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India

Cotton and Textile Industries

Reforming to Compete

(in Two Volumes) Volume I: Main Text

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Rural Development Sector Unit
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CURRENCY

<u>Currency</u>	<u>Rs/ US\$</u>		
	<u>Official</u>	<u>Unified</u>	<u>Market ^a</u>
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.

^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

AICCIIP	All India Cotton Coordinated improvement Project
AMPA	Agricultural Product Markets Act
ATC	Agreement on Textiles and Clothing
BIFR	Board for Industrial and Financial Reconstruction
CACP	Commission for Agricultural Costs and Prices
CCI	Cotton Corporation of India
CIB	Central insecticides Board
CICR	Central Institute for Cotton Research
CIRCOT	Central Research on Cotton Technology
CV	Coefficient of Variation
EC Act	Essential Commodities Act
ELS	Extra-Long Staple
EOUs	Export Oriented units
EPCG	Export Promotion Capital Good Scheme
FAO	Fair Average Quality
FC(R)A	Forward Contracts (Regulation) Act
GATT	General Agreement on Tariffs and Trade
GOI	Government of India
HYO	Hank yarn Obligation
ICDP	Intensive Cotton Development Program
ICMF	Indian Cotton Mills Federation
IPM	Integrated pest Management
ITMF	International Textile Manufacturers Federation
IPR	Intellectual Property Rights
MSCCGMF	Maharashtra State Cotton Cooperative Growers' Marketing Federation
MCPS	Maharashtra Cotton Procurement Scheme
MEP	Minimum Export Price
MFA	Multi-Fiber Agreement
MMF	Man Made Fibers
MOA	Ministry of Agriculture
MODVAT	Modified Value Added Tax
MSP	Minimum Support Price
NPC	Nominal Protection Coefficient
NTC	National Textile Corporation
NTSD	Non-transferable Specific Delivery Cotton Contracts
OGL	Open General License
OTC	Office of the Textile Commissioner
QRs	Quantitative Restrictions
RBI	Reserve Bank of India
SITRA	South Indian Textile Research Association
VABAL	Value Added Based Advanced License

Weights and Measures

qtl - quintal (100 kg)
ha - hectare

kg - kilogram
mt - metric ton

bale - 170kgs

INDIA

COTTON AND TEXTILE INDUSTRIES: REFORMING TO COMPETE

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ECONOMIC DEVELOPMENT

GNP Per Capita (US\$, 1996-97): 380^a

Gross Domestic Product (1996-97)

	US\$ Bln	% of GDP	Annual Growth Rate (% p.a., constant prices)					
			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)
Merchandise Exports (Average 1990-91-1996-97)

	1994-95	1995-96	1996-97		US\$ Mil	% of Tot.
Exports of Goods & NFS	32,990	39,668	42,379	Tea	386	1.6
Merchandise, fob	26,855	32,311	33,764	Iron Ore	486	2.1
Imports of Goods & NFS	41,437	51,213	54,271	Chemicals	1,919	8.1
Merchandise, cif	35,904	43,670	48,063	Leather & Leather products	1,457	6.2
of which Crude Petroleum	3,285	3,442	4,797	Textiles	3,000	12.7
of which Petroleum Products	2,396	3,759	5,239	Garments	2,875	12.2
Trade Balance	-9,049	-11,359	-14,299	Gems and Jewelry	3,894	16.5
Non Factor Service (net)	602	-186	2,407	Engineering Goods	3,229	13.7
				Others	6,363	26.9
Resource Balance	-8,447	-11,545	-11,892	Total ^f	23,610	100.0
Net factor Income ^a	-3,711	-3,497	-3,584	External Debt, March 31, 1997		
Net Transfers ^b	8,093	8,506	11,071			
						US\$ Mil.
Balance on Current Account	-4,065	-6,536	-4,405	Public & Publicly Guaranteed		74,406
Foreign Investment	4,922	4,794	5,834	Private Non-Guaranteed		7,382
Official Grants and Aid	416	345	410	Total (Including IMF and Short Term)		89,827
Net Medium & Long Term Capital	2,357	562	-758	Debt Service Ratio for 1996-97		
Gross Disbursements	7,533	7,585	6,483			% curr receipts
Principal Repayments	5,175	7,023	7,240	Public & Publicly Guaranteed		20.6
Other Capital Flows ^c	2,410	-2,113	1,582	Private Non-Guaranteed		1.3
Non-Resident Deposits	818	944	3,536	Total (Including IMF and Short Term)		24.5
Net Transactions with IMF	-1,174	-1,719	-972	IBRD/ IDA Lending, March 31, 1997 (US\$ Mil)		
Overall Balance	6,858	-2,004	6,199			
Change in Net Reserves	-5,684	3,723	-5,227	Outstanding and Disbursed	8,768	17,616
Gross Reserves (end of year) ^d	21,160	17,436	22,664	Undisbursed	3,097	4,368
				Outstanding incl. Undisb.	11,865	21,984
Rate of Exchange						
End-Mar 1998 ^e	US\$ 1.00 = Rs. 39.50					

-- Not available.

- 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.
- 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.
- Includes short-term net capital inflow, changes in reserve valuation and other items.
- Excluding gold.
- The exchange rate was reunified at the market rate in March 1993.
- 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					
<i>(% of population)</i>					
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					
<i>(% of income or consumption)</i>					
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					
<i>(% of age group)</i>					
Total	..	..	..	..	..
Male	..	..	..	..	..
Female	..	..	..	..	..
Access to safe water					
<i>(% of population)</i>					
Total	31	54	81	78	76
Urban	80	80	85	83	80
Rural	18	47	79	74	72
Immunization rate					
<i>(% under 12 months)</i>					
Measles	..	1	84	82	80
DPT	..	41	86	83	81
Child malnutrition (% under 5 years)	..	..	66	..	..
Life expectancy at birth					
<i>(years)</i>					
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	..	..

Cotton and Textile Industries: Meeting Emerging Market Opportunities and Challenges

Executive Summary

Introduction

1. Like many of India's large agriculture-based industries, cotton and textiles have been recording impressive growth in recent years as controls on external and domestic trade have begun to relax. That growth -- a 13% annual increase in cotton-textile exports between 1990 and 1997 and a 3.9% rise in cotton output over the last decade -- can continue and even significantly accelerate if the industry's productivity and quality levels rise to make Indian products truly competitive. The phase-out of the Multi-Fiber Agreement (MFA) which long restrained developing country exports is opening tremendous opportunities for India to enlarge its share of existing markets and capture new ones.

2. With more open global trade, however, comes heightened competition for India in both export markets targeted by other exporters including China, Korea, Thailand, and Vietnam and from imports in the domestic market, notably of yarn and fabrics, which are projected to increase dramatically over the next eight years. At the same time, Indian mills will have to begin paying world prices for cotton fiber as changes in oilseed policies eliminate the implicit subsidy of the domestic product, and the cotton export quota policy may need to adapt to meet WTO rules. Although growth has already made cotton-based textiles nearly a \$6 billion export industry that accounts for 20% of total Indian merchandise exports, further, rapid expansion is not assured.

3. A host of policies and regulations relating to firm size, product composition, labor and taxation, combined with inadequate export infrastructure and cumbersome customs procedures now limit the capacity and incentives of textile firms to pursue adjustment and modernization. The necessary efficiency gains require both very large private modernization investments and extensive government regulatory changes to undo a pronounced bias in favor of small-scale, labor-intensive operations. That long-standing preference, in effect almost across the board in Indian agriculture and the industries based on it, was meant to sustain and improve the lives of poor rural people, now numbering some 250 million. In the case of textiles, regulation has protected the livelihood of an estimated 6-7 million handloom operators (mostly otherwise unskilled women in small and mid-size villages), of nearly 100,000 workers in sick mills taken over by the government, and of about one-third the workforce in mills obliged to manufacture a special, low grade yarn primarily for handloom weavers.

4. India's 5,000-year-old cotton sector also faces several new challenges, above all to remain competitive with imports not only in terms of price but also in product quality and consistency. Hampered in that pursuit by the slow pace of investment in higher productivity and quality and by practices at the farm, market and ginning levels, cotton growers must also deal with a textile industry historically oriented toward undemanding domestic customers, and, until recently, an over-regulated domestic trade and ginning sector. Public-sector weaknesses, as in providing extension services and irrigation, and inattention to such inputs as pesticides and seeds further constrain farmers' ability to reduce crop losses and raise yields. If the sector is to remain competitive now that cotton fiber imports have been completely liberalized, however, efforts to raise productivity, reduce costs and upgrade cotton quality are imperative.

5. Unless they receive higher prices for their crop, India's cotton growers are not likely to invest time, energy, and money in improving the quality or widening and bettering the varieties they cultivate. India's textile makers--the farmer's ultimate consumers--sorely need higher grade and more varied raw materials to win buyers in an increasingly open global market for fabric and apparel, and to stave off competition from imports. Export-oriented mills, the textile industry's leaders, have no choice; they must pay more for cotton fiber as it makes its way up the production chain. And, this report argues, textile makers can absorb these higher costs if the Government of India removes or reduces a variety of regulatory and policy obstacles to their efficiency, encourages new investments to improve their productivity and, back on the farm, extends much needed support to introduce and sustain modern practices.

6. Regulatory and investment policies aimed at promoting the industry's overall modernization can be defined with relative ease and, with greater difficulty, integrated with one another in a sequence of productive transformations. The central, though not the exclusive focus of such reform packages -- especially in the manufacturing and apparel sectors -- should be the direct and indirect restraints on the size of operations and the efficiency costs such limits impose. At the same time, however, reformers will have to take into account the social goals behind India's traditional preference for smaller enterprises. The revenue that a more efficient cotton and textile industry can generate can also repay massive investments in modernization and cover many of the costs of providing potentially more remunerative employment for the rural poor. Still, it is important to acknowledge the considerable dislocations that reform may engender and to include that human factor in planning for change. Carefully sequenced, a comprehensive program of reform has the potential to mitigate the social costs of transition to more competitive and rapidly expanding cotton and textile industries.

Textile Industry Efficiency

7. Composed of spinning, weaving (and knitting), fabric processing and garment-making units, the textile industry accounted for about one-fifth of India's total industrial output in 1994-95 and about 7 percent of GDP. Uniquely Indian in its complexity, it is characterized by: (i) the coexistence of a broad spectrum of production techniques -- from hand-operated to sophisticated automated technology; (ii) a dualistic structure dominated by a fast expanding, decentralized or "unorganized" small-scale segment in weaving, knitting and apparel/garment-making along with a declining vertically integrated, large-scale "composite" mill segment (spinning and weaving); (iii) a predominantly domestic-oriented industry with cotton (rather than synthetic fibers) as the primary raw material; and (iv) the existence of a public sector (2% of domestic fabric production), composed mainly of nationalized and "sick mills" taken over by the government. With exports of \$9 billion responsible for over one quarter of total merchandise exports and with nearly 20 million people employed, the textile industry has the potential to serve as an engine for faster, highly labor-intensive GDP growth. Operating now below its potential, the industry is characterized by low productivity and a wide variation in firm performance; a few internationally competitive firms coexist with a large number of inefficient ones.

8. The main driving force behind growth to date is the rapid expansion of exports, outpacing the 3% annual increases since 1990 and previously stagnant domestic demand. Cotton-based textile export revenues (fabrics, yarn, garments and made-ups) reached \$6.2 billion in 1995/96, increasing by 13 percent per year in real terms between 1990/91 and 1995/96 and reflecting increases in textile output of 30 to 40 percent over the 5-year period. Because of the MFA, the bulk of Indian cotton textile exports (yarn, fabric, and made-ups) before 1991 went to the EU (41.5%), USA (16.5%), and the Eastern Bloc countries (12.5%). Binding export ceilings in these traditional quota markets have since compelled India to diversify and to achieve its

recent growth mainly from non-quota countries. Despite their rapid expansion, exports still account for only around 10 percent of domestic production and about 1-2 percent of world textile trade.

9. **Spinning.** Inferior by both international and domestic standards, with a recent SITRA survey finding that 60 percent of spinning mills operate well below Indian productivity norms, the performance of the subsector is significantly affected by three government policies: the yarn export quota, the hank yarn obligation (see below) and discriminatory taxation against man-made fibers. The quota on yarn exports, instituted to ensure an adequate supply of yarn to the weaving industry, works as an implicit tax on spinners that holds domestic yarn prices about 10% below world market prices. Cotton export quotas compensated mills by keeping supplies of cotton lint so cheap that, even though India's manufacturing outlays on average were comparable to those of Korea and Thailand, overall costs were lower. With cotton lint prices now rising and still restrained by quotas from taking advantage of higher world yarn prices, firms in this capital-intensive specialty find their profitability and financial capacity to modernize and restructure threatened. Often marked by antiquated technology and widespread inefficiencies in production, spinning mills catering to the domestic market lack access to export quotas and to the benefits of such export incentives as tax holidays and duty-free imports of machinery.

10. They are particularly affected by the profitability squeeze and, according to a simple multi-market model of the entire textile industry, would be the least competitive segment of the overall textile industry in an environment where raw materials fetch world market prices. As long as high import tariffs and fiscal levies on man-made fiber (MMF) make them prohibitively expensive either as a supplement to cotton in blended yarns or as a substitute, Indian spinning mills have no choice but cotton. Increasing domestic and international consumer preferences for MMF products and mixed blends would normally dictate their increasing use, which would in turn allow the textile industry to expand further into the blended and synthetic textile markets.

11. An added burden on spinning mills, the Hank Yarn Obligation (HYO) requires them in practice either to process about a quarter of their deliveries in the form of a yarn used by handlooms or to transfer the obligation to other firms. Manually reeled, hank yarn is rarely made in-house since production uses older machinery and requires a work-force (mostly women) half as large as that of the total factory. Instead, most mills pay others from 25 paise to Rs 1 per kilo to fulfill the obligation, itself calculated on the basis of a percentage of the net qualifying amount after exemptions for exports, for own consumption in composite mills, and for hosiery and blended yarn output.

12. Nonetheless, the HYO distorts production. Tax exemptions on hank yarn, for instance, make it profitable to declare cone yarn (used by powerlooms and composite mills) illegally as hank yarn. Since the combined effect of tax exemptions and production controls is to lower hank yarn prices relative to cone yarn, non-handloom weavers often use the former. The leakage is estimated at 15-25 percent. Simultaneously, the HYO acts as both an implicit export tax on cone yarn (reducing the volume available for sale abroad) and as a productivity tax (estimated at about 0.14% of the value of total spinning industry output) that mandates the use of an inferior technology and lowers cone yarn production. The duty relief on hank yarn, moreover, subsidizes old, inefficient and costly production processes, many of which are in the state sector. Finally, the HYO influences investment decisions by encouraging investments in hosiery yarn spinning or the establishment of a 100 percent EOU -- exempt from the HYO -- to circumvent the obligation.

13. **Weaving.** What the HYO does to impair the productivity of spinners, stringent labor regulations under the 1948 Factories Act and tax concessions do to fragment the weaving

industry. Restrictive labor rules governing “large” firms (10 or more workers in processes that use power, 20 or more workers if not electrified) that foster employment rigidities and vest strong powers on labor unions raise labor costs to the point that wages in the organized sector are 50-60% above those in unorganized enterprises. Together with a variety of incentives associated with small-scale operations (tax concessions, lower power tariffs, etc.), these regulations encouraged the rapid development of a dualistic industry structure dominated by small-scale but less efficient powerlooms because larger firms are denied the flexibility to take advantage of economies of scale, to improve efficiency through vertical integration, and to enhance quality management. Unsurprisingly, the weaving industry is also characterized by a large number of closed and sick (mostly public sector) mills whose accumulated financial losses between 1989-90 and 1993/94 totaled \$799 million (in 1993/94 real dollars). Current labor laws and the absence of a clear exit policy for bankrupt enterprises are slowing progress in restructuring or liquidating these failing firms in a subsector where capacity utilization is low and competitiveness reliant primarily on cheap yarn prices and, until recently, on protection from imports.

14. *Handlooms.* What protects the operators of India’s 3.6 million handlooms is the translation of a fundamental social goal – the priority given to generating employment and alleviating rural poverty – into a set of operational economic policies affecting far more enterprises and lives than the estimated 6-7 million people whose looms cater primarily to the fabric requirements of rural folk and who also specialize in saris in many areas. The share of the handloom subsector in fabric output remains stable (around 35 percent), but its influence on textile policy remains large as the GOI attempts to provide a counterbalance through such protective measures as the HYO. Additional support schemes for handloom weavers include the exclusive right to produce certain fabric varieties, low-interest working capital, modernization funds, tax exemptions, and rebates on prices of fabrics sold through cooperatives.

15. *Apparel and Knitting.* At the opposite end of the scale of sophistication, a companion bias against large enterprises keeps apparel and knitting firms so far behind the productivity curve that, in spite of rapid and recent investments, successive international surveys point to a widening gap of about 50% between Indian firms and such main East Asian competitors as China. Several factors explain this trend. First, the inclusion of the apparel and knitting industry under the Small-Scale Industry (SSI) reservation hinders it in satisfying large orders and maintaining quality consistency. For most garment-makers, the investment ceiling was only recently raised to Rs. 30 million (US\$ 840,000)– subject, however, to a requirement that within three years the firm export half its output to non-quota countries, an obligation that larger enterprises must also fulfill. Restrictive labor policies that apply to organized firms and various tax incentives and reduced utility rates that encourage enterprises to stay small further deter productivity and the kind of investments that would improve quality while increasing size.

Textile Industry Reform Options

16. From spinners to garment-makers, India’s textile producers all face basically the same challenge: to raise productivity through gains in efficiency that will still allow them to compete at home and abroad in the face of higher cotton prices resulting from policy adjustment to WTO rules and demand pressures. To achieve those gains, they require major changes in the domestic policies that have become obstacles to modernization. And reforms – such as abolishing the Hank Yarn Obligation, removing limits on yarn exports and reducing tariffs and taxes on man-made fiber imports, selling off or closing sick mills, relaxing labor regulations and eliminating the SSI reservation – will require not only sequential packaging but compensatory action as well to address the economic impact of change on the rural poor.

17. **Spinning.** So that mills can expand capacity and modernize and absorb higher cotton prices, they need both the freedom to export yarn – for which world demand and prices are high - - and relief from the Hank Yarn Obligation. Eliminating the yarn export quota would quickly ease the current profitability squeeze on spinning mills, buttress them against threats from cotton yarn and fabric imports that could increase by as much as 300 percent by 2005, and strengthen incentives to improve efficiency and attain greater international competitiveness. The recent reduction of import duties on several kinds of textile machinery to 10 percent, while an important measure facilitating the process of modernization, needs to be complemented by measures that address the future of public sector composite mills. (See Weaving, below.)

18. The projected tripling of yarn imports raises serious policy questions about the appropriate level of yarn import tariffs, currently 20 percent. It is likely that lowering yarn tariffs further could hasten the restructuring of the textile industry, provided that import tariffs for fabrics are revised accordingly. It is certain, however, that cutting MMF import tariffs and trade restrictions and eliminating the discriminatory taxation of MMF -- as the 1997-98 Budget begins to do -- by lowering the cost of synthetics, will boost domestic consumption, including those of the poor who appreciate their greater durability, and exports of blended and synthetic products. With appropriate modernization investments to permit greater use of MMF, these reforms permit the textile sector to capture market opportunities in the growing blended and synthetic product markets, without necessarily depressing cotton prices, provided cotton exports--which offer a price floor-- are kept free (para 36). A positive spillover for garment manufacturers would be the opportunity to use valuable spare capacity for such products to supplement the manufacture of cotton garments for which demand is highly seasonal.

19. **Handlooms.** HYO abolition will reduce efficiency losses in spinning but needs to be paired with effective social protection measures for handloom weavers who are generally poor and relatively unskilled. Since their welfare is properly a major GOI concern, it is important to devise ways to address their low productivity and to compensate their loss of competitiveness. Three complementary options merit consideration, beginning with an explicit, targeted, demand-based, per unit subsidy for hank yarn or handloom fabric. Such a scheme would be more transparent and avoid the economic costs imposed by the current HYO approach. Effectively targeted, it would minimize the incentive problems of over-supply of hank yarn, leakage to other segments of the industry, misreporting, and uncertainty about the actual number of handloom units and the volume of yarn they require. While possessing the added advantage of greater transparency in terms of costs to taxpayers of this social obligation, such a program will be complex to administer. Decentralizing implementation to local governments or village-based organizations could help ensure effective targeting of handloom weavers. Another option, programs to convert handlooms to powerlooms and to upgrade product quality may offer a viable and effective strategy for raising weavers' productivity. A third course involves mitigating employment and income losses in the handloom industry through training and job conversion programs to help weavers move to more productive employment, including garment-making.

