

Chapter 6

OPENING UP INDIAN AGRICULTURE: EMPIRICAL EVIDENCES

Introduction

This chapter deals the impact of liberalization in international trade and food security situation. The discussion shows that greater reliance on trade for ensuring food security creates risks in terms of supply and prices. And the second phase of the chapter deals how trade liberalization fails in raising the productivity, generating the employment in agriculture and the nutritional level of the people in general.

Impact of Globalisation

This heading is devoted to the main focus of the present study, namely to examine in what way the liberalisation of the Indian economy and the establishment of a free and liberalised trade regime under the WTO has affected the fortunes of the Indian economy. Public discussion on this subject has tended to be dominated by fears about the damaging impact of import liberalisation on the agricultural sector and these fears were especially exaggerated because much of the discussion took place in the context other debate about the Uruguay Round and WTO, which had its own political colour.

Provisions regarding with Agriculture, (AoA) has both direct and indirect effects on the farmer. The direct effect can be determined by examining to what extent the various provisions of the agreement have affected the growth and employment in agriculture and have thereby impacted on the living standards of the farmers. But more important, economic liberalisation brings about a significant change in the macro-economic policy framework that directly and indirectly influences overall and sectoral growth pattern.

It was noted that at present, India had no reduction commitment regarding domestic support and export subsidies. The domestic support in India is not so large that needs reduction. But in the matter of domestic support, there is an exemption from reduction commitment only up to a de minimus ceiling of 10% both in the matter of product specific support and more so in the matter of non-product specific support. The product specific is currently negative for most of the commodities.

So far as India is concerned, its basic obligation was in terms of fixing ceiling bindings, at 100% for primary, 150% for processed commodities and 300% for certain types of edible oils. Considering the fact for most agricultural commodities, applied tariff rate is 35%, the ceiling bindings allow sufficient degree of protection to Indian agriculture. There are some items on which tariff levels were bound at lower levels under earlier rounds of GATT negotiations. Subsequently, applied tariff rates on some of these commodities have also been raised. India was expected to gain from access to the agricultural markets of developed countries. But it was made difficult for some of the value dairy and meat products because of very high tariff ceilings and tariff escalation by these countries.

AoA also subjects export subsidies to reduction commitments. India currently does not extend any export subsidies to agriculture which are prohibited under the illustrative list of the agreement. The agreement allows the developing countries to provide certain subsidies such as reduction of export marketing costs, internal and international transport and freight changes. India is making selective use of this provisions. The Article 20 of the AoA mandated further negotiations to continue the reform process. These negotiation have already started and basically focus on further reduction / elimination in domestic support, export subsidies and increases market access. But there is a clear message for the farmers that if they want to compete in the international

market for their product, not by dependence on increasing subsidies but through increased productivity.

After the implementation of the AoA, the outcome has not been as beneficial to India (developing countries) as was expected. While there has been some improvements in the market access in term of nominal tariffs, agricultural trade continues to be distorted due to substantial continuation of subsidies in the developed countries. Average tariffs of the agricultural commodities is around 40% where there for industrial products, the rate is less than 10%. Further, various types of non-tariff barriers especially in the form of sanitary and phyto-sanitary measures, have adversely impacted the agricultural exports of the country. For example after the free trade the imports of edible oils have risen quite very fast which led adverse consequences for oilseed farmer.

Trade Performance since 1995

This chapter looks at the scenario since 1995. The reason for choosing this year is that 1995 represents a watershed in the history of global agricultural trade policy. The Agreement on Agricultural negotiated under the Uruguay Round, came into effect from 1995.

India's agricultural exports since 1995 has shown extreme volatility (Table 6.1). It is more remarkable that export growth rate has turned negative during the last three years, namely, 1997-98 to 1999-2000. As a result, share of agricultural exports in total exports has come down to 15 per cent by 1999-2000. Agricultural exports growth turned positive during 2000-2001 recording a growth rate of seven per cent. However, despite this favourable development, the share of agro-exports further declined to 13.5 per cent.

The concentration in agriculture exports remained more or less constant during the 1995-96 to 1999-2000 period. Share of top 10 export commodities fluctuated between 75 per cent and 84 per cent (Table 6.2).

Analysis of growth performance of individual export commodities during 1995-96 and 1999-2000 resulted in identification of two sets of commodities. The first sets of commodities are those which recorded positive export growth rate during the period. 17 commodities were identified to fall in this category (Table 6.3). More importantly, the share of these commodities in total agricultural exports increased to 72 per cent in 1999-2000 from only 47 per cent in 1995-96. The second set of commodities were those which reflected a negative growth rate. There are 14 such items whose share declined to 27 per cent in 1999-2000 from 53 per cent in 1995-96 [Table 6.3(b)].

