

Trade Liberalisation and Competitiveness of India's Rice Exports

8.0 Introduction:

Trade liberalisation, agro-export promotion under the Structural Adjustment Programme (SAP) from mid-1991 and the piling of foodgrain stocks with the Food Corporation of India (FCI) have led to an increase of rice exports from India. We have seen in Chapter VII that India became the second largest rice exporter in the world in 1995. In this context it is important to rise certain crucial questions such as: whether the excess supply in years of bumper harvest be added to the existing buffer stock or use it for creating productive employment or should the country operate in the international market? If we have to depend on the external markets for selling our excess stocks some related, but important, questions should be raised - do we have price competitiveness in the world market to rely on external trade? Is there enough export demand for our product? In other words can India manage to export its excess production at times of glut in domestic production? To what extent can India increase its exports to a market where there are no fixed trade channels and strong consumer preferences? Another important but a related question is: do we have real exportable surpluses? Can we consider the increasing stocks with the Food Corporation of India (FCI) as a real surplus available for export? Is the competitiveness of India's rice exports that we are talking about a competitiveness in a real sense? What would be the impact of liberalisation and the signing of General Agreement on Tariffs and Trade (GATT) on our competitiveness? Are we able to retain this competitiveness even after liberalisation? In other words, given the likely dependence of world price on India's trade, would the opening up of foodgrain trade to the private sector lead to trading of large amounts? In other words, the question to be asked is: how large is India as a large country? Before making any pronouncement on the prospects of India's rice exports these questions should be answered carefully keeping in view the structure of the world and the India's domestic rice markets.

Price competitiveness of India's rice exports is examined in Section 8.1. Since real competitiveness lies not merely on international price advantage but also on the capacity of the country to generate exportable surplus, the latter aspect is an important, an attempt is made in Section 8.2 to examine possibilities of the country generating exportable surplus. Section 8.3 discussed the existing literature on the implications of unilateral and multilateral trade liberalisation for India's rice sector. The infrastructural problems that are confronting the exporters such as congestion at the ports, etc, are also equally important in the context of promoting rice exports. Since the generation of exportable surplus also depends on the milling capacity, i.e. the recovery rate, it is important to examine a profile of the rice milling industry in India and existing linkages in Indian rice marketing. A conducive economic climate is needed in the domestic market for a country to capture the world market for any commodity. Instead, rice millers and traders in India are facing many problems in terms of infrastructural bottlenecks, outdated milling technology and so on. An elaborate discussion is carried out on all these aspects in Section 8.4.

8.1 Price Competitiveness of India's Rice Exports:

A country is said to be price competitive if a unit of a commodity fetches a price in external markets higher than in the domestic market. Export competitiveness is a situation in which the difference between the domestic supply price and the world market price is enough to cover a large number of charges such as costs of transport, processing, marketing and distribution margins etc. The degree of export competitiveness depends on the extent of divergence between these two prices¹. However, the comparison of Indian domestic price with world price is difficult because we must be sure that the commodities being compared are of similar quality. And also the prices of similar goods

¹ It must be submitted here that while measuring the true competitiveness one must adjust for distortions in input prices that are often caused by tax/subsidy policies in different countries.

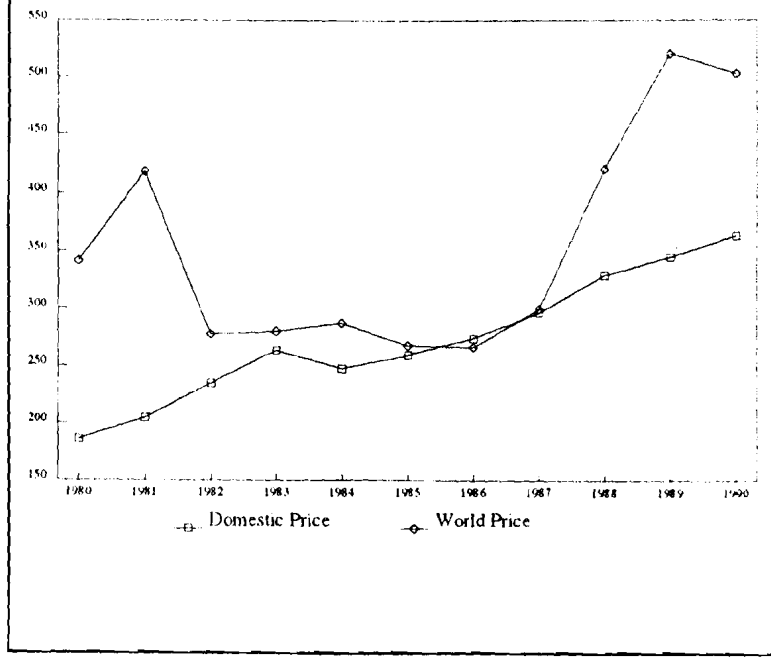
vary considerably across space and over time due to the large transport costs.

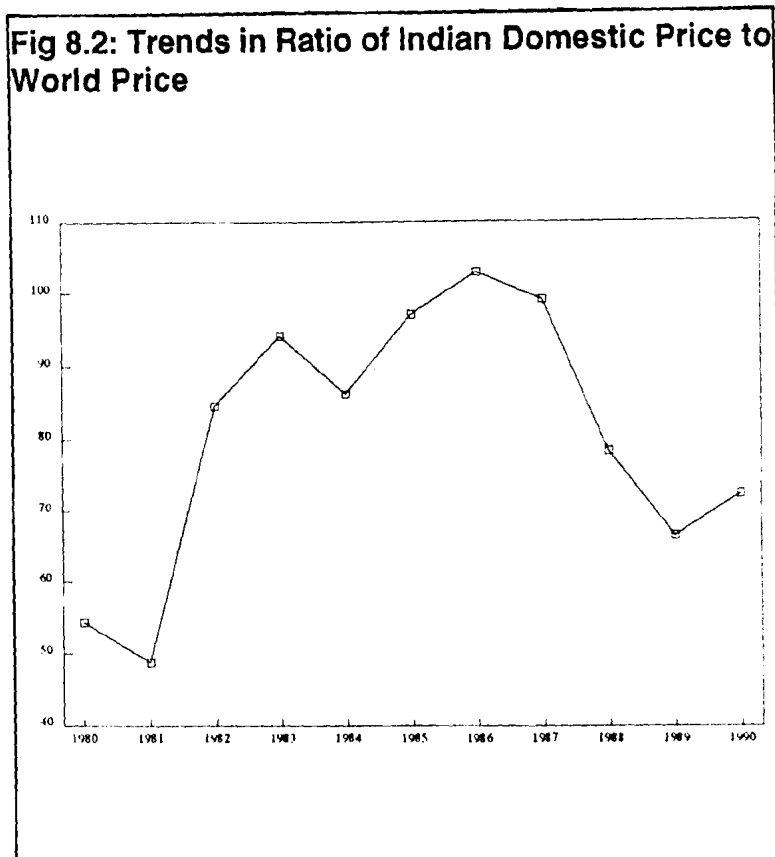
The export competitiveness has been assessed by:

