

Why food inflation is likely to remain persistent in India?

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Food inflation had been in double digits since June 2009 and it was a welcome respite to see it print lower at 9.4% in November 2010. However, food inflation in December 2010 again increased to double digits with the food inflation at 18.3% in last week of December 2010. This sudden spike in food inflation has created a stir amidst public and policymakers.

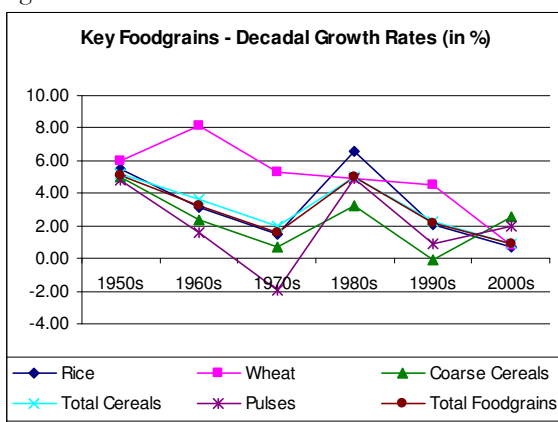
What is to be noted is that despite a good monsoon in FY 2010-11, food inflation in India remains remarkably high. RBI officials have been highlighting the persistence of high food inflation in numerous speeches and policy statements and the dilemma posed for conduct of monetary policy. Monetary policy can only control inflation emanating from rising demand but food inflation is largely because of supply side constraints.

This paper attempts to look at the developments in Indian agriculture from a long term perspective and reasons for this persistent rise in food price inflation.

Agriculture Sector – Decadal Performance

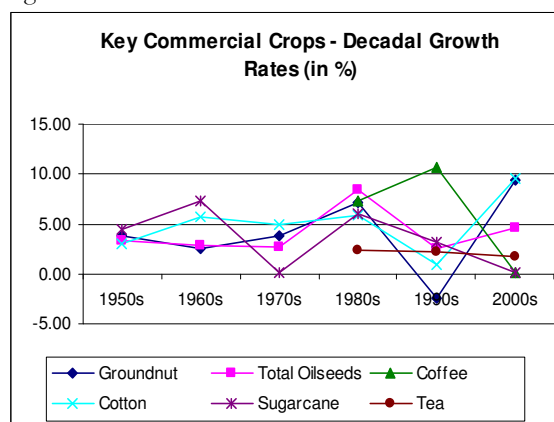
The growth rates in the production of key food-grains in India have declined with each passing decade. Average growth in foodgrain production was highest in 1950s and declined in subsequent decades. It briefly improved in the 1990s and reached its lowest in the subsequent decade, (Figure 1), when the growth rate in incomes was at its highest pace. Within foodgrains, rice and wheat both recorded average growth rates lower than 1%. Growth rate in pulses was higher in the 2000s decade but has not been enough to keep pace with the changing demand pattern of the Indian population. Another significant feature is the volatility in growth rates which has increased in 1990s and 2000s.

Figure 1



Source: RBI

Figure 2



Source: RBI

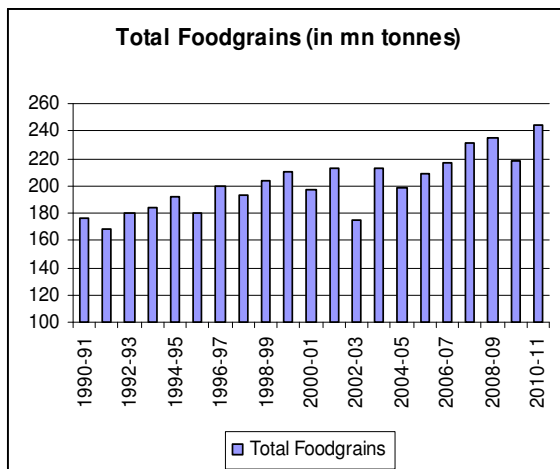
The trend is no different when we look at growth rates in key commercial crops (Figure 2) with sugarcane and coffee hardly registering any growth in the last decade. However the growth rate of oilseeds and cotton was higher in the 2000s which is a positive sign.

