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India
Foodgrain Marketing Policies: Reforming to Meet Food Security Needs

(In Two Volumes) Volume I Main Report

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Rural Development Sector Unit
South Asia Region

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CURRENCY

Currency		Rs/ US$ Official	Unified	Market [a]
Prior to June 1966		4.76		
June 6, 1966 to mid-December 1971		7.50		
Mid-December 1971 to end-June 1972		7.28		
	1971-72	7.44		
	1972-73	7.71		
	1973-74	7.79		
	1974-75	7.98		
	1975-76	8.65		
	1976-77	8.94		
	1977-78	8.56		
	1978-79	8.21		
	1979-80	8.08		
	1980-81	7.89		
	1981-82	8.93		
	1982-83	9.63		
	1983-84	10.31		
	1984-85	11.89		
	1985-86	12.24		
	1986-87	12.79		
	1987-88	12.97		
	1988-89	14.48		
	1989-90	16.66		
	1990-91	17.95		
	1991-92	24.52		
	1992-93	26.41		30.65
	1993-94		31.36	
	1994-95		31.40	
	1995-96		33.46	
	1996-97		35.50	
	1997-98		37.16	
Jan	1998		39.36	
Feb	1998		38.91	
Mar	1998		39.50	

Note: The Indian fiscal year runs from April 1 through March 31.

Source: IMF, International Finance Statistics (IFS), line "rf"; Reserve Bank of India.

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[a] A dual exchange rate system was created in March 1992, with a free market for about 60 percent of foreign exchange transactions. The exchange rate was reunified at the beginning of March 1993 at the free market rate.

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ABBREVIATIONS AND ACRONYMS

AP	Andhra Pradesh
APL	Above Poverty Line
BOO	Build, Operate, Own
BPL	Below Poverty Line
CACP	Commission on Agricultural Cost and Prices
CAP	Covered and Plinth (Storage)
CWC	Central Warehouse Corporation
FAQ	Fair Average Quality
FCI	Food Corporation of India
GATT	General Agreement on Tariffs and Trade
GOI	Government of India
IRRI	International Rice Research Institute
MP	Madhya Pradesh
MSP	Minimum Support Price
NPC	Nominal Protection Coefficient
OMS	Open Market Sales
PDS	Public Distribution System
PRI	Panchayat Raj Institutions
RBI	Reserve Bank of India
SCC	Selective Credit Controls
SDP	State Domestic Product
TPDS	Targeted Public Distribution System
TN	Tamil Nadu
UP	Uttar Pradesh
VRS	Voluntary Retirement Scheme
WB	West Bengal

Units

cr	crore (10 million)
ha	hectare
km	kilometers
kg	kilogram
lakh	100,000
mt	metric ton
qtl	quintal (100 kg)
Rs	Rupees

ECONOMIC DEVELOPMENT DATA

GNP Per Capita (US$, 1996-97)· 380[a]

Gross Domestic Product (1996-97)

			Annual Growth Rate (% p a , constant prices)					
	US$ Bln	% of GDP	70-71-75-76	75-76-80-81	80-81-85-86	85-86-91-92	92-93	93-94-96-97
GDP at Factor Cost	323 7	90 0	3 4	4 2	5 4	5.2	5 3	7 1
GDP at Market Prices	359 7	100 0	3 3	4 2	5 6	5 4	5 3	7 0
Gross Domestic Investment	90 7	25 2	5 3	3 7	5 7	6 6	12 3	11 4
Gross Domestic Saving	78 8	21 9	4 4	2.6	4 6	7 9	9.7	12.5
Current Account Balance	-4 4	-1 2	--	--	--	--	--	--

Output, Employment and Productivity (1990-91)

	Value Added		Labor Force [b]		V A per Worker	
	US$ Bln	% of Tot	Mill.	% of Tot	US$	% of Avg
Agriculture	82 5	31 0	186 2	66 8	443	46 4
Industry	78 0	29.3	35 5	12 7	2198	230 2
Services	105 7	39 7	57 2	20 5	1848	193 7
Total/ Average	266 2	100 0	278.9	100 0	954	100 0

Government Finance

	General Government [c]			Central Government		
	Rs Bln	% of GDP		Rs Bln	% of GDP	
	96-97	96-97	90-91-96-97	96-97	96-97	90-91-96-97
Revenue Receipts	2424 1	19 0	19 3	1531 4	12 0	11 5
Revenue Expenditures	2936 8	23 0	23 1	1834 1	14 4	14 9
Revenue Surplus/ Deficit (-)	-512 7	-4 0	-3 8	-302 7	-2.4	-3 4
Capital Expenditures [d]	436 6	3 4	4 4	399.9	3 1	3.7
External Assistance (net) [e]	29 9	0 2	0 6	344 3	2 7	2 3

Money, Credit, and Prices

	90-91	91-92	92-93	93-94	94-95	95-96	96-97
	(Rs billion outstanding, end of period)						
Money and Quasi Money	2658 3	3170 5	3668 3	4344.1	5314 3	6040 1	7001.8
Bank Credit to Government (net)	1401 9	1582 6	1762.4	2039.2	2224 2	2577.8	2888.2
Bank Credit to Commercial Sector	1717 7	1879 9	2201 4	2377 7	2927 2	3446 5	3753 6
	(percentage or index numbers)						
Money and Quasi Money as % of GDP	49 6	51 4	52 0	53 6	55 2	54.0	54 8
Wholesale Price Index (1981-82 = 100)	182 7	207 8	228 7	247 8	274.7	294.8	314.6
Annual Percentage Changes in.							
Wholesale Price Index	10 3	13 7	10 1	8 4	10 9	7 3	6 7
Bank Credit to Government (net)	19 7	12 9	11 4	15 7	9 1	15.9	12 0
Bank Credit to Commercial Sector	13 2	9 4	17 1	8 0	23 1	17.7	8 9

a. The per capita GNP estimate is at market prices, using World Bank Atlas methodology Other conversions to dollars in this table are at the prevailing average exchange rate for the period covered

b Total Labor Force from 1991 Census Excludes data for Assam and Jammu & Kashmir

c Transfers between Centre and States have been netted out.

d. All loans and advances to third parties have been netted out.

e. As recorded in the government budget

Balance of Payments (US$ Millions)

	1994-95	1995-96	1996-97
Exports of Goods & NFS	32,990	39,668	42,379
Merchandise, fob	26,855	32,311	33,764
Imports of Goods & NFS	41,437	51,213	54,271
Merchandise, cif	35,904	43,670	48,063
of which Crude Petroleum	3,285	3,442	4,797
of which Petroleum Products	2,396	3,759	5,239
Trade Balance	-9,049	-11,359	-14,299
Non Factor Service (net)	602	-186	2,407
Resource Balance	-8,447	-11,545	-11,892
Net factor Income[a]	-3,711	-3,497	-3,584
Net Transfers[b]	8,093	8,506	11,071
Balance on Current Account	-4,065	-6,536	-4,405
Foreign Investment	4,922	4,794	5,834
Official Grants and Aid	416	345	410
Net Medium & Long Term Capital	2,357	562	-758
Gross Disbursements	7,533	7,585	6,483
Principal Repayments	5,175	7,023	7,240
Other Capital Flows[c]	2,410	-2,113	1,582
Non-Resident Deposits	818	944	3,536
Net Transactions with IMF	-1,174	-1,719	-972
Overall Balance	6,858	-2,004	6,199
Change in Net Reserves	-5,684	3,723	-5,227
Gross Reserves (end of year)[d]	21,160	17,436	22,664

Rate of Exchange

End-Mar 1998[e]	US$ 1 00 = Rs. 39 50

Merchandise Exports (Average 1990-91-1996-97)

	US$ Mil	% of Tot
Tea	386	1 6
Iron Ore	486	2 1
Chemicals	1,919	8 1
Leather & Leather products	1,457	6 2
Textiles	3,000	12.7
Garments	2,875	12 2
Gems and Jewelry	3,894	16.5
Engineering Goods	3,229	13.7
Others	6,363	26 9
Total [f]	23,610	100.0

External Debt, March 31, 1997

	US$ Mil
Public & Publicly Guaranteed	74,406
Private Non-Guaranteed	7,382
Total (Including IMF and Short Term)	89,827

Debt Service Ratio for 1996-97

	% curr receipts
Public & Publicly Guaranteed	20 6
Private Non-Guaranteed	1 3
Total (Including IMF and Short Term)	24 5

IBRD/ IDA Lending, March 31, 1997 (US$ Mil)

	IBRD	IDA
Outstanding and Disbursed	8,768	17,616
Undisbursed	3,097	4,368
Outstanding incl Undisb	11,865	21,984

-- Not available

a Figures given cover all investment income (net) Major payments are interest on foreign loans and charges paid to IMF, and major receipts is interest earned on foreign assets

b. Figures given include workers' remittances but exclude official grant assistance which is included within official loans and grants, and non-resident deposits which are shown separately

c Includes short-term net capital inflow, changes in reserve valuation and other items

d Excluding gold

e The exchange rate was reunified at the market rate in March 1993

f Total exports (commerce), net of crude petroleum exports

India Social Indicators

	Latest single year			Same region/income group	
	1970-75	1980-85	1990-96	South Asia	Low-income
POPULATION					
Total population, mid-year (millions)	613 5	765.1	945.1	1,265 8	3,236.2
Growth rate (% annual average)	2 3	2 1	1 8	1.9	1 8
Urban population (% of population)	21 3	24 3	27 1	26.6	29.1
Total fertility rate (births per woman)	5.6	4 4	3.1	3.4	3.2
POVERTY					
(% of population)					
National headcount index		.	35.0		
Urban headcount index	.	..	30.5	.	
Rural headcount index			36 7	..	
INCOME					
GNP per capita (US$)	180	280	380	380	490
Consumer price index (1987=100)	45	85	227	233	275
Food price index (1987=100)		83	238	.	.
INCOME/CONSUMPTION DISTRIBUTION					
(% of income or consumption)					
Lowest quintile	5 9		9 2	.	.
Highest quintile	49 4	.	39 3		
SOCIAL INDICATORS					
Public expenditure					
Health (% of GDP)			0 7	0.8	1.5
Education (% of GNP)		3 4	3.8	3 0	3 6
Social security and welfare (% of GDP)					
Net primary school enrollment rate					
(% of age group)					
Total	.	.	.		
Male					
Female				.	.
Access to safe water					
(% of population)					
Total	31	54	81	78	76
Urban	80	80	85	83	80
Rural	18	47	79	74	72
Immunization rate					
(% under 12 months)					
Measles		1	84	82	80
DPT		41	86	83	81
Child malnutrition (% under 5 years)			66	.	.
Life expectancy at birth					
(years)					
Total	50	52	63	62	63
Male	51	52	62	61	62
Female	49	51	63	63	64
Mortality					
Infant (per thousand live births)	132	101	65	73	68
Under 5 (per thousand live births)	202	173	85	93	94
Adult (15-59)					
Male (per 1,000 population)	324	261	229	239	231
Female (per 1,000 population)	353	279	219	230	206
Maternal (per 100,000 live births)		460	437		

World Development Indicators 1998 CD-ROM, World Bank

Executive Summary

A. Overview

1. Rice and wheat accounts for over 75 percent of all foodgrain output, 40 percent of gross cultivated area, and about 26 percent of agricultural GDP. They are staples that are vital for household food security and constitute a major source of calories, especially for the over 300 million poor in the country, accounting on average for 30 percent of rural and 20 percent of urban food per capita expenditures. This paper examines both India's success in achieving improved food security in the 1990s and the associated fiscal and efficiency costs of the system that accompanied those results. Rice and wheat are referred to as foodgrains in this report.

2. The Government of India is at a critical juncture. The changing character of the foodgrain sector is creating new demands on the foodgrain marketing system, that is calling for adjustments to foodgrain policies if these demands are to be effectively and successfully met. Recent estimates project rice and wheat demand alone rising to as much as 200 to 230 million mt by 2020. Raising the marketing sector's capacity to perform its tasks in the most efficient and cost effective manner possible will be critical to satisfy the needs of both rich and poor consumers.

B. Policy and Regulatory Environment of Foodgrain Markets

3. GOI interventions influence prices, volume, quality, storage, processing and distribution of wheat and rice. To ensure remunerative returns to farmers, the Food Corporation of India (FCI) procures wheat and, to a lesser extent, paddy at a minimum support price (MSP) that is uniform throughout India and throughout the seasons, with uniform standards for quality. Wheat procured at this price is used (in addition to imports) to meet the requirements of the public food distribution program and for buffer stocks. A dual market with two-tiered pricing governs the rice market. Various State Levy Control Orders require private rice mills to deliver from 7 to 75 percent of their output to FCI and state governments for the public distribution system and buffer stocks. Millers are remunerated at a State-prescribed (below market) pan-territorial and pan-seasonal levy price that is based on the MSP for paddy plus "average" rice milling costs. Only after meeting their levy commitments can rice mills sell the rest of their output in the open market. At the retail level, the state governments sell rice and wheat to poor and non-poor consumers through fair price shops at below-market pan-territorial and pan-seasonal prices. For both rice and wheat, FCI resorts to open market sales of buffer stocks at below market prices to dampen sudden price rises.

4. To support GOI's food distribution and price stabilization program, additional trade controls restrict private-sector operations through limits set by GOI and State governments on movement and storage. Some States, such as Andhra Pradesh, Tamil Nadu, Orissa and West Bengal impose additional movement restrictions. Storage Control Orders, which impose limits on the volume of foodgrain stock that private traders may hold, set ceilings that vary depending on the severity of supply shortfalls and price rises. Subject to drastic change over short periods of time, the ceilings require private traders to comply with the limits within 15 days. These limits are lifted and re-imposed as deemed necessary.

5. To help foster competition that would assure fair prices to farmers, State governments legislated Agricultural Produce Market Acts that established a network of "regulated" wholesale markets. They are meant to improve efficiency and promote a more equitable distribution of gains from trade. States such as Punjab, Uttar Pradesh and Haryana, make it illegal for farmers to sell through alternative outlets (e.g. selling directly to mills). The regulated marketing system takes an ad-valorem marketing fee (0.5 to 2%) for its

services, collecting it in some states (e.g. UP) at every point of sale.

6. Several other policies affect operations in the grain marketing sector. Selective credit controls by the Reserve Bank of India control access to trade financing by the private sector. Although the government monopoly on foreign trade in wheat and rice (except for high-quality, long-grain Basmati rice) has been relaxed, the policy has undergone drastic changes over the last three years, for example from full export liberalization to export bans and quotas. Other controls include the prescribed use of jute bags for retail packaging, differential sales taxation of foodgrains across states, and a ban on rice and wheat futures contracts. Rice and wheat trading is generally done on the basis of fair average quality (FAQ) specifications, which annually set upper limits on items such as foreign material content, broken grain percentages, moisture content, etc. No premia are given for better-quality foodgrains, but grain falling below these limits is discounted.

C. Main Findings

7. Progress in Indian foodgrain programs occurred within a fairly static post-independence policy regime and at a heavy and rising economic and fiscal cost. A rough estimate of the costs of the GOI's foodgrain policies (food subsidy, implicit interest rate subsidy to FCI, and the value of physical losses in the private marketing sector) is about $2 billion per year in 1996/97. By 1998/99, food subsidies alone reached Rs 90 billion ($2.2 billion). Responsible for anywhere from 20 to 40 percent of all central government subsidy outlays, equivalent to about 0 6 percent of GDP, GOI's foodgrain subsidies accounted on average for about 8 percent of the Central Government's large fiscal deficit between 1985/86 and 1998/99. At the same time, the current system is less than effective in reaching those who need help the most -- the poor. By one estimate, after accounting for poor targeting and leakages to the open market, less than one-quarter of the grain distributed through the PDS actually reaches the poor.

8. Government policies and their implementation are also stifling the growth and modernization of grain markets and processors and contributing to rising physical losses and wastage. A recent study estimates foodgrain post harvest losses in India at about 7 to 10 percent at the farm to market level and another 4 to 5 percent at the marketing and distribution level. For the system as a whole, the losses equal about 12 to 16 million mt of grain (including all grains) per year -- including 3 to 4 million mt of wheat and 5-7 million mt of rice. With average per capita consumption of about 15 kg of foodgrains per month, these losses are enough to feed about 70 to 100 million people, about one-third of India's poor, or the states of Bihar and Haryana, for almost a year.

9. The government, through the public procurement, distribution, and buffer stocking programs, repressed the growth and modernization of private foodgrain marketing, undermining its potential contribution to long-term food security. FCI's procurement and distribution operations under the Targeted Public Distribution System (TPDS) create an extensive public marketing channel, leaving the private sector to function only in FCI's residual market. Illegitimate trade which flourishes on leakages from government food programs, however, undermine the effectiveness and raise the cost of public programs. Within the residual market, private trade is subject to erratic controls and technical shortcomings, which inevitably adds to the cost burden of India's grain growers, traders and consumers. Moreover, FCI open-market sales (OMS) of rice and wheat at below-market prices undercut trade in the already circumscribed share of the market open to private activity. GOI foodgrain marketing policies have, despite their original intent, brought into being small-scale and fragmented industries characterized by outdated technologies and associated inefficiencies.

10. The impact of GOIs foodgrain marketing policies is critical on two counts. First, by stunting private trade, it discourages much-needed modernization. Market

congestion, heavy handling and storage losses, high transport costs and low recovery rates in processing wheat and rice all reflect a marketing and milling infrastructure in great need of improved technology and infrastructure. Investments in such up-grading, however, are unlikely to come from private traders as long as government policies heighten their risks and costs by imposing unpredictable limits on their marketing margins and offer them little or no reward for raising efficiency. Second, the fiscal cost of maintaining these policies are high. At the same time that the GOI's pricing policy in the public distribution system contributes to rising fiscal subsidies, technical and operational inefficiencies in FCI operations drive up its costs and the attendant subsidies.

Policy-Induced Inefficiencies in the Private Sector

11. **Storage.** Although there are no detailed national statistics on private sector storage, most of it is known to be small-scale, low-quality structures such as covered and plinth (CAP) storage or covered godowns. CAP storage involves stacking grain in bags in a pyramid on a cement or wooden platform raised about 30 cm above the ground and covered with synthetic sheets held down with ropes. Losses from CAP could amount to as much as 20 percent. Large urban wholesalers generally operate their own godowns or lease private godowns, but even they are generally out-of-date. For the storage industry, unpredictable enforcement of storage, credit and movement controls increases storage costs and uncertainty of throughput and the ultimate value of inventories. It creates planning difficulties and increases the cost and risks of large scale storage infrastructure investments. A major factor deterring the growth and modernization of the storage industry is the overall implementation of the GOI's price stabilization program which not only reduces returns to storage but also increases uncertainty. In most foodgrain markets, price increases during the season are inadequate to make extended intra-seasonal storage profitable.

12. **Grain Markets.** Most of India's roughly 6,800 state operated wholesale markets or mandis are severely congested at harvest time. Since there is no electricity in many markets, trading ends at sunset, whether or not unsold grain remains. Usually, the only storage space is in grain dealers' shops in the periphery of the market yard. Unsold grain stays where it was unloaded (in piles covered or not) or in farmers' carts parked along the roadside. Many covered yards have leaky roofs, with interior unpaved roads turning to quagmires when it rains. The predominantly manual system and aging infrastructure result in considerable waste (especially spillage), quality deterioration and increased cost of marketing.

13. **Milling.** About 30 percent of paddy is still milled using less efficient technologies, such as hullers and shellers with recovery rates of 50 to 68 percent compared to modern rice mill's 70 to 72 percent. This reliance on less technologically efficient hullers and shellers implies that for every 100 kgs of paddy, about 4 to 20 kgs of rice become unavailable for direct consumption as it is mixed into the by-products. Of the modern rice mills, average capacity at 10 mt/hr is small by international standards. Unpredictable enforcement of various regulatory controls and of FCI open-market sales leaves operators uncertain about the value of their inventories and inhibits investment in cost-reducing technically advanced systems or various quality-raising options.

14. Wheat milling is mostly done by less efficient, small-scale operations -- about 26,000 *chakkis* -- that turn 85 percent of India's wheat into coarse brown flour. The remaining wheat is processed in 812 roller flour mills whose extraction rates (60 to 65 percent) are significantly below international norms (72-75 percent). Their finished product has a short, average shelf life of about one month, compared to about 6 months in developed countries, requiring quick sale. Further, the enforcement of multiple regulations by multiple agencies -- 18 in Andhra Pradesh, 17 in Uttar Pradesh and 12 in West Bengal -- consume

both valuable time and unofficial fees required by the inspectors.

15. **Transport.** Cost-effective transport for wheat and rice in private hands is hindered by policies which give private shippers only fourth priority for railway freight and force them to rely on more expensive hired trucks Road transport, moreover, requires passage through a large number of checkpoints for collection and verification of payment of various taxes which increase cost and reduce profitability because of inordinate delays and the payment of "speed money" Transport difficulties are among the factors that impede at least the short-run integration of India's grain markets. The impact on prices of both random open-market sales and of the equally unpredictable volume and timing of imports is also relevant.

16. **External Trade.** Stringent controls inhibit external trade. Although increasingly relaxed due to the favorable supply situation beginning in the 1990s, trade bans still appear and disappear unpredictably, depending on local grain supply and demand balances. The seemingly random shifts in part reflect weaknesses in the design of the existing price stabilization program It has led to inflated public sector stocks on the one hand and the purchase of costly unprogrammed imports on the other, increasing public storage costs and disrupting private trading operations. Even when private imports or exports are allowed, the uncoordinated implementation of government policies raises difficulties for private participation. The lack of systematic procedures for publicly announcing export privileges or quotas, issued on first-come-first-serve basis, impedes private entry into the export market.

