up in 2009-10 despite bad monsoon followed by floods in some parts of the country, the growth rate was not in line in relation to the trends in the recent past. Due to lower production of oil seeds in 2008-09 and 2009-10,



the inflation in oil cake prices was high. The prices of milk and dairy products were soaring high as a result of the combined effect of rise in oil cake prices which is used as animal/cattle feed and the consistent fall in the production of milk since 2006-07 (Table 11). India is the second largest producer of milk in the world and the net exporter of milk and milk products (Table 10). However, in 2008-09 and 2009-10, the export of milk has taken a hit which was severe in 2009-10. Though the international prices of the dairy products were low during October 2008 and October 2009, India imported higher quantity of milk in the same period did not translate into lower domestic inflation of milk and dairy products. This may be because of the cost push effect of high inflation in oil cake and higher domestic demand for milk (Table 10).

5) Egg, Meat and Fish

The reasons for the high inflation in egg prices were the fall in production in 2008-09 (Table 10) and higher prices of livestock feed. The key product responsible for the high prices of meat during March 2008 to July 2010 was mutton. The production growth rate of mutton was also disappointing since 2007-08 (Table 10). This cause high inflation in mutton prices started from October 2007 and continued thereafter. The prices of the inland fish pushed up between June 2009 and July 2010 due to the drastic fall in the production during 2009-10 compared to the previous year (Table 10). Similarly, lower production in two consecutive years from 2008-09 resulted in high inflation of marine fish from July 2008 to July 2010.

6) Spices, Tea and Coffee

India is the leading producer and consumer of spices. Also, it was the world's largest exporter (in 2003) and fourth largest importer (in 2005) of spices. Despite higher production of spices each year, imports are necessitated to fulfill the domestic demand for it. The drop in the growth of spices production during 2008-09 and 2009-10 resulted in high inflation in spices (Table 10). However, the spices export was continued despite domestic demand which aggravated the supply-demand gap, thereby causing further rise in prices of spices.

India is world's second largest producer of tea and fourth largest exporter of tea. The rate of growth of tea in India

was much lower from 2007-08 onwards compared to the previous three years (Table 10). However, export of tea remained high despite domestic demand. This suggests that export of tea was allowed to take advantage of the high price situation in the international market between February 2008 and April 2010. Thus, the high inflation in tea prices was the result of lower tea production, higher exports and high cost imports.

Inflation rate in coffee was high between March 2008 and April 2010 due to low growth of production in 2008-09 and higher consumption in 2008-09. There was significant jump in domestic consumption of coffee from 94,400 million tonnes to 1,02,000 million tonnes in 2009, an increase of 8.05%. This was the second highest jump in domestic consumption in coffee since 2000. However, the export of coffee did not witness any significant downward pressure in 2008-09 and 2009-10 (Table 10). On the contrary, coffee imports increased during the same time. Though, the inflation in coffee at the global level was ruling negative between October 2008 and October 2009, imports could have provided some relief to consumers which are inadequate as compared to domestic demand.

