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COTTON SUBSECTOR BASELINE STUDY

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LIST OF ACRONYMS

ALCOTEXA	Alexandria Cotton Exporters Association
APCP	Agriculture Production and Credit Project
APRP	Agricultural Policy Reform Program
ARC	Agricultural Research Center
CAA	Central Audit Agency
CALCOT	California Cotton Cooperative
CAPMAS	Central Agency for Public Mobilization and Statistics
CAPQ	Central Administration for Plant Quarantine
CATGO	Cotton Arbitration and Testing General Organization
CIF	Cost, insurance and freight
CIT HC	Cotton and International Trade Holding Company
CRI	Cotton Research Institute (of ARC)
CSPP	Cotton Sector Promotion Program (GTZ-funded)
CV	Coefficient of variation
CY	Calendar Year
EE	Eastern Europe
EIHS	Egypt Integrated Household Survey (APRP/FSRU)
ELS	Extra Long Staple
ERS	Economic Research Service (USDA)
ETMF	Egyptian Textile Manufacturers' Federation
EU	European Union
FAO	Food and Agriculture Organization (of the United Nations)
FAS	Foreign Agricultural Service (USDA)
fd.	Feddan (equivalent to 0.420 hectares or 1.037 acres)
FOB	Free on board
FSRU	Food Security Research Unit of APRP
FY	Fiscal Year
GATT	General Agreement on Tariffs and Trade
GDP	Gross Domestic Product
GOE	Government of Egypt
HC	Holding Company
HVI	High volume instrument (for testing 5-6 characteristics of cotton lint)
IFPRI	International Food Policy Research Institute
IPM	Integrated Pest Management
IPO	Initial Public Offering
kg.	Kilogram
LE	Egyptian Pound (equivalent to $ .294 in mid-1998)
LOP	Life of Project
LS	Long Staple
MALR	Ministry of Agriculture and Land Reclamation
MD	Managing Director
MEFT	Ministry of Economy and Foreign Trade
MELES	The Middle East Library for Economic Services
MFA	Multi-Fiber Agreement

MLS	Medium Long Staple
mmt	Million Metric Tons
MPE	Ministry of Public Enterprise
MPWWR	Ministry of Public Works and Water Resources
mt	Metric Ton
MTS	Ministry of Trade and Supply
MVE	Monitoring, Verification, and Evaluation Unit of APRP
NIS	Newly Independent States
PBDAC	Principal Bank for Development and Agricultural Credit
PD	Presidential Decree
PEO	Public Enterprise Office (of MPE)
RDI	Reform Design and Implementation Unit of APRP
RMC	Ready Made Clothes
RMG	Ready Made Garments
S&O	Situation and Outlook (reports and reporting)
SFD	Social Fund for Development
SWRMC-HC	Holding Company for Spinning, Weaving and Ready Made Clothes
TCC	Textile Clothing Consultants bv (Netherlands)
TCF	Textile Consolidation Fund
TMT-HC	Textile Manufacturing and Trade Holding Company
UR-GATT	Uruguay Round, General Agreement for Tariffs and Trade
USAID	United States Agency for International Development
USDA	United States Department of Agriculture

WEIGHTS, MEASURES AND BALE SIZES

General	1 Kilogram	= 2.205 pounds (lbs)
	1 Metric Ton	= 2,205 lbs
	1 Hectare	= 2.471 acres
Egypt	1 Feddan	= 0.420 hectares or 1.037 acres
	1 Kentar	= 157.50 kilograms (un-ginned seed cotton)
	1 Metric Kentar	= 50.00 kilograms (lint or ginned cotton)
	1 Ardeb	= 120.00 kilograms (cotton seed)
	1 Bale of Lint	= 6.53 metric kentars or 326.50 kg. (lint cotton) or 720 lbs
USA	1 Acre	= 0.4047 hectares or 0.964 feddan
	1 Pound	= 0.454 kg.
	1 Bale of Lint	= 480 pounds or 217.7 kg.
	1 Ton	= 2000 pounds or 907 kg.
	1 Meter	= 1.0935 yards
	1 Inch	= 25.4 mm

Statistical Bale Weights

Australia	= 227 kilos	
Colombia	= 233 kilos	
Mexico	= 220 kilos	
Nigeria	= 185 kilos	
Uganda	= 182 kilos	
India/Pakistan	= 170 kilos	
South Africa	= 200 kilos	
Egypt	= 720 lbs	= 327 kilos
Sudan	= 420 lbs	= 191 kilos
Tanzania	= 400 lbs	= 181 kilos
USA	= 480 lbs	= 218 kilos

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ALCOTEXA's *Egyptian Cotton Gazette*, edited by Galal el Rifai, is also an excellent source of statistical information and commentary on industry developments.

- The Cotton and International Trade Holding Company statistics on cotton seed procurement, ginning, deliveries to spinning mills, and lint cotton exports.

- Numerous public and private sector traders, ginners, spinners, weavers and holding company officials offered their time, knowledge of the cotton subsector, detailed information about their operations, and opinions on policy reform progress.

- Dr. Ahmed El Gohary, head of the Cotton Research Institute, provided detailed information about Egypt's cotton breeding program and varietal characteristics.

- CAPMAS provided export and import volume and value statistics, on a calendar year basis, for cotton lint, yarn and numerous textile products.

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PREFACE

The Monitoring, Verification and Evaluation (MVE) Unit of the APRP is responsible for monitoring, documenting and assessing the impact of reforms introduced by the project. This baseline study provides an overview of the structure, conduct and performance of the cotton subsector in Egypt in 1996/97, the baseline year. It also includes data and analysis of many subsector developments in 1997/98 and some changes that have taken place at the beginning of the 1998/99 marketing season. The report summarizes policy reform issues, opportunities and constraints raised in previous studies relating to the cotton subsector. It also suggests indicators of progress and proposes how to measure them as they relate to the cotton subsector.

The study draws heavily on previous and concurrent work on the cotton/textile subsector carried out by the Reform Design and Implementation (RDI), Food Security Research (FSR) and MVE Units of the APRP, as well as numerous other previous publications and research activities. The Egyptian-German Cotton Sector Promotion Programme (CSPP) has also provided a wealth of studies and information on the subsector.

This study focuses relatively more attention on seed and lint cotton marketing and export, ginning and spinning. Weaving, knitting, dyeing and finishing, and manufacture of ready-made garments (RMG) are discussed but receive quite a bit less attention. This choice of focus is driven by two factors. First, APRP benchmarks concentrate on marketing, ginning, export and spinning (and pricing of the outputs of these industries). Weaving, knitting, dyeing and finishing and RMG production are covered more under RDI's implementation and promotion activities (e.g., creation of an umbrella cotton promotion organization in Egypt), but they are not the direct target of many benchmarks (at least not through Tranche III). Second, data are more readily accessible for marketing, export, ginning and spinning. Beyond the spinning stage of the subsystem, data access becomes problematic. Holding company statistics are typically not released in a disaggregated form suitable for in-depth analysis. Aggregate estimates of employment, debt and inventory are available for the HCs but typically are not disaggregated by affiliated company. Since all of the HCs include ACs of different types (trading, ginning, spinning and weaving, and other firms — some in unrelated fields such as general trading, or manufacture of jute sacks or agricultural equipment), aggregate measures combine apples and oranges. In addition, rigorous analysis of the technical and financial performance of individual ACs is usually not possible, given the sensitivity of these data for public companies, many of which are performing poorly. Finally, private companies are hesitant to release confidential performance data to outsiders, fearing giving competitors inside information and any competitive advantage.

The RDI Unit is planning to undertake an investigation of employment in the RMG industry, which should contribute to APRP's understanding of the numbers of firms in that industry, its expansion and dynamism, and the policy and regulatory environment in which RMG production has flourished. Note, however, that the expansion of RMG industry predates APRP and has been driven primarily by the duty drawback system on imported yarn. APRP reforms affecting the overall performance of the cotton subsector may, however, provide a more conducive business environment in which RMG manufacturers can operate. Hopefully, with APRP reforms these manufacturers will use more cloth produced from yarn spun from Egyptian cotton lint than they are currently using.

The weaving and knitting industries are and will likely remain the least well understood stages of the cotton/textile subsystem. Woven cloth output is roughly evenly divided between public and private firms. This may or may not change under APRP, although private sector participation is reported to be vigorous and would likely be strengthened if APRP reforms affecting the spinning and weaving industries were implemented. One recommendation of this study is that either APRP or CSPP undertake a more systematic census of private weavers and analysis of the structure, conduct and performance of this key textile industry.

EXECUTIVE SUMMARY

Introduction and Approach. This study establishes a baseline for the cotton/textile subsector against which changes from the baseline year of 1996/97 to the end of APRP can be measured and examined. Reform of the cotton subsector has received a lot of attention under both APCP and APRP. If each policy benchmark receives equal weight under APCP and APRP, the dollar value attached to cotton/textile subsector benchmarks is calculated as $85 million out of $390 million total (in nominal terms) from the beginning of APCP through the end of Tranche II of APRP. Under APRP, privatization of the ginning, cotton trading and textile industries has received much more weight than under APCP, when USAID and the GOE focused on gradual liberalization of seed cotton marketing and lint cotton export, as well as on increasing the proportion of the export price paid to farmers.

This baseline study uses a structure, conduct, performance approach. A key element of cotton subsector liberalization is broader private sector participation. The baseline study documents and MVE will continue to track emerging private sector investment and participation in the subsector, with particular attention to the seed cotton marketing, ginning, lint cotton export, and spinning stages of the subsector. Changes in public sector market shares are also recorded and will be monitored carefully over the course of APRP.

Subsector conduct and performance are more challenging to assess, in part due to lags in data release and uneven data access. The assessment of conduct focuses on how firms in key industries in the subsector (noted above) behave in an increasingly competitive market environment, where Egypt will be less protected from international market forces. The examination of conduct also addresses how industries at one stage of the subsector inter-relate with industries at surrounding stages of the subsector with respect to pricing and exchange arrangements, risk sharing, and control and coordination of the subsector.

Subsector performance involves making analytically based judgements about how the subsector, and key industries in the subsector, are progressing under market liberalization with respect to important performance attributes: allocative, operational and technical efficiency, progressiveness, employment, market coordination, and market responsiveness and competitiveness.

STRUCTURE of the COTTON SUBSECTOR

Seed Cotton Marketing. Following a promising start in 1994/95 and 1995/96, when many companies (largely private ones) registered to trade seed cotton and actually participated, progress was reversed in 1996/97, the baseline year, when private companies bought virtually no seed cotton. Fortunately, this situation improved in 1997/98, when private companies bought 6.5 percent of the seed cotton crop, and in 1998/99, where early indications are that the private sector may buy as much as 30 percent of the crop. Private sector market share appears to be relatively highly concentrated, however.

Cotton Ginning. In 1994/95 and 1995/96, a significant share of seed cotton was ginned by private companies that leased public sector gins (24.5 percent in 1995/96). In 1996/97, the baseline year, the private sector share in ginning remained at nearly the same level as 1995/96, but

ginning by privatized ginning companies exceeded ginning by private companies leasing public gins. By 1997/98, most of the leases had been cancelled, but privately owned gins increased their share to 33.5 percent. New private investment in gins has been disappointing, but this is not surprising given the excess national ginning capacity, a legacy of the much larger cotton crops of the post-World War II era through the mid-1980s. Further privatization of public ginning companies is anticipated under the GOE's privatization program and under APRP, although very high land values and ginning company valuations will complicate this process.

Lint Cotton Exports. Private sector lint cotton exports increased from a modest 8.8 percent of total exports in 1996/97 to 25.1 percent in 1997/98, and they are likely to increase further in 1998/99 (26.8 percent in late November 1998). Three private exporters dominated the private sector market share in 1997/98 and will likely ship over 80 percent of the lint exported by the private sector in 1998/99, though there are eight other private companies that have made commitments to export. Cotton exporting may become concentrated increasingly over time in a small group of private firms that integrate backward into ginning and seed cotton buying. Concentration has its benefits; resources for investment in new equipment, plant and handling/sorting/processing techniques will be made available that will upgrade the quality of Egyptian lint cotton exports and bolster Egypt's flagging reputation as an exporter of high quality, fine cotton. Concentration could have its downside in restricting opportunities for smaller competitors to participate and invest profitably. Backward integration by exporters requires deep pockets and there appear to be economies of scope and scale. These issues will require attention in the endline impact assessment.

Cotton Spinning. Spinning was an almost exclusively public sector preserve before 1996/97, particularly if the joint stock companies of Misr-Iran and Amriya Spinning and Weaving are viewed as virtual public entities. With privatization of several public sector spinning companies (Unirab, Alexandria S&W, KABO, ESCO) in 1996/97 and 1997/98, the private sector share is slowly increasing. There is also new private investment in spinning (for export) in Egypt, though the industry remains dominated by two textile industry holding companies, their affiliated companies, and several industry committees chaired and comprised largely of public sector spinners and holding company officials. Leasing, management contracts and liquidation are valid privatization options that will probably be increasingly used and lead to improved productivity of viable units and scrapping of idle and unproductive plant and equipment.

Weaving and Fabrication of RMGs. By 1996/97, capacity in the weaving industry was roughly half public and half privately owned and operated. There are hundreds of small and medium scale private weavers and RMG producers. Output of woven fabric was approximately half produced by public companies and half made by private firms. As much as 80 percent of national output of RMGs is reported to come from private companies, many of which are located in industrial cities such as Tenth of Ramadan or Sixth of October or in duty free zones in ports such as Port Said and Suez. Under APRP, privatization of public spinning and weaving companies will continue, though much of the weaving capacity in the public sector will ultimately be scrapped or sold off to private weavers. Large public sector companies are not nimble enough to compete in the RMG market (only 11 public textile firms have RMG units), and privatization prospects are not strong. Private sector investment, fueled by tax incentives, import bans on RMGs and cloth (now subject to high but slowly declining tariffs), and the duty drawback scheme on imported yarn, should continue for firms with an export orientation.

CONDUCT of the COTTON SUBSECTOR

MVE's analysis of subsector conduct focuses on the competitive (or anti-competitive) behavior of firms and industries. MVE has used available information from in-depth interviews with participants at different levels of the subsector and knowledgeable informants to obtain as comprehensive a picture as possible of subsector conduct or behavior. Pricing policy intervened in ways that limited participation and competition, most acutely during 1996/97 but also continuing into 1997/98.

Seed Cotton Marketing. All indications are that there were many participants and a lot of competition among buyers during the 1994/95 and 1995/96 cotton marketing seasons. During the baseline year of 1996/97, progress was stopped due to the high seed cotton floor price. Farmers responded by planting the largest area in a decade, but private buyers of seed cotton declined to participate, as they would have lost money on every kentar that they bought and sold. Public sector trading and ginning companies bought the entire crop, and their shares were allocated administratively. Two groups (three firms) participated in seed cotton buying in 1997/98: Modern Nile/Arab Ginning Company, and Arab Trade and Investment Company. The first two firms have the same principal owners and are part of an emerging integrated cotton buying, ginning and export complex. Each company had its own sales rings and had to accept all the cotton delivered to those rings. Seed cotton procurement in 1996/97 and 1997/98 was, therefore, not competitive. Setting of high floor prices discouraged private sector participation, and the public sector bought most of the crop. MVE expects significant improvement in 1998/99 and beyond. Early indications are that there were numerous private sector buyers of seed cotton, who competed in procuring seed cotton and offered price premiums and discounts (relative to the GOE price list) directly to farmers outside of sales rings.

Cotton Ginning. Prior to 1996/97, the market shares of ginners were allocated administratively and the ginning rate per kentar was set by the holding company officials with public sector ginning company managers. During 1996/97 and 1997/98, shares were still allocated administratively, yet there was some evidence that ginning companies competed on non-price grounds (as ginning charges were still fixed per kentar) by offering to share transport costs, store seed and lint cotton at the gins, or provide preference in ginning. The ginning companies met to set ginning charges in 1998/99, which are marginally higher than from 1995/96 to 1997/98 (when they were fixed at the same level), but holding company approval is still required.

One of the major problems facing the ginning industry, which holds ginning charges down, is excess national capacity, which will discourage new investment (in completely new gins) and may stall further privatizations (of the three remaining public ginning companies). On the positive side, as private trading companies buy more seed cotton (as they are doing in 1998/99), they will become more demanding customers of the ginning companies, insisting on gin-level "farfarra," better seed and lint cotton handling, baling and storage practices at gins, and the introduction of improved technology in moving and feeding cotton into ginning machines, removing impurities from seed cotton, and baling. Further private sector investment in and privatization of the entire cotton subsector will introduce more competitive pressure into different industries, which will lead to investment in better technology, hiring of better managers, and providing of better services to attract customers.

Lint Cotton Exports. Significant private sector entry into cotton trading since 1994/95 and the emergence of a small number of strong competitors to the public sector trading companies have introduced competition into cotton lint exports. 1996/97 was a year of limited progress, as private firms bought virtually no seed cotton from producers or sales rings and had to acquire lint for export from the public sector trading companies. In 1997/98, public and private companies competed for market share and cut prices at the margin or sought cost-saving methods, such as baling at gins for direct export, to offer foreign customers better prices and hence expand market share. Several private exporters have invested in new presses and farfarra rooms at cotton gins, bypassing the more costly farfarra in Alexandria. ALCOTEXA set the overall export price level in 1997/98, but exporters were able to offer discounts of a few cents per pound. This de facto relaxing of minimum export prices set the stage for more competitive behavior among exporters and pricing in 1998/99. At the end of December 1998, ALCOTEXA adjusted its export prices (and minimum exportable grade) for one slow-moving ELS variety in response to world market conditions.

Cotton Spinning and Weaving. As of 1996/97, cotton spinning was not a competitive industry in Egypt, with public firms and quasi-public firms dominating the industry. Cotton lint supplies were allocated quasi-administratively by committees staffed by holding company officials and managers of the largest public sector spinning and trading companies. Prices were set by MTS in relation to ALCOTEXA export prices. This situation is for the most part unchanged as of early 1998/99, when spinners are buying—for the second consecutive year—carryover stocks of long staple cotton at a discount.

Slow privatization and modest but promising foreign investment are applying some competitive pressure to an industry that is considered strategically important. The successful privatized companies are export-oriented, exporting much of the yarn they produce, and they focus on spinning and do not do weaving, knitting, dyeing/finishing or RMG production. Five new private sector firms are introducing new technology, management methods, and an orientation toward competitiveness in world markets that could hasten the privatization process and spur further private investment. Transforming the lagging spinning industry is critically important in improving the international competitiveness of the Egyptian textile industry. A major challenge is to use Egyptian cotton in textile production in a way that adds value, rather than under-spinning high-quality lint into lower count yarns.

Despite this progress, minimum export prices are still set for yarn and fabric by industry committees that meet at TCF periodically to review domestic and world market conditions. Without external pressure, this system would probably not change for several years, as industry leaders, TCF and the MTS fear dumping charges and penalties. There is a Tranche III benchmark designed to allow private exporters of cotton yarn to export yarn at freely negotiated prices.

The competitive behavior of public and private weavers is quite different. Public weavers, usually integrated into public spinning companies, are passive price takers and use almost exclusively yarn transferred from the parent spinning (and weaving) companies at administered prices. Private weavers competitively seek out the cheapest source of yarn and imports of cheap Indian and Pakistani yarn have risen for several years, made possible by the duty drawback scheme. These private weavers compete vigorously among themselves and with the public weavers for export markets.

RMG Industry Conduct. This is a very competitive, largely (and increasingly) private sector industry that has enjoyed tremendous growth in recent years, largely due to the duty drawback scheme on imported yarn and fabric used in producing export garments. There are some reports of leakages into the domestic market, but this is most likely a limited phenomenon (though it could have negative consequences for public producers of RMGs).

PERFORMANCE of the COTTON SUBSECTOR

Performance in the cotton subsector is slowly improving, though there some remaining performance gaps and shortfalls. Seed and lint cotton pricing policy limited private sector participation, competition and new investment and employment in 1996/97 and 1997/98. The political importance of preventing widespread dislocation of workers in public sector firms in cotton trading and the textile industry has led the GOE to take a cautious approach to privatization. Change and performance improvement will continue to be gradual and carefully managed under APRP.

Allocative Efficiency. The cotton subsector was not allocatively efficient in 1996/97, the baseline year. Too much seed cotton was planted, the harvest was excellent, export prices for cotton lint were set too high and exports were lower than they should have been, and carryover lint stocks burgeoned to 2.494 million kentars (or 124,693 mt). Carryover expanded even more by 1 September 1998 to 3.085 million kentars (154,260 mt); these excessive stocks overhang world markets and depress cotton prices. Coupled with weak foreign markets, particularly in Asia, the supply of Egyptian extra-long staple and some long staple lint greatly exceeds demand at the prices set by ALCOTEXA, which establish the overall price level for Egyptian cotton in the world market and clearly influence the prices of competing growths, especially U.S. pima.

Recognizing this situation, ALCOTEXA, with GOE support, has lowered minimum export prices during the past two marketing seasons. Surplus long staple cotton lint stocks, particularly Giza 75, have also been sold at a discount to domestic spinners in the final quarters of 1997 and 1998. Furthermore, the GOE abstained from announcing producer support prices in 1998, stating before harvest that producers would be paid according to a formula that linked seed cotton prices to ALCOTEXA prices. There is some evidence of farmer dissatisfaction with the lower cotton prices in 1998/99 relative to 1996/97 and 1997/98, which will most likely lead to sowing of fewer feddans to cotton in 1999, a needed allocative adjustment.

Operational Efficiency. Although precise figures on company costs and returns are hard to obtain in the cotton subsector in Egypt, it is clear that the public sector companies are not operationally efficient. Debt servicing is high, workers are redundant, inventories of raw material, intermediate goods and finished goods are higher than they should be, accounts receivable are very large, and managers are prevented from taking the hard decisions (layoffs, closures of the least productive plants, sales of equipment, buildings and land) that are needed to generate the resources required to turn their companies around.

Recent privatizations of two ginning companies, two spinning companies, and a weaving company provide some grounds for optimism, although there have been no major management changes and these companies were already operating profitably before privatization. The efficiency of new private sector companies in cotton trading and spinning is likely to be higher, as overheads are

kept low, assets remain minimal, scaled to market requirements and limited, market-responsive production plans, and the number of employees (and plants) is not out of line with what can be effectively managed and with production plans (keyed to realistic market opportunities).