17. **Market Support Services**. Other market support services are weak. The grading system for FCI and state-level procurement of foodgrains on the basis of their fair average quality (FAQ) rather than on the basis of differing levels of quality discourages growers and traders from improving the quality of paddy, rice and wheat. Year-to-year revisions of FAQ standards and limits which vary from state to state further add to the uncertainty and disincentives for investments in better quality management. There is a critical shortage of precise, publicly available market information, raising the transaction costs for market participants and hinders effective government planning and policy formulation.

Costly FCI Operations

18. The single largest operator in foodgrain markets is the Food Corporation of India (FCI). FCI has grown in every aspect of its operations. Employing about 65,000 employees and over 170,000 direct contract labor, it manages 1,446 storage depot centers. Procurement, for instance, has almost tripled, from 7-8 million mt in the early 1970s to 20-25 million mt during the mid-1990s, but as volume has grown, so have operating costs.

19. The report suggests that FCI's operations are increasingly costly and inefficient. GOI subsidies are required because FCI's rice and wheat marketing margins (issue price less procurement price) covered on average only 30 percent of its procurement and distribution costs. While price subsidies, especially those intended to transfer income to the poor and vulnerable through the TPDS are socially and economically justified, rising subsidies to support the deteriorating cost effectiveness of FCI are not. For example, between 1980/81 and 1994/95, aggregate FCI rice marketing cost per unit increased by 70 percent in real terms; wheat marketing costs rose by 10 percent. Personnel expenditures and storage and interest charges rose fastest (from 2 to 5 percent per year). Significant losses in storage and transport (officially reported at 1-2 percent but likely much higher) due to stock deterioration and theft add to the cost.

20 Technical and management problems contribute to rising FCI costs Extensive use of covered and plinth (CAP) storage unnecessarily increase losses and increase difficulties in implementing the first-in, first-out principle of inventory management Interviews with FCI officials suggest that half their stock is at least

2 years old; 30 percent, between 2 to 4 years old; and some grain as old as 16 years. The loss of value due to quality deterioration and aging in storage and weaknesses in inventory monitoring and control raise FCI's operating costs. More importantly, FCI has limited incentive to cut costs and improve efficiency as all its financial losses are subsidized by the GOI.

D. Options for Reform

21. The report outlines a framework for putting in place a more efficient and responsive balance in the foodgrain marketing system, built on private enterprise rather than government intervention, which could contribute to doing the job better, maintaining grain flows that will keep prices stable and promoting the investments needed to modernize transport, storage and processing.

22. India's Ninth Five Year Plan 1997-2002 indicates a readiness to move toward greater market competition, to minimize controls and to use external trade more extensively in managing grain surpluses and shortages. Those outlines of a changed policy, including plans to further improve the effectiveness of the Public Distribution System so that the food it delivers reaches the truly poor, are a welcome movement toward a marketing system in which government's role becomes more targeted and that of the private sector expands. In the long term, liberalized trade, operating as a common market in which decisions reflect access to accurate, timely information, can ensure India's food security more effectively and less expensively than the prevailing regime. Many specific reforms would be needed to build that new structure. The process of reform will not be uncomplicated. Its progress will not be unopposed.

23. Striking a new balance between government intervention and private competition would be the central purpose of marketing reform. The principal changes required must come from adjustments in the price stabilization and public distribution programs. This would involve:

(a) Improving the efficiency of the foodgrain marketing system by:

(i) Promoting private sector efficiency and investments through:

- FCI open market sales at market prices;
- Formulation and adoption of "price band" rules that allow efficient private sector participation, supported by a strengthened market information system;
- Phasing out the rice levy over the medium term;
- Fostering the development of negotiable warehouse receipt systems;
- Formulating and implementing of a competition policy to ensure fair trading practices by private traders;

(ii) Concurrently with the above, improving the efficiency and effectiveness of FCI by:

- Modernizing systems through subcontracting of activities to private sector;
- Improving management incentives for efficiency and operating under hard budget constraints;
- Putting on hold decentralization programs to state agencies until appropriate incentives are designed to ensure medium to long run cost minimization in State operations and adequate mechanisms are formulated to resolve conflicts between State and National food security objectives.

(iii) Upgrading market infrastructure and support services, such as mandi facilities, telecommunications, roads, grading and market information systems.

(b) Improving the targeting and delivery of safety nets, particularly the TPDS.

(i) Proceeding with proposed phase-out of APL allocations and increasingly relying on open market sales at market prices to cushion non-poor from price shocks.

(ii) Piloting food stamp programs in selected cities and municipalities with well-developed private markets.

24 For private traders to enjoy the degree of certainty about their activities that would enable them to invest with some confidence in modernization, India's policy and regulatory environment would need to become transparent and predictable Beyond an immediate move to open-market sales at market prices, increased private sector participation in the market could be fostered by adopting greater transparency and consistency in the food price stabilization program A revised program could maintain a "price band" -- the width between the ceiling and floor price -- which permits reasonable marketing margins for profitable private sector operations.

25. New operating rules for price stabilization interventions would need to be clearly outlined. It should cover the types and scope of policy and regulatory instruments to be used and the rules governing when they are to be enforced, triggered by price movements outside the desired "price band." Interventions should rely as much as possible on market mechanisms; not only open-market sales at market prices but also more liberalized trade, such as public tenders of imports to the private sector. To be GATT-consistent, the price band -- formulated perhaps by the Commission of Agricultural Cost and Prices -- would have to follow a long-run trend in international reference prices and replacing with tariffs the non-tariff instruments. The Minimum Support Price/floor price for foodgrains would be better linked to international prices, rather than being based largely on estimated "average cost of production"

26 As a necessary complement to this reformed price-stabilization program, Central and State authorities would need to restrain the "stop-go" imposition of market-distorting storage, movement and credit controls except when price ceilings are breached or in emergency conditions Timely, high-quality flows of market information are another necessary ingredient in a strategy oriented toward more effective price stabilization interventions (i e open market sales) and freer, more competitive grain trading.

27. These basic and overdue reforms will bring substantial savings. A mere 10 percent reduction in food subsidies could generate fiscal savings of as much as $170 million per year Simply cutting FCI's operational costs by ten percent could save as much as $139 million a year. Improved private efficiency that reduces physical foodgrain losses alone by a third could generate financial savings of as much as $60 million and make available an additional half a million mt of foodgrain per year.

Chapter 1

India's Foodgrain Markets: Old Structures Unequal to New Challenges

A. Introduction

1.1 ***Rice and wheat - the two foodgrains on which this study focuses – together account for more than a quarter of India's agricultural GDP, two fifths of the country's gross cultivated area and over three-fourths of its entire output of foodgrain.***[1] Staples vital for household food security, they supply calories that are especially crucial to the over 300 million poor (Datt 1997) and absorb on average 30 percent of per capita rural food expenditures and 20 percent of those made by urban consumers.[2] To ensure food security, the Government of India (GOI) authorities have long been extensively involved in the public procurement and distribution of rice and wheat, referred to hereafter jointly as foodgrains.[3]

1.2 ***The programs and policies designed to achieve food security, while successful in many respects, have not been as effective as hoped in reaching the poor.*** By one estimate[4], after accounting for poor targeting and leakages, less than one quarter of the grain distributed through PDS actually reaches the poor. Moreover, they have become increasingly costly. A rough estimate of the costs of the GOI's foodgrain policies (food subsidy, implicit interest rate subsidy to FCI, and the value of physical losses in the private marketing sector) is about $2 billion per year (Annex Table 1.13) As India's population grows and as growing affluence improves diets, foodgrain demand will also expand.

1.3 ***To maintain food security in such conditions and to insure adequate foodgrain supplies for the poor, India needs to reorient its approach to the marketing of rice and wheat so as to encourage greater production and far more efficient distribution.*** This report examines the workings of India's foodgrain marketing programs and policies, and recommends a reevaluation and redirection. It proposes their reform through a series of changes, which could heighten efficiency, lower cost and strengthen the prospects of India's maintaining secure supplies of foodgrains.

1.4 ***To shape that future sensibly, it is important to understand the past.*** The basic foundation of India's food policies in general, and food security strategy in particular, took root during the critical decades after independence. The primary emphasis was on food self-sufficiency, public food distribution, food price stabilization and pervasive control of the private grain marketing sector. Those early years were characterized by famines, enormous volatility in domestic foodgrain production and prices, dependence on imports and markets that performed poorly. Active and pervasive government involvement (described in Volume II, Annex A) was meant to preserve the economic, political and social fabric of the nation against the destabilizing cycles of boom and bust in domestic supplies and the accompanying drastic price fluctuations.

1.5 ***That intervention has brought India far along the road to food security --a long trek from the cataclysmic Bengal famine of 1943 when over a million people died to the attainment of average self-sufficiency in foodgrains in the 1990s.*** Investments in rural infrastructure and services and increased regional diversification of foodgrain production contributed to increased output and domestic supply stability (World Bank 1999). Better developed domestic market infrastructure (markets, roads, telecommunications, ports) facilitated faster response to crisis situations. Sustained economic growth has also helped reduce poverty significantly from 50 percent (head count index) in the 1960s to 35 percent in the 1990s (Ravallion and Datt 1995, World Bank 1997b). Although there is much room for improvement, tighter targeting of some safety net programs is helping the Public Distribution System, for example, to shelter the poor from price and income shocks (Department of

Consumer Affairs and Public Distribution 1996). Outside India, developments such as the General Agreement on Tariffs and Trade (GATT) offer opportunities for diversifying food security instruments. The increasingly globalized trade environment and rapid communication make external trade a more useful instrument for managing both domestic surpluses and occasional shortfalls.

1.6 ***In such a setting India has less need for and cannot indefinitely afford a foodgrain policy regime that is a legacy of harsher times and fewer viable alternatives.*** The costs are too high. The fiscal cost of food subsidies for wheat and rice (and relatively minor outlays for sugar) is second only to subsidies for fertilizer as a drain on tax revenues. The social cost of policies, which fail to distribute food and other help according to real need, is also mounting. And the economic cost of restrictions that inhibit the functioning of competitive foodgrain markets falls on producers, consumers and the poor. More measured government regulation could reduce marketing costs and margins, thereby producing savings that could be passed on both as higher farm prices for producers and as lower food prices for consumers. Effective markets could also add to household food security, by responding quickly to local shortages and price rises through rapid movement of domestic or imported grain.

1.7 ***That is not, however, the way the current, two-track system now functions.*** Private markets, which handle between 30 and 50 percent of wheat traded and 50 to 60 percent of rice traded in India, tend to use relatively primitive facilities that result in heavy losses -- 5 percent on average - of the grain either when it is being stored or shipped. For its part, the 34-year-old Food Corporation of India, a large parastatal agency that is the principal executor of government policies in foodgrain marketing is the channel through which roughly half of India's marketed wheat and rice move. Its losses, due to poor handling and storage are also believed to be heavy. FCI combines its procurement, storage, transport and distribution activities with responsibilities for supporting farm prices, for supplying grain to the Public Distribution System and other GOI food programs (See Annex B) and for carrying out buffer stocking operations to stabilize prices. To support these programs, a large number of Central and State-level regulations affect private buying and selling. Private mills, for example, must make forced rice deliveries (levy) to the government at below market prices. Additional controls affect price, movement, storage, credit, mill-size (until 1997) and external trade.

1.8 ***One way or another, many of these interventions distort the foodgrain marketing system on which this study focuses.*** While commenting briefly on the operations of the Targeted Public Distribution System (TPDS), on price support and price stabilization programs, this report's three principal chapters concentrate on the performance of the public and private sectors in the marketing system and on the opportunities for reforming that system. The report looks at foodgrain production, the overall structure of the marketing system and the workings of the policy regime that shapes that system, especially the regulatory, infrastructural and institutional constraints on sound performance. Drawing primarily on experiences in the States of Punjab, Uttar Pradesh, Andhra Pradesh and West Bengal, that often reflect countrywide realities, the study presents options for future improvement and is accompanied by a separate Volume II with Annexes and reference tables and figures.

B. Production Performance

1.9 ***India made great strides over the last three decades in producing foodgrains and achieving "on average" foodgrain self sufficiency.*** By 1998/99, rice and wheat output reached 82.2 and 69.1 million mt respectively (Economic Survey 1998-99), compared to 37.6 million mt and 16.5 million mt in 1967/68 at the dawn of the Green Revolution (Figure 1.1). Between 1967/68 and 1995/96, wheat output grew at a rate of 4.7 percent per annum, while rice output rose 2.9 percent per annum (Economic Survey 1996-97), exceeding the population growth rate of 2.1 percent per annum over the same period. Per capita availability of rice and wheat per day went from about 280 grams in 1967/68 to 400 grams in

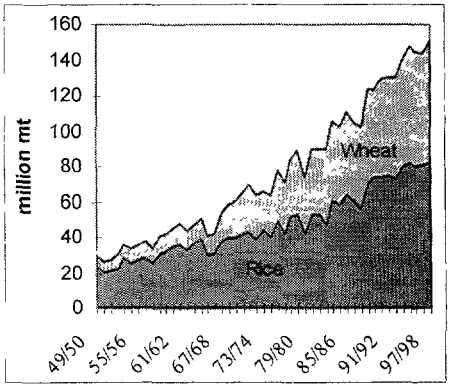
1995/96.[5] Acute famines in India have practically been eliminated, thanks to increased food availability at the national level, improving early warning systems and expanding infrastructure for more rapid transport of foodgrains to needy areas.

1.10 ***Growth in rice and wheat yield, more than expansion of area cultivated, was a primary force behind this progress, especially since the late 1970s*** (Annex Table 1.1 and 1.2). By some estimates, over 50 percent of output growth in the post-Green Revolution Period came from increased total factor productivity (TFP--the productivity of all inputs combined; Rao and Gulati 1994), although there is some evidence of a slowdown in TFP growth in the 1990s. The supply boom-bust pattern has greatly moderated as production variability more than halved (Annex Tables 1.3 and 1.4a&b). Wheat production, 85 percent of which is irrigated, remains highly concentrated-- 90 percent -- in the North (Punjab, Haryana and Uttar Pradesh) and Central (Madhya Pradesh and Rajasthan) Regions (Annex Figure 1.1). Rice production, 50 percent of which is irrigated, is more regionally diversified. The Northern Region registered the fastest growth over the last two decades, nearly doubling its production share to 25 percent (Annex Figure 1.2). While wheat grows only in the Rabi season (October to March), rice crops can be harvested, depending on the region, one to three times per year. The bulk, 90 percent, however is grown during the *Kharif* (June to October) season, with the rest produced in *Rabi* or *Aman* (March to July).

C. Structure of the Foodgrain Marketing System

1 11 ***India's farmers keep roughly 60-70 percent of the rice and wheat they grow for seed, animal feed or for their own consumption.*** Of the amount they sell, a little less than half (22 million mt in 1997/98) is handled by the public sector and the rest by private trade (Annex Figures 1.3 and 1 4). While wheat trades are voluntary, government takes two-fifths to half of the marketed rice as a low-priced levy or forced procurement on the output of mills.

Figure 1 1 Rice and Wheat Production 1949/50 to 1997/98, million mt



Source Directorate of Economics and Statistics, *Agricultural Statistics at a Glance,* various issues, GOI, *Economic Survey 1997-98* See Annex Table 1 3 for area, yield, and percentage area irrigated

1.12 ***The agency that exacts this levy and, in general, executes GOI food policies is the Food Corporation of India, established by Parliament in 1965 under the Food Corporation Act of 1964.*** FCI implements the rice and wheat price support program through its procurement operations. It also handles, stores and distributes rice and wheat for the Targeted Public Distribution System and other GOI food programs (Annex B) [6] and stabilizes domestic foodgrain prices through buffer stock operations, open market sales and external trade. State Civil Supplies Departments and other State procurement and distribution agencies assist FCI in these tasks. [7] GOI covers the difference between FCI's selling price (called the issue price) and its procurement price plus costs of handling, storage, etc. through a central food subsidy.

1 13 ***Whether public or private, wheat marketing follows identical parallel trading arrangements with the private sector handling from 30 to 50 percent of the grain that is traded*** (Annex Figure 1.3). The rest moves through the public channel--FCI and other state agencies. Purchases by private traders and FCI agents take place in mandis (state operated "regulated" wholesale markets) and other buying centers. Farmers who sell voluntarily to FCI receive pre-announced uniform procurement prices (with uniform specifications for quality). FCI's wheat is then distributed to consumers without further processing through fair price shops and other government programs

at below-market prices.(Annex Table 1.9). Most private-sector wheat is also sold directly to consumers for subsequent custom milling at neighborhood *chakkis* (small scale traditional grinding units), although private flour mills take a smaller but increasing share. Once milled, flour is sold to wheat product manufacturers (e.g. bakeries and biscuit manufacturers) or to wholesalers for domestic distribution through retailers to consumers.

1.14 ***More complex and coercive, rice marketing divides between private traders buying 40-60 percent of the marketed surplus in mandis, through agents or directly from farmers and the forced procurement or "levy" FCI obtains from private rice mills*** (Annex Figures 1 4). Mills must deliver from 7 to 75 percent of their processed output, depending on the state, at pre-determined below-market procurement prices to FCI or its agencies. FCI covers a smaller share of its rice requirement through direct paddy purchases from regulated markets (limited mainly to Punjab, Haryana, Uttar Pradesh, and Tamil Nadu). The paddy is then custom-milled into rice by private mills (Annex Table 1.10 and 1.11) for distribution, like wheat, through subsidized public programs. Milled rice from private mills flows through wholesalers and retailers to domestic consumers or for export

1.15 ***Although several government ministries oversee the functioning of the foodgrain marketing system, the Ministry of Food and Consumer Affairs (MOF) has the primary responsibility for managing the food economy.*** It is charged with the formulation and implementation of national policies on procurement, movement, distribution and stocking of foodgrains, provision of storage facilities for the foodgrain strategic reserves and control over external trade of foodgrains (MOF, 1997). The MOF oversees the operations of FCI. The Ministry of Food Processing Industries regulates the rice and wheat milling industries, while the Department of Rural Development of the Ministry of Rural Areas and Employment, until recently worked with state governments in fostering the growth and development of the regulated markets system. This responsibility has been transferred to the Department of Agriculture and Cooperation. This latter department in the Ministry of Agriculture, gathers statistical and economic agricultural data (including output, prices and market arrivals) and is responsible for formulating and implementing national policies and programs for achieving agricultural productivity growth. The Commission of Agricultural Costs and Prices, within the Ministry of Agriculture, recommends minimum support prices for the main foodgrains.

D. Need for Reform

1.16 ***India's foodgrain marketing system is fiscally expensive.*** The fiscal cost of the explicit food subsidy has escalated--on average 0.6 percent of GDP between 1981/82 and 1996/97 and, in the dozen years since 1985/86, equaling on average about 8 percent of GOI's total fiscal deficit.

1 17 ***Costly as they are, the government wheat and rice programs are not very effective in getting food to those who need help the most--the poor.*** They have been too effective, on the other hand, in stifling the growth of foodgrain markets, hampering their ability to meet the rising demand for, and quality of services expected by producers and consumers.

1.18 ***A large and increasing food subsidy that is poorly targeted contributes to fiscal pressures.*** One concern is financial. In 1998/99, food subsidies (including sugar) alone are estimated to reach Rs 90 billion or $2.2 billion (World Bank 1998c). A significant share of the total underwrote FCI operations. Over and above the Central food subsidies, some states are paying for food-subsidy schemes that are hard to sustain financially but politically difficult to stop. Rice subsidies in Andhra Pradesh, for example, cost the state government 1 percent of SDP each year (World Bank 1997a), while Karnataka incurs an additional food subsidy of 0.3 to 0.5 percent of SDP (World Bank 1998a).

Box 1.1: Operations of the Targeted Public Distribution System

The Targeted Public Distribution System (TPDS), while continuing the subsidized distribution of foodgrains, differentiates between above- and below-poverty- line households that the PDS lumped together Designed to improve the effectiveness of the GOI's food distribution safety net, the GOI, through TPDS, commits to make available 10 kg of foodgrains per family per month to below-poverty-line (BPL) households at highly subsidized prices The States also receive some transitory allocation for the above-poverty-line (APL) households amounting to the difference between the average 10-year allocation less the BPL allocation The GOI supplied wheat and rice to States in 1997/98 at the following Central Issue Prices Rs 2 5/kg for wheat and Rs 3 5/kg for common and fine rice for BPL households APL grain is issued at Rs 4 5/kg for wheat, Rs 7/kg for fine rice and Rs 5 5/kg for common rice These prices are about 25-30% below open market prices and also below the average FCI economic cost-- Rs 9 2/kg for rice and Rs8 7/kg for wheat

Allocations across states for BPL households, formerly made without reference to the incidence of poverty, are now determined by state poverty levels (using the Planning Commission Expert Group's estimates) Under the new system, explicit attention is paid to poverty in determining at least the highly subsidized BPL allocations The actual identification of the BPL households is left to the states under broad GOI guidelines While APL households have universal access to TPDS, their rice and wheat issue prices are intended to remain close to open market prices FCI supplies foodgrains to states at various centers across the country, and in most states, stocks are lifted by the State Government or their nominees such as State Civil Supplies Corporations and State Marketing Federations for sale at Fair Price Shops (private retail outlets which operate on commission basis) The final size of the rations is determined by the states The end retail price for BPL allocations cannot be more than 50 paise per kilo higher than the Central issue price, but states have discretion in setting APL retail prices

Source Government of India, 1997, *Focus on the Poor, Guidelines for the Implementation of the Targeted Public Distribution System*, and Ministry of Finance, *Economic Survey 1997/98*

1.19 ***If those funds were actually weaving a strong social safety net, the outlays might be easier to justify.*** The evidence, however, points the other way. The Public Distribution System (PDS), in particular, is widely criticized for its ineffectiveness in reaching the poor and for its escalating costs. By one estimate, after accounting for poor targeting and leakages to the open market, less than one-quarter of the grain distributed through the PDS actually reaches the poor (Ahluwalia, 1993). Radhakrishna and Subbarao (1997) find a minimal impact on poverty reduction and estimate that without PDS, poverty would increase by only 2 percentage points and PDS costs the GOI Rs 4.27 to transfer one rupee of income to the poor (Annex G) Realizing these shortcomings, the GOI launched the Targeted Public Distribution System (TPDS) in July 1997 as a way to differentiate between Above Poverty Line (APL) and Below-Poverty Line (BPL) households and instituted a two-tiered pricing system for the different groups. Distributing rice and wheat at considerably lower prices to the Below Poverty Line population (Box 1.1), the total TPDS allocations of nearly 23 million tons in 1997/98 accounted for over 90 percent of FCI food distribution operations. A promising reform in safety net operations, the TPDS also opens opportunities to reevaluate grain marketing policies.