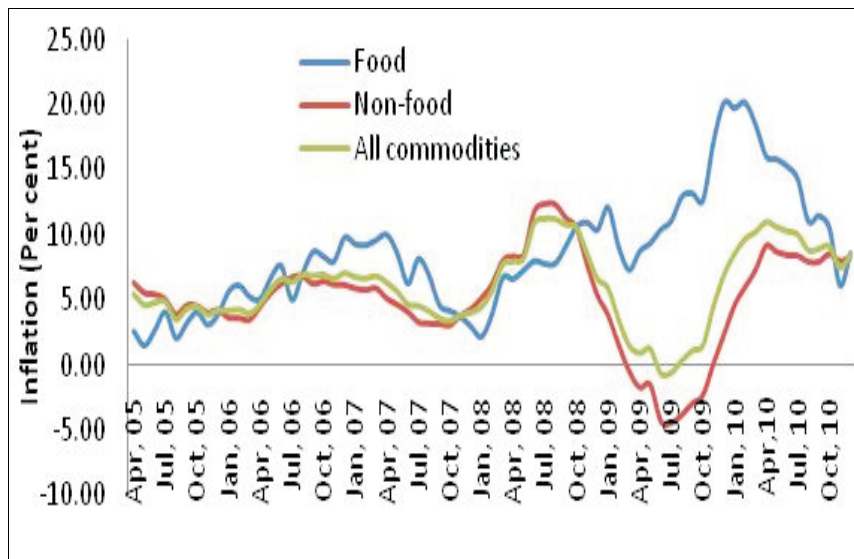
Conclusions

This study finds no substantial evidence to support the popular view that, the higher food prices in recent years was the outcome of the structural shift in the dietary pattern. Majority of the food articles showed upward pressure due to supply side constraints including pulses, fruits, vegetables, meat, fish, spices & coffee. On the other hand, prices of rice and wheat remained high due to set of factors such as procurement at high MSP and lack of sale under open market sales scheme (OMSS). The prices of milk and eggs were the result of cost push factor, namely, high inflation in animal feed (oil cake). In case of tea, the world market prices had an influence on the domestic prices through costly imports. Finally, it has been concluded that, in India, high inflation in food articles was attributed mainly to the short term domestic supply side constraints and mismanagement of the food grain economy.



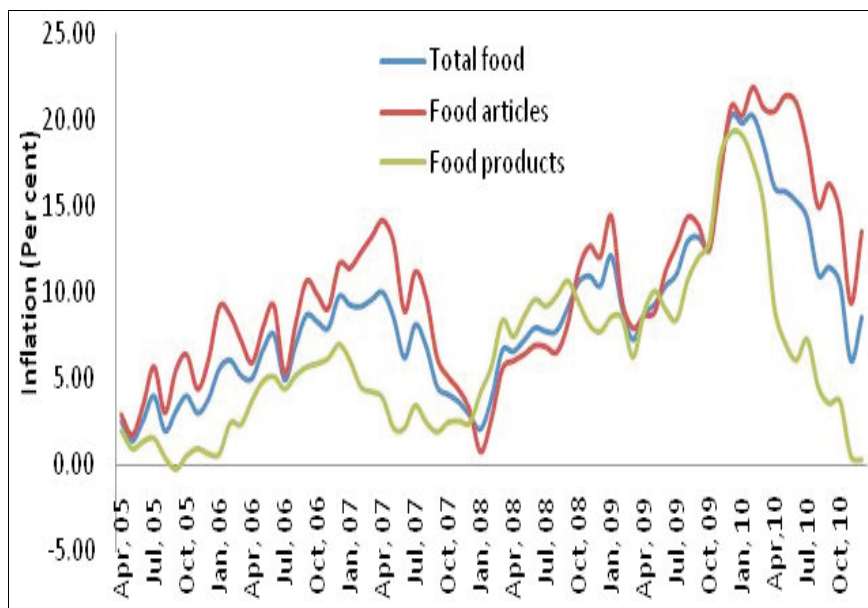
Figures And Tables

Figure 1: WPI inflation in Food and Non-Food Commodities



Source: GoI (2011).

Figure 2: WPI Inflation in Food Disaggregated



Source: GoI (2011).



Table 1: Trends in percentage composition of MPCE (at current prices) on groups of Food Items in India
(Share in total consumer expenditure on food)

Food Items	Rural Area		Urban Area	
	2004-05	2009-10	2004-05	2009-10
Cereals	32.72 (-4.59)	29.19 (-3.53)	23.65 (-2.04)	22.25 (-1.40)
Pulses & Pulse Products	5.59 (-0.82)	6.89 (1.30)	5.03 (-0.87)	6.54 (1.51)
Milk & Milk Products	15.38 (0.64)	16.13 (0.75)	18.62 (0.57)	19.07 (0.45)
Egg, Fish & Meat	6.05 (0.46)	6.49 (0.44)	6.36 (-0.16)	6.60 (0.24)
Vegetables	11.08 (0.70)	11.51 (0.43)	10.47 (-0.22)	10.54 (0.07)
Fruits & nuts	3.39 (0.49)	2.37 (-1.02)	5.29 (0.25)	4.06 (-1.23)

Source: (1) Household Consumer Expenditure in India 2007-08, NSSO 64th Round (Report No. 530), GoI.