- (i) comparing the all-India wholesale price of common rice, which is the annual averages of the absolute wholesale price quotations at different centres, with price of Thai 5% broken. All-India wholesale price of rice is obtained from Nayyar (1994) for 1980-1990.
- (ii) comparing the absolute wholesale price quotations of common rice at different centres of Punjab, Haryana and Andhra Pradesh, which are the important rice exporting states in India, with the price of Thai 5% broken for the period 1985 to 1995.
- (ii) making use of Gill and Brars' estimates, which takes into account the costs of transport, processing, marketing and distribution margins (1996).
- (iii) adding the costs of transport and other costs, which are borrowed from Gill and Brar (1996) to the absolute wholesale price quotations of common rice of Punjab.

All-India wholesale rice price, which is taken from Nayyar (1994) is compared with the price of Thai 5% broken for the period 1980-90. . These later prices are f.o.b quotations at Bangkok published by the World Bank in the publication *Commodity Trade and Price Trends*. The all-India wholesale price of rice is available in rupees. Price of Thai 5% broken, which is available in US dollars, is converted to rupees using India's official exchange rate. Fig 8.1 and 8.2 plot the movements of these two prices. These comparisons show that with the exception of three years viz., 1985, 1986 and 1987, domestic prices were lower than world prices throughout the period under study. Two types of trends can be seen in the ratio of domestic to international price viz., increasing trend from 1980 to 1987 and decreasing trend from 1988 to 1990 (Fig 8.2).

Fig 8.1: Trends in Indian Domestic Price with World Price (Rs/Quintal)





In 1985, 1986 and 1987 these domestic and international prices were close to each other. Though these two price movements are correlated positively, the correlation is extremely low. World prices showed greater variability around the trend than Indian prices. The domestic and border prices were growing at the same rate until the mid-1980s and thereafter the growth of latter prices were faster than the former. The magnitude of the difference between the all-India wholesale price of rice and the Thai 5% broken shows the possible gains from exporting rice (Table 8.1.1). This difference according to Jha and Srivasan (1995) is likely to be higher in future².

² They arrived at this conclusion by comparing the cumulative distributions of domestic and world prices and examined whether one distribution dominates the other in the first order stochastic sense.

Table 8.1.1
Comparison of India's Domestic with World Price of Rice

Year	Domestic Price (Rs/Qtl)	World# Price (US \$/Qtl)	Exchange Rate (Rs/US \$)	World Price (Rs/Qtl)	Ratio of Domestic to World (%)
1980	185.5	43.39	7.9	342.8	54.11
1981	203.9	48.28	8.7	420.0	48.55
1982	234.4	29.29	9.5	278.3	84.22
1983	263.0	27.69	10.1	279.7	94.04
1984	246.7	25.21	11.4	287.4	85.84
1985	258.9	21.59	12.4	267.7	96.71
1986	273.2	21.05	12.6	265.2	103.01
1987	295.6	23.03	13.0	299.4	98.73
1988	328.2	30.14	13.9	418.9	78.34
1989	344.5	32.02	16.2	518.7	66.42
1990	362.9	28.72	17.5	502.6	72.20

Source: *Commodity Trade and Price Trends*, World Bank, 1993.

Commodity Markets - And the Developing Countries,
World Bank Business Quarterly, World Bank, Various
Issues.

Bulletin on Food Statistics, Ministry of Food and
Agriculture, GOI.

Nayyar (1994).

Notes#: White, milled, Thai 5% broken, Board of Trade posted
export price, f.o.b Bangkok

Since Andhra Pradesh, Haryana and Punjab are the major rice exporting states from India in the second step average wholesale price quotations of these states at different centers are compared with the price of Thai 5% broken for the period 1985 to 1995. Wholesale price of Akkulu variety is taken from Kakinada for Andhra Pradesh, coarse variety from Karnal for Haryana and IR-68 from Amritsar for Punjab. From my interviews with various rice exporters in Andhra Pradesh it is clear that price of these varieties are more appropriate to compare with the price of Thai 5% broken. These prices are given in Table 8.1.2.

Table 8.1.2
Wholesale Rice Price Quotations At Different Centres (Rs/Quintal)

Year	Andhra Pradesh Kakinada Akkulu	Haryana Karnal Coarse	Punjab Amritsar IR-68	Thailand Thai 5% Broken	Punjab#
1985	267.9	201.4	252.1	267.7	304.4
1986	310.0	231.8	258.6	265.2	315.8
1987	317.0	239.0	308.3	299.4	366.3
1988	388.0	239.0	350.0	418.9	413.5
1989			319.3	518.7	396.1
1990	365.0	252.0	330.0	502.6	419.6
1991	431.0	289.0	395.0	770.9	491.9
1992	481.0	289.0		708.4	
1993				738.2	
1994	697.5			840.2	
1995	747.0			1023.7	

Source: *Agricultural Situation of India, Various Issues*

Commodity Markets - And the Developing Countries,
World Bank Business Quarterly, World Bank, Various
Issues.

Gill and Brar (1996)

Notes#: Price of Punjab rice after including gunny
bag cost, local transport and handling charges
interest, and rail freight charges to Bombay.
These charges are taken from Gill and Brar(1996).