1.20 ***The impact of extensive government controls on marketing clearly calls for such reevaluation.*** Aside from the heavy fiscal cost, numerous GOI policies and instruments, discussed more fully in Chapter 2, have inhibited private investments that could modernize grain handling and reduce the cost and the high – typically estimated at 10-15 percent -- post-harvest handling, storage and transport losses that characterize the existing system. In Australia and Canada, by contrast, post-harvest grain losses are less than 1 percent; in China they are typically estimated at 3-7 percent (Vercammen et al, 1997).[8] A recent study (Chauhan, 1998) estimates foodgrain post harvest losses in India of about 7 to 10 percent at the farm to market level, compounded by another 4 to 5 percent at the marketing and distribution level. For the system as a whole, the leakage equals about 12 to 16 million mt of grain per year -- including 3 to 4 million mt of wheat and 5-7 million mt of rice. With average per capita consumption of about 15 kg of foodgrains per month, these losses are enough to feed about 70 to 100 million people, about one-third of India's poor, or the states of Bihar and Haryana, for almost a year. At the marketing level alone, public and private physical losses of rice and wheat in 1996/97 are estimated at 1.3-1.8 million mt, worth $213-287 million (Annex Table 1.12). Pervasive controls that discourage modernizing investments are largely responsible for the inadequate infrastructure and logistical capacity of the

marketing system. As capacity lags behind the demands of a rapidly growing domestic foodgrain supply, the marketing system incurs higher costs than necessary, penalizing producers, consumers and the poor

1.21 ***The growing domestic requirement for foodgrains will require extensive modernization that will provide grain to consumers cost effectively and in a timely manner.*** Among the recent projections of substantial higher domestic foodgrain demand, the Food and Agricultural Policy Research Institute (FAPRI, 1997) forecasted domestic consumption of rice and wheat to reach about 164 million mt by 2005/06, with India becoming a net importer of wheat (Annex Tables 1.7 and 1.8). Mohanty, Alexandratos, and Bruinsma (1998) project rice and wheat demand of about 200 million mt by 2015. Kumar (1998) projects rice and wheat demand to rise to levels ranging from 222 to 227 million mt by 2020, based on annual GDP growth rates of 4 to 7 percent. Bhalla and Hazell (1997) paint an even more serious picture by 2020, assuming the elimination of poverty and/or the intensive growth of livestock rearing. Their preliminary results see cereal demand reaching 350 million mt even without poverty elimination by 2020 and 370 million mt if eliminated.

1.22 ***In any of these future scenarios, the volume of domestic or imported grain to be handled by the foodgrain marketing system will rise dramatically.*** Raising the marketing sector's capacity to perform its tasks in the most efficient and cost effective manner possible will be critical to satisfy the needs of both rich and poor consumers. Markets will have to cut the already substantial grain losses, gear up to meet the growth in domestic supply and demand, and also prepare for possible large imports. The existing obstacles to such improvement are examined in greater depth in the next chapter.

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[1] Other foodgrains include the coarse cereals (such as sorghum, bajra, ragi, millet) and pulses (such as gram, mung bean, chickpea)

[2] Rice and wheat account for 20 percent of rural and 15 percent of urban total per capita expenditures

[3] There is a limited state level public procurement and distribution of other grains, notably sorghum However, rice and wheat clearly dominate with over a 95 percent share in the total publicly handled foodgrains in the country

[4] Ahluwalia, D (1993)

[5] Overall per capita foodgrain availability, including other cereals and pulses increased from 460 to 500 grams per day, boosted by the rapid growth in rice and wheat output

[6] In addition to the TPDS which accounts for over 90 percent of rice and wheat distributions, FCI channels rice and/or wheat to the Jawahar Rojgar Yojana (JRY, a food-for-work program), nutrition/feeding programs, scheduled castes and scheduled tribes and backward class hostels, below-poverty-line food processing units, Modern Food Industries Ltd and its franchise units, mid-day meals programs, the World Food Program Projects and the Indian military and defense units (See Volume II Annex B for details)

[7] In Punjab, for example, 4 state agencies and parastatals assist FCI--the Food and Supplies Department, the Punjab Cooperative Supply and Marketing Federation Ltd (MarkFed), Punjab Civil Supplies Corporation (Punsup) and the Punjab State Warehousing Corporation (PSWC)

[8] Grain losses are notoriously difficult to estimate accurately However much of the literature, plus anecdotal evidence, does suggest that losses in the Indian foodgrain marketing system are very high

Chapter 2
Foodgrain Marketing:
The Impact of Policy on Performance

A. Regulating Foodgrain Markets

2.1 ***To achieve its multiple food policy goals, the Government of India adopted a highly interventionist approach to foodgrain markets.*** A host of government interventions circumscribe trading, transport, storage, quality, processing and distribution of wheat and rice. As implemented, these policies create a dual "public-private" market (Table 2.1) in which private sector activity and growth is stunted by public policy. By itself, that imbalance ensures an inefficient process. Further distorted by physical and technical deficiencies and pervasive petty rent-seeking, the marketing system works against the interests of farmers and consumers and could jeopardize India's quest for long-term food security.

2.2 ***At the start of the process and with the aim of ensuring farmers a remunerative return, the Food Corporation of India procures wheat and, to a lesser extent, paddy*** (equivalent to 20% of total rice procurement). They are purchased at a pan-territorial and pan-seasonal minimum support price (MSP).[8] The MSP operates in practice only during the harvest season as a cushion against sharp price declines. In addition to imports, FCI purchases are also the primary means of acquiring wheat needed for public food distribution programs and for buffer stocks.

2.3 ***For rice, the heaviest intervention – resulting in a two-tiered pricing system – takes the form of various State Levy Control Orders.*** These Orders require private mills to deliver from 7 to 75 percent of their rice output to FCI and to state governments for the public distribution system and buffer stocks.(Annex Table 2.1).[9] In 1998, the Government of West Bengal also began imposing a 5 mt per year levy on rice hullers in the State. For these deliveries, the mills receive a State-prescribed pan-territorial and pan-seasonal levy price (Annex Table 2.2) that is based on the MSP for paddy plus "average" rice milling costs and a "margin" of profit for the millers (CACP 1998). Only after meeting levy commitments, from which rice hullers and shellers (Box 2.3) are generally exempt, can private mills sell their remaining rice output in the open market. At the retail level; public sector stocks of rice and wheat are sold to poor and non-poor consumers through fair-price shops at below-market pan-territorial and pan-seasonal prices. For both rice and wheat, FCI now resorts to open market sales at below-market prices to dampen sudden price spikes. In some states, however, it has transferred (West Bengal), or is considering (Uttar Pradesh) transferring, grain procurement and distribution responsibilities entirely to state agencies.

2.4 ***On top of central price support and government procurement, India's states have regulated the marketing of agricultural produce, including wheat, rice and paddy.*** Under various Agricultural Produce Market Acts, a network of state-controlled "regulated" wholesale markets (*mandis*) are meant to work to improve the efficiency of marketing, so as to foster competition and promote fair prices for growers (Box 2.1). Most of these facilities, however, provide only the most primitive weighing, grading and storage services, and harvest-time congestion turns them into time-and-money-draining bottlenecks for farmers. Some states (such as Punjab, Uttar Pradesh and Haryana) go so far as to make it illegal to sell through alternative outlets (e.g. directly to mills). For its services, the regulated marketing system charges buyers a marketing fee (0.5 to 2% *ad valorem*), collected in some states (e.g. UP) at every point of sale and often evaded.

Table 2 1 Regulatory Controls on Private Grain Trade

Policy/Regulation GOI	State	Market Implication	Territorial Coverage
I. Rural Wholesale Markets			
Essential Commodities Act 1955		FCI panterritorial Minimum Support Price	All India-adjusted yearly
	Agricultural Produce Market Acts	Restricts farmer marketing channel to State regulated markets	Most States
		Multi-point market fees and sales tax	UP
II. Transport			
Essential Commodities Act 1955		Restricts interstate movement, sporadically enforced in recent years	All India. lifted/sporadic
Jute Packaging Materials (Compulsory Use in Packing Commodities) Act		Restricts transport of rice and wheat intended for retail sales to gunny bags	All-India
	Sales Tax Legislation	Unequal taxation discourages interstate movement	Most states
	State Paddy/Rice(Restrictions and Movement) Order	Restricts intra or interstate movement	Paddy Orissa,Tamil Nadu, Rice. AP -
III. Storage			
Essential Commodities Act 1955	State Storage Control Orders	Imposes stock quantity limits, frequent revised and sporadically enforced in recent years	All India lifted/sporadic
		Uncertainty discourages banks from accepting warehouse receipts	All-India
Negotiable Instruments Act		Restrict use of warehouse receipts as a financial instrument to CWC	All-India
RBI Selective Credit Controls		Restricts access by setting working capital borrowing limits, frequently revised	All-India lifted/sporadic
IV. Grading			
Agricultural Produce (Grading and Marking) Act, 1937		FAQ grading standards periodically relaxed, differentiated across states	All-India
Prevention of Food Adulteration Act (1954)			
V. Processing			
	State Levy Control Orders	Forced rice mill output (7-75%) delivery to FCI	Most states,
		Restricts open mkt sales till levy commitment filled	Most states
		Fixes processing margins of levy rice	Most states
Rice Milling Industry (Regulation and Licensing) Act 1959		Restricts rice milling to small-scale firms	All India-abolished 1997
		Amendment prescribes modernization of hullers & hullers/shellers	All-India
	New Rice Mill Incentives	Levy and sales tax exemptions to new mills	Some states (Eastern UP, WB)
VI. Distribution			
Essential Commodities Act, 1955		Price Stabilization through buffer stock operations, sporadic FCI open market sales at below market prices	All-India
		Distribution of rice and wheat at subsidized prices (TPDS)	All-India
		Export quota on non-basmati rice and wheat products, sporadic export restrictions and bans All imports canalized, sporadic lifting	All-India
Forward Contracts (Regulation) Act 1952		Bans on futures trading of rice and wheat Basmati futures approved	All-India
	State Licensing Acts	Requires licenses for dealers and traders, prescribes storage limit	Most states

Box 2.1:State Agricultural Produce Markets Act and Mandi Structure

The Agricultural Produce Markets Act prescribes the setting up of *mandis* for agricultural products and the establishment of Marketing Committees, charged with managing the respective markets (Annex Table 2 3) The mandi committee includes representatives from farmers, traders, local government bodies and other government bodies such as FCI The Market Committees control and regulate admissions to the markets, charge fees (market and license fees) and issue, renew, suspend or cancel licenses (Annex Table 2 4) In many states, these Committees are supervised by State Agricultural Marketing Boards responsible for state-wide market development Others have Advisory Boards or no Boards The Marketing Board consists primarily of representatives from government In UP for example, ten government officials, a representative from academia, six market committee representatives and two traders make up the Board Revenues generated under the Act are supposed to be allocated for the operation and development of respective markets Market Committee Funds are for the operation and maintenance of market yards and related facilities Market Development Funds support the development and improvement of market infrastructure (market yards, storage, grading, packaging facilities) and market services (market information and intelligence, verification of weights and scales)

2.5 ***Movement and storage controls as well as limits on credit set further restrictions on private market operations.*** Dating from the Essential Commodities Act (EC Act) 1955 and intended to facilitate government food distribution and price stabilization programs, a variety of GOI and State Orders control and regulate the marketing and distribution of specific commodities to ensure the availability of essential mass consumption items at reasonable prices. For foodgrains, the Order for movement control is currently lifted, but the GOI and states impose such bans with no advanced notice and for any length of time. One was temporarily activated for wheat in 1996/97.

2.6 ***Traditionally, these restrictions bottled up grain supplies so as to hold market prices down enough to ensure supplies for the public distribution system and buffer stocks.*** Usually, controls require private traders to obtain a government permit to transport grain out of a particular state or district, but criteria vary by state, and permits generally become more difficult to obtain when public procurement lags. In addition, Andhra Pradesh, Tamil Nadu, Orissa and West Bengal have instituted state-specific restrictions.[10] In Andhra Pradesh, of the 50 percent "non-levy" rice, only half can be exported outside of the State and only with payment of a transport tax. The Andhra Pradesh government lifted the movement restriction for the 1997/98 season and reduced the "transport fee" from Rs100/mt to Rs 10/mt. In the Thanjavur district of Tamil Nadu, where government has a procurement monopoly, paddy cannot move out of the district.

2.7 ***Storage Control Orders under the EC Act that limit foodgrain stockholdings by private traders also vary depending on the severity of supply shortfalls and price rises.*** These Orders may be changed drastically over short periods of time. Any private trader owning excess stocks has 15 days to comply with the limits. Currently lifted, such Orders were last enforced temporarily in 1996/97, setting ceilings at 15 days of the operational requirement. In addition, state licenses prescribe storage ceilings for traders and millers of paddy, rice and wheat (Annex C).

2.8 ***Credit controls, implemented by the Reserve Bank of India (RBI) under the Selective Credit Control Policy, are another instrument for preventing private traders from driving prices up by holding stored grain (and other commodities) back from the market.*** The RBI issues directives to the Scheduled Commercial Banks[11] from time to time to regulate credit by limiting margins against the value of security of commodity stocks and resetting credit ceilings and interest rates. Margins and credit ceilings operate at the level of the individual borrower. Margins refer to the proportion of advances permitted to the value of stocks. Ceilings relate to the peak level of advances attained in any of the three preceding years by the borrower Table 2 2 highlights the frequency and unpredictability with which these terms were revised between 1990 and 1997. A related issue is the way in which FCI also crowds out the private sector in the formal financial system During the early to mid-90s, private trade credit amounted to only 6 to 25 percent of trade credit extended to the FCI

(Annex Table 2.24). While inhibiting speculative commodity trading, these factors also discourage investments in efficient, modern storage facilities.

2.9 ***External trade policy – specifically, the FCI's traditional (but recently and intermittently relaxed) monopoly on rice (excluding Basmati[12]) and wheat imports--also supports price stabilization programs and national food security.*** Exports of rice and wheat/wheat products were liberalized in 1994, banned in 1996/97 and permitted subject to quota in 1997/98 (Annex Table 2.5a&b) Flour millers in 1996 and in 1997 (through the State Trading Corporation) were temporarily allowed to import, but private imports were insignificant (para 2.39). Concerns about declining government stocks, high domestic prices and anticipated higher TPDS requisitions prompted the GOI to permit private imports of low-quality rice for a short period Because of high world prices, however, no private imports arrived. Import tariffs for rice and wheat are currently set at zero. The Uruguay Round ceiling binding for wheat and wheat products is 100 percent and for rice zero percent. In 1997/98, when concerns about domestic supplies abated, export quotas of 500,000 mt were set for wheat and wheat products and 1 million mt for non-basmati rice, effective until March 1998

2.10 ***A ban on futures contracts, except for "spot" contracts requiring delivery and payment within 11 days for purchases of common paddy, rice and wheat; controls on packaging and the unequal sales tax rates set by different states for foodgrains also complicate grain marketing.*** Limiting opportunities to hedge risks in private trade, the Forward Contracts Regulation Act 1952 regulates the use of forward and futures contracts.[13] Although the GOI in January 1998 cleared a Kabra Committee proposal for futures trading for basmati rice, contracts for common rice will not benefit from the change. And jute bags will remain the only legal retail packaging material for paddy, rice and wheat as long as the Jute Packing Materials (Compulsory Use in

Table 2 2 Minimum Margins, Level of Credit Ceilings and Lending Rate on Bank Advances to Private Sector (excl Cooperatives) for Rice and Wheat, under Selective Credit Controls

PADDY/RICE						
Effective	Minimum Margins			Credit Ceiling		Lending
Date	Mills1/	Others2/	Warehouse Receipts	%	Reference Period 3/	Rate
Sep-91	60%	75%	60%			
Oct-91						20%
Mar-92						19%
Apr-92				70%	90/91	
Oct-92						18%
Mar-93						17%
Apr-93	45%	60%	45%	85%	91/92	
Jun-93						16%
Sep-93						15%
Oct-93	30%	45%	30%	100%		
Oct-94	Lifted					
WHEAT						
Jul-90	SCC reintroduced					
	30%	45%	30%	100%	89/90	
Oct-91				85%		20%
Feb-92	45%	60%	45%			
Mar-92	60%	75%	60%			19%
Apr-92				70%	90/91	
Oct-92						18%
Mar-93						17%
Apr-93	45%	60%	45%	85%	91/92	
Jun-93	30%	45%	30%	100%		16%
Sep-93						15%
Oct-93	Lifted					
Apr -Jul 97	45%	60%	45%	100%	95/96	
Aug-97	Lifted					

Note 1/Includes mills and processing units 2/ Mainly trade 3/ Three years ending the year listed
Source RBI, *Report on Currency and Finance*, Economic Review, various issues

Packing Commodities) Act remains in force to protect jute growers and processors.

2.11 ***Quality standards that the GOI changes annually[14] and that discounts substandard produce without rewarding high levels of quality hampers operations in rice and wheat markets.*** The fair average quality (FAQ) system sets upper limits on items such as foreign material content, broken grain percentages, moisture content, etc. (Annex Tables 2.6 to 2.8 list the FAQ tolerance limits for 1997/98 for various quality characteristics.) Discounts are imposed on grain up to the rejection limit. The system gives no premia, however, for better quality foodgrains falling within or above these limits. The Agricultural Produce (Grading and Marking) Act 1937, which provides for grading and marking of agricultural commodities, empowers the GOI to fix quality grades, authorizes specific parties to grade a product, specifies conditions related to marking and packaging, confiscation and disposal of sub-standard produce Grading for rice and wheat is currently voluntary. The Prevention of Food Adulteration Act 1954 (PFA Act) sets standards for the maximum limits of admixture of hazardous substances and guards against adulteration of foodgrains with inferior quality, cheaper or contaminated substances.

2.12 ***In 1997, the Rice Milling Industry (Regulation and Licensing) Act, which required that rice be milled in small-scale[15] operations was abolished by the GOI.*** (The flour milling industry was delicensed in 1986.) Originally intended to foster more labor intensive growth in rural areas, the small-scale reservation finally gave way to the greater efficiency of modern mills relative to shellers and hullers and the need to foster increased modernization of the rice milling industry. In addition to repealing the Act, a scheme for the modernization of single hullers is being implemented in 15 states where huller owners each get grants of Rs15,000 for the modernization of their units. Some states also provide special incentives to encourage the establishment of new mills in desired areas. In Eastern UP, for example, new mills benefit from sales tax (4%) waivers and a graduated five-year levy starting at zero in the first year and then rising annually by 10% each year after.

B. Impact of GOI Food Policies on Private Markets: Fragmentation and Poor Performance

2.13 ***Through the FCI's procurement, distribution, and buffer stocking programs, Government of India repressed private foodgrain marketing, hindering their potential contribution to long-term food security.*** Figure 2.1 illustrates how the GOI price support, TPDS, and price stabilization operations have come to substitute for the private sector.

2.14 ***First, FCI's procurement and distribution operations under the TPDS create an exclusive public marketing channel where private trading could otherwise operate.*** The narrow "marketing margin" under which subsidized TPDS operations occur precludes private competition, leaving it to function only in FCI's residual market. Second, FCI open-market sales (OMS) of rice and wheat at below-market prices or its commodity dumping operations, until recently, undercut trade in the already circumscribed share of the market open to private activity (Annex Table 2.23). FCI's open-market sales can be sizable. From 1990/91 to 1995/96, its cereal open market sales (including coarse grains) ranged from 50,000 to 6 million mt or 1-30 percent of cereals handled by FCI and 1-20 percent of total marketed surplus (Radhakrishna and Subbarao 1997). Foodgrain leakages in the former PDS, amounting to as much as 38 percent for rice (Ahluwalia 1993), further crowd out private trade, which – as noted in the previous section – is already stunted by policies and regulations on movement, storage and credit.

2.15 ***Erratic controls and technical shortcomings pervades India's foodgrain marketing system, which inevitably burdens India's grain growers, traders and consumers with costs that a smoother, more modern***

operation would not incur. As the following detailed discussion of storage and handling, mandi congestion, milling, transport and exports and imports documents, GOI foodgrain marketing policies, whatever their original intent, have brought into being small-scale and fragmented industries characterized by outdated technologies and associated inefficiencies. Such a structure, so fragile and antiquated, is unlikely to meet India's long-term food security needs.