A major source of operational inefficiency in public sector spinning and weaving companies is the consolidation of too many different industrial activities in one management unit. The public sector textile companies were created by consolidating diverse production units, most of which were under separate private sector management, into mega-firms that included spinning, weaving, knitting and sometimes dyeing/finishing and RMG production. Managing several production units in one industry, such as spinning or weaving, is challenging enough in the increasingly competitive and complex international market. Managing multiple units in multiple industries is too complicated and contributes to overproduction (and inventory build-up) and financial losses.

Technical Efficiency. Privatization and private sector investment are increasing competition and will raise technical efficiency, particularly in ginning and spinning, above the generally low levels of public sector firms. Some gins are old and operate outdated equipment having low output. Privatized ginning companies are closing down the smallest, least efficient gins in the most congested urban areas. Privatization of spinning mills is leading to transfer or sale of assets (under liquidation), restoring of idle production units (through purchase of spare parts under the leasing option), and closure of old mills that require too much investment to rehabilitate. The technical efficiency of privately created and owned gins and mills is reported to be higher than all but the best public sector companies, although the data needed to make detailed comparisons are lacking.

Progressiveness. Protected from international competition for many years, public companies in Egypt's cotton/textile subsector did not face competitive pressure to lower costs and improve products and customer services. They became producers and order-takers, receiving instructions from GOE officials and committees, who made decisions regarding pricing, procurement, product mix, and sales for the public companies. This resulted in a well documented loss of market share in exports of cotton lint from the mid-1980s to the late 1990s to American pima producers, underspinning of fine cotton into low-count yarn, and excess output of many textile products, which piled up in slow-moving inventories. By late 1998, the Egyptian textile industry faced a challenge in adding value to high-quality Egyptian cotton; much of the ELS and higher quality LS lint cotton is being exported to foreign fine-count spinners, who add value through spinning high-count yarns and capture benefits that could accrue to the Egyptian textile industry (if certain changes and improvements were made). Many domestic private weavers and RMG producers are using cheaper, short-staple imported yarn from India and Pakistan to produce cloth and clothes that do not require fine cotton as raw material.

As noted earlier with the recent creation of private spinning companies, private sector investment, management and know-how are being introduced into the Egyptian textile industry. This will help to reduce under-spinning of fine Egyptian lint and production of low-quality goods for which demand is limited. In seeking ways to lower costs and compete more effectively, private spinning, weaving and RMG companies are making investments in technology and developing strategic alliances with foreign firms that provide market access and intelligence, technology and marketing management know-how. From a largely unprogressive subsector and set of industries in 1996/97, individual companies are making changes (some of which are experimental) in an effort to

produce more efficiently, gain market share, and satisfy customers, particularly demanding foreign ones.

Market Coordination. During the years of public sector dominance, all resource allocation decisions were made administratively by the GOE. Intra- and inter-industry decisions were made by committees of public officials and directors of public companies. In 1996/97, the baseline year, committees made most pricing and allocation decisions, while markets operated in a limited way in some stages of the cotton subsector. By 1998/99, some change had taken place, particularly in seed cotton procurement, as private traders were able to buy seed cotton at negotiated prices reflecting a discount or premium over the GOE price tables.

In well-functioning markets, the public sector plays an important role in regulating and coordinating a commodity subsystem and in working with the private sector to develop and enforce grades and standards, providing information about production forecasts/estimates, prices and market conditions, and widely disseminating policy and regulatory information to ensure market transparency. APRP and CSPP are working closely with various public agencies to improve pest management, simplify and revise grades and standards, generate more accurate and timely information about the commodity subsector, and make the policy and regulatory environment more transparent. More work remains to be done, though a promising start has been made. Transparency has improved from 1996/97 to 1998/99.

Evidence of increasing integration in seed cotton buying, ginning, and trading among major private sector players helps to improve market coordination in one sense, but in another sense it suggests that well-financed private trading companies have to integrate to ensure access to high quality seed cotton and quality ginning services. The public sector companies (in cotton trading and ginning) cannot be counted on to deliver required grades and quality of seed and lint cotton.

At present, the cotton subsector/textile industry is characterized by uneven coordination and some weak links and discrete segments, particularly many of the private weavers, knitters and RMG manufacturers that use cheaper imported South Asian yarn rather than Egyptian cotton. Private sector industry development appears to be in large part the product of a policy exception (duty drawback scheme), which favors the use of cheap imported yarn spun from short-staple cotton.

Market Responsiveness and Competitiveness. The cotton subsector (beyond the farmgate) and textile industry of Egypt was not very responsive to the world market or competitive in 1996/97. Committees of public sector officials, rather than market forces, made decisions about production, marketing and who could participate, processing, prices, and sales. Significant changes are underway, though perhaps not at a quick enough pace to satisfy many private firms and prospective investors (as well as some outside observers of the industry), to remove policy barriers, let markets work to determine prices and allocate resources, and allow the private sector to invest, bid on privatized companies, and participate. One of MVE's major tasks will be to track and evaluate changes in the subsector over the LOP, documenting increased market responsiveness and international competitiveness.

ANTICIPATED CHANGES and OUTCOMES in the COTTON/TEXTILE SUBSECTOR

Table 1 lists key impact variables and includes some brief comments on anticipated outcomes of policy and regulatory reform on the cotton subsector. MVE will need to monitor changes in the subsector over the remainder of the project and prepare a final assessment of impact on this critical subsector. In order for MVE to do a timely and rapid assessment of the situation of the textile industry (and public sector ginning and trading companies) by the end of the project (30 June 2000), data access needs to improve. Otherwise, given the usual lags and difficulties in obtaining data, MVE will have information about textile industry performance through the 1998/99 marketing and processing season.

An alternative vision of policy reform and change in the cotton subsector is presented by Ariza-Nino et al. (1999) and as a vision statement by the RDI Unit of APRP (see annex table outlining the RDI vision for Egyptian cotton to 2003). This table contains proposed studies, policy reform design efforts, policy reforms, and implementation measures for improving performance of the cotton subsector in Egypt in the coming five years. This table includes activities concerning varietal development and release measures, institutional innovations, strengthening of market information, timely dissemination of public information on cotton production and varietal performance, and certain trade policy reforms not discussed in this report.

Table 1: Some Anticipated Impacts of Policy and Regulatory Reform on the Cotton/Textile Subsector

Variable	Direction & Relative Magnitude of Change	Likely Lag from 1996/97	Comments
Number of varieties	reduction in # to 5-6	2-6 yrs	Giza 75 will be replaced by Gizas 86 & 85 or 89. 1-3 ELS varieties (Giza 76, 77, 70) dropped. New MLS variety to replace Giza 80 & 83 in Upper Egypt.
Cotton area planted & production: 0) Aggregate 1) ELS 2) LS 3) MLS 4) Upland	 moderate decrease moderate decrease moderate decrease strong increase modest increase strong increase	 3-4 yrs 3-4 yrs 3-4 yrs 3-4 yrs 4-5 yrs 7-10 yrs	Overall area in the Nile River valley will decline; MLS (incl. Giza 85) will substitute in part for ELS and LS. Upland will be grown in the new lands but not in the Nile valley. Not clear which crops will expand to replace declining area to cotton & rice.
Lint cotton exports 0) Aggregate 1) ELS 2) LS 3) MLS 4) Upland	 strong increase moderate decrease moderate increase modest increase no exports	 1-2 yrs 3-4 yrs 1-2 yrs 3-4 yrs	LS exports (of new varieties G86 & 89) will increase. Giza 75 will be phased out. ELS exports decrease due to overall decreased output. Upland used entirely domestically.
Domestic spinning industry (lint cotton input): 0) Aggregate 1) ELS 2) LS 3) MLS 4) Upland	 modest increase strong decrease no net change strong increase strong increase	 3-4 yrs 3-4 yrs 3-4 yrs 3-6 yrs 7-10 yrs	Domestic spinners will increasingly use MLS cotton and upland cotton produced in Egypt.
Textile Industry Capacity: 1) Ginning 2) Spinning 3) Weaving	 moderate decline moderate decline moderate increase	 3-4 yrs 3-4 yrs 3-4 yrs	Some excess ginning capacity will be closed down with privatization. Least profitable spinning companies will be liquidated, offset by some private investment. Some continued private investment in weaving will more than offset public companies' decline.

Variable	Direction & Relative Magnitude of Change	Likely Lag from 1996/97	Comments
Lint cotton imports	a) no change or slight increase b) decrease (relative to medium run (3-4 yrs).	3-4 yrs 7-10 yrs	Some imports could replace local lint in the short-run if local production declines. Local upland will replace imports.
Yarn imports (cotton and blended)	decrease	4-5 yrs	Yarn spun from locally produced LS, MLS and upland cotton will become competitive with imported coarse and medium counts.
Private sector market share in: 1) seed cotton buying 2) ginning 3) lint cotton export 4) spinning 5) weaving	 strong increase strong increase strong increase moderate increase moderate increase	 2-3 yrs 1-3 yrs 1-3 yrs 2-4 yrs 3-4 yrs	Most of the increase in market share in 2, 4 & 5 will come from privatization, 1 & 3 from new entrants.
Total net employment: 1) seed cotton buying 2) ginning 3) lint cotton export 4) spinning 5) weaving	 decrease decrease decrease decrease modest increase?	3-6 yrs	With closure/privatization of public companies, which are overstaffed, overall employment will decrease. Overall decline in cotton production, ginning and spinning will reduce employment. Remaining private firms will use labor more efficiently.
Yarn Output and Exports 1) Low counts 2) Medium counts 3) High counts	 decrease (short run) increase (long run) modest increase unchanged or decrease	 3-4 yrs 7-10 yrs 3-4 yrs	Low count yarn output and export will decrease in the short run but expand as upland cotton becomes available. Less under-spinning of LS & MLS cotton as spinners rehabilitated. Egypt will have trouble developing competitive advantage in high count spinning, which is done more efficiently offshore (Turkey, India, Italy).
Cloth/fabric output for: 1) domestic market 2) export market	 modest increase moderate increase	 3-5 yrs 4-10 yrs	As population and incomes rise. As domestic spinning becomes more competitive and does less under-spinning of Egyptian cotton, though MFA phase-out will put pressure on Egyptian weavers.

Variable	Direction & Relative Magnitude of Change	Likely Lag from 1996/97	Comments
Net resource allocation to (total investment in) the cotton subsector	may decline but indeterminate	4-10 yrs	Likely decrease in domestic production, ginning and spinning of *barbadense* cotton may be offset by increased output, ginning, spinning of *hirsutum* varieties. Private share & volume in weaving & RMG production could continue to grow.

1. STUDY CONTEXT AND OBJECTIVES

1.1 Introduction

This paper is one of four subsector baseline studies being done by MVE as part of its APRP Impact Assessment program. MVE's Impact Assessment Plan for APRP (see Zalla et al., 1998) calls for focused subsector baseline studies to establish as systematic a baseline in key commodity and input subsectors as possible. This cotton subsector baseline study draws from useful prior study findings, establishes time-series data files for tracking priority variables, documents policy reform measures since liberalization began, and summarizes reform progress and problems to date (as of early in the 1998/99 cotton marketing season).

The baseline year is 1996/97, which was characterized by an unusual marketing season. Producer support prices were set at a very high level of 500 LE per kentar of seed cotton, above world price levels when converted to lint equivalent terms by 7-21 percent. Public sector cotton trading (and ginning) companies bought the entire seed cotton crop, as private traders had no incentive to participate. These public companies were forced to sell lint cotton at a loss to domestic spinners and foreign buyers. This led to an accumulation of huge debts, which have not been fully and satisfactorily resolved to date.

Lint exports expanded over 1995/96, a year of low seed cotton production (the smallest since World War II), but high ALCOTEXA export prices kept export volume well below what it could have been in 1996/97. Purchases by domestic spinners of barely four million kentars of lint cotton were also constrained by the financial difficulties facing most of the public spinning and weaving companies. Lint cotton carryover burgeoned from 617,000 kentars on 1 September 1996, one of the lowest levels since World War II, to nearly 2.5 million kentars on 1 September 1997, returning to the oversupply situation that characterized the 1993/94 and 1994/95 marketing seasons.[1]

In many respects, the 1996/97 marketing season represented a worst case scenario. Things could only improve and, in many areas, they have since that time. Note, however, that despite a successful export market campaign in 1997/98, carryover was an estimated 3.085 million kentars of lint cotton on 1 September 1998, a dangerously high level that overhangs both the domestic and world markets.

[1] Lint cotton carryover was an estimated 2.644 million kentars at the opening of the 1993/94 marketing season and 3.193 million kentars on 1 September 1994.

This carryover has contributed to lower world and ALCOTEXA prices for cotton lint at the beginning of the 1998/99 marketing season. Furthermore, progress in privatization has been steady but slow. Large public sector companies continue to dominate the ginning, cotton trading and spinning industries with somewhat negative consequences for private sector participation and investment. In sum, much remains to be done in liberalizing the cotton/textile subsector and key industries in that subsector.

1.2 Study Objectives

This report establishes a cotton subsector baseline for the beginning of the Agricultural Policy Reform Program. It also provides data and analysis of developments during the 1997/98 season and at the beginning of the 1998/99 marketing campaign. The report draws heavily on recent work by Krenz (1997), Cotlook Consulting (1997), and various APRP/RDI analysts and consultants (over a dozen technical reports; see reference list). Given the volume of high quality analytical work done on the cotton/textile subsector under APRP and CSPP, this impact assessment report does not attempt to be exhaustive or comprehensive. Rather, the author is selective in highlighting findings from available studies, providing his own interpretation of conditions prevailing in the subsector during the baseline year and beyond, and hopefully adding some value to the ongoing discussion of progress in policy reform in the cotton subsector.

This baseline study uses a structure, conduct, performance approach to the organization of the report and the analysis therein. Structure, conduct, performance (SCP) is a partial equilibrium approach to analysis of agricultural input or commodity subsystems. SCP was first developed to look at the organization, behavior and competitive performance of industries, which are horizontal groupings of firms that produce the same or related products. Key industries in the cotton subsector are the cotton trading, ginning, spinning, weaving, dyeing and finishing, RMG manufacturing, and export industries. In Egypt, the distinctions between different textile industries (spinning to RMG production) are somewhat blurred, because the large public sector companies have multiple units (plants) performing multiple functions in the textile production process. In the private sector, there are many more single purpose, single industry firms specializing in spinning, weaving, RMG manufacture, or dyeing and finishing.

When applied to subsector analysis, the SCP framework can be used to examine the organization and performance of industries in the subsector, as well as inter-relationships among firms at different levels (or nodes) of the subsystem. Taking this latter perspective, the analyst focuses on control, coordination, exchange arrangements, and risk-sharing and spreading in a vertical context, where the subsector is a vertical array of participants (firms and industries) that take a commodity from the farmgate to the end user.

The APRP/RDI *Cotton Subsector Map* (1997) provides a very useful point of departure in establishing the structure or organization of the cotton/textile subsector in Egypt for the year 1996/97. It presents subsector maps showing the volume and value of inputs and outputs at each stage of the subsector, employment and aggregate wages from employment at each level of the subsector, and unit prices for outputs for each subsector level. The *Cotton Subsector Map* does not attempt to assess the conduct or performance of the cotton/textile subsector. This baseline study draws heavily on the *Cotton Subsector Map,* and numerous other sources, in examining and evaluating conduct and performance. The conduct chapter of this study focuses mainly on pricing and exchange arrangements among firms at different levels of the industry as well as within industry segments. Performance is assessed with reference to key performance attributes: allocative, operational and technical efficiency; progressiveness; and market responsiveness and competitiveness.

1.3 Study Analyses and Components

Completing this baseline has required the following discrete analyses:

- A summary and analysis of available data on subsector structure from various sources.

- An analysis of public and private market shares, processing capacity, employment and investment for the past several years.

- Assembling of final statistics on cotton production, marketing, ginning, and export since the beginning of cotton subsector liberalization (1994/95) and analysis of trends and changes in key variables and public/private market shares.

- An analysis and assessment of cotton pricing policy, with special attention to the relationship between domestic and international prices.

- A summary of the salient features of recent trends or shifts in national seed cotton production by variety.

- An assessment of subsector conduct, with particular attention to pricing and exchange arrangements, and the freedom of firms to do business without government interference.

- An assessment of subsector performance, constraints, and opportunities for improvement, including a discussion of the extent to which different levels/stages of the subsector are workably competitive or oligopolistic.

2. COTTON VARIETIES AND PRODUCTION

2.1 Cotton Varieties

During the 1990s, Egypt has produced only *barbadense* cotton varieties, which are full season, long staple varieties that produce a very high quality cotton. These varieties cover the full spectrum of medium long staple (MLS), long staple (LS) and extra-long staple (ELS) cottons, whose characteristics are summarized in Table 2-1. Most of the cotton produced in the world is shorter season, short and medium staple *hirsutum* cotton, commonly referred to as upland cotton. Under APRP, *hirsutum* varieties are being introduced on an experimental basis in East Oweinat, outside of the Nile River valley.

Egyptian cotton statistics are typically broken down between ELS varieties and LS varieties, with MLS variety statistics combined with the LS statistics. MVE has chosen to separate out MLS varieties as a separate category in reporting cotton production statistics, because MLS varieties (Dandara, Giza 80, 81, 83 and 85) are used almost exclusively in domestic spinning of coarse and medium count yarn and not exported for fine-count spinning. The lint cotton from LS varieties (Gizas 75, 86, 89) and ELS varieties is suitable for fine-count spinning and is both exported and used domestically.[2] Hence, reporting statistics by varietal category corresponds better to the ultimate end use of those varieties.

Cotton varieties have approximately a 15-20 year life cycle before they are phased out. In 1996/97, the baseline year, Giza 75 was the dominant LS variety, planted on 49.8 percent of the area sown to long staple varieties and 41.0 percent of total cotton area in Egypt.[3] By 1997/98, these proportions had declined to 28.9 percent (of LS) and 23.1 percent (of total). Given the large carryover stocks of Giza 75 held at the beginning of the 1997/98 season (1.3 million kentars) and estimated going into the 1998/99 season (nearly 1.0 million kentars), MALR policy-makers decided to cut back Giza 75 area to virtually zero in 1998/99. This decision was market-driven and very responsive to the domestic cotton trading industry and export market demand, although some industry participants expressed concern over the precipitous cutback in area (preferring a more gradual phase-out). One factor that allowed MALR to reduce Giza 75 area so swiftly was the dramatic success of Giza 86, an LS variety introduced in 1995/96 with excellent growing and spinning properties. Priced to sell by ALCOTEXA in 1997/98, Giza 86 became the leading export

[2] Gizas 75, 86 and 89 can be used to spin 60s count yarn, while the ELS varieties are spun into 80s count yarn and higher. Note that the lower grades of the LS varieties used in producing higher counts of yarn are generally used for spinning in Egypt and not exported, even in the case of the most sought-after varieties, such as Giza 86. While nearly three-quarters of the output of Giza 86 had been committed for export during the first three months of the 1998/99 marketing season, a quarter of the output, made up of the lowest grades, remains unsold on the export market and is probably unsaleable.

[3] The proportion of cotton area planted to Giza 75 was actually higher in 1994/95 (63.0%) and 1995/96 (59.0%).

Table 2-1: Characteristics of Cotton Varieties Cultivated in Egypt

Type of Variety	Variety Giza:	2.5% Spinning Length	Mean Length (mm.)	Year of Release	Days to Maturity	Yield l. kent./ feddan	Yield Var-iability (CV)	Area Cult. in 1996/97 '000 feddans	Percent of Total Area	Where Variety Released
ELS	45	34.9	30.7	1957		4.45	0.22	2,931	0.3	
	70	35.0	31.3	1971		7.82	0.14	102,705	11.2	
	77	34.2	30.1	1982		7.70	0.16	39,196	4.3	
	76	34.7	30.8	1980		6.13	0.19	15,165	1.6	
	88	35.1		1995 & 1999	180	higher than G70		0		Beheira
LS	86	33.1	28.9	1995		7.31	0.14	42,488	4.6	Dakhalia
	75	30.5	26.5			6.88	0.16	378,009	41.0	
	89	30.8	26.2	1996		7.98	--	775	0.1	Menoufia
MLS	85	29.7	25.8	1993	180	6.70	0.21	146,634	15.9	Gharbeya, Sharkeya, Fayoum
	80	30.1	24.9	1981		7.94	0.22	147,702	16.0	
	83	30.2	24.9	1989	160-165	10.37	0.28	43,818	4.8	Assiut
	90			1999	150	in G80/83 range		0		Sohag

Sources: *Egyptian Cotton Gazette* of ALCOTEXA, various issues. Interview with Ahmed El Gohary, Cotton Research Institute.

Notes: 1) Type of variety: ELS is extra long staple. LS is long staple. MLS is medium long staple. Mean staple length is for the 1996 growing season.

2) Yield is a national three-year average, expressed in lint cotton kentars per feddan, and centered on 1996/97. The only exception is Giza 89, whose yield is the average of 1996/97 and 1997/98. The coefficient of variation is calculated for the ten-year period 1988/89 to 1997/98 for all ELS varieties and for Gizas 75 and 80. Shorter time-series are used to calculate the CV for Gizas 83, 85 and 86, reflecting more recent varietal introduction.

3) Area cultivated to each variety (and the percentage of total area cultivated to each variety) is shown for the baseline year, 1996/97.

4) There are many ways to classify cotton varieties. The interested reader is referred to CATGO's Annex to the *Egyptian Cotton Gazette* entitled "Physical Fiber Properties of Egyptian Cotton Varieties" for measures of length, strength, fineness, maturity, trash, and spinning properties.

variety by far; 32,654 mt were shipped, representing 44.7 percent of total exports and overshadowing the second most shipped variety, Giza 75, of which only 11,870 mt were shipped.[4] Giza 86 area has been expanded rapidly since its introduction; it was the leading variety planted in 1998/99 — 249,818 of 788,812 feddans, or 31.6 percent of total area sown to cotton. The next closest varieties were Giza 70 (159,586 feddans) and Giza 83 (104,230 feddans). The reasons behind the 33.1 percent expansion in area sown to Giza 70, a slow-moving ELS variety, are hard to fathom. Estimated carryover of 883,450 kentars of Giza 70 at the beginning of the 1998/99 season, a near tripling of carryover from 1 September 1997 (316,337 kentars), would seem to argue for a reduction in area sown to Giza 70, not a significant increase.