20. **Sick Public-Sector Mills.** Either privatization or liquidation or both will be required to deal with sick public-sector mills, in particular the National Textile Corporation, the umbrella corporation of mills taken over by the government. The recently established Disinvestment Commission represents one significant step toward setting clear policies on bankruptcy and the ending of government involvement. The problem of cost, however, in an environment of tightening fiscal constraints requires comparisons between continuing direct and indirect financial support for chronically loss-making mills or authorizing large, one-time outlays for displaced workers. A rough estimate of the cost of Voluntary Retirement Schemes for the 95,000

workers in these mills is about US\$380 million, equivalent to about 87 percent of accumulated 1992/93 and 1993/94 losses. The sum is also a small fraction of the potential efficiency gains domestic reforms can bring to the textile industry as a whole. Because sector-wide growth and employment opportunities are quite large, training programs in the highly labor-intensive apparel sector could ease the move of these workers to other activities.

21. ***Scale-Neutral Labor Regulations and Tax Incentives.*** While relaxing current labor regulations and adjusting tax policies would be highly beneficial to the textile industry, their impact extends beyond it, and reform needs to be seriously considered and conducted in an economy-wide context. The 1997/98 budget is proposing preliminary and constructive steps in this direction by simplifying the excise duty structure and concessions for small-scale units and by excluding cotton yarn and texturized man-made yarn from the purview of the SSI exemption scheme.

22. ***Apparel and Knitting.*** A shift towards manufacturing for export, with concomitant growth in productivity, could score significant increases in income for manufacturers of garments and knitwear and employment opportunities for the economy. If India could achieve China's level of labor productivity (a 67% increase), the apparel sector by the year 2005 could generate additional net cotton apparel exports of over US\$2 billion (1992 dollars) even if the MFA is fully abolished. It is not an easy transformation to achieve, however. The small-scale structure of the subsectors, having served India well in the past in carving a niche for small, low-to-medium quality orders in the world market, now impedes a transition into the growing market for higher-quality as well as mass-consumption products. The elimination of the SSI reservation, as proposed by the Abid Hussain Committee, would enable manufacturers to process large orders efficiently, to take advantage of economies of scale, and to justify larger investments to improve quality.

23. Streamlining handling systems and customs procedures and improving often dilapidated port infrastructure so as to halve current 90-120-day lead times for export deliveries would also greatly improve the competitiveness of the apparel and knitting industries -- and of every Indian exporter. The garment industry's ability to provide timely and reliable delivery is also predicated on dependable availability of high quality raw materials (fiber, fabric, and accessories) at short notice. To compete successfully abroad, the textile industry requires either quick access to imports or higher operational efficiency and better quality control in the domestic cotton, spinning, and weaving sectors. That imperative underscores the necessity of comprehensive textile and cotton reforms.

Cotton Productivity and Marketing

24. ***Cotton Production.*** With 9.1 million hectares planted in cotton in 1995-96 and producing 2.4 million metric tons of cotton fiber, India's cultivated area covered about one fourth of all land dedicated to cotton in the world, and its output -- up 3.9% over the last decade -- equaled 13 percent of the planetary total. Over the last 15 years, even with stagnation in cultivated area, yields have increased significantly though remaining low by international standards. Yields per hectare in the irrigated northern areas are only half or less those of comparable cotton producers (China, Egypt) while farmers in rainfed areas get only 70% as much as Brazilians. Such increases as have been attained are due to the spread of irrigation to 30% of all cotton farms and the increasing adoption of improved varieties now planted on 55% percent of the total cotton area.

25. Thanks to its long tradition as a cotton grower and its diverse climatic zones, India is one of the few countries in the world that can grow about 100 varieties of cotton; of which 20-25 account for 90% of the crop, with staple lengths, ranging from short (under 10 millimeters) to extra long (over 30 mm). Staple length is an important determinant of final fabric quality, and India's ability to produce a broad range gives it great flexibility to expand sales across many markets. Short staple cottons, for example, are generally used for knitwear and denim, while fine shirts and knits need longer staples.

26. In addition to the cotton fiber or cotton lint that is separated by ginning from *kapas* (unprocessed cotton) to be spun into yarns, the boll also yields seeds that can be crushed to extract an edible oil and leave meal behind to be used as livestock feed. Until 1994, GOI oilseed policies (see companion report "The Indian Oilseed Complex: Capturing Market Opportunities" for details) provided an indirect subsidy to the textile industry at no cost to cotton growers. India's second most important cash crop, after oilseeds, cotton grows predominantly (70%) in rainfed areas where the incidence of poverty is high and growth opportunities are typically limited for small farmers, two-thirds of whom cultivate less than two hectares of land. The staple of a major industrial sector, cotton is the basic raw material in textile products that account for three quarters of the output value and two-thirds of the export revenues of the textile industry. It can play a central role in generating employment, raising incomes, reducing poverty, and stimulating development in lagging rural areas.

27. **Cotton Lint Pricing.** By imposing export quotas on cotton lint and setting minimum export prices until 1994/95, GOI ensured spinning mills supplies of raw material at prices below world market levels – about 35% lower for Extra Long Staple (ELS) and 15% for short staple cotton fiber during the last 15 years. Medium staple cotton prices fluctuated around export parity levels. While bolstering the competitiveness of the textile industry until now, low prices did not drive farmers out of cotton since oilseed policies kept the price of cottonseed significantly above world price levels. This compensatory benefit was unevenly distributed. While *kapas* prices for short and medium staples, which are grown mostly in the north and contain seeds worth 25% of the cotton's total value, remained at or above export parity levels, prices for the longer staples with only 6% seed content in value terms, mainly produced in central and southern states, fell well below export parity.

28. The liberalization of edible oil imports in 1994-95, the reduction of import tariffs to 20% in 1996, and rapidly rising domestic cotton lint demand are lifting domestic cotton prices closer to international levels and depressing those for cottonseed. So far, cotton growers have not yet been seriously affected by this downward trend, because the demand for fiber fueled by the 1990s textile export boom coupled with pest-related production shortfalls has kept cotton lint and *kapas* prices moving upward, providing farmers with strong incentives to increase output.

29. Cotton lint export quotas nonetheless still depress domestic lint prices, especially of ELS cottons and thus discriminate particularly against farmers in the rainfed areas where most ELS cotton is grown. In addition, the export limits prevent cotton farmers and traders from capturing the gains that arbitrage offers by enabling the export of cotton varieties which have an international price advantage and the import of others in short supply. These counter-productive restrictions also fuel greater lint price instability, because they eliminate the buffer against the sharp price drops that bumper harvests produce and disguise the very real need for farmers to raise the quality and consistency of their cotton before higher grade imports draw their customers away. Finally, cotton lint export quotas may be challenged under WTO rules.

30. ***Policy and Technical Constraints.*** Central to those shortcomings are poor on-farm pest and seed management, inadequate availability of improved seeds adapted to rainfed conditions, and inadequate access to reliable water supply. The increasing frequency of major pest outbreaks (six in the last ten years), is a serious threat against which the GOI launched an Integrated Pest Management (IPM) Program in 1992 to help farmers use natural enemies, pest-resistant crops, cultural management and judicious use of pesticides. Engaging growers in the program, however, has been slow work hindered by pesticide subsidies, poor enforcement of pesticide regulations and quality control, weak extension systems, poor water delivery management in irrigated areas, and weak incentives that would encourage farmers to minimize pest damage.

31. The limited availability of high-yield cotton varieties adapted to India's predominantly rainfed conditions rather than to irrigated environments means that many improved varieties are yielding on average less than half their potential. Moreover, low-quality, mixed seeds are used on 45% of the planted area partly because low prices for cotton lint and limited quality premiums provide few rewards for improved seed-quality management and partly because of the small-scale cotton production system that requires several farmers to pool their produce before ginning it and that encourages them to sell kapas rather than lint.

32. ***Cotton Marketing.*** Among the major players in India's well-established cotton-marketing system, private traders (owners of gins, local and terminal market merchants or their agents and textile mills) account for 77% of marketed kapas. Next in size with an 11% share, the Maharashtra State Cotton Cooperative Growers' Marketing Federation (MSCCGMF) implements the state government's Monopoly Procurement Scheme. Finally, the Cotton Corporation of India (CCI) is a government parastatal originally charged with managing GOI's cotton price-support program and now competes with the other bidders – including state-level cooperatives -- to hold a small (8%) and declining share of the market. With free market prices consistently above support prices, CCI's role has shifted to procuring cotton for public and private mills and exporting cotton.

33. ***Deregulation.*** Over the last three years, the GOI has lifted or repealed regulatory impediments to improved cotton marketing, voiding the 1923 Cotton Transport Act in 1995 and its controls on the movement of cotton and, in 1997, the 1925 Cotton Ginning and Pressing Factories Act that had administratively set ginning and pressing fees. Further, the Reserve Bank of India in October 1996 lifted the Selective Credit Controls, which limited access to commodity and trade financing, and the 1997/98 Budget speech officially lifted the Cotton Control Order (1955, 1986 and 1995) that granted the Textile Commissioner power to set kapas, lint, and cotton seed prices, to fix limits on stock levels, to control movement of cotton, and to control entry into ginning and pressing through licensing. Finally, the ban on trading in cotton lint futures contracts was also lifted in 1997. Reducing marketing costs and allowing a true common and more competitive national cotton market to develop, deregulation will also stimulate needed modernization investments and improved quality management.

34. ***Constraints on Marketing Efficiency.*** But deregulation is incomplete. The 25-year-old *Maharashtra Cotton Monopoly Procurement Scheme* remains as the sole regulatory impediment to a common market in India, a program that gives the Maharashtra State Cooperative Cotton Growers' Marketing Federation (MSCCGMF) exclusive rights to procure all cotton in the state. By assuring local growers fixed, variety- and grade-specific prices for kapas for the whole season, the Scheme seeks to ensure the state's farmers fair, remunerative prices without recourse to middlemen and to bring about stability and growth in overall cotton production. These laudable objectives have proven very costly to pursue, generating reported losses of Rs. 5 billion (\$142 million) in the 1995-96 season coming on top of earlier ones amounting to Rs.2.6 billion

(\$75 million.) Over the years the Maharashtra government has subsidized the MSCCGMF with transfers (according to available information) of Rs 514 million (US\$ 43 million) in 1984/85, Rs 2.8 billion (US\$ 229 million) the next year, and Rs 2.8 billion (US\$ 89 million) in 1993/94.

35. Several factors contribute to the monopoly's fiscal failure. First, the commitment to a season-long purchase price at the cultivation cycle's start carries high risks, especially because announced MSCCGMF guaranteed prices can go well above their theoretical base, the GOI's Minimum Support Price, itself generally below free market levels. Porous borders and competition with neighboring states make enforcement extremely difficult and Maharashtra's exposure to risk larger. Extensive misgrading of cotton also affects losses, against which the replenishment rule of the Price Fluctuation Fund (PFF) fails to building adequate reserves. Finally, the absence of competition under the Monopoly Scheme reduces incentives to improve the efficiency of marketing operations, including accurate grading, and unnecessarily raises operating costs.

36. **Poor market infrastructure and weak support services.** The regulated markets or *mandis* that are the primary sales conduits for kapas (and for other produce) in India lack adequate – sometimes any -- facilities for weighing, handling, moving, and storing cotton. In some markets, space shortages lead to the mixing of different lots, while poor handling practices increase losses and contamination of the cotton, reducing the quality of the stock. Mechanisms for the dissemination of market information are also weak or non-existent, in spite of intensive collection efforts. Grading standards for lint exist but facilities to apply them do not except in top-of-the-line mills that use scientifically advanced High Volume Instruments and in such states as Karnataka and Maharashtra. As a result staple length may be gauged visually but not other attributes -- fiber strength, uniformity, maturity – that are important quality indicators for an increasingly export-oriented textile industry. Although mandis generate considerable revenues from collecting a cess to improve market facilities, these funds are frequently diverted to non-market related activities. Lack of fiscal authority of the respective marketing committees constrains access to the necessary capital to properly operate or upgrade the facilities and services of these markets.

37. **Cotton Futures Trading.** Although parliament recently approved the reintroduction of futures trading in cotton, the commodity futures market may not function efficiently, partly because the ad-hoc implementation of cotton export quotas creates unhedgeable risks for lint futures contracts and partly because the discretionary interventions by the Forward Markets Commission into the trading operations of the cotton exchanges runs counter to the development of competitive futures markets. Existing rules and procedures in the commodity exchanges, moreover, are not strong enough to banish improper trader behavior. Even if these obstacles were overcome, the absence of a standardized grading system for cotton lint will impede development of an appropriate cotton lint futures contract.

Reform Options

38. **Improving Price Incentives.** Besides achieving consistency with WTO rules, phasing out the cotton lint export quota would eliminate the implicit tax on farmers, stimulate increased production, and open opportunities for profitable trade arbitrage, enabling Indian farmers to capture a larger share of the benefits of the growing domestic and international textile markets. Foreign sales will provide a price floor for farmers, especially during bumper harvests and permit India to export cotton for which it has a price advantage, while complementing with imports those types of cotton that are in short supply in domestic markets. From a short-term perspective, rising cotton lint prices would adversely affect the whole textile industry and spinners most

directly, since cotton accounts for 50% to 70% of the final yarn cost and thus parallel policy measures to mitigate the impact of rising cotton prices are likewise needed (see earlier section: Textile Industry Reform Options). Retaining or reducing the size of current export quotas on the other hand might hold domestic prices down for a time, but at the cost of discouraging domestic cotton production and forcing spinning mills to rely more on relatively costlier imports. Recent projections to 2005 indicate that rapidly rising raw material demand by the textile industry, despite a 72% growth in cotton output, could still leave India a net importer of cotton lint. Eliminating the cotton export quota can generate an additional growth in output that would help reduce the trade imbalance -- or the net import value -- by about one-third. Faster growth in domestic cotton output through more rapid productivity enhancement, or higher manmade-cotton fiber mix in the textile industry, would lower cotton import needs.

39. Within the spinning industry, the higher prices of cotton that will follow export liberalization will impose the most acute loss of competitiveness on mills that use the longest-staple cotton. While quota elimination could proceed relatively quickly for fiber with shorter staples, it might be wiser to replace the export quota on ELS cotton with an export tax that would drop to zero over two to three years. Alternatively a "textile modernization fund" could assist the operations of the mills hardest hit by increased raw material costs. The first option generates government revenues and is easy to administer but it is non-targeted and more likely to distort market activities. The second option introduces fewer distortions and is more transparent, fiscally explicit and targeted. On the downside, it involves direct fiscal cost to the government, is more difficult to implement, and from past experience could be subject to abuse. Whichever path is chosen, the policy reforms and investments that encourage productivity growth in the textile industry, discussed in the previous section, are needed to improve the capacity of textile firms to absorb rising cotton prices.

40. ***Technical and Institutional Constraints.*** Whatever price their crop fetches, farmers will need to embrace technological change to stay ahead of foreign competition. With improved seeds, appropriate pest control, improved on-farm water, fertilizer, seed management and integrated pest management techniques, government can help them achieve higher levels of productivity while minimizing production costs. In the case of pest management, the phase-out of pesticide subsidies and tighter government enforcement of pesticide regulations and quality control are warranted to strengthen incentives for adoption of the IPM approach. Just as important as price incentives in encouraging the adoption of new technologies, non-price factors include the availability and quality of technologies suited to local, mostly rainfed conditions; the quality and delivery of agricultural support services, particularly extension; and investments in reliable water supply, roads, and soil management. Especially in areas neglected by the private sector, continued financial support by the public sector to cotton research will strengthen the existing base for technological advances. Government should also provide an enabling environment for private research (e.g. improved seed legislation and certification processes, IPRs, competitive grants, and public-private research collaboration). Research priority areas could include developing high yielding varieties for rainfed and irrigated areas, drought and pest resistance, shorter duration varieties, environmentally friendly cultivation practices and pest management technologies. More effective delivery of support services would facilitate access to and promote awareness by farmers of these technological advances. Measures to improve the effectiveness of public extension services and promote greater private, and NGO extension would be critical to the rapid diffusion of these technologies. In rainfed areas, improved public sector funding and design of watershed programs would play an important role in improving access to water and/or moisture retention, that could have large expected impacts on yields.

41. **Market Management and Services.** The recent deregulation of domestic marketing and ginning represents significant progress which needs to be complemented by government action to improve the operations of regulated markets and helping them strengthen their support services. The decentralization of financial and management controls in regulated markets through greater delegation of authority to market committees or, where possible, divesting control to users would give operators greater leeway to invest in creating more efficient market infrastructure and services so as to cut wastage in market yards and minimize quality deterioration during the exchange process. Relaxing government control would also enable the markets to improve their grading services and, with GOI and state financial assistance, to use radio transmission and electronic hookups to disseminate market information more effectively and deliver extension messages for cotton and other commodities. Textile industry associations and cotton commodity exchanges could also play an important role in disseminating prices and prevailing quality premiums and discounts.

42. **Cotton Quality.** Since quality, not volume, is key to the competitiveness of India's cotton and textiles in a liberalized foreign trade setting, focused efforts are needed from farm to mill to upgrade the grade and consistency of raw and finished materials. For manufacturers, the stakes are high – reduced wastage and under-spinning mean critical cost savings. For farmers and traders higher quality means higher prices and steadier demand. For GOI and state governments the quality imperative requires vital interventions to facilitate and help implement collective initiatives related to quality management in cotton marketing.

43. A starting point could be a thorough review and evaluation of existing cotton lint quality standards and grading procedures. Conducted by a distinguished private sector committee consisting of cotton producer associations, industry, exporters, and trade, with representation from government (e.g., Ministry of Textile, Ministry of Agriculture, state governments), and whose establishment could be facilitated by government, the review could also examine ways to achieve greater consistency between Indian and international cotton lint standards. A similar private sector committee composed of ginners, private traders, cooperatives, farmers, professional cotton trade associations, and exporters, with participation from the GOI, and state governments could work to develop nationally recognized quality standards – now non-existent -- for seed cotton and quality norms and grading procedures in cotton markets.

44. Since quality begins at home, in the cotton fields, farmers are on the front lines of the battle and urgently need effective support from the rear, from public, private, NGO, cooperative and farmers' association extension services that can help them adopt quality improving practices responsive to the changing variety requirements of textile manufacturers. These extension providers could also play an important role in fostering farmer self-regulation of the varieties planted to minimize variety mixing, a practice which should also be fought through speedier official denotification and withdrawal of old seed varieties. Improved coordination between the irrigation department and farming community (possibly facilitated by the extension system, water user groups, NGOs) would minimize the quality-reducing effects of improperly timed water deliveries and over-application of water.

45. **Cotton Futures Markets.** Government has a major supportive role to play in facilitating the reintroduction of cotton lint futures trading, first and foremost by providing a stable and predictable external trade environment for the fiber, one without cotton export quotas. Second, the regulatory and institutional frameworks governing the Forward Markets Commission and various cotton commodity exchanges need to be revised to foster the orderly development of cotton futures markets, exchanges in which FMC discretionary interventions are curbed and the FMC confines itself to approving exchanges and setting the general legal and regulatory framework for

them. Not only would brokerage rules need to be strengthened but so would cotton commodity exchanges' rules and regulations for trading procedures, delivery systems, and supervision, as well as their clearing operations and promotional and development activities. The development of a commodity warehousing system would also facilitate futures trading.

46. ***Maharashtra Monopoly Procurement.*** More effective than the current, troubled monopoly purchasing system in achieving remunerative cotton prices and stable production growth for Maharashtra cotton farmers are measures that would help them in raising their yields, such as improved local research and extension and more effective expenditures in watershed programs, irrigation and rural infrastructure. Increased funding and further improvement of the Employment Guarantee Scheme would also provide better income protection from drought-related crop failures. Crop insurance is an alternative, but not a viable and attractive one since adverse selection and moral hazard problems generally necessitate government subsidies to make crop insurance accessible to more farmers. Restructuring the MSCCGMF along the lines followed by the Gujarat State Cotton Marketing Federation to permit greater participation by farmers-owners, to reduce government involvement, and to allow the federation to compete with other traders, would help eliminate misgrading and higher marketing costs. If the Federation does not use forward and futures markets to hedge procurement against price instability, state-provided price insurance mechanisms similar to the Cotton Price Support Scheme provided by ASERCA, a Mexican parastatal, might serve the same end without getting involved in the physical handling of the crop.