As average growth rates may not provide the right picture given the volatility, we also need to look at overall production levels (Figure 3). If we see the production numbers from 1990 onwards, we can see the sharp volatility as explained above. Barring a rise in last few years, overall production has stagnated and remains at production levels seen in 1990s. Consequently, with a growing economy



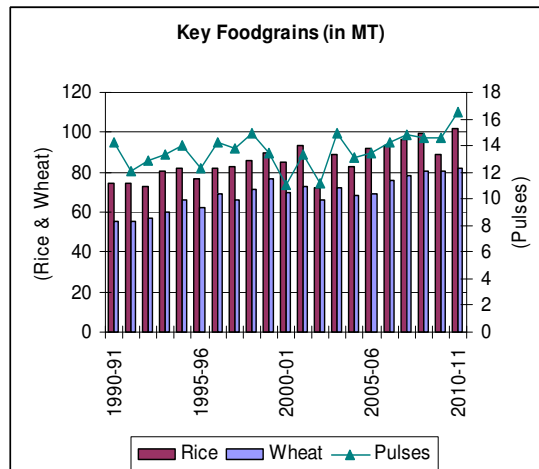
and population, supply of foodgrains emerged as a constraint (discussed later). Within foodgrains we see similar trends in rice, wheat and pulses (Figure 4).

Figure 3



Source: RBI

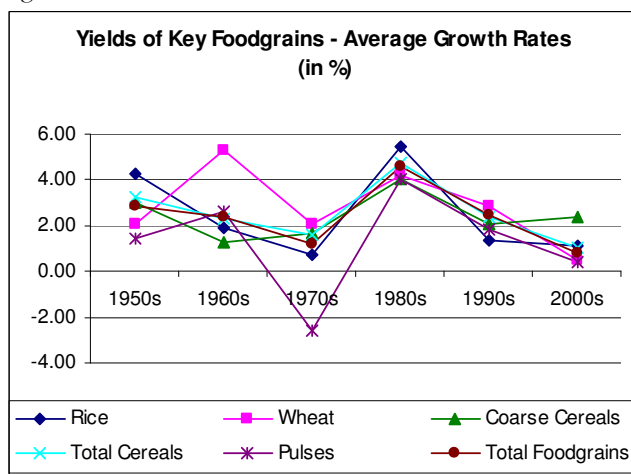
Figure 4



Source: RBI

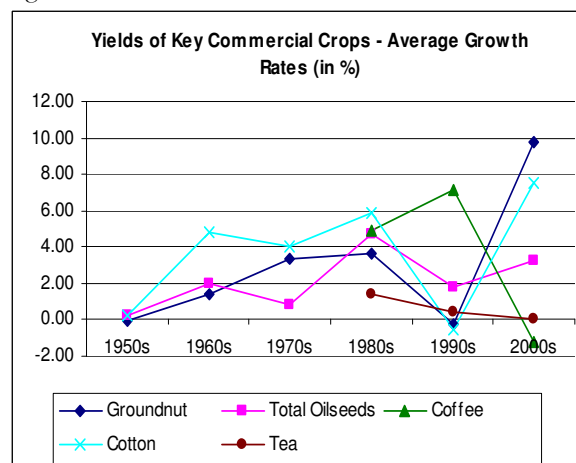
Apart from production, overall yields have remained stagnant as well. We see lower growth rates of yields in the 1990s and further in the 2000s (Figure 5). The case of pulses is even more alarming. In case of commercial crops, the trends are mixed (Figure 6). The yields rose in the case of oilseeds and cotton but declined in the case of sugarcane, tea and coffee.