Egyptian LS and ELS cotton varieties have enjoyed an excellent international reputation for decades as the highest quality cotton lint in the world, though the steady expansion of pima's world market share (42 percent of world ELS cotton exports from 1994 to 1997) has taken some edge off Egypt's dominance of fine cottons (24 percent of world ELS cotton exports, 1994-97). In addition to being supplied reliably by American producers year after year, pima has low trash and foreign matter content relative to Egyptian cotton (see Breginc, 1998), and it tests better than Egyptian LS cotton on most objective counts (see Cotton Outlook, *The Long Staple Market Update*, June 1998).[5] Fine-count spinners report that pima has excellent spinning characteristics, emphasizing its uniformity and low degree of foreign matter contamination. Egyptian fine cotton also has excellent spinnability, featuring fiber strength, lustre, and smooth running on spinning machines. Pima, Giza 86 and Giza 75 are used to spin 60's count yarn. Pima can be blended with Giza 77 or 70 to produce 80's count. Gizas 70, 76 and 45 are required to spin 100's count yarn (from Breginc, 1998).

[4] The export success of Giza 86 in 1997/98, relative to Giza 75, represented a turnaround from 1996/97, when only 10,002 mt of Giza 86 and 18,080 mt of Giza 75 were shipped. One exporter reported, before the 1998/99 export season began, that the phenomenal success of Giza 86 in 1997/98 was based in large part on the poor harvest of Indian ELS/LS varieties. Indian spinners substituted Giza 86, an LS variety with near-ELS spinning properties, which he thought might be less likely in 1998/99 if the Indian ELS/LS harvests were normal. As the 1998/99 export marketing season has unfolded, Giza 86 export commitments have been greater than anyone anticipated.

[5] The Egyptian cotton industry often asserts that Egyptian ELS varieties are superior to pima and can be used to spin higher counts of cotton yarn. Although the ELS varieties Gizas 76 and 70 are revealed to have superior characteristics to pima in tests using sophisticated equipment (HVI instruments and AFIS equipment), pima test results for fiber length and strength show that pima is clearly superior to Egyptian LS varieties. Gizas 75 and 86 also have higher micronaire, meaning that the fibers are coarser/wider. Test results are reported by the Director of Raw Material at Manifattura di Legnano Aldo Pienzi in "The Important Parameters in Making Fibre Choice," in Cotton Outlook, *The Long Staple Market Update*, June 1998.

2.2 Trends in Cotton Area, Yield and Production

2.2.1 Area Planted

Statistics for cotton production during the past eleven years are shown in Tables 2-2 to 2-4. Aggregate cotton production and utilization statistics, going back to 1900/1901, are presented in the Statistical Section of *The Egyptian Cotton Gazette*, issued semi-annually. Average area sown to cotton was highest during the 1950s at 1.786 million feddans, twice the annual average of 870,025 feddans planted over the ten-year period 1988/89 to 1997/98. By the 1980s average area planted had declined to 1.035 million feddans; this average is 835,724 feddans for nine years during the 1990s.

Total area planted to cotton declined 18 percent from over one million feddans in 1988/89 and 1989/90 to an average of 824,034 feddans in 1997/98 and 1998/99. Note, however, that area sown to cotton in 1996/97, the APRP baseline year, was higher at 920,911 feddans, which was the highest area planted since 1990/91. Taking a three-year average for the baseline year (1995/96 to 1997/98) gives area sown of 830,124 feddans. From 1988/89-1989/90 to 1995/96-1997/98, area sown to LS varieties rose as a proportion of total area sown (from 75.7 to 82.5 percent), while ELS area declined in proportional terms (from 24.3 to 17.5 percent).[6] Breaking LS varieties into medium-long staple (MLS) and long staple varieties reveals that MLS area averaged 188,859 feddans over the three year period 1993/94 to 1995/96 but rose to 331,445 feddans for the past three growing seasons. This increase may have been driven in part by a desire to supply local spinners with the cheapest cotton lint that could most competitively by spun into lower and medium count yarn than more expensive LS and ELS lint.

2.2.2 Yields

Yields vary significantly across years, both within varieties and across ELS and LS varieties (as evident from Table 2-3). The coefficient of variation (CV) ranges from 0.14 (for Giza 70) to 0.22 (for Giza 45) among ELS varieties, though is only 0.14 for all ELS varieties combined. The CV is as low as 0.14 (for Giza 86) but as high 0.32 (for Dandara) among the LS varieties, but it is 0.17 for all LS varieties combined. Across all varieties, the CV averages 0.15.

Average ELS yields increased in 1995/96-1997/98 (7.54 kentars per feddan) relative to 1988/89-1989/90 (6.57 kentars per feddan). Similarly, LS yields rose from an average of 5.64 kentars per feddan in 1988/89-1989/90 to 7.27 kentars per feddan in 1995/96-1997/98. Note, however, that the historical period of highest yields for Egyptian cotton was 1979/80 to 1985/86, when yields averaged 8.26 kentars/feddan, as compared to 7.38 for all varieties in 1995/96-1997/98. Yield increases in the last three years relative to the early 1990s can be attributed in part to the introduction of high-yielding new varieties, particularly Gizas 85 and 86, the strong yield performance of Gizas 80 and 83 since 1993/94, and the phase-out of less productive varieties (Dandara, Giza 81). Probably a more important factor, however, has been economic incentives

[6] This proportionally greater decline in ELS area planted was reversed in 1998/99, with the large increase in Giza 70 area sown. ELS area was 25.7% of total cotton area in 1998/99.

Table 2-2: Area of Egyptian Cotton, by Variety

Table 2-3: Yields of Egyptian Cotton, by Variety

Table 2-4: Production of Egyptian Cotton, by Variety

to grow cotton (and apply pesticides, fertilizer and other inputs on a timely basis) due to high producer support prices over the period 1995/96 to 1997/98.

Examining yields in more detail shows that Giza 70 is the most productive ELS variety (having averaged 7.82 lint cotton kentars/feddan for the three year period 1995/96 to 1997/98). These yields are only exceeded by Giza 89 among the LS varieties and Giza 80 and 83 among the MLS varieties. Of these more productive varieties, only one—Giza 83—gives significantly higher yields (10.37 kentars/feddan) than Giza 70.[7]

2.2.3 Production

Total cotton production in 1996/97, the baseline year, was 6.914 million kentars; it averaged 6.156 million kentars over the three-year period 1995/96 to 1997/98. This represented an overall increase of 2.8 percent over the 5.989 million kentars produced in 1988/89-1989/90.

These aggregate figures mask the fact that ELS production declined dramatically, by 31.8 percent, from 1.6 million kentars in 1988/89-1989/90 to 1.1 million kentars in 1995/96-1997/98. Giza 45, 76 and 77 production fell off 43.3, 54.9 and 70.2 percent respectively. Expanded output of Giza 70 by 29.1 percent partially offset these declines for the other major ELS varieties.

The drop in ELS production from the late 1980s to the APRP baseline period was more than offset by expanded output of LS varieties. Total LS production expanded 16.2 percent from 4.3 to 5.0 million kentars from 1988/89-1989/90 to the 1995/96-1997/98 period. Giza 75 output fell 20.5 percent, but Giza 80 production increased 134 percent. Three of the four leading LS varieties — Gizas 80, 85, and 86 — over the 1995/96-1997/98 period were not even produced in the late 1980s, when Giza 80, Dandara and Giza 81 were important secondary LS varieties to Giza 75, which accounted for 64.9 percent of LS output.

Overall cotton production has trended downward since the 1960s, when the combination of large areas planted (1.698 million feddans on average) and rising yields (5.52 kentars/feddan) led to an average cotton crop of 9.275 million kentars. By the 1980s, this had slipped to 7.686 million kentars, when average yields had risen to 7.39 kentars/feddan, but average annual area planted had declined to 1.035 million feddans. For the first eight years of the 1990s, average production had fallen to 6.346 million kentars. Lower output during the 1990s can be attributed largely to less attractive cotton prices in the first half of the 1990s, relative to rice, and the continued profitability of the rice/wheat rotation relative to the cotton/berseem rotation after 1995, despite high seed cotton floor prices (see Selzer, 1998).

Grouping LS varieties into LS and MLS reveals that LS output for the three years from 1993/94 through 1995/96 was over three million kentars on average (3.084 million). MLS production was 1.647 million kentars a year, or only 53 percent of LS production. For 1996/97 and 1997/98, LS

[7] Giza 80 and 89 yields are only marginally higher than Giza 70 yields, and the average yield for Giza 89 is calculated for only two seasons, as it was first released in 1996/97. Note that expansion of cultivation of Giza 70 in 1998 to areas of the western and southwestern Delta, where Giza 75 was formerly cultivated may well lower yields. These areas are less well adapted to ELS.

output had dropped to 2.626 million kentars, while MLS production had soared to 2.870 million kentars.

2.3 Changes to Date in Varietal Cultivation and Planned Changes under APRP

Up to 1997/98, Giza 75 was the flagship long staple variety, accounting for a large proportion of area sown to cotton and a significant share of total production and exports (through 1996/97). Giza 75 exports stalled in 1997/98, while Giza 86 became the leading export variety (61.2 percent of long staple exports). As of 1998/99, area sown to Giza 75 was cut back drastically (to one district in Gharbeya), and Giza 86 became the leading long staple variety, with Giza 89 area also expanding significantly in only its second year following release.[8]

The leading ELS variety since 1992/93, Giza 70, also became more prominent in terms of area sown and ELS cotton production in 1997/98. Area planted to Giza 70 has expanded steadily since 1995/96, with the jump to 151,419 feddans in 1998/99, or 78.7 percent of ELS area, being the largest. There appear to be no strong economic reasons driving Giza 70 expansion, given the large carryover from 1997/98 (an estimated 944,000 kentars) and soft demand worldwide for ELS cotton. Giza 70 was also grown in 1998/99 in areas of the western and southwestern Delta where it had not been grown before (areas reserved for Giza 75 production in the past). Cotton traders state that both the overall expansion of Giza 70 area and its cultivation in new areas were not driven by industry considerations. They point out that Giza 70 yields will be lower in the new production zones and the quality of the Giza 70 harvested will be lower than it is in the customary production areas for Giza 70.

The Cotton Research Institute (CRI) plans to reduce the number of varieties from nine in 1996/97 and ten in 1997/98 and 1998/99 to five within 3-4 years. Giza 88, a new ELS variety, will be introduced in the Delta in 1999/2000 and will eventually replace Gizas 70, 77 and 76. Its yields are reported to be 15-20 percent higher than those of the productive ELS variety Giza 70. By 2002/03 there will be only two ELS varieties: Gizas 45 and 88. Within several years, there will also only be two LS varieties in the Delta, Giza 86 and either Giza 85 or 89. Giza 86 will be the export LS, while Giza 85 or 89 will be used largely for domestic spinning of medium and higher count yarn.

As for Upper Egypt, CRI will introduce Giza 90, a Giza 83 and Dandara cross, in 1999/2000 in Sohag. By 2001/02 (or perhaps a year later), only Giza 90 will be grown from Fayoum/Beni-Suef to Sohag and Gizas 80 and 83 will be phased out. Average yields of Gizas 80 and 83 were 18 and 16 percent lower in 1997/98 than they were in 1996/97 (an excellent year), and yields are reported to be disappointing in 1998/99 as well.[9] CRI states that Giza 90 will be a 150-day variety, the

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[8] The expansion of Giza 86 was widely anticipated, though many observers were surprised at how rapidly area planted to Giza 89 was expanded in 1997/98 The Cotton Research Institute designates Giza 89 and 85 as possible successors to Giza 75 in domestic spinning of medium count yarn.

[9] Yields and out-turn ratios for Giza 80 and 83 were low in 1997/98. 1998/99 was an unusually hot growing season, which negatively affected yields of Gizas 80/83. A late season (August) attack by pests (worms) also lowered yields.

shortest season *barbadense* in Egypt, some 15 days shorter than Giza 83. Giza 90 will have comparable yields to Gizas 80/83.

Important reasons to reduce the number of commercial varieties to five include the following:

- reduce varietal mixing.
- the larger the number of varieties grown, the greater the need for large areas to produce foundation seed.
- the larger the number varieties, the greater the area needed for seed production for multiplication purposes (>200,000 feddans in the past; could decline to 70,000 feddans with fewer varieties).
- under freer domestic cotton marketing, the potential for inter-mixing varieties is greater if there are a large number of varieties. By reducing the number of varieties, this risk is offset.

2.4 Geographic Distribution of Cotton Production

Barbadense cotton varieties are grown in the Nile River valley, including the Delta. The MALR, in consultation with CRI, has promoted the earlier maturing, heat tolerant MLS varieties of Giza 80 and 83 in Upper Egypt (along the river south of Cairo). Varieties grown in irrigated areas of the Delta (and lying just outside the Delta in old new lands) include the major LS varieties (Gizas 75, 86, 89), all of the ELS varieties (Gizas 45, 70, 77, 76), and the borderline MLS/LS variety Giza 85. Each variety has a preferred production zone, given its agronomic requirements and the suitability of certain micro-climates for cotton production.

This paper will not report and analyze cotton area, production and yield statistics by governorate. These statistics appear in the annexes of MVE's Impact Assessment Report No. 4, *Survey of Data Availability and Quality.* The interested reader is also referred to ALCOTEXA's excellent color cotton maps, which show the distribution of varieties by production zone (down to the district level).[10] Finally, APRP/RDI is preparing a paper that uses cotton production data at the governorate level to build a linear programming model of optimal seed cotton production patterns to meet domestic spinning industry requirements and export targets (Ariza-Nino, forthcoming, 1998).

2.5 Future Plans for *Hirsutum* Cotton

APCP and APRP have had several benchmarks promoting the examination, testing and introduction of short-season, short-staple cotton. Under APCP's Tranche 7, a short season (*barbadense)* cotton study was carried out (see Gleason and Sayed Hussein, 1997). This was followed under APRP's Tranche I with extension of the results of this study to farmers and Tranche II testing of *hirsutum* varieties in the New Lands (East Oweinat). In 1998, under Tranche II of APRP, the GOE has begun to test a *hirsutum* variety in East Oweinat, an area irrigated by well water in southeast Egypt, well outside the Nile River Valley.

[10] MVE has the ALCOTEXA cotton maps from the past four growing seasons — 1995/96 through 1998/99.

The area planted to *hirsutum* cotton promises to be modest for several years, but it could expand significantly within East Oweinat and the New Valley (Toshka) early in the next century. Many *hirsutum* cotton varieties mature more rapidly than the shorter season *barbadense* varieties (< 150 days vs. 160-165 days) and therefore consume less scarce irrigation water. Hence, *hirsutum* production costs are lower (in real terms), and cheaper *hirsutum* can be used to supply much of Egypt's spinning industry with short and medium staple lint cotton. Shorter staple upland varieties are more suitable for producing coarser count yarn (NE 30 and under) than *barbadense*, a superior but expensive raw material that is better suited for spinning medium to fine count yarns. A final advantage to using shorter season cotton varieties, particularly *hirsutum* ones, is that they require less costly pest control measures (as pests tend to attack Egyptian *barbadense* cotton varieties late in their production cycles). .

Egyptian spinners have been accused of under-spinning long staple cotton for many years. The dynamic and fast-growing private sector weaving, knitting and RMG industries in Egypt, much of whose output is exported, import cheap yarn spun from short-staple cotton in India and Pakistan rather than use expensive Egyptian cotton as a raw material. *Hirsutum* cotton could substitute increasingly for this imported yarn, brought in at low cost under a duty drawback scheme.

The longer-run impact of implementing the *hirsutum* cotton benchmarks could be quite marked. Note, however, that these impacts will only be felt well after the completion of the APRP program. Even more so than in the case of rice subsector liberalization, the most significant impacts of policy reform (in this case, *hirsutum* promotion) will lag the implementation of the reforms by years, probably by 3-10 years. The downstream impacts are likely to be the most pronounced, particularly in the:

- spinning mills spinning coarse (low) count yarn with *hirsutum*
- weaving mills weaving fabric made with coarse count yarn
- RMG plants using this fabric.

Ultimately, *hirsutum* cotton could substitute for lint cotton imports (negligible during the past few years) and, more importantly, for imports of yarn from competing, low-cost producing countries, notably India and Pakistan. The extent of this substitution will be influenced initially by how successfully *hirsutum* cotton is grown in areas of Egypt outside the Nile River valley. The competitiveness of *hirsutum* cotton over the medium term will be determined by the following factors:

- Relative production costs per kentar of *hirsutum* vs. MLS *barbadense* varieties.

- The competitiveness of imported upland cotton lint vis-a-vis *hirsutum*.

- Transport costs, as *hirsutum* will be produced in remote areas, far from current spinning capacity in Egypt.

- Processing costs. If spinners outside Egypt are more efficient at spinning, they could supply private Egyptian weavers with yarn, despite the transport costs and assuming continued use of the duty-drawback scheme.

- Various comparative and competitive advantage considerations. Other field or tree crops or horticultural products may enjoy a comparative advantage in production in the remote zones of East Oweinat and Toshka.

MVE plans to observe the developments in upland cotton production in Egypt over the next two years, which may provide some initial indications as to how successfully *hirsutum* will be introduced and whether it will substitute for *barbadense* cotton in yarn production.

3. COTTON PRICING

3.1 Introduction

This section will examine pricing of cotton during the 1990s in Egypt. As noted earlier, Egyptian cotton production declined in large part during the 1980s and first years of the 1990s due to low, unattractive fixed producer prices. Producers received a small percentage of the world price, which dampened their enthusiasm to grow cotton and to apply inputs and labor in a timely manner. After 1985/86, cotton yields fell from over eight kentars per feddan to under six kentars per feddan in 1989/90 and 1990/91.

Realizing the crucial importance of seed cotton pricing, USAID encouraged the GOE to set progressively higher floor prices. Under APCP, benchmarks in successive tranches pushed producer prices higher (taken directly from Goldensohn, 1998):

- Tranche 1, Benchmark 6: Increase the farm price for cotton from LE 91.5 per seed kentar to LE 116 for the 1987-88 season.

- Tranche 2, Benchmark 8: GOE intent to move the farm price for cotton closer to the world price.

- Tranche 3, Benchmark 6: Implementation of cotton and other farm price changes to closer approach shadow prices.

- Tranche 4, Benchmark 1: Adjust the cotton procurement price to eliminate at least one-third of the 1989 price (*sic*) and the target price: two-thirds of international price.

- Tranche 5, Benchmark 1: The cotton procurement price will be adjusted to eliminate one-half the difference between the 1990 price and two-thirds of the international price.

- Tranche 6, Benchmark 1: The cotton procurement price will be adjusted to equal or exceed the medium term target of two-thirds of the international price.

- Tranche 7, Benchmark 1d: The floor price for cotton cultivated in CY94 is set to provide protection for growers against severe price declines; and not interfere with private sector participation in domestic marketing, exports and ginning.

These benchmarks were achieved by the GOE, and by the 1994-95 cotton season, the GOE was setting seed cotton floor prices that met the criteria specified in the benchmarks. The floor price of LE 340/seed cotton kentar for Giza 75, produced on 63 percent of the area sown to cotton, was set at a level that protected growers yet encouraged private sector participation in seed cotton marketing. World prices for competing growths, particularly pima, rose to unusually high levels in 1995, which led the GOE to set a much higher support price for Giza 75, the main variety, of 500 LE/kentar. This price level was based on the optimistic assessment that world cotton prices would remain high; this proved to be a false assumption and hope by early 1996, when export prices had plummeted. The short 1995 crop also prompted the many private buyers

in the domestic market that season to offer very attractive prices above the floor price. When world prices fell, many of these traders (including public sector trading companies, whose market share was only 34 percent in 1995/96) were forced to sell their seed cotton to exporters and spinners at a loss.

Despite the decline in world prices, the GOE had set an unfortunate precedent in offering such a high support price to growers. In 1996/97 and 1997/98, the high seed cotton floor price more than adequately protected growers, but it kept private traders out of the market. The six public sector trading companies were instructed to buy the seed cotton crop at a loss; promised reimbursement for these losses has been slow in coming. In summary, for the baseline year of 1996/97, the private sector was essentially out of the domestic seed cotton market, due entirely to producer support prices that exceeded world prices. The floor price concept, promoted by USAID during APCP, was a good idea in principle, but if set high and undercut by changing world market conditions, it proved to be a double-edged sword. The GOE hemorraeghed huge sums of money in paying the support price to growers, estimated at LE 800 million in 1996-97 and 300-400 million in 1997/98. These sums represented generous resource transfers to growers at a huge opportunity cost to the GOE, not to mention the setbacks to liberalization of the cotton market (particularly private sector participation and investment), privatization efforts, and the financial health of public sector companies (whose debts continued to pile up).

By the end of APCP and the beginning of APRP, the focus of price policy efforts shifted from producer floor prices, whose level was viewed as the political prerogative of the GOE, to export pricing. We again list the relevant policy benchmarks, following the presentation by Goldensohn (1998):

- APCP Tranche 7, Benchmark 1e: Cotton price controls are abolished beginning with cotton planted in CY1994 (export prices, mill prices, allocation systems, etc.).

- APRP Tranche 1, Benchmark 1.A1: Verify the APCP, Tranche 7 benchmarks are met for the 1995 crop.

- APRP Tranche 1, Benchmark 1.A4: Eliminate minimum export prices for yarn and woven fabrics.

- APRP Tranche 2 Benchmark A1: Announce weekly indicative prices based on demand and supply for Egyptian cotton as an intermediate step toward use of a cotton futures market. Private sector traders can export lint cotton without quantity restrictions.

- APRP Tranche 2 Benchmark A2: GOE will ensure that private traders can buy cotton from farmers at freely negotiated prices and that traders can participate in cotton trade.