Postscript

47 The report was discussed with concerned government agencies at the central and state levels. There is a broad agreement among government representatives about the need and obstacles to raising the productivity and competitiveness of both the cotton and textile industries. While there is agreement on the objectives and thrust of the reform options identified in this report, there is a divergence of views between Government of India and the World Bank report on the sequencing of reforms. First, due to adverse consequences of rising cotton prices on the textile industry of removing the cotton export quota, the government strategy is to retain the quota and focus instead on cotton productivity and quality enhancing programs to meet the increasing domestic demand for cotton and raise profitability at the farm level. The Cotton Technology Mission announced since by GOI would aim at supporting productivity and quality enhancement at the farm and ginning level. Second, concerns about the social costs the deregulation of the textile industry may impose on the small-scale textile enterprises in the short run, are prompting the government to place a greater emphasis on special incentive schemes to promote productivity improvements among the small-scale segments of the textile industry.

Program for Action

Improving the Competitiveness of the Textile Industry	Recommendation
(1) Increasing efficiency of spinning industry	<p>GOI: (i) Eliminate hank yarn obligation; (ii) Eliminate yarn export quota.</p> <p><u>Accompanying Actions in Other Sectors:</u></p> <p>GOI: (i) To assist handlooms in coping with higher hank yarn prices, explore alternatives including: targeted explicit subsidy to handloom weavers; converting handlooms to powerlooms; and training programs for alternative professions; (ii) To enable weaving mills to cope with higher yarn prices, reduce excise duties and import tariffs on MMF and eliminate barriers to increased weaving sector efficiency (see below);</p>
(2) Increasing efficiency of weaving/knitting	<p>GOI: (i) Rationalize national labor regulations; (ii) Phase-out differential taxation according to enterprise size; (iii) Eliminate small scale reservation on knitting; (iv) Privatize or liquidate sick public sector mills while providing transitional programs for retrenched workers.</p> <p><u>Accompanying Actions in Other Sectors:</u></p> <p>GOI: (i) Promote more efficient power generation and delivery to reduce costs; (ii) Facilitate upgrading of transport and port infrastructure and improve customs procedures to reduce costs.</p>
(3) Increasing efficiency of garment manufacturing	<p>GOI: (i) Eliminate small-scale reservation of garment manufacturing.</p> <p><u>Accompanying Actions in Other Sectors:</u></p> <p>GOI: (i) To reduce lead time and export costs, upgrade transport and port infrastructure and improve customs procedures; (ii) Reduce excise duties and import tariffs on MMF products and intermediate inputs to permit improved capacity utilization through production of cotton and synthetic garments.</p>
Improving the Competitiveness of Domestic Cotton	Recommendation
(1) Overcoming price disincentives to higher cotton quality and yields	<p>GOI: (i) Eliminate cotton export quota on small and medium staple cotton. For ELS cotton, temporarily (2yrs) replace with alternative instrument (e.g. export tax or targeted modernization fund to spinning mills); (ii) Facilitate upgrading of transport and port infrastructure to reduce export costs.</p> <p><u>Accompanying Actions in Other Sectors:</u></p> <p>GOI: (i) Eliminate spinning mill yarn export quota to mitigate cotton price increase; (ii) Reduce excise duties and import tariffs on MMF products and intermediate inputs to ease upward pressure on cotton prices on spinning mills; (iii) Eliminate hank yarn obligation.</p>
(2) Facilitating adoption of improved farm practices	<p>GOI & State: (i) Support public sector cotton research to develop high-yielding varieties and improved crop and pest management practices, while promoting an enabling environment for private sector research; (ii) Increase effectiveness of public sector extension, while promoting private sector participation in extension; (iii) Improve implementation of watershed programs</p>
(3) Increasing cotton marketing efficiency	<p>GOI: Facilitate efficient functioning of commodity futures markets by rationalizing regulatory role of FMC. Establish national brokerage rules.</p> <p>Private Sector: Commodity exchanges to upgrade rules and regulatory systems to ensure orderly trading.</p> <p>State: Transfer control of regulated markets to market committees and adjust cess to fit market operation requirements. Explore divestment to users.</p> <p>Maharashtra: Replace Maharashtra Monopoly Procurement Scheme with more cost-effective mechanisms. Options to ensure reasonable farmer incomes include: (i) increased investments in rural infrastructure and improved support services; (ii) income protection through social programs (e.g. employment guarantee schemes); (iii) allowing the MSCCGMF to compete with private sector to promote efficiency. Pilot/experiment with alternative price risk management mechanisms.</p>
(4) Fostering improved cotton quality management	<p>Private Sector: Private industry participants, with GOI facilitating process, to review and develop national kapas and cotton lint grading standards and undertake promotion campaigns for nationwide dissemination and adoption.</p> <p>GOI & State: Assist in strengthening market information systems to improve transmission of quality premiums and discounts.</p>

A. INTRODUCTION

1.1 A leading export performer earning revenues of \$5.9 billion by the mid-1990s (one-fifth of total merchandise exports), India's cotton textile industries has built competitive strength – 15 percent real annual growth rates since 1990 -- during a decade of diminishing policy restrictions and five years of economy-wide liberalization. With the phase-out of the Multi-Fiber Agreement (MFA), beginning in 1995 under the Agreement on Textiles and Clothing (ATC) of the General Agreement on Tariffs and Trade (GATT), India's textile industry is in position to enlarge its share of existing markets and to capture new ones. But in contrast to previous years, the setting for its operations is changing drastically as competition rises abroad and imports, especially of yarn and fabrics, press harder at home to blur the distinction between export-oriented and domestic-oriented units. Finally changed oilseed policies that eliminated an implicit cotton subsidy are rapidly lifting cotton prices to export parity levels.

1.2 In these circumstances, only increased productivity and improved product quality can keep the industry competitive and expanding against goods from other major exporters like China, Korea, Thailand and Vietnam both in foreign markets, and at home where apparel demand is due to grow along with the largely export-generated demand for intermediate textile inputs (i.e. yarn and fabrics). Measures to enhance productivity and quality will require massive modernization investments but a host of policies and regulations relating to firm size, product composition, labor and taxation, combined with inadequate export infrastructure and cumbersome customs procedures still limit firms' capacity and incentives to undertake the formidable task of adjustment and modernization.

1.3 New challenges also face India's cotton sector in which output – responding to accelerating export-led demand from the textile industry -- posted the second highest growth rate (3.9 percent) among major crops during the last decade. Needing to compete with imports in terms of price, quality and consistency, cotton growers, traders and ginners are making only slow progress toward productivity and quality enhancing investments and practices at the farm, market and gin. Low cotton fiber prices, a domestic-oriented textile industry that ranked quality well below other priorities, and, until recently, over-regulated domestic trade and ginning sectors reduced incentives for cultivating better grades and varieties of cotton. Weak delivery of such agricultural services as extension and irrigation and input policies (i.e. pesticides and seeds) further constrained farmers' ability to reduce pest-induced crop losses and to raise yields. With fiber imports now completely liberalized, the need to raise productivity, reduce costs and upgrade quality is a competitive imperative.

1.4 To capture emerging market opportunities and overcome challenges from imports, cotton growers and textile makers will have to focus on improving efficiency and achieving international competitiveness. As support, they will need a diverse and complex package of policy and regulatory changes and investments in agriculture, marketing and manufacturing that can strengthen incentives to modernize, raise productivity and improve product quality. Integrated reforms are necessary, since the garment industry, for example, cannot make itself a stronger competitor unless its suppliers – farmers and weavers – also raise their efficiency and quality. Conflicting yet complementary objectives of cotton farmers, traders, and textile

manufacturers will require the careful sequencing and pairing of reforms and complementary investments.

1.5 Since cotton is important to both the textile industry and the rural economy, especially in rainfed areas where 70 percent of the crop is grown, higher cotton output growth can not only aid textile firms, but more importantly can generate employment, raise incomes, reduce poverty, and stimulate rural development. Freeing the textile industry of growth constraints, as this report recommends in the following chapters, carries macro-economic significance in terms of expanding employment, generating foreign exchange, sustaining GDP growth and spurring cotton sector growth.

1.6 To understand the challenges ahead for the cotton and textile industries, this chapter and the one following describe the structure, operation and policy and regulatory constraints to growth and increased competitiveness of the textile industry and the cotton sector, drawing at all times on the strong linkages between manufacturing and agriculture. Chapter 3 proposes a program for action to meet these new challenges. Volume II presents more in-depth discussion of the textile and cotton policy environment (Annex 1 and 2); the structure and performance of the textile industry (Annex 3), the cotton production sector (Annex 4), cotton markets (Annex 5); the impact of the MFA phase-out on the cotton and textile sectors (Annex 6); and short run, distributional consequences of domestic cotton and textile reforms (Annex 7).

B. STRUCTURE

1.7 Complex and uniquely Indian, the cotton-based and, for the most part, domestically oriented textile industry shelters spinning, weaving, fabric-processing and garment-making firms ranging in sophistication from the hand-powered looms operated by 6-7 million, mostly poor villagers to the advanced, automated technology found in some privately owned textile mills. (Figure A3.1, Annex 3 depicts the industry's structure). While large-scale, composite mills (mills that spin, weave, dye, print, and finish fabric in vertically integrated operations) are in decline, decentralized or "unorganized" small-scale operations are expanding rapidly. Both coexist with a public sector that turns out about 2 percent of domestic fabric production and consists mainly of nationalized and sick mills taken over by the government. Predominantly small-scale, the roughly 77,000 apparel enterprises – 80 percent of which use no more than 20 sewing machines -- employ about 1.8 million mostly piece-rate workers.

1.8 Viewed in terms of function, the structure in which garment-makers figure last includes two supporting specialties. The first, spinning, is the province of composite mills that turn out finished textiles and of mostly private independent spinning mills. The weaving segment consisted in 1994 of 266 "organized" composite mills, 145 of them privately owned, and a host of "unorganized" powerloom, handloom, knitting, and yarn and fabric processing units that produce 90 percent of India's fabric. Coordinated by a master weaver or loom owner, all operations in the unorganized weaving segment (weaving, dyeing, printing, etc.) are generally subcontracted out to different enterprises.

1.9 Riding a decade-long boom which raised its output of yarn, fabric, and apparel by about 30-40 percent, India's textile industry has prospered and become a major exporter despite the widespread inefficiencies of many textile manufacturers. Containing only a small proportion of internationally competitive enterprises, the industry as a whole is performing below potential and suffering from the effects of a large number of yet-to-be-liberalized policies and regulations that impede productivity growth. Considering the on-going phase-out of the Multi-Fiber Agreement (MFA) and the consequent opportunities for enlarging India's share of the growing global market, such growth – rooted in improving efficiency and competitiveness – is doubly urgent.

Freer post-MFA trade, including unrestrained entry of imports, will bring tighter competition for domestic as well as overseas sales. This following sections examine the textile industry's readiness to respond to those opportunities and challenges and the impact of existing government policies and regulations on the prospects for successful adjustment.

C. EXPORT-LED BOOM

1.10 Domestic Demand. A reverse stimulus to India's aggressive export performance in textiles, low domestic cloth consumption of about 2.8 kilos per year per capita in 1993 – 74 percent of the developing country average – stagnated in the late 1980s at an annual average growth rate of just 1.5 percent. Still, it consumes about 90 percent of industry output, and having doubled its growth rate to 3 percent in the 1990s now presents important future market opportunities. A recent study by the Market Research Wing of the Textile Committee shows the high income elasticity of demand for textile products in India: per capita consumption of textiles is twice as high in the households earning Rs 40,000 or more in 1992 (20.4 meters per household) as in those earning less than Rs 6,000. Consumers also shifted towards higher value textiles and better quality textiles as incomes rise. Sustained GDP growth and rising incomes will thus be key factors boosting and shaping future domestic demand.

1.11 Export Growth and Potential. Growing 25 percent faster than total merchandise sales abroad, textile export revenues boomed during the last five years at a rate of 12 percent per year in real terms, reaching a 1995-96 total of \$8.8 billion, more than 25 percent of all merchandise exports (Table 1.1). Fabric and garment exports earned about 70 percent of these revenues. Cotton-based textile exports (fabrics, yarn, garments and made-ups) totaled \$6.2 billion dollars, outpacing overall industry performance with annual 13 percent increases. Despite such growth, exports still account for a small share of domestic production and even smaller share of world textile trade (Table 1.2), and it is not certain that India will be able to expand its future share of world markets against other exporters. The industry's major challenge is to raise overall efficiency and competitiveness, no mean task considering both its prevailing domestic orientation and the effect of long-term protection in sustaining a large assortment of firms of widely diverse technical and economic capacity.

Table 1.1: Exports of Textile Products
\$ million (1994/95 dollars)

Product Line	Exports, \$ million Constant 94/95 dollars		Ave. Annual Percent Rate of Growth
	90/91	95/96	90/91-95/96
Fabrics	745.0	1047	8
Millmade	384.0	413	3
Powerloom	201.3	474	17
Handloom	76.4	73	1
Knitted	83.3	88	3
Made-ups	464.2	953	17
Millmade	159.0	139	-4
Powerloom	128.0	461	33
Handloom	177.2	352	16
Yarn	318.4	958	24
Sewing Thread	3.1	1.0	-19
Garments	1878.9	2952	11
Woven	1300.8	1909	10
Knitted	578.0	1043	13
Subtotal Cotton	3409.6	5915	13
Rayon/Synthetics excl garments	396.1	890	17
Woolen excl garments	57.5	125	17
Non-cotton garments	1023.1	1269	7
Total Textiles	5157.6	8441	12
All Merchandise	20651.1	30942	9

Source: Textile data are from ICMF, 1995, Handbook of Statistics on Cotton Textile Industry, New Delhi, Index of Unit Value of Manufactured Exports (MUV) deflators from World Bank.

Table 1.2: India Cotton and Textile Exports
as a Percentage Share of Production and
World Textile Trade

Product	Exports as a Percentage of	
	Prod'n	World Trade
Cotton Lint	2 percent	1 percent
Cotton Yarn	14 percent ¹	2 percent
Cotton Fabrics	9 percent ²	3 percent
Cotton Apparel	Na	2 percent
All Textiles	Na	3 percent

Note: na - not available; 1: 1994/95; 2: 1996/97
Source: ICMF, Handbook of Cotton Textile Industry 1995.

**Box 1.1: The Agreement on Textiles and Clothing
and the Phase-out of the MFA**

The GATT provides the legal framework for the ten-year, three-stage phasing out of the MFA and its integration into the GATT/WTO framework by the year 2005. On January 1, 1995, importing countries were required to "integrate" a certain portion of textile and clothing product categories by removing them from the MFA. Existing quotas restricting imports of these products, which had to represent at least 16 percent of 1990 import volume, are to be abolished permanently. Moreover, products selected had to include at least one category from each of the following subsectors: yarns, fabrics, clothing, and other textile products. Growth rates of remaining quotas were to increase by 16 percent during the first phase, i.e. a quota subject to a 10 percent growth rate in 1994, will grow by 11.6 percent during 1995-97. The second stage begins on January 1998-2001, another 17 percent of 1990 import volume will be chosen from a product list for integration, export growth rates will be increased by 25 percent. From January 2002-2005, another 18 percent will be integrated and the growth rates will be increased to 27 percent. On January 2005, all remaining products, representing at least 49 percent of 1990 import volume, will be integrated. For products which remain on the list, the MFA bilateral framework (e.g. US and EU bilateral agreements) continues. This permits differential growth rates dating from the start of integration to continue to apply to different exporting countries and different products until the end of the process.

Source: M. Majmudar, 1996, "The MFA Phase-out and EU Clothing Sourcing: Forecasts to 2005," *Textile Outlook International*, March 1996.

1.12 The clocking is ticking as the MFA (summarized in Box 1.1 and discussed in detail in Annex 6) phases out over ten years beginning in 1995 and leaves behind a radically altered textile trading environment. Before 1991, the bulk of Indian cotton textile exports (yarn, fabric, and made-ups) went to the EC (41.5 percent), USA (16.5 percent), and the Eastern Bloc countries led by the former USSR (12.5 percent). When binding ceilings on exports to those traditional quota markets were reached in the early 1990s, India had to diversify its foreign customers, finding them – and its recent export growth – in such developed countries as Australia, New Zealand, and Canada; in Asia (Japan, South Korea, and Malaysia); and in entrepot centers like Dubai, Singapore, Hong Kong, Bangladesh, Mauritius, Sri Lanka, Taiwan, and the Canary Islands which process intermediate textile products for re-export. On top of this push into new territory, India will have widening opportunities to sell in traditional markets as the provisions of GATT Agreement on Textiles and Clothing, which established the framework for phasing-out the MFA, take progressive effect. Export quotas will expand in three stages: by 16 percent during 1995-1997, 25 percent in 1998-2002, and 27 percent for 2003-2005. At each phase, the MFA will also drop quotas for portions of product categories (16 percent, 17 percent and 19 percent of 1990 export volumes respectively).

1.13 The changes already reshaping international textile trade could mean substantial jumps in Indian apparel and textile output (11 percent and 8 percent per year respectively) between 1995 and 2005 and in export revenues -- 15 percent for apparel and 5 percent for textiles. Using the Global Trade Analysis Project (GTAP) general equilibrium model, a recent analysis of the impact of the combined full MFA phase-out, US-EU bilateral agreements with India and sectoral growth on the Indian cotton textile sector by 2005, projected significant increases in production and earnings.¹ (See Annex 6.) Although textile imports are projected to increase (driven mainly by imports of intermediate products like yarn and fabric to support apparel export growth), India's labor-cost advantage is expected to be critical in helping it remain a significant net exporter, especially of garments expected to account for about 80 percent of a projected \$8.9 billion increase in net export revenues. The degree to which the textile industry will be able to capture these and even greater gains will depend on the pace at which India eliminates the domestic policy and regulatory constraints which inhibit investment and productivity growth.

¹ A. Elbehri, T. Hertel and W. Martin, 1997, "Estimating the Impact of Trade Reforms on the Indian Cotton and Textile Sectors: A General Equilibrium Approach," Background working paper; see Annex 6.

D. TEXTILE SUPPLY

1.14 As demand for cotton textiles rose at home and abroad, so did industry output, especially of fabric, which had experienced a long period of stagnation in the late 1980s (Table 1.3). Crucial to the industry's ability to respond were two profound shifts in government policy: the Textile Policy of 1985 and the economic liberalization program that the GOI launched in 1991. After long reliance on import substitution and the protection of labor interests as the foundations of its strategy for textiles (Box 1.2), the government began to recognize in the mid-1980s both the need to generate foreign exchange and expanding international market opportunities. Easing some domestic industrial regulations and trade policies, the 1985 Textile Policy (i) dismantled the sector approach to the industry, while retaining a special role for handlooms; (ii) adopted a multi-fiber orientation and fiber flexibility; (iii) provided adequate raw materials at reasonable and stable prices; (iv) reduced the level of duties on synthetic raw materials; (v) easing entry and exit barriers; (vi) emphasized modernization and technology and machinery imports at international prices; and (vii) made Indian textiles more competitive in the world market.² The Statement of Industrial Policy, 1991 and the Textile (Development and Regulation) Order, 1992 followed by easing entry into the spinning and weaving industry. The Industrial Policy 1991 eliminated the need for mills to obtain licenses for new capacity, removed the restrictions that had kept large companies coming under the Monopolies and Restrictive Prevention Act from making new investments, and provided for some automatic clearances for foreign investment proposals. The Textile (Development and Regulation) Order 1992 made certification of powerlooms automatic, except in very special cases.

Table 1.3: Production Trends of Cotton Yarn and Cotton Fabrics

Year	Yarn million mt	Fabric billion sqm
85/86	1.25	12.47
90/91	1.51	13.40
93/94	1.89	18.9
Rate of Growth (percent)		
85/86-93/94	3.1	4.4
85/86-89/90	1.9	0.1
90/91-93-94	4.9	6.9

Source: ICMF, 1995, *Handbook of Statistics of the Cotton Textile Industry*.

Box 1.2: Evolution of India's Cotton Textile Policy

Long-standing government emphasis on import substitution and the protection of labor interests shaped the structure of textile industry. Covered by the general economic policy of self-reliance dating to the 1950s, the industry treated exports as a marginal outlet for surpluses. The large labor base and the GOI's strong concern for employment produced a multitude of labor regulations favoring handlooms, but discriminating against composite mills through various regulations under the Factories Act of 1948 that imposed employment rigidities and increased labor costs on them. Restrictions on expanding mill loom capacity and on automation in the 1950s, price controls and lower tax rates for powerlooms and handlooms than for composite mills in the 1960s and 1970s added to the policy burden.

To protect the handloom industry, the Hank Yarn Obligation was introduced in 1974 to require spinning mills to process 50 percent of their deliveries in hank form, with at most 85 percent in 40s count or below. Government concern for adequate access by the poor to their "preferred" cotton clothing (Synthetics were for the rich.) translated into a heavy tax burden on manmade fiber, licensing to restrict entry, and the compartmentalization of the industry in terms of cotton, synthetics, or wool units. Fiscal and trade policies further discriminated against increased domestic use of synthetic fibers.