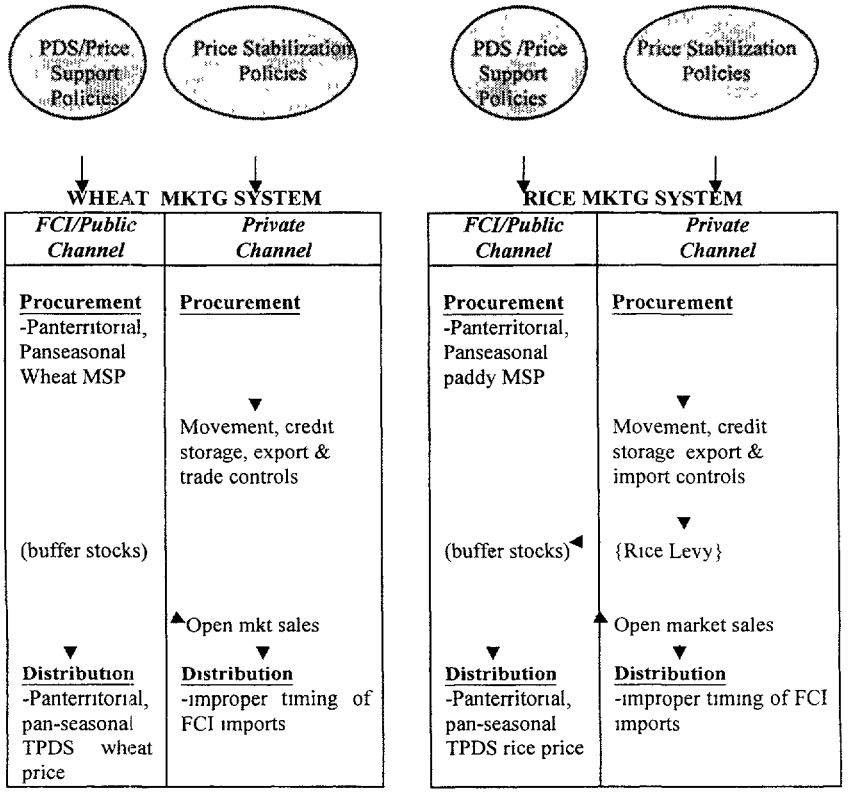
Storage and Handling

2.16 ***Although there are no detailed national statistics on private sector storage,[16] most of it is known to be small-scale, low-quality structures such as covered and plinth (CAP) storage[17] or covered godowns.*** These are used by both grain dealers and millers in rural areas. Large urban wholesalers generally operate their own godowns or lease private godowns, but even they are generally out-of-date. Only the FCI uses bulk storage. Despite the findings of a 1976 pilot project that a reinforced concrete silo manned by skilled (and expensive) labor could save 20 percent of the costs of a godown of comparable capacity (Araullo et al. 1976), the private sector has built few (if any) large, modern, cost-effective storage facilities.

2.17 ***Experience in other countries also indicates the economies of more modern storage***. For example a comparison of the economics of bag and bulk storage from the Sri-Lanka Paddy Marketing Board found that the operational cost of a 3,000 mt bulk paddy storage unit was 40 percent lower ($3.21/mt) than a similar capacity bag godown ($5.21/mt) (Wimberly 1983). Bag storage entails greater losses from insects, rodents, birds and environmental control problem, is more supervision (labor) intensive, slower, prone to spillage/theft and requires expensive bags.

2.18 ***Grain that is stored in such conditions is also handled almost entirely by manual labor.*** Transported, moved and stored almost 100 percent in bags that usually weigh 95 kg, at every stage and in almost every case the foodgrain is shifted manually. Simple mechanical equipment could increase efficiency considerably, reduce the losses inherent in the use of hooks and greatly reduce

Figure 2 1 Foodgrain Policies and the Foodgrain Marketing System



the physical burden on laborers. However, portable conveyers, forklift trucks and similar devices are hardly used in India. Globally, bulk transport, handling and storage reduce costs and losses and facilitate accurate inventories. In India, however, the risk, uncertainty and low returns produced by regulatory policies deter investments in these and other improvements

2 19 ***Among those policies, direct and indirect government interventions to achieve price stabilization increase the cost and reduce the profitability (the economies of scale) of private storage.*** First, since unpredictable FCI open-market sales intended to "stabilize" prices do not reflect the full cost of storage, they increase the uncertainty of returns to storage. Second, licenses restrict traders' or processors' storage capacity (Annex Table 2.40). To ensure that traders comply with the quantity ceilings and to monitor private stockholdings, the Civil Supplies Departments require reports of stock levels every 15 days, increasing transaction costs To get around the ceiling prescribed by each license, traders often obtain multiple licenses by showing a "separate storage" per license even though doing so requires them to absorb the cost of multiple reports. Third, even if state ceilings are ample, under the Essential Commodities Act, the GOI can impose any level of storage limit at any time it deems necessary, often forcing traders to sell at a loss. Fourth, in the case of rice mills until 1997, the small-scale reservation precluded large storage capacity (para 2.12). Finally, the arbitrary changes in ceilings for trade financing under the RBI Selective Credit Controls and movement controls under the Essential Commodities Act increase uncertainty regarding the volume of stocks that can be held, enlarging the risk that any large facility will find its capacity underutilized

2.20 ***GOI interventions dampen seasonal price increases, reducing the profitability of storing.*** The seasonal price index, a rough measure of whether seasonal price increases adequately cover storage costs—approximated by the cost of working capital of 15 percent,[18] also is a guide to the incentives (or their absence) for private foodgrain storage. Reflecting the price-dampening effect of government interventions, a recent study (Puri 1996) of 15 wheat wholesale markets for the years 1991-95 found seasonal price increases covering intra-seasonal storage costs in only 5 markets (Annex Table 2 25). And rice markets are even harder hit with only 4 out of 18 examined returning farmers and traders seasonal earnings high enough to meet intra-seasonal storage costs (Annex Table 2.26). The paucity of on-farm and other storage facilities contributes in turn to congestion in assembly markets as harvested crops come to market in increasingly narrower periods (para 2.24) and to the mounting storage burden on FCI, whose burgeoning stocks reached 30 million mt in 1995 and 1996. Another indicator of increasing price stability is the coefficient of variation of the random component of prices.[19] Puri (1996) finds that rice and wheat prices became more stable between 1985-90 and 1991-95 (Annex Tables 2.28 and 2.29). While some degree of price stability reduces uncertainty and risks for the private sector, excessive price controls have the adverse impact of discouraging private sector participation in storage altogether and increasing the burden on the public sector.

Market Bottlenecks

2.21 ***Most of India's roughly 6,800 (Annex Table 2.38) regulated markets or mandis are severely congested at harvest time.*** Punjabi farmers in Amritsar and Jalandhar typically have to spend 17 hours waiting outside a mandi to sell a single tractor-trailer load (2.4 mt) of grain.[20] (Chahal and Singh 1997). Another 14 hours are taken up weighing the produce, bag by bag, in hanging balances; cleaning it by hand-held screens, grading it visually and testing it for moisture by the unscientific method of biting the grain (Annex Table 2.39; see also Box 2.2). Once ownership passes from grower to trader, moreover, acute storage problems arise. Of the 1,350 mandis in Punjab, it is reported that only about 147 have covered sheds and only 300 have concrete floors (The Indian Express, November 27, 1997). Even in covered yards, roofs are dotted with holes.

Box 2.2 Trading Grain in the Mandi

Farmers generally bring their paddy and wheat to the mandi on bullock carts or tractor trolleys, unloading it inside into piles of about 1 to 1.5 meters high on the cement market yard or -- during peak harvest period -- onto the bare ground. Manual "cleaning," using portable screens, hand-driven or motorized cleaners (Punjab) or whisk brooms to sweep the surface of the heap is usually performed, although some states (Punjab, e.g.) are experimenting with mechanical cleaners and weighing. In AP and UP, grain is sold without cleaning. An inspector employed by the mandi or state government inspects the grain to determine whether it meets FAQ standards. In practice, inspection is usually manual and visual, even if moisture-measuring instruments and a testing laboratory are available. Grain failing to meet FAQ standards is discounted, but only rarely is it rejected. It is well-known that the post of inspector is much sought after everywhere. Inspected grain is then auctioned with bidding organized by *kacha arthia* or commission agent who usually gets a two-percent commission. Once bidding is completed, the grain is loaded into 95 kg bags for wheat and 65 kg for paddy, each weighed individually on a portable scale (a balance) by a licensed weighman. Each bag is stitched close manually with the required 14 stitches (informally cut to 7-10 during peak periods, resulting in higher losses during transport and handling). The bags are manually loaded into trucks of private traders, FCI or state agencies. The farmer bears the cost of unloading, cleaning, filling and weighing and tips to the weighman and commission agent. Buyers pay the commission agent's fee, the market fee, purchase tax, stitching, loading and any other associated taxes (such as the Rural Development Fund in AP and Punjab).

Source: Field observations.

Potholed interior roads become quagmires after heavy rain, causing further contamination of the grain.

2.22 ***Since there is no electricity in many markets, trading ends at sunset, whether or not unsold grain remains.*** Usually, the only storage space is in grain dealers' shops in the periphery of the market yard. Unsold grain stays where it is unloaded (in piles covered or not) or in farmers' carts parked along the roadside. Shortages of unloading and parking areas, weighing facilities, storage areas, places to stay overnight -- due to marketing delays -- and canteen facilities are major problems listed in recent marketing surveys in Rajasthan and Punjab (Baulch and Jairath 1998, Chahal and Rangi 1996). The predominantly manual system and aging infrastructure result in considerable waste (especially spillage), quality deterioration and increased cost of marketing.

2.23 ***This regrettably commonplace state of affairs turns mandis, institutions meant to assist farmers and aid rural development, into bottlenecks in the marketing system*** where farmers lose revenues due to lowered volume and quality while higher marketing costs and margins push up consumer prices. Sodhi (1995) estimates grain loss during handling and cleaning alone at about 0.5 percent for wheat and 0.7 percent for rice in mandis, higher if performed in unpaved areas. Government of Punjab officials report foodgrain losses in mandis amounting to as much as 3.4 percent.

2.24 ***In order to extract two to three crops per year from the same plot (Annex F), farmers need speedy marketing facilities or stronger incentives for on-farm storage.***[21] Required to repay loans advanced by traders and other lenders (in part to obtain credit for the next crop),[22] they are denied all-but-limited price incentives to store because price stabilization operations limit intra-seasonal price rises. Under such circumstances, harvest arrivals deluge mandis, which use few of the substantial revenues they collect for improvement or maintenance. In some states (e.g. UP), market fees paid by the buyer are exacted each time the grain is sold within the state unless, as often happens, traders bypass the mandis to evade the levy. Mandis also collect license fees from various marketing participants (Annex Table 2.42 and 2.43), passing on as much as 80 percent of total revenues to the Mandi Board for its operations and developmental investments (Annex Table 2.41). In Punjab and UP, Mandi Board revenues in 1996/97 alone amounted to Rs1.2 billion ($33 million) and Rs 1.8 billion ($51 million) respectively. Because mandi committees retain only limited funds, they use most of them to cover salary expenses, little for adequate maintenance. While existing markets fall into disrepair, the revenues accumulated at the Mandi Board level are spent on new general rural development activities (including new rural roads and their maintenance, drinking water programs, scholarship schemes, lending

Box 2.3: Rice Milling Technologies in India

Paddy is milled into rice using three different technologies hullers, shellers and rice mills. Small-scale (250 to 550 kg/hr) **Hullers** remove the husk from the paddy and scrape the bran off in one operation In the process, the husk and bran are ground into small pieces and separated from the polished rice Hullers have the lowest recovery rate in total rice (about 60%), a high percentage of broken rice (greater than 50%), greater mixing of bran and husks in the final product, and loss of most small broken rice with the husk and bran They require more power per unit of milling capacity than other technologies Because of the low recovery of bran, hullers waste the potential of rice bran oil production **Shellers**, in addition to the hulling machine, are equipped with pre-screeners, separators and sometimes polishers Their capacities range from 2 to 10 mt/hr though the most common size is 3 mt/hr They have a higher recovery rate than hullers (64-68%), smaller percentage of brokens While, they separate bran and husks, their costs are 3 to 4 times those of hullers **Rice mills** use different machines for each processing step cleaning, deshusking, separating, bran removal and grading Mills include a paddy pre-cleaning system, a magnetic separator, rubber roller shellers, husk and bran aspirators, rice polishers, bran sifters, graders, mechanical handling equipment, bulk paddy and rice weighers They have the highest recovery rates (70 to 72%), with the smallest percentage of broken rice **Parboiling** is also employed by some rice mills, using the hydrothermal treatment (soaking, steaming and drying) of paddy before milling Parboiling which changes the taste and texture of the rice is preferred by consumers in West Bengal and consumers in the northern states, but has limited acceptance in the south

Source Roessler, S , T Kundu and N Rao ,1998, IRRI 1983

schemes) or are "borrowed" by State Treasuries.

2.25 ***The local markets might keep a fairer share of the revenues they raise if heavily centralized decision-making at the Mandi Board level did not effectively exclude them.*** The development of stronger marketing committees, however, is curbed by the fact that committee elections have not been held in decades. Many sitting committee members have limited management experience, and local political forces are able to interfere in the management of mandis and in decisions on expenditure of funds Frequent transfers of senior Board personnel further hamper improved and consistent management, while deficient accounting systems contribute to rent seeking at the committee level. The mandi network could play a constructive role in the modernization of grain marketing. It is not doing so now, and its failures are costing Indian farmers and consumers heavily

Rice Milling

2.26 ***Most Indian rice mills are small in scale and equipped with generally outmoded technologies of low efficiency.*** A large percentage of paddy (30%) is still milled by hullers and shellers (Box 2 3) that have much lower recovery rates (50 to 68%) than modern rice mills (70 to 72%). This reliance on less technologically efficient hullers and shellers implies that for every 100 kgs of paddy, about 4 to 20 kgs of rice become unavailable for direct consumption as they are mixed into the by-products Hullers generally service households' custom milling needs (and some commercial milling of parboiled rice), while modern mills cater to commercial wholesale buyers and FCI milling requirements. The capacity of modern Indian rice mills average 10 mt/hr, relatively low by international standards. In Australia, for example, predominant milling capacities are 20 to 50 mt/hr, the same range as three-fourths of US rice mills in 1986. A survey of mills in Thailand in 1985 found exporting mills had capacities ranging from 10 to 125 mt/hr. Several studies of rice milling indicate economies of scale.[23]

2.27 ***The milling recovery rates of India's modern mills are at par with other major rice producing countries*** such as Australia-72%, China-70%, US - 70% and Indonesia- 68% (IRRI, 1991). Since modern mills process 70 percent of India's rice, the recent GOI program to encourage the modernization of hullers is a positive step (para 2.12). Not only is average capacity utilization of rice mills reported to be only 50 percent, mills in the North usually operate for only six months, stopping by around April. In UP, rice mills on average operate 20 hrs per day from November to December and 8 hrs per day from January to March, and only about 5 percent continue to operate after April. By contrast, rice mills in Australia operate on average three shifts per day, 6 days per week throughout the whole year.

Box 2.4: Modernization Incentives for Export Oriented Basmati Rice Mills

Export-oriented Basmati rice mills are rapidly modernizing as they are afforded special privileges. The past five to eight years witnessed some large investments in the sector for setting up integrated paddy-processing complexes primarily preparing basmati rice for export These projects are exempted from the rice levy and other domestic restrictions Moreover, they benefit from various incentives on account of the processing of rice bran oil as a premium edible oil and the use of husk and paddy straw for co-generation of power Rice bran (constituting 6-7% of paddy), used to be traditionally fed to poultry and animals, but is now increasingly being used for the production of rice bran oil This change has also improved the profitability of rice milling (Annex Table 2 31 and 2 32) There is considerable scope for increasing edible rice bran oil production, a premium oil that holds considerable export potential

2 28 ***Were their operations more profitable, private mills would be more likely to modernize, but the Rice Levy cuts into profitability.*** Milling margins (levy price less the rice equivalent MSP) permitted under the rice levy system not only declined in real terms in some years, but they also discriminated against some states(Figure 2.2). The levy, to the extent that they force mills to deliver rice to FCI at below market prices, discriminates against AP, Haryana and Punjab, the states that deliver about 80 of every 100 metric tons of rice levied for the FCI. (Annex E describes conceptually the mechanism by which the levy could reduce mill profitability.) Frequent peak-period bottlenecks in FCI receiving centers further prevent timely lifting of the rice levy. Millers indicate that "speed money" to expedite the centers' acceptance of levy deliveries adds to the transaction cost. As mills can only sell rice in the market *after* delivering the levy requirement, FCI delays can also delay open-market sales so much that mills sometimes suspend operations due to lack of storage space.

2.29 ***Not only does the levy disrupt mill operations, it also ties up capital.*** In the Northern States, rice mill operations are suspended when the wheat season begins—a major cause of capacity underutilization. Since FCI personnel are preoccupied with wheat procurement operations, rice levy deliveries are made difficult and much delayed. UP, however, is lifting levy requirements during the later part of the season to preclude such problems, but, throughout India, annual changes in the price and quality requirements of levy rice continue to hamper reliable calculations of risk and profit.

2.30 ***Uncertainty undermines millers' ability to operate efficiently, to plan and to modernize.*** Uncertainty is the dominant characteristic of Indian regulation of rice marketing Erratic enforcement taints controls on storage, on credit, on transport and marks FCI's sales on the open market. Uncertain power supplies compound millers' risks, and most of them maintain standby diesel generators to cope with frequent outages. Instead of favoring modernization and cost-efficient larger operations, moreover, government incentives (levy exemptions for new mills and for hullers) work – along with the high cost of credit -- to discourage established mill operators from upgrading their facilities and expanding their capacity. The tilt toward the less-efficient hullers, and their propensity for tax evasion go far to explain their sustained growth of 1 percent per year.

Wheat Milling

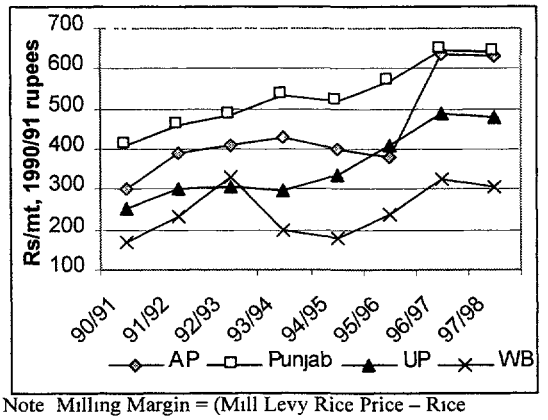
2.31 ***As with rice processing, India's wheat mills tend to be small in scale, low in technical efficiency and deficient in product quality*** Most (85%) wheat continues to be milled in the unorganized sector, consisting of about 26,000 *chakkis* or small (usually stone) grinding units. The less hygienic coarse brown flour (*atta)* they produce is used to make *chapatis* and similar staples of the Indian diet. But largely because official food programs distribute their marketed wheat directly to consumers who need custom milling, the *chakkis* continue to flourish. More efficient roller flour mills number only 812 with an estimated average capacity of 70mt/day and total capacity of 16.5 million mt/year (Annex Table 2.34).[24] More precise estimates of aggregate annual capacity are not readily available. Roller mills, which process about 15

percent of wheat, primarily produce *maida* or flour which is consumed mainly in urban centers for the manufacture of breads, biscuits, and other bakery items.[25] The Flour Millers Association reports average capacity utilization of mills at 50 to 55 percent, reaching 100 percent immediately after harvest. An illustration of the costs involved in flour milling, based on a representative 150 mt/day capacity mill in Punjab, is presented in Annex Table 2.35.

2.32 ***Even the flour mills, however, operate in most cases below international norms of scale and quality of output.*** In North America, the accepted norm for viability is 300 mt/day, one-third above the predominant cost-effective scale in Australia. Indian extraction rates (60 to 65 percent) are significantly below international norms (72-75 percent). The shelf life of locally milled flour is also considerably shorter, about one month, compared to about six months in developed countries. Poor packaging and poor technology (usually locally made equipment that is three times cheaper but far less efficient than imported machinery subject to high import duty) fail to eliminate the endosperm. This process reduces shelf life and requires that flour products be sold and consumed quickly.

2.33 ***Flour millers bear burdens similar to those of rice millers—diminished opportunities to cut costs and raise quality—because of the unpredictable enforcement of various regulatory controls.*** The sudden imposition of controls on transport, credit and storage as well as unpredictable open-market sales of subsidized wheat to select mills put operations at risk and inventory values in jeopardy. The regulations and their application disrupt mill operations and impose associated risks that discourage investments to achieve either economies of scale (bulk long-term storage facilities, for example) or the technical advances available to larger, more sophisticated plants (Annex Table 2 36). Since the FAQ system makes it difficult for millers to obtain clean wheat of consistent grade and quality, they must pay higher processing costs to destone and clean wheat of which as much as 6

Figure 2 2 Rice Milling Margins Permitted by the Rice Levy in Selected States, 1990/91 to 1996/97, constant1990/91 rupees



Note Milling Margin = (Mill Levy Rice Price – Rice Equivalent of Paddy MSP @ 67% recovery)
Source CACP

percent is waste. As long as they are limited to buying such "fair average quality" wheat, they can gain little by investing in advanced quality management. Hindered, like rice millers, by unreliable power supplies and the high costs of credit, wheat millers are also hurt by the shortcomings of India's over-burdened rail network Obliged to rely primarily on trucks, millers must match the volume of their operations to the limits of economical truck transport and consequently prefer to build a second, small- capacity mill in production areas rather than enlarge an existing plant.