Table 6.1

India's Export of Agricultural and Allied Products

(US \$ Million and per cent share)

Year	Total Export	Agro Exports	Per cent Share in Total Exports	Growth Rate	
				Total Export	Agro Export
1995-96	31,841.87	6,120.01	19.2	20.90	44.77
1996-97	33,497.97	6,868.50	20.5	5.20	12.23
1997-98	35,048.67	6,634.20	18.9	4.63	-3.41
1998-99	33,310.97	6,033.11	18.2	-5.24	-9.06
1999-00	36,579.52	5,614.80	15.3	10.68	-6.93
2000-01	44,400.30	6,012.50	13.5	20.79	7.08

Source: Various issues of Economic Survey.

Table 6.2
Major Agricultural Exports from India and their Share in Total Agricultural Exports

Products	Share %				
	1995-96	1996-97	1997-98	1998-99	1999-2000
Non-basmati rice	18.19	7.90	6.84	17.35	5.75
Marine producers	16.54	16.45	18.20	17.21	21.46
Oil Meals	11.49	14.35	13.90	7.65	6.73
Coffee	7.35	5.86	6.89	6.81	10.29
Cashew	6.05	5.28	6.79	6.81	5.73
Tea	5.73	4.26	7.62	8.92	7.41
Basmati rice	4.16	5.12	6.84	7.39	7.29
Spices	3.88	4.93	5.72	6.43	7.14
Castor oil	3.63	—	—	—	4.46
Meat and Preparations	3.07	—	—	3.1	—
Sugar & Mollases	—	4.42	—	—	—
Tobacco Unmanufactured	—	—	3.73	—	—
Cotton raw including waste	—	—	3.34	—	—
Guargum meal	—	—	—	2.87	3.44
Share in total Agricultural Exports	80.09	75.03	74.80	84.13	79.69

Source: GoI 2001, Agricultural Statistics at a Glance, Ministry of Agriculture.

Table 6.3
Export Performance of Agricultural Products
Part A
Agricultural Products Showing Positive Export
Growth During 1995-96 to 1999-2000*

Products	1995-96	1996-97	1997-98	1998-99	1999-00
Marine producers	1,012.31	1,129.86	1,208.72	1,038.15	1,181.55
Cashew	369.97	362.41	377.13	386.76	566.42
Tea	350.63	292.38	505.47	538.23	407.99
Basmati rice	254.69	351.74	454.10	446.03	401.10
Spices	237.58	338.92	379.76	387.96	393.23
Castor oil	222.31	176.84	155.21	159.72	245.37
Guargum meal	68.02	100.40	146.82	172.93	189.15
Tobacco Unmanufactured	113.38	186.21	247.17	136.00	184.87
Processed fruits and juices	61.25	59.05	73.51	69.12	113.29
Pulses	39.47	37.10	97.22	53.00	93.56
Seasame and niger seeds	77.02	77.61	81.51	79.07	85.88
Tobacco manufactured	20.40	27.15	41.15	45.03	44.55
Poultry and Dairy products	17.59	34.90	31.80	23.04	22.76
Floriculture products	18.01	17.87	23.37	25.18	20.94
Shellac	18.78	14.75	15.65	15.52	18.85
Fruits/vegetable seeds	12.32	11.86	14.41	15.35	15.55
Cashewnut shell liquid	0.43	0.78	1.93	0.98	0.50
Share of these commodities in total agricultural exports %	47.29	46.88	58.11	59.52	72.40

Source: DGCIS

*Commodities are sorted by their value of exports in 1999-2000, Exports in US\$ million.

Part B

Agricultural Products Showing Negative Export Growth During 1995-96 to 1999-2000*

Product	1995-96	1996-97	1997-98	1998-99	1999-00
Oil meals	703.18	985.44	925.44	461.43	370.43
Non-basmati rice	1113.00	542.63	454.03	1046.54	316.41
Coffee	449.98	402.20	456.93	410.63	315.17
Meat & preparations	187.73	199.86	217.77	187.29	180.44
Fresh vegetables	89.04	94.27	84.31	65.12	81.63
Fresh fruits	68.92	68.90	74.58	63.29	66.59
Mis. processed items	161.81	215.41	68.85	60.62	62.39
Groundnuts	68.62	91.86	152.56	33.19	42.34
Processed vegetables	42.74	32.93	31.39	39.75	38.17
Cotton raw including waste	60.94	443.90	221.41	49.17	18.64
Spirit and beverages	13.37	56.75	19.83	16.80	16.21
Sugar and molasses	151.62	303.89	68.68	5.81	8.74
Other cereals	5.08	13.71	3.39	2.06	1.88
Wheat	109.81	196.91	0.11	0.32	0.00
Share of these commodities in total agricultural exports (%)	52.71	53.12	41.89	40.48	27.60

Source: DGCIS

*Commodities are sorted by their value of exports in 1999-2000, Exports in US\$ million

One positive feature of India's agricultural exports is that its export markets are well diversified. India exports to a large number of countries spanning practically all continents except Latin America. Major export markets for important agricultural exports from India are shown in Table 6.4.