1.15 The new emphasis on export-led growth also translated into incentives for Export Oriented Units (EOUs), the Export Promotion Capital Good Scheme (EPCGs), elimination of the minimum export price in 1995, and relaxation of the export quota for yarn. The principal benefits to EOUs include: a tax holiday for a block of five years out of eight, the free import of raw materials and capital goods, permission to sell up to 25 percent of their output domestically

² P. Anubhai and V.L. Mote, 1994, "India's Textile Industry: A Case Study of Subsectoral Restructuring," in S.D. Meyanathan (ed), *Managing Restructuring in the Textile and Garment Subsector, Examples From Asia*, Washington, D.C.: EDI, World Bank.

provided that at least 30 percent of the raw material is of Indian origin, and expanded yarn export quota exemptions.

1.16 Such incentives, however, have little impact on the fundamental competitive weakness of the textile industry, its dualistic and highly fragmented structure as shaped by the prior policy of replacing imports and preserving jobs. (See Table 1.4.) That legacy includes a predominant concentration on markets for low-quality textile products and tremendous variation in levels of efficiency and competitiveness in spinning, weaving, and apparel firms, ranging from very high - the industry-leading exporters -- to very poor - firms oriented toward the historically protected domestic market.³

Table 1.4: Policy Environment in the Textile Industry, 1997

Policy	Sector	Implementing Agency	Remarks
Domestic Regulations			
Textile (Development and Regulation) Order, 1992	Weaving Spinning	Min. of Industry	Removed licensing requirement.
The Factories Act, 1948, & Labor Policies	Weaving Spinning	Min. of Industry, State govt.	No clear "exit" policy
Small-scale Reservation, 1977	Garment Knitting	Min. of Industry	Ceiling recently raised from Rs 6 to 30 million on fixed investment of SSIs
Tax Policy	Spinning Weaving MMF	Min. of Finance	Differential taxation between cone & hank yarn, handlooms and powerlooms/mills, cotton and MMF
Hank Yarn Obligation, 1974	Spinning	Min. of Textiles	Except yarn for export, hosiery yarn, >60 counts, blended & industrial yarn
Handlooms (Reservation of Articles of Production) 1985	Handloom	Min. of Textiles	Covers 22 products
Janata Cloth Subsidy Scheme	Handloom	Min. of Textiles	Subsidy financed by addl. 15 percent duty on textile products
Trade Policies			
Export Quotas	Apparel Fabrics Yarn	Apparel Export Promotion Council, Min. of Textiles	Yarn counts > 40s, EOU and EPCG yarn, processed yarn, & bilateral yarn exports exempted, Fabric and garment export quotas under ATC and bilateral agreements allocated by OTC based on pre-set criteria
Import Restrictions	Apparel Fabric	Min. of Textiles	EOUs and EPCGs exempted
Import Tariffs	Apparel Fabric Yarn	Min. of Textiles	Reduction subject to US and EU bilateral agreements

E. SPINNING PERFORMANCE

1.17 As government restrictions eased and export-promotion incentives grew after 1985, private investors financed almost all the capacity additions and modernization made in spinning mills, setting up about 50 new export-oriented enterprises, often with the help of a soft loan scheme established in 1976 and the Textile Modernization Fund Scheme introduced in 1986. Current spinning sector capacity stands at about 30 million spindles, 70 percent of them in the private-sector producing 83 percent of all 1995 output and almost all yarn exports. While some ten million spindles process only pure cotton yarn, another 21 million - in all 70 percent of spinning capacity - are exclusively tailored to handle 100 percent-cotton and cotton-viscose yarns. The remaining capacity processes manmade fibers in combination with others (polyester:viscose, polyester:cotton, polyester:wool; viscose:cotton) or in pure form like polyester, acrylic, and viscose yarns. The current stock of technologies impose some short-term limits on cross-fiber substitutions.

³ See Annex 5 for a more detailed analysis of the performance of the textile industry.

1.18 Benefits of Cheap Cotton. Because only limited amounts of cotton could be exported, spinners have enjoyed a raw material subsidy that held down their input costs on as much as 70 percent of the final value of yarn spun from coarse counts and at least 50 percent for higher counts. This apparent relative manufacturing

Table 1.5: Index of Manufacturing Cost Components of Spinning Mills Using Thailand as Reference

Item	USA	Japan	Italy	Korea	Brazil	Thailand	India
Waste	0.89	1.00	0.98	1.00	0.81	1.00	0.81
Labor	5.30	10.00	8.90	1.80	2.10	1.00	0.50
Power	0.78	2.57	1.00	0.87	0.91	1.00	1.43
Stores	0.82	1.00	0.76	0.82	0.76	1.00	0.71
Financial charges	1.25	0.95	1.05	1.02	1.48	1.00	1.11
Mfg. expense	1.28	1.55	1.36	1.02	1.25	1.00	1.02
Cotton raw materials	0.93	1.00	0.98	1.00	0.87	1.00	0.88
<i>Total cost</i>	<i>1.10</i>	<i>1.27</i>	<i>1.17</i>	<i>1.01</i>	<i>1.06</i>	<i>1.00</i>	<i>0.95</i>
<i>Total cost without raw materials</i>	<i>1.28</i>	<i>1.55</i>	<i>1.36</i>	<i>1.02</i>	<i>1.25</i>	<i>1.00</i>	<i>1.02</i>

Source: ITMF, 1995 *International Production Cost Comparison*.

advantage derived from discounted domestic prices is, along with cheap labor, a major competitive strength of Indian spinning mills. As shown by a seven-nation comparison of the manufacturing costs of yarn (Table 1.5) conducted by the International Textile Manufacturers Federation (ITMF), India's manufacturing expenses are comparable to those of Korea and Thailand, but the additional benefit of cheaper raw materials brings Indian costs below those countries. India's cost disadvantage with respect to electric power -- unreliable in supply and billed at higher rates for industrial consumers -- and financial charges -- traceable to tighter capital markets and higher budget deficits -- is more than compensated by lower labor and material costs. While Brazil's cotton is a penny cheaper than India's, its wages are more than four times as high.

1.19 The availability of low-cost cotton more than compensated spinning mills (with benefits varying according to levels of efficiency) for the implicit tax on yarn -- about 20 percent during the early 1980s as measured by nominal protection coefficients -- imposed by export quotas. Sharp production shortfalls in the late 80s and early 90s, however, drove domestic prices up, eliminating the implicit tax until continued export controls and the

Table 1.6
Effective Protection of Yarn EOUs and Domestic-oriented Firms, 1995

Yarn	EPC		
	Dated	Modern	EOUs
20s count	1.02	1.02	1.41
30s count	1.41	1.41	1.28
40s count	1.36	1.36	1.28

Source: computed; Annex 3

rupee devaluation restored it at a lower rate of about 10 percent in the 1990s. The benefits of cheap cotton vary according to the performance levels of spinning mills in three categories: EOUs, modern and dated mills. EOUs consist of new mills using more modern technologies to cater primarily to the international market. They account for about 21 percent of capacity and 25 percent of yarn production of 60s count or less. Modern mills that hold the largest share of capacity (40 percent) and of output (40 percent) are usually older ones that upgraded their equipment during the 80s. The less efficient, mostly public-sector dated mills use old equipment and account for the other large chunk of capacity (35 percent) and production (38 percent). Most of the yarn exported comes from export-oriented units and the well-run, modern units. Depending on the yarn count, it was estimated that the rate of effective protection of spinning mills in 1995 ranged from 2 to 40 percent (Table 1.6). Export-oriented units captured the most significant positive effective protection.

1.20 Trading in an Open Environment. Even without such shelter, dedicated exporters and modern mills should be able to compete in international markets, but older mills will need to modernize to adapt to liberalized global trade and probably move to lower yarn counts where India's comparative advantage seems stronger. If cotton and yarn prices are allowed to rise to world market levels, EOUs -- on the basis of their total costs and prices per kilo -- remain profitable across most yarn counts. Modern mills also earn profits for 20s and 30s yarn counts,

but, unless they modernize further, would incur losses of about Rs 6.28/kg in producing higher counts. Dated mills, because of their high operating costs, are unlikely to remain competitive in the international market in all yarn counts (Table 1.7). Restructuring and modernizing dated mills producing 20s and 30s counts of yarn may be enough to put them in the black, since estimated losses per unit of Rs 1.48/kg and Rs 5.03/kg are small, compared to those of Rs 11.36/kg. at 40s count and above. To remain cost competitive, the dated mills in the higher counts that produce 15 percent of all cone yarn would need to move down the scale to yarn India has been most successful in selling abroad.

Table 1.7: Competitiveness of Different Categories of Mills by Yarn Counts at World Cotton and Yarn Prices, Rs/kg

Yarn Count	Export Oriented Units	Modern Mills	Dated Mills
20s	6.34	1.69	-1.48
30s	4.39	0.38	-5.03
40s	0.66	-6.28	-11.36

Source: H. Bhattacharya, 1996, "India Cotton Sector Study".

1.21 **The Hank Yarn Obligation.** A constraint on the competitiveness of all spinning mills, the Hank Yarn Obligation (HYO) was conceived as a way to ensure affordable supplies to poor village and rural handloom weavers. Technically, the HYO directs spinning mills either to process 50 percent of their deliveries as hank yarn, a hand-reeled type used by handlooms and requiring a large workforce, or transfer the obligation to other firms. Since the 50 percent obligation is calculated on the basis of a percentage of the net qualifying amount after exemptions for exports, own consumption (for composite mills), and hosiery and blended yarn output, actual deliveries of hank yarn generally average about 25 percent of total yarn output. Many older mills have phased out their hand-reeling operations and most new ones do not set them up at all, since they take up additional space, require older systems and such a large labor force that the mostly female hand-reelers in some mills with both automatic spinning and hand-reeling facilities number half the total of all other factory employees. Facing such high costs, mills that do not have in-house reeling transfer their hank yarn obligations, generally to public-sector and cooperative mills. In the active market for HYO transfers, charges range from 25 paise per kg to Rs 1 per kg (Table 1.8). The premium on transfers, up to Rs 5 per kilo at the 1994 peak of the cotton shortage, had dropped to 40 paise/kg by January-February 1996.

Table 1.8: Hank Yarn Obligation Transfer Prices

Year	Transfer Charge, Rs/kg	
	Minimum	Maximum
91/92	0.25	0.70
92/93	0.30	0.30
93/94	0.30	1.00
Jan 96	0.40	???

Source: ICMF, 1995, in H. Bhattacharya, "Cotton and Textile Markets, Linkages, Performance and Prospects"; S. Chaudhury, 1996, "Cotton Sector Study," ICRA.

1.22 Meant to sustain low-income weavers, the obligation acts as an incentive for illegal misrepresentation of hank yarn, which is exempt from excise duties and sales tax, as cone yarn, which is subject to a 5 percent excise duty and a 2 percent sales tax. Although hank yarn is Rs 4/kg more expensive to produce, the combined effect of tax waivers and administratively prescribed production is to make its price about 10 percent lower than cone yarn, a differential that results in leakages of output (estimated at 15 to 25 percent) to non-handloom weavers. This improper diversion of hank yarn occurs because machine dyeing of cone yarn is more costly than hand-dyeing of hank yarn. Some spinning mills even find it economical to convert hand-dyed hank yarn back into cone yarn to meet the demand of powerlooms for dyed cone yarn.

1.23 Raising cotton spinning costs by compelling the use of obsolete hand-reeling technology and by requiring firms to divert resources to hank yarn production, the HYO is a productivity tax that forces mills to limit their cone yarn production and thus forego both higher export volumes and advantageous economies of scale. The observed transfer cost of the obligation – an estimated Rs 0.5/kg on one quarter of total production -- provides a market-based approximation of the HYO's associated costs: a productivity loss equal to roughly 0.14 percent of the output of the cotton spinning sector. The HYO also influences investment decisions by encouraging

investments in hosiery yarn spinning or the establishment of a 100 percent EOU to get around the obligation.

1.24 In addition to the effect of the implicit tax in discouraging private investments in modernizing spinning mills, the duty relief on hank yarn subsidizes old, inefficient, and costly production processes, many of them in the state sector. This implicit subsidy to inefficient mills is over and above the direct government support to the handloom industry for hank yarn. Worse, it is not targeted. The explicit subsidy at least goes to socially disadvantaged handloom weavers. As new mills come on stream – almost certainly without hand-reeling facilities -- the continuation of the HYO will simply mean higher implicit subsidies to the state sector and widespread transfers of public revenues to private mills that falsify their declared hank yarn output.

F. MANMADE FIBER PRODUCTS

1.25 Lower Man Made Fibers (MMF) prices will boost domestic consumption of synthetic textile products-- including those of the poor who appreciate their greater durability--and exports of blended and synthetic products. Although traditionally perceived by government as a “rich man’s product,” over 50 percent of synthetic textile products according to a recent study are now consumed by lower income households in India (earning less than Rs 20,000 per year). Blends of cotton and MMF have gained domestic and international popularity because they combine the easy-wear properties and durability of synthetic fibers with the comfort of cotton. Increased production of blends would permit increased textile output with the available supply of cotton and help ease the upward pressure on cotton prices, while substituting manmade filament yarns for cotton would help accommodate rising domestic textile demand.

1.26 **Production and Export Trends.** The continuing cuts in fiscal levies and tariffs on manmade fiber intermediates initiated by the 1985 Textile Policy as well as various programs to promote exports have already fostered greater domestic and export demand for manmade fibers and spurred higher investments in new manufacturing capacity. Between 1985/86 and 1993/94, installed capacity for the production of manmade fibers and filament yarn grew at an annual average of 14 percent and 19 percent respectively, resulting in the near tripling of domestic output. Synthetic product export revenues rose 17 percent per year in real terms to reach \$900 million in 1995/96 (Table 1.1). Even so MMF products have only a small, though increasing,

market share in domestic output and in exports. Blended and 100 percent MMF spun yarn, for example, had only 25 percent of India’s yarn market in 1994/95, and manmade fabrics account for 37 percent of the fabric market. The share of synthetic product exports (excluding garments) in total textile export revenues is only about 9 percent.

Table 1.9
Impact of Excise Duties on Market Prices for Different Yarn Types

Yarn Type	Ex-mill price, Rs/kg	Excise Duty	Market Price Rs/kg	Market Price at 5 percent duty, Rs/kg
Polyester/Viscose	102	20 percent	122	107
Polyester/Cotton	101	20 percent	121	106
Cotton	110	5 percent	116	116

source: R. Ramakhrisna, 1995, “Textile Export Targets, The Role of Polyester,” Association of Synthetic Fiber Industry. mimeo.

1.27 Those shares might well rise if higher tariffs and taxation did not inflate the relative costs of MMF products and discourage growth in domestic consumption. Higher excise taxes, for instance, make 40s count blended and non-cotton spun yarns 5 percent more expensive than cotton yarn. If the 5 percent duties applied to cotton yarn were levied uniformly on all 40s count yarns, blends would be as much as 7 percent cheaper than cotton (Table 1.9). Higher tariffs on MMF intermediate products, however, raise the costs of synthetics even further relative to cotton products (Table 1.10).

G. WEAVING PERFORMANCE

1.28 As cotton fabric production rose 40 percent between 1985/86 and 1995/96 to 18.9 billion square meters, a distinct shift in market position carried the share of organized mills down from 22 percent to 7 percent as the unorganized and small-scale segment (handloom, powerloom and hosiery) of the weaving and knitting industry rose substantially. Powerlooms expanded their share of cotton fabric output from 35 percent to 41 percent and hosiery's grew from 11 percent to 26 percent. A relative newcomer in the market, the small-scale hosiery/knitting subsector, has also been expanding particularly fast since 1990/91 (20 percent per annum until 1995/96.)

1.29 What eroded the competitive position of organized mills was a government-imposed package of regulations on the composite mill sector designed to promote their unorganized rivals and protect labor. (See Annex 1.) Burdened by these rules with a work force with low productivity, mills gradually lost their capacity to modernize and survive. By 1995, the number of closed mills rose to 61 units, their idle spindles and looms accounting for about 13 percent and 23 percent of industry capacity respectively. Average capacity utilization in the mill sector dropped to 73 percent for installed spindles and 43 percent for looms, very low by international standards. In addition, there are currently 275 mills registered as sick with the Board for Industrial and Financial Reconstruction (BIFR). Of these 124 are under the National Textile Corporation (NTC), a government parastatal created in 1968 by the GOI to oversee the mergers and revival of ailing private mills. Among the better private performers, a large (about 40 percent) share of their production is exported, a reflection both of their greater capacity – compared to the unorganized sector -- to meet export volume and quality requirements and of their difficulty competing against powerlooms in domestic markets.

1.30 **Export Competitiveness.** Thanks in part to low labor costs, India's private weavers can be internationally competitive in the low-to-medium-price/quality market. (See Table 1.11.) In the gray cloth market, for instance, assuming similar yarn prices in India and four other countries, low manufacturing costs in powerlooms and new mills give India considerable advantages. A comparison of hourly wages in the clothing industry (inclusive of social contributions) in 1993 shows that India has one of the lowest costs of labor (27 cents/hr) in general and relative to other Asian countries. India rivals Pakistan; only Vietnam (26 cents), Romania (25 cents), China (25 cents) and Bangladesh (16 cents) rank lower.⁴ Because of this competitive strength, the weaving industry is attracting substantial investments, such as those to set up 13 denim projects at a total investment cost of Rs 17.4 billion (\$519 million) with a total capacity of 156.2 million meters. Of these, 42.8 million were commissioned by March 1996, with a further 50 million meters of production capacity added in March 1997.

Table 1.10: Import Tariffs on Cotton and Manmade Products

Commodity	Tariffs June 1996
Cotton-based Products	
Cotton Apparel	50 percent
Cotton fabric	50 percent
Cotton yarn	25 percent
Cotton lint	0 percent
Raw cotton	0 percent
Man-Made Fiber Products	
Apparel	50 percent
Fabrics	50 percent
Nylon, Polyester, and Viscose Filament yarn	30 percent
Other manmade filament yarn	30 percent
Artificial and synthetic fibers	30 percent
DMT, PTA, & MEG	25 percent

Source: GOI and G.Pursell, 1996, "Indian Trade Policies Since the 1991/92 Reforms," forthcoming.

⁴ European Commission, 1995, in M. Majmudar, 1996, "The MFA Phase-out and EU Clothing Sourcing: Forecasts to 2005," *Textile Outlook International*, pp.31-61.

Table 1.11
Comparison of Cost of Production of Gray Cloth, \$US/yard of 63 inch wide cloth

Cost Component	Italy	USA	S.Korea	Brazil	India		
					Old Mills	New Mills	Powerloom
Yarn	0.44	0.44	0.44	0.44	0.44	0.44	0.44
Energy	0.06	0.03	0.03	0.03	0.04	0.04	0.18
Labor	0.22	0.14	0.04	0.03	0.03	0.02	0.01
Capital	0.21	0.18	0.16	0.20	0.18	0.16	0.06
Others	0.03	0.04	0.05	0.06	0.14	0.08	0.03
Total cost:							
w/o yarn	0.52	0.39	0.28	0.32	0.39	0.30	0.28
w/ yarn	0.96	0.83	0.72	0.76	0.83	0.74	0.72

Note: Cloth specification 60x60 using 20s count yarn. Yarn requirement per yard is 210gms, 20s cotton yarn taken at \$2.1/kg.

Source: ITMF, Switzerland 1993 data, powerloom data from ICMF, in H. Bhattacharya, in "India Cotton and Textile Markets: Linkage, Performance and Prospects".

mills accounted for a fifth. That year the entire industry incurred total (financial) losses of Rs 7,960 million (\$301 million), nearly double the drain in 1987/88.⁵ Losses of public textile enterprises (NTC or private mills taken over by GOI) alone amounted to Rs 6 billion in 1993/94, equivalent to 75 percent of the reported industry-wide losses in the previous year. In real 1993/94 rupees, their cumulative deficits over the five years from 1989/90 to 1993/94 came to about Rs 21.6 billion (\$787 million), funds which could have been invested more productively in other areas (Table 1.12). States also operate a number of sick textile enterprises, but no data are available on their performance.