Other APCP Tranche 7 and APRP Tranche 1 benchmarks indirectly touched on the cotton pricing issue in covering allocation of seed, lint cotton, yarn and fabric, free competition of public and private entities in providing various marketing and processing functions and services in the subsector, overall liberalization and privatization of the subsector, import liberalization for cotton lint, yarn and cloth, and disposal of stagnant inventory. All of the benchmarks listed below relate in one way or another to the freedom of public and private companies in the cotton subsector to

buy and sell inputs and outputs. This in turn presupposes workable competition and a pricing mechanism that allows public and private companies to operate profitably or break even. By implication, the pricing mechanism is at least quasi-open market pricing, not fixed (administered) or strongly suggested prices announced (and enforced) by GOE ministries, holding companies, quasi-public/quasi-private institutions such as ALCOTEXA and TCF, or other agencies.

- APCP Tranche 7, Benchmark 1a: Cotton producers can freely choose area planted and sell cotton and byproducts to any registered buyer. No restrictions in transporting, ginning and trading.

- APCP Tranche 7, Benchmark 1b: Eligible private entities can register as cotton dealers, exporters, and importers. They can engage freely in domestic and export cotton trade. They can trade and gin on equal terms with the public sector.

- APCP Tranche 7, Benchmark 1c: Mina el Bassel is reopened and private, open to all, on equal terms.

- APCP Tranche 7, Benchmark 2a: By 3-95, eligible private entities will have begun domestic marketing, ginning, exporting and importing cotton.

- APCP Tranche 7, Benchmark 2b: By 3-95, no GOE market restrictions on private participation in cotton domestic marketing, ginning, exporting and importing.

- APCP Tranche 7, Benchmark 3: By 3-95, develop a comprehensive plan for liberalizing and privatizing the cotton subsector, to include:

  Benchmark 3a: Public ginning and trading companies must compete for market share among themselves and with the private sector. Cotton gins offer services to all on equal terms. Ginning charges are determined on a competitive basis.

- APRP Tranche 1, Benchmark 1.A1: Verify the APCP, Tranche 7 benchmarks are met for the 1995 crop.

- APRP Tranche 1, Benchmark 1.A2: Verify that there is no administrative allocation of lint to spinners.

- APRP Tranche 1, Benchmark 1.A3: Abolish administered systems for allocating yarn output.

- APRP Tranche 2, Benchmark A5: GOE will implement a schedule to allow imports of cotton yarn, cloth and RMG in accord with WTO agreements, without quantitative restrictions.

- APRP Tranche 1, Benchmark B1: GOE, HCs and CBE will carry out necessary arrangements to enable textile companies to dispose of obsolete, stagnant or excess inventory.

In preparing the APRP Tranche I Verification Report, MVE found that it repeatedly came up against thorny pricing issues which had a profound impact on whether private firms could participate and compete with public companies in cotton trading, ginning, export, and spinning and weaving. Because administered pricing continued to prevail during the 1996/97 cotton marketing season, private sector participation was reluctant and cautious, if there was indeed any at all (e.g., essentially none in seed cotton buying). Pricing, participation, and competition are all inextricably inter-linked. Finally, there were a series of privatization benchmarks in APRP Tranches I and II that also presupposed reasonably open and workably competitive cotton and textile markets.

According to Goldensohn (1998), 51 of 228 APCP and APRP benchmarks (or 22 percent) were focused directly on cotton.[11] Twenty-two of 87 APRP benchmarks (25 percent) in the first two tranches have focused on cotton. Assuming all benchmarks are assigned equal weights (and dollars), cotton subsector benchmarks, most dealing directly or indirectly with pricing, private sector participation and privatization, have been worth $85 million in nominal terms for APCP and APRP. For APRP alone, cotton subsector related benchmarks have been worth $29 million.[12] Clearly, the cotton subsector in general, and cotton/textile pricing issues in particular, have been a very large part of both APCP and APRP. Let us proceed to examine the pricing issues facing the subsector.

3.2 Pre-APRP: 1986/87 to 1995/96

As suggested by the cotton pricing benchmarks above, a major achievement of APCP was to increase the prices producers received for their seed cotton relative to world prices. Producers were paid fixed procurement prices for their seed cotton through the end of 1993/94. As of 1994/95, the GOE declared and supported floor prices. In 1995/96, a year of cottonseed production shortfall, prices paid to growers by registered traders exceeded the floor prices.[13]

The major factor driving the decline in seed cotton yields and production that characterized the 1980s was unattractive producer prices (see Table 3-1 for nominal prices from 1986/87 to 1997/98). Beyond the observation that nominal prices were low in the late 1980s, floor prices for seed cotton had declined to 21-27 percent of the lint cotton export prices in 1987/88 and 1988/89 for several major export varieties (as shown in Table 3-2). Farmers were capturing only a small share of the world cotton prices for leading varieties. This changed dramatically in a few

[11] The other leading benchmark categories for APCP and APRP (through Tranche II) were fertilizer and other agricultural inputs (45), seed (16), livestock and feed (15), water (14), PBDAC restructuring (11), and farmer freedom of choice, free markets, land, and rice (all 9).

[12] Total APCP funding was $275 million; APRP funding through Tranche II has been $115 million. APCP funding allocated to cotton equals $56.64 m. (or $275 m. * 20.6%), and APRP funding equals $28.75 m. (or $115 * 25%).

[13] Cotton traders paid an average of 11.8 percent higher prices for Giza 70 in Beheira than the floor price, 11.2% more for Giza 75 in Sharkeya, and 10.4% higher for Giza 80 in Minya in 1995/96 (from MALR/CAAES survey of cotton producers in 1996 and reported in APCP Tranche VII Monitoring and Verification Report, Supplement I, March 1996).

Table 3-1: Procurement and Floor Prices of Major Varieties of Seed Cotton, 1986/87 to 1998/99

Table 3-2: Seed Cotton Floor Prices as a Percent of Lint Cotton Export Prices

Marketing Year	Giza 75	Giza 70	Giza 77	Giza 76	Giza 86
1986/87	42	35	33	36	
1987/88	27	25	23	24	
1988/89	27	23	22	21	
1989/90	36	30	29	28	
1990/91	42	32	33	31	
1991/92	63	52	53	51	
1992/93	86	91	88	91	
1993/94	87	91	90	92	
1994/95	93	94	92	90	
1995/96	No sales	80	80	81	
1996/97	121	108	109	107	134
1997/98	124	107	110	109	120
1998/99	94	94	93	92	99

Source: Adapted from Ron Krenz, *Liberalization of Cotton Marketing in Egypt, 1993-1997*. CSPP Report No. 41, June 1997 (see p. 85). Author estimates for 1997/98 and 1998/99.
Note: 1997/98 and 1998/99 calculations take the higher grade requirement (G/FG vs. Good) and out-turn ratios relative to 1996/97 into account.

short years. Beginning in 1989/90, cottonseed procurement prices were adjusted upward. By 1992/93, cotton growers were receiving 86-91 percent of the export prices. In 1994/95, farmers received 90-94 percent of the export prices, which squeezed export marketing margins. APCP cotton pricing benchmarks had therefore been successfully implemented, and farmers were receiving a large share of the world price from 1992/93 to 1994/95. In 1996/97, the GOE set floor prices for seed cotton at 107-134 percent of the export prices, which resulted in huge financial outlays and losses in order to procure the seed cotton crop. The practice of providing very attractive financial incentives (in the form of high support prices) to growers worked well when world prices remained relatively constant, were high, or were rising steadily, but it proved to be a recipe for GOE financial disaster when high support prices were declared (before or at planting), world prices dropped (over the course of the growing season), and the GOE felt that it could not adjust the producer price downward to reflect changed market conditions by harvest time. The 1996/97 production/marketing year was such a year.

Comparing export prices for major Egyptian cotton varieties with the price of U.S. pima, grade 3 in Table 3-3 reveals that the export prices of Egyptian lint rose as a percentage of the pima price from 1986/87 to 1989/90, but then declined steadily from 1990/91 to 1994/95. Following these changes in relative prices, Egyptian cotton production and exports declined precipitously from 1986/87 to the trough of 1990/91 to 1992/93.[14] By 1993/94, thanks in part to exceptionally high average cotton yields and a large harvest (the largest since 1985/86), exports responded very positively. By 1993/94, the prices of Egyptian cotton varieties relative to pima had dropped below 1986/87 levels, fueling exports. At the same time, growers were receiving a high percentage of the export price. The declining yields and production of the late 1980s was reversed by 1992/93.

Table 3-3: Opening Export Prices as a Percent of the Price of US Pima

(U.S. cents/lb.)

Marketing Year	Giza 75	Giza 70	Giza 77	Giza 76	Giza 86
1986/87	96	120	120	123	
1987/88	116	144	143	150	
1988/89	101	135	132	146	
1989/90	164	221	217	239	
1990/91	125	174	171	191	
1991/92	103	138	134	145	
1992/93	95	129	121	138	
1993/94	85	104	94	111	
1994/95	73	82	78	86	
1995/96	No sales	109	108	114	
1996/97	94	120	115	126	95
1997/98	89	116	109	121	94
1998/99	90	113	108	115	96

Source: Ron Krenz, *Liberalization of Cotton Marketing in Egypt, 1993-1997.* CSPP Report No. 41, June 1997 (see p. 86). Author calculations for 1997/98 and 1998/99.

The 1990s have been generally characterized by higher yields and aggregate cotton output than the second half of the 1980s, a dark era for Egyptian cotton production and outputs. Positive changes in price policy, on both the producer and export price fronts, were important determinants of this success story.

[14] By 1992/93, lint cotton exports remained low (at 361,000 kentars), but yields and production had begun to improve significantly.

3.3 Cotton and Textile Pricing in 1996/97, the Baseline Year

As noted above, 1995/96 was an exceptional year and hence is not appropriate as a baseline. Area sown to cotton was the lowest since World War II, average yields were mediocre, and aggregate output was also the lowest since World War II. Concerned about covering the lint cotton procurement needs of the domestic spinning industry, the GOE limited exports to ELS cotton lint during only a one-week period. No Giza 75, the benchmark LS variety, was exported in 1995/96. Egypt's small seed cotton harvests of 1994/95 and 1995/96 contributed to high world prices. Domestic cotton traders paid premium prices above the floor prices in 1995/96 to procure seed cotton that they hoped was destined for export (which would enable them to capture an attractive marketing margin).

Delighted by the high average prices they received in 1995/96, growers were further encouraged by the high, attractive support prices declared for 1996/97. They responded by planting 30 percent more area to cotton; the 920,911 feddans sown were the largest area planted during the 1990s. Quite good yields led to a large cotton crop. Once again, attractive producer prices had induced a significant output response by farmers.

The previous section showed that producer floor prices exceeded export prices in 1996/97 (see Table 3-2). Yet 1996/97 export prices for major Egyptian cotton varieties were set at a significantly higher level than they had been in 1993/94 and 1994/95, which dampened lint exports. Export prices of major ELS export varieties (Gizas 70, 77 and 76) were also set higher relative to Giza 75, the LS benchmark variety, in 1996/97 than they had been in 1993/94 and 1994/95 (see Table 3-4). The net effect was to depress exports (below what they could have been with more realistic export pricing) and contribute to a massive build-up of lint cotton stocks.[15]

3.4 Changes in the Cotton and Textile Pricing Since the Baseline Year

Prices of Egyptian seed cotton were effectively adjusted downward in 1997/98 by GOE announcement of floor prices for each variety requiring a higher grade (G/FG) and higher ginning out-turn ratios than 1996/97 (see Table 3-5). This had the effect of reducing floor prices for comparable grades of the same variety by 5.4 percent for Giza 86 to 10 percent for Giza 85 (excluding Giza 45, whose effective price dropped only 5.1 percent).

[15] The reason for the high export prices was the GOE fiscal imperative to reduce budgetary losses, which would have been exacerbated by a lower export price relative to the high producer floor price, above world price levels.

Table 3-4: Opening Export Prices of Egyptian Lint Cotton and U.S. Pima, 1986/87 to 1998/99

Farmers had the correct impression that cotton prices were indeed lower in 1997/98 than they were in 1996/97 (and 1995/96) and grumbled about rising input costs (and land rents).[16] Farmers also were not certain what prices they would receive for their seed cotton delivered to the PBDAC-run sales rings, because they received 80 percent of the floor price at the time of delivery and some balance later (not equivalent to the additional 20 percent), adjusted for the lint cotton grade, ginning out-turn and payments to PBDAC for inputs extended on credit and GOE cotton spraying.

Table 3-5: Seed Cotton Prices in 1996/97 and 1997/98
(LE per kentar of seed cotton)

Variety (Giza)	1996/97 Price for Grade Good	1996/97 Out-turn Ratio	1997/98 Price, G/FG	1997/98 Out-turn Ratio	1997/98 Price for Grade Good at 1996/97 Outturn	Effective Price Decrease (Percent)
45	700	0.96	700	0.98	664	5.1
70	565	1.08	555	1.10	520	8.0
77	550	1.08	550	1.13	502	8.7
76	590	1.06	590	1.09	550	6.8
75	500	1.15	500	1.17	465	7.0
86	500	1.15	520	1.20	473	5.4
89	500	1.15	500	1.20	454	9.2
85	500	1.15	500	1.21	450	10.0
80	440	1.18	440	1.20	405	8.0
83	440	1.18	440	1.21	402	8.6

Source: APRP/RDI and the Cotton Marketing Supervisory Committee
Note: 1996/97 prices are for the grade "Good." 1997/98 prices are for the grade "Good/Fully Good."
Note: The out-turn ratio is a measure of ginning out-turn in lint kentars per unit input in seed kentars.

In 1998/99, the GOE announced that seed cotton prices would be linked to ALCOTEXA export prices. To date, this has resulted in prices paid to producers that are below 1997/98 levels. CSPP and the MALR/CAAE report that farmgate cotton prices in 1998/99 were 21-29 percent below 1997/98 prices, a greater proportional decline than the 4-11 percent decrease in ALCOTEXA export prices (see Table 3-6). In comparing gross margins to cotton cultivation in Dakhalia in 1997/98 and 1998/99, CSPP and MALR/CAAE conclude that gross margin declined 35.5 percent from 1,790 LE/feddan to 1,155 LE/feddan. Assuming land rental and

[16] In a cotton producer survey carried out by CSPP in the fall of 1996 (see Krenz, 1997), producers seemed to be oblivious to the fact that the GOE suffered huge losses in buying up the seed cotton crop in 1996/97. 62% of the respondents believed that the GOE was making money on the 1996/97 cotton crop, perhaps because prices were lower than they had been in 1995/96.

taking higher land rent costs in 1998/99 into account for tenant farmers, the gross margin decreased from 1,390 LE/feddan to 489 LE/feddan, a 64.8 percent decline (CSPP and MALR/CAAE, October 1998).

Preliminary indications are that cotton producers are unsatisfied with seed cotton prices and that some farmers are not delivering it to sales rings and storing their seed cotton for later sale. According to some sources, farmers expected higher prices than in 1997/98 because of the explicit link that the GOE made in public announcements in August 1998 between producer and export prices. It appears as if many farmers are unaware of the large carryover stocks in Egypt, which contribute to poor world market conditions and prices, and overall soft international demand for fine cotton.

Table 3-6: Comparison of Cotton Prices in 1997/98 and 1998/99

Variety	Export Price			Farm Gate Price		
	1997/98 (cents/lb.)	1998/99 (cents/lb.)	Price Decline	1997/98 (LE/seed kentar)	1998/99 (LE/seed kentar)	Price Decline
Giza 45	245	220	10%	1000	787	21%
Giza 87		130			450	
Giza 76	135	120	11%	590	447	24%
Giza 70	130	117	10%	565	447	21%
Giza 77	122	112	8%	550	427	22%
Giza 88		112			437	
Giza 86	106	100	6%	500	392	22%
Giza 89	100	94	6%	500	355	29%
Giza 75	100	94	6%	500	357	29%
Giza 85	96	92	4%	500	356	29%
Giza 80	92	88	4%	440	338	23%
Giza 83	92	86	7%	440	329	25%

Source: CSPP with MALR/CAAE, *The Cotton Prices for 1998 and their Impact at Farm Level*, October 1998.

4. COTTON SUPPLY AND USE

4.1 Supply and Use Tables

Tables 4-1 and 4-2 show cotton supply and use during the past two decades. Table 4-1 summarizes statistics on Egyptian cotton published in ALCOTEXA's *Egyptian Cotton Gazette*, with MVE adjusting some 1996/97 and 1997/98 figures using several sources. Table 4-2 calculates ending stocks rather than taking the ALCOTEXA figures as given. This tends to inflate the magnitude of ending stocks for the period 1981/82 to 1991/92. Tables 4-1 and 4-2 have virtually identical estimates of ending stocks (carryover) for 1992/93 and 1993/94. Calculated ending stocks in Table 4-2 are shown to be much greater than in Table 4-1 for the period 1994/95 to 1997/98.

The reason for these discrepancies is unclear. It may be that some of the Beginning Stocks become discarded, due to deterioration or damage in storage, and hence are not counted as Ending Stocks at the end of the season (at which point such stock would be two years old). A certain percentage of Beginning Stocks may be sold for alternative uses (e.g., furniture and mattress stuffing) that are not classified as Domestic Utilization, but the quantities involved are likely to be modest. This issue requires more intensive examination (perhaps by Galal el Rifai, who edits the *Cotton Gazette*).

Several trends are clear from the available statistics, however.

- Overall cotton production has trended downward.

- Imports have fluctuated strongly since the early 1990s. From 1984/85 to 1992/93, imports (of mainly U.S. cotton) averaged 764,000 metric kentars (or 38,211 mt) per annum. Imports (of non-U.S. cotton) were modest in 1996/97 and 1997/98.

- Exports declined as a percentage of output from the first half of the 1980s (when it ranged from 31.2 to 41.7 percent of production) to 1992/93, when it reached a nadir of 5.1 percent. Since then, this percentage has fluctuated greatly, reflecting variation in annual output.

- Domestic utilization of Egyptian lint cotton is on average lower in the 1990s than it was in the 1980s. Utilization has trended downward over the entire 18 year span, with a sharp decline coming in 1994/95 to 4.061 million kentars. Since that sesaon, utilization has barely exceeded 4.0 million kentars per annum.

- Using ALCOTEXA figures, ending stocks have been very sizeable and indeed too large during most of the 1990s, particularly in 1992/93 and 1993/94, and again since 1996/97. The stocks to use ratio was very high in 1996/97 at 46 percent (having exceeded the 44 and 41 percent of 1992/93 and 1993/94) and exceptionally high in 1997/98 at 78 percent.

Table 4-1: Egyptian Cotton Supply and Utilization, 1980/81 to 1997/98: ALCOTEXA Figures

Table 4-2: Egyptian Cotton Supply and Utilization, 1980/81 to 1997/98: Study Calculation

4.2 Domestic Cotton Utilization

As shown in Table 4-3, domestic cotton utilization has declined during the past ten years. Domestic ELS use dropped precipitously in 1995/96 and 1996/97, while LS use increased to 3.73 million kentars in 1995/96 (and stayed at the same level in 1996/97) from a decade low 2.658 million kentars in 1994/95. In 1996/97, the baseline year, domestic spinning of Gizas 75, 80 and 85 exceeded one million lint kentars each. Although final figures for 1997/98 are not yet available, there was heavy use of Gizas 75, 85 and 80 by domestic mills, while spinning of Gizas 83 and 70 fell off somewhat.

One reason for the decline in domestic utilization of Egyptian cotton lint since the mid-1990s has been the accumulation of sizeable inventories of fabric, knits and RMGs by the public sector textile companies. (Yarn inventory is lower, but I need the numbers to prove this). As inventories rose, domestic spinners' financial situation deteriorated, and they cut back on their orders of lint cotton. This led to a decrease in output and an eventual reduction in production capacity (the longer equipment was idled, the harder it became to bring it back on line).

4.3 Carryover of Lint Cotton

At the beginning of 1993/94 and 1994/95, and again starting in 1996/97, Egypt accumulated massive lint cotton carryover. As shown in Table 4-4, carryover was concentrated relatively more in ELS than LS lint up to 1996/97 (i.e., carryover disproportional to production of each type of cotton). From the beginning of 1990/91 to the beginning of 1994/95, ELS carryover actually exceeded LS stocks. As of 1 September 1994, ELS lint stocks of 1.863 million kentars were 46 percent greater than LS stocks of 1.276 million kentars. This was reversed in 1995/96, when only ELS varieties were exported. As of 1 September 1997 (the end of the baseline cotton marketing season), LS stocks were over three times ELS stocks. A record 1.308 million kentars of Giza 75 was carried into the 1997/98 season, fully 52.5 percent of total carryover. In the fall of 1997, the holding companies reduced the price of carryover stocks of Giza 75 and other varieties paid by local spinning mills by 50 LE/kentar (below the 1996/97 into-mill price). This managed to reduce Giza 75 carryover stocks to slightly less than 1.0 million kentars by late August 1998.[17] Although Giza 75 stocks appear to have been cut by 30 percent from 1 September 1997 to 1 September 1998, ELS stocks burgeoned, nearly tripling for Giza 70 (from 316,337 to 883,450 kentars). The increase in unsold and unused stocks in 1996/97 and 1997/98 is disturbing and evidence that resource allocation in Egyptian agriculture and agribusiness is far from optimal.

Carryover stocks may decline in 1998/99, particularly in light of lower than anticipated 1998 seed cotton production, though soft domestic and international markets for textiles may make it difficult to move large volumes of carryover stocks. The domestic market for cloth and RMGs is reportedly saturated; low incomes for much of the Egyptian population constrain demand and

[17] Note that estimates of carryover differ by source. The ALCOTEXA *Cotton Gazette*, published in the October 1998 bi-annual issue and obtained from CAPMAS through 22 August 1998, reports carryover of Giza 75 of 989,230 metric kentars. Estimated carryover by the end of the 1997/98 season from a GTZ consultancy report, as of 30 June 1998, was 1,424,460 metric kentars of Giza 75.