Table 8.1.3
Ratio of Wholesale Price of Rice to Price of Thai 5% Broken (%)

Year	Andhra Pradesh	Haryana	Punjab	Punjab#
1985	100.1	75.2	94.2	113.7
1986	116.9	87.4	97.5	119.1
1987	105.9	79.8	103.0	112.4
1988	92.6	87.0	83.5	98.7
1989			61.5	76.4
1990	72.6	50.1	65.6	83.5
1991	55.9	37.5	51.2	63.8
1992	67.9	40.8		
1993				
1994	83.0			
1995	69.6			

Source: Table 8.1.2

Notes #: Price of Punjab rice after including gunny bag cost, local transport and handling charges interest, and rail freight charges to Bombay. These charges are taken from Gill and Brar (1996).

Tables 8.1.2 and 8.1.3 show that all the states have comparative advantage in exporting rice if we ignore all those costs that the trader has to incur for exporting the good. Though domestic price is higher than world price in Andhra Pradesh in the mid-1980s, this disadvantage has disappeared from 1990 onwards. In 1995, wholesale price of Akkulu rice variety in Kakinada, which can be easily compared with the price of Thai 5% broken, is 70 of the world price. However, these price comparisons merely give the relative movements of domestic and world prices and are not sufficient for judging the country's competitiveness because the trader has to incur so many costs such as transport, processing, marketing and distribution margins and so many other charges before it is reaching the final buyer. The larger the bulk/weight of a commodity in relation to its costs larger the sale price of a commodity in the international market. Since these costs are higher for agricultural commodities the components of these costs need to be

examined carefully before arriving at any conclusion on their export competitiveness. In this context, it is important to examine the existing empirical literature on price competitiveness of India's rice exports.

Gill and Brar (1996) examined the competitiveness of Punjab's super fine and coarse rice for the period 1982 to 1994 by adding cost of market handling, grading, packing, market fee and taxes, local transport and storage charges, inland transport charges from sale market to international port, storage charges for the product awaiting shipment, transshipment charges, overseas transport and insurance costs, unloading charges from the ship, customs duty charged by the importing country, trader's margin and local charges and taxes to procurement price of super fine and coarse rice to arrive at a reference price at Bombay railway station (Table 8.1.4).

The list of these charges is indicative of the fact that the exported commodities not only crosses a long distance but also passes through several processes before it reaches to the final user. His estimates show that for most of the years Punjab super fine rice is uncompetitive in the world market implying that Punjab rice has been costlier than Thailand rice. The coarse rice variety is found to be competitive in price terms in all the years since 1988 (Table 8.1.5). To arrive at price of IR-68 at Bombay railway station we added costs of gunny bag, local transport and handling, interest rates, and rail freight charges to the wholesale price of IR-68 rice variety in Amritsar. These various costs are borrowed from Gill and Brar (1996). Our estimates demonstrate that Punjab has competitiveness in exporting common variety like IR-68 which can be easily compared with Thai 5% broken.

On export competitiveness estimates of Gulati and et al. (1990, 1994) are different from those of Gill and Brar (1996). The major cause of differences arise out of estimates of marketing costs and distribution margins. Gulati and et al. have estimated them at the rate of 5 per cent of the procurement price where as actual costs are taken in Gill and Brar (1996). Dutta (1995) analysis shows slender competitiveness of India's basmati rice.

This study points out that if Punjab agriculture, which is most advanced in the country with high yield per hectare, is not internationally competitive then it will be much more difficult for other regions to successfully compete with the agriculture of the advanced countries in the world. Dutta (1994) study demonstrates slender competitiveness both for Indian basmati and non-basmati rice.

Table 8.1.5
Comparison of Price of Thailand Rice and Punjab Rice At Bombay Railway Station

Year	Price of Thailand Rice	Price of Punjab		Ratio of rice Of Punjab Rice and Thailand(%)	
		Superfine Rice	Coarse Rice	Superfine	Coarse
1982	277.60	266.71	247.32	96.08	89.09
1983	279.54	286.98	266.51	102.66	95.34
1984	286.69	304.11	283.18	106.08	98.78
1985	268.78	316.20	295.11	117.64	109.80
1986	265.08	365.03	342.64	137.71	129.26
1987	297.87	343.37	321.53	115.28	107.94
1988	419.75	386.64	342.99	92.11	81.71
1989	519.72	441.87	400.82	85.02	77.12
1990	502.72	496.35	450.58	98.73	89.63
1991	714.55	546.80	499.71	76.52	69.93
1992	744.88	627.37	578.18	84.22	77.62
1993	740.40	743.99	657.53	100.48	88.81
1994	784.25	801.81	728.04	102.24	92.83

Source: Gill and Brar (1996).

Table 8.1.4

Procurement Price, Market Charges, Transport Cost and Other Charges of Punjab Superfine Rice at Bombay Railway Station (Rs /Quintal)

	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994
Procurement													
Price of Paddy	130	140	148	150	175	158	180	205	255	250	290	350	380
Compulsory market charges	9.8	10.5	11.1	11.3	13.1	13.4	15.3	17.4	20.3	22.5	26.1	35.0	38.0
Mandi Labour	1.1	1.1	1.2	1.3	2.7	3.0	3.3	3.6	3.8	3.9	4.8	4.7	4.7
Local transport and handling charges upto mill point	4.0	4.4	4.8	5.3	5.8	6.4	7.0	7.7	9.1	10.0	11.3	11.3	11.3
Local Storage	0.8	0.8	0.8	0.8	0.8	1.8	1.8	1.8	1.8	1.8	2.0	1.8	1.8
Drying Charges	2.9	3.1	3.3	3.4	3.9	3.6	4.1	4.7	5.2	5.7	6.6	8.0	8.7
Milling Charges	3.6	4.0	4.4	4.8	5.0	5.0	5.0	6.5	7.5	7.5	7.5	7.5	7.5
Rice price at mill premises	227	245	259	264	308	285	323	355	407	450	520	624	675
Gunny bag Cost	6.2	6.7	8.3	11.3	11.3	9.6	9.9	13.6	17	17	17	18	18
Local transport and handling	4.0	4.4	4.8	5.3	5.8	6.4	7.0	7.7	9.1	10.0	11.3	11.3	11.0
Interest	8.3	8.9	9.5	9.8	11.4	10.5	11.9	13.5	17.3	19.1	21.9	26.1	28.0
Rail freight charges to Bombay	21.1	22.4	22.4	25.9	28.7	31.5	34.7	42.0	46.2	50.8	57.4	64.2	69.0
Rice Price at Bombay Railway Station	266.7	287	304	316	365	343	367	442	497	547	627	744	802