Figure 5



Source: RBI

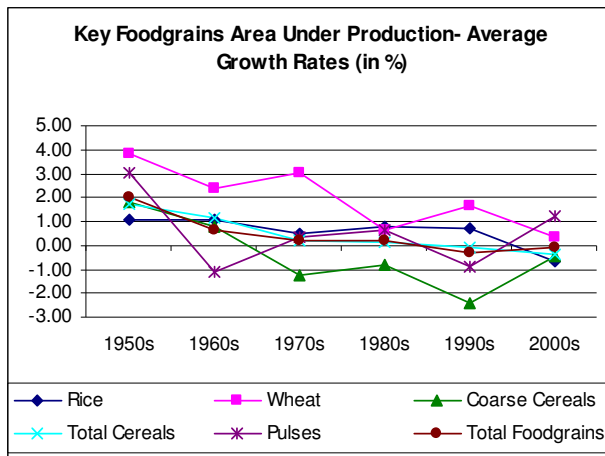
Figure 6



Source: RBI

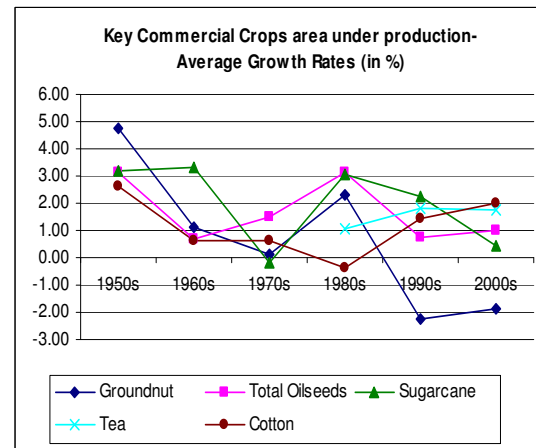
In case of area under production, foodgrains showed higher average growth rates in 2000s only in case of pulses (Figure 7). The others have declined with growth rates in negative for rice and other cereals. In commercial crops, one sees stagnation of growth rates in most crops (Figure 8).

Figure 7



Source: RBI

Figure 8

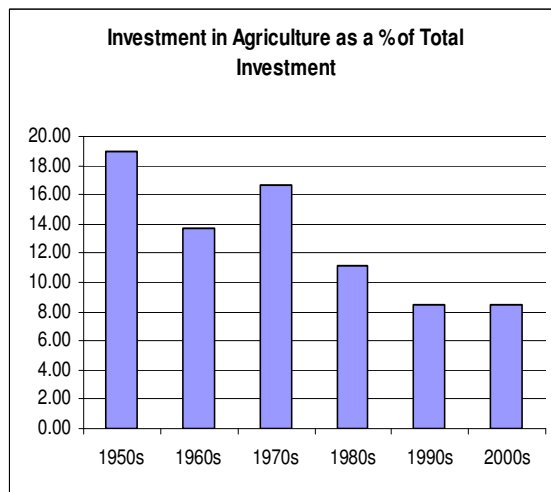


Source: RBI

Factors for stagnation in agriculture

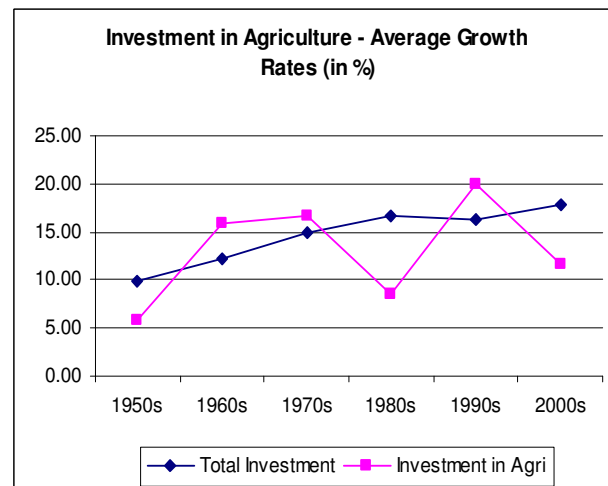
- Investment in agriculture has declined:** In the 1950s, investment in agriculture was 19% of total investments and has declined steadily to touch 8.5% in the 2000s (Figure 9). The growth rate of investments in agriculture has declined in 2000s when total investment in the economy has increased (Figure 10).