Table 1.12: Public Textile Enterprises: Cumulative Net Profits and Losses (89/90-93/94) and Net Worth (93/94) and Number of Employees

Enterprise	Cumulative Net Profits/Losses \$ million ^a	Net worth ^b 93/94 \$ million ^a	No. of Employees 93/94
Cawnpore Textiles	-10.98	0.47	1,446
Elgin Mills	-91.90	0.40	4,838
NTC:			
NTC, Ltd	2.76	146.98	334
AP, Karnataka & Kerala	-49.79	24.07	11,437
Delhi, Punjab & Rajasthan	-30.98	11.23	7,618
Gujarat	-105.73	11.38	7,791
MP	-81.80	13.19	12,206
Maharashtra-North	-85.01	24.10	10,770
Maharashtra-South	-93.29	22.86	13,339
TN and Pondicherry	10.16	25.42	11,442
UP	-118.07	19.02	1,861
WB, Assam, Bihar & Orissa	-132.84	17.48	12,003
Total	-787.46		95,085

Note: a - 93/94 dollars; b - equity and reserves, c - non-casual employees in 1993/94
Source: GOI, Public Enterprise Survey, various issues.

questions related to the sale of surplus land in affected mills.⁶

1.33 Still, some individual workers -- about 38,000 of them in NTC mills -- have opted for voluntary retirement and received average payments of Rs 143,000 (about \$4,000). Some state governments are also adopting the same policy, funding a Rs 2.5 billion VRS, in one instance,

⁵ In 1982/83, total textile industry losses amounted to Rs 1,880 million.

⁶ "The ICMF Urges Total Liberalization in Textile Sector," *The Textile Monitor*, Vol. 15, December 1995.

1.31 Public Sector Mills.

In contrast to those encouraging signs of renewal is the reality, as recorded by the Annual Survey of Industries, that taken as a whole, the cotton textile industry is persistently incurring losses. Of its component 8,896 factories in 1992-93, spinning and weaving

1.32 Cutting some of these losses, officials had closed 25 public mills by December 1994 and released Rs 743 million from the Textile Worker's Rehabilitation Fund Scheme to compensate the 37,131 workers laid off, an average payment per worker of about Rs 20,000 (US\$571). Labor unions have stalled further closings of the remaining 124 public mills, objecting strongly to any more worker layoffs. The issue's acute political sensitivity is heightened by

for 14,000 workers of the Gujarat State Textile Corporation Ltd (averaging Rs 180,000 per worker). The existing forms of VRS, however, have been criticized both for adverse selection, poor targeting and for built-in bias in the method of estimating surplus labor. A recent study⁷ found that most workers opting for VRS were close to retirement, making the retirement scheme more an added retirement bonus than an instrument of retrenchment. It also encouraged the departure of more competent workers and officers in the 35-to-50 age group (almost 44 percent of the total), a large number of whom had already secured alternative employment in better paid private sector jobs. The poor targeting of redundancies is further exacerbated by stringent labor laws which require complicated, hard-to-obtain proof that closing a plant or a section of it will alleviate substantial losses. This provision also impedes efforts to shut down unrelated or unprofitable lines of business when a firm is making profits.

1.34 The performance of almost all the mills listed in Table 1.12 has been so poor that their accumulated losses (1989/90 to 1993/94) exceed their net worth by close to \$800 million, a gap prompting calls for an end to direct and indirect government support, especially in hard fiscal times. But any action to liquidate or privatize these mills will require large fiscal outlays to retrench workers. Assuming all 95,000 workers currently employed in these mills participate in a VRS at a rate of Rs 140,000 per worker, the cost of their departure would total some \$380 million, about 88 percent of the losses (in real terms) accumulated by these mills in 1992/93 and 1993/94. For mills that need to be liquidated, an important issue would be the speed and efficiency of the process, a tortuously slow one in India. A recent study⁸ found that 51 percent of companies in court to wind up their operations remained in limbo for at least 10 years; 32 percent at least 20 years.

H. THE HANDLOOM SECTOR

1.35 The share of hand-loomed fabric in total output increased from about 25 percent in the early 80s to 37 percent in 1995/96, and there remains over 3.6 million handlooms and 6-7 million people – most of them poor, rural and often illiterate women -- employed in working them in various parts of the country. The majority are in the states of Tamil Nadu, Andhra Pradesh, Assam, Uttar Pradesh, West Bengal, and Haryana, catering primarily to the fabric requirements of rural folk and also specializing in saris in many areas. Handloom operators have been on the losing end of a competition with powerlooms which are better able to turn out mass consumption products such as saris, shirts, suits, and dress materials. Through various schemes and regulations, however, the GOI is protecting the handloom subsector, as it is labor intensive and provides supplementary wages in rural areas. In addition to the Hank Yarn Obligation, these measures include the reservation of production of certain fabric varieties, low-interest working-capital loans, modernization funds, tax exemptions, and rebates on prices of the fabrics sold through cooperatives. This protection effort, as noted earlier, has come at a cost to the spinning industry, especially because of the HYO.

I. APPAREL MAKERS

1.36 Another instance of the GOI's bias toward smaller-scale, labor-intensive enterprise is the subsector that employs about 1.8 million people – most of them paid as piece-workers -- and included in 1990 an estimated 77,046 apparel manufacturers of which about 80 percent operate small or cottage-industry level operations. Recently, the investment ceiling for small-scale enterprises in general was raised by a factor of five to Rs. 30 million with investors obliged to

⁷ O. Goswami, 1996, "India's Public Sector Enterprises, The Case for Reform and Privatization," mimeo, HIID, Harvard University.

⁸ A. Mathur 1993, "Industrial Restructuring and the National Renewal Fund" mimeo, Asian Development Bank.

export half their output to non-quota countries within 3 years. Since 1997, larger scale enterprises (above Rs 30 million) have also been allowed, again subject to the 50 percent (down from 75 percent) export obligation. The Factories Act of 1948, pervasive labor regulations, and a number of incentives that encourage small-scale operations (tax exemptions, lower power tariffs, concessional credit), however, work as further deterrents to investments in larger scale ventures. Knitting, which is also reserved for small-scale enterprises, faces similar problems.

1.37 Despite the obstacles in its way, the (cotton) apparel subsector has managed to raise its export earnings by 11 percent a year in real terms from the early to mid-1990s and to reach Rs 103 billion in foreign sales in 1995/96 when it accounted for over one third of total textile exports. In spite of this rapid expansion, manufacturer/exporters represent a mere 7.5 percent of installed capacity. Of the 120 countries purchasing Indian-made apparel, those of the EU take the largest share (43 percent in 1993). India exports mainly medium- to low-priced items: mostly men's shirts, ladies' blouses and dresses, T-shirts and jerseys. Indian products are rare in the high fashion (i.e. high-price) and blended/synthetic apparel markets which India cannot afford to ignore if it is to be globally competitive over the long term. As noted earlier, export opportunities arising from the MFA phase-out are enormous. The apparel sector's ability to respond to these opportunities, however, will be increasingly curbed by the constraints (see below) arising from its small-scale structure.

1.38 One constraint to success is the widespread perception that Indian garments lack quality and quality consistency, a logical consequence of the shortage of high quality, modern, dyeing, processing and finishing technology⁹ and of the use of low quality inputs (trims and accessories, dyes, buttons, zippers, and others). The lower investment value per machine in India (US\$250), equivalent to 17 percent of China's, 10 percent of South Korea's, and 7 percent of Hong Kong's investment per machine, provides one indicator of quality of technology used, but the factor determining consistency shortcomings is size. Not only does the decentralized small-scale nature of garment manufacturing make quality control very difficult, the same limitations affect fabrics produced in the predominantly small-scale weaving industry, and inconsistent fabric quality stems in part from the poor quality management of cotton lint discussed in the following chapter. Access to good quality inputs (fabrics and accessories), including imported goods, is further constrained by multiple restrictions and burdensome import procedures.

1.39 Labor productivity in the Indian apparel subsector is not only well below that prevailing in other exporting countries but even declining relative to China and other suppliers. A 1990 study, using 1982 and 1984 data, indicated that work that took one hour in Hong Kong required

Table 1.13: Cost per Standard Minute Produced of a Standard Clothing Item, Selected Countries, 1995
DM per standard minute

Country	Standard Costs DM/std minute
Germany	0.58
Turkey	0.21
Hungary	0.25
Hong Kong	0.25
India (Bombay)	0.25
India (North)	0.23
Indonesia	0.21
Thailand	0.20
Sri Lanka	0.20
Vietnam	0.18
South Korea	0.15
China (south)	0.14
China (north)	0.14

Note: Based on a factory with 140 direct employees conducting contract processing (for mother company) with the capacity to produce 500 suits or 2,000 trousers or 3,000 shirts. It should be noted that calculations in DM are sensitive to exchange rate conversions and fluctuations.

Source: Kurt Salmon Associates, 1995, in . M. Majmudar, 1996, "The MFA Phase-out and EU Clothing Sourcing: Forecasts to 2005," *Textile Outlook International*, pp.31-61

⁹ S.R. Khanna (1993) *The Challenge of Global Competition in the 1990s: An Agenda for Enhancing the Competitive Position of the Indian Textiles and Clothing Industry*. ICRIR Mimeo.

5.4 hours in China and 6.5 hours in India.¹⁰ A 1996 study,¹¹ using 1993 and 1995 data, implies that work that took 1 hour in Hong Kong requires 8.7 hours in China and 14.4 hours in India. As a result, the potential advantage of India's low labor costs – a more significant factor in apparel making than in spinning -- is being dissipated by low labor productivity (Table 1.13) traceable to low levels and quality of investments, management weaknesses, and lower labor quality, all of which are expressions of the limits inherent in small-scale manufacturing.

1.40 Yet another obstacle to global competitiveness arises from the 90-120-day lead times for the delivery of Indian exports, as against 45-60 days for Hong Kong/China suppliers, and from non-adherence to delivery schedules. At fault are poor transport and port infrastructure, cumbersome import and export procedures, and the decentralized nature of production. The loss of 30 to 40 days to the licensing process, the 5-7 days to receive imported goods, and the 10-15 days needed to move exports through customs, and the difficulty of coordinating a large number of participants put Indian companies that would convert imported fabric into garments at a serious international disadvantage. While low labor costs, lower overheads, operational flexibility and the ability to accommodate greater product variety offer apparel exporters a potential competitive advantage, that edge is blunted by low labor productivity, quality consistency problems, and long lead times for export processing.

J. CONCLUSION

1.41 The Indian textile industry faces tremendous domestic and export market opportunities as well as new challenges in what is bound to be a more competitive market for textile products. Although its performance indicates tremendous scope for productivity catch-up with its main competitors, notably from East Asia, progress is delayed, if not blocked, by such policies as the cotton yarn export quotas, hank yarn obligation, discrimination against MMF, labor regulations, and restrictive policies on foreign and domestic investments. Sustained growth in the textile industry would benefit cotton growers by increasing demand and stimulating improved quality management in cotton production and marketing, raising growth opportunities that also pose new challenges to cotton policies traditionally shaped to fit textile industry interests. Eliciting a cotton supply response, in volume and quality, may require sacrificing some of the cushion provided by the cotton subsidy and squeeze profitability in various segments of the textile industry. The next chapter addresses those issues.

¹⁰ Trela, I. and Whalley, J. 1990. "Global Effects of Developed Country Trade Restrictions on Textiles and Apparel." *Economic Journal* 100:1190-2105.

¹¹ Economist Intelligence Unit (1996), *Textile Outlook International*,. Economist Intelligence Unit, London.

2 Cotton: Farming and Marketing

2.1 Rising domestic and export demand for textile products opens tantalizing opportunities for cotton producers to improve their performance, both in quantity and quality, so that they can compete with imports, and provide the textile industry the grade of raw materials it needs to succeed against foreign contenders at home and in new export markets. Increasing productivity, however, requires broad policy changes. Low prices, over-regulated domestic trade and ginning, together with a historically domestic-oriented and highly protected textile industry have until now acted in combination to hold farmers back from adopting the necessary improvements in the quality of their product and the control of the pests that threaten it. A central finding of this report, developed in this chapter on the performance and prospects of the cotton sector, is that growers have much to gain from quality-enhancing changes in their practices and that the textile industry, adapting to more demanding domestic and foreign markets, has little to lose from the higher prices that higher-grade cotton should fetch.

A. COTTON PRODUCTION

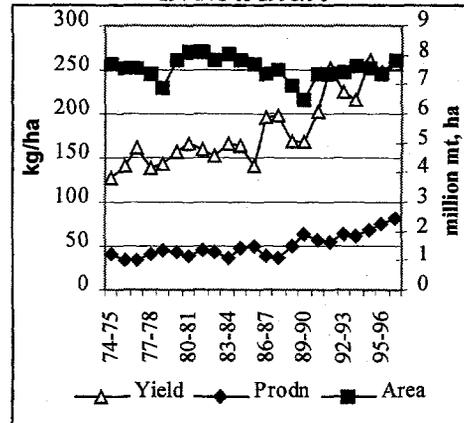
2.2 **Background.** Five millennia of cotton growing and an ideal range of climatic conditions have made India a major and diverse producer (16 percent of world cotton lint output in 1996/97) and one of the few countries that can grow a wide spectrum of cotton varieties with different staple lengths -- from short (<10 mm) to extra long staples (>38 mm). On 9.1 million hectares planted in cotton in 1996-7 -- equivalent to about 25 percent of total world cultivated area -- production amounted to 2.4 million metric tons (mt) of the fiber (lint) that is the ginned product of raw, unprocessed seed cotton, locally known as *kapas*, also the source of seeds that can be crushed to extract edible oil and of meal used as livestock feed. When lint is spun into yarn, staple length becomes an important determinant of final fabric quality with short-staple cotton generally used for knitwear and denim, and longer staples woven into fine shirts and knits. Currently, about 100 varieties of cotton grow in India, of which 20 to 25 account for 90 percent of the crop, a mix that provides great flexibility in expanding sales in a wide range of textile product markets.

2.3 **Specialization.** Cotton produced in India is classified by the private sector into 5 staple categories: *Extra Long* (27 mm & above); *Long* (24.5 to 26 mm); *Superior Medium* (22 to 24 mm); *Medium* (20 to 21.5 mm); and *Short* (19 mm & below).¹² The northern region (Punjab, Haryana, and Rajasthan) is the primary producer of shorter staples, and southerners in Karnataka, Andhra Pradesh, and Tamil Nadu mainly grow longer staples (mostly DCH 32 and Suvin). The central region (Maharashtra, Gujarat, and Madhya Pradesh) produces a wider range of staples (mostly American and Desi varieties). As of 1995/96, , superior medium and medium staples accounted for 47 percent of domestic output, followed by long staples 43 percent. The extra long and short staples accounted for 2 percent and 8 percent respectively.

¹² This is the classification followed by the East India Cotton Association, Ltd. The Cotton Corporation of India follows a different system: Extra Long->32.5 mm; Long -27.5 to 32 mm; Medium Long - 25-27 mm; Medium - 20.5 to 24.5; and short- <20 mm.

2.4 Sources of Growth. In the last 15 years as yields rose, overall production grew by about 800,000 mt, from 1.27 million mt in TE 81/82 to 2.02 million mt in TE 1995-96. Cotton output grew by 3.9 percent per year, second only to oilseeds, which grew at 5.5 percent, faster than all cereals (2.6 percent) and sugarcane (2.8 percent) and at about the same rate as plantation crops (3.8 percent), fruits and vegetables (3.9 percent). Overall yield improvements of about 3 percent annually more than compensated for the stagnation in cultivated area (Figure 2.1). Cotton yields improved the fastest in the southern region and Maharashtra, explaining most of the cotton output growth. In the northern region where yields are highest but improved more slowly, area expansion played the dominant role in explaining production increases.

Figure 2.1: Cotton Production, Area, Yield 1974/75 to 1995/96

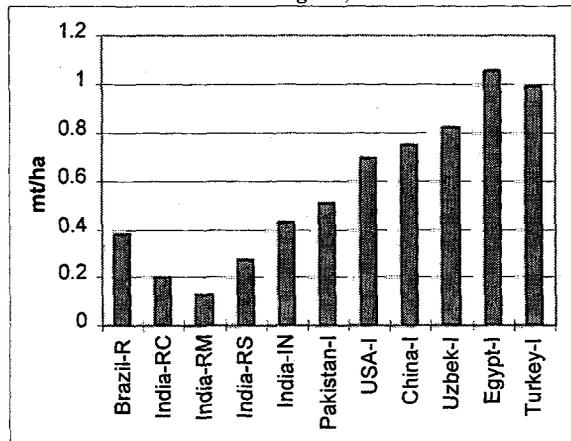


Source: MOA, GOI, *Agricultural Statistics at a Glance*.

2.5 Behind these increases lie both the spread of irrigation and the introduction between 1967 and 1992 of over 100 improved varieties and hybrids with potential yields of 600 to 4,500 kg/ha. By 1992-93, high-yielding varieties covered about 55 percent of total cotton-cultivated area -- hybrids 36 percent and improved varieties 19 percent.¹³ A strong domestic public and private research program developed these that so reshaped the composition of the country's cotton staples that it could shift from being a traditional importer to a major producer and occasional exporter of long staple cottons. Begun in 1968, increased liberalization of the seed industry fostered the development of private enterprises that distributed the improved varieties widely and, by 1993/94, accounted for almost 80 percent of hybrid seed sales. Since improved varieties generally perform better with irrigation, its expansion -- though still on only 30 percent of all land planted in cotton -- helped support the production increases. In the north, the 340,000 additional hectares added between TE 81/82 and 93/94 are primarily in irrigated areas, and in the central region, although total cotton plantings dropped, the irrigated share rose.

2.6 Unexploited Potential. Better seeds and more water, however, have still left productivity low by international standards. The average yield of irrigated cotton in the Northern Region (India-N) during 1991-92 to 1993-94 is less than or close to half of the other major irrigated cotton producers in the world, including China, Egypt, the United States, and Uzbekistan (Figure 2.2). Rainfed cotton yields in Maharashtra and the Central and Southern regions are likewise considerably lower than the mostly rainfed cotton yields in Brazil.

Figure 2.2: Average Cotton Lint Yields in Selected Countries and Indian Regions, 1992-94



Note: I - irrigated; R - rainfed; N -North, C-Center, M-Maharashtra, S-South
Source: FAO.

2.7 Swelling Demand. As described in the preceding chapter, export-led growth, fueled by

¹³ A.K. Basu and R.S. Paroda, 1995, *Hybrid Cotton in India--A Success Story*, Bangkok, Thailand: Asia Pacific Association of Agricultural Research Institutions.

the MFA phase-out, and surging domestic demand indicate such an increase in markets for textile products and cotton that a world textile general equilibrium model (See Annex 6) projects a need to boost cotton output an estimated 72 percent by the year 2005 if the MFA is fully phased-out (60 percent if the ATC/MFA quotas are not fully eliminated by then). Even then, since domestic supply would probably still fall short of demand and quality requirements, cotton imports are projected to rise by US\$ 160 million by 2005. Driven by export criteria and even with export quotas in effect, quality requirements will also become more stringent and create strong incentives to export some cotton varieties while importing others – using trade arbitrage to make the choices -- so as to achieve product differentiation. Given the wide disparity between Indian and world yield levels, intensification, rather than area substitution, looks to be the strongest engine of future output growth. Achieving a 72 percent increase in domestic production requires overcoming the policy, technical, and institutional constraints to intensification and quality management discussed below, and translates into a 4.2 percent annual production growth rate, compared to 3.9 percent achieved over the last 15 years.

B. POLICY AND PRODUCTIVITY

2.8 Export Quotas. To ensure textile manufacturers an adequate supply of raw materials, India sets yearly quotas for cotton lint exports, ranging from 7,000 mt to 300,000 mt, depending on the local supply and demand situation. (Table 2.1.) Fluctuating from 1 percent to 16 percent as a share of domestic production, exports have until recently been a monopoly of government and cooperative agencies. Only during the 1995-96 were they opened to private trade, with export allocations awarded through auction. For the 1996-97 season (October to September), the export quota for staple cotton is set at 58,650 mt, equal to 345,000 bales.

2.9 Depending on official assessment of the cotton supply situation, export quotas are released in ad-hoc installments during the season, a practice that introduces considerable uncertainty – and consequent price discounts on world markets – and has gone so far as a sudden 1994-95 suspension of quotas and temporary halt to shipments for contracts entered into with overseas buyers. Aggravating these discounts are the perceived lower and inconsistent quality of Indian cotton, the need for importers to regrade cotton (due to less stringent local grading practices) and the lack of expertise in international cotton trading of the state agencies that dominate exports. Consequently, most CCI and state agency export sales are made on a FOB basis to international cotton merchants, who use Indian cotton merchants as their agents. It is export quotas, however, that have the strongest impact of any single policy factor in keeping cotton prices low. Using the nominal protection coefficients of MCU-5, S-4, and J-34 cotton varieties as indicators of the degree of protection or disprotection for extra-long staples (ELS), medium and short staple cottons, respectively, a recent study showed that Indian prices for Extra Long Staple (ELS) and short staple cotton lint ran on average about 35 percent and 15 percent below export parity levels, respectively, since 1980 (Figure 2.3). Medium staple cotton prices fluctuated around export parity levels.