Source: Gill and Brar (1996)

8.2 Demand and Supply Projections:

A prerequisite for export potential of any country is its capacity to generate exportable surplus. This can be possible only when domestic supply exceeds domestic demand and leave some surplus for international market. The immediate question to ask ourselves is "do we have that surplus". The swelling of buffer stock in the FCI godowns does not imply that the country has a real exportable surplus. Many economists who claim India is self-sufficient in its food production should find out how far our 'self-sufficiency' is real when a sizeable proportion of our population who live below the poverty line can not afford to buy even at the 'fair' (subsidised) price under the public distribution for lack of purchasing power (Table 8.2.1).

Table 8.2.1
Incidence of Poverty in Rural India, 1973-93

Year	Head Count Ratio
1973-74	56.4
1977-78	53.1
1983-85	45.6
1986-87	38.3
1987-88	39.2
1988-89	34.4
1990-91	35.0
1992-93	43.9
1993-94	33.5

Source: Chandrasekhar and Sen(1996)

Surplus can be generated either by increasing supply or by decreasing demand. To analyse the various possibilities generating surplus it is important to examine rice consumption patterns and the various possibilities of increasing its supply. Supply of foodgrains can be increased either by increasing gross cropped or net sown area or yield improvement. It would be possible to expand area under HYV technology but not overall

area due to the near closing of land frontier for further cultivation. On the contrary, area substitution in favour of more remunerative crops may result in shrinkage of area under this crop. For instance, the process of converting paddy fields for prawn cultivation has already started in most of the paddy growing districts of Andhra Pradesh. Growth rates of area expansion for foodgrains for India as whole has become negative at -2.04 during 1980-83 to 1990-93. This is mainly due to negative growth rates of area under foodgrains in southern region viz., Andhra Pradesh and in all states of central region (Appendix Tables 8.1 and 8.2 and Table 8.2.2). When we examined trends in area under rice it is clear from Table 8.2.3 that the growth rates of area expansion under rice in Andhra Pradesh and Bihar became negative during 1983-84 to 1993-94. We could find some possibility of expanding area under rice in eastern states such as Orissa, West Bengal, and Assam and Northern region such as Uttar Pradesh (Table 8.2.3).

Foodgrains production during the 1980s has increased by an acceleration of growth in inputs or total factor productivity. The good performance during 1980-83 to 1990-93 was mainly due to increase in land productivity since the expansion of gross cropped area actually declined in most of the low productivity states in the Central Region. In North-Western and Eastern regions in fact cropped area expanded, though at a low rate. Production growth rates during the second decade of green revolution period have mainly come from improvements in yield growth rates in West Bengal, Madhya Pradesh, Bihar, Orissa, and Tamil Nadu (Table 8.2.4). Despite the increase in yield and area under HYV technology, the stagnation of yield at the national level implies a decay and obsolescence of new technology and necessitates a search for alternatives for growth in productivity with sustainability. The yield stagnation is particularly apparent in those states which have adopted HYV technology for a long time. Since the mid-1980s, both public and private investment on infrastructure particularly irrigation has been decelerated. Insufficient irrigation facilities, only 45 per cent of the rice is irrigated, constrain the possibilities of enhancing production and productivity during the rabi/summer season. Nearly 45 to 50 per cent of the country's rice area is located in the low productivity states of Assam, Bihar, Madhya Pradesh, Maharashtra and Orissa with yields ranging from 64 to

85 per cent of the national average (Table Appendix Table 8.2). Production of rice can be increased by bringing yield in these states at par with the existing national average besides improving the national average itself. It is possible to increase productivity in these states, given the constraints prevailing there. A detailed investigation into the causes of such low yields in the above mentioned states is of paramount importance for enhancing appropriate research and development activities aiming at an improvement in yield.

The existing empirical literature on supply-demand projections showed the possibilities of the country to generate surplus but only by a couple of million tonnes both rice and foodgrains as a whole (Table 8.2.5 and 8.2.6). To be able to increase output, efforts at spreading and deepening the yield raising new technology have to be continued. For this efficient public research system is the most important. This research would help the farmers in making more efficient use of their resources through scientific management and enable them not only to reduce costs but to diversify into more remunerative crops. While privatisation of research is likely to bring in more innovations, the benefits would only accrue to the richer sections of peasantry who would be able to afford the new seeds and inputs. The public research system should acquire the necessary flexibility not only to innovate but also to reach the new technologies to the small and marginal farmers (Bhalla, 1995).

Table 8.2.2
Increase in Area and Production of Foodgrains

State	Area			Production		
	1970-73	1980-83	1990-93	1970-73	1980-83	1990-93
	over 1962-65 (Million Hectares)	over 1970-73 (Million Hectares)	over 1980-83 (Million Hectares)	over 1962-65 (Million Tonnes)	over 1970-73 (Million Tonnes)	over 1980-83 (Million Tonnes)
Haryana	0.33	0.12	-0.17	1.98	1.79	3.40
Himachala Pradesh	0.05	0.04	0.00	0.22	0.13	0.32
Jammu & Kashmir	0.14	0.06	0.05	0.33	0.33	0.10
Punjab	0.75	1.00	0.72	4.07	5.48	6.51
Uttar Pradesh	1.45	0.79	0.02	4.94	6.76	10.55
North-Western Region	2.29	2.04	0.64	11.55	14.49	20.86
Assam	0.15	0.36	0.20	0.29	0.49	0.79
Bihar	0.13	-0.52	-0.50	1.30	-0.23	2.16
Orissa	0.44	0.78	0.44	0.07	0.55	2.07
West Bengal	0.65	-0.24	0.56	1.72	-0.49	5.39
Eastern Region	1.37	0.38	0.70	3.38	0.32	10.41
Gujarat	0.07	-0.14	-0.36	1.00	1.03	-0.09
Madhya Pradesh	1.36	0.94	-0.70	1.69	1.55	4.20
Maharashtra	-1.00	2.10	-0.16	0.94	-2.20	5.32
Rajasthan	1.24	0.13	-0.45	1.99	0.55	2.78
Central Region	1.68	3.03	-1.67	2.48	8.44	8.57
Andhra Pradesh	-0.58	-0.08	-1.51	-0.22	3.72	0.93
Karnataka	-0.77	0.32	-0.02	1.01	0.87	1.21
Kerala	0.06	-0.09	-0.20	0.22	-0.03	-0.23
Tamil Nadu	0.10	-0.95	-0.15	1.34	-1.10	2.10
Southern Region	-1.18	-0.80	-1.90	2.35	3.46	4.00
All India	4.45	4.73	-2.04	20.27	28.11	43.25

Source: Bhalla, 1995.