Figure 9



Note: 2000's data between 2001-07
Source: Planning Commission

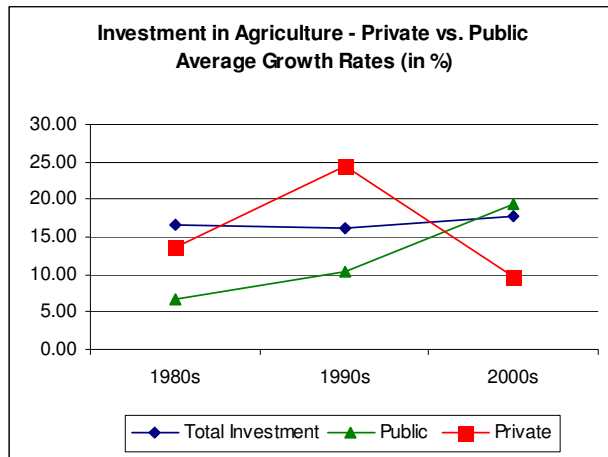
Figure 10



Note: 2000's data between 2001-07
Source: Planning Commission

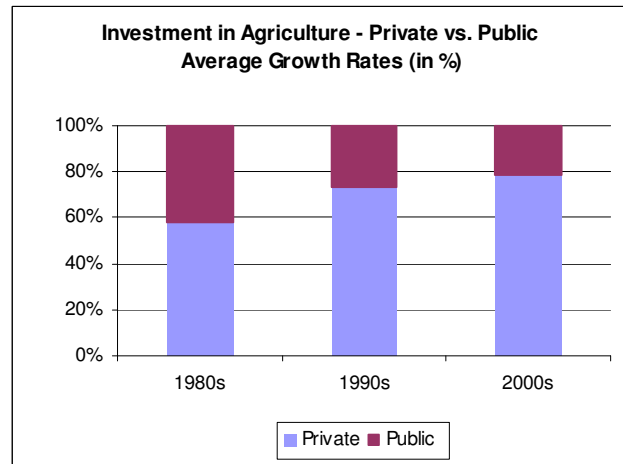
Further, the growth rate of private sector investment in agriculture declined in the 2000s (Figure 11) which was compensated by the increase in the growth rate of public sector investment. Another interesting trend is that share of private sector in total agriculture investment is higher than share of public sector (Figure 12). In the 1980s public sector's share was 42% of total investment and in the 2000s it has halved to just 21% of total investment, despite a higher growth rate in 2000s.

Figure 11



Source: Planning Commission

Figure 12



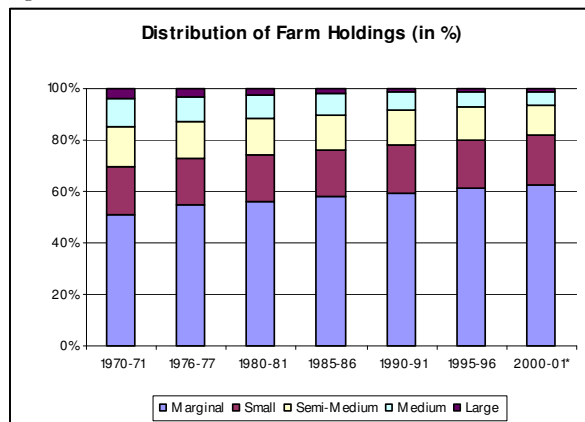
Source: Planning Commission

These trends are very interesting as investment growth overall picks up in the 1990s because of private sector, but the production trends do not improve. Hence, quality of investments is questionable. It also indicates that private sector has not been averse to investing in agriculture. It requires proper incentives and policies for private sector to invest in agriculture.

The overall decline in growth rate of investments explains partly the stagnation in yields and production levels in agriculture.