Table 6.4

**Major Destinations for Export of the
Select Agricultural Commodities**

Sl.No.	Products	Major Export Markets
1.	Basmati Rice	Saudi Arabia, UK, Kuwait, USA
2.	Cashew	USA, Netherlands, UK, Japan, UAE
3.	Castor oil	France, USA, Netherlands
4.	Coffee	Russia, Germany, Italy, USA
5.	Floricultural products	Netherlands, USA, Japan, UK
6.	Fresh fruits	Bangladesh, UAE, UK, Spain, Saudi Arabia
7.	Fresh Vegetables	Malaysia, Sri Lanka, UAE, Bangladesh
8.	Guar meal	USA, Germany, China, Netherlands
9.	Marine Products	Japan, USA, China, UAE, UK
10.	Meat and preparation	Malaysia, Egypt, UAE, Philippines.
11.	Misc. processed items	Bangladesh, USA, UAE
12.	Non-basmati Rice	Bangladesh, Saudi Arabia, South Africa
13.	Oil Meals	Singapore Indonesia, Korea RP, Vietnam
14.	Processed Fruits and juices	Saudi Arabia, USA, UAE, Netherlands
15.	Processed vegetables	USA, Germany, Switzerland, Netherlands
16.	Sesam and Niger seed	USA, Egypt, Netherlands, Guatemala
17.	Spices	USA, UK, Japan, UAE
18.	Tea	Russia, UAE, UK
19.	Tobacco manufactured	UAE, USA, Saudi Arabia
20.	Tobacco unmanufactured	Russia, Germany, UK, Belgium
21.	Wheat	Bangladesh, Korea RP, Philippines UAE

Source : CMIE

One important area for future negotiations in agriculture relates to market access which essentially covers nominal tariff rates and non-tariff measures affecting agricultural imports. An exercise has been carried out to identify the current level of MFN tariffs as well as the existing non-tariff measures for important export items in the major importing countries.

In line with agro-exports, India's agricultural imports also has displayed extreme fluctuations. The growth rate varied between minus 37 per cent to 64 per cent. The percentage share of agro-exports in total imports also has shown very high volatility. It is interesting to observe that in contrast to the a priori expectations, agricultural important showed a negative rate of growth during 2000-2001, the first year when the impact of QR removals was supposed to have been felt (Table 6.5).

Table 6.5

India's Import of Agricultural and Allied Products

(US% million) and Per cent Share

Year	Total Imports	Agro Imports	Per cent Share in Total Imports	Growth Rate	
				Total Imports	Agro Imports
1995-96	36,729.98	1,103.46	3.00	28.15	-12.68
1996-97	39,165.46	1,371.70	3.50	6.63	24.31
1997-98	41,534.56	1,677.88	4.04	6.05	22.32
1998-99	42,379.20	2,756.82	6.51	2.03	64.30
1999-2000	49,798.64	2,655.02	5.33	17.51	-3.69
2000-01	49,720.12	1,676.35	3.37	-0.16	-36.86

Source: CMIE, July 2001

*Growth rate is calculated over previous year

Food Security and International Trade

In theory, international trade imparts a great deal of flexibility in the matter of food security of developing countries through augmenting domestic supplies and reducing supply variability.

But a few caveats need to be added. First, greater reliance on trade for ensuring food security created two important risks namely the uncertainty of supplies and instability of world prices. In this context, two elements become important for the developing countries. The first is import capacity, and the second is reliability of the world market as a source of affordable food supplies.

The import capacity of most of the developing countries has increased because of relative decline in real price of food and some increase in income. Relative share of developing countries' expenditure on food imports has declined substantially despite increase in absolute terms.¹ The expected boost in food production in developing countries consequent to the lowering of subsidies by the developed countries is also likely to bring about greater liquidity in the grain market and greater choice of suppliers thereby further increasing the reliability of world market as a source of food imports.² In the short run, however, the withdrawal of subsidies is likely to reduce production and raise food prices and increase import bill of food deficit countries.

This notwithstanding the risk of supply reliability persists. This is because in many cases despite the guidelines of the AoA, food-exporting countries have placed export restrictions or "embargoes" for a variety of reasons. Furthermore, the decline in prices because of large subsidies by the developed countries has led to increased dependence on food imports.

¹ For South and Southeast Asia as a whole, the share declined from 16 per cent in 1970 to 6 per cent in 1991 and in Latin America, it fell from 11 to 10 per cent.

² It should be noted, however, that the developing countries are dragging their feet in the matter of withdrawal of domestic and export subsidies.

Although food importers benefit in the short run, low prices not only foster a continued dependence but also become a major disincentive for increasing domestic production. Sometimes the prices fell to a level where many developing country farmers could not make a living.