(2) Key indicators of Household Consumer Expenditure in India 2009-10, NSSO 66th Round (Report No. KI (66/1.0)), GoI.

* Figures in the bracket are percentage point change over the years.

Table 2: Real MPCE on Groups of Food Items by Urban India

(In Rs.)

Food Items	Urban Area	
	2004-05	2009-10
Cereals	25.87 (24.43)	24.80 (23.44)
Pulses & Pulse Products	5.14 (4.85)	4.55 (4.30)
Milk & Milk Products	21.75 (20.54)	23.79 (22.48)
Egg, Fish & Meat	5.97 (5.64)	5.85 (5.53)
Vegetables and Fruits	17.57 (16.59)	16.09 (15.20)

Source: (1) Household Consumer Expenditure in India 2007-08, NSSO 64th Round (Report No. 530), GoI.

(2) Key indicators of Household Consumer Expenditure in India 2009-10, NSSO 66th Round (Report No. KI (66/1.0)), GoI.

* Figures in the bracket are percentage point change over the years.

Table 3: Production and growth of Rice

Year	Production (In MT)	Year-on-Year (growth %)
2000-01	84.98	(-)
2001-02	93.34	9.84
2002-03	71.82	-23.06
2003-04	88.53	23.27
2004-05	83.13	-6.10
2005-06	91.79	10.42
2006-07	93.35	1.70
2007-08	96.69	3.58
2008-09	99.18	2.58
2009-10	89.09	-10.17

Source: Department of Agriculture and Cooperation, Ministry of Agriculture, GoI.
(<http://agricoop.nic.in/Agristatistics.htm>)

(-) indicates data not available.



Table 4: Production and government procurement of Rice

Year	Production	Procurement	Procurement as % of production
2000-01	84.98	18.93	22.28
2001-02	93.34	21.12	22.63
2002-03	71.82	19.00	26.46
2003-04	88.53	20.78	23.47
2004-05	83.13	24.04	28.92
2005-06	91.79	26.69	29.08
2006-07	93.35	26.30	28.17
2007-08	96.69	26.29	27.19
2008-09	99.18	32.84	33.14
2009-10	89.09	32.59	36.58

Source: Handbook of Statistics on Indian Economy (2009-10), RBI.

Table 5: Minimum Support Price of paddy inclusive of incentive bonus

(Rs. per quintal)

Marketing Season	Common Trade	Grade 'A'
2000-01	510	540
2001-02	530	560
2002-03	530	560
2003-04	550	580
2004-05	560	590
2005-06	570	600
2006-07	620	650
2007-08	745/850*	745/880*
2008-09	900	930
2009-10	1000	980

Source: Department of Agriculture and Cooperation, Ministry of Agriculture, GoI. (<http://agricoop.nic.in/Agristatistics.htm>)

*From 12 June 2008

Table 6: Production and growth rate in production of Wheat

Year	Production (in million tonnes)	Year-on-Year Growth (%)
2000-01	69.68	-
2001-02	72.77	4.43
2002-03	65.76	-9.63
2003-04	72.15	9.72
2004-05	68.64	-4.86
2005-06	69.35	1.03
2006-07	75.81	9.32
2007-08	78.57	3.64
2008-09	80.68	2.69
2009-10	80.80	0.15

Source: Department of Agriculture and Cooperation, Ministry of Agriculture, GoI (<http://agricoop.nic.in/Agristatistics.htm>).

(-) indicates data not available.