Table 8.2.3

Annual Average Area of Rice in Major Rice Producing States (Million Hectares)

Year	West Bengal	Uttar Pradesh	Madhya Pradesh	Bihar	Orissa	Andhra Pradesh	Assam	Tamilnadu
1970-79	5.14	4.70	4.61	5.27	4.48	3.50	2.13	2.65
1980-89	5.30	5.33	4.94	5.19	4.26	3.73	2.33	2.15
1990-91	5.81	5.61	5.12	5.39	4.40	4.04	2.49	1.86
1991-92	5.72	5.41	5.13	4.79	4.55	3.94	2.53	2.12
1992-93	5.69	5.48	5.16	4.52	4.44	3.60	2.52	2.18
1993-94	5.88	5.37	5.22	4.72	4.55	3.55	2.53	2.31
1994-95	5.77	5.58	5.35	4.86	4.46	3.64	2.45	2.23
1995-96	5.95	5.58	5.17	5.03	4.53	3.68	2.50	2.23
	(.3;1)	(1.2;.3)	(.8;.5)	(-.7;-.5)	(-.4;.7)	(1.3;-.5)	(.5;1)	

Source: CMIE, Various Issues

Notes : Figures in the parentheses are compound annual rate of increase for the period 1970-71/1983-84 and 1983-84/1993-94 respectively.

Table 8.2.4

Average Yield of Rice in Major Rice Producing States (Tonne/Hectare)

Year	West Bengal	Uttar Pradesh	Madhya Pradesh	Bihar	Orissa	Andhra Pradesh	Assam	Tamilnadu
1970-79	1.2	0.9	0.7	0.9	0.9	1.6	1.0	2.0
1980-89	1.5	1.4	0.9	1.0	1.1	2.1	1.1	2.4
1990-91	1.8	1.8	1.1	1.2	1.2	2.4	1.3	3.1
1991-92	2.1	1.7	1.0	0.9	1.5	2.4	1.3	3.1
1992-93	2.0	1.8	1.0	0.8	1.2	2.4	1.3	3.1
1993-94	2.1	1.9	1.1	1.3	1.5	2.7	1.3	2.9
1994-95	2.1	1.9	1.2	1.3	1.4	2.6	1.4	3.4
1995-96	2.0	1.9	1.1	1.4	1.4	2.5	1.4	3.4
	(-.4;5.4)	(3.4;4.5)	(.4;3)	(0;2.0)	(-.4;3.8)	(3.1;1.8)	(.6;2.0)	(1.2;4.2)

Source: CMIE, Various Issues

Notes: Figures in the parentheses are compound annual rate of increase for the period 1970-71/1983-84 and 1983-84/1993-94 respectively.

Table 8.2.5
Projected Total Demand and Production of Foodgrains (Million Tonnes)

Study	Production		Demand	
	2000	2005	2000	2005
National Commission on Agriculture, 1976			205 to 225	
World Bank (1991)				
Total (high)	213.00		205.00	
Foodgrains (low)	197.00		191.00	
Seventh Five Year Plan, 1985-90	235 to 240		240.00	
Planning Commission				
Sarma and Gandhi, IFPRI, 1990 (high)	219.40		240.70	
IFPRI Study (low) (for ADBI)	220.74		210.23	
Radhakrishna and Ravi, 1990	-		234.50 206.00	
Kumar et al 1994	-		206 to 210	

Source: Bhalla, (1995).

Table 8.2.6
Projected Total Demand and Supply of Rice and Other Foodgrains
(Million Tonnes)

Study	Production			Demand		
	2000	2005	2010	2000	2005	2010
Radhakrishna and Ravi						
Rice				88.42		107.29
Wheat				63.36		79.57
World Bank (1993)						
Rice	124.60	136.72		82.66	90.60	
Wheat	71.78	84.04		77.67	92.03	
Kumar and Rosegrant IARI-IFPRI-IRRI Collaborative Study 1996.						
Rice	89.10*	98.70*	109.3	86.20	95.20	117.0
	87.50**	94.70**	102.5	86.20	95.20	117.0

Source: Bhalla (1995).

* under the assumption of constant TFP growth

** under the assumption of decreasing TFP growth.

Table 8.2.7
State-Wise Percentage of Irrigated Area

State	% of Irrigated Area (1991-92)	Yield per Hectare (tonne/per hectare) 1993-94
Andhra Pradesh	94.9	1.2
Assam	33.8	1.3
Bihar	35.6	1.3
Gujarat	51.1	1.4
Haryana	99.5	2.7
Jammu and Kashmir	88.8	1.7
Karnataka	64.0	2.3
Kerala	42.3	1.9
Madhya Pradesh	22.3	1.2
Maharashtra	24.5	1.6
Orissa	37.3	1.5
Punjab	99.2	3.5
Tamil Nadu	92.4	2.8
Uttar Pradesh	43.4	1.9
West Bengal	24.6	2.0
All India	46.0	1.9

Source: Agricultural Statistics At Glance, GOI, 1995.