Table 4-3: Local Consumption of Egyptian Cotton, by Variety, and of US and Sudanese Cotton

Table 4-4: Carryover of Egyptian Cotton, Beginning of Each Marketing Season

clothing purchases. International markets for lint, yarn and cloth made from fine-count Egyptian cotton continue to be weak in light of economic difficulties in Asia. September bulletins of *Cotton Outlook* stated that fine-count spinners "will enter the market as needed to cover relatively nearby shipment requirements," rather than making virtually all of their commitments in the first 2-3 months. Strong export sales in the first three months of the 1998/99 season belie this forecast, however, as commitments approached 100,000 mt as of the end of November 1998, well above the final export shipments of 69,595 mt for 1997/98.

The cotton lint carryover level is an important indicator of the performance of the Egyptian cotton/textile subsector. When carryover stocks exceed 1.0 or, at most, 1.5 million, the Egyptian agricultural economy is allocating excessive resources to cotton production. The stocks to use ratios of 46 percent in 1996/97 and of 78 percent in 1997/98 are clearly too high, evidence of resource misallocation. One reason for the mounting unused stocks in 1996/96 and 1997/98 has been reduced public sector capacity to spin cotton lint into yarn. Accumulating inventories of textile products during the first half of the 1990s led to financial difficulties for public spinners, who have had troubles procuring lint to keep their operations going during the past two years. Lower capacity utilization over time leads to idling of equipment, which, once taken out of operation, may be difficult to bring back into production. By technically and financially restructuring public spinning companies so that they can be privatized or operate at higher levels of capacity utilization, consumption of Egyptian lint cotton could expand. Note that local consumption of Egyptian lint cotton averaged 5.3 million kentars a year from 1988/89 to 1993/94, while it averaged only slightly more than four million from 1994/95 through 1997/98. While some production capacity may be lost, some of it can be brought back on stream. New investments in spinning are also beginning to take place. In addition, privatized spinning companies (such as Alexandria and Uniarab S&W) may be able to expand output following privatization.[18]

4.4 Imports of Lint Cotton

Egypt has historically imported significant quantities of American upland cotton, as shown in Table 4-5. From 1984/85 to 1995/96, Egypt imported an average of 673,658 metric kentars (or 33,673 mt) per year over the eleven year period (which included one year, 1993/94, of no imports). Egypt imported Sudanese cotton, mostly *acala* (a medium staple cotton), during only three years from 1984/85 through 1994/95. Imports of Sudanese cotton have averaged 54,667 kentars during the past three seasons. Total import volume was only a fraction of export volume during much of the 1980s, but as of 1989/90, imports have exceeded exports in five of the last nine years.

[18] MVE will try to monitor the mix, volume and value of output of the recently privatized spinning companies over the course of APRP. Obtaining detailed output and sales data from these now private firms may prove to be challenging.

Table 4-5: Imports of Cotton Lint, 1984/85 to 1997/98

Imports as a proportion of lint cotton supply (production plus imports) ranged from zero in 1993/94 and 1.1 percent in 1996/97 to 18.8 percent in 1989/90 and 19.1 percent in 1991/92.[19] U.S. upland cotton imported from CALCOT by three public sector trading companies in 1995/96 is reported to be sitting in storage in Alexandria. It has never been used by the Egyptian spinning industry, because world and Egyptian cotton prices declined dramatically following the transaction.

Benchmarks in successive APRP Tranches require the GOE to allow cotton lint imports, subject to phytosanitary regulations, and to collect, clarify and publicize these regulations. MVE will monitor lint cotton imports during APRP, as they could become more important over time, particularly once the large carryover stocks are drawn down. As long as there is significant lint cotton inventory, however, the holding companies will discourage public spinners from importing cheaper, shorter staple lint.[20]

Two other factors could influence the level of cotton lint imports. First, if the trials of *hirsutum* cotton, discussed in section 3.5, lead to commercial production of shorter staple varieties within 3-5 years, this could satisfy import requirements. Second, if the GOE continues to withdraw from intervening in cotton pricing and marketing, and if world prices for LS and ELS cotton remain soft, seed cotton prices paid to farmers will decrease, leading to a significant drop in area planted and cotton production.[21] Firmer world prices would, of course, work against any decline in area cultivated to cotton.

4.5 Exports of Lint Cotton and Yarn

4.5.1 Lint Cotton Exports

Lint cotton exports have expanded steadily since 1995/96, the year when only ELS cotton lint was exported during a one week period in Feburary 1996. Shipments increased nearly four-fold from 18,816 mt in 1995/96 to 69,596 mt in 1997/98, as shown in Table 4-6. Export commitments, from 1 August to 28 November 1998, for the 1998/99 marketing season, are already 99,155 mt.

Export Shipments by Destination. Export destinations, also shown in Table 4-6, have changed in relative importance since 1995/96. Half (50.8 percent) of the export volume of lint cotton went to East Asia (including Japan and Korea, the largest importers) in 1995/96. This proportion had declined to 20.4 percent in 1997/98. This decline is more apparent than real, however. East Asian countries mainly import ELS cotton lint. Their import volume actually increased from

[19] This assumes that all of the imported lint was consumed (spun) in the year it was imported, which is not necessarily the case.

[20] Use of carryover stocks by domestic spinners is enhanced when the holding companies agree to offer price discounts, as they did in the fall of 1997 and again in September 1998.

[21] Deputy Prime Minister and Minister of Agriculture Youssef Wally was quoted in the press in August 1998 as saying that lower producer prices for seed cotton could lead to a decline in area sown to 500,000 feddans in the next couple of years.

Table 4-6: Distribution of Egyptian Lint Cotton Exports by Region and Country

1995/96 to 1997/98. Demand for clothing, sheets, towels and other apparel made with ELS cotton is reported to be relatively inelastic (see Outlook Consulting, 1997), so we would not expect to see a large surge in ELS exports.

Western European countries as a group have been the largest customers for Egypt's lint cotton exports in 1996/97 and 1997/98, importing 52.5 and 38.8 percent respectively.[22] Italy is by far largest customer among European countries and among all importers of Egyptian lint, having imported 14,768 mt of cotton lint in 1996/97 (60.6 percent of total European imports) and 17,847 mt in 1997/98 (66.1 percent). India emerged as a major buyer of Egyptian lint in 1997/98, buying 11,019 mt. Indian spinners substituted Giza 86 for Indian ELS varieties, due to poor domestic ELS harvests. Pakistan has imported far lower quantities of Egyptian lint. Countries in Eastern Europe, the Americas and Africa are relatively minor importers of Egyptian cotton, receiving only 5.5 percent of total imports.[23]

Turkey, the third largest importer of Egyptian lint in 1996/97 and the second largest in 1997/98, increased imports from 2,046 mt in 1995/96 to 12,340 mt in 1997/98. Turkey imports a lot of Giza 86 and considerably less, though significant amounts of Giza 70. Turkey is reported to spin high quality LS/ELS Egyptian cotton lint into excellent yarn, which is woven largely in Turkey. Turkish fabric is then shipped to Western European countries, particularly Italy, for dyeing and finishing and RMG production.

Export commitment data for 1998/99 through 28 November 1998 show Italy as the most common export destination (with 27,466 mt), India second with 15,421 mt, Switzerland a close third with 13,386 mt, and Germany fourth with 8,048 mt. These four countries have accounted for 64.8 percent of export commitments as of 28 November 1998 during the 1998/99 season.

Export Shipments by Variety. Breaking down export volume by variety shows some pronounced shifts in recent years. As calculated from Table 4-7, Giza 75 exports represented over half (50.8 percent) of total lint cotton shipments in 1994/95. Giza 70 exports made up 24.4 percent of the total exports; all ELS exports represented 42.4 percent of the total. In 1995/96, only ELS varieties were exported, with Giza 70 comprising 62.0 percent of the total. In 1996/97, Giza 75 was once again the largest export variety (38.8 percent of the total), with Giza 70 remaining prominent (22.2 percent) but nearly overtaken by Giza 86 (21.5 percent). By 1997/98, Giza 86 exports had surged to 32,654 mt, representing 44.7 percent of total export volume, in

[22] Note that ALCOTEXA's statistics on exports by country do not necessarily show the final destination where the lint cotton is actually spun. Since the major international cotton trading companies are found in Western Europe, some Egyptian exports to Europe may be shipped onward to other countries.

[23] Czechoslovakia and Hungary are becoming more important buyers of Egyptian lint cotton, having imported 1,212 mt and 939 mt respectively in 1997/98. Brazil, which imported 458 mt in 1997/98 and 504 mt in 1996/97, is the next most important buyer in this group of countries.

Table 4-7: Exports of Egyptian Cotton, by Variety

large part because it was priced to sell, but also due to its excellent spinning properties.[24] Giza 75 exports languished through much of 1997/98, as most observers felt it was priced too high relative to pima and Giza 86, but exports finished the season at 11,870 mt, still only 16.2 percent of total exports and down from 27,003 mt in 1996/97.

The predominance of Giza 86 as the leading export variety continued through the first three months of the 1998/99 marketing season. As of 28 November 1998, Giza 86 export commitments represented 62.7 percent of the total. Four countries — Italy, India, Switzerland and Germany — had committed to import 78.7 percent of the Giza 86 export commitments.

4.5.2 Yarn and Fabric Exports and Imports

The Textile Consolidation Fund (TCF) compiles and tabulates statistics on exports of yarn, fabric, knits and RMGs, as shown in Table 4-8. From 1994 to 1996, cotton yarn and textile exports declined from 153,633 to 101,471 mt, although the nominal value of the exports decreased only slightly from LE 2.48 to 2.30 billion. Looking beyond this broad category, cotton yarn and woven cloth exports declined the most; yarn exports fell from 93,332 to 41,194 mt and cloth exports decreased from 28,024 to 17,205 mt. Exports of knit fabric, towels, RMGs and other categories actually rose during this period. Synthetic yarn and textile exports doubled from 1994 to 1996, albeit from a modest base of 2,757 mt (to 5,405 mt). The value of synthetic exports was only a small fraction of cotton textile exports. Blended cotton/synthetic yarn and textiles were a more important export category than synthetics; these fell from 20,704 to 10,666 mt, with the decline in blended yarn exports being the most pronounced (17,407 to 6,471 mt). The decreases in export volume in 1995 and 1996 were primarily to the high prices that local spinners paid for Egyptian cotton lint, particularly during the 1995/96 marketing season.

As shown in Table 4-9, imports of cotton yarn increased over six-fold from 3,001 in 1993/94 to 19,385 mt in 1997. Synthetic yarn imports declined slightly from 51,325 in 1993/94 to 47,236 mt in 1997. From 1995 to 1997 there were steady increases in imports of synthetic fiber and yarn (from 82,420 to 99,931 mt). The far greater imports of synthetic fiber and yarn than cotton yarn are driven in part by cyclically low polyester prices, which were $1.23/kg. (1.7 decitex and 38 mm staple) in mid-September 1998 (Cotton Outlook).

4.6 Inventory of Textile Products

Data on the inventory of textile products held by public companies are usually reported in aggregate value terms by HC or affiliated company and not disaggregated, in either volume or value terms, by product type (yarn, fabric, knits, towels, blankets, RMGs, etc). Inventory is accounted for as assets on the balance sheets of the ACs and valued at product sales prices prevailing at the time of production or at the cost of production. These two valuation methods tend to inflate the inventory's value and overstates each AC's asset base. Correctly determining the value of old, stagnant inventory is a time-consuming process that requires visits to each AC,

[24] Giza 86 comes in at the top of the LS range on fiber length and the Pressley index. It has excellent white color and smoothness, comparable to Giza 70. It is a thicker fibre than most ELS varieties (higher micronaire), which contributes to fiber strength.

Table 4-8: Exports of Egyptian Cotton Lint, Textiles, Apparel and Made-Ups by Volume and Value, 1990-1997

Table 4-9: Imported Quantities and Values of Yarn and Fabric, 1993/94 to 1997

Items	1993/94		1994/95		1995		1996		1997	
	Tons	LE 000	Tons	LE 000	Tons	LE 000	Tons	LE 000	Tons	LE 000
Cotton Lint							126,966	156,718	14,184	24,594
Cotton Yarn	3,001	27,612	5,902	74,944	8,593	115,898	14,623	191,396	19,385	237,151
Cotton Fabric					5,650	108,066	3,722	78,245	4,008	83,682
Blended Fabric					277	7,711	372	10,396	584	18,209
Synthetic Yarn	51,325	311,069	--	--	41,545	338,103	47,678	307,758	47,236	291,432
Synthetic Fiber					40,875	308,843	43,059	267,500	58,385	337,746
Artificial Fiber									3,485	27,362
Other Synthetic Yarn					2,129	36,462	5,038	60,984	6,593	67,168
Synthetic Fabric					1,624	30,009	2,882	31,841	3,193	39,436

Source: CAPMAS, *Annual Bulletin of Foreign Trade*, 1996 and 1997. APRP/RDI Report No. 18, *Feasibility of Eliminating Tariff and Non-Tariff Barriers on Imports of Cotton Yarn*, April 1998.

inspection of the inventory, and knowledge of local (and possibly international) market opportunities. APRP/RDI textile industry consultants have begun to value some of this inventory.

The most disaggregated inventory value data are shown in Tables 4-10 and 4-11 for the Textile Manufacturing and Trade Holding Company (TMT HC), comparing inventories held at two points in time — 1 April 1997 and 1 April 1998.

The value of inventory per affiliated public textile company in 1995/96 is presented in Table 5-5 (see next chapter). The total value of inventory for the 25 ACs of the three cotton and textile ACs was a staggering LE billion 2.936 on 30 June 1996, equivalent to $865 million. In 1995/96, the inventory was valued at 75 percent of total sales revenue for the year.

Revenues from textile sales into the domestic market were more than double the export revenue in 1995/96 (see Table 5-5). MVE was unable to obtain detailed sales data for yarn, fabric and other textile products into domestic markets. Perhaps these sales can be estimated as a residual (known output - exports + change in stocks), although MVE has not been able to obtain detailed information on inventory changes (in disaggregated volume and value terms) for the public sector textile companies.

Table 4-10 : Inventory of Textile Products as of 31/03/1997
Misr Spinning & Fine Textile Co. in Kafr Al-Dawar

(LE 000)

Item	Total Value (by selling price)	Total Value (by cost of production)	Suggested Selling Price (acc. to inventory condition)	Difference in Value (3-2)
Blended & Cotton Yarn	40561	32724	33487	763
Blended & Cotton Textiles	148854	131270	94493	(36777)
Knitting & Fishnet Fibers	5315	4574	5315	741
Ready-made Clothes	22111	20958	12598	(8360)
Cotton for Upholstery	18	18	18	0
Total	216859	189544	145911	(43633)

Source : Textile Manufacturing & Trade Holding Company.

Table 4-11: Total Value of the Stock of Textile Products Belonging to Affiliated Companies of the Textile Manufacturing and Trade Holding Company, 30/4/97 and 30/4/98

5. STRUCTURE OF THE COTTON SUBSECTOR

Without complete, accurate or easily comparable (across firms) data on assets and capacity, the best measures of market share (under structure) are procurement/sales and output or throughput data. The farther down the marketing chain an industry is from the farmgate, the harder it becomes to estimate capacity and market share for private sector firms, however. The estimates for private sector weavers, knitters and ready-made garment (RMG) manufacturers are rough and approximate.

The market share data presented in this chapter are aggregated for public sector trading companies, public sector ginning companies, and private sector trading companies. Detailed tables showing company by company market shares appear in Annex A.

5.1 Seed Cotton Trading

The domestic cotton trade law, Act No. 210/1994 (issued on 17 June 1994), established the conditions under which companies could buy seed cotton. The Cotton and International Trade Holding Company (CIT HC) was charged with registering cotton traders. A listing of these traders, as of April 1997, appears in Annex A of the *Tranche I Verification Report* (June 1997).[25]

At that point, there were 162 registered cotton traders, which included all of the public sector trading (6) and ginning companies (3), many of the public sector spinning companies (12), cooperatives (14), private sector ginners (2), private trading companies (67), and private individual traders (52). Hence, there were 121 registered private traders, comprising 74.7 percent of the total.

Many of these firms participated in seed cotton marketing in 1995/96, as 105 companies were registered by July 1995 (see Krenz, 1997, for details). Another 42 participants registered in the August-November 1995 period. A far smaller number had been registered by 20 September 1994 (37) and 1 December 1994 (48), which restricted private sector participation in 1994/95. Nevertheless, some 14 private traders bought an estimated 1.67 million kentars of seed cotton in 1994/95 (or 38.2 percent of the crop) and 2.34 million kentars in 1995/96 (or 58.2 percent of the crop). By the beginning of the 1997/98 season, however, 21 companies had dropped out as registered traders, failing to renew their registrations, due to dissatisfaction with the lack of opportunity to participate in seed cotton buying in 1996/97.

According to APCP Monitoring and Verification reports and Krenz (1997), cooperatives handled 85 percent of the seed cotton crop in 1994/95, yet only 17 percent of the crop in 1995/96. Coop deliveries to private traders and public trading companies were roughly equal in 1994/95 yet far greater to private traders in 1995/96. In 1996/97, most seed cotton was delivered to PBDAC-run sales rings. PBDAC continued to run sales rings in 1997/98 (and 1998/99), where one buyer accepted delivery of all the cotton brought to his exclusively operated ring. Farmers reported that one-third of their sales (transactions, not total sales volume) were to private traders in 1994/95. In 1995/96, nearly nine of ten cotton producers had been visited by private traders during the

[25] MVE has a more current listing in its files.

marketing season. In marked contrast to 1995/96, 89 percent of the seed cotton was sold by producers at PBDAC sales rings, which received the cotton on behalf of public sector trading and ginning companies (Krenz, 1997). Eight percent of the cotton sales were reportedly to private cotton buyers in 1996/97.[26]

Seed cotton procurement was dominated by the six public sector cotton trading companies in 1996/97 (the baseline year) and in 1997/98, although there was some participation by the larger private sector trading (export) companies in 1997/98, as shown in Table 5-1. Private sector purchases of seed cotton went from virtually zero in 1996/97 to 6.5 percent in 1997/98.[27] The public sector ginning and trading companies also participated in seed cotton buying in 1996/97 and 1997/98, albeit as minor buyers relative to the public trading companies (purchasing 14.9 and 9.2 percent of the crop respectively).

Table 5-1: Shares in Seed Cotton Procurement, 1995/96 to 1997/98
('000 seed cotton kentars and percentages)

Type of Buyer	1995/96 Volume	Share	1996/97 Volume	Share	1997/98 Volume	Share
Public Trading Companies	1366.7	34.0	4898.1	85.1	4878.2	83.5
Public Ginning & Trading Cos.	273.3	6.8	859.6	14.9	538.1	9.2
Private Trading Companies	2339.5	58.2	0.2	>0	378.3	6.5
Other	40.2	1.0	?	?	47.2	0.9
TOTAL	4100.3	100.0	5759.9	100.0	5841.7	100.0

Sources: Cotton and International Trade Holding Company, individual affiliated companies.
Notes: Seed cotton purchases of the Nile Cotton Ginning Co. and the Arab Cotton Ginning and Trading Co. are considered public for 1996/97, as their privatizations took place after they had procured their seed cotton.

The public sector predominance in seed cotton buying during the last two years contrasts markedly with the experience of 1995/96, when private cotton traders bought a much higher

[26] Note that Krenz's estimate of 8.0 percent of the seed cotton crop going to private buyers (traders and other farmers) does not match with the estimate of only 0.2 percent of the crop being bought by private traders in 1996/97. Most of this privately bought seed cotton, purchased outside PBDAC sales rings, probably was bought on commission for public sector trading companies. Krenz (1997) reports that private buyers paid LE 6-11 less per seed cotton kentar than the floor price for most varieties (Gizas 80, 75, 85 and 86), although they paid 30 LE more for Giza 70 and 25 LE more for Giza 77 than the floor prices (which is difficult to explain).

[27] Modern Nile reported buying less than 500 kentars of seed cotton in 1996/97. Nassco bought 175 kentars of Giza 70 and Al Watany bought 1,500 kentars of Giza 70 directly from farmers in 1996/97. Other private firms may have bought negligible quantities as well.

percentage of the cotton harvest, estimated at 58.2 percent (see Krenz, 1997). According to many sources, the enthusiastic and broad private participation that season was disorderly and led to delivery of seed cotton to gins characterized by varietal mixing and a high degree of contamination. Hence, the relatively high degree of private sector participation cannot be considered as an unqualified success that season. Seed cotton quality problems could be considered as liberalization growing pains.

5.2 Cotton Ginning

Whereas private sector participation in seed cotton procurement has been limited during the past two seasons, the private share in ginning has steadily expanded. At the beginning of the 1996/97 season, there were no privately owned gins other than Egypt Company's sole rotary knife gin. By the end of the 1996/97 season, two of five original public sector ginning companies, Arab and Nile Cotton Ginning Companies, had been privatized. They are operating successfully as privately owned and managed gins.[28]

By the end of 1996/97, these two companies operated 27 of the 72 gins (or 37.5%) owned by the five original public sector companies, or 1,604 ginning stands of 4,354 (36.8%). By adding the Egypt Company's gin to the total of privatized gins, it is estimated that about 38 percent of total ginning capacity in Egypt was privately owned in 1996/97. Including the one gin leased by Nefertiti Company as a privately run gin increases the private sector total to 29 gins or 40 percent of ginning capacity. The private sector share should rise under APRP, since MPE plans to privatize one or two of the three remaining public sector ginning companies in 1998/99. By the end of 1999/2000, all the ginning capacity in Egypt may be in the private sector.

Ginning by privately owned mills increased from zero in 1994/95 to 33.5 percent of the seed cotton crop in 1997/98, an impressive achievement (see Table 5-2). Although some companies, including Al Ahly and Mabrouk, expressed an interest a couple of years ago in buying equipment and setting up their own gins, these plans have been tabled for the moment. Nefertiti opened a private gin and oilseed processing complex in El Minya in early October 1998, where the main activity appears to be production of cottonseed oil. The privatized ginning companies are in the process of closing several of the smallest and least productive gins in congested urban areas, so national capacity will decline slightly during APRP. This will not be a bad development, as ginning capacity outstrips actual capacity needed to gin the much smaller seed cotton harvests of the 1990s, which averaged 6.288 million lint cotton kentars from 1990/91 to 1996/97, relative to the mid-1960s through the mid-1980s, when the harvest was consistently over 8.0 million lint cotton kentars (and exceeded 10.0 million kentars in six of those years).