- Decline in farm sizes:** The number of farms have risen over the years but the overall area under cultivation has declined. This is because of fractionalization of Indian farms. In the 1970s, marginal farm sizes constituted 51% of the total number of farms which increased to 63% in 2000-01 (Figure 13). All the other categories viz. small, semi-medium, medium and large holdings declined in number. This resulted in overall number of holdings going up but the size of the overall area under farming not rising (Figure 14).

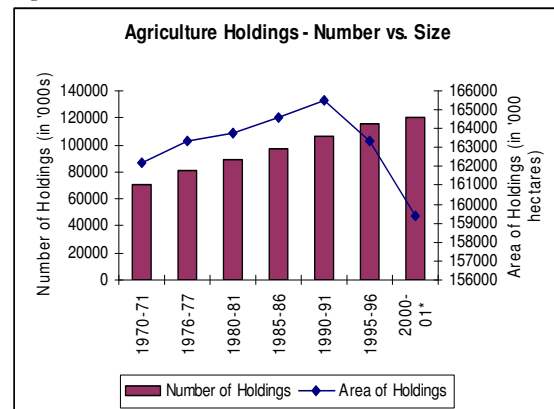
Figure 13



Note: Marginal – Less than 1 Hectare; Small - 1.0 to 2.0 hectares; Semi-Medium - 2.0 to 4.0 hectares; Medium - 4.0 to 10.0 hectares; Large - 10.0 hectares and above

Source: Planning Commission

Figure 14



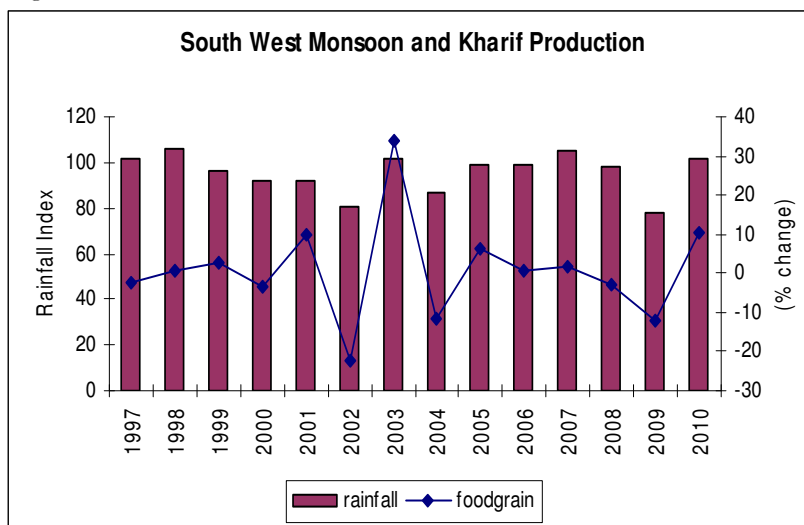
Source: Planning Commission

With a rise in small farms and fractional holdings, agriculture production is bound to suffer as it requires economies of scale which is not possible in small farm sizes. The trend is different from that seen in other economies where one sees consolidation in farm sizes which not only leads to rise in production but allowed higher investment and more productivity.

- **Dependence on monsoon:** Monsoons have always played an important role in Indian economy. With economic growth and improvement in technology we should see a decline in our dependence on the monsoons. However, the dependence on monsoons remains as strong as ever because of decline in investment in agriculture. Figure 15 shows the high dependence of monsoons on agriculture production in the Kharif season.

In 2010, monsoons were 2% above normal and a rise of 10.4% in foodgrain production is expected. It is important to note that agriculture production picked up between FY 2005-08 after stagnating since the 1990s. Though public investment rose in this time, normal/near normal monsoons are also an important factor for stronger agriculture production in that time-period.