The net impact on stability of world prices would depend on several factors e.g. positive effect from tariffication, uncertain effect from a shift in location of production; negative effect from a reduction in total stock level; and positive effect from increased price responsiveness of stocks. The aggregate result of these four effects is uncertain. So it has argued that trade liberalization would lead to more stable world prices in the longer run after markets fully adjust to new trading environment after the UR. However, the post-WTO period so far is marked by increased instability in prices.

The domestic price instability in the developing countries is likely to be affected firstly by fluctuations in production and consumption vis-a-vis those in the rest of the world; and secondly by the extent of isolation of the domestic market before tariff-only reforms. The price and income risks of excessive dependence on world trade could be quite serious for large countries like China and India where consumption of basic food commodities is too large and dwarfs world trade in these commodities (Parikh, 1998).³ These countries have to primarily depend on augmenting their domestic food production for meeting their food demand, although international trade would play increasingly important role in supplementing their food security needs.

But, the main issue for food security is whether this economic growth reaches the poor. If the benefits of trade-induced growth are highly

³ According to the simulations with Basic Linked system (BLS) undertaken by Parikh, while India's entry in the wheat trade will not change things significantly, India's imports of say 5 mn tonnes of rice would raise world price by 72.10% and its export of the same amount of rice would lower world rice price by 20.525 (Parikh, 1998).

concentrated among the better off, then household food security may worsen for many, despite higher overall rates of economic growth.

Nothing conclusive can be said about the linkages between trade, growth, employment and poverty (Winters, 2000). Trade does provide new opportunities for specialisation and exchange, but the extent to which poor households in particular, the small and marginal farmers and the landless labour take advantage of them depends on their access to resources and the supportive role provided by the state. Should export production be associated with large-scale capitalist enterprises that displace small-scale farmers, food security of the poor is likely to get adversely affected. Thus, for enhancing positive benefit is of trade opportunities at micro level, the need is to undertake sectoral policies like strengthening institutional mechanisms, access to credit, education and extension services and market access by the poor farmers.

Several options are available under the WTO for food security purposes under production, consumption and price stabilization policies. The production policy options under WTO for food security include imposition of additional tariffs and varying the level of applied tariffs. Support measures for food security include to agricultural producers product specific support through guaranteed administered prices in excess of parity level, and non-product specific support (e.g., subsidies for credit and input) upto 10 per cent de minimise level of farm gate value of production (5 per cent for the developed countries). The developing countries can also use Green Box policies. The Special and Differential (SDT) Treatment allows expenditures on general investment, agriculture input subsidies to lower income or resource poor producers and support to encourage diversification of crops.

There are policy options available for consumption and price stabilization also. For example, 'domestic food aid' category of the Green Box

allows the developing countries to provide foodstuffs at subsidies prices for meeting food requirements of urban and rural poor. The WTO-compatible measures to mitigate the effects of market instability on food security include food security stocks, special safeguard clause (SSG) of the AoA and the general WTO safeguards (e.g. to levy additional tariffs) and export prohibitions. In addition, forward and future price contracts and options are fully compatible with the WTO.

Under the SDT, developing countries are also eligible to take longer periods to make adjustments and lower reduction commitments. The UR has a commitment to take action to mitigate the negative effects of reforms on the food importing countries in terms of the availability of adequate imported supplies of basic foodstuffs on reasonable terms and conditions.

The above provisions of the AoA provide sufficient flexibility to enable developing countries to achieve the overriding objective of food security. The major issue for these countries is to devise the right combination of policies, which will ensure the promotion of social goals along with accelerated growth. To ensure the continuation of the positive measures for food security, India along with other developing countries has asked for the inclusion of Food Security Box under the WTO during the Doha round of negotiations on agriculture.

Food Management and Food Security in the Post-Liberalisation period

Food management in India is credited with having increased both the physical and economic access to food and enhanced the level of food security in the country in general and in deficit areas in particular. The physical access to foodgrains increased because of increased productivity, and output of foodgrains. The economic access to food increased both because of rising incomes in agriculture and also because (upto the beginning of the nineties) the real price of food had declined over time and the proportion of per capita income required buy food had also declined significantly (Tyagi, 1990). Rapid agricultural growth also made a dent in rural poverty. Further, numerous anti-poverty and employment generating programmes also ended to increase the economic access of the poor to food. Effective mechanisms were also developed for scarcity relief. The domestic prices of foodgrains were also insulated from very large price fluctuations in the world market. However, large inter-regional and inter-seasonal price variations continued to exit.

With the initiation of economic liberalisation in India in June 1991, the country embarked on a policy of comprehensive economic reforms with the purpose of liberalising the economy and integrating it with the world economy. Now that the policy has been in operation for more than a decade it is worthwhile to evaluate its impact on food security in the country in terms of three main determinants of food security namely, food availability in relation to demand, stability in availability and adequate income for purchase of foodgrains i.e. entitlement to food.