Private leasing of public sector gins declined precipitously from 1995/96 to 1997/98. The main lessee, Al Ahly Cotton Company, negotiated leases on 16 gins in 1994 and hired ginning

[28] As of late 1997, 30 percent of the shares of Arab Ginning Co. were owned by the CIT HC. Nile Ginning was entirely owned by private shareholders. The Egypt Company gin was sold to Arab Ginning in 1998.

services on a custom basis from other gins (see Krenz, 1997). These leases were discontinued by the end of the 1996/97 season. Only one company, Nefertiti for Trading and Cotton Exports, was leasing a gin (at El Minia) during the 1997/98 season. The discontinuance of leases was due to the fact that the leasing firms were ginning cotton for public sector companies at quasi-fixed rates that appear to be below real costs, and hence not able to participate profitably in seed cotton procurement, ginning of this cotton, and export of lint cotton directly from the gins. One of the leasing firms, Modern Nile, acquired its own ginning capacity by buying shares in the Arab Ginning Company (controlling 51 percent as of December 1997). The decline in leases is unfortunate, but increased private ownership is preferable to leases of public firms to private operators as a privatization measure, because leases tend to be shorter run solutions (3-5 years) and might not be renewed. Private sector ownership will also lead to closures of inefficient gins, which is needed to bring national capacity more in line with a smaller seed cotton crop.

Table 5-2: Shares in Ginning of Seed Cotton, 1995/96 to 1997/98 ('000 seed cotton kentars and percentages)

Type of Buyer	1995/96 Volume	Share	1996/97 Volume	Share	1997/98 Volume	Share
Public Ginning Companies	3026.3	73.8	4324.4	75.2	3779.5	64.7
Privately Leased Gins	1004.0	24.5	636.2	11.1	93	1.6
Privately Owned Gins	19.4	0.5	764.2	13.2	1957.8	33.5
Other	53.2	1.3	22.3	0.4	11.4	0.2
TOTAL	4103.0	100	5747.1	100	5841.7	100

Sources: Cotton and International Trade Holding Company, individual companies.

Privatization of the three remaining public sector gins will not be easy, as long as MPE and the holding companies insist on selling public companies in their entirety with high valuations based largely on high land values. The massive investment required is a barrier to entry into ginning.[29] There are few potential anchor investors or investor groups that can muster the $30-40 million required to make a serious bid. Breaking large ginning companies into smaller blocks of gins might make privatization easier and increase the number of bids.

[29] Arab Ginning Company was valued at LE 60 million in 1996. Most observers felt that this valuation was too low, which led the CIT HC to value Nile Ginning at LE 350 million, which knowledgeable observers felt was too high. Preliminary valuations are LE 121.8-126 million for El Wady Ginning.

5.3 Lint Cotton Export

By the beginning of the 1998/99 season, there were 21 registered cotton exporters as members of ALCOTEXA, with 12 privately owned firms. This is evidence of significant entry, contrasting with the beginning of the 1995/96 season, when 13 companies were registered with ALCOTEXA, including only four private firms.[30] For the baseline year of 1996/97, 18 companies, of which seven were private, were registered exporters.

Numbers of registered firms do not provide any information on actual participation, however. Five private sector companies actually shipped exports in 1996/97 and 1997/98. Yet the market share of these firms reached 25.1 percent in 1997/98, up from nothing in 1994/95 and 8.8 percent in 1996/97 (see Table 5-3). The private sector share promises to be even higher in 1998/99 under a more liberal seed cotton procurement and export regime. As of 28 November 1998, 11 private exporters had made export commitments representing 26.8 percent of total commitments.

Table 5-3: Shares in Lint Cotton Export, 1995/96 to 1997/98
('000 lint cotton kentars and percentages)

Type of Buyer	1995/96 Volume	Share	1996/97 Volume	Share	1997/98 Volume	Share
Public Trading Companies	368.2	96.7	773.8	91.2	909.8	74.9
Public Ginning & Trading Cos.	0	0	0	0	0	0
Private Trading Companies	12.7	3.3	74.7	8.8	305.5	25.1
TOTAL	4141.7	100	5757.7	100	5841.7	100

Sources: ALCOTEXA and Cotton and International Trade Holding Company, individual companies.

5.4 Cotton Spinning

Spinning of cotton is dominated heavily by public sector companies in Egypt, although recent privatizations have increased the private sector's share. At the beginning of 1996/97, there were 19 spinning companies among the total of 25 public textile companies (see Table 5-4). By 1997/98, three formerly public sector companies — Uniarab, KABO, Alexandria Spinning and Weaving — operated under majority private ownership (though management has not changed). One other company, ESCO, is being leased for spinning. Several other public companies are slated for privatization in 1998/99. There is also reported to be new

[30] Note that only ALCOTEXA members are allowed to export. The annual registration fee is LE 5,000 and the minimum capital requirement is LE 500,000. Managers of export companies must have at least five years of experience (and hence must have been public sector trading company managers). Exporters must earmark one LE per exported bale for ALCOTEXA.

Table 5-4: Functional Matrix of Affiliated Companies of the Three Textile Holding Companies, 1996/97

investment in spinning mills in Tenth of Ramadan, and Giza Spinning and Weaving is a private spinner of long-standing (though reported to be spinning primarily synthetic fibers in mid-1998).

According to the *Cotton Subsector Map*, yarn output of the public sector spinners was 121,050 mt in 1996/97, while the private sector output was 33,778 mt — totaling 154,828 mt. [Note: the figure of 33,778 seems too high]. Hence, the private share was 21.8 percent, much of which can be attributed to Miratex, a joint stock/venture company. Approximately 50,000 mt of yarn were exported in 1996/97.

Financial statistics reported by the cotton and textile industry holding companies, shown in Table 5-5, reveal that total sales in 1996/97 (1 July 1996 - 30 June 1997) for the public sector firms were LE 3918.7 million, with inventory valued at LE 2936.2 million (see *Cotton Subsector Map*, 1997). Assuming that 60 percent of the total value of sales is either yarn or woven products and RMGs which used yarn spun by the public companies themselves, yarn sales are valued at LE 2351.2 million. Private sector sales for the same period were limited to those of Giza Spinning and Weaving, the only truly private sector firm. In 1996/97, Giza S&W reported that it was operating at about 60 percent of its capacity of 2,000 mt of yarn output per year (having an average count of NE 28/1), spinning Giza 80. At the TCF prices as of 16 November 1996, where the minimum export price was LE 11,600/mt for NE 30/1 count yarn, Giza's output is valued at LE 13.92 million. Needless to say, this is a very small fraction, 0.6 percent, of total estimated yarn sales of the public spinning companies for 1996/97.

If one adds the two joint venture companies[31] to the analysis and considers them as private sector firms, the private sector share rises. Miratex, a joint venture between some Egyptian textile companies, the National Investment Bank, Adro of Iran, and the GOE, produces only yarn. APRP has not been able to obtain any information about Miratex's operations or sales. Misr El-Amria Spinning and Weaving is another joint stock company whose ownership is virtually all public sector (Banque Misr, GOE) and about whose operations information is not publicly available.

For the year 1997/98 (GOE fiscal year of July 1, 1997 to June 30, 1998), the private sector share in spinning output rose, as two productive and recently privatized spinners were operating as privately managed firms. In 1996/97, Alexandria Spinning and Weaving produced approximately 12,000 mt of cotton and blended yarn, of which about 1,500 is blended. Uniarab produced about 20,000 mt of cotton yarn, some of which may be blended with polyester. Privatization of Shebin El-Kom, STIA and perhaps one or two other spinning companies under APRP will also increase the private sector share.

[31] These joint stock companies are also referred to as mixed companies that operate under Law 230 of 1989. The public sector textile companies, referred to as affiliated companies, operate under Law 203 of 1991 and are owned in full or in large part (majority ownership) by the three holding companies.

Table 5-5: Selected Financial Statistics for the Three Textile Holding Companies and Affiliates

Note that the above estimates should not be taken too literally. Estimating the private sector market share is fraught with data collection and comparability problems for the spinning, weaving, and RMG industries. In addition, the holding companies and ACs generally do not present the production and sales data in disaggregated form. Sales of stocks out of inventory (earlier production years) also complicate the picture. Estimating industry capacity is also tricky, as spindles and looms are of different vintage (year and make), speed, and productivity.

5.5 Cotton Weaving and Knitting

In 1996/97, nineteen of the 25 public sector textile companies had weaving operations, though at least seven of these companies' weaving operations were barely operational. Six firms had knitting operations, of which two did not do any weaving. The public sector used to predominate in weaving and knitting in Egypt, but this changed during the 1990s. According to the *Cotton Subsector Map*, public companies produced an estimated 65,729 mt of fabric and knitwear (54.5 percent), while the private sector produced 54,782 mt, for a total of 120,511 mt (45.5 percent) in 1996/97. Using a second source (Hanaa Kheir El-Din and Hoda El-Sayed, 1996), which compiled and presented Ministry of Industry statistics, the private sector share is estimated to have been 55 percent of the total value of cotton fabric woven in Egypt in 1994/95.

The *Cotton Subsector Map* estimates that there were some 900 private weavers and knitters in Egypt in 1996/97. Many of these firms are small-scale operations with few looms and employees. There are reported to be as many as 400 weaving units in the Cairo industrial zone of Shoubra El Kheima alone. Many others are found in new industrial cities, particularly in the Tenth of Ramadan, or in duty free zones such as Port Said and Suez. Others have sprung up around large public spinning companies, notably Misr Mehalla, near which a dozen private weavers are operating.

The Egyptian Textile Manufacturers' Federation (ETMF) reports that there are some 2,500 member firms across the entire industry, but APRP has been unable to obtain a current detailed listing of members, broken out by category.[32] According to a dated ETMF publication, there were 49 weavers and 131 knitters in Egypt at the end of 1994. These figures grossly under-report the actual number of companies as of 1996/97, the baseline year.

5.6 Production of Ready Made Garments (RMG)

The RMG industry is predominately private sector. According to the *Cotton Subsector Map*, private sector RMG output in 1996/97 was 56,225 mt (79.1 percent of the total), nearly four times the public sector output of 14,856 mt (or 20.9 percent of total output). ETMF listed 239 manufacturers of RMGs as of the end of 1994, though the *Cotton Subsector Map* estimates that there were about 1,000 private RMG producers that use cotton (in pure form or

[32] MVE obtained a copy of a 1995 ETMF directory that listed 49 spinners and weavers, 28 firms in the wool, natural and synthetic manufacturing sector, 25 dyers and finishers, 131 tricot manufacturers (knitters), 239 producers of RMGs, and 18 miscellaneous textile companies — for a total of 472 firms.

blends) in 1996/97. According to APRP/RDI, there may be about 2,000 RMG producers when synthetics are included.

By 1998, one RMG unit of a public sector company (Dakhalia Spinning and Weaving) had been leased to an Egyptian/Taiwanese joint venture company. Further privatization of RMG production is problematic; domestic and foreign investors prefer to set up their own new plants in industrial cities, such as Tenth of Ramadan, or in duty free zones where there are various tax incentives and the start-up company is free to hire and train its own labor force, rather than deal with redundant (and poorly motivated) public sector workers or accumulated company debts. Private sector investment and job creation in RMG manufacture is likely to continue strongly under APRP.

5.7 Concluding Observations

The private sector share in many segments of the cotton/textile industry has increased since 1994/95, the year the GOE took important strides to begin liberalizing the subsector. There have been positive developments in cotton trading, ginning, lint export, weaving and RMG manufacture. Spinning has been a more difficult industry to privatize and in which to encourage private sector investment, but progress began to take place by the end of 1996/97 and continued into 1997/98.

While the private sector predominates weaving, knitting and RMG production, the public sector hand is still heavy in seed cotton procurement, ginning, lint export and spinning. Privatization and liberalization are making inroads into these industries, but the GOE still controls a majority of the assets, employs most of the workers in those industries, sets the overall price levels (procurement and sales prices), and determines the rules by which both public and private firms must compete. Clearly, there is room for more private sector entry, participation and investment in these industries. 1998/99 promises to be a year of continued progress, as the procurement prices for seed cotton have been linked to ALCOTEXA export prices, which were set at lower opening levels than the 1997/98 season in order to encourage more private sector participation and in light of lower pima prices.

6. CONDUCT OF THE COTTON SUBSECTOR

6.1 Introduction

Liberalization of the cotton subsector began in 1986/87 and has had a long gestation period. For decades, cotton has been considered as the "government's crop," although this has begun to change during the 1990s, particularly since the three landmark cotton marketing and trade laws of 1994 were enacted. Nevertheless, the GOE continues to dominate key industries in the subsector (trading, ginning, spinning), to make decisions concerning seed cotton procurement and pricing, and influence decisions regarding export prices of lint cotton, yarn and fabric, ginning charges, and supplying of lint cotton to domestic mills.

Given the often slow pace of cotton subsector reform, and the fact that the conduct of firms is strongly influenced by GOE decisions and public company actions, MVE must look for evidence of modest changes in firm behavior and relations that cumulatively and over time have a significant impact on the structure and performance of the subsector. After a somewhat disorderly beginning during 1994/95 and 1995/96, when private sector participation in the cotton economy increased dramatically, 1996/97 and 1997/98 were years of slower and more carefully managed reform. After a rather disappointing performance in 1996/97, private sector shares in seed cotton buying, ginning and lint cotton exports rose impressively in 1997/98. 1998/99 promises further private sector progress.

At a certain point, policy and regulatory changes leading to liberalization are irreversible and the grip, scope, and impact of public sector companies on the subsector begin to decline dramatically. Additional privatizations, such as those contemplated in the ginning and spinning industries, will contribute to this transformation. The point of no return was reached in the rice subsector by the mid-1990s, when public sector market share in rice milling and exports dropped precipitously and private investment in commercial rice milling literally exploded. Note that a key factor driving the transformation of the rice subsector was complete liberalization of pricing decisions; the forces of supply and demand set prices in paddy procurement, paddy sales to domestic mills, and sales of milled rice to the domestic and export markets. Private sector milling charges are also driven by supply and demand. Import protection that is effectively 30 percent continues to be a pricing distortion that pushes up the overall level of domestic prices, which affects Egypt's competitiveness as a rice exporter. Despite this distortion, which allows international market signals to be imperfectly transmitted to the domestic rice market, participants in the marketing system are free to negotiate prices at various levels of the marketing system. This point has not been reached in the cotton subsector, but with continued APRP-recommended reforms, significant progress in liberalization of pricing decisions could come in 1998/99 and beyond.

6.2 Conduct in Seed Cotton Procurement

During the 1995/96 cotton marketing season, there was significant private sector participation in seed cotton buying. Smaller registered cotton traders, each operating generally in only one governorate, assembled a large part of the seed cotton crop for larger, national cotton traders in both the public and private sectors. These small-scale traders were allowed to register as

licensed domestic cotton buyers with the Cotton and International Trade Holding Company (CIT HC). By the end of the 1995, there were 147 registered cotton traders, of which 108 were private sector companies and individual traders. The overall private sector share was estimated as 58.2 percent in 1995/96, a dramatic change from 1994/95 and earlier years.

Interviews with large and small registered traders and ginners revealed that the cotton marketing season in 1995/96 was highly competitive, albeit somewhat disorderly. The perception of disorder stems in part from the steady increase in seed cotton prices during the early part of the marketing season in 1995/96, reflecting a certain amount of private sector exuberance (at finally being able to participate in seed cotton buying) as well as speculative pressure, which was partially relieved during the two-week "buying freeze" of October 1995. High seed cotton prices in the fall of 1995 were driven in large part by high world prices for lint cotton. Many observers pointed to a decline in the quality of seed cotton delivered to the gins relative to 1994/95. There were numerous reports of producers (and perhaps small-scale buyers) adding dirt, sand and other foreign matter to sacks of seed cotton, as well as some claims of varietal mixing.

The competitive excesses of 1995/96 were completely reversed and offset in 1996/97, when private sector participation declined to virtually zero. MVE has no evidence that small registered cotton traders bought any seed cotton in 1996/97 or 1997/98; based on interviews with small numbers of traders, particularly in Fayoum and Beni-Suef, it appears that they did not. The absence of private trade in seed cotton was due to the decline in world lint cotton prices at the same time that a high support price to farmers was maintained, leading to a negative export marketing margin. Any incentive for private buyers to procure seed cotton had been snuffed out of the market.

During 1997/98, the seed cotton floor price for the benchmark variety Giza 75 was nominally the same as in 1996/97, but effectively set lower by specifying that farmers achieve a higher required grade and ginning out-turn ratio to receive the 500 LE/seed cotton kentar price. The prices for Egyptian LS and ELS cotton varieties remained above world price levels for competing growths. Three firms elected to buy all the cotton delivered to selected seed cotton rings, despite the requirements to deposit funds with PBDAC as a guarantee during the buying season and to buy the seed cotton at the high support prices, awaiting GOE deficiency payments by the end of the season. Two of these firms, Modern Nile and Arab Ginning, had interlocking directorates and supplied seed cotton primarily to the gins of the latter, a privatized ginning company. A third and much smaller firm, Arab Investment and Trading Company, bought MLS cotton in Upper Egypt (Giza 80/83) to supply domestic mills. All three seed cotton buyers have suffered from long delays in receiving the GOE deficiency payments.

During 1996/97 and 1997/98, seed cotton procurement was not open and competitive. Public sector companies were assigned sales rings in 1996/97, and they procured nearly all of the crop, not competing among themselves but accepting delivery of all the seed cotton to their rings, however poor the quality. The shares of each of the six public trading companies fell into the narrow range of 13.6-14.8 percent each, evidence of administrative allocation of rings and seed cotton market shares.

In 1997/98, there was some negotiation among buyers over sales rings before the season opened, but the principle of one buyer per ring, procuring all the seed cotton delivered, was maintained. There was virtually no procurement of seed cotton directly from farmers outside of the sales rings.[33] Buyers were obligated to pay the GOE-declared support prices, and sellers were required to sell at sales rings in order to receive the full support price (which included the deficiency payment amount). Small registered cotton traders did not participate in buying seed cotton in either 1996/97 or 1997/98. Whether they will participate actively and competitively in seed cotton buying in 1998/99 remains to be seen; large trading companies have expressed an interest in using small registered companies in order to reduce their field presence and procurement transaction costs. A large number of buyers, large and small, would offer farmers the best possible prices within a competitive range. Unfortunately, due to exceptionally high world prices in 1995 and too high floor prices in 1996 and 1997, this competitive range will be well below what prices farmers received in 1995-1997. During the 1998/99 season of lower world prices for LS and ELS cotton, farmers will probably perceive this as a cutback in GOE support for cotton production.

6.3 Conduct in Ginning

The leasing of 18 gins by three private firms from public sector companies on generous terms (five-year leases) in 1994/95 and 1995/96 augured well for liberalization of gins. These companies competed vigorously for seed cotton to gin, although ginning charges were set by the CIT HC. The fact that three companies announced plans to build new gins also bode well. The cancellation of all but one lease by the end of the 1996/97 season, and the fact that only one company, the Egypt Company, built and operated a gin for two seasons (but not in 1997/98) were unfortunate reversals.

Ginning charges were set by the CIT HC at LE 14.5/kentar from 1994/95 through 1996/97. Ginners reported that their actual financial costs varied from LE 16.5-25/kentar in 1994/95 to LE 17-29/kentar in 1996/97, with an average (in 1996/97) of LE 21/kentar (see Krenz, 1997). Hence, the allowed ginning charges did not cover operating costs, which is clearly undesirable and unsustainable in a competitive, liberalized cotton marketing system.

By 1996/97, public and private ginners competed for business by offering to share certain costs, such as transportation to/from gins, the costs of baling materials, and storage of lint cotton (at the gins). They also reported that they competed on the basis of quality and service, offering better services and priority in ginning to larger clients.[34] This indirect competition continued into 1997/98, when ginners were allowed to charge a higher rate of LE 17/kentar.

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[33] MVE conducted a survey of producers selling seed cotton at PBDAC-run sales rings in 1997/98. None of the 296 respondents reported having sold any cotton outside of sales rings, although the MVE survey team obtained some evidence that some producers did. Note that the sample of producers interviewed had a bias in that all of the respondents were selected from farmers who sold seed cotton at sales rings.

[34] As part of the cotton grading and quality study in September-October 1998, interviews with traders and gin site visits revealed that gins do not appear to be offering special services or better quality ginning to particular clients, as there are no price incentives to do so.

According to one private ginner, this rate was determined by the ginners themselves, although it did not cover the real financial cost of ginning, which was at least LE 21/kentar. Public ginners suggested that CIT HC approval was necessary to raise the ginning charge 17 percent in 1997/98. One ginner noted that excess national ginning capacity depresses what ginning companies can charge for their services. Based on recent interviews, the ginning rate appears to be set at LE 18.5/lint kentar in 1998/99.

The potential for collusion in an industry of only five large firms is real. The five ginning companies appear to be trying to behave in a collusive manner, sitting together to set prices, although the low ginning charge benefits cotton trading companies. Under a marketing system freed of high floor prices, fixed lint cotton prices to domestic spinning mills, and minimum lint cotton export prices, this situation could well change, but it will take time. Closing down of excess ginning capacity will have to take place in order to lessen the pressure to charge prices below operating costs.

Removing fixed and strongly suggested prices at all levels of the cotton marketing system could enhance the competitiveness of the Egyptian cotton industry in world markets, allowing lint cotton export prices to decline significantly. This international competitive pressure could keep ginning charges relatively low; they might not rise very quickly to the reported average operating cost of LE 21/kentar. At the same time, ginning companies cannot operate indefinitely at a loss, particularly as the industry becomes privatized. In light of the excess capacity and continued competitive pressure, one or more of the private ginning companies might eventually fail (or continue to operate with greatly reduced capacity).