Figure 15



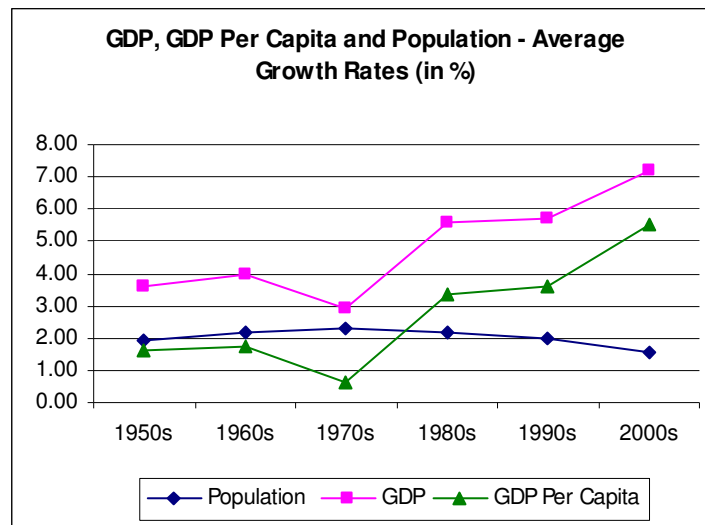
Note: Rainfall Index is 100 for normal rainfall which is measured as long period average (LPA) rainfall of 89 cm during 1941-1990.

Source: RBI

Stagnating Supplies Clashes with Rising Income and Demand

- **Incomes rising:** The per capita incomes have risen in the 2000s decade tracking rise in GDP and lower population growth (Figure 16), whereas we see decline in food production in the same period. The strong growth is likely to continue and would continue to contribute to higher incomes and demand.

Figure 16



Source: RBI

- Rise in demand for food items:** The time series of demand of food grains is not publicly available. However, we have some demand data for recent years and it shows the supply and demand mismatch especially in the case of pulses (Table 1). Production of pulses is critical given the change in Indian consumption patterns. There is generally no mismatch in overall foodgrains with supply remaining surplus except in FY 2009-10 which was on account of drought. The mismatch might arise going ahead as income levels rise further.

	Cereals			Pulses			Foodgrains		
	Demand	Production	Deficit/Surplus	Demand	Production	Deficit/Surplus	Demand	Production	Deficit/Surplus
2007-08	197.25	216.02	18.77	16.77	14.77	-2	214.02	230.78	16.76
2008-09	201.49	219.9	18.41	17.51	14.57	-2.94	219.01	234.47	15.46
2009-10	205.75	203.61	-2.14	18.29	14.59	-3.7	224.04	218.2	-5.84

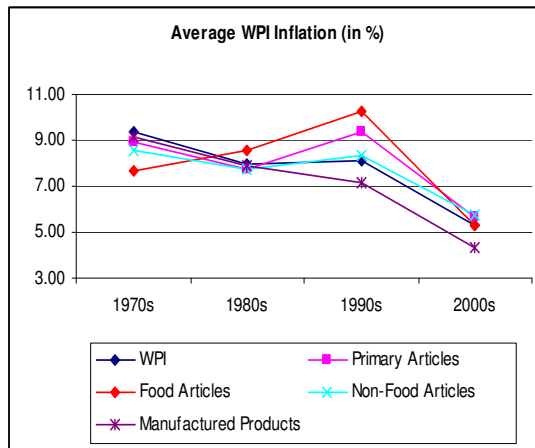
Source: PIB

The end result is persistence in food inflation

Economics tells us that if supply does not match the rise in demand, the prices are going to increase. However, if we look at the average inflation over the decades, we do not see the above mentioned trend. Inflation and more importantly food inflation peaked in the 1990s and declined subsequently (Figure 17). However, if we look at annual food inflation trends (Figure 18), we see food inflation rose in FY 2008-09 and remained persistent till date. Each year different reasons are responsible for this rise in food inflation. In FY 2008-09 it was a rise in global commodity prices, in FY 2009-10 it was drought and in FY 2010-11 it is late winter rains. These factors only exacerbate the situation further.