8.3 Liberalisation and Implications for India's Rice Trade:

The trade policy in India, over the last three decades, made a distinction between the agriculture and the industrial sectors. Our traditional exports like tea, tobacco, spices etc, which bring maximum amount of foreign exchange to the country, have a special treatment. For these commodities, the open trade regime has continued since the colonial period. This is not so in the case of foodgrains. Agricultural foreign trade flows, whether exports or imports, have always been residual in nature. This has been implemented using various policy instruments such as quantitative restrictions, through canalisation or combination of both. For regulating the volume of trade flows, the quantitative restrictions on agricultural exports are imposed in the form of licenses or quotas. Some agricultural

exports are regulated by canalisation of trade through state trading organisations. All import decisions viz., how much quantity should be imported, what value should be paid etc., are taken by the Government. Thus Canalisation through state trading organisations is a predominant means of regulating the trade flows into the country.

Such restricted trade policies are adopted with a view to provide domestic price stability. Because "a large proportion of India's agricultural exports, whether consumer goods or intermediate goods, are exportables which enter into domestic consumption or use so that the volume of exports can exercise a strong influence on domestic prices" and "a large proportion of India's agricultural imports, whether consumer goods or intermediate goods, are importables produced in the agricultural sector so that the volume of imports can exercise a strong influence on domestic prices" (Nayyar, 1994: 1188). Other important objectives of trade policy in India are improvement in balance of trade, favourable terms of trade and the need to protect domestic agriculture.

However, in July 1991 the Government has initiated certain trade policy reforms under structural adjustment programmes (SAP) for macro-economic stabilisation. The following reforms are initiated:

- (i) The canalisation of agricultural trade flows has been almost abandoned. All agricultural imports other than cereals, oil seeds and edible oils have been decanalised. All agricultural exports, except onions, have decanalised.
- (ii) Many quantitative restrictions on agricultural trade flows have been dismantled. Apart from the general restrictions on imports of consumer goods, there are no longer any quantitative restrictions on agricultural imports.
- (iii) Exports of rice bran, pulses, paddy, coconut, copra, oil cakes and vegetable oils are subject to licensing
- (iv) Exports of foodgrains, sugar and raw cotton are delicensed but in practice they are subject to quantitative limits
- (v) Exports of groundnuts, tobacco, guar gum are subject to minimum export price (MEP).
- (vi) Rice exports until 1993 are subject to a minimum export price, which is \$ 225 for non-

basmati varieties and \$ 550 for basmati while wheat exports have long been subject to quantitative restrictions. In November, 1993, the government allowed exports of the superior quality of durum wheat subject to a MEP of \$ 160.

(vii) The decanalisation of a substantial proportion of agricultural trade flows and dismantling of quantitative restrictions on agricultural imports has not been associated with a systematic restructuring on tariffs (Nayyar, 1994).

One group of economists argue in favour of liberalisation that the restrictive trade policies tax the farmer by not allowing him to avail the prevailing price advantage in the international market (Gulati, 1993). If the export of rice is viewed as an instrument of price policy for providing incentives to farmers to boost production the immediate question to ask is that the export competitiveness that we have been examining under a specific trade policy regime would it be present even in a liberalised and post GATT era?

The GATT agreement would result in (i) increasing access of agricultural commodities in the world market due to the (a) replacement of all types of non-tariff barriers with tariff barriers by the member countries (b) Reduction of tariff rates under a time bound programme. The developed countries will reduce by 86 per cent (of 1986-88 average level) of their tariff rates during six years while developing countries by 24 per cent during the next 10 years. The least developed countries are not required to undertake any such reduction. Safeguards against sudden and abnormal increase in imports, dumping, deficits in balance of payments and food insecurity have been kept in these agreements. (ii) A maximum amount of aggregate measure of support (AMS) to agriculture has been fixed at 10 per cent of the value of agricultural produce, both product specific and non-product specific for developing countries³. In case AMS exceeds these limits then developed countries shall reduce it by 20 per cent and developing countries by

³While calculating AMS, exemptions have been given for expenditure on research and extension in agriculture; investment for building up of infrastructure such as electricity, reticulation of roads and other means of transport, water supply, dams etc.

13.3 per cent during the implementation period. The least developed countries are exempted from such a reduction.

(iii) GATT agreement on agriculture provide for minimum access to market to the outside suppliers. This has been fixed at minimum of 3 per cent of domestic consumption or the existing level of import in the reference period (1986-88) in beginning of implementation period.

(iv) This agreement provides for reduction in subsidy on exports to the extent of 36 per cent by developed countries and 24 per cent by developing countries of 1986-90 base period levels at the conclusive implementation period i.e. 2005.

All these factors may bring benefits to Indian rice trade. It is expected that prices of these products will rise more in the markets of advanced countries such as the US, European Union and Japan where this commodity is highly subsidised and protected (Table 8.3.1).

**8.3.1: Level of Protection in Developed and Developing Countries 1985-87:
Percentage of Total Value of Agricultural Output**

Commodity	USA	Japan	EU	Asia		North Africa	Latin America	FSU
				Low Income	Middle			
Rice	49	368	122	19	119	0	162	100
Wheat	51	538	72	-6	264	24	-3	38
Coarse Grains	24	416	95	0	320	23	8	0

However, any discussion of the possible implications of India liberalising its policies regarding international trade in rice must begin by noting two important facts;

(i) Structure of the world rice market where world rice trade occurs in a highly imperfect

setting. World prices are determined by the relatively small surpluses and deficits which enter world market and are not influenced by world production and consumption (See Chapters III and IV for further details). The implication of this is that world prices can respond disproportionately to even small changes in the proportion of world output which is subject to free trade, and this effect is likely to be magnified even more if the relevant price elasticities are small.

(ii) With total world trade in rice currently less than a fifth of Indian production. India's contribution to world rice production is more than 20 per cent but her share in total rice trade is less than 1 per cent until 1994. The implication of small trade in relation to world trade and large output in relation to the latter is that an opening up of India's rice trade has extremely large effect on world prices. It is in this sense rice sector is not disprotected to the extent implied by the present world price. A correct measure of disprotection according to Kirit Parikh and et al. (1995) is present domestic price minus world market price that would prevail if India were to have free trade in rice. They suggested an imposition of tariff on rice exports from India to check domestic price rise. They used a rice demand elasticity of 0.1 and supply elasticity of 0.4 for the rest of the world to determine the world market price that would prevail corresponding to different quotas on rice export varying between 0.5 and 4 million tonnes by India. For exports beyond 4 million tonnes, the world price falls below the domestic price. The results of this exercise showed that as rice exports rise, domestic rice price increases. They suggested an optimum tariff of half a million tonne to check domestic price rise. They suggest a half a million tonne export tariff for optimal tariff.