It is quite likely that the ginning companies do not fully account for all sources of revenue in thinking about ginning costs. Gins produce seed which can be sold at a fixed price of LE 80/ardeb to oilseed processing companies. This price may have been acceptable to the latter in late 1997, but it was considered too high by May 1998, when the oilseed processors were importing large stocks of soybeans from the U.S. and other suppliers. According to one ginner, the ginning companies held stocks of three million ardeb of cottonseed in their stores in May 1998. A source of revenue for integrated ginning and oilseed processing opertions, such as the mill owned by Nefertiti in El Minya, is sales of cottonseed cake, which can be used as a protein- and energy-rich feed ingredient. Finally, if a ginning company, such as Arab Ginning, is part of an integrated operation, including a seed cotton purchasing and lint cotton exporting operation, such as Modern Nile, the ginning costs can be spread over a larger set of marketing functions. Not fully understanding the cost and return sides of the ginning business argues for an in-depth financial and economic analysis of one or more ginning companies. This could be the subject of an MVE special study.

6.4 Conduct in Lint Cotton Exporting

Lint cotton export, still dominated by public sector companies, has become more competitive as liberalization gradually has taken hold. Private firms exported 25.1 percent of the lint from Egypt in 1997/98 and several firms, particularly Modern Nile, Nassco and Nefertiti, competed vigorously with public sector firms for market share. Modern Nile, which was able to obtain lint cotton from its ginning affiliate, Arab Ginning Company, actually exported more cotton than three of the public sector companies in 1997/98.

The other private sector exporters depended on the CIT HC and its Committee for Facilitating Cotton Trade for their supplies of lint, as they decided not to participate in seed cotton buying. This created a definite tension with the public sector companies, who accused the private exporters of having stolen their customers by undercutting the ALCOTEXA export prices by 1-3 cents per lb., something which they could not do, given the close scrutiny of their accounts by the CIT HC and Central Audit Agency. The ALCOTEXA export prices are construed by the ALCOTEXA Management Committee as minimum prices, but both private and public companies sought and used ways to chisel and export at prices slightly below the ALCOTEXA prices in 1997/98.[35] Nevertheless, ALCOTEXA prices in 1997/98 set the general level of prices for different varieties of Egyptian lint cotton; some private firms offered modest discounts, but these were marginal.[36]

An important distinction to understand is that Egyptian lint cotton is sold by type, not by grade, although types can only include one variety (no mixing allowed). The fact that exporters sell on the basis of type enables them to manipulate their costs, margins and returns somewhat. Exporters mix different grades of lint cotton of one variety in preparing a type, striving for as homogeneous an export lot as possible. A common practice is to mix higher grades of a variety with largely lower grade lint, while stating in the export contract that all the lint cotton has been exported at the lowest permissible selling grade. This is one way to chisel, at the margin, at ALCOTEXA export prices that are deemed too high to be competitive.

With some notable exceptions, most of the senior managers of private trading companies have spent most of their career in public sector cotton trading companies. Hence, they brought with them to the private sector their contacts from years of exporting lint cotton to European, Asian and other buyers as public sector traders. The main users of fine lint cotton (ELS and LS types) are well-known; the number of fine count spinners in the world is limited and has declined during the past decade. There is also a small and finite number of international fine cotton trading companies and brokers. Competition among Egyptian traders to sell to this limited number of customers is brisk. It would intensify if controls on seed and lint cotton prices at different levels of the marketing system (including exports) were removed. In that

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[35] The export pricing issue is a complex one. The MTS maintains that ALCOTEXA prices are indicative prices, though the Management Committee insists that these prices be enforced as minimum prices. The enforcement capacity is limited, however, as private exporters are only required to submit (for ALCOTEXA approval) contracts that show they intend to export lint cotton at the minimum export price. For the majority of private companies which procured lint cotton from the public sector companies at fixed prices that were 12 cents less than the export prices (to allow for fobbing costs), their gross margin was not large enough to permit those private exporters to offer discounts of more than 2-3 cents/lb. without losing money. Some public sector firms pressed lint cotton for export at the gins in 1997/98, avoiding farfarra and saving several cents per lb. on fobbing costs. Public firms were required to document thoroughly their costs to demonstrate to the CIT HC how much they economized in order to avoid losses borne by the GOE.

[36] Egypt cannot be viewed as a passive price-taker in world markets for LS and ELS lint cotton. As a major producer and exporter, the levels at which ALCOTEXA sets export prices influences what competitors do (especially U.S. producers of pima) and the level of world market prices.

case, firms' average costs would determine the price levels at which they could export and still stay in business.

Since there are likely to be at least some economies of scale (size) and scope (reflecting the degree of integration of a firm or group of firms within the subsector), larger and better backward integrated exporters should, over time, enjoy a competitive advantage. Three private sector companies (Modern Nile, Nassco and Nefertiti) shipped 93.5 percent of the total private sector lint cotton exports in 1997/98. Modern Nile has integrated backward into seed cotton buying and ginning. Nassco is a subsidiary of an international commodity trading company, Volkart, as well as being one company in a prominent group of Egyptian firms with significant assets and access to working capital (the Setcore group). Nefertiti, owned by one of the wealthiest businessmen in Egypt, has leased a gin at Minia for several seasons and considered other investments in the cotton and oilseed subsectors. These three firms are in the business for the long haul and will survive the policy and regulatory vicissitudes and uncertainties of the transition period to a liberalized cotton economy. In contrast, the other private sector exporters risk becoming marginal players. Talaat Harb is reported to be facing crushing debts. Al Watany's participation in the cotton business has been questioned by the Board of Directors of its parent company, Al Watany Bank. Al Ahly exported cotton only in 1995/96 and appears to be out of the business entirely, having terminated all of its leases with public ginning companies. Other entrants appear to be small and inconsequential.

If the public sector trading companies were to retrench dramatically, very significant market share would be up for grabs, though the largest and best financed private companies would be in a strong position to capture most of it. If one accepts this scenario, one views the future of the public sector trading companies in a different light. Given their debts, excess labor, and limited assets, these companies have not been attractive privatization candidates. One of the public trading companies has proposed that management and labor take the company private, though there has been no forward movement on this proposal.

6.5 Cotton Spinning and Weaving

Since most of the cotton spinning capacity in Egypt lies in the public sector,[37] the GOE and the HCs of MPE continue to exercise a lot of control over this industry. Up until 1996/97, the spinning industry did not operate in a competitive manner. Holding Company committees allocated lint cotton to public spinners, instructing which public sector cotton trading companies should supply which spinners with cotton of particular varieties at fixed prices. Spinners sold their output in either the domestic or foreign markets subject to minimum yarn prices. Burgeoning inventories of textile products during the 1990s, after the collapse of the Soviet and Eastern European markets, were accounted for as assets (at inflated prices). Without any immediate financial/accounting pressure to move this inventory, public spinners were not compelled to market aggressively and competitively.

[37] If cotton pricing were freed and the subsector fully liberalized, there are many private spinners who currently spin synthetics who could adapt some of their capacity to spinning cotton. Hence, there may be a quite significant latent private sector capacity in spinning in Egypt.

By the mid-1990s, the mounting inventories, crushing debts, and redundant labor (which averaged 38 percent in the textile industry as of 1994) had forced some public spinners into a very precarious financial position. Public trading companies, with their own mounting debts and accounts receivable (unpaid "sales" to public spinners), became increasingly wary of providing lint cotton to spinners on credit. They began to insist on stricter payment terms, demanding cash upfront or Holding Company guarantees of repayment. This had the effect of restricting lint supplies to the most financially distressed firms, which further stressed their operations. By 1996/97, the weakest public spinning companies were operating well below capacity, purchasing lint cotton only when they had firm orders or cash in hand. By operating at low levels of capacity, certain production lines were idle. Idle equipment becomes difficult to revive over time, given the dirty and dusty factory conditions of many public companies. Pilfering of parts is also reported to be a problem. Idle facilities also translate into greater labor redundancy.[38]

The public sector spinners do not compete vigorously among themselves. In the first half of the 1990s, their yarn output was allocated administratively by committees of holding company officials and public spinners to domestic and export markets. By 1996/97 this system had broken down somewhat, as individual ACs were more free to negotiate directly with domestic and foreign buyers. Minimum prices were set, however, for both domestic and foreign markets by the Textile Consolidation Fund, a quasi-governmental body whose key committees are staffed largely by managers of public sector textile companies and holding company officials. These key committees set minimum prices for yarn and fabric twice a year, based on estimates of production costs and to avoid inducing dumping penalties by importers, particularly EU countries. Yarn export prices are set at NE 36 count level for all lower counts, which makes Egypt's lower count yarn exports uncompetitive in world markets with cheaper Indian and Pakistani yarn spun from shorter staple cotton. The TCF also allocates export quotas to individual firms under the U.S. and EU quota systems, so once again industry committees (dominated by managers of public spinning companies and holding company officials) determine which firms gain access to export markets for yarn and fabric. According to TCF officials, future quota shares are based on past shares with some modest allowance for expansion. Such a system is not designed to promote new entry into export markets, where the most promising opportunities lie.

Most of the public sector spinners (16 of the original 19) have weaving operations, so they supply a large part of their yarn output to their own weaving operations (intra-firm transfers). The better public sector spinners export a significant proportion of their yarn; an estimated 15,800 of 65,729 mt (24.0%) of yarn spun by all the public sector companies was exported directly in 1996/97 (see *Cotton Subsector Map*).[39] A further 13,700 mt of yarn were exported

[38] One textile industry observer noted that the proportion of labor redundancy has increased over time, as production lines in public textile factories have been idled. He attributes the idling of equipment to an inability of many public sector managers to plan production based on a sound marketing plan and specific market opportunities (i.e., orders).

[39] According to the CAPMAS *Annual Bulletin of Foreign Trade*, exports of cotton yarn reached 64,600 mt in CY 1997. 59,712 mt contained at least 85% cotton, while 4,888 contained less than 85% cotton. This represented a significant increase over CY 1996, when 44,246 mt were

by private spinners. Many private sector weavers and knitters obtain their yarn from Indian and Pakistani suppliers under the duty drawback scheme. Imports of cotton yarn reached 19,329 mt in CY 1997, of which 18,947 mt contained at least 85% cotton and 382 mt contained less than 85% cotton. Figures for CY 1996 were 14,942 mt (total), including 14,623 mt of at least 85% cotton, and 319 mt of less than 85% cotton.

The quantity of domestically spun yarn supplied to private weavers in 1996/97 was an estimated 39,610 mt.[40] The proportions of this amount of yarn supplied by public spinners and by private spinners are not known. Nor are the exchange arrangements well understood. MVE's understanding is that public spinners face minimum sales prices in the domestic market, but that private spinners do not. As of 1996/87, two of three private sector spinners were joint stock firms run by public entities, so they abided by the TCF minimum prices.

The few private cotton spinners target niche markets and hence do not compete directly with the public sector spinners. The oldest private company, Giza Spinning and Weaving, produces some mixed cotton/polyester yarn for its own weaving and RMG production. New joint venture companies, coming on line in 1998, are reported to target the export markets of the foreign partners (the U.K. and Switzerland). One of the nominally private spinners, Miratex, exports most of its yarn (much of it to Iran). The other, Amriya, is an integrated spinning, weaving and RMG operation that produces yarn as an intermediate input into its own operations. (MVE has no information on how much cotton yarn Amriya sells to other users).

6.6 Ready-Made Garments

Public sector producers of RMGs (11 of the original 27 public sector textile companies in 1996/97) procure most of their fabric from public sector weavers (through intra-firm transfers). As calculated from the *Cotton Subsector Map* for 1996/97, public RMG manufacturers used 18,570 mt of fabric. MVE assumes that all of this fabric was supplied by public weavers (from the 65,729 mt of yarn produced by public textile companies).

Private weavers and knitters supplied an estimated 45,582 mt of cloth to private RMG producers, with an estimated 24,700 mt coming from the public sector.[41] The public weavers supplied an estimated 31,359 mt of fabric to both private RMG producers (24,700 mt) and private buyers (6,659 mt).[42] The exchange arrangements governing sales of cloth by public

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exported, of which 38,104 mt contained at least 85% cotton and 6,142 contained less than 85% cotton.

[40] The figure of 39,610 mt is arrived at by estimating 1996/97 imports as the mean of the two calendar years (1996 and 1997), which is then subtracted from the estimated yarn input of 56,745 mt to private weavers and knitters (reported in the *Cotton Subsector Map*).

[41] This is calculated as follows: private sector RMG input of cloth (70,282 mt) — private sector cloth output less exports (54,782 - 9,200 mt).

[42] The quantity supplied to individual buyers, which might include fabric traders and shops, of 6,659 mt is calculated as a residual (31,359 mt - 24,700 mt). The 24,700 mt is also a residual, so the 6,659 figure should be used with caution.

sector weavers to private RMG producers are not well understood. Presumably, TCF minimum prices apply to these sales, though TCF's capacity to enforce these prices (with hundreds of private RMG buyers) may be limited. Note, however, that any sales by public weavers below the minimum prices could be detected through CAA audits. Sales by private sector weavers to private RMG producers are not controlled in any way; a competitive market most likely prevails, with free and open pricing.

7. COTTON SUBSECTOR PERFORMANCE

Performance is a multi-dimensional concept with a number of potential measures. Key dimensions include allocative efficiency, operational efficiency, technical efficiency, progressiveness, employment (especially in the Egyptian context), market coordination, and market responsiveness and competitiveness. These measures or attributes are defined below:

Allocative Efficiency refers to the extent to which an economy, industry or commodity subsystem allocates resources to their highest value uses in production.[43] A resource can be said to be efficiently allocated within an economy, industry or subsystem if it is employed in production or marketing activities that maximize its value product. Excessively high or low domestic commodity prices, relative to world prices, indicate inefficient resource allocation (typically brought about by price and trade policies that drive a wedge between domestic and international price levels). Large commodity stocks or carryover relative to annual requirements, and too much productive capacity at any stage of a subsystem, suggest over-allocation of resources.

Operational Efficiency refers to the extent to which firms in a subsystem minimize costs to produce output (which matches consumer needs and preferences). In an operationally efficient set of firms, prices reflect real economic costs and a modest return. Over time, firms' operating costs approach their long-run average costs of operating. Excessive returns over a few years are usually evidence of monopoly or oligopoly. Individual firms achieve operational efficiency by choosing types and combinations of inputs and a product mix that maximize returns, taking into consideration the costs of the inputs and the prices of alternative outputs.

Technical Efficiency refers to maximizing output per unit(s) of input(s) in an economic engineering sense. In contrast, operational efficiency implies minimal cost/price relations. An input/output combination might be technically efficient but not operationally efficient (as when crop yields are maximized but not economic returns to farmers).

Progressiveness measures the ability of a subsector or industry to identify and adapt suitable technical, management and organizational innovations that enhance productivity. Progressive firms continually seek to upgrade their technology, management practices, market intelligence and understanding of consumer requirements, as well as the way they organize themselves to procure inputs, produce (process) outputs, and market what they produce.

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[43] Productive efficiency has several dimensions. At the individual firm level, firms strive to allocate resources efficiently among the goods that they can produce. Among firms, resources should be allocated so that the marginal physical product of any resource in production of a particular good is the same no matter which firm produces the good. An efficient combination of outputs among firms is achieved when firms producing the same outputs have the same rates of transformation among alternative products (production possibilities). In order to achieve both productive and exchange efficiency, the marginal rate of substitution for any two goods must be equal to the rate of product transformation. In the final analysis, only when the trade-off rates for certain costs and benefits are the same will resources be efficiently allocated among all economic agents. (Paraphrased from *Microeconomic Theory: Basic Principles and Extensions* by Walter Nicholson, 1972).

Employment is a particularly important performance dimension in Egypt, as the country has a large population on a limited land area, significant unemployment, and many new entrants to the labor market each year.[44] In the Egyptian context, generation of increased employment and choice of labor-intensive production and processing techniques are critical performance norms. Hence, MVE will track changes in employment in the cotton subsector. Broad participation in the production, processing and marketing functions of a commodity subsystem is an important objective, although some subsectors lend themselves more to capital intensive production and processing. A necessary condition of *broad participation* is relative ease of entry into a subsystem, though certain stages of a subsector necessarily require higher levels of investment.

Market Coordination refers to the effectiveness of market participants and coordinating institutions and mechanisms (particuarly exchange arrangements) at matching supply and demand at each level of the subsector production/marketing system. Sub-dimensions of coordination include complementary public and private investment and market transparency that promotes efficient exchange. Coordination mechanisms include physical marketplaces, direct marketing, integration (forward or backward) by major subsector participants, contracts, auctions, organizations such as producer groups and industry/trade associations, government programs, and market information.[45]

Market Responsiveness and Competitiveness is similar to progressiveness but goes beyond it in emphasizing how demand drives commodity subsystems. It refers to how effectively firms, a subsector, or an industry track changing domestic and international demand (tastes and preferences), and adjust input and output mix, output quality/grades, and production levels to respond to changing market conditions. *Competitiveness* is the ability of a subsector or industry to exploit a natural comparative advantage by expanding market opportunities, creating new market niches, continually searching out new technology and improved methods of management to enhance productivity, and improving the quality and mix of products (that respond to the requirements of different market segments).

7.1 Allocative Efficiency

[44] Dr. Akhter Ahmed of the Food Security Research Unit reports that the current Egyptian labor force is 18 million people, defined as "economically active" among the resident population of 60 million inhabitants. To accomodate new entrants to the labor market of some 504,000 people per year (2.8% * 18 million) over the next few years, as well as employ the unemployed backlog of potential workers, the Egyptian economy must generate some 550,000-600,000 jobs per year. The 2.8 percent figure reflects the demographic boom of the 1976 to 1986 period, when population grew at 2.8 percent per annum. This rate dropped to 2.2 percent per year in the 1986-1996 census period.

[45] An excellent discussion of the concept of market (or vertical) coordination is found in *The Organization and Performance of the U.S. Food System* (1986) by Bruce W. Marion and the NC 117 Committee.

As of the baseline year of 1996/97, the Egyptian cotton subsector was not allocatively efficient. High producer prices encouraged excessive production, which led to over-accumulation of lint cotton stocks. Carryover stocks going into the 1997/98 season, estimated at 2.5 million kentars, were as high as they had been since 1994/95 (3.2 million kentars).[46] Carrying excessive stocks has a high opportunity cost; the storage space has a monthly cost, funds are tied up in holding the stock (interest rates), and the lint cotton deteriorates over time, especially when the storage conditions are not optimal.[47] It becomes difficult to export lint that has been stored into the following marketing season, because foreign buyers want lint from the new cotton crop. In addition, the higher quality lint is usually sold by the end of the marketing season, leaving the lower quality, non-exportable lint as carryover. Ultimately, large carryover stocks have to be provided to domestic spinners at a discount,[48] sold at a deep discount on the world market (see RDI proposal for disposing of excess lint cotton, May 1998), or sold for alternative uses, such as providing stuffing for mattresses and furniture.

In light of the high producer support price, the GOE encouraged ALCOTEXA to set lint cotton export prices at high levels relative to competing growths (especially pima). This led to lower exports than could have been achieved, most notably in 1996/97. Note that when export prices were set lower at the beginning of the following season, 1997/98, Egypt expanded exports by 49.7 percent. World markets are indeed price responsive, and as one of the two major producers and exporters of ELS/LS cotton, Egypt is able to influence world price levels.

Into-spinning mill (into-mill) prices have been set as a function of ALCOTEXA lint cotton export prices since September 1995. Since ALCOTEXA prices were set too high in 1996/97 and 1997/98, the into-mill prices also penalized Egyptian spinners. Although it was theoretically possible to import cheaper lint from other countries, Egyptian spinners were instructed not to do so, given the large 1996 cotton crop and the carryover. Hence, spinners faced high raw material costs, not to mention heavy debt, high levels of their own product inventory, and redundant labor. In selling yarn and fabric into the world market, these spinners faced a dilemma. TCF sets minimum yarn export prices, which are fixed at the NE 36 count level for lower counts (i.e., buyers had to pay higher medium count prices for low count yarn). The high cost of raw material constrains what spinners could ask for their yarn, relative to India, Pakistan and other spinners of short and medium staple count, even though Egyptian lint is superior in quality (LS/ELS cotton) to the cotton that the other major yarn exporters are

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[46] The estimated carryover going into the 1998/99 season was nearly 3.1 million kentars, the highest level since 1983/84 (3.7 million as of 1 September 1983).

[47] Some of the large carryover stocks were stored outdoors, not raised off the ground, and exposed to the elements or poorly covered and baled.

[48] In the fall of 1997, the cotton and textile holding companies decided to provide one million kentars of lint cotton from the 1996 crop to domestic spinners at a discount of LE 50/kentar off the 1996/97 fixed into-mill prices. This same discount has been offered for lint cotton carried over from the 1997 crop to spinners as of late September 1998. Domestic spinners will probably buy about two million kentars of 1997 cotton lint, which will delay their purchases of the 1998 crop until at least February/March 1999.

spinning. Egyptian spinners can command a slight premium for their yarn, given its strength, smoothness and lustre, but not the reported 30 percent differential above Indian and Pakistani yarns in the world market (see Dahmoush and Ariza-Nino, 1997).

Excessive resources were allocated to cotton production in 1996/97, in response to a high producer support price, and also in 1997/98 and 1998/99. Too much seed cotton was produced in 1996/97 and 1997/98, leading to accumulation of massive carryover stocks. This excess supply situation was exacerbated when ALCOTEXA set export prices too high in 1996/97, dampening demand of foreign buyers. High, fixed into-mill prices for Egyptian lint cotton from 1995/96 through 1997/98 hurt domestic spinners, who faced high raw material costs (in an industry where lint makes up 60-70 percent of production costs) on the input side but weak domestic demand and quasi-fixed export prices for yarn and fabric on the output side. The financial difficulties brought on by pricing policies compelled many spinners to idle plant, equipment and workers, which further strained their financial situation. These millers continued to pay wages to workers and interest on rising debt. The condition of most public sector spinners and weavers went from bad to precarious, which appears to be leading to an irrevocable loss of productive capacity in a major Egyptian industry. To conclude, resource allocation in the cotton/textile subsector was highly sub-optimal at the beginning of APRP. In collaboration with the GOE and holding company, APRP is attempting to resolve this impasse through several policy benchmarks and technical assistance. Despite these efforts, net losses of jobs and capacity in the textile industry (particularly the spinning industry) are highly probable before the end of APRP.