Transport

2.34 ***Ninety percent of both paddy and wheat privately traded in mandis and of milled rice and wheat moves in rented and usually overloaded trucks along India's three-million-kilometer network of rough, crowded roads*** (Bhandari 1998; World Bank 1995), largely because private consignments get only fourth priority on cheaper rail transport.[26] On average, only 25 percent of the total foodgrains transported by the Indian Railways is for the private sector which pays the same freight rates as FCI but gets lower priority for service. As a result, private traders generally use the railroad only for shipments that must go 500 km or farther from surplus production areas in the north to deficit areas -- such destinations as Bombay, Calcutta, Madras, Delhi, Vijaywada, Bhopal, Rajkot, Lucknow, Patna and Bhubaneswar (Annex Figure 2.10). Traders

Table 2 3. Summary of Recent Market Integration Studies of Rice and Wheat Markets in India

Study	Market Coverage	Period	Findings
Palaskas & Harriss-White	Rice, 3 markets, West Bengal	1988-90	Not integrated in short-run, more integrated in long run
Puri , 1996	Rice, 14 wholesale markets & Wheat, 15 wholesale markets, All India	1985-95	Not integrated in short run, most markets integrated in long run
Prakash, 1996	Rice, 28 markets, All India	1968-85	Not integrated in short run
Palaskas, Harriss-White & Crowe, 1997	Rice, 9 markets in Tamil Nadu	1972-92	Not integrated in short run, long-run integration in some markets
Kumar 1997	Wheat, 8 markets & Rice, 4 markets, Haryana	1978-93	Weak market integration
Baulch and Jairath 1998	Wheat, 7 markets, Rajasthan	1992-96	Not integrated in short run.

use 9 mt and 17 mt (registered capacity) trucks, often illegally loaded up to 13-15 mt and up to 25 mt, respectively, paying rates based on supply and demand. For example, rates from Khanna, Punjab to Delhi range from Rs1,600 to Rs 3,000/ mt.

2.35 ***On top of truck transport fees, shippers bear the costs (both inordinate delay and "speed money") imposed by transit through multiple road checkpoints set up to collect and verify payment of various taxes (octroi, mandi, sales taxes).*** Truck operators surveyed by the Ministry of Railways in 1993 cited the plethora of these bottlenecks along with police harassment as problems that burdened them even more than the poor condition of the roads. In addition, unequal state sales taxes discourage inter-state movements and the lack of a properly functioning grading system results in higher transport costs as dockage and waste material end up being transported with the grain. In some states (Punjab and Rajasthan), trucking rates are allegedly controlled by transport unions, leading to monopolistic rate structures in "union" markets where competitive private truckers are barred.

2.36 ***Another reason that private traders opt for the higher cost of truck transport is the indirect costs of low-quality rail service – grain damaged by water in leaky boxcars and slow shipments*** – which, in addition, does not provide the desired door-to-door delivery service. In 1995/96, the Indian Railways shipped about 25 million mt of foodgrain, usually in unit trains called a "rake" that carry about 2,000 to 2,200 mt of foodgrain.[27] Such a fully loaded conveyance can take about 12 to 15 days to travel from Punjab to Kerala, a distance of 3,500 km that should ideally be covered in about 7 days. (Kundu 1997).

2.37 ***Transport difficulties are among the factors that impede at least the short-run integration of India's grain markets.*** The impact on prices of both random open-market sales and of the equally unpredictable volume and timing of imports (para. 2.39) is also relevant. Table 2.3 below summarizes the findings of recent national and state-level studies of the degree of market integration and their conclusion that most markets are not integrated in the short run and only some markets achieve a degree of longer-run price responsiveness, one to the other. [28] Along with poor roads and slow trains, the policies of making open-market sales at below-market prices, of importing and exporting grain without pattern and of imposing and then lifting movement controls all undercut private traders and the efficiency of markets for their produce.

2.38 ***Although it fails to signal its own market-shaping moves, government imposes a great many reporting requirements on grain traders and millers.*** These requirements push up the incidental costs associated with inspections to enforce government policies and regulations Each of the many agencies (12 in WB, 17 in UP, 18 in AP)[29] involved in enforcing the various regulations dealing with grain trading or processing has extensive reporting requirements.[30] And in addition to filing periodic reports, traders and processors have to contend with inspections – sometimes annually, sometimes weekly. The unofficial

fees that many inspectors require, millers and traders complain, add to their business costs. (See also Annex Table 2.37)

External Trade

2.39 ***Through imports and exports, in theory, India's private grain traders could help stabilize prices between harvests, but stringent controls on external trade inhibit such activity.*** Although increasingly relaxed due to the favorable supply situation beginning in the 1990s, trade bans still appear and disappear unpredictably, depending on local balances between grain supply and demand. The seemingly random shifts in part reflect weaknesses in the design of the existing price stabilization program. It has inflated public sector stocks on the one hand and purchased costly unprogrammed imports on the other, disrupting private trading operations most recently in 1996/97, when a sudden, crisis-driven interdiction forced wheat exporters to cancel commitments they had made. Even when private imports or exports are allowed, the uncoordinated implementation of government policies raises barriers to private participation. The lack of systematic procedures for publicly announcing export privileges or quotas, issued on first-come-first-serve basis, impedes private entry into the export market. The experience of the last wheat crisis, described in Box 2.4, when various policy roadblocks deterred the private imports that had been temporarily permitted, highlights these policy inconsistencies.

2.40 ***Inadequate port infrastructure increase the costs of exports and imports.*** Foodgrain imports if arriving in containers are bagged on arrival, while exports are made using both bags or containers.[31] Ports in India are generally ill-equipped to handle foodgrains. With the exception of the Jawarhal Nehru Port in Maharashtra, no other port is equipped with specialized mechanized grain handling facilities.[32] For loading and unloading grain, wharf cranes or ship equipment in combination with stevedores are used. The lack of mechanized handling equipment slows operations, resulting in inordinate delays in ship turnaround time. In Kandla port, which handles about 70 percent of the country's rice exports, the average turnaround time for ships carrying rice exports is 19 days, and 33 days for ships carrying imported wheat (Kundu 1997). In developed countries, turn around time is as short as 5 days. Moreover, although the berths are designed to take 45,000 DWT ships, limitations of channel depth restrict berthing of fully loaded ships to 28-30 thousand DWT. This restricts accessibility of ship transport and results in increased freight cost per unit. The lack of storage facilities and rail linkages in Indian ports limits hauling to truck transport. This increases coordination requirements and costs. It is estimated that only 15 percent of rice export is brought by rail. In Kandla, because of a shortage of storage in the port area, 60 percent of ship cargo in general needs to be stored in warehouses outside the port area. These warehouses could be as much as 14 km away, adding to shipment costs.

2.41 ***Unofficial port charges add to costs.*** A recent study of actual cash costs of moving containers through Indian ports found that the cash outlay to move an import container through Indian ports ran to about $500-520 per box compared to $330-350 at comparable foreign ports. Indian exporters must carry a cost disadvantage of $80 per container compared to their competitors. Most of these cash outlays go either to pay "speed" money or in charges for customs administrative procedures. Speed money payments ranged from $50 to $100 per container as opposed to $0 to $30 in other ports. Customs agent charges ranged from $120 to $200 per container in Indian ports compared to $50 to $100 in other countries. Both payments arise from the need to process 23 separate documents to clear imports and 118 documents to clear exports through Indian ports—requiring an estimated 22 hrs of preparation time (World Bank 1993; Peters 1990).

Market Support Services

2.42 ***The grading system for FCI and state-level procurement of foodgrains on the basis of their fair average quality (FAQ) rather than on the basis of differing levels of quality discourages growers and traders from improving the quality of paddy, rice and wheat.*** In implementing the system, FCI only discounts products, which exceed the maximum limits (up to a specified tolerance beyond which grain is rejected). It offers no reward for products that exceed FAQ standards and, as the "market leader" in several states, deprives farmers of any incentive to meet more than minimum delivery specifications. Year-to-year revisions of FAQ standards and FAQ limits and their variation across states further add to the uncertainty and disincentives for investments in better quality management.

2 43 ***There is a critical shortage of precise, publicly available market information.*** While inspection agencies gather copious data from traders and mills, precise and publicly available market information (e.g. supply estimates, market prices and arrivals and stockholding) is in such critically short supply that the GOI failed to anticipate the 1996/97 wheat crisis. Under the Department of Agriculture and Cooperation, the Directorate of Economics and Statistics prepares production estimates to help estimate supplies. The preliminary estimates of sown area, furnished by State Agricultural Statistics Agencies and the weather behavior and crop condition by the Market Intelligence Agency of the Directorate provide the basis for the pre-harvest estimates until data for generating quick estimates arrive from the states. They are the initial post-harvest estimates based on crop area and obtained from the Timely Reporting Scheme (TRS) sample survey and on crop yields measured by the General Crop Estimation Survey (GCES). In some states the TRS area estimates may not reach the Directorate at the prescribed dates or may be based on partial returns. When, as a result, estimates of yield per ha are based on too small or unrepresentative a sample or come from subjective sources, the quick estimates lose reliability.

2.44 ***The limited availability of real time market information has several implications.*** Since easily accessible "real time" market information is severely limited, each grain trader has to maintain a network of information sources, consisting of other dealers and commission agents. At the industry level, faulty or missing information on private storage capacity and rice mill and flour milling capacity, for instance, undercuts the work of formulating and implementing consistent food and price policies and the development of an appropriate strategy for the grain sector as a whole. Accurate market information is also critical to the government in setting and executing food policy and utilizing its Foodgrain Early Warning Systems to judge if a crisis is serious enough to warrant costly, direct interventions in the market. Better information might have prevented such problems as the 1996/97 wheat crisis and disruptive government market interventions. Without reliable data, it is difficult for either government or private traders to clearly anticipate overall supply and demand and thus forecast prices that would justify their marketing decisions. Traders are obliged to duplicate effort and pay unnecessary marketing costs – passed back to farmers and on to consumers -- just to collect information for themselves. Finally, adequate market information is required to gauge the impact of specific interventions correctly and to monitor the impact of any eventual GOI changes in foodgrain policies.

C. Mounting Fiscal Cost of FCI Operations

2.45 ***The single largest operator in foodgrain markets – the Food Corporation of India (FCI) – is burdening India's taxpayers with rising fiscal costs***. This is due both to its pricing policy and its technical and operational inefficiencies. Food subsidies alone have accounted for over seven percent of the country's mounting fiscal deficit in 10 out of

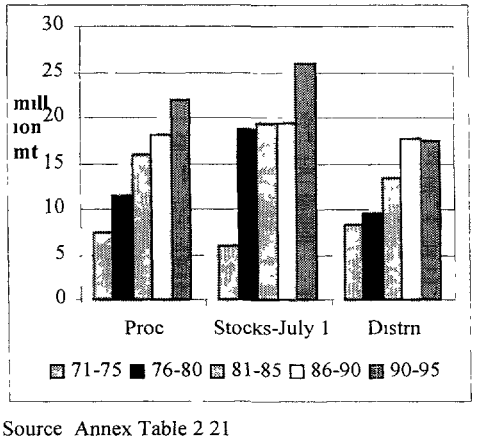
twelve years between 1987/88 and 19986/99 (World Bank 1998b).

2.46 ***FCI has grown in every aspect of its operations, but it level of efficiency declined.*** Employing about 65,000 departmental employees and over 170,000 direct contract workers, it manages 1,446 storage depot centers. Procurement, for instance, has almost tripled, from 7-8 million mt in the early 1970s to 20-25 million mt during the mid-1990s (Figure 2.3), but as volume has grown, so have operating costs. And as payrolls and purchases rose, so did FCI's per-unit operating costs. Procurement costs[33] increased two percent a year in real terms from the early 1980s to the early 1990s (Annex Tables 2.14-16), twice the annual rate of growth in per-unit distribution costs (Annex Table 2.13). Aggregate rice marketing costs in real terms spiraled upward 70 percent between 1980/81 and 1994/95, a period during which the same costs for wheat rose ten-percent. Such escalation in costs and in the subsidies that keep FCI afloat – even apart from FCI's distorting role in grain markets -- strongly suggests that the institution and the policies behind it deserve thoroughgoing scrutiny and significant reform.

2.47 ***The subsidies channeled through FCI undermine India's fiscal stability in the name of food security.*** Between 1980/81 and 1995/96, FCI rice consumer subsidy per unit rose by about 70 percent in real terms, averaging Rs 1240 per mt (constant 1990 rupees) in the 1990s compared to Rs 720 per mt in the early 80s (Annex Table 2.19). The wheat consumer subsidy per unit rose about 25 percent in real terms reaching Rs 1,230 per mt in the early 90s compared to Rs 980 per mt in the early 80s (Annex Table 2.20). In addition, FCI receives a substantial (implicit) interest rate subsidy on its working capital requirements. It gets credit at concessional interest rates 3 to 6 percent lower than market rates. Applying an average 4 percent discount on FCI gross bank credit (Annex Table 2.24), the implicit interest rate subsidy to FCI ranges from Rs 1 to 4 billion per year in the early 90s.

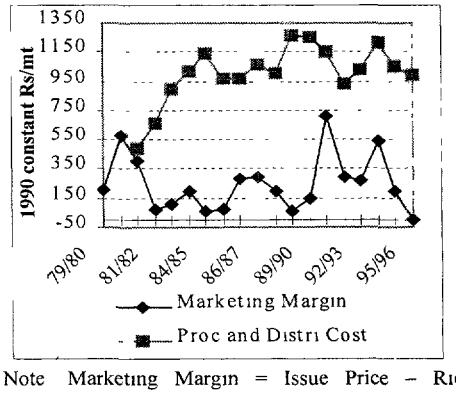
2.48 ***The inflation in foodgrain subsidies derives not only from its slim marketing margin but also from its ballooning per unit operating costs.*** During the last 15 years, FCI's rice and wheat marketing margins covered on average only about 30 percent of its total marketing costs—including procurement and distribution (Figure 2.4 and Annex Figure 2.7). FCI's low cost recovery is partly due to the narrow GOI- prescribed PDS marketing margin -- issue price less procurement price – which does not vary according to season or locale and thus fails fully to cover transport or storage costs. Poor cost recovery is further exacerbated by rising FCI operating costs. Between 1980/81 and 1994/95, aggregate FCI rice marketing cost per unit (procurement and distribution) increased in real terms from an average of Rs 670/mt early 1980s to Rs 1140/mt in the early 1990s. Wheat marketing costs rose during the same period from Rs

Figure 2.3 FCI Foodgrain Procurement, Buffer Stocks (as of July 1) and PDS Foodgrain Distribution million mt, 1971 to 1995



Source Annex Table 2 21

Figure 2 4. FCI Rice Marketing Margin and Procurement and Distribution Cost per Metric Ton, Constant 1990/91Rupees



Note Marketing Margin = Issue Price – Rice Equivalent of Minimum Support Price
Source FCI, GOI, *Agricultural Statistics at a Glance*

1390/mt to Rs 1500/mt.

2.49 ***In both procurement and distribution, where personnel expenditures -- administrative overheads and handling expenses -- account for 15 to 20 percent of total cost, these costs grew the fastest, 3 to 5 percent per year.*** Storage and interest charges increased yearly at a two-percent rate. Per unit buffer-stocking costs remained practically unchanged only because declining interest charges compensated for rising administrative costs and storage charges. The lack of a clear-cut price stabilization policy, particularly on exports and imports, has produced stock levels that exceed norms and needlessly add to storage costs. Indeed, between January 1993-April 1998, actual buffer stocks stood above quarterly minimum norms 90 percent of the time (Annex Table 2.10). FCI staffing policies -- under pressure from State governments—of regularizing contractual labor and the limited accountability of FCI management for operational expenditures contribute to these rising costs. FCI officials recognize that labor is one of their biggest problems, in terms of both efficiency and costs. Numbering over 200,000, departmental labor (about 30,000) are paid four to five times market wages and direct contract labor (about 170,000) are paid about twice the market wage. Strong unions limit FCI's control over imposing higher work standards The agency's staff and consequent administrative expenses have risen faster than the rate of increase in volume handled, above all because, as long as the GOI subsidizes all its financial losses, there is little incentive for FCI to cut costs and improve efficiency.

2.50 ***A variety of implicit subsidies and advantages should – but do not – keep FCI's costs low.*** Its working capital costs, for example, account for about 30 percent of its distribution costs and half its buffer-stocking costs. In this area, FCI not only can borrow at rates about 3 to 6 percentage points lower than private traders; it is also exempt from selective credit controls. In 1997, FCI interest rates on commercial borrowings averaged 14.6 percent compared to about 18 percent for the private sector. FCI moves about 95 percent of its foodgrains by rail, a relatively cheaper means than the truck transport on which the private sector primarily relies. Since freight charges account for another 30 percent of FCI distribution costs, its edge in transportation is an important source of potential savings. Information on the relative costs of FCI and the private sector grain marketing is limited. Malik et al. (1988) found FCI wheat market costs (excluding storage) in Haryana to be 13 percent higher than private trade (Annex Table 2.21b). Gulati et al. (1996) reported storage costs in FCI-owned godowns in 1992-93 (Rs 19/mt/month) higher than in hired ones (Rs 11/mt/month) at least in part because of low (53%) capacity utilization of FCI warehouses. Sharma (1991) found that the cost of public distribution of wheat was double private sector costs. A recent study (Sidhu 1998) comparing wholesale marketing costs of the private and public channels for rice and wheat in Punjab puts FCI wholesale marketing costs 10 to 15 percent higher (Annex Table 2.21a).[34]

Internal Factors That Boost FCI Operating Costs

2.51 ***Among the most significant inefficiencies in FCI operation are the inadequate storage facilities it uses and the inefficient practices it follows*** Neglecting the usual first-in, first-out criteria for storage management, it lets grain sit in inadequate shelter, being fumigated every 15 days[35] -- a needless added cost and health risk. As reported by FCI officials, 50 percent of their stock is at least 2 years old, 30 percent aged between 2 to 4 years old, and some has been in storage 16 years. Losses run especially high for grain bags that are simply stacked on raised, cement or wooden platforms (CAP storage) that were meant to be temporary but have become permanent fixtures (Annex Table 2.22). Although CAP storage accounts for about 20 percent of overall FCI storage capacity, its share can go to 30 to 40 percent in the north where the bulk of foodgrain stocks are stored. According to one estimate, 92 percent of FCI storage losses occurred because of CAP

storage. In 1994-95, such unscientific or inadequate storage reportedly damaged as much as 1.5 million mt of FCI-owned paddy (The Tribune 1995). Estimated transit losses equivalent to 400 to 500 thousand mt of foodgrains, worth about Rs2 billion, represent about 1.5 percent of volume handled during the 1990's and run three times as high as storage losses (Annex Table 2.18a). Actual levels are probably much higher, and any national average masks considerable disparities in performance by state and commodity. Chauhan (1998) reports storage losses of paddy in UP of 7 to 40 percent during the mid 1990s, 2 to 4 % in Punjab, 3 to 70 percent in Tamil Nadu and 40 percent in West Bengal (Annex Table 2.18b). Transit shortages occur due to missing wagons, natural calamities, theft and pilferage.[36]

2.52 ***FCI's officially reported storage losses are high by international standards.*** They are about 5 times those of Indonesia's Food Agency--BULOG (0.1 percent) (BULOG 1998/99) and double the rates in Australia (less than 0.9%) and quadruple those of Canada's (0.5%). The official Indian figures, however, are suspect. FCI accounting of the actual volume and quality of stocks it holds (see para 2.51) is less than reliable that the Comptroller and Auditor General of India found that FCI had overvalued its foodgrain stocks as current assets in its 1995 Balance Sheet by Rs 85 million. It put the worth of substandard/fit for dumping/non-existent stocks at more than realizable value (Rs 84.4 million) and did not include Rs 453,000 worth of shortages of stocks in baby stacks[37] (FCI, Annual Report 1994-95, p. 173).

2.53 ***The reliance on CAP storage further constrains optimal stock management.*** In theory, the First-In, First Out (FIFO) rule of stock management is to be followed. However, CAP storage is prone to larger losses than the godowns since during heavy rains, the upper and side layers of bags get soaked leading to grain deterioration. Consequently in practice, the covered godowns receive stock first followed by CAPs, but stocks under CAPs are moved out first to reduce losses. In some cases, the latest purchases from the mandis are shipped directly to consuming areas, instead of rotating stocks between the CAPs and godowns. Failure to effectively implement FIFO results in aging stocks and deteriorating quality. The loss of value due to quality deterioration and aging in storage, contribute to lowering FCI sales realization, and thus rising costs. Due to limited control over the grain storage environment and long storage, frequent fumigation of stored grain is required, adding to costs.

2.54 ***In theory, bulk storage of grain should cost less than FCI's existing systems.*** The Corporation even owns a number of bulk grain storage facilities located mainly in the northern states, including five 20,000 mt capacity fully mechanized silos in the Punjab, built using a World Bank loan in the 1970s and 1980s. FCI also has bulk storage located at Borivilli and Manmad (Maharashtra) and at Kanpur, totaling 276,000 mt in capacity. (See Annex D).[38] There is currently a Committee in the Ministry of Food studying the feasibility of bulk storage and handling. Although it was acknowledged that the silos were superior with reduced losses and minimal fumigation requirements, they are not utilized at present. According to FCI staff, the main reasons for not using these silos are the lack of an integrated system that makes bulk storage less economical. Since there are no integrated bulk transport chains in existence, grain has to be delivered to the silos in bags, manually de-bagged, stored, and then bagged again for further transportation. Not only costly, the process of emptying bags makes it impossible to run conveyor equipment at rated capacity. Frequent power shortages and failures also stall operations, leaving grain "locked" in the silos. Aside from strong opposition from labor, the silos suffer from poor maintenance and problems in obtaining spare parts.