Table 6.6
Changes in Food Consumption Pattern in Rural
and Urban India, 1977-99

(Quantity in Kg/Person per annum)

Item/Years	Rural				Urban			
	1977	1987	1993	1999	1977	1987	1993	1999
Rice	86.5	88.1	85.4	81.0	67.6	68.1	64.2	62.5
Wheat	49.2	61.6	53.5	53.9	64.6	60.4	57.4	55.4
Coarse Cereals	56.7	29.8	24.1	17.7	14.8	10.6	7.7	7.1
T. Cereals	192.6	179.5	163.0	152.6	14.7	139.1	129.3	125.0
Pulses	8.7	11.5	9.2	10.1	11.7	12.2	10.5	12.0
Milk & M.P.	24.6	58.0	51.4	50.5	39.7	64.9	68.3	72.4
Edible Oils	2.7	4.3	4.6	6.0	4.8	6.8	6.3	8.6
Vegetables	24.7	50.8	53.2	66.0	39.7	66.4	63.1	70.0
Fruits	2.6	10.3	9.8	17.0	5.9	18.8	20.1	19.0
Meat, Egg & Fish	2.7	3.3	4.1	5.0	4.8	4.9	6.8	6.8
Sugar & Gur	13.5	11.0	9.2	10.1	17.1	12.3	11.8	12.0

Source: NSSO: Consumer Expenditure Survey, Various Rounds.

Food Availability in Relation to Demand

Taking the demand side first, there is a slow down in the growth rate of direct demand for foodgrains for two reasons. First, the growth rate of population has decelerated to 1.95 per cent pa during 1991 to 2001 compared with 2.15 per cent pa during the earlier decade. Second, with rise in per capita income, the food basket in India is getting rapidly diversified. With diversification of consumption, the income elasticity of demand for foodgrains

has declined perceptibly. On the other hand, per capita expenditure on superior foods, animal husbandry products and edible oils is increasing at a rapid rate (Table 6.6). The result is that the expenditure on foodgrains constitutes only 40 per cent of total expenditure on food. Data shows that the food diversification has taken place in all expenditure groups including the poorest households, although the poorest households still spend a major part of their income on foodgrains.

Multiplying these with population, the estimated demand for foodgrains in 1999-00 works out to be 156.24 million tonnes. The demand for animal husbandry products namely milk and milk products and for meat, eggs (and fish), works out to be 56.8 million tonnes and 5.52 million tonnes, respectively.⁴ Adding the estimated demand for feed, the total direct and indirect demand for foodgrains is likely to be around 170 mn tonnes in 2004 as against an estimated food production of 183.2 mn tonnes in 2002-03.

Now taking the supply situation, the growth rate of foodgrains production which was 2.85 per cent pa during 1980-81 to 1990-91 decelerated significantly to only 1.66 per cent during the post liberalisation period 1990-91 to 2000-01 (Table 6.7). This growth rate was even lower than the population growth rate of 1.95 per cent pa during this period. This had adverse consequences for the availability of foodgrains.

The official data indicate that the per capita availability of foodgrains in the country came down from 481 kg per capita during the TE 1993 to 445 kg per capita during the TE 2001. (Economic Survey, 2002-03).

⁴ Since the feed demand for producing animal husbandry products is quite high, in the total demand for foodgrains in India and is estimated to increase rapidly at about 2% pa by 2020 (Bhalla, Hazell and Karr, 1999).

Stability

Stability of supplies is the second feature of food security. Indian food production is characterized by large year-to-year fluctuations. For example, foodgrains output which had increased from 199.4 mn tonnes in 1996-97 to a peak level of 212 mn. tonnes in 2001-02 is estimated to fall down to 183.2 mn tons during 2002-03. In India, stability of food supplies and prices is brought about through stocks maintained for this purpose and imports.

Table 6.7
Growth Rates of Production of Major Crops
(% per annum)

Crops	1980-81/1999-91	1999-91/2000-01
Rice	3.56	1.74
Wheat	3.57	3.27
Coarse Cereals	0.4	-0.54
T. Cereals	3.03	1.86
T. Pulses	1.52	-0.04
Foodgrain	2.85	1.66
Non Foodgrain	3.77	2.41
All crops	3.19	1.96

Source: Gol, 2001, Agricultural Statistics at a Glance, Ministry of Agriculture.

India was able to maintain a satisfactory level of stability of food supplies and Indian prices could be effectively insulated from very high volatility in international prices of wheat and rice and other agricultural commodities because of a policy of buffer stocking. Stocks had to be sometimes supplemented by imports. For example, during the early 90's and again in 1998 India entered into contract for imports of wheat to overcome domestic shortage. However recently the existence of very large stocks far

above quantities needed for stabilization and PDS distribution have resulted in undue increase in food subsidy.

Access

Economic access to food is the third important component of food security. An important development during the post reform period was that both the GDP and per capital income recorded a significant acceleration during 1990-91 to 2000-01 as compared with all the earlier decade of the eighties (Table 6.8). Given favourable income distribution, rapid growth of per capita income should mean that the economic access of the population to food has certainly increased, on an average.