Table 7: Export and Import of Wheat

(In '000 tonnes)

Year	Export	Import
2000-01	813.49	4.22
2001-02	2649.38	1.35
2002-03	3671.25	-
2003-04	4093.08	0.46
2004-05	2009.35	1.39
2005-06	746.18	0.49
2006-07	46.64	6079.56
2007-08	0.24	1793.21
2008-09	1.12	0.01
2009-10 (P)	0.0293	160.08

Source: Department of Agriculture and Cooperation, Ministry of Agriculture, GoI.
(<http://agricoop.nic.in/Agristatistics.htm>)
(-) indicates data not available.

Table 8: Production and government procurement of Wheat

(In million tonnes)

Year	Production	Procurement	Procurement as % of production
2000-01	69.68	16.36	23.48
2001-02	72.77	20.63	28.35
2002-03	65.76	19.03	28.94
2003-04	72.15	15.80	21.90
2004-05	68.64	16.80	24.48
2005-06	69.35	14.79	21.33
2006-07	75.81	9.23	12.18
2007-08	78.57	11.13	14.17
2008-09	80.68	22.69	28.12
2009-10	80.80	25.38	31.41

Source: Handbook of Statistics on Indian Economy 2009-10, RBI.

Table 9: Minimum Support Price (MSP) of Wheat inclusive of incentive

(Per Quintal)

Marketing Seasons	MSP
2000-01	580
2001-02	610
2002-03	620
2003-04	620
2004-05	630
2005-06	640
2006-07	650
2007-08	850
2008-09	1000
2009-10	1080

Source: Department of Agriculture and Cooperation, Ministry of Agriculture, GoI.
(<http://agricoop.nic.in/Agristatistics.htm>)



Table 10: Export and Import of Food Items

(In '000 tonnes)

Commodity		2005-06	2006-07	2007-08	2008-09	2009-10(p)
Pulses	Export	447.44	250.7	164.2	136.27	100
	Import	1695.95	22740.97	2835.05	2474.11	3448.35
Spices	Export	400.24	482.8	614.86	673.87	680.6
	Import	108.93	118.51	144.63	122.85	150.03
Tea	Export	162.86	185.63	197.39	207.46	208.55
	Import	18.75	23.29	19.73	25.16	33.64
Coffee	Export	177.68	213.65	178.3	174.08	177.23
	Import	24.94	5.71	9.35	14.19	16.55
Milk & Cream	Export	67.10	41.00	58.07	50.10	26.74
	Import	1.63	3.09	1.98	3.23	8.24

Source: (1) Department of Agriculture and Cooperation, Ministry of Agriculture, GoI. (<http://agricoop.nic.in/Agristatistics.htm>)

(2) Export Import data bank, Ministry of Commerce and Industry, Department of Commerce, GoI. (<http://commerce.nic.in/eidb/Default.asp>).

Table 11: Year-on-Year growth of production of various Food Articles

(Percent)

Items	2005-06	2006-07	2007-08	2008-09	2009-10
Pulses	1.98	6.05	3.94	-1.29	0.14
Fruits	-7.54	7.60	10.11	4.39	2.47
Vegetables	10.03	3.23	11.70	0.49	4.77
Tea	4.64	2.54	1.43	-1.44	1.89
Coffee	-0.54	5.11	-9.03	0.11	10.41
Milk	4.97	3.91	3.87	3.53	3.23
Egg	2.21	9.74	5.52	3.39	8.03
Meat (Mutton)	3.81	16.93	-15.71	7.59	2.72
Fish (Marine)	1.33	7.39	-3.44	1.99	-9.70
Fish (Inland)	6.55	2.37	9.41	10.27	4.81
Spices	-53.98	6.69	10.22	-4.87	-3.11

Source: (1) Department of Agriculture and Cooperation, Ministry of Agriculture, GoI. (<http://agricoop.nic.in/Agristatistics.htm>)

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(5) Coffee Board of India.

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