2.55 ***Union hostility to such labor-saving devices as portable conveyors, bag stackers and even forklifts discourages FCI experimentation with such modern equipment.*** In its absence, bagged grain (95 kg/bag) must

be handled manually with steel hooks through out the marketing channel, sometimes as much as 20 times.[39] Such repeated handling, combined with below specification stitching, results in spillage losses during transport and storage, estimated at 1 to 1.5 percent of total volume -- over and above storage losses. Moreover FCI uses jute bags, 30 percent more expensive than available synthetic ones, only once compared to 3 to 4 times by the private sector. The Jute Packaging Materials Act requires continued use of the more expensive jute bags

2.56 ***Serious efforts at cost control is needed.*** It would have to begin with grain bags, but not just with their material or the frequency of their use The practice of manual weighing in the mandis on portable scales or weigh bridges (if they are operational) includes a pattern of weighing only a certain percentage of the bags to obtain an average weight and then counting bags to determine overall weight. At the very start of the procurement process, inaccuracies mar inventory accounting and valuation, and the practice leaves considerable room for leakages during storage.[40] Some millers comment that paddy received for custom milling are sometimes short of the specified weight.[41] Similarly, there are reports of under-weighing of bags of levy rice, accepted for a "fee". In contrast, commercial weighing in other countries requires an accuracy of at least 1/10th of 1 percent. The imprecision in India contributes to the controversy over estimates of transit and storage losses of grain, and the railways' practice of accepting foodgrains on a "said-to-contain" basis neither helps improve inventory management nor stems leakages. Since grain flows through the whole system – including to dispatching and receiving centers -- on an "estimated" basis, identifying the true source of losses and leakages is problematical. Recent FCI investments in computerization of stockholding and transport records and management information systems will help improve monitoring, but their effectiveness would still be limited by weaknesses in the existing inventory control procedures.

2.57 ***Decentralizing procurement, handling, and storage of TPDS to State Agencies, as currently designed, is unlikely to ensure cost effective operations in the medium to long run.*** The measure, which is promoted by the Department of Food and Civil Supplies of the GOI and FCI involves "subcontracting" to State agencies the procurement and maintenance of State TPDS foodgrain allocations, with some additional purchases in surplus states for contribution to the central pool/buffer stock. Currently, decentralization is implemented on a cost plus basis—i e. all costs incurred by State procurement agencies are directly passed to FCI. The Department of Food and Civil Supplies of West Bengal and Uttar Pradesh[42] are the first states to adopt this new approach, with the Government of Madhya Pradesh also expressing interest. As these functions are increasingly transferred to State governments, FCI's operations would be scaled down, with the view of FCI functioning as a coordinating mechanism in the long term. In adopting this approach, GOI aims to reduce transport cost through local procurement, generate savings through reduced dependence on high cost FCI wage labor, and ensuring adequate and timely foodgrain supplies in the quality desired by local consumers through greater local accountability. Intended to help scale down FCI operations and costs, the change involves paying State agencies a pre-negotiated, fixed fee to procure and distribute state TPDS requirements and to procure for FCI's central pool. But the effect would be to create multiple "mini-FCIs" at the state level where, in the absence of competition, the same poor managerial incentives and lack of commercial orientation -- would simply be replicated. In the longer term, with the expected changing role of the public sector, such decentralization would not reduce costs but incur higher ones when a larger number of state-level agencies have to be phased-out.

2.58 As presently implemented, the GOI's decentralization strategy does not include any

mechanisms to address conflicts between national and state food security objectives. Unless these are addressed, both efficiency and food security could be greatly reduced. In the past, imposition of (formal and informal) movement controls by surplus states in times of shortage has greatly hampered national food security. With the current mode of decentralization, these tendencies to protect "local" consumers and meet state level foodgrain requirements would increase, with dire consequences for the existence of an effective and well-integrated national market. The unreliability of supplies that this is likely to create would encourage deficit states to increase rice mill levies or to promote domestic production even though it may be cheaper to grow other commodities and transport foodgrains from surplus states. While a consistent program of decentralization can, in principle, achieve these goals, the way in which decentralization is currently proposed would likely fall short of achieving these goals. No incentive exists for states to operate at least cost and there is no mechanism to reconcile potential conflicts between state level and national level food security objectives

D. GOI and State Food Policies: Do they Benefit Farmers?

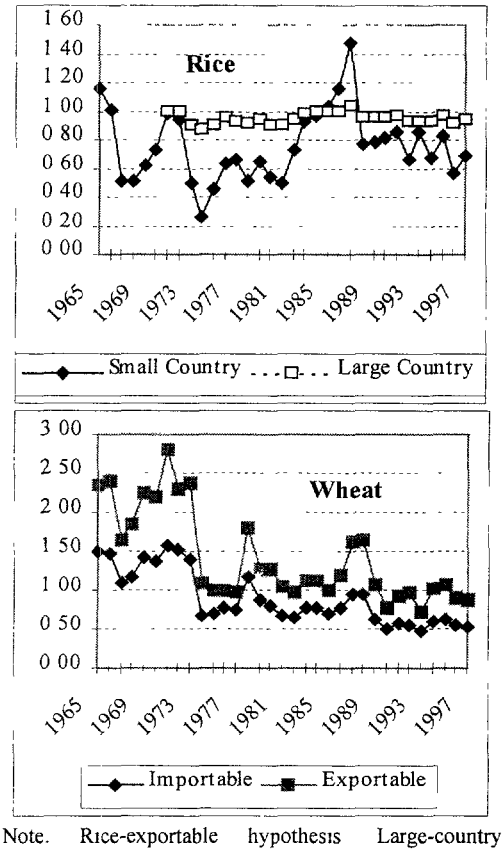
2.58 As this chapter has documented, the fiscal cost of FCI operations and the GOI foodgrain policies it executes is high and rising. The market-distorting impact of government regulations is also severe, stunting the growth of cost-effective private trade and of investment in modern technology. But whether farmers benefit or suffer from these policies and practices is still a matter for some debate. One school of thought holds that rice farmers gain from two-tier rice pricing (Dantwala 1967, 1986, 1993; Mellor 1968; Hayami, Subbarao and Otsuka 1982) insofar as procurement increases open-market prices. Therefore, according to one formal market model, the weighted average price that farmers receive rises in both the short and long run.[43] Other analysts who highlight the limitations of past studies accord two-tier pricing as having a neutral or negative impact on rice farmers (Binswanger and Quizon 1984, Radhakrishna and Indrakant 1988; World Bank 1990; Radhakrishna and Hanumantha Rao 1994; Schiff 1994).[44] In the case of Andhra Pradesh, Radhakrishna and Indrakant find that while procurement of 1 million mt of rice and its distribution through the PDS would increase the open market price by 4 percent, the weighted price would remain the same. Using a general equilibrium model of the Indian economy to simulate alternative pricing policies, Binswanger and Quizon find a negative impact on the average with forced procurement and equal access to ration shops by all urban groups. Schiff investigates the impact of various scenarios--free trade, closed economy with no rationing, closed economy with rationing and with and without markets segmented between rich and poor. He finds that as long as the procurement policy is not applied infinitesimally, the effect on the average price is ambiguous or negative under most of the different scenarios. Only when a closed economy does not ration to the urban poor, maintains perfect market segmentation between urban rich and poor, when marketable surplus does not fall with price and when the price elasticity of demand for the urban poor is larger than for the rich does procurement produce a positive effect on the average price.

2.59 ***If the procurement-price interaction is still open to question, India's external trade policies are not.*** They impose an implicit tax on farmers. The nominal protection coefficient (NPC), the ratio of the domestic price to the international reference price, measured at the same location or reference point,[45] is one indicator of the impact of government interventions on the price of a commodity Pursell and Gupta (1998) examined the level of protection for the wheat that India alternately imports and exports. Using NPCs based on exportable and importable hypotheses (See Figure 2.5), they find that while wheat producers were implicitly subsidized in the 1960s and 1970s, their situation was increasingly reversed in the 1980s and 1990s.[46]

In the case of rice, previous studies (Gulati and Pursell forthcoming, Gulati and Sharma 1991) estimated the nominal protection coefficient for rice based on a small-country assumption and found a significant implicit tax on rice producers in most years. Given the large volume and thinness of the rice market, NPCs that take a large-country assumption illustrate a more realistic impact on India of international rice trade. Preliminary estimates indicate that rice producers are implicitly taxed but to a much smaller degree than previously estimated.

2.61 ***For their part, market inefficiencies bred by government food policies implicitly taxes not only farmers but consumers as well.*** Elevated marketing costs attributable to these inefficiencies raise marketing margins, depressing prices to growers and raising prices charged to consumers for grain handled in private channels. FCI wastefulness, of course, adds to the fiscal burden on all Indians, growers and consumers alike. In the case of farmers alone, the GOI's price stabilization program, in dampening seasonal price increases, removes the incentive for storage by farmers and traders, both of whom could profit by storing freshly harvested surplus grain until demand brings higher prices. But since on-farm storage is discouraged, markets experience an increasing concentration of arrivals over shorter periods of time. During the early 1960s, 51 percent of wheat arrivals occurred during the first quarter (April to June). The percentage increased to about 70 in the late 1980s (Tyagi and Kahlon 1990) and to about 90 in the early 1990s (Sidhu 1997).[47] A similar trend characterizes paddy marketing with most of it delivered to northern markets between September and November. In other areas, most of two crops are delivered to the markets within a month or two of harvesting, a pattern that is a major cause of market congestion (para 2.21). These marketing gluts also depress farm prices during harvest periods, putting a heavier burden on the GOI's price support program. Congestion in the marketing system in general is further aggravated by the reduced incentives for private traders to move grain when surprise

Figure 2 5 Nominal Protection Coefficients for Rice and Wheat, 1965 to 1997



Note. Rice-exportable hypothesis Large-country calculation assumes India adopts an optimal export tax
Source Pursell and Gupta, 1998

open-market sales could force prices down and when movement and storage controls could be imposed without warning.

2.62 ***Farmers pay a price for market congestion in lost time and in the deterioration of their produce*** For the farmers of Punjab alone, the total economic value of time lost has been estimated at about Rs 384 million a year. Making that estimate, Chahal and Singh (1997) based it on total market arrivals of 9.3 million mt of paddy, an average marketing delay of 7 hrs per ton, and a prevailing wage rate of Rs 59 per ten-hour day. In other areas (AP, Orissa, and Tamil Nadu), state-level movement controls bottle up supplies and thus curb farmers'prices

2.63 ***Finally, government price-support operations – necessitated in part by the price-stabilization program and its depressing effect on grain prices -- benefit only a portion of***

farmers and distort resource allocation. Since FCI price-support activities apply primarily to wheat and, to a lesser extent, to paddy and are concentrated only in a few states, their benefits are not equally shared. De Janvry and Subbarao (1986) find the benefits of price support are concentrated in the technologically advanced Northern States (Punjab, Haryana, and Uttar Pradesh) where procurement is highest and to greater degree captured by medium and large farmers. Price supports, moreover, can also serve as a taxing mechanism during short falls, as in the wheat crises of 1992/93 and 1996/97, when the GOI uses storage, movement and credit controls to force farmers to sell to the FCI at the MSP, which even after occasional addition of bonuses remain considerably below open-market prices. FCI's price-support operations also skew resource allocation, helping to encourage the production of water-intensive rice in increasingly water-short Punjab and Western UP.[48] Pan-territorial price supports also foster production in areas where accounting of full marketing costs might render such farming economically unviable.

E. Conclusion

2.64 In the process of implementing GOI policies that set up parallel public and private grain markets, FCI has displaced most of the private sector and blocked what remains from increasing its efficiency and overcoming a legacy of small-scale, highly fragmented and costly operations. The government policies responsible for stunting private sector growth have also, it is true, helped make India the second largest producer of foodgrains in the world. Compared to the considerable advances it has been making in the international grain trade, India is notably slow at home in modernizing its system and removing the policy disincentives that impede the development of more efficient integrated markets and the adoption of more modern and cost effective technologies and practices. Instead, sizable physical wastage, losses and higher marketing costs persist, and public-sector activities -- FCI operations – remain plagued with wasteful practices and rising costs that continually raise the fiscal burden.

2.65 Reform is imperative if India is to have a grain marketing system capable of maintaining food security as growing affluence and an increasing population drive up demand for rice and wheat. The following chapter outlines options for policy and practical reforms that could make India's markets equal to the coming challenge.

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[8] The MSP is based on cost of production, changes in input prices, supply and demand, stock levels, inter-crop price parity, the likely effect of changes in prices on the cost of manufacturing of industrial goods and the cost of living, international price trends, and the parity between prices paid and prices received by farmers (Tyagi, 1990) The Commission of Agricultural Costs and Prices formulates and recommends the MSP to the Cabinet which decides on the final prices to be implemented These are submitted to various ministries, the Planning Commission and State governments for comments, before submission to the Cabinet The MSPs are announced during sowing time, for wheat in October and for rice in July

[9] The GOI fixes the minimum buffer-stock levels to be maintained during different periods of the year (Annex Table 2 10) A Technical Group on Buffer Stocking Policy, created in 1995, periodically reviews buffer stocking policy and suggests minimum and maximum levels to be maintained and the grain mix for consideration of the Government The Technical Group is chaired by the Secretary of the Ministry of Food, and members include representatives from Ministry of Agriculture, FCI, and the Planning Commission

[10] Prior to 1997, West Bengal (WB) was divided into two marketing areas--the Statutory Rationing Area (SRA)--largely Calcutta--and all others, a separation implemented under the West Bengal Rationing Order 1964 Within the SRA, trade in paddy, wheat and rice was restricted to the public sector -- FCI, state agencies and fair-price shops As a result, the private rice milling industry in the SRA practically disappeared In December 1997, the SRA restrictions were lifted for paddy and rice, but remain for wheat

[11] A Scheduled Commercial Bank is one that is registered with the Bank Schedule of RBI upon fulfilling certain conditions pertaining to the amount of paid-up capital and the conduct of business.

[12] Basmati rice is a high-quality, long-grain, fragrant rice, which accounts for a small percentage of total rice production (about 800,000 mt per year). It is not subject to the same controls as common rice varieties Basmati rice exports were shifted to Open General License in the late 1980s Their minimum export price restrictions were abolished in 1994, and they were exempted from the rice levy

[13] See World Bank, 1997d, "Managing Price Risks in India's Liberalized Agriculture Can Futures Markets Help?", Report No 15453-IN for more detailed discussion

[14] While the permissible limits for common parameters are covered by both FAQ and the PFA standards, the PFA guards against the presence of substances not covered by the FAQ

[15] The small-scale sector is defined as units with investments not exceeding Rs 10 million (Rs 7 5 million prior to 1997)

[16] They are compiled primarily at the district level but not consolidated at the national level

[17] CAP storage involves stacking grain in bags in a pyramid on a cement or wooden platform raised about 30 cm above the ground and covered with synthetic sheets held down with ropes

[18] The cost of capital generally accounts for the largest share of storage costs

[19] To measure the degree of price instability, the seasonal, trend and cyclical components of price movements are filtered out The coefficient of variation of the remaining random components is then estimated as a measure of price instability The coefficient of variation is estimated by dividing the standard deviation of the random component by the last fitted value of estimated regression

[20] The Amritsar and Jalandar districts account for 21 percent of paddy produced in the state of Punjab

[21] In Punjab, farmers plant two to three crops per year For example under the paddy-potato-wheat rotation, a delay of 15 days in one operation affects yields of the next crop The same situation exists for rice farmers planting two to three crops per year (rice-rice-fodder) in the South and East

[22] See World Bank, Rural Finance Report for detailed discussion of constraints on farmers' access to credit

[23] See Wailes and Holder 1987 for the US and cost analysis of storage/processing operations by IRRI 1983.A study of rice milling in Indonesia, however, indicates no economies of scale (Timmer 1973)

[24] In Punjab, there are 100 mills with capacity of 60 to 500 mt per day, the most common size is 150 mt/day

[25] The typical output of mills is 60 percent flour, 18 percent atta and 22 percent bran The atta produced by chakkis have a limited shelf life (3 to 6 weeks), but still longer than atta produced by roller mills Atta produced by chakkis include the bran which improves shelf life. Mills separate the bran More recently, some corporate mills have combined the modern technologies of mills and chakkis to produce and sell branded atta with extended shelf-life in of 2,5 and 10 kg packages

[26] Although many proposed main corridor highway improvement projects could bring economic rates of return above 40 percent, road investments as a share of public-sector plan investment have dropped steadily from 5 5 percent in the Fourth Plan to 3 percent in the Eighth Plan Along with the usual thinness of the pavement originally laid and the reliance on manual labor in road building, the shrinking of resources allocated to highway construction is a major force in the declining quality of public roads in India

[27] For newer box wagons, each rake consists of 37 cars with a payload of 60 mt each Rakes using older box wagons have a capacity of 2,000 mt

[28] Market integration analysis involves the study of the price relationship between homogeneous commodities sold in geographically separated markets Markets are integrated when prices in different locations move together in response to changes in demand and supply and other economic variables

[29] UP agencies include the Marketing Department, Civil Supplies Department, Mandi Committees, Sales Tax Department, Income Tax Department, Weights and Measures Department, Food Inspector, Municipal Corporation, Food Adulteration Unit, Pollution Board, Labor Commission, Police Department, Fire Department and Electricity Board

[30] For example, in West Bengal, each grain dealer licensee must submit a monthly "Form E" detailing transactions by commodity (e g paddy, rice, broken rice) and by variety regarding the opening stock for the month, quantities received and sold and any other information the government may require

[31] In Kandla Port, 10 percent of rice exports were in containers, 90 percent in bags

[32] JNP also has a 50,000 mt capacity bulk storage, mechanized on-line bagging and rail and road transport links

[33] Procurement costs can be divided into two groups obligatory and non-obligatory The former include mandi charges, sales/purchase taxes and the cost of gunny bags Non-obligatory costs include storage and interest charges, mandi labor, forwarding charges and internal movement and establishment charges Of these, FCI reimburses storage, interest and establishment charges to State agencies Distribution costs include interest, freight and storage charges, handling expenses, storage and transit shortages and administrative expenses

[34] Comparisons between FCI and private sector costs are complicated by differing operational procedures and objectives For example, price-support operations may necessitate procurement in more remote localities, thereby increasing public-sector costs relative to the private sector

[35] Stored grain in the godowns and CAPs is fumigated three to four times per year on a regular basis In addition the interior of the godown is sprayed usually every 15 days (or more often if insects are detected) with insecticides, and the bag stacks manually sprayed every 15 days

[36] FCI missing-wagon claims against the Indian Railways amounted to Rs 6 5 to 6 6 billion per year in 1994-95 to 1996-97 (FCI, 1997)

[37] Baby stacks are defined as stacks where the number of bags is less than 20% of the total number of bags received at the creation of the stack

[38] These storage facilities receive grain in bags, which are emptied into receiving hoppers The grain is conveyed in and out of the storage in bulk using mobile pneumatic handling units Grain is re-bagged for further transport Such storage units are very effective in storing bulk grain for long periods (up to 6 years) without loss of quality

[39] According to International Labor Organization rules, labor should only be required to carry a maximum of 50 kgs per bag.

[40] According to FCI policy, the Physical Verification of Stocks (including substandard and damaged) foodgrains must be made at the end of the year on the basis of peripheral count No weighing is conducted in all depots, including CWC and SWC godowns. Physical verification is conducted by 100% weighing of only selected stacks in specified depots Weighing of baby stacks is conducted except for those covered by tender sale or litigation (FCI Annual Report 1994-95, p 93)

[41] Part of the problem may be due to changes in moisture content or leakages

[42] Five UP government agencies and parastatals are involved in procurement the Food and Civil Supplies Department (procurement and distribution of wheat, rice, kerosene, petrol, etc), the Marketing Department (TPDS procurement and distribution), UP Essential Commodities Corporation (procurement of grains), Provincial Cooperative Federation (procurement of grains from farmer members) and the UP Sarkarisan (grain procurement and distribution for members)

[43] Dantwala (1967) argues that the large differences in the price elasticities of demand of low and high income consumers made it unlikely that reductions in open market supplies of key commodities due to some compulsory procurement at below-open-market prices would be accompanied by equivalent decreases in demand As a result "whenever there is procurement, open market prices go up steeply and disproportionately to the quantum withdrawn As such, it would be reasonable to hold that the weighted average price received for the total sales is no less than what he would have received in the absence of procurement"

[44] For example, Schiff points to several limitations of the Hayami et al 1982 study. He notes that they describe the policy as entailing queues by the urban poor to obtain rations at fair-price shops, but their model includes no cost of waiting and assumes no rationing Hayami et al states that the access to the ration shops is general, but their model assumes market segmentation with access restricted to the poor

[45] If the NPC is greater than 1 (the domestic price is greater than the reference price), the commodity enjoys positive protection as a result of government policies Its production is encouraged, while its consumption is discouraged If the NPC is less than 1 (the domestic price is less than the reference price) then the commodity under consideration is disprotected or "taxed"

[46] Preliminary findings of Pursell (1998), which compares observed prices with a simulated wheat price without FCI interventions, show implicit subsidization of wheat in the early 70s, limited or no taxation in the 80s, and an implicit taxation in the early 90s of 10 to 15 percent

[47] In the Northern region, the peak arrivals for wheat occur over a period of only 20 to 25 days starting in mid-April

[48] While an assured market and price from FCI are two of the incentives for water-intensive rice production in water-short areas, other important contributory factors are water pricing policy (usually underpriced and currently free in Punjab), availability of good infrastructure (roads, electricity, markets, access to rail) and services (extension and input markets) relative to other areas, patterns in introduction of new technologies (first varieties developed were best suited for Haryana, Punjab and Western UP)

Chapter 3
Foodgrain Marketing Reforms: Encouraging Private Trade, Changing Government's Role

A. Long Term Goals and Guidelines

3.1 ***Addressing the inefficiencies and fragmentation of foodgrain markets and reforming the fiscally and socially costly policies and practices that govern them will not be easy.*** Nevertheless, the need for reform is urgent. The overall cost of existing policies is too high, especially when their implementation are falling short of the nation's social and economic goals. The current structure, for instance, has not been fully successful in ensuring food security for the poor, while subsidizing food consumed by the more affluent. As market inefficiencies increase marketing cost, these in turn limit farmer's incentives to better their income and the quality of their produce and penalizes consumers with higher-than-necessary prices. And it needlessly inflates the country's fiscal deficit.