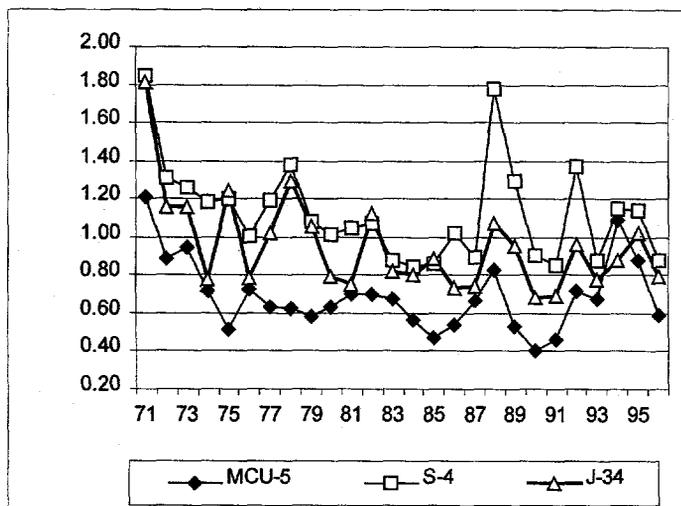
Table 2.1
Cotton Production and Export Quotas

Year	Prodn 000 mt	Quota 000 mt	% Share of Quota/Prodn
84-85	1446.2	50.2	3%
85/86	1483.6	235.1	16%
86/87	1173.9	90.4	8%
87/88	1084.9	7.5	1%
88/89	1486.5	36.7	2%
89/90	1940.4	251.8	13%
90/91	1673.2	228.7	14%
91/92	1651.4	23.0	1%
92/93	1969.1	303.6	15%
93/94	1820.7	96.9	5%
94/95	2354.5	31.6	1%
95/96		270.3	

Source: Office of the Textile Commissioner.

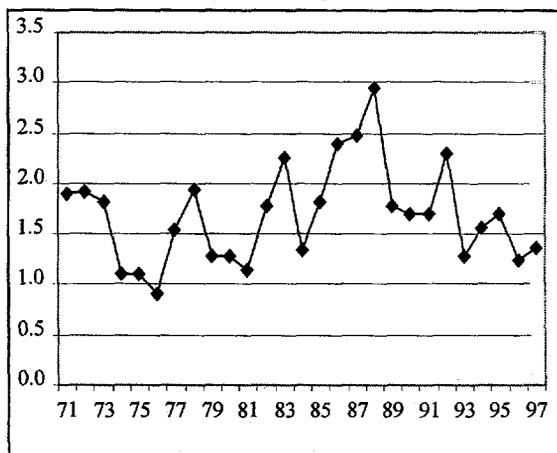
2.10 **The Oilseed Subsidy.** Compensating growers for the low lint prices that constituted an implicit subsidy of textile manufacturing, production-stimulating oilseed policies long kept

Figure 2.3
Nominal Protection Coefficients for MCU-5, S-4, and J-34
Cotton Lint (Exportable Hypothesis)



Source: G. Pursell and A. Gupta, "Background Statistics, Protection and Incentive Indicator, 1965-95, World Bank.

Figure 2.4:
Nominal Protection Coefficients for Cotton Seed
(Importable Hypothesis)



Source: G. Pursell and A. Gupta, "Background Statistics, Protection and Incentive Indicator, 1965-95, World Bank.

weaker compensatory effect from oilseed policies. The share of cotton seed (6 percent) in the total value of ELS cotton is substantially less than the 25 percent seed share in shorter staples.

2.12 **Lint Prices Rise.** Pest-related production shortfalls and rapid domestic cotton lint demand expansion -- fueled by the textile export boom -- have kept domestic cotton lint prices close to export parity levels since 1991, more than compensating for the depressing effect of

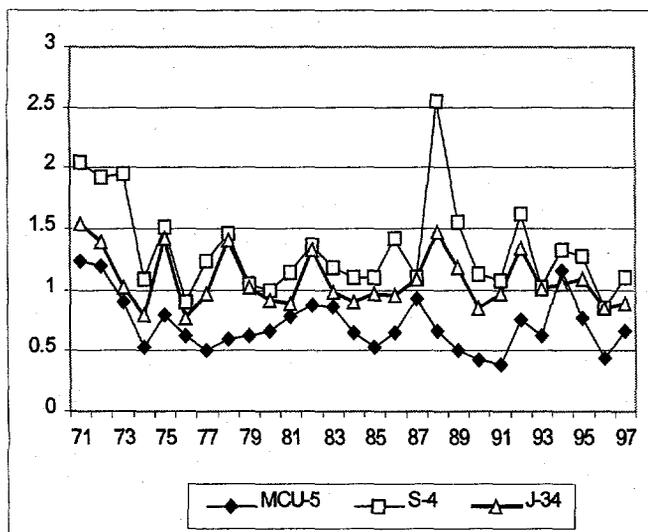
cottonseed prices -- and therefore those for kapas -- above world levels.¹⁴ (Figure 2.4) Farmer incentives for cotton production, therefore remained favorable until an oilseed policy change in 1994, as prices for short (J-34) and medium (S-4) kapas held above world levels throughout the 80s (Figure 2.5) Indeed, an analysis of the ratio of the wholesale price indexes of MCU-5, S-4 and J-34 seed cotton to the wholesale price indexes of oilseeds, cereals, pulses, and sugar (and its khandasari and gur forms) indicate that

seed cotton prices in general moved favorably relative to sugar prices between 1981/82 and 1993/94, and to cereals and oilseeds beginning in the mid-80s. Thus, by driving up farmgate prices, the government's intervention in oilseed cultivation helped maintain production incentives for cotton growers throughout the 80s and early 90s.

2.11 The effect of this stimulus, however, varied across regions. While kapas prices for short and medium staples, mostly grown in the north, remained at or above export parity levels, ELS cotton, largely a central and southern product, fell below that measure (Figure 2.5). The ELS growers, mostly in rainfed areas, did not gain as much, both because of heavy taxes on ELS cotton and a

¹⁴ See World Bank, 1996, "The Indian Oilseed Complex: Capturing Market Opportunities," Report No. 15677-IN, Vol. I & II, Washington, D.C.: World Bank for more detailed discussion on the GOI's oilseed sector policies.

Figure 2.5
Nominal Protection Coefficients for Seed Cotton
(Exportable Hypothesis)



Source: G. Pursell and A. Gupta, "Background Statistics, Protection and Incentive Indicator, 1965-95, World Bank.

because they imply an implicit subsidization of the domestic textile industry. Export quotas have a depressing effect on domestic lint prices, especially of ELS cottons, notably discriminating against production in rainfed areas where ELS cotton is grown. In addition, export quotas prevent cotton farmers and traders from capturing arbitrage gains by exporting varieties which have an international price advantage and importing those in short supply. The quota, now likely to become counter-productive and challenged under WTO rules, also contributes to greater lint price instability by eliminating the safety net against sharp price declines that bumper harvests bring. Eliminating quotas would help growers, but raise input prices for the textile industry, obliged in any case to gain in efficiency if it is to maintain competitiveness. The major challenge for the cotton sector, discussed below, is not only to remain competitive with imports both in terms of price and of product quality and consistency. Quality management in the cotton sector is weak.

C. TECHNICAL CONSTRAINTS

2.14 Pests and Disease. Of the four major, technical concerns (pests, seed variety, seed management and irrigation) hindering higher yields of higher quality cotton, the increasing frequency of pest outbreaks -- six major instances in the last ten years -- is arguably the most serious (Table 2.2). Among significant infestations of the cotton bollworm, whitefly and jassids and the cotton leaf curl virus (of which the whitefly is the primary vector), one resulted in Andhra Pradesh farmers losing 59 percent of potential output -- worth about \$160 million (including \$34 million in cottonseed) -- to bollworms in 1986-87.¹⁵ The most recent bollworm outbreak in Punjab in 1993/94 and 1994/95 leveled yields and sent domestic prices shooting over world price levels, prompting GOI to liberalize cotton imports at zero tariff.

oilseed policy reforms and bringing farmers a windfall but, over the longer term, jeopardizing the competitive advantage textile manufacturers gained from cheap raw materials. Even after the GOI lifted restrictions on edible oil imports in 1994/95 and reduced import tariffs to 20 percent in 1996, the export-fueled boom in textile demand and the incursions of crop pests kept seed cotton prices close to world market levels --except for ELS cotton-- diminishing the effect of the cotton export quotas and oilseed policy changes. Farmers are responding to these incentives by continuing to increase output.

2.13 Cotton export quotas are not consistent with WTO rules, in part

¹⁵ Nalin M. Kishore, 1992, "Pesticide Externalities, Comparative Advantage, and Commodity Trade, Cotton in Andhra Pradesh," World Bank Policy Research Working Paper 928, Washington, D.C.: World Bank.

2.15 Although cotton growers use 45 percent of all pesticide in India – making their crop by far the largest consumer – they appear to use the cheap, heavily subsidized chemicals so inexpertly that secondary pests, insects resistant to pesticide, and resurgent infestations are becoming common. Behind this development lie official failure to enforce pesticide regulations and quality control¹⁶ and to insure that farmers have the knowledge to use pesticides properly. Although both GOI and state governments perceived the importance of pesticides as an input to cotton cultivation and promoted the use of pesticides directly through subsidies of production, distribution, and application equipment, as well as agricultural extension programs, they did not adequately provide the necessary advice to forestall or control major pest outbreaks (Table 2.2). As a result, growers tend to react first by increasing dosage and frequency of application or to use ad-hoc mixtures of two or more insecticides – responses which only worsen their problems. In some cases, moreover, poor quality control results in the sale of substandard products that are ineffective when they are needed. The UP Pesticide Testing Laboratory at Kanpur, for example, tested about 19,090 pesticide samples during 1969-95 and found that 9.4 percent of the samples were substandard. Poor crop husbandry practices, such as continuous cotton cultivation or rotation with preferred alternative host plants, high density planting, excessive irrigation and fertilizer application, and/or improper timing of application, as well as use of susceptible varieties contribute to pest build-up.

Table 2.2: Outbreaks of Major Pests by Year and State

State	Bollworm	Whitefly	Jassid
Andhra Pradesh	87/88	84/85, 85/86	89/90
Gujarat		86/87	
Haryana	78,80, 83		
Maharashtra		84/85, 85/86	
Karnataka		84/85,85/86	
Tamil Nadu	late 60s, 70s	84/85, 85/86	
Punjab	93/94, 94/95	94	

Source: S. Jayaraj, 1996, "Pesticides and Pest Management in Cotton Production in India: Some Policy Issues," Consultant's report.

2.16 **Integrated Pest Management.** Recognizing the complex problems arising from pesticide use, not only in terms of escalating pest outbreaks, but also widespread problems of environmental pollution and public health hazards, the GOI in the Eighth Five Year Plan (1992-97) launched the Integrated Pest Management Program (IPM) focused on research, technology and knowledge dissemination, and pest monitoring (Box 2.1). Withdrawing some direct subsidies to farmers, GOI now limits central subsidies to special categories like Scheduled Castes and Scheduled Tribes for insecticides and fungicides but still allows a 25-50 percent subsidy on herbicides. Some state governments also continue to subsidize pesticides. The Intensive Cotton Cultivation Program (ICDP), a centrally-sponsored scheme initiated in the 1970s to improve cotton productivity through the adoption of new technology, has also been modified to give special attention to plant protection measures.

Box 2.1: GOI Integrated Pest Management Program

Integrated pest management encourages natural control of pest populations by anticipating pest problems and preventing pests from reaching economically damaging levels by enhancing natural enemies, planting pest resistant crops, adapting cultural management, and using pesticides judiciously. Three other major components of the GOI IPM program are research, technology and knowledge dissemination, and pest monitoring. Research pertaining to IPM in cotton is being conducted by the Indian Council of Agricultural Research Institutes, State Agricultural Universities (SAUs) and a few private research organizations, coordinated by the All India Cotton Coordinated Improvement Project (AICCIP). Research areas include the development of resistant varieties, biological control agents, bio-pesticides, pest monitoring tools, improved crop husbandry and pesticide management practices (economic threshold levels of pesticide applications, fertilizer and water management.) Demonstrations for farmers, training, of extension workers and other state agents, and dissemination of user friendly publications are techniques used to transfer technology and knowledge by 19 Central Pest Surveillance Stations, 13 Central Plant Protection Stations, and 11 Biological Stations in various parts of the country. The Central Plant Protection Training Institute under the Central Directorate of Plant Protection provides training in plant protection consistent with the IPM approach. SAUs in cotton growing areas also produce user friendly publications covering improved agronomic practices, for agricultural extension workers to discuss with farmers. Central Surveillance Stations and Central Plant Protection Stations in collaboration with various State Departments of Agriculture conduct pest monitoring and forecasting.

¹⁶ S. Jayaraj, 1996, "Pesticides and Pest Management in Cotton Production in India: Some Policy Issues". Consultant's report.

Source: S. Jayaraj, 1996, "Pesticides and Pest Management in Cotton Production in India: Some Policy Issues". Cotton textile background report.

2.17 Improvement at the farm level, however, is coming slowly because of the developed preference for pesticide use. Continuing poor enforcement of pesticide regulations and of quality control mean continued sale of substandard or banned pesticides, and weak support (extension) services limit both the spread of improved technologies and practices at the field level and the extent of useful feedback to the research system of knowledge about farmers' needs. Finally, government policies that depressed cotton lint prices also cut back on the potential rewards for adopting relatively more costly measures such as more labor-intensive IPM practices or improved seeds that could improve quality and, with quality, earnings.

2.18 **Seed Management.** India's cotton farmers are about equally divided between those who use higher quality seeds –55 percent of the cultivated area (19 percent improved varieties and 36 percent hybrids) – and the remainder, predominantly in rainfed areas, who plant low-quality seeds of mixed varieties that they acquired at market or from their own crops. (Box 2.2) The choice of which kind of seed to plant is almost forced by the reality that, until recently, very few improved varieties were well-adapted for rainfed areas, where most cotton is grown. One consequence of the disparity is the much larger observed gap between potential and observed cotton yields in the mostly rainfed Central and Southern regions relative to the fully irrigated North¹⁷ (See Annex 4). It also highlights the need for more adaptive cotton research tailored to local farming conditions so that farmers can maintain the genetic purity of the (improved) seed over succeeding generations. Such purity is essential to maintain yield performance and uniformity in cotton fiber quality, attributes which the high percentage of mixed seeds seriously jeopardizes.

Box 2.2: Cotton: Marketing and Distribution of Improved Seeds

India has a flourishing public and private seed industry. Public sector agencies generally produce and market certified publicly developed improved varieties and hybrids that account for about 60-70% of certified seeds sold. Several public agencies are involved in seed multiplication and distribution, including ICAR research institutes, National and State Seed Corporations, Central State Farms, CCI, and state governments. Several cotton growers' cooperative societies also produce certified seeds of cotton. The private sector is highly concentrated in the production and marketing of hybrid cotton developed in-house or by the public sector. In 1993/94, the private sector, including seed companies and trade associations (e.g. South India Mills Association Cotton Development Research Association), accounted for almost 80% of cotton hybrid seed sales. The Seeds Act 1966 and the Seeds (Control) Order 1984 govern seed production and distribution.

Four categories of seeds are sold in India: certified seeds, truthfully labeled seeds, market seeds and farmer seeds. Certified seeds have passed certification standards for quality (purity, seed viability, moisture content, foreign matter, etc.) established by the GOI Seed Certification Agency. Truthfully labeled seeds comply with the standards but have not been officially certified. Because of the length of time involved in obtaining seed certification, private sector firms prefer to market their seeds directly. Falling short of the quality standards established by the Seed Certification Agency, market seeds are set aside by ginners and sold through dealers at half the cost of certified seeds. Their use is concentrated in the Northern states of Punjab, Haryana, and Rajasthan. Additionally, a small proportion of farmers sets aside their own seeds after their cotton has been custom ginned.

Source: A.K. Basu, 1996, "Current Status of Cotton Seed in India," Background working paper, World Bank; F. Egilham, et al., 1995, "Cotton Production Prospects for the Next Decade," World Bank Technical Paper No. 287/A.F. Ferguson & Co., "Draft Report on Cotton Prospects Study," 1994, New Delhi.

2.19 Progress on this front is made possible by the ready availability of hybrid seeds, for which supply exceeds demand by a comfortable, 17 percent margin, according to recent official estimates by the Ministry of Agriculture,¹⁸ and of improved seeds, for which supply is also in line with a 30 percent replacement rate that would be technically sufficient to maintain genetic purity.

¹⁷ A.K. Basu and R.S. Paroda, 1995, *Hybrid Cotton in India--A Success Story*, Bangkok, Thailand: Asia Pacific Association of Agricultural Research Institutions and research studies of the CICR/AICCIP.

¹⁸ Task Force on cotton production, Department of Agriculture and Cooperation of Ministry of Agriculture, 1995.

(Table 2.3) The location-specific seed shortages that occur can be traced to infrastructure (weak transport, lack of road networks) and economic constraints (weak demand limit incentives for some dealers to carry stock). On the whole, because the seed industry grew rapidly

Table 2.3: Total Requirement and Supply of Quality Seeds
1994/95, 100% Replacement Rate

Production Zone	Area million ha	Seed Rate kg/ha	Seed Rate mt	Seed Supply mt	% Supply/Rate
Improved Varieties					
Northern zone	1.7	20	3400	na	
Central zone	3.6	10	3600	na	
Subtotal	5.3		7000	2128	30%
Hybrids					
Central & South	2.2	2.5	550	642	117%

Note: na - not available

Source: Ministry of Agriculture, GOI.

during the last decade and a half with the private sector competing more and more with public (parastatal) firms, access to good quality seeds is not a problem. The trouble lies elsewhere.

2.20 It can be traced to poor price and marketing incentives for farmers and ginners. Like most other cotton-growing developing economies, good seed management is made inherently difficult in India by the small-scale structure of cotton production that requires several farmers to pool their produce before ginning and by the fact that farmers mostly sell unginning cotton. This results in the mixing of cotton that may also consist of different varieties, contributing to the mixing the cotton seeds as well. Achieving greater quality improvement and consistency under such conditions will require collective action by farmers and ginners.

2.21 With cotton lint prices historically artificially depressed, grading standards unused, and quality premiums only notional, farmers get little or no reward for raising the quality of their output and tending to the purity of their seeds. The same poor financial incentives, in addition to administratively set ginning fees, also discourage cotton ginners from sorting raw cotton and cottonseed so as to produce better quality output and improve the purity of seeds they sell. Although the strong and well-established seed industry has the apparent capacity to respond to increases in seed demand, the incentives that could stimulate those increases are still too weak. Prices are part of the equation, but the performance of the marketing system in transmitting price and quality signals between cotton growers and the textile industry carries equal weight. That performance, discussed below, is seriously flawed.

D. MARKETING AND QUALITY

2.22 Although it has long been mostly in the hands of private traders, India's decentralized marketing system for cotton (and many other agricultural products) is a poor provider of both physical support services and the economic signals necessary to steer farmers toward higher quality output. The lack of facilities for weighing, handling, moving, and storing kapas and lint; the obsolescence of almost half the gins; grading standards honored almost only in the breach; and minimal premiums for high-grade raw material are among the major factors discouraging growers from pursuing the quality improvements that can bring them higher prices for their crop and provide the textile industry the caliber of cotton it needs to be competitive over time. As a crucial early and weak link in the commodity system, the marketing system needs urgent attention and comprehensive improvements.

2.23 **Marketing Structure.** India is one of the few countries in the world where marketing and processing of seed cotton and lint have been historically decentralized and primarily (77 percent) handled by private traders and cooperatives, usually owners of ginneries, local and wholesale market merchants or their agents, and textile mills. Of the other major players, the Maharashtra State Cotton Cooperative Growers' Marketing Federation (MSCCGMF) takes an 11 percent share in executing the state government's Monopoly Procurement Scheme, and the Cotton

Corporation of India (CCI), a government parastatal which purchases cotton in competition with private traders and local cooperatives, accounts for 8 percent of the cotton market. CCI was originally charged with supporting cotton prices. But since free market prices have remained above support prices, its role has shifted to procuring cotton for public and private mills and exporting extra-long staple cottons. Its market share appears to be declining over time, and its financial performance only turned positive in the 1990s after years of losses. Other state level cooperatives have a 4 percent share of the market.