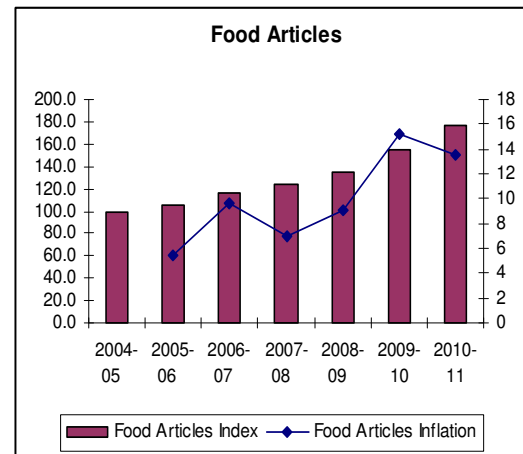


Figure 17



Source: RBI

Figure 18



Source: RBI

Another notable trend is change in consumption patterns of Indian population. As people move towards higher income levels, they start replacing their demand of cereals (wheat, rice) etc with more protein items like pulses, eggs, meat items etc. Dr. Subir Gokarn, Deputy Governor of RBI in a recent speech (The Price of Protein, Oct 2010) points to this shift in demand pattern. This rise in demand for protein items has not been met by an equal rise in supply. The end result is rise in prices of these protein based items.

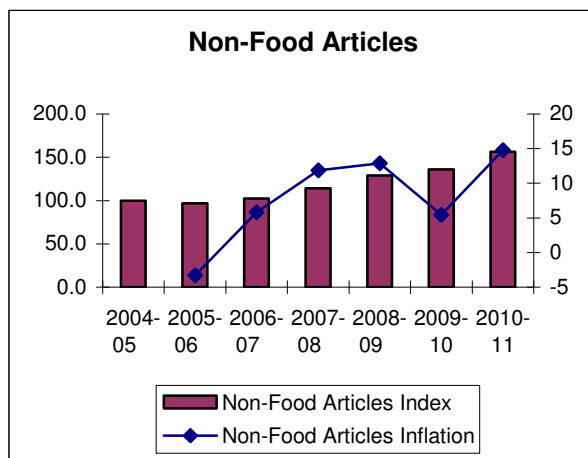
This change in demand pattern complicates the situation further. First raising production of vegetarian protein items like pulses is difficult in a short-period of time. Second, non-vegetarian items like eggs and meat items further need foodgrains for raising the animal stock. This also puts upward pressure on food-grain prices.

So far, we have discussed only prices of food-grains. But we see substantial rise in prices of non-food articles and manufactured food items as well.

- In non-food articles we have some key commercial crops like oilseeds and cotton and as we saw above, production levels have dipped in this category as well. We are seeing a rise in non-food articles inflation as well (Figure 19).
- Both food articles and non-food articles (especially oilseeds) act as inputs in manufactured products. So far it has been subdued in FY 2010-11 but usually rises with a lag as seen in FY 2008-09 and FY 2009-10 (Figure 20). If both food and non-food articles continue to rise, the prices of manufactured food items are bound to rise.