3.2 ***Even though India has achieved average foodgrain self-sufficiency under this regime and done much to reduce poverty levels, its foodgrain markets have only recently begun to open to the rewards and pressures of global trade.*** Without extensive improvement, the system would be unlikely to ensure either that domestic production of rice and wheat will keep up with rising demand or that Indian grain, in times of surplus, will prove competitive in world markets.

3 3 ***What direction should the foodgrain marketing system be heading in the future, in view of the changing foodgrain scenario in India?*** At this juncture, a long-term vision of the foodgrain sector could be an unfettered marketing system where foodgrains in desired volumes and quality are readily available when and where needed, at the lowest marketing margins, with producers facing attractive prices and consumers purchasing foodgrains at affordable prices. The poor are protected from price and income shocks by effectively targeted safety nets (including food), while drastic supply shocks are mitigated by a cost-effective and well-managed price stabilization mechanism.

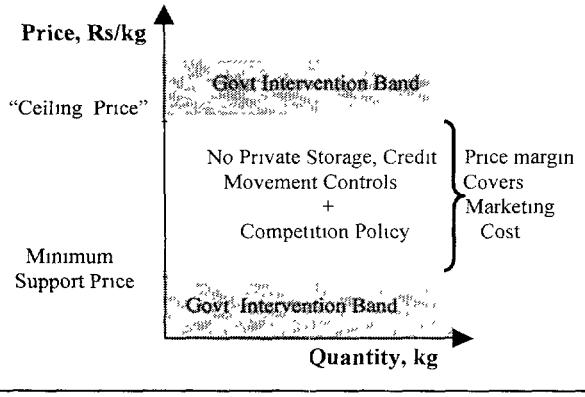
3.4 ***This vision could be attained through a liberalized market environment where well-functioning, efficient and competitive foodgrain markets perform the primary role of marketing, distributing, exporting and importing grain.*** In this scenario, a regulatory framework that fosters private sector participation and competition in foodgrain markets governs, while a well-designed competition policy guards against unfair practices. Farmers, traders, consumers and policy makers have ready access to accurate and timely market information to enable them to make appropriate decisions on resource allocation (e.g. production and marketing) and to take appropriate actions to help minimize risks associated with temporary food shortfalls and surpluses.

3.5 ***Ensuring food security for the poor would remain a key role for the government, but more cost effective and better targeted instruments for protecting the poor could be implemented.*** Dependence on physical handling of the grains by the government could be phased out and more market-based instruments, such as food coupons and food stamps that can be presented to private shops, are adopted. This permits the poor access to a critical food safety net, while allowing the private sector to operate efficiently and effectively in an environment free of associated distortionary interventions and controls. Improved targeting of the poor is enhanced by greater participation of communities in the selection and implementation process.

3.6 ***The price stabilization program could be reoriented to improve effectiveness and reduce costs.*** With well-functioning foodgrain markets responding quickly to localized surpluses and shortages and a more effectively targeted public distribution system (in addition to other supplementary safety nets such as food-for-work programs) shielding the poor from sudden adverse conditions arising from price and income shocks, the role of the GOI and FCI in ensuring national food security through price stabilization measures would be much reduced. Supported by accurate and timely market information, FCI would operate more narrowly and far more predictably than at present. A reformed FCI would intervene in the market only on the basis of clear and transparent "price band rules" that set the upper and lower price limits that allow adequate marketing margins for the private sector to operate (Figure 3.1). While strategic reserves/buffer stocks are maintained, their levels and costs are kept at a minimum through better management, including greater reliance on other instruments, such as trade (exports and imports through private channels) or other financial instruments. These reserves are procured through the market at market prices.

3.7 ***Achieving the long-term vision for the foodgrain marketing sector would require beginning the process of reform as soon as possible.*** Striking a new balance between government intervention and private competition would be the central purpose of marketing reform. Shrinking the former and stimulating the latter, a healthy policy and regulatory environment could encourage efficiency and investments in foodgrain marketing, with the principal change coming from adjustments in the price stabilization and public distribution programs This would involve:

Figure 3.1: How a Price Band Operates....



(a) Improving the efficiency of the foodgrain marketing system by:

(i) Promoting private sector efficiency and investments through:

- FCI open market sales at market prices;
- formulation and adoption of "price band" rules that allow efficient private sector participation, supported by a strengthened market information system;
- Phasing out the rice levy over the medium term;
- Fostering the development of negotiable warehouse receipt systems
- Formulating and implementing a competition policy to ensure fair trading practices by private traders.

(ii) Concurrently with the above, improving the efficiency and effectiveness of FCI by:

- Modernizing systems through subcontracting of activities to private sector;
- Improving management incentives for efficiency and operating under hard budget constraints.
- Putting on hold decentralization programs to state agencies until appropriate incentives are designed to ensure medium to long run cost minimization in State operations and adequate mechanisms are formulated to resolve conflicts between State and National food security objectives.

(iii) Upgrading market infrastructure and support services, such as mandi facilities, telecommunications, roads, grading and market information systems.

(b) Improving the targeting and delivery of safety nets, particularly the TPDS by:

(i) Proceeding with proposed phase-out of APL allocations and increasingly relying on open market sales at market prices to cushion non-poor from price shocks.

(ii) Piloting food stamp programs in selected cities and municipalities with well-developed private markets.

3.8 ***The various required actions are summarized in matrix form in Table 3.3 at the end of this chapter.*** For an analysis of the likely impact of these reforms on the Ministry of Finance/Ministry of Food, FCI, state Marketing Boards, private traders/processors, labor groups, farmers and consumers, see the matrix summarizing the proposals in Annex K, Volume II. Annex Figure 3.1 also offers a graphic conceptualization of results of the long-term reform process.

3.9 ***These basic and overdue reforms could bring substantial savings***. A mere 10 percent reduction in food subsidies could generate fiscal savings of as much as $170 million per year. Improved private efficiency that reduces physical foodgrain losses alone by a third could generate financial savings of as much as $60 million and make available an additional half a million mt of grain per year. Simply cutting FCI's operational costs by ten percent could save as much as $139 million a year. The various measures proposed for minimizing the distortions that flow from government intervention and for maximizing the role of competitive, private trading occupy – in that order – are discussed in the rest of this section. This chapter examines those possibilities and the means of realizing them.

3.10 ***Due to the close interdependence of foodgrain markets, the targeted public distribution system and FCI foodgrain operations, it is critical that reforms follow an integrated approach centered on achieving food security goals.*** The Ninth Five Year Plan 1997-2002 appears to recognize that necessity. India's 1997-2002 strategy for food security will focus on self-sufficiency of foodgrains at the national level, availability of foodgrains at affordable costs to local level, and household food security for the poor (Box 3.1). Foodgrain marketing, the Plan foresees, will move to improve the management of buffer stocks. External trade will play an expanded role in coping with surpluses and shortfalls while controls on foodgrain marketing diminish, so that market competition and efficiency rise, and a common, national market comes into being. Additionally, the Targeted Public Distribution System is to be reoriented so that its benefits go more specifically to the poor and its delivery system gains in efficiency.

3.11 ***Those objectives are sensible and attainable.*** Without scrapping vital commitments to stabilize foodgrain prices and ensure food security for the needy, supporting policy and regulatory instruments could and should be recast to eliminate their distorting, adverse impact on grain marketing. The GOI has already made a strong beginning with the TPDS. Fostering the development of a modern, efficient and competitive private marketing system would contribute to the GOI's food security goals by reducing marketing margins in private channels. Stronger incentives, including the means to turn warehoused grain into working capital, would prompt farmers to adopt productivity-enhancing technologies and practices and promote efficient resource allocation for production and marketing, spurring higher food production and food quality and rural growth. The cost of delivering quality products to consumers would decline, another plus for household food security and a factor likely to moderate pressures for public assistance to the poor. An efficient private sector would contribute to reducing the sizable physical losses, in volume and quality, throughout the marketing system and prepare

the sector for meeting the rising (direct and indirect) demands for foodgrains and other higher value grain products of India's growing population. More efficient domestic markets would also improve the international competitiveness of the Indian foodgrain sector, and contribute to improving fiscal balances. Finally, focusing public sector efforts, without distorting private-sector dynamics, on cost-effective, well-targeted safety nets would also reduce the fiscal costs of India's food policies.

3.12 ***As mentioned above, there will be losers and resistance from them. But for India's poor, India's grain farmers, India's consumers and India's taxpayers, foodgrain marketing reforms promise significant benefits.*** Change would be a win-win proposition. It is a strategy to be set in motion at the earliest possible time and carried out consistently through the early years of the next century.

B. Promoting Private Sector Efficiency and Investments

Improving Price Stabilization

3.13 ***As currently practiced, GOI efforts at stabilizing grain prices are untransparent and unpredictable, that they have the effect of crowding out private traders.*** Fiscally costly – and becoming more so as public buffer stocks swell – erratic marketing and trade controls, open market sales and imports and exports undermine the development of an integrated, efficient private sector and the willingness of traders to enter the market, much less invest in modernizing its operations. A recent study by Jha and Srinivasan (1997) confirms that buffer stocks are the most costly instrument for price stabilization, compared to other alternatives such as variable levies and canalized trade (government trade monopoly) (Box 3.2).

3.14 ***GOI, which now sells its buffer stocks at below-market prices could immediately reverse that practice and make open- market sales at prevailing market prices.*** The current practice only serves to create a windfall for the few select mills/traders that receive the subsidized grain. Such a switch would both end the undercutting of private sector operations and profitability and also reduce the fiscal subsidies required by FCI. For example, from July 1996 to March 1997, FCI sold 4.4 million mt of wheat through open market sales. In New Delhi, by December 1997, the FCI wheat open-market sales price was about Rs2,000/mt cheaper than the prevailing wholesale market price.[49] Even taking an

Box 3.1: Ninth Five Year Plan 1997-2002 Strategy for Food Security
Implications for Foodgrain Marketing

According to the Ninth Five Year Plan 1997-2002, the Government of India strategy for food security will focus on self-sufficiency of foodgrains at the national level, availability of foodgrains at affordable costs to local level and household food security for the poor. Food security at the national level would come from a combination of domestic production, international trade and buffer-stocking operations. A multi-prong strategy would work at the household level, where food security implies having physical and economic access to foods that are adequate in terms of quantity, quality and affordability Development strategies and micro-economic policies, for instance, would create conditions for growth with equity. Accelerated growth in food and agricultural sectors would expand food sources and income. Promoting rural development focused on the poor; improving their access to cheap credit and to land and other natural resources and increasing employment opportunities would increase the ability of the poor to grow and to buy food Finally, the strategy envisions introducing income-transfer schemes, including public distribution of subsidized cheap food, and improving emergency preparedness to provide food aid during natural disasters

Importantly for the foodgrain marketing system, the new strategy lays emphasis on improved management of buffer stocks, on using external trade to manage surpluses and shortfalls, on minimizing controls on foodgrain marketing to facilitate the development of a common market, and on restructuring the Public Distribution System to target the poor

Reorientation of Buffer Stock Management (i) open-market sales at market-related prices through auction, (ii) reduce volume to minimum, (iii) use of exports in years of excess production and imports in years of lean output, (iii) close monitoring of prices, (iv) shift from the use of quotas and restrictions to import tariffs and export taxes, (v) using international futures and option as complementary instrument to buffer stock management

Integrating Production and Distribution Systems to Develop Common Market: (i) ending "stop-go" restrictions and eliminating domestic market and price controls, (ii) minimize restrictions and penal provisions of the Essential Commodities Act to facilitate development of a common market; (iii) introduction of futures trading in grains; (iv) promote regional diversification of foodgrain production

Restructuring the Public Distribution System (i) target PDS to below-poverty-line (BPL) households, (ii) increase transparency and accountability through improved monitoring of distribution system (i.e involve Panchayats, establish Vigilance Committees), (iii) issue BPL allocation at half the central issue price and above-poverty-line allocation to central issue price, which is linked to the economic cost, (iv) offer financial incentives to States that reduce poverty levels below national average

average price difference of Rs 100 per mt between market and FCI open-market sale prices, selling at market prices could have reduced GOI fiscal subsidies by as much as Rs 440 million during the period Just the release of additional grain supplies, which exerts downward pressure on market prices, achieves price stabilization goals. In 1998, the GOI Department of Food and Civil Supplies took a positive step in this direction in selling additional allocations of wheat to State governments closer to though still below market prices. Options for direct sales through multiple private sector channels could be explored to eliminate additional administrative costs of selling through State agencies

3.15 ***Beyond an immediate move to open-market sales at market prices, the food price stabilization program must set the kind of clear, transparent and consistent rules for its operations.*** This would boost private sector confidence and willingness to invest in the market system. First, a revised program would maintain a "price band" — the width between the ceiling and floor price — which permits reasonable marketing margins for profitable private sector operations. The Commission of Agricultural Cost and Prices could potentially assume an important role in the formulation of such bands. Second, new policies would have to clearly outline the nature and scope of policy and regulatory instruments and the rules governing when they are to be triggered by price movements outside the desired price band. Third, interventions should rely as much as possible on market mechanisms; not only open-market sales at market prices but also more liberalized trade, such as public tenders of imports to the private sector.

3.16 ***Fourth, to be GATT consistent, price bands would need to be consistent with the long-run trend in international reference prices, shifting from non-tariff instruments to tariffs.*** The minimum support price, the lower bound of the price band, would need to be more closely linked to international prices rather than being based largely on estimated "average cost of production" as it is today To insure that the new rules work in a stable and consistent manner, stringent limits should govern the use of market-distorting market controls; Central and State storage, credit and movement restrictions should go into effect only in extreme emergency conditions or when price floors or ceilings are breached. As much as the private sector, government would need up-to-date, high quality market information to manage its programs effectively. The design of an alternative optimal price stabilization/buffer stock management scheme that achieves a better balance between public and private sector objectives is complex and requires careful formulation to effectively integrate economic, fiscal, social and political concerns.

Box 3.2 Analysis of Grain Price Stabilization in India

Jha and Srinivasan (1996) examined the trade-off between achieving specific foodgrain price stability objectives and the associated fiscal costs of a variety of price stabilization instruments. These include buffer stocks, canalized (or public sector monopoly) trade, variable levies on private external trade, subsidies to the private sector and combinations of each under different scenarios--open and closed trade regimes They analyze the welfare implications of these instruments on producers and consumers and the trade-off between price variability and government costs using a dynamic stochastic multi-market model of the Indian foodgrain market

In general, they find that consumers lose and producers gain from price stabilization policies They also find that the relative ranking of alternatives changes depending on the objective pursued Under free and closed trade regimes, they find that holding domestic public buffer stocks is the costliest option For a given level of price stability, it involves the highest cost and at a given level of public cost, it leads to the lowest level of price stability The cost of maintaining buffer stocks under free trade is higher than in a closed trade regime Examining the tradeoffs between reduction in price variability and government costs, they find that imposing variable levies, when private external trade is liberalized, is the least-cost option for public sector, compared to subsidizing private storage and canalized trade Ranking the different alternatives based on the reduction of price variability per unit of government cost, subsidies to private storage are the most cost-effective, followed by canalized trade and variable levies Ranking the different alternatives in terms of net producer and consumer welfare increase relative to the reference case of no policy intervention, the subsidy to private storage under free trade ranks first They note that stabilization costs are highly sensitive to the levels of trade margins assumed Increased marketing efficiency leading to lower trade margins leads to a reduction in public stabilization cost in cases when variable levies and canalized trade are used

Source. S Jha and P V Srinivasan, 1996, "Grain Price Stabilization Policies in India," IGIDR. Bombay Draft

The challenge calls for additional analysis.

3.17 ***On the contrary, available evidence points to the large savings that better timing of open- market sales and of imports could earn.*** As long as they do not arrive during harvest periods, for instance, imports can prevent sudden drastic domestic price upswings. Sound management of purchases abroad can also minimize the large country impact of India's often heavy demand on world prices. Policies that keep stockholding to a minimum, moreover, would reduce costs and fiscal subsidies. In Indonesia, improvements in buffer stock management and external trade enabled the Food Logistics Agency's (BULOG) to cut average stock levels almost in half The drop from over 2.1 million mt to less than 1.4 million mt between the 1980s and the early 1990s saved about $70 million per year (at $100/mt) in storage costs (Annex H). By the early 1990s, the coefficient of variation of rice prices in Jakarta and Surabaya, Indonesia averaged less than 10 percent.

3.18 ***To conform to the openness of its selling activities, FCI could gradually phase out the rice levy and procure its supplies in the future through open, competitive public tenders.*** No longer obliged to set aside large portions of their output for the levy – nor guaranteed a buyer – millers would see their profitability rise and receive a strong stimulus to undertake cost-reducing and efficiency-enhancing modernization investments that could help contain the public costs of market-price purchases. Ending the levy from which hullers and shellers are exempt would eliminate the bias against modern and more efficient rice mills and the official and unofficial administrative costs involved in enforcing the levy. The resultant lower risks and costs associated with milling would translate into lower marketing margins with consequent benefits for both farmers and consumers.

3 19 ***An integrated approach would contain fiscal costs over the longer term.*** At the early stages of implementation, the phased shift to open-market purchases would probably raise FCI's costs, since pan-territorial and pan-seasonal rice-levy prices do not fully reflect transport and storage costs. But smaller, better-managed buffer stocks and phasing out of the APL allocations of TPDS as originally proposed, for example, would bring savings in spending for procurement, transport and storage. Increased reliance on open-market sales at market prices would further reduce the fiscal subsidy requirement. Higher levels of FCI efficiency (mirrored by its private sector contractors) would lower operational costs, and that competition-driven reduction in costs and physical losses in the system would bring down private-sector marketing margins and, with them, procurement prices. Additional analysis on the probable size and timing of fiscal expenditures in short to medium term associated with the phase-out of the rice levy and implementation complementary of measures would facilitate fiscal planning.

3.20 ***With expanding private sector participation, a new regulatory framework, particularly the adoption of a competition policy, would be imperative.*** This would involve transparent, well-designed mechanisms, rules and procedures that ensures that private foodgrain marketing proceeds in a competitive fashion. An appropriate independent regulatory authority, insulated for political forces, would be designated to implement the competition policy. This agency would be empowered to perform separate investigation, prosecution and adjudication functions subject to checks and balances, including rights of appeal, review of decisions, and access to information on legal and economic interpretation and impose significant penalties on firms found to be following unfair trade practices. Its proceedings would have to be expeditious and transparent while safeguarding sensitive business information.[50]

Promoting Use of Negotiable Warehouse Receipts

3.21 ***If, without having to build their own storage facilities, India's farmers could hold their grain back from market and borrow briefly against its value and expected higher price, they (or traders seeking the same advantage) could tap important sources of working capital.*** Negotiable warehouse receipts (Box 3.3) would give them both the competitive power of extending their potential sale period and much improved access to short term credit. With stored foodgrain functioning as collateral, credit histories and asset bases become less important and lenders seeking to expand their client base can take on even small farmers as borrowers. By separating the task of managing storage from ownership of foodgrains, a receipt system fosters the development of a professional and well-capitalized warehousing industry capable of creating economies of scale and scope that reduce storage costs and losses. The unbundling of ownership and management of foodgrain storage, opening markets to small farmers and traders, would also help prevent large dealers from getting a stranglehold on trade. It helps reduce the cost of capital because a standardized and securitized warehouse receipt system reduces lenders' risks, monitoring costs and risk premiums. Large-scale use of warehouse receipts facilitates links between local, national and international prices. Trading in warehouse receipts themselves – effectively in title to goods or commodities for forward delivery -- would provide helpful information on stockholdings in the system. Finally, warehouse receipts could offer the government a more cost-effective way to manage its buffer stocking requirement, since it could buy the receipts in the open market and thus secure supplies without having physically to hold stocks.

3.22 ***The prospects for warehouse financing in India are bright.*** Many of the preconditions for its successful introduction already exist. The existing Negotiable Instruments Act, for instance, only needs to be amended to establish the negotiability of warehouse receipts issued by licensed private warehouse operators. Insurance is already available, and the banking system has experience in working capital financing using warehouses owned by banks. An active capital and money market can absorb warehouse receipts, and the private sector has had considerable practice in setting up and operating warehouses, not least on behalf of FCI and the State and Civil Supplies Corporation.

3.23 ***To bring the system into being, India would need to establish a Warehousing Code*** that sets out the operations of a warehouse receipt system and the technical standards for management of warehouses and establishes warehouse licensing and bonding agencies to administer and regulate the activities of private warehouse operators. The Central and State Warehousing Corporations could shift from operating warehouses to regulating them. Lenders will require new legal protection of their ownership interests in warehouse receipts so that they can quickly take control of the

Box 3.3: How does a Warehouse Receipt Operate?