2.24 While largely private, trader and processor operations were tightly limited by pervasive GOI and state interventions till 1997 and by inadequate market infrastructure and weak support services that reduce market efficiency. Although the farmer's share of cotton lint and cotton seed price in India (78-89 percent) appears high, there is scope for reducing transaction costs and raising incentives for quality management. A starting point would be the more than 1,000 regulated markets (*mandis*) established under the State Agricultural Product Markets Act that make up a dense, nationwide network of delivery points where farmers use commission agents to sell three-fourths of their seed cotton.

2.25 Many of the mandis provide at best inadequate facilities to weigh, handle, move, and store the seed cotton that passes through them. Most have no means of grading cotton or disseminating information about sales. Some simply have no such services and such shortage of space that different lots are mixed together, one way – along with poor handling practices and contamination of the seed cotton – to reduce the quality and even quantity of the stock. This distinctly inferior performance contrasts with the mandis' success in raising funds that are supposed to be spent on improving market facilities and frequently are diverted instead to unrelated activities. As per the State Agricultural Product Markets Act, mandi committees are permitted to charge an *ad valorem* market cess for the purpose of generating revenues for market improvement and development activities. Those proceeds can be substantial: about Rs 900 million collected by Rajasthan in 1994 and about Rs 1 billion by Andhra Pradesh, money that is to a large extent diverted by the state Agricultural Produce Marketing Boards to other uses. In Andhra Pradesh, for example, only about 45 percent of the market tax was reinvested in the markets, where governing committees lack the financial authority to raise capital on their own to operate their facilities or upgrade them.

2.26 **Cotton Grading.** Among the more damaging shortcomings of the marketing system is the widespread failure to utilize the seed cotton grading standards established by the GOI Directorate of Marketing and Inspection. Except in a few states like Karnataka and Maharashtra and by the CCI, the marketing system largely ignores procedures that could provide accurate grading and classing information to spinners so that they can purchase the right quality of cotton for the yarn their customers demand. Spinners, however, are not the only ones disadvantaged. Farmers, traders and ginners suffer as well when the market fails to signal the price premiums that higher grades will earn. In the absence of those signals, producers and processors see little self-interest in adopting the methods of picking, storage, packing, transportation, and ginning that would deliver and preserve the quality characteristics that the market seeks.

2.27 Despite the existence of grading procedures, including cotton lint standards maintained by the East Indian Cotton Association (EICA) for each of the commercially grown varieties (with different staple lengths) as per the schedule in each season, most cotton lint traded is graded visually primarily on the basis of staple length. Other important attributes -- fiber strength, uniformity, maturity -- are not uniformly included in the value of the cotton fiber (Box 2.3). The rapidly increasing export-orientation of the textile industry is, however, encouraging the adoption of improved grading practices. According to industry sources, about 20-25 percent of total marketed

cotton lint is now subjected to more systematic and precise grading practices, and market premiums for quality cotton are developing. The use of more scientific grading methods, such as High Volume Instruments, however, is still limited to a few mills and traders.

2.28 **Ginning.** After seed cotton passes through the mandis, it is ginned to separate the lint from the seed which, on average, accounts for one-third of the weight of seed cotton. After ginning, the cotton lint is pressed into bales of standard sizes (170 kg) in pressing factories. About 90 percent of these factories are privately owned; the rest belong to cooperatives. Almost half are over 75 years old; some date back about a

**Box 2.3: Seed Cotton Fiber
Properties and Textile Product Output**

The quality of raw cotton is affected by a number of physical properties -- color, luster, fineness, trash content, level of stained and immature fiber, feel, and moisture content -- that influence the type and quality of the final product. The color of the fiber affects bleaching, dye absorption capacity, and finishing of yarns and fabrics. Stains in cotton affect dyeing uniformity. Fineness and maturity affect the strength and length of the fiber and thus spinning efficiency and fibrous waste levels. Luster measures ability to reflect light. Trash increases processing losses and lowers quality of output. Moisture affects the cotton fiber strength.

century. Most importantly, the majority lack pre-cleaning facilities, the handling power to make up for poor transport infrastructure, storage facilities, cleaning and handling equipment, and well-trained, well-supervised workers. Not only do these defects lead to high contamination levels, most gins -- because of their antiquity -- suffer from low productivity, high costs and high percentages of trash in the pressed bales.

2.29 Several factors discourage efficiency improvements and attention to quality during ginning and pressing. First, although price premiums exist across different qualities of cotton lint, they are too small to act as sufficient incentives (or penalties) to ginners to invest in improving quality. Second, various regulations, such as state government fixing of the ginning and pressing fees under the Cotton Ginning and Pressing Act (lifted in 1996); licensing, storage, and movement controls (lifted in 1997); and the Selective Credit Controls (lifted in 1996) all increase operating costs to the point that lowered profitability limits the capacity to invest in raising efficiency.

2.30 This lack of attention to quality is reflected back to kapas trading as another signal that mandis need not make grading a main focus of their work. Since "cotton consumers" (the gins) are indifferent and since farmers so often mix their crop with others to produce a bulk lot, even the mandis understandably opt to give quality control a low priority. Farmers get the same negative message about changing their practices -- the use of mixed seeds, the cultivation of old and new varieties almost side by side to get high-volume (but not high-quality) output, the improper timing of applications of fertilizer and water, the excessive use of pesticides and inattention to integrated pest management. Even extension services are denied incentives to strengthen their performance, just as markets are deterred from improving (or creating) mechanisms to gather and disseminate information. To earn higher prices and produce the cotton that an increasingly export-oriented textile industry will require, farmers will have to pay much greater attention to quality control. Markets will have to stimulate that transition. At present, they generally discourage it.

2.31 **Liberalization of Marketing.** One area of recent progress is the elimination or suspension over the past three years of many government-imposed restrictions that increased uncertainty and transaction costs. Raw or ginned, cotton is classified as an essential commodity under the EC Act, a designation that empowered the Textile Commissioner of the Ministry of Textiles to require licenses for entry into trading and ginning; to fix kapas, lint, and cottonseed prices; to set limits on stock levels; and to control movement of cotton under the Cotton (Control) Order, 1955 (amended in 1986 and 1995). Additionally, RBI Selective credit policies restricted would-be borrowers, licensing rules kept ginning small-scale, and state governments fixed ginning

and pressing fees. Frequent changes in the provisions of these regulations, such as the storage limits and movement controls, in response to short-term production shocks increased the risk and uncertainty in trading. In a ripple effect, the resulting increased risk premiums and inability to take advantage of economies of scale inflated transactions costs and discouraged investments to improve efficiency.

2.32 Since private trade handles almost 85 percent of cotton marketing, the overall costs associated with the various restrictions ran quite high. With the February 1997 elimination of scale limits on ginning through licensing and of the ban on cotton lint futures trading, however, cotton marketing has been almost completely liberalized. Only the licensing of traders – not a restrictive practice – remains after the official repeal of the Cotton Transport Act and the decision for the time being not to enforce the Cotton Control Order, selective credit controls and to lift the Cotton Ginning and Pressing Act and the ban on futures trading under the Forward Contracts (Regulation) Act, 1952 (Table 2.4).

Table 2.4: Summary of Cotton Marketing Regulations and Controls

2.33 The 1997 action that opens the way for cotton futures trading may prove an especially significant reform, since both the cotton and the textile industries are exposed to significant price volatility. Our estimates indicate that inter-year cotton price instability is high (23 percent) and equivalent to international levels (based on the international Cotlook “A” index). Within a season, cotton price volatility has been estimated at 25

Action	Regulation	Date Lifted
Movement controls	Cotton Transport Act	May 1995
Storage limits	Cotton Control Order 1955, 1986, 1995	June 1995
Licensing	Cotton Control Order 1955, 1986, 1995	Not binding
Credit controls	Selective Credit Controls	October 1996
Price support	Cotton Control Order 1955, 1986, 1995	Market prices are above MSP
Ban on futures contracts	Forward Contracts (Regulation) Act, 1952	January 1997
Small-scale reservation of ginning	(through licensing)	January 1997
Fixing ginning and pressing fees	Cotton Ginning and Pressing Factories Act, 1925	December 1996
Maharashtra Monopoly Procurement Scheme		

percent (See Annex 5). The option of buying and selling futures contracts gives cotton traders a way to hedge against the risks such price swings carry. The move also legalizes the significant unofficial trading in kapas and cotton lint futures purportedly going on in Surendranagarin and other centers and permits the general public to benefit from the associated price discovery process. The smooth and competitive operation of futures trading in cotton and other commodities, however, is not automatic. It requires an in-depth review and adjustment of the role, operations, and rules and regulations of the Forward Markets Commission, the regulatory body overseeing futures trading and the cotton commodity exchanges. A recent study of the potential of futures trading in India (World Bank 1996) identified several areas where FMC interventions were interfering with the efficient trading of contracts and other areas where its regulatory capacity was weak. Similarly, the rules and regulations -- trading procedures, delivery systems, trade supervision, clearing operations -- in some commodity exchanges will require strengthening to increase transparency and ensure competitiveness. Efficient trading of futures contracts will also depend on well-functioning physical markets and product grading systems.

2.34 **Maharashtra’s Unviable Monopoly.** With so much liberalization at least begun, the remaining major regulated trading system -- the Maharashtra Monopoly Procurement System -- seems a policy anomaly, but one that stills controls 11 percent of India’s cotton trade. Dating to 1972/73, the Cotton Monopoly Procurement Scheme gave the Federation exclusive rights to procure all cotton produced in the state with the dual aim of ensuring fair and remunerative prices to cotton growers by eliminating middlemen and bringing about stability and growth in overall production. Cotton growers, who are assured a fixed guaranteed variety- and grade- specific

price for seed cotton for the whole season, have earned average prices during the 1989-90 to 1994-95 seasons 20-70 percent above the GOI's MSP. In contrast, free market prices exceeded the Minimum Support Price (MSP) by 30-50 percent.

2.35 This price support, however, has proved costly. During the 1995-96 season, Maharashtra State Cotton Cooperative Growers' Marketing Federation (MSCCGMF) was reported to have incurred additional losses --largely subsidized by the Maharashtra state government -- amounting to Rs. 5 billion (\$142 million), a sum that raised its accumulated losses to Rs 7.6 billion (\$217 million).¹⁹ The replenishment rule of the Price Fluctuation Fund (PFF) is clearly inadequate for building reserves to deal with losses; only 25 percent of annual profits are credited to the PFF; farmers get the balance as bonus payments. Based on available information, the state government covered losses of Rs 514 million (US\$ 43 million) in 1984/85, Rs 2.8 billion (US\$ 229 million) in 1985/86, and Rs 2.8 billion (US\$ 89 million) in 1993/94.²⁰

2.36 Several factors contribute to the high risks and poor commercial viability of the scheme. First, the Maharashtra Federation exposes itself to considerable price risks when, at the start of the season, it makes the required commitment to a season-long purchase price. That exposure is amplified by the absence of such price-risk management mechanisms as hedging on futures markets. Although in principle the guaranteed price is to be set at the GOI's MSP -- usually significantly lower than free market prices and thus a potential shelter against price risks -- in practice the announced guaranteed prices can be much higher.²¹ The absence until early 1997 of a futures markets as a price-discovery mechanism made it harder to arrive at a commercially defensible guaranteed price and exposed the price-setting process to political influence. Porous borders and competition with neighboring states reduce effective enforcement of the monopoly and severely limit the ability to set a first payment low enough to reduce the Federation's exposure to risk. Instead, high guaranteed prices attracted cotton from other states, raising the Federation's risk exposure and subsidy costs if final prices were set too high.

2.37 The improper grading of cotton also contributes to significant losses and higher risks since, unlike other traders, MSCCGMF cannot adjust its announced prices within a season. This serious problem persists as over 50 percent of cotton procured between 1989/90 and 1993/94 was graded as superior and about 95 percent as FAQ or above. Finally, the absence of competition under the Monopoly Scheme reduces the incentives for improving the efficiency of marketing operations and unnecessarily raises operating costs. India's Central Government has been pressing Maharashtra over the last few years to devise an alternative to the Monopoly Procurement Scheme, but failing to get one, has granted it extensions, of which the most recent -- lasting two years -- expires on July 1, 1998.

2.38 **Quality Management.** The flaws in the marketing system need correcting because they, along with other weaknesses, impede improvements in cotton quality, a critical determinant of the sector's ability to maintain competitiveness and capture a major share of future demand growth. Higher and more uniform quality raises spinning efficiency and lowers conversion and production costs that increase when, for instance, high levels of contaminants result in frequent yarn breakage and frequency of knots. Poor quality cotton, moreover, produces lower grade

¹⁹ *Cotton Statistics and News*, No. 35, November 26, 1996. and A.Gulati, S. Bhide, S. Bhagat, and S. Shroff, 1996, "Economic Reforms and Agricultural Parastatals: The Case of Cotton Corporation of India and Maharashtra Federation," IRIS-India Working Paper No. 19 Center for Institutional Reform and the Informal Sector, University of Maryland.

²⁰ A. Gulati, S. Bhide, S. Bhagat, and S. Shroff, 1996, op. cit.

²¹ For example, although the MSP for the 1996-97 range from Rs 1150 to 1480 per qt., it is reported that the State is committed to paying Rs 2,100/qt. *Cotton News and Statistics*, No. 35, November 26, 1996.

yarns, fabrics, and final products, resulting in costly product discounts or loss of potential markets. Indeed, a 1991 survey of 201 mills worldwide by the International Textile Manufacturers Federation found that India had one of the highest levels of cotton contamination and stickiness. In part because of the lack of quality raw materials, Indian exports are largely composed of low-to-medium priced textile products that are significantly discounted in the world textile market where India will have to remain competitive.

2.39 Several factors explain the low priority given to quality management. A basic reason is India's low average per-capita income level. Historically, poverty has limited the demand for quality textile products on the domestic market toward which the heavily protected textile industry has been predominantly oriented. The implicit cotton subsidy to the textile industry enabled firms to absorb the increased production costs associated with processing lower quality raw materials while the rapid expansion of the export market for low-to-medium priced textile products also made raw material quality less of a concern. The weak premium for raw material quality, in turn, has filtered back through the marketing system to growers. Government policies governing ginning and weak market and farmer support services further reduced the incentives to improve cotton quality.

E. CONCLUSION

2.40 To capture the major share of expected volume and quality increases in cotton demand, India will need to address technical, structural, and policy-induced constraints to cotton production and marketing. Although eliminating the export quota could generate a price-driven supply response, complementary textile policy reforms are also needed to reduce the adverse downstream effects on the textile industry. Maintaining cotton-sector competitiveness will require greater attention to increasing productivity, particularly measures that promote the adoption of higher yielding varieties and improved crop and pest management. Improving cotton quality can generate significant value-added to farmers and manufacturers, but that improvement will come slowly or not at all if, along the cotton marketing chain from growers to traders to ginners, signals remain too weak to show the rising value associated with desired quality characteristics.

3.1 To sustain their recent growth and respond successfully to the MFA phase-out, the cotton and textile industries will need to implement a decisive strategy to make themselves more productive, more quality-conscious and more export-oriented. Along with rising domestic demand for apparel, they face both a likely challenge from apparel, yarn, fabric and cotton imports and a growing opportunity to expand sales of cotton and textiles in world markets. Government action in three separate but complementary areas would help the cotton and textile industries to raise their productivity and enhance their competitiveness:

- providing the enabling policy and regulatory environment to improve the incentives and capacity of the private textile industry to undertake the modernization and restructuring investments needed to improve efficiency,
- addressing the policy and institutional constraints that slow farmers' adoption of productivity and quality enhancing technologies and practices; and
- improving the regulatory framework for marketing as well as facilitating investments to upgrade the performance of cotton markets in the areas of quality and risk management.

3.2 Since the cotton and textile industries have complementary yet conflicting interests, officials will need to weigh and design reform measures in the context of an integrated sector. Farmers, for instance, will benefit significantly if cotton prices rise to world market levels. Textile manufacturers, however, will be weakened in international competition if their raw materials costs escalate without a corresponding increase in their efficiency. Similarly, eliminating yarn export quotas to enable spinning mills to better cope with rising cotton prices would have important downstream implications on the competitiveness of the weaving, knitting and garmenting industries. The careful packaging and sequencing of actions will therefore be important to minimize negative spill-over impacts across sectors. This chapter discusses policy options for strengthening both industries and, whenever possible, the likely impact of change in one industry on performance of the other. The gains that reform can bring appear substantial. To achieve those benefits, sustained collaboration across the sector and between producers and regulators will be essential.

A. FOR A MORE EFFICIENT, MORE COMPETITIVE TEXTILE INDUSTRY

3.3 The domestic reforms that are critical to promote modernization investments to achieve higher levels of textile industry efficiency are those that will give it added strength as an export producer and a competitor against imports, especially of yarn and fabrics. That strength, in turn, will flow from greater flexibility and opportunity to modernize to achieve the levels of productivity growth that will permit textile mills and garment makers to mitigate the adverse impact of rising cotton prices caused by pressures from domestic demand and/or to adjust cotton export policies to WTO rules.

3.4 **Spinning.** Three separate but related policy changes would encourage productivity improvements in spinning mills and raise their capacity to absorb higher cotton prices. Eliminating the yarn export quota in the near term would allow the mills to take advantage of higher world prices for their output and thus compensate for the rising cost of their raw materials.

Given the existing profitability squeeze and the rising threat from yarn imports, mills need the resources that can give them more realistic opportunities to modernize, restructure, and compete against imports. A recent study (Annex 6) projected that cotton yarn and fabric imports could increase by 300 percent by 2005 to meet the input requirements of the projected growth in exports. Free access to exports by all firms -- not just the larger, more modern export-oriented ones -- would also help level the playing field. The recent cut in import duties on several kinds of textile machinery to 10 percent is an important complementary measure facilitating this process of modernization, but to move it farther, government needs to address the future of public sector composite mills as discussed below.

3.5 Freeing yarn exports would seem to require a parallel approach to the projected increase in yarn imports on which a 20 percent import tariff is now imposed. It is likely that lowering yarn tariffs further could hasten the restructuring and modernization of the textile industry, provided that import tariffs for fabrics are revised accordingly. Although more detailed analysis is needed to define the ramifications of different levels and pace of removal of import tariffs, it is clear that the continued reduction of yarn import tariffs as part of the commitments under US & EU agreements will be critical for the future growth of the industry.

3.6 Further reducing import tariffs and trade restrictions on manmade fibers and eliminating the discriminatory taxation of MMF would help boost domestic consumption and exports of blended and synthetic products and help mills cope with rising cotton prices. A positive spillover for garment manufacturers would be the opportunity to use valuable spare capacity to produce synthetic and blended clothing to supplement production of cotton apparel for which demand is highly seasonal. The 1997/98 Budget has announced several measures that would reduce the discriminatory taxation against MMF, but much more needs to be done. A recent study found that the reduction in the import tariff on manmade fibers (non-cotton textiles) would play a key role in keep the clothing industry competitive despite rising cotton and yarn prices. (Annex 6.)

3.7 **Assisting Handloom Weavers.** A fourth change -- but a move that would hurt handloom weavers -- would be the abolition of the Hank Yarn Obligation. On the plus side, it would free spinning mills of the need to maintain labor-intensive, technologically inefficient hand-reeling operations, permit them to capture greater gains from economies of scale, remove a policy that distorts investment decisions, and eliminate the implicit tax on cone yarn exports. It would also, however, raise the prices that 6-7 million mostly village-dwelling, mostly poor weavers pay for their yarn and, according to a recent multi-market study, possibly cut their net incomes by about 3 percent. (Table 3.1) Their welfare is a major concern of the GOI which will want to pair the elimination of the HYO with alternative programs to mitigate the costs of adjustment on the handloom industry.

3.8 Three possibilities can be quickly described, each complementing the others. One option is an explicit and targeted subsidy either to cap hank yarn prices on a per unit basis or reward production of handloom fabric. More transparent and less costly to the economy than the current HYO approach, an explicit subsidy would move away from a supply driven quantity-based to a demand-based regime and minimize the incentive problems of over-supply of hank yarn, leakage to other segments of the industry, misreporting, and the uncertainty about the actual number of handlooms and their demand for yarn. Implementation of such a scheme, however, would be complex and require a significant administrative complement. Another option, converting handloom weavers into powerloom operators and providing them help in up-grading their quality would offer a viable and effective approach to increasing productivity. Third, it may be possible, as well, to effect a different kind of conversion, encouraging handloom weavers to take their compatible skills into other jobs, including the highly labor-intensive apparel industry where

Table 3.1: Short-term Changes in Net Income and Export Values

Policy Changes		Scenario 1	Scenario 3	Scenario 4	Scenario 5
Export Policy	Cotton Yarn	Free Quota	Free Free	Free Free	Free Free
	HYO	50%	50%	Abolished	Abolished
	10% subsidy to handloom	No	No	No	Yes
Net Income* Changes	Cotton	13%	14%	14%	14%
	Yarn	-39%	1%	10%	10%
	Textile	-1%	-10%	-11%	-9%
	Mill/Powerloom	-1%	-8%	-9%	-9%
	Handloom	-2%	-12%	-15%	-9%
	Total	-1%	0%	0%	1%
Export Value Changes	Cotton	46%	13%	6%	6%
	Yarn	-6%	10%	12%	12%
	Textile	1%	-2	-2%	-2%
	Total	2%	2	1%	1%

Note: * Net income is measured by the gross margin, defined as total revenue minus raw materials cost. For cotton growers, it corresponds to gross income. All percentage changes are computed from the base case, at the end of year 1.