Some economists argue that a small part of Indian agricultural output currently enters world trade does not by itself mean that agricultural trade liberalisation by India would lead to large changes in world prices. The analysis on competitiveness by Gill and Brar (1996) clearly showed that superfine rice of Punjab, a region where most of the rice exports originate, is not competitive in the world market implies that even with free trade a large country such as India would account for a much smaller share of world trade than

of world output.

The price comparisons that are made in section 8.1 of this Chapter showed that the world rice prices more volatile than Indian domestic prices. The implication of this is that relaxing of trade restrictions on Indian rice trade would result in instability of domestic rice market like world rice market. In India, the main input subsidies received by agriculture relate to fertiliser, electricity, and irrigation, and the incidence of such subsidies varies across crops. Rice and cotton receive less subsidy than wheat and sugar cane (Nayyar, 1994). As a result, the effect of subsidy withdrawals on relative profitabilities would be broadly in the same direction as that of trade liberalisation. It would cause domestic prices to go up generally, along with a reduction in relative profitability of sugar cane and with relative increases in profitability of growing rice and cotton (Nayyar, 1994).

Different opinions are expressed on the impact of liberalisation on India's agriculture. Utsa Patnaik (1997) observed falling total area under foodgrains and decelerating growth of foodgrain output below the population growth rate during the period of structural adjustment. He argues that the 'food first' set of policies that are pursued up to 1991 resulted in increase in per capita food availability and effective functioning of public distribution system in providing access to basic food to the important segments of the population. He argues further that food security system has been undermined with the substitution of an 'export first' policy regime from mid-1991, which has led to predictable decline in per capita food production. Some economists argue that trade liberalisation would result in improving the agricultural terms of trade (Rao and Gulati, 1994).

8.4 Hurdles in Promoting Rice Exports:

(i) Outdated Milling Technology⁴:

The maximum capacity of the modern rice mills in India is 2 TPH (Tonne Per Hour). A 2 TPH mill processes about 8000 tonnes of paddy per year. The cost of a 2 TPH capacity mill is Rs 0.5 million. Parboiling unit costs about 0.2 million where as grading unit cost at 0.15 million. A 2 TPH mill requires about 15 persons without parboiling unit to operate it. With parboiling facility, another 25 persons are required to run the unit.

India has a large rice milling industry - about 0.13 million rice mills are generating about 79 million tonnes of rice out of 118 million tonnes of paddy the country produces annually. The rice milling industry, however, is not composed of homogenous units as it contains traditional units - hullers with roughly 500 kg / hour capacity and sheller/sheller come huller with about 750 kg/hour capacity and modern rice mills with 2 to 4 TPH capacity. The development of rice processing differs from region to region mainly due to economic differences. Modern rice milling technology should be adopted to avoid higher percentages of broken rice and lesser recovery rate. Table 8.4.1 gives the recovery rate in India from the existing milling technology.

Table 8.4.1
Rice Milling Technology in India

Milling System	Raw Milled Rice Recovery (Percentage)		
	Head Rice	Broken Rice	Total Rice
Huller	49.80	13.70	63.50
Sheller-Polisher	53.78	11.32	65.10
Mini Rice Mill	59.14	8.06	67.20
Modern Rice Mill	64.55	4.85	69.40

Source: Datta, 1996.

⁴Milling is carried out in different stages for polishing the brown rice as per the consumer preferences. At the end of the process, to separate out broken rice from whole rice a grading unit would be installed. The Sortex machine, a machine for detecting the contaminants and stones in the product, is used to sort out the whole grain to suit the requirements of the export market. The proportion of broken rice can be reduced if modern rice technology is used.

In 1991, the proportion of traditional rice milling units is greater than the modern rice milling units where huller units consists of 68 per cent of the total and modern rice mills 25 per cent (Datta, 1996). A major problem of Indian rice milling industry is that due to large varieties in grades and grain sizes, machinery adjustment becomes difficult. De-husking, paddy separation and polishing equipments require improvement in designs by incorporating hydraulic and electronic controls. This is needed if Indian rice is to cater to the needs of the premium market both at home and abroad (Datta, 1996).

(ii) Linkages in Indian Rice Marketing:

Existing linkages in any marketing system would indicate the efficient functioning of that market. If the linkages are too many, in other words too many middle men exist between the actual producer and the ultimate consumer, the share of actual producer in the ultimate price paid by the consumer would be reduced which in turn reduce his capacity to invest. So, it is important to discuss the linkages in Indian rice marketing.

With a view to carry out production, farmers in India procure inputs from mainly four sources: market, kachha aarti, Primary Agricultural Co-operatives (PACs) and the Government. PACs supply credit and other inputs to the farmer at subsidised rates. Government provides research and extension services to the farmer through its departments R & D organisations. While he sells the final product mostly to regulated markets or sometimes, under the force of circumstances to kachha aarti in lie of inputs. The Kachha aarti procures paddy not only from the farmers but also from the regulated market and generally sells them at 1.25 per cent commission to pucca aarti, who inturn supplies grain to private processors and exporters at two per cent commission. Sometimes, the pucca aarti also directly purchases from the regulated market. The existence of intermediaries in the marketing of the grain would result in exploitation but it also result in " dissemination of information, through risk-bearing and also through purchases for the processors and exporters as per the latter's specifications" (Datta 1996).

Private processors and exporters sell the paddy byproducts to outsiders instead of internationalising the byproduct processing activities. All the processors of the main product and byproducts sell in national or international markets. Government plays a very important role in which it influences directly and indirectly all the marketing channels. It influences directly the input market, farmer, regulated markets, Cooperatives, the private processors and exporters etc. It influences indirectly through Food Corporation of India, R & D organisations, and Agricultural Product Export Development Authority (APEDA)⁵. Government exercises its power on processors and exporters through FCI levy policy and through various schemes of the APEDA.