As an alternative mechanism for raising working capital, a warehouse receipt system offers farmers or traders to convert foodgrain into collateral held in a licensed warehouse Warehouse operators issue negotiable receipts that farmers/traders could either retain or assign/transfer to a lender in return for a percentage of the value of the commodity – a loan to be repaid by a certain due date Lenders record their security interest with warehouse operator so that, if a borrower defaults, a lender can directly claim the commodity from the warehouse operator and sell the foodgrain to liquidate the loan A negotiable receipt also gives the lender the opportunity to trade the receipt on a secondary market and refinance its loans

The Warehouse Code in the United States requires that every agricultural commodity receipt contain the location of the warehouse; the date of issuance, the consecutive number of the receipt, a statement guaranteeing delivery of the product to the bearer, to a specified person or to order. the storage rate, and the quantity, weight, grade or class of the product In addition to a statement that the receipt is subject to the warehouse law and the signature of the licensed warehouse operator, the receipt must also identify the ownership of the warehouse and specify the amount of advance and liabilities incurred for which the warehouse operator claims a lien

Source A Gupta 1998 "India Foodgrain Marketing Study, Financing Issues", mimeo

stored foodgrains assigned to them by the borrower Instituting a nationally recognized formal system of grading – a reform valuable in itself – would provide the basis for pricing foodgrains. To encourage banks to lend against such collateral, they could be permitted to use warehouse receipts as part of their Statutory Liquidity Portfolio Requirements. A warehouse receipt system, of course, would only bring maximum benefits if the reforms already discussed are implemented Along with a stable and transparent price policy, price-band rules must rein in storage, price and movement controls. Also, in the several states that impose them, storage ceilings linked to grain trading licenses should be lifted.

C. Improving the Cost Effectiveness of FCI Foodgrain Operations

3.24 ***Some portion of productive public expenditures required to foster growth of the foodgrain marketing system could be met from possible substantial savings generated from improved FCI efficiency.*** In the longer term, reforms in the way FCI buys and sells grain and in the quantities it holds as buffer stocks could shrink its activities and their cost. But consistent with those gradually implemented improvements, short-term measures can cut the sizable physical losses it incurs and the budgetary subsidies it swallows. Stepped-up FCI efficiency can, above all, improve the quality of FCI's service to its clients—the poor. In 1996/97, FCI's foodgrain distribution and buffer stocking costs totaled about Rs 49.5 billion ($1.4 billion) of which distribution took about Rs 24.5 billion and buffer stocking, about Rs 25 billion.[51] Operational improvements that reduce costs by a mere 10 percent can generate savings of as much as Rs 4 9 billion ($139 million) per year. Those are impressive sums. They would remain out of reach, however, unless authorities recognize that efficiency-raising measures are going to be inadequate and ineffective without the accompanying reforms to enhance private sector participation and efficiency. As FCI is streamlined, the private sector must grow to ensure fiscal sustainability in the medium to longer term as domestic foodgrain demand increases rapidly.

3.25 ***FCI efficiency could increase by subcontracting various functions to the private sector.*** This could include concessional arrangements and management contracts, where the private sector invests in more modern grain handling systems. This approach separates the functions of financing from the delivery of publicly provided services. FCI retains the responsibility of financing and overall coordination of foodgrain operations, while transferring actual performance of foodgrain operations to the private sector. At the same time, it would have to reform its management policies to strengthen incentives to improve efficiency. But to insure both those changes, FCI would have to work under hard budget constraints. Exploring new private-sector partnerships dovetails with the interest of the Department of Food and Civil Supplies in public-private joint ventures. And such subcontracting would take advantage of higher private sector efficiency in conducting activities that are largely a private good but that aim at the public goal of ensuring access to foodgrains by the poor at acceptable fiscal cost. Reversing long-established FCI philosophy and practices would require a determined effort, but pressure for genuine efficiency is mounting, and – as the following discussion documents – greater efficiency is attainable.

Improving Technical and Economic Efficiency

3.26 ***Modernizing the physical aspect of FCI's grain marketing operations to gain cost-effectiveness would require improved infrastructure and equipment.*** Investments in those areas could go to set up bulk-handling and storage facilities in foodgrain assembly areas (e.g. mandis in surplus states); at key transfer points (e.g. railheads in transfer and receiving areas), in distribution areas (e.g. distribution centers in deficit states) and into modern transport (bulk trucks, hopper cars) (Table 3.1). A recent study (Roessler, et al. 1998) indicates that possible savings from

Table 3.1: Infrastructure/Equipment Investment Options for Modernizing Grain Handling

Purpose	Type of Investment	Possible Location
Collection Storage	Vertical silos and flat-bottom storage tanks (5,000-30,000mt), mechanical handling equipment, weighing facilities, cleaning, grading, sorting and fumigation equipment, bulk trucks	Mandis in surplus states farm gate
Transfer Storage	Vertical silos and flat-bottom storage tanks (50,000-100,000mt),high-capacity mechanical handling equipment, cleaning and drying facilities	Rail heads in surplus states
Receiving Storage	Vertical silos and flat-bottom storage tanks (50,000-100,000mt), high capacity mechanical handling equipment, cleaning and drying facilities	Rail heads in deficit states and ports, in case of exports
Distribution Storage	Vertical silos and flat-bottom storage tanks (5,000-30,000mt), mechanical handling equipment, weighing facilities, cleaning grading sorting and fumigation equipment, bulk trucks	In or near important consuming centers
Transportation	Bulk trucks, hopper cars, wagons	Along the entire supply chain for trucks and wagons for movement between collection and receiving rail head

Table 3.2: Extent of Private Sector Participation

Option	Investment in fixed assets	Operations and Maintenance	Asset Owner-ship	Commercial risk on fixed asset investment	Duration of the option
Joint Venture	Shared	Shared	Shared	Shared	Indefinite
BOO	Private	Private	Private	Private	5-10 years
Mgmt Contract	Public	Private	Public	Public	3-5 years

adopting more modern technologies could exceed $260 million per year.[52] The technological and investment advances would require more detailed, careful logistical and operational analysis to ensure both correspondence with market needs and – as experience in other World Bank projects confirms – close coordination with the overall, integrated thrust of reform. One practical example: gunny sacks would have to go. Unless wheat and rice are exempted from the requirements of the Jute Packaging Materials Act, investments in bulk-handling and storage would be unrewarding

3.27 ***Nor will public-private joint ventures, in which the Ministry of Food's Department of Food and Civil Supplies is keenly interested, automatically remedy the inefficiencies, irregularities and cost-control weaknesses that have been common to public-sector enterprises.*** Improved performance would require clear lines of authority Public-private joint ventures in India (manufacturing, textiles, and chemicals) have tended to fail in the past because of residual public-sector governance problems. Such drawbacks could be avoided by permitting majority private ownership of the joint venture coupled with a management contract to the firm for services to be provided. The terms of partnerships between the public and the private sector in other sectors such as the power and telecommunication sectors offer a starting point for examining possible ownership-sharing arrangements.[53]

3.28 ***Another avenue of change would convert various FCI activities (procurement, storage and handling, transport) into separate, stand-alone operations delegated to the private sector under overall FCI coordination*** (Table 3.2). Under a build-operate-own (BOO) concession awarded through competition, for instance, the private investor (concessionaire) constructs and runs a facility and comes to own at the end of the concession period. In the interim, the concessionaire provides services under contract to the client (government) for an agreed fee to recover the cost and earn a risk-adjusted return on investment. For the facilities already owned by FCI, private operators could bid competitively for management contracts with eligible organizations -- including state agencies and the private sector. Either the contractual operating arrangement or the BOO option would foster efficiency, enhance competition and build private sector capacity while offering

a streamlined FCI increased flexibility to adjust to the changing economic environment so that it could smoothly divest specific functions to the private sector as the domestic situation warrants.

3.29 ***The private sector should be drawn to these opportunities by the relative ease of financing their investments, since separate, former FCI functions could be handled by medium-sized as well as large companies, allowing lenders to spread their credit risk widely.*** Those lenders, however, would also need assurances that FCI payments would be adequate to service borrowers' debts; that land, environmental and other clearances are in order; and that – in case of default – they would have the right to takeover a concession and assign it to a new, acceptable operator.

3.30 The designated regulatory authority implementing the competition policy described above could also oversee FCI's subcontracting operations, to ensure it proceeds in a competitive fashion. For FCI business transactions with the private sector, regulation should cover the award of concessions or contracts; technical, performance, delivery and operating standards; and tariff and service charges to be paid to concessionaires. Both the regulations and the independent regulatory body need to be enacted so that oversight ensures consistency and precludes conflicts of interest in FCI awards of different concessions.

3.31 ***Since greater efficiency in FCI operations would mean fewer jobs, labor opposition to some reforms is predictable and must be effectively addressed.*** Approaches adopted in restructuring public and private enterprises in other sectors, such as the textile industry, could provide useful examples of successes and failures and lessons for the future. Compensatory measures for textile workers included voluntary retirement schemes (VRS) involving compensation and retraining in other skills. State development initiatives fostering rural employment could help open alternative employment opportunities

Improving Management Efficiency

3.32 ***A more commercial outlook could help improve management performance.*** One helpful measure would be to institute practices that account for the true economic costs of FCI operations (including factoring the true economic cost of credit received). Another would entail conducting systematic performance benchmarking across subunits and relative to the private sector. As very basic moves, FCI should adopt a transparent, merit-based system of personnel management, and the Government of India should impose hard budget constraints on FCI operations. At the same time, FCI would be investing to hasten completion of the nation-wide modernization of its logistical monitoring systems and to revamp and modernize its cost-accounting and monitoring systems. Finally,

3.33 ***The on-going decentralization of procurement and distribution operations to selected state agencies by the Department of Food and Civil Supplies (DFCS) merits further reevaluation.*** To ensure that the decentralization strategy achieves its intended goals of reducing the cost and improving the effectiveness of the government's foodgrain operations, there is a need to revisit whether this strategy provides adequate mechanisms to ensure cost minimization in the long run and whether appropriate safeguards have been incorporated to reduce conflicts between national and state food security objectives.

D. Strengthening Market Infrastructure and Services

3.34 ***The mandis, India's regulated markets, are the gateway to the grain trade, but their facilities are, in most cases, antiquated and inadequate.*** Their management provide neither the means to grade paddy, rice and wheat according to quality nor the instruments to collect and disseminate essential information about produce prices and quantities. Improving their performance is critical.

Improving Performance of Regulated Markets

3.35 ***Reform should begin with increased decentralization of financial and management controls, at a minimum delegating greater authority to market committees and, where possible, divesting markets over entirely to users.*** Given that leeway, market operators could improve management and strengthen their financial capacity by retaining greater control over revenues they collect. These could be used to modernize infrastructure and services – covering the yards; paving roads; installing electricity, portable conveyors and modern cleaning, weighing and grading equipment; and upgrading storage facilities. Such advances would cut wastage and also lay the base for government-aided improvements in support services – quality grading and market information networks.

3.36 ***Regular market committee elections, as mandated by the Agricultural Produce Markets Act, should be promptly held to ensure the participation of committed and qualified representatives.*** Marketing restrictions in selected states (e.g. Punjab and UP) should also be relaxed so that farmers who wish to bypass mandis and sell directly to traders or mills can do so. As in other states, such as AP, alternative mechanisms for collecting fees and associated taxes (e.g direct mill payment to government) could be formulated while permitting farmers free choice of where and to whom to sell To increase efficiency, authorities could also explore ways to let private subcontractors chosen by competitive bidding collect market cess.

3.37 ***The GOI and state governments must make coordinated, selective investments to ensure the flow of high quality and timely market information,*** the lifeblood of an efficient marketing system and an effective price-stabilization program. Improved information collection, analysis and dissemination, including the increased use of more advanced data collection approaches such as remote sensing and geographic information systems could justify setting up electronic linkages between central and state-level units and among regulated markets. To get high returns on these investments, authorities will have to strengthen information management systems and upgrade staff skills. States where regulated markets operate could undertake price monitoring and local data dissemination (e.g. through radio broadcasts and on site access to market information), with all concerned exploring ways to recover the costs of such fundamental improvements (Box 3.4).

3.38 ***One key category of information that should be collected and disseminated concerns the quality of grain sold, stored and shipped.*** Without a standardized grading system, however, not only is that data unavailable, farmers are denied any reward for quality output and any incentives to adopt the technologies and practices that would boost the worth of their output. Grading also cuts marketing costs in ways that benefit traders, millers and consumers. Dealers gain an objective basis for meeting buyer specifications and thus reduce the risk and transaction cost of using many suppliers. They save on transport of waste products mixed with grain. Underpinning the development of a warehouse receipt system that helps reduce working capital costs, the system gives traders detailed information at low cost about the products they purchase. For millers, the availability of grain that fits varying quality could justify investing in better machinery and adopting quality management practices, and for India's international grain traders, a standardized grading system would ease the passage of their goods through foreign markets.

3.39 ***The first step toward such a system requires replacing FCI's use of "fair average quality"(FAQ) for its sales and purchases with an incentive framework of explicit rewards or discounts according to product quality.*** As a practical start, a nationally recognized inter-sectoral committee composed of representatives from producers', consumers', millers' and exporters' associations, other trade associations, and government (i.e. Departments

Box 3.4: International Experience in Charging for Market Information

The majority of market information systems (MIS) in developing countries is a public service, although a few countries are going for partial or full cost recovery for information services In Colombia, a new MIS generates market information on ten wholesale markets on a daily basis This information is transmitted to Bogota by satellite and a detailed bulletin is prepared by noon of the same day This is available, at a price, to traders and anyone else who wishes to pay The same information in summary form is subsequently published in newspapers and broadcast on the radio In China, market information is distributed through a dedicated phone line or a computer modem connection Callers pay for the information through the cost of a phone call, with the MIS company receiving revenue from the phone company

In South Africa, Agritel, a privately run information service supplies market information from all wholesale markets and 11 major abattoirs The markets are computerized and all transactions (price and volume) are recorded Agritel receives data daily on all markets which it then processes and packages in a more user friendly format Agritel has approximately 400 users, who pay a monthly fee ranging from $28 to $30 depending on the number of markets and services the user wishes to access Users include producers, caterers, packers, butchers, wholesalers market agents, and the market themselves Agritel is cost effective only because of ease of access and availability of fully computerized data

Source A W Shepherd, 1997, *Market Information Services, Theory and Practice,* FAO Agricultural Service Bulletin 125, Rome FAO

of Food and Civil Supplies, Food Processing and Agriculture and Cooperation) should formulate a revised system in which a number of grades and quality characteristics match the market's grading standard needs. For this quality differentiation to gain nationwide acceptance, its private-sector users and beneficiaries must play a critical part in its design

Expanding Other Physical Infrastructure

3.40 ***Although foodgrain-marketing reform entails a dwindling government presence in markets themselves, fostering investments in key infrastructure would be critical to improved market performance.*** . India's grain markets – and India's industries and cities and families – need far more efficient power generation and improved roads, highways, railways and ports than the country now has. Specifically but not exclusively for grain and other agricultural produce, these infrastructure must be modernized. In addition, port and customs procedures should be significantly streamlined and the railways should provide equal priority to FCI and private sector grain in rail transport. Over time and especially as India opens wider to global trade, such investments can pay for themselves in lower marketing costs and higher export volumes Improving basic infrastructure services through private sector participation in electricity, transport and telecommunications would make a major contribution to growth and has been a major focus of Indian policy since 1991. Improved sector regulatory frameworks and independent and empowered regulatory authorities would stimulate efficient private sector participation (See Volume II, Annex J).

E. Public Distribution System: Smaller and on Target

3 41 ***To be consistent with the food-security goals of the Ninth Five-Year Plan, reform must insure that foodgrain prices do not rise so high as to harm households now above the poverty line.*** As allocations for distribution to such consumers decline, appropriately timed open market sales guided by the refined "price-band" rules could and should prevent prices from going too high. In addition, savings won from more cost-effective FCI operations would be passed on to the states through lower economic costs of APL distribution.

3.42 ***Instead of distributing BPL allocations through inefficient public channels, India could begin pilot-testing alternative distribution mechanisms such as food coupons or food stamps in a few localities such as food coupons or food stamps.*** Food coupons are "secured paper or notes", which like money, permit the purchase of a list of food items in limited quantities at a discounted price. Food stamps are "secured paper or notes" which could be used to buy a number of specific foods at market prices. Such a change could help reduce fiscal costs and the crowding-out effect on the private sector of subsidized prices and exclusive

"public" markets for grain. Adopting a pricing structure for BPL foodgrains to reflect storage and transport costs, eliminating pan-territorial and pan-seasonal pricing, however, would be socially inequitable, politically unfeasible and administratively difficult to implement. It would imply pricing grain for the distant poor higher than for those living closer to surplus areas. A food stamp scheme, complemented by other safety nets (e.g. food for work programs), would offer the poor continued access to subsidized grain. Such a monetized income transfer from the government, rather than a price subsidy, would also permit unfettered private-sector participation in foodgrain markets and pare down the fiscal costs of supporting public-sector handling of foodgrains. It would be reasonable to begin testing this option for BPL households in selected larger cities and municipalities where private grain-trading operations are better-established and well-developed. Annex I in Volume II describes some international experience in implementing food stamp programs.

Table 3.3: Proposed Program for Action

Area	Recommendations
I. Improving the Efficiency of the Foodgrain Marketing Systems	
A Promoting Private Sector Efficiency and Investments	**GOI:** *ST:* ➢ Begin open-market sales of rice and wheat by FCI at prevailing market prices ➢ Develop competition policy to ensure fair competition in foodgrain markets Inputs from well-functioning market information system would be crucial *ST to LT* ➢ Ministry of Food with assistance from National-level Expert Committee on Buffer Stock Management to develop clear and transparent rules for price interventions that permits private-sector operations within a reasonable "price band" and eliminates unpredictable movement. storage and credit controls, remaining GATT consistent Buffer stock management improved to minimize physical volumes stored, complemented by other mechanisms (e g trade or currency reserves) ➢ Remove foodgrains from the Jute Packaging Materials Act ➢ Phase out rice levy and procure rice requirement through open-market purchases **States**-ST ➢ States (AP. Orissa, West Bengal) lift movement restrictions ➢ Lift storage ceilings linked to grain trading licenses
B. Improving Technical, Economic and Management Efficiency of FCI	**GOI/FCI:** ST ➢ Establish regulatory framework and regulatory agency to ensure competitive practices in private channel and oversee business contracts between FCI and private sector ➢ GOI imposes hard budget constraints on support for FCI operating costs ➢ Improve management systems, through investments to complete management information and cost-monitoring systems, full accounting of costs and benchmarking against private sector, more merit-based personnel systems ***ST to LT*** ➢ Unbundle foodgrain-marketing activities and develop public-private partnerships in investment operations, based on a competitive process ➢ In tandem, implement compensatory measures to assist labor displaced by modernization process **States**-ST to LT ➢ Complement with state level rural (community level) development initiatives that fosters employment generation
C Upgrading Market Infrastructure and Services *(i) Fostering Development of Negotiable Warehouse Receipt Industry*	**GOI**-*ST* ➢ Establish regulatory framework to permit use of negotiable warehouse receipts, amend Negotiable Contracts Act, formulate a Warehouse Code

Table 3.3: Proposed Program for Action, continued

Area	Recommendations
(ii)Improve regulated market performance	**States**-*ST* ➢ Increase decentralization of financial and management authority to market committees, enabling them to retain sufficient funds to improve management of regulated markets and invest in upgrading their facilities Potential for divestment to users should be explored ➢ Increase number and participation of beneficiaries (farmers, traders, consumers) in State Marketing Boards ➢ Develop alternative mechanisms for collecting marketing cess and other taxes to eliminate need for marketing channel restrictions explore possibility of auctioning cess collection functions ➢ Scheduled marketing committee elections, as per Agricultural Produce Markets Act, should be held
(iii) Strengthening market and industry information flows	**GOI & State:** *ST to MT* ➢ Strengthen market information and foodgrain early warning systems through selective investments, strengthen link with the price stabilization program
(iv) Improving the Grading System	**Private Sector with GOI & States:** *ST* ➢ Private sector to spearhead establishment of nationally recognized body, with representation from government to develop grading standards for rice and wheat to meet market needs GOI and state governments to facilitate process
(v) Expanding other physical infrastructure	**GOI & States** *ST to LT* ➢ Improve sectoral regulatory frameworks and independent and empowered regulatory authorities to stimulate efficient private sector participation in the power, roads, ports, and telecommunications sector ➢ Improve port and customs procedures ➢ Railways to provide equal priority between FCI and private sector grains
II. Improving Targeting and Delivery of Safety Nets	
Moving forward in TPDS implementation	**GOI:** *ST* ➢ Gradually phase out over short term (in volume terms) the Above Poverty Line TPDS allocation as proposed, shifting to well-timed open market sales at market prices ➢ Issue APL allocations to states at economic cost *ST to MT* ➢ Test alternative decentralized food safety net mechanisms for BPL households--such as food coupons and vouchers in areas with well developed private sector such as big cities and municipalities Scale up experiences in follow-on tests ➢ Improve targeting of BPL through increased community/PRI participation

Note ST – short term, MT –medium term, LT – long term

[49] The month-end price for ordinary wheat variety at the Delhi wholesale market was Rs7 000/mt in December 1997 (USDA, 1997, "Grain and Feed Annual Report," Report No IN7019) The FCI wheat open market sales price in New Delhi during the same month was Rs 4,900/mt (Roller Flour Miller's Federation of India Annual Report, 1997)

[50] Shyam Khemani, 1994, "Competition Law," Viewpoint, Note No 14, Private Sector Development Department, World Bank

[51] Assuming (i) a buffer stocking cost of Rs 1391 per mt and 18 million mt in rice and wheat stocks and (ii) distribution cost of Rs1164 per mt and PDS offtake of 21 1 million mt (FCI, 1997, "Functioning of Food Corporation of India An Overview," Planning and Research Division, New Delhi, mimeo

[52] This is based on the assumption of a system handling 11 6 million mt of grain and total investment costs of $1 6 billion

[53] *The India Infrastructure Report Policy Imperatives for Growth and Welfare* (Ministry of Finance 1996) provides an overview of experiences and lessons from India and other countries of reforms in the power and telecommunication sectors

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