Source: Computed. See Annex 7.

employment opportunities are growing rapidly. Training and job conversion programs could facilitate such a transfer.

3.9 Sick Public-Sector Mills. The Government of India cannot long afford to keep its numerous publicly owned mills in business. The drain – nearly \$800 million in one five-year period -- of direct and indirect financial support to these perennial money-losers is too high. The alternative policies are liquidation or privatization, and the recent establishment of a Disinvestment Commission signals a significant step toward those outcomes. Still missing, however, are clear government policies governing bankruptcy and exit policies and speedy, simplified liquidation processes. Any action to liquidate or privatize these mills would require retrenching workers at a high one-time fiscal cost. Assuming all estimated 95,000 NTC workers choose voluntary retirement at a rate of Rs 140,000 per worker, the total outlay would amount to about US\$ 380 million, roughly 87 percent of the 1992-94 losses these mills accumulated. Because of broad growth and employment opportunities in the textile sector, however, training programs could ease the workers' move to other jobs, particularly in apparel-making.

3.10 Garment Exports. Eliminating the SSI reservation, adopting scale-neutral labor and tax policies (see next paragraph), upgrading port infrastructure and rationalizing customs procedures would give the knitting and garment industries a significant boost toward international competitiveness. Having gained a niche for small, low-to-medium quality, orders in the world market, these industries now need to diversify into the growing market for higher quality as well as mass consumption products. Their atomistic structure stands in the way. The elimination of the SSI reservation, as proposed by the Abid Hussain Committee, and the reform of related labor and tax policies, would enable manufacturers to increase productivity, process large orders efficiently, take advantage of economies of scale and possible efficiency gains associated with vertically integrated operations, and increase the viability of quality-improving investments. The economic gains if India closes the productivity gap with China (raising Indian productivity by 67 percent) in garment production and domestic yarn and fabric quality also improves could be enormous (Table 3.2). The apparel and knitting industries – and every export-oriented industry in India -- would also reap significant competitive gains from improving port infrastructure that facilitates shipment processing and from streamlined customs procedures that reduce 90-120 day lead times of export deliveries from India to international norms of 45-60 days. Meeting that

target would especially benefit the garment industry, which needs not only to export its product but also often to import high-quality fiber, fabric and accessories on short notice. The garment sub-sector is at the high end of the textile production chain, but its need for speed, operational efficiency, and quality-improving investments is shared throughout the industry. Only comprehensive reforms can effectively respond to that need and set the stage for the projected, very large welfare gains to be won.

Table 3.2: Incremental Impact of Domestic Reforms on India's Welfare in Year 2005 (1992 US\$ million)

Policy Reform Scenario	Total Welfare Gains
MFA QUOTAS ABOLISHED in 2005:	
Removing cotton export quota	-0.5
Removing cotton and textile export quotas	119.5
Removing Hank Yarn Obligation	83.7
Raising productivity on apparel 67% to China's level	1700.5
All reforms combined *	1928.2
MFA QUOTAS NOT ELIMINATED in 2005:	
Removing cotton export quota	3.3
Removing cotton and textile export quota	163.7
Removing Hank Yarn Obligation	66.7
Raising productivity on apparel 67% to China's level	577.4
All reforms combined *	809.2

Note: *The sum of individual reforms do not exactly add up to the combined effects due to rounding errors, and because of interactions between the reform options.

Source: Annex 6.

3.11 **Scale-Neutral Labor Regulations and Taxation.** The textile industry, especially garment making and weaving, is hardly alone in suffering the distorting effects of current labor regulations and tax policies. Considering the breadth of their impact, the reform of these regulations deserves to be seriously considered and conducted in an economy-wide context. The 1997/98 budget is proposing preliminary and constructive steps in this direction by simplifying the excise duty structure and concessions for the small-scale units, and by excluding cotton yarn and texturized manmade yarn from the purview of the SSI exemption scheme.

B. IMPROVING COTTON PRODUCTION AND MARKETING

3.12 To enable the cotton sector to respond effectively to the textile industry's growing demand for raw material, demand and its changing quality requirements, three related policy issues need attention: (i) ways to improve price incentives; (ii) measures to lower technical and institutional constraints to productivity growth; (iii) actions to better market performance in exchanging cotton and in managing risks and quality. As a start the Cotton Technology Mission planned by GOI proposes to support the cotton sector by strengthening cotton research (seeds, nutrient and pest management) and assisting the modernization of ginning and pressing technologies.

3.13 **Price Incentives.** Although domestic demand is strong, cotton growers would benefit from phasing out quotas that limit exports. Aside from opening new markets in ways that would elicit higher output, phasing out the quota would also enable farmers and traders to capture profitable arbitrage opportunities. Changing market conditions, in any event, are bringing domestic cotton prices at or very close to export parity levels and thus nullifying the rationale for the export quota, which it is counter-productive to preserve. Quotas depress domestic lint prices, more so for ELS cottons, and discriminate against cotton production, notably in central and southern rainfed areas where ELS cotton are grown. The export limits contribute to greater lint price instability by eliminating an obvious buffer against sharp price declines resulting from bumper cotton harvests. In addition, they bar access to the gains from exporting cotton varieties which have an international price advantage and importing those in short supply. A recent study estimated that the elimination of export quotas alone could generate a supply response that raises cotton exports by an estimated 85 percent (Table 3.3)

3.14 Higher cotton prices that benefit growers and traders and stimulate the former to raise yields and quality have, of course, a negative impact on all textile firms, especially certain segments of the spinning industry which may require their own compensatory measures. Mills producing higher counts (40s and above), for instance, are likely to suffer a greater loss of competitiveness than those specializing in the lower counts. This situation carries two important policy implications. First, while the export liberalization of the short and medium staples could proceed more quickly, there may be room for a phased liberalization of the longer staples to give the affected firms time to adjust. Second, textile policy reforms that promote increased manufacturing efficiency are needed to mitigate the adverse impact of rising cotton prices. In the case of mills producing higher counts, two options could be explored. First, the export quota on ELS cotton could be replaced by an export tax, gradually declining to zero over two-to-three years. Second, a “textile modernization fund” could be established to assist

Table 3.3: Summary Incremental Impact on Net Textile Export Revenues of Selected Policy Reforms

Elimination of	Add'l Net Exports with MFA	
	Abolished in 2005	Remains Post-2005
	92 million	92 million
1. Cotton export quota		
-cotton	52	62.2
-cotton textile & clothing	-8	-6
2. Yarn export quota	2622	935
-cotton textile	2113	975
-cotton clothing	509	-39
3. Hank Yarn Obligation	58	19
-cotton textile	34	15
-cotton clothing	25	4
3. Investment and size restriction on apparel industry	2322	383
-cotton textile	-169	-5
-cotton clothing	2492	388
5. All reforms combined	3830	1323
-cotton textile	1948	984
-cotton clothing	1881	339

Source: Elbehri, et al 1996; see Annex 6

mills adversely affected by export liberalization. The first option generates revenues for the government and is easier to administer, but it is also non-targeted and, by preferring one sub-sector over another, it does more to distort the market. The second option distorts less and is more transparent, fiscally explicit, and targeted. It carries the disadvantages of direct fiscal cost to the government and greater difficulty of implementation. On past experience, moreover, it could be subject to abuse.

3.15 **Technical and Institutional Constraints.** The introduction and spread of advanced technologies – better seeds; biological control; better use of on-farm water, fertilizer, seed management, and pest control – are key to higher seed-cotton yields, improved quality and lower relative costs. In the case of pest management, the phase-out of pesticide subsidies and tighter government enforcement of pesticide regulations and quality control are warranted to improve the incentives for the adoption of the IPM approach. While price incentives are important in encouraging the adoption of new technologies, of equal importance are non-price factors. Among them are the availability and quality of technologies suited to local, mostly rainfed conditions; the availability and quality of agricultural support services, particularly extension; and investments that could improve the productive potential of rainfed areas (reliable water supply, roads, watershed programs and soil management.)

3.16 Governments need to provide an enabling environment for private research through improved seed legislation and certification processes, IPRs, competitive grants, and public-private research collaboration. At the same time, continued public financial support for cotton research especially in areas neglected by the private sector will strengthen the existing base for achieving the technological advances. Research priority areas could include developing high-yielding varieties for rainfed and irrigated areas, drought and pest resistance, shorter duration varieties, environmentally friendly cultivation practices and pest management technologies. More effective delivery of support services – giving growers more of a role in design and implementation and improved research and extension linkages -- would make it easier for farmers to learn and use new procedures. Measures to improve the effectiveness of public extension services and promote greater private and NGO extension would be critical to the rapid

diffusion of these technologies. In rainfed areas, improved public sector funding and design of watershed programs would play an important role in improving access to water and/or moisture retention methods that could have large expected impacts on yields.

3.17 **Cotton Markets.** There is tremendous scope for improving the performance of Indian cotton markets in three areas: the physical exchange of cotton across space and time, risk-management, and quality-management. In addition, there is a need to find cost-effective alternatives that can meet the stated objectives of the Maharashtra Cotton Monopoly Procurement Scheme.

3.18 Improving the operations of the regulated markets and strengthening their support services will contribute to narrowing marketing margins so that producer prices can rise while letting those paid by textile manufacturers decline, thus improving the competitiveness of Indian cotton and textile products. Although the recent de-regulation of domestic marketing and ginning represents significant progress towards improved market performance, government action is still needed to improve the operations of the regulated markets and to help strengthen market support services. The decentralization of financial and management controls in regulated markets through greater delegation of authority to market committees – or, where possible, the full divestment of the markets to users -- would give market operators greater leeway to undertake needed investments to improve market infrastructure and services so that market yard wastage can be reduced, quality deterioration minimized, grading services assured, and information disseminated.

3.19 GOI and state financial assistance in the use of mass communication technologies (e.g. radio transmission and electronic linkages between regulated markets) would serve a double purpose. It could be important in facilitating not only transmission of market information, but as a medium for delivering extension messages for cotton and other commodities. Textile industry associations and cotton commodity exchanges could also play an important role in disseminating prices and prevailing quality premiums and discounts, as regulated markets, cooperatives, and the extension system could in the case of kapas. Improved access to market information would assist ginner/private traders and farmers in making better decisions and bolsters the use of grading standards and the transmission of quality premiums and discounts. Economies of scale in collecting and disseminating information permit large pay-off from such investments.

3.20 **Developing Futures Markets.** Once cotton export quotas have been lifted, futures markets can play a helpful role in managing price risks. But beyond a stable and predictable external trade environment for cotton lint, GOI needs to ensure orderly trading by reviewing and in some cases strengthening the regulatory and institutional frameworks for the operations of the Forward Markets Commission and various cotton commodity exchanges. For example, the FMC needs to curb its discretionary interventions. It should give associations permanent recognition, automatically renew contracts, standardize regulatory measures, and withdraw price ceilings. Reverting to the original intent of the three-tier regulation model provided by the Forward Contracts (Regulation) Act, the FMC would still approve exchanges and set the general legal and regulatory framework. Thereafter, as a monitor, it would approve requests for the introduction of new futures contracts emanating from the commodity exchange associations and intervene when the situation warrants it. The GOI should also introduce a two-tier brokerage regulation for the specific purpose of consumer protection and prudential rules for the use of risk management instruments by companies. Just as brokerage rules need to be strengthened so cotton commodity exchanges need to up-grade their rules and regulations (trading procedures, delivery system, supervision), clearing operations, and promotional and development activities.

3.21 The efficient trading of cotton lint futures contracts requires that traders and regulators carefully develop a delivery system that includes grading and contract enforcement at the same time that it balances the tradeoffs between liquidity and basis risks (i.e., the difference between market and futures price) among and within the large number of cotton varieties produced across India. Available evidence suggests that domestic deregulation of the domestic market is crucial to alleviating these tradeoffs. The development of a commodity warehousing system, in addition to improved performance of physical markets, would also facilitate development of futures trading. At the national level, the introduction of one futures contract which allows the delivery of the high grade medium and long staple cottons throughout the country could be considered. In the case of ELS, the forthcoming introduction of cotton future contracts in Turkey, if successful, may offer ready access to an already existing international contract.

3.22 **Options in Maharashtra.** Monopoly procurement in Maharashtra has proved a costly way to assure remunerative prices to growers and stable growth of output. A more promising set of means to the same ends involves raising yields through improved local research and extension and more effective expenditures in watershed programs, irrigation, and rural infrastructure. Most of these programs already exist in Maharashtra, but are starved of funds – not least because of the large recurrent losses incurred under the Scheme. Increased funding and further improvement of the Employment Guarantee Scheme would also provide better income protection from drought-related crop failures. Although crop insurance is an alternative instrument, its inherent limitations would not make it a fiscally viable and attractive alternative. Since adverse selection and moral hazard problems generally necessitate government subsidies – with substantial fiscal implications -- of insurance premiums for many farmers, such programs have typically limited the extent of their coverage in India, and probably wisely so.

3.23 Restructuring the MSCCGMF to permit greater participation by farmers-owners with less government involvement and allowing the federation to compete with other traders would help eliminate the Federation's noted inefficiencies such as misgrading and elevated marketing costs. Maharashtra may learn useful lessons in this area from the experiences of the Gujarat State Cotton Marketing Federation. MSCCGMF use of forward and futures markets to hedge procurement operations by the Federation could help in managing price instability. Alternatively, the state government could provide price insurance mechanisms to growers without getting involved in the physical handling of the crop, following the example of the Cotton Price Support Scheme provided by ASERCA, a parastatal, in Mexico (Box 3.1).

3.24 **Cotton Quality.** System-wide collective action, from textile manufacturers to farmers, is needed to improve cotton quality and consistency, an advance that is critical both to minimize processors' and manufacturers' costs by reducing wastage and under-spinning and to win through improved prices for higher quality output for farmers and traders. Rising cotton prices, free cotton imports, and the closer integration with a more discriminating world market set a stark choice: either greater attention to quality considerations or a loss of competitiveness. GOI and state governments have a critical role to play in facilitating the emergence and implementation of collective initiatives related to quality management in cotton marketing. Unless standard quality norms are set and are widely known and adopted in lint and seed-cotton contracts, improved quality management will be largely wishful thinking. As a practical start, a nationally recognized inter-sectoral committee composed of representatives from cotton producer associations, industry, exporters and trade, the textile industry, and government (e.g., Ministry of Textile, Ministry of Agriculture) could usefully review and evaluate existing cotton lint quality standards and grading procedures and perhaps address the need to adopt greater consistency between Indian and international cotton lint standards. In the case of seed cotton, a similar body with

representative ginners, private traders, cooperatives, farmers, professional trade associations, exporters, the GOI, and state governments could develop quality norms where none now exist and grading procedures in cotton markets.

Box 3.1
Mexico's Cotton Price Support Scheme

Because of the recent liberalization of agricultural trade and internal marketing systems in Mexico, farm-level prices of several agricultural products are now determined mainly by international markets, and farmers have had to cope with price uncertainty between planting and harvest times to a degree unknown before. In response, the Government of Mexico, through ASERCA, a government organization providing support services for agricultural commercialization, assists Mexican cotton producers in managing their price risks during the harvest period as well as guarantee a minimum price during the planting season. Unlike other programs which simply transfer price risks from producers to the government budget through the floor price mechanism, ASERCA transfer price risks from growers to international markets.

During the planting season, ASERCA offers farmers the chance to participate in a program guaranteeing a minimum cotton price for a fixed fee. The minimum price is fixed using the New York cotton futures exchange. For a fee, ASERCA offers a guaranteed price (in US dollars) and hedges its own risk by using the fee to purchase a put option on the exchange for future delivery at harvest time. (The put option gives ASERCA the right to sell cotton on a specific future date at a prescribed price, known as the strike price). Should prices subsequently fall, ASERCA pays farmers the difference between the New York price at harvest and the minimum price. The difference is exactly equal to the payoff value of the put option. If prices rise instead, ASERCA makes no payments to farmers. By paying a fee and participating in the program, a farmer in effect purchases insurance against a drop in prices below a certain level -- in fact, the program refers to the fee as a "premium". As with insurance, payouts do not always occur, so the program is not without costs to farmers. Private brokers could offer similar programs, although the private sector has had little experience in providing such services directly to growers. Since ASERCA's program is inexpensive to administer and demand driven, ASERCA can readily reduce its presence should a market for private brokers develop.

Source: P. Varangis, D. Larson (October 1996): "Dealing with Commodity Price Uncertainty", Policy Research Working Paper No. 1667, World Bank.

3.25 Standardized grading -- another feature absent in most markets -- produces clear and transparent incentives to farmers to raise the quality of their output and to ginners to do the same through investments in upgraded machinery and a move to quality management practices. For traders, standard quality norms provide an objective basis for meeting buyers' specifications and reducing the transaction cost of using many suppliers as sources. Markets that seek to provide this critical service -- the contractual basis for the orderly development of forward and futures contracts -- can turn to such improved grading technologies as High Volume Instruments (HVI). A key complementary measure to setting up quality standards is the strengthening of existing market information systems so that markets can promptly and accurately transmit signals regarding the textile industry's cotton quality preferences through the marketing chain to farmers.

3.26 Quality improvements, of course, begin -- if they begin at all -- at the bottom of that chain, on-farm, where government and growers need to mobilize multiple extension services -- public, private, NGOs, cooperatives and farmer's associations -- to promote quality improving practices in response to awareness of the changing variety requirements of textile manufacturers. These extension providers could also play an important role in fostering farmer self-regulation to minimize mixing of the varieties planted. At the same time, to cut down opportunities for seed mixing, the GOI's Seed Commission could act more rapidly to notify users when varieties become obsolete and to withdraw them promptly from the market. Improved coordination between the irrigation department and farming community (possibly facilitated by the extension system, water user groups, and NGOs) would help ensure more efficient water delivery and thus decrease the harm done by improperly timed water delivery and over-application of water.

C. CONCLUSION

3.27 Already leading performers in the Indian economy, the cotton and textile industries cannot only hold but build on that position by making the improvements in efficiency that will make them, as well, strongly competitive, international performers. If implemented, the reforms outlined above can bring far-reaching benefits in bettering the use of domestic resources, positioning India's industry to stay competitive against imports and to capture markets being born of on-going changes in world trading rules, and preserving cotton and textile competitiveness vis-a-vis major rivals with higher productivity. For example, available information indicates a widening labor productivity gap relative to China in the apparel industry. Similarly, India is behind its competitors in tackling pest problems (e.g., China, Pakistan), quality management (e.g., Uzbekistan), or in managing price risks (e.g., China, Turkey). Most importantly, these reforms would stimulate more equitable and more poverty-reducing growth, because they encourage growth in industries that are inherently labor-intensive. The apparel industry, in particular, offers easily accessible employment opportunities and could have significant impact on poverty and gender inequality -- due to lower skill requirements and accessibility to women. Reforms would also promote production of a predominantly rainfed crop in regions where opportunities for growth typically tend to be more limited than in the irrigated areas.

3.28 A recent study that provides an indication of the potential gains from reform in the context of partial abolition of the MFA in 2005 projects that by then cotton and textile industry reform could generate additional net export revenues of \$1.4 billion a year in 1992 dollars, additional cumulative growth of 3.5 percent in cotton output values, 9 percent in cotton-textiles and 11 percent in apparel and welfare gains amounting to as much as \$800 million annually. (Table 3.2) The analysis suggests that a complete MFA abolition by 2005 would reap annual benefits gains that are twice as high.

3.29 To realize those growth possibilities will require the close collaborative effort of government, private industry, and farmers to put a reformed field-to-factory structure in place. The central and state governments have an important role to play in maintaining a policy and regulatory framework that would enhance the incentives of both private industry and farmers to increase productivity and improve their competitiveness. Private industry and farmers, in turn, face the challenging task of undertaking the productivity enhancing investments and adopting efficiency improving management practices necessary to capture the gains from emerging market opportunities. Having already made the sector such a strong performer at home and abroad, they have a solid base on which to build new wealth.

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