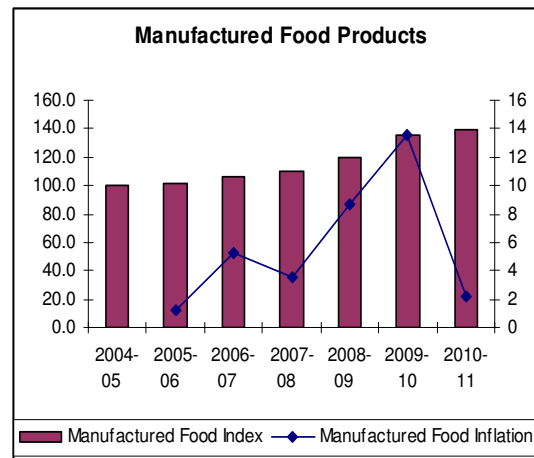


Figure 19



Source: RBI

Figure 20



Source: RBI

Policy Options

- Monetary Policy:** The persistence of food inflation puts RBI in a dilemma. As a central banker it cannot ignore rising food inflation and at the same time rate increases are unlikely to lower food inflation. RBI is worried over the spilling of these food prices into other consumption items as well. For instance, a persistent rise in food prices could lead employees to demand higher wages. As food still forms a large percentage of household expenditure for majority of India households, employers might be left with little choice than to raise wages. The higher wages then leads to further rise in demand and again rise in prices. It becomes a classic case of cost-push inflation becoming demand-pull inflation. The government has already revised the wages upwards by 17-30% under its NREGA program.

RBI rate increases can dampen the demand pressures, but it is not going to address the broader problem of food supplies. The monetary transmission of rate increases works by increasing interest rates and lowering overall demand. Hence, there are problems of upsetting the growth applecart as well.

- Government Policies:** The government has been slow to wake up to the enormity of the problem and the decline in agriculture sector has not been a focal point of attention. It was seen as a normal transition of an agrarian economy to more productive sectors of an economy. In other economies, similar transition did not mean agriculture production not keeping pace with rising population and incomes. It simply means agriculture became more productive with lesser share of workforce needed to produce the increased output.

The Planning Commission was one of the first bodies to see this decline in agriculture. In eleventh plan it proposed to raise agriculture growth to 4% but so far it has been just around 2.2% in its first three years of the eleventh plan (2007-10). Around 7% growth is needed in next two years of the plan. Seeing this as difficult, Planning Commission said around 3% growth was likely in its mid-term evaluation of the Eleventh Plan. The lower growth rate is again disappointing and much more needs to be done.



In the Union Budget for 2010-11 the Finance Minister proposed to extend the green revolution to the eastern region of the country comprising Bihar, Chattisgarh, Jharkhand, Eastern UP, West Bengal and Orissa, with the active involvement of Gram Sabhas and the farming families. He also proposed to organise 60,000 "pulses and oil seed villages" in rain-fed areas during 2010-11 and provide an integrated intervention for water harvesting, watershed management and soil health, to enhance the productivity of the dry land farming areas.

These solutions have been known for a long time but little has been done. The investment levels have to be increased. Private sector has to be invited to increase its investment in various agriculture and related activities and there is a need to consolidate and raise farm sizes.

From a more micro perspective, there is a need to overhaul the entire supply chain of foodgrain management by the government. The Chief Economic Adviser to Finance Ministry, Mr Kaushik Basu in a research paper (The Economics of Food Grain Management in India) writes about the shortcomings in all three aspects of food management – production, procurement and distribution. All these are long-term issues and cannot be resolved overnight.

Conclusion

Overall, the above analysis shows food inflation as a major structural and policy issue. The decline in agriculture sector has been happening over decades and the impact on prices is being felt now because of rising incomes. The solution is to increase investments and productivity across the entire agriculture sector. This automatically implies it is a long-term issue and short-term fixes like importing foodgrains from abroad are only going to help address mi-matches over a short-term period. As India is a large country, importing food commodities only raises the prices further. The end result is jump in food inflation. Rise in commodity prices globally is also going to exacerbate the food inflation situation. Inflationary expectations also keep rising despite aggressive interest rate hikes by the central bank. The "inflation tax" is expected to remain with us unless the supply side issues are resolved.

Apart from persistent food inflation, policymakers face multiple problems on the agriculture front. Agriculture's share in output has declined with each passing decade but employment has not decreased with the same pace. This implies income levels within agriculture have not risen in line with the growth in the economy. The focus on inclusive growth has come from this mismatch in growth and employment and this is leading to conflicting policies. The government raises Minimum Support Prices for various crops and initiates social programs to lower poverty and support agriculture. The first policy leads to rise in inflation and second one leads to rise in fiscal deficits and further to rise in inflation as rural incomes increase. Hence, it is a much complex set of interconnected issues than is apparent. It remains not just a structural inflation problem but structural economic problem as well.



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