But no definitive conclusion can be arrived at regard in the growth of agricultural GDP, which affects a very large proportion of population in India. While the GDP from agriculture recorded a significant decline compared with the 1980's at constant 1980-81 prices, there was no change in its growth rate at 1993-94 prices. The higher growth of agricultural GDP at 1993-94 prices is mainly because of the contribution of fruits and vegetables, since the growth rate of crop production registered a significant decline. The statistical commission of India has expressed serious doubts about the validity of data on fruits and vegetables (GoI, Statistical Commission of India Report, 2002).

Table 6.8
Growth Rates of GDP and per capita Income
(at 1980-18 and 1993-94 prices)

	At 1980-81 Prices		At 1993-94 Prices	
	1980/81- 1990-91	1990/91- 1998/99	1980/81- 1990-91	1990/91- 2000/01
GDP	5.46	6.23	5.51	6.10
GDP Agr.	3.94	1.95	3.13	3.13
Per Capital Income	3.01	4.3	3.13	4.11

Source: Gol, National Accounts Statistics, Various Issues.

The impact of growth on the economic access of the poor could be obtained from the changes in the incidence of poverty. According to official data, the incidence of poverty has declined perceptibly from 36.0 per cent in 1993-94 to 26.1 per cent in 1999-00. But the data on poverty has been seriously questioned because of mix up of recall periods of 7 days and 30 days (Sen, 2002). In any case the official data also brings out that nearly 260 mn people are still below the poverty line in India. Hence although nothing conclusive can be said about decline in poverty, the number of poor in India that have inadequate access to food continues to be quite high.

On the other hand, increase in prices of foodgrains has reduced the economic access of the poor to foodgrains. One of the serious consequences of hefty rise in administered price during the nineties was that consumption of the poor declined and many of them were priced out in terms of demand for foodgrains.

There is a pressure on all developing countries to wean away from the policy of food self-sufficiency, the overall objective of agricultural policies so far. The widespread move towards globalisation on the one hand and the secular decline in food prices on the other, are advanced as arguments to

forsake food security and organise production on the basis of comparative costs. But such proposition is flawed on many counts. Firstly, the notion of comparative advantage often represented by border prices is at best a static concept. It does not take into account the dynamic role of technological and institutional measures. It also assumes quick and frequent changes in cropping pattern by domestic producers to adjust to year to year changes in international prices. Secondly, wide swings in inter-year and intra-year fluctuations in international prices, greater in magnitude than the domestic prices, enhance risk and uncertainty for the domestic producers as well as the consumers. Advocacy of unrestricted exposure to international markets ignores the fact of the dependence of a large majority of domestic producers on foodgrains production as their main source of livelihood; it overestimates the resilience of the system to compensate these producers from heavy and sudden dislocations. These assumptions are not borne out by facts, not the least in large and poor country like India (Tyagi, 1990, Nayar and Sen, 1994, Vyas, 2002). While recognising that trade liberalisation has given much more flexibility in management of food society, it needs to be emphasized that large countries like India cannot entirely depend on food imports and will have to produce a major part of their food requirements domestically.

Impact on Crop Production

The growth of agricultural production has shown deceleration during the 1990's if we compare with the 1980's. The growth rate for all crops taken together decelerated to 1.96 per annum during 1990-91 to 2000-01. Compared with a rate of 3.19 per cent per annum during 1980-81 to 1990-91. It may be noted that the reported crops taken together account for more than 95% of gross cropped area in the country.

Table 6.9

All India Compound Growth Rates of Area, Production and Yield of Major Crops

Crops	1949-50 to 1964-65			1967-68 to 1980-81			1980-81 to 1990-91			1990-91 to 2000-01		
	Area	Production	Yield	Area	Production	Yield	Area	Production	Yield	Area	Production	Yield
Rice	1.21	3.5	2.25	0.77	2.22	1.46	0.40	3.56	3.47	0.81	1.74	0.92
Wheat	2.69	3.96	1.27	2.94	5.65	2.62	0.46	3.57	3.10	1.03	3.27	2.21
Coarse cereals	0.90	2.25	1.23	-1.03	0.67	1.64	-1.34	0.40	1.62	-2.07	-0.54	1.18
T. Cereal	1.25	3.21	1.77	0.37	2.61	1.70	-0.26	3.03	2.90	-0.06	1.86	1.38
T. Pulses	1.72	1.41	-0.18	0.44	-0.4	-0.67	-0.09	1.52	1.61	-0.79	-0.04	0.55
Foodgrain	1.35	2.82	1.36	0.38	2.15	1.33	-0.23	2.85	2.74	-0.19	1.66	1.28
Sugarcane	3.28	4.26	0.95	1.78	2.60	0.8	1.44	2.70	1.24	1.87	2.70	0.82
Oilseeds	2.67	3.2	0.3	0.26	0.98	0.68	1.51	5.20	2.43	0.88	1.62	1.04
Cotton	2.47	4.55	2.04	0.07	2.61	2.54	-1.25	2.80	4.10	2.33	1.37	-0.94
Non-Foodgrains	2.44	3.74	0.89	0.94	2.26	1.19	1.12	3.77	2.31	1.19	2.41	0.86
All crops	1.58	3.15	1.21	0.51	2.19	1.28	0.10	3.19	2.56	0.19	1.96	1.09

Source: GoI, 2001, Agricultural Statistics at a Glance, Ministry of Agriculture.