All India Rice Exporters' Association (AIREA) is the most important voluntary organisation for the promotion of rice exports. It brings about a monthly magazine named "Rice India" which provides a comprehensive coverage of the rice situation in India and abroad. Its main function is to represent the interests of rice exporters before the Commerce Ministry and other relevant bodies both in India and abroad⁶.

(iii) All paddy including basmati variety is subject to a levy of 4% of purchase tax per annum by the State Excise and Taxation Department. So far, only Uttar Pradesh

⁵ APEDA covers a vast area of multiple groups of agro-products, rice being the latest addition to the long list. The main functions of APEDA include:

1. Development of scheduled products for exports through surveys and feasibility studies and participation in equity capital through joint ventures
- 2 registration of exporters
3. Quality control and fixing of standards
4. improvement in packaging
5. promotion of marketing abroad
- 6 collection of statistics in production, processing, marketing and exports
7. dissemination of information
8. training.

⁶ It conducts seminar on relevant topics. In order to have greater control and monitoring over exports this organisation starting its own seed distribution centre, own laboratory and Rice Export Promotion Council.

abolished this tax.

(iv) A majority of exports are routed through Kandla port which resulted in port congestion and berthing delays. Due to incredible spurt in rice exports, the port authorities have recently started allotting berths on a first come first served basis, irrespective of whether it is an export vessel or an import vessel.

(v) Adulteration is the major constraint which is preventing high price and demand in the international market; Taking advantage of physical resemblance and lack of stringent quality control measures, they mix different proportions of non-basmati rices, basmati like rices and inferior basmati rices with superior types. This practice continues misusing the provision of self-certification for quality without realizing how seriously it affects the export prospects. Lack of well equipped and extended processing industries, makes it difficult to maintain grain quality in order to meet standard levels of export.

(vi) Poor and inadequate storage facilities lead to wastage and maintain the quality.

(vii) Due to the poor extension and seed distribution programmes traditional farmers forced to adopt to the traditional low yield potential seed varieties.

(viii) Poor techniques to test the quality results in failure to achieve standard level required for exports.

(ix) Varietal variation: Recognised basmati varieties, for instance, differ in their physical grain as well as cooking characteristics. Even the highly priced Travadi basmati is only a group of varieties differing in their grain dimensions and possibly cooking quality indices. For traders, however, all basmati quality rices having grain lengths above six mm are typical basmati and qualify for export. They pool all, mill together and market as one grade. Its impact is seen only when it is cooked and consumed.

(x) Poor seed quality is an important constraint to enhance rice production. In the case of basmati, inadequacy of seeds, is a major constraint.

Pusa basmati 1 is a high yielding dwarf variety popular in Northwestern states and compares in quality of the traditional basmati 370. Because of this indecision a vast export potential remains underexploited. Marketing of basmati rices in attractive packages under catchy brandnames such Super Kohinoor, Shehansha, Mother's Choice, Royal

Chef and Vikrant by various exporting houses is a welcome development. Such innovations greatly add value to the rice. Selling a product under a variety of names in those markets where branded products are preferred, however, confuse the consumer. What is required is the development of a branded rice of consistent quality conveying clearly to consumer this is Hindustani basmati.

(xi) In the area of packaging, a good attempt has been made in a short period of 3-4 years. To the Western markets, however, our level of packaging is still far from satisfactory. Due attention to make our rice packs look still more attractive and appetising would pay rich dividends.

These constraints could be overcome by making some infrastructural changes, viz, modernisation, strict administration in our quality control through well equipped and extended processing industries, improving and expanding our ware housing facilities. Flexible packaging instead of jute, paper etc is more important because it gives the much needed protection and shelf life to the products since it is made of special multilayer laminates which acts as an effective barrier against moisture, gases, temperature variations and retains the original aroma and flavour of the premium basmati.

Government Measures:

Given the comfortable supply situation and keeping in view the need to maintain an incentive framework for the farmers for inducing them to make investment and adopt yield-increasing inputs, the government took several measures to promote rice export. These include abolition of minimum support price, relaxation of stock limits, suspension of levy on super fine non-basmati rice meant for export, relaxation of quantitative ceilings on exports of rice and permission to the FCI to sell rice from its stocks for the purpose of exports. To promote agricultural exports the government has set up APEDA in 1985. It was set up with a view to systematizing and regulating agricultural exports. The Authority is geared towards improving the quality of scheduled products and to enhance foreign exchange earnings through increased food product exports. It consists of forty government appointed members drawn from both the houses of the parliament, the

Planning Commission, several ministries, export promotion councils, trade and industry etc.

The Act lays down the following rules:

- 1 Development and preparation of scheduled products
- 2 Surveys and feasibility studies
- 3 Quality control and fixing of standards
- 4 Improving packing
- 5 Registration of exporters with APEDA.

Rice is the latest addition to the long list of agro products under APEDA's purview. According to Eighth Plan, rice has been identified as a major thrust item for exports and as per the new policy, the export of both basmati and non basmati rice is freely allowed to export without any restrictions. The abolition of minimum export price on basmati and non basmati rice is a major step towards liberalisation of rice trade. APEDA, in order to encourage exporters, has special schemes to help in packaging and quality testing. It finances 60 per cent of the cost of packing development subject to ceiling of Rs 1 lakh per beneficiary. It is also providing quality control assistance by meeting 50 per cent of the cost of setting of quality control laboratories subject to a ceiling limit of Rs 5 lakhs per beneficiary. In addition to these measures strong market intelligence to identify prospective buyers, their quality preference and size of demand and rapid technology upgradation to compete with established exporters, especially of Thailand and of the U.S is necessary.

Thus from the above discussion it is clear that India's common rice, which is a comparable quality with the Thai 5% broken, was competitive in the world market, even after taking into account all the costs that the trader has to incur. This competitiveness can be further improved if the necessary infrastructure is provided. Success story behind our exports in the recent periods is abnormally large stocks of cereals with the government owing to the reduction of offtake from PDS following near-doubling of issue prices combined with high levels of procurement. Our ability to export depends, in addition to

competitiveness, on the availability of these stocks in future. The existing empirical literature on the food demand and supply projections has clearly shown that the country would produce a surplus of only a couple of million tonnes which might be sufficient to maintain the buffer stock.