From the table 6.9, there is also a visible deceleration in the yield growth of major crops. Thus, if we compared the growth rate of yield of all crops together decelerated from 2.56% per annum during the eighties to 1.09% per annum during the nineties, that for rice decelerated from 3.47% to 0.29% and for wheat from 3.10% to 2.21% per annum. Similarly in the case of sugarcane. The main reason for deceleration in crop yields is neglect in public investment in R&D and extension in agriculture.

The most important factor which is responsible for the deceleration in agricultural production and yield growth rate is the sharp deceleration in total investment and more so in public sector investment since the beginning of 1980's and more so since 1991.

Figure 1
Growth Rates of Yield

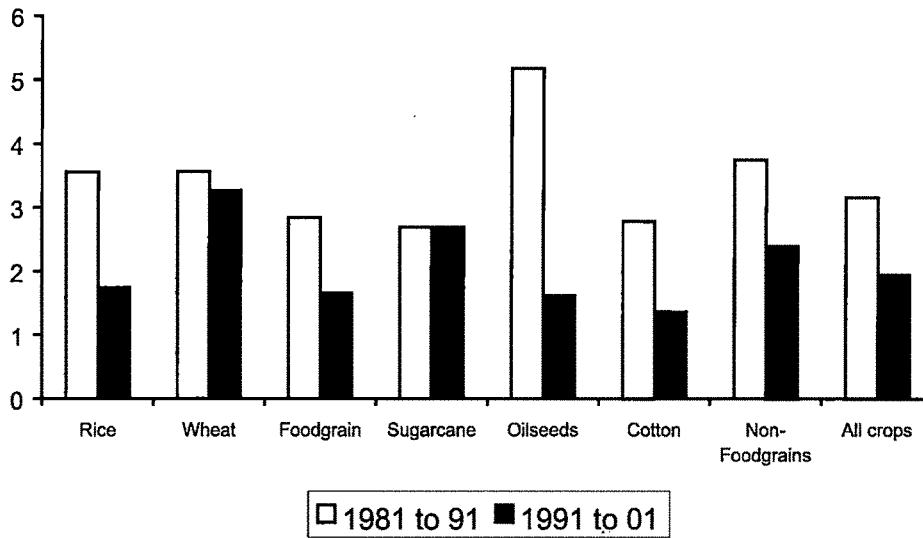


Figure 2
Growth Rates of Output

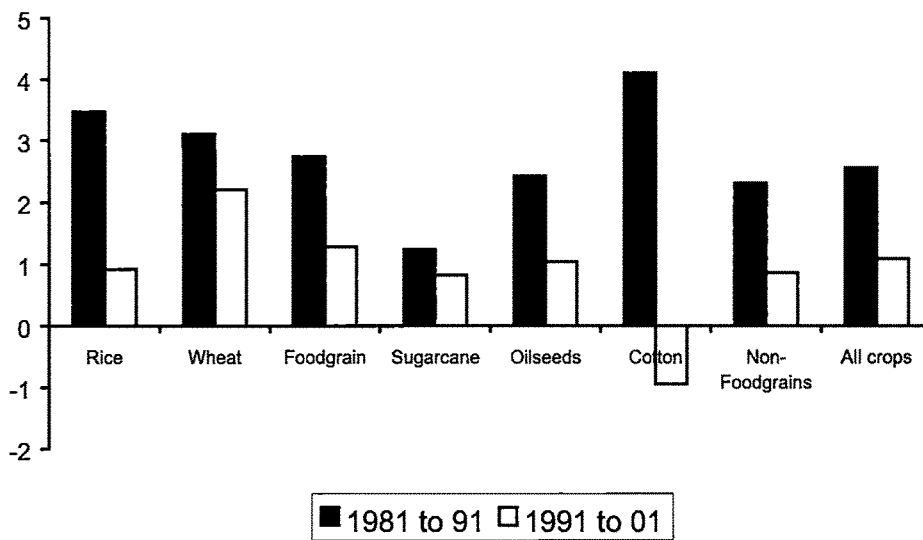


Table 6.10 shows at both 1980-81 prices and 1993-94 prices, there has been a deceleration in public investment in agriculture. The deceleration in public investment hampers research work which has more serious consequences and to be the main cause for stagnation and deceleration of yields of major crops.

Table 6.10
Capital Formation in Agriculture

(Rs. Crore)

Year	Total	Public	Private	Per cent share		Total GCF in Agriculture as % of GDP from Agriculture
				Public	Private	
(At 1980-81 Prices)						
1960-61	1668	589	1079	35.3	64.7	5.1
1970-71	2758	789	1969	28.6	71.4	6.7
1980-81	4636	1796	2840	38.7	61.3	9.6
1990-91	4594	1154	3440	25.1	74.9	6.6
1991-92	4729	1002	3727	21.2	78.8	6.9
1992-93	5372	1061	4311	19.7	80.3	7.4
1993-94	5031	1153	3878	22.9	77.1	6.7
1994-95	6256	1316	4940	21.0	79.0	7.9
1995-96	6961	1268	5693	18.2	81.8	9.0
1996-97	6999	1132	5867	16.2	83.8	8.5
(at 1993-94 Prices)						
1993-94	13523	4467	9056	33.0	67.0	5.2
1994-95	14969	4947	10022	33.0	67.0	5.4
1995-96	15690	4848	10842	30.9	69.1	5.7
1996-97	16176	4668	11508	28.9	71.7	5.4
1997-98	15953	3979	11974	24.9	75.1	5.4
1998-99	16384	3846	12538	23.5	76.5	5.2
1999-00	18656	4668	13988	23.0	75.0	5.9

Source: GoI, CSO, National Accounts Statistics, Various Issues.

Impact on Agricultural Employment

Slow growth rate of agricultural production and yield has had mainly serious consequences for the peasantry in the country

One of the serious developments was a noticeable deceleration in employment growth in the economy from 2.20% per annum during 1987-88 to 1993-94 to only 1.03% per annum during 1993-94 to 1999-2000. More important, although employment growth has registered a decline in almost all the sectors of the economy, compared with that during 1972-73 to 1987-88, a significant development is a sharp decline and collapse of employment growth in agriculture during the 90's [Table 6.11].

Table 6.11

**Growth of Workers (Employment)
1972-73 to 1999-00: Rural Plus Urban**

	2000-94	1994-88	1994-73
Agriculture & Allied	0.20	2.18	1.49
Secondary	2.43	1.34	3.60
Tertiary	3.01	4.09	3.99
All UPS Workers	1.03	2.40	2.40

Source: NSSO Surveys for 1972-73, 1983, 1987-88, 1993-94 and 1999-00.

According to NSS, there were 3.98 million unemployed in India in 1973-74 and their numbers had increased to 7.49 million by 1993-94 and to as much as 9.15 million by 1999-2000. Table 6.12 shows the deceleration in employed growth of rural workers from 2.14% per annum during 1988-1994 to only 0.66% per annum during 1994-2000. In the meantime, the incidence of unemployment (defined as the ratio of unemployed persons to

the labour force) increased from 1.64% in 1973-74 to 1.96% in 1993-94 and to 2.25% in 1999-00. The increase in both the number and per cent of unemployed is the direct consequence of collapse of employment in agriculture. This is more so because the higher growth of employment in the non-agricultural sectors has not been sufficient to compensate for decline in agricultural employment.

Table 6.12
Growth of Rural Workers (Employment)
1972-73 to 1999-00

	1994-2000	1988-1994	1973-1994
Agriculture & Allied	0.19	2.19	1.44
Secondary	2.53	0.28	3.61
Tertiary	2.19	3.81	4.14
All UPS Workers	0.66	2.14	1.87

Source: NSSO Surveys – Various rounds.

Table 6.13
Per cent Distribution of Usually Working by
Broad Group of Industry: Rural India
Usual Principal and Subsidiary Status

Year	Male			Female		
	Primary	Secondary	Tertiary	Primary	Secondary	Tertiary
1983	77.5	10.0	12.2	87.5	7.4	4.8
1987-88	74.5	12.1	13.4	84.7	10.0	5.3
1993-94	74.1	11.2	14.7	86.2	8.3	5.5
1999-00	71.4	12.6	16.1	85.4	9.0	5.8

Source: GoI (1999), "Household 'Consumer Expenditure and Employment Situation in India", NSS Report No.442 and 55th Round of NSSO.

Thus, the share of agricultural workers in total work force declined from 73.9% in 1972-73 to 63.9% in 1993-94 and further to 60.2% during 1999-2000. In 27 years from 1972-73 to 1999-00, the share of agricultural workers in total work force has only declined from 13.7%. At this rate of change, even in 2,050 more than one third of the workforce will still be engaged in relatively low productivity agriculture. Another disturbing feature is that the diversification of workforce is much slower in the rural areas and 71.4% of male workers are still engaged in agriculture (Table 6.13).

It appears that the introduction of economic reforms and the becoming founder member of WTO have not brought about the promised benefits to a large section of the poor farming community in India.

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