7.2 Operational Efficiency

1996/97 represented a transition year at the end of an era of administrative allocation of seed cotton to gins and lint cotton to mills. Prices and costs were essentially fixed. Ginning charges had been held to the same level of LE 14.5/lint kentar for three years. In 1997/98, ginners raised this price, with CIT HC approval, to LE 17/lint kentar, still well below their estimated operating costs. Given the low ginning charge, there is very little incentive for ginners to upgrade equipment and improve quality. One of the recently privatized ginning companies plans to close down four small and inefficient gins. The overall excess capacity in the industry needs to be cut back. This process will probably not begin in earnest until the remaining public sector ginning companies are privatized. MPE and the HCs need to allow private investors to scrap the smallest, inefficient gins and sell valuable land for urban development.

Even using the highly aggregated and semi-transparent financial statements of the ACs in the spinning and weaving industries, it is clear to see that these public sector companies are not operationally efficient. Most of the firms are highly indebted, and their inventories (counted as assets, valued at cost at the time of production) and accounts receivable are high relative to sales. Following the collapse of the NIS market in the early 1990s, these public sector firms continued to produce a lot of yarn, fabric, knits and RMGs that went into inventory. This was evidence of allocative inefficiency. Textile companies continued to produce textile products of lower quality for a collapsed market. Public sector company managers were rewarded for meeting production targets, not for actual sales and company profitability.

The public sector cotton trading companies face similar problems of debt, excessive inventory, large accounts receivable, redundant labor, and overall high operating costs relative to the much leaner and more efficient private sector trading companies. If the public companies are to be privatized successfully, they need to trim debt, inventory, costs and labor to levels that will not deter private investors.

7.3 Technical Efficiency

While Egypt generally produces high quality seed cotton, the harvested cotton has too high a degree of contamination, which is bemoaned by Egyptian buyers and users as well as world buyers and spinners (see Cotlook Consulting, 1997 and Krenz et al, 1998). The root of this problem is the pricing and grading system for Egyptian cotton; between grade price differentials for seed cotton are so low that they encourage one or two pickings rather than the recommended two to three. Furthermore, not enough care is taken to prevent contamination from foreign matter in harvesting, handling and transporting seed cotton to sales rings and gins. At the gins, bags of seed cotton are exposed to dust, sand and rain, and baling and covering of lint cotton leaves a lot to be desired. These problems are examined in detail in the MVE/CSPP cotton grading and quality special study (see Krenz et al., 1998).

The technical efficiency of the ginning process is not high. Most of the ginning stands are very old roller gins. The newer, more efficient gins are usually rotary knife gins. Egyptian ginners insist that their gins are better suited to ginning fine cotton (LS and ELS), yet U.S. pima is ginned using more modern, higher capacity rotary knife gins. International buyers report that pima has far lower contamination than Egyptian lint cotton. Although technically LS, pima can substitute for Egyptian ELS in spinning fine cotton yarns up to NE 80s count. The Supima campaign to limit contamination and trash content to zero reflects U.S. producers' attention to quality, cleanliness and careful handling practices — attention which seems to be lacking in Egypt, probably in large part due to the lack of financial incentives for growers, buyers and ginners to handle Egyptian seed and lint cotton with special care.

Much of the spinning and weaving equipment in public sector mills dates from the mid-1980s and earlier. Much of the older equipment is idle for lack of spare parts and poor maintenance. Most of the equipment that is operating is performing sub-optimally, at low levels of output per day and per worker, and with significant down-time (due to poor maintenance, uneven quality of raw material input, and inattentive workers). Although no statistics are available, the technical performance of the private spinning, weaving and RMG industries is reported to be much higher. Down-time and idle equipment are far less common; workers are better supervised and seem to have a better work ethic; and, private firms generally operate at a higher level of capacity (reportedly running three shifts for longer periods of the year). The uneven quality of some Egyptian lint cotton and yarn has led many of the private weavers, knitters and RMG producers to import Indian and Pakistani yarn under the duty-drawback system in order to produce cloth, knits and RMGs to satisfy export orders. (Egyptian private textile companies also have a strong price incentive to use imported yarn spun from short staple cotton for exported textile products).

7.4 Progressiveness

A progressive industry is driven by consumer demand (tastes and preferences) and the competitive imperative to produce the highest quality goods at the lowest possible cost. Firms seek out better technology, skilled workers (and training for workers with potential to become skilled workers), the highest quality raw material at the lowest cost, and skilled managers who can gauge and anticipate demand (domestic and world) and plan production accordingly. These attributes are lacking in most of the public sector companies in the textile industry in Egypt. Until the early 1990s, before the collapse of the Soviet Union market, Egyptian public sector companies were not exposed to world market conditions and forces. Increasing globalization of the world textile business by the early/mid 1990s and heightened competition and unsettled Egyptian manufacturers, accustomed to protected and undemanding markets and not disciplined by international market forces to perform to a high standard.

Financially strapped public sector companies are struggling to survive and limit losses, so they cannot concentrate on innovation, new technology, and producing high quality goods for demanding markets. Private sector investment in the industry will be the driving force for innovation, cost-cutting, and market-driven production. Formerly public sector companies that are privatized will be slower to respond than newly established companies that can choose their technology, workers, product lines, and markets from scratch. There are firms in the private sector, particularly weavers, knitters and RMG manufacturers, that are responding to international market challenges. These firms necessarily have an outward orientation; the Egyptian market for textile products is relatively thin,[49] very price-sensitive, and undemanding of quality. Most Egyptian consumers are unwilling or unable to pay the premium for textile products that will enable private investors to innovate technically and upgrade quality of output (and still get a return on their investment).

7.5 Employment and Participation

For obvious reasons, maintaining and creating employment in the Egyptian cotton subsector and textile industry, is an important GOE objective. Egypt is facing a demographic explosion, with a population of over 60 million and an estimated population growth rate of 2.2 percent. It is estimated that there are as many as one million new entrants to the Egyptian labor force each year.

The cotton/textile subsector has long been touted as the strategically most important industry, employing the largest numbers of people in Egypt. According to one source, there were 230,000 workers in 31 public sector textile companies as of 30 June 1991 in Egypt. By 1993/94, the cotton marketing and textile industry employed about half a million people, of which 209,700 or 42 percent worked in public sector companies. Employment in public sector textile companies alone totaled 186,500 (Hanaa Kheir El-Din and Hoda El-Sayed, 1996). As shown in Table 7-1 below, textile industry employment had declined to 173,725 by 1996/97, mainly through attrition but also partly through early retirement programs funded by the HCs and the Social Fund for Development (SFD).

[49] The Egyptian market for textile products is relatively thin in that per capita consumption of four kg. is low compared to consumption in higher income industrial countries.

According to the *Cotton Subsector Map*, total employment in the entire cotton production, marketing and processing subsystem was 1,507,070 million in 1996/97, including 1,000,000 producers and farm laborers (see breakdown by subsector stage in Table 7-1).[50] The 1.5 million total excludes service agencies (CATGO, ALCOTEXA, the Egyptian Cotton Pressing Company, and TCF), which employed another 2,250 people, as well as retail shops selling yarn, cloth, knit products and RMGs, estimated at 300,000 (with 150,000 shops employing two people each).

Netting the one million producers from cotton subsector/textile industry employment in Table 7-1, private sector employment totaled 288,834 people (57 percent) while public sector employment totaled 218,236 (43 percent). The public sector dominated employment in seed cotton collection (including 30,000 cooperative employees), ginning, cotton trading and export, and spinning[51], but private sector employment was higher in weaving and RMG manufacture, two industries where their had been significant private sector investment by 1996/97.

Note that there is no estimate of employment of yarn and cloth traders, particularly importers (of mainly synthetic yarn), in the *Cotton Subsector Map*. According to one industry informant, there are 8-9 specialized importers of yarn, mainly based in Alexandria. There are also reported to be some wholesale dealers in cloth, who either sell locally or export the output of private sector weavers (which is often mixed cotton and polyester). MVE has no estimates of numbers of firms or employment for these participants.

It is important to note that downsizing and privatization of public companies will probably lead to a decline in cotton/textile subsector employment in the short to medium term (over the APRP LOP). Net job creation in some industries with overcapacity, such as ginning, or declining capacity, such as spinning, may be negative, while it will likely be positive in more dynamic, competitive and private sector-dominated industries such as RMG production, dyeing and finishing and perhaps weaving. Given misallocation of (excessive) resources to the cotton/textile subsector during the 1990s in a world market of declining demand for

[50] MVE producer survey results indicate that 159 of 181 farmers interviewed grew 539.1 feddans of cotton in 1996/97 for an average of 3.39 feddans/farm (Morsy A. Fawzi, 1998). In 1996/97, producers planted 920,911 feddans to seed cotton. Hence, an estimated 271,655 farms produced cotton in 1996/97 (920,911 feddans/3.39 feddans per farm). The estimated 1,000,000 people working in seed cotton production is a rough estimate. The real number could be higher, as the labor required per feddan of cotton was 127 days in Dakhalia and 114 days in Beni-Suef in 1997 (see Selzer, 1998) and labor tends to be concentrated during peak periods. Full-time equivalent laborers would be equal to 0.64 for Dakhalia (the Delta) and 0.69 for Beni-Suef (Upper Egypt), assuming 200 and 165 days respectively for the cotton crop in the ground.

[51] MVE assumes that 50 percent of the employment in public sector textile companies, or 86,863 workers, could be attributed to spinning in 1996/97. This was over four times private sector employment in spinning.

Table 7-1: Employment in the Cotton Subsector, 1996/97

Subsector Stage	Private Sector Employment	Percent Total	Public Sector Employment	Percent Total
Cotton Growing	1,000,000	100.0		
Seed Cotton Collection	900	2.6	34,275	97.4
Ginning	1,162	18.7	5,047	81.3
Cotton Trading/Export	1,260	19.5	5,189	80.5
Spinning	20,395	62.2	173,725	37.8
Weaving/Knitting	110,117	9	9	9
Dyeing/Finishing	5,000	9	9	9
RMG Manufacture	150,000	9	9	9
Total	288,834	57.0	218,236	43.0

Source: *Cotton Subsector Map*, APRP/RDI Report No. 14, August 1997

Notes: 1) The figure of 173,725 represents employment in the public sector textile companies, which typically undertake two or more of the following activities: spinning, weaving, dyeing/finishing and RMG production. It was not possible to disaggregate the public sector company data by activity or function. 2) The percentages are calculated for each stage and show public and private sector employment shares. The percentages listed for "spinning" represent all the activities (or industries) from spinning through RMG manufacture. The percentage calculation in the total row excludes cotton growing. 3) One ginning company, Arab Ginning, was privatized early in the marketing season, so its employees are counted as private sector workers. Nile Ginning was privatized well into the marketing season, and it operated under public management for over half of the ginning season, so its employees are considered as having been in the public sector in 1996/97.

Egyptian and fine cotton lint, overall net job creation in the subsector is likely to be negative under APRP. Shifting agricultural and agribusiness resources to other uses is not necessarily a bad development from a macroeconomic perspective. In a more liberal and open economy and agribusiness system, resources will flow to uses where there marginal value products are highest. Labor-intensive production and processing of horticultural products and feed/livestock might represent a more socially optimal use of scarce irrigated land and water, labor, management, financial and other resources.

Both the MVE and RDI Units of APRP are collaborating in special studies of agribusiness system employment, with special attention to the cotton/textile and rice subsectors, that will provide better baseline data and a mid-program picture of employment generation since the early 1990s in these subsectors. A more comprehensive assessment of net employment impacts of liberalization and privatization measures in the overall agribusiness system requires

a broader general equilibrium perspective and goes beyond what MVE plans to accomplish by June 2000 (see Zalla et al., 1998).

The most prominent changes underway during the life of APRP to date that have increased private sector employment in the cotton subsector include the following:

- possible increased participation by brokers and small registered traders in seed cotton buying in 1998/99;
- an increase in the number of private ginning industry employees to 1,962 with the privatization of two ginning companies (Arab Ginning - 1,062 employees; Nile Ginning - 800 employees[52]);
- a steady decrease in public sector employment in textile companies, as workers in some companies receive early retirement packages and as a few companies are privatized or liquidated.
- a modest increase in private sector employment of 4,296 in textile companies through privatization (3,511 at Alexandria S&W; 785 transferred from Bolivara to Unirab with liquidation) and continued private investment in weaving, knitting, and RMG manufacture (with unknown employment consequences).

The early retirement program of MPE, designed to decrease the number of (excess) workers prior to AC privatization, has proved to be very popular, with 103,000 of 159,000 eligible workers in all public sector companies (across all industries) applying (IBTCI, *Semiannual Review*, 1998). Not all requests could be honored, though 48,000 were, as the original scheme, implemented with support of the Social Fund, was not sufficiently funded.[53] For the three textile HC's, the numbers of early retirement requests and actual retirements appear in Table 7-2.

Under new funding, as of 15 August 1998, the Social Fund had provided LE 63.077 million in support to the Holding Company for Spinning, Weaving and RMC for early retirement, involving 1,673 workers in seven companies, of which 1,204 workers in five textile ACs.[54]

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[52] Nile Ginning Company has 2,000 employees, of which only 800 can be directly attributed to the ginning enterprise. The other 1,200 work in seed cotton buying, oilseed crushing, and administration and management in Alexandria. Arab Ginning Company reports that it has not laid off any of the 1,062 employees that it acquired at privatization.

[53] The Social Fund provides up to 35 percent of the funds required to induce a worker in a public company to take early retirement (a maximum of LE 7,000 for a maximum LE 20,000 retirement package).

[54] Only LE 9.59 million of the contracted LE 63,077 million had been transferred to workers as of 15 August 1998. Note that each cotton and textile trading holding company contains affiliated companies that are not in the cotton subsector. These non-cotton/textile companies are involved in international trade, retailing, equipment manufacture, and production of non-cotton fibers (e.g., jute, and synthetics such as rayon, wool).

To summarize, employment and participation in the cotton subsector appear to be broad-based. Entry barriers to cottonseed procurement, ginning, trading and export, and spinning have been progressively dismantled, and private sector participation in the cotton subsector is

Table 7-2: Early Retirement Program Participation, Textile HCs

Holding Company	Total Workers in HC, 1996/97 (Number)	Partic-ipating ACs (Number)	Workers Willing to Retire (Number)	Workers Actually Retired (Number)	Early Re-tirement Value (Mill. LE)	Aver. Early Retirement Value Per Worker (LE)
TMT HC	86,225	7	10,908	10,896	211.9	19,448
CIT HC	53,578	19	13,015	4,321	91.6	21,199
SWRMC	91,125	12	6,577	1,204	36.9	19,151
Total	230,928	38	30,500	16,421	340.6	20,742

Source: IBTCI, *USAID Privatization Project: Evaluation Services Contract. Quarterly Review: 1 January to 31 March 1998;* Social Fund for Development (for SWRMC only), September 1998.
Note: The total number of workers in 1996/97 include workers in non-textile firms in the three HCs.

on the upswing. Private sector investment opportunities should continue to generate new jobs at all stages of the subsystem, which is already a major agribusiness employer.

7.6 Market Coordination

During the years of public sector dominance, all resource allocation decisions were made administratively by the GOE. Intra- and inter-industry decisions were made by committees of public officials and directors of public companies. As in many socialist countries, government committees and planners are usually not an adequate substitute for well-functioning markets and (public and private) institutions that support markets. Cotton quality declined, mistakes were made in export pricing (of cotton lint), market share was lost, and the textile industry churned out large quantities of goods that were shipped mainly to the former Soviet Union. Ultimately, this large captive market was lost, leading to increasing inventories and debt in the textile industry. In 1996/97, the baseline year, committees made most pricing and allocation decisions, while markets operated in a limited way in some stages of the cotton subsector. By 1998/99, some change had taken place, particularly in seed cotton procurement, as private traders were able to buy seed cotton at negotiated prices reflecting a discount or premium over the GOE price tables.

Well-functioning markets are generally not completely laissez-faire and unregulated. The public sector plays an important role in regulating a commodity subsystem, working with the private sector to develop and enforce grades and standards, providing information about production forecasts/estimates, prices and market conditions, and widely disseminating policy and regulatory information to ensure market transparency. APRP and CSPP are working closely with various public agencies to improve pest management, simplify and revise grades

and standards, generate more accurate and timely information about the commodity subsector, and make the policy and regulatory environment more transparent. More work remains to be done, though a promising start has been made.

Evidence of increasing integration in seed cotton buying, ginning, and trading among major private sector players helps to improve market coordination in one sense, but in another sense it suggests that well-financed private trading companies have to integrate to ensure access to high quality seed cotton and quality ginning services. In other words, there is too much uncertainty in the marketplace and no particular incentives to provide quality cotton or services. The public sector companies (in cotton trading and ginning) cannot be counted on to deliver required grades and quality of seed and lint cotton. One positive feature of having "market channel captains"[55] take the lead in investing in and organizing the emerging private sector-led cotton subsector is that these firms are willing to innovate and bring in new technology and management, and they have strong links with and are responsive to international markets.

At present, the cotton subsector/textile industry is characterized by poor links and discrete segments, such as the private weavers, knitters and RMG manufacturers. This latter industry segment is driven by export quotas (to the U.S. and EU) and has been fueled by the duty drawback scheme on imported yarn and fabric, as well as unattractively high prices on Egyptian cotton lint. This particular policy has led many private textile producers to procure cheap, coarse-count yarn spun from foreign short-staple cottons. Hence, a large part of the textile industry does not use Egyptian cotton. This is a rational decision, given the high cost of Egyptian lint and the fact that many private textile manufacturers are producing T-shirts, other clothing, and fabric that do not require high-quality, fine *barbadense* cotton. Nevertheless, this industry development appears to be in large part the product of a policy exception, which favors the use of cheap imported yarn. Coordination among industries in the subsector appears to be poor. At a minimum, one can ask why the private textile manufacturers were not able to obtain cheaper yarn spun from domestic MLS cotton or get the GOE to approve production of short-staple *hirsutim* as a lower-cost substitute.

Returning to marketing of seed and lint cotton, GOE policies and regulations have not always been transparent. Ministerial decrees, which modify the rules of the game from season to season, are no substitute for a clearly stated, well-disseminated and transparent set of rules and regulations about who can buy seed cotton and how, as well as pricing of seed and lint cotton. The fact that three Ministers signed cotton marketing decrees in the summers of 1997 and 1998 is evidence of better high-level policy coordination, but the way in which these decrees have been translated into implementation practices and rules has not always been transparent to subsector participants. It is important to note, however, that the 1998/99 season has been a significant improvement over 1997/98, when private sector participation in seed cotton buying proved to be disappointing. On the issue of transparency, things are moving in the right direction.

[55] This term refers to dominant firms that play a coordinating role in commodity subsystems in the food system. See Harrison et al., 1974, for an in-depth discussion.

Another factor which creates uncertainty and inhibits investment and better coordination of supply is pricing of lint cotton exports. Export prices are set at the beginning of each market season, which (arbitrarily) opens on September 1, and they are generally only adjusted upward, if at all. It is obviously critically important to set the opening prices "right" or in line with prices of competing growths, particularly pima but including ELS/LS cottons grown in India, Peru, and Uzbekistan. Depending upon the perspective of the respondent one talks to, the initial export prices are set by a public-cum-private cartel (ALCOTEXA) or primarily influenced by what the MTS thinks export price levels should be. Notions of what export prices should be have been driven in part by ALCOTEXA and GOE sentiment about the "intrinsic value" of Egyptian cotton, particularly ELS, which is believed to sell itself, have no rival, and be the most spinnable cotton in the world. While the purpose of this discussion is not to question or debate the underlying excellence of Egyptian cotton, quality alone does not determine world prices—markets do. And markets reflect the interaction of the forces of supply and demand. No committee or government agency can simulate an international market accurately for very long. In the final analysis, the high price of ELS cotton has led to a massive build-up of stocks, low export levels, a substitution of U.S. pima for ELS cotton on international markets, and limited domestic use of Egyptian ELS. This has contributed to poor coordination within the subsector and non-optimal resource allocation.

7.7 Market Responsiveness and Competitiveness

Although Egypt has many of the preconditions to become internationally competitive in textile manufacturing and export, heavy-handed state intervention and policies with adverse consequences on the GOE budget and the viability of textile firms have kept this potentially competitive advantage latent. APRP and CSPP are working closely with the GOE to remove policy distortions, streamline and clarify regulations, encourage privatization, and stimulate new investment. Progress is slow but steady, though perhaps not rapid enough to keep pace with the changing and demanding world of international textile manufacture and trade. The phased implementation of Uruguay Round GATT agreements, which will gradually lower protection, serves as a reminder and backdrop against which adjustments need to be made in the short to medium term.

As of 1996/97, the baseline year, the textile industry could not be viewed as entirely market driven and competitive. The public sector continued to dominate the trading, ginning, spinning and weaving industries and hence allocate resources, plan production, set (or strongly influence) prices, and accumulate debts. The GOE had not provided a transparent policy and regulatory environment, but rather it intervened heavily in planning production and marketing of cotton, a strategic crop, and textiles, a strategic industry employing many people. The inherent assumption, operative up to 1996/97, was that government could do a better job of valuing and allocating resources and selling products than can a market dominated by private actors. The high opportunity cost of such an orientation should become increasingly evident as Egypt moves into the 21st century.

The conventional wisdom, some of which is outlined below, needs to be re-examined under APRP and abandoned where it is shown to be flawed.

- A high producer price for cotton is needed to ensure that growers plant a minimum, sustainable area to seed cotton. Without an attractive support price, cotton will drop out of the crop rotation. *MVE Prediction:* Assuming that the GOE will not set producer support prices for seed cotton, cotton area planted will decline to about 500,000 feddans, as the least efficient producers who obtain the lowest yields will drop out.

- Growers need to be instructed which variety to plant in their areas. One variety per zone and one variety per gin are essential to maintaining varietal purity. *MVE Prediction:* The MALR will continue to enforce one variety per zone, but some new gins, set up on desert land outside the Delta, may eventually gin more than one variety in separate ginning runs.

- The best ginning results can only be obtained using antiquated roller gins. Rotary knife gins are "too rough" on Egyptian seed cotton. *MVE Comment:* Roller gins are less rough on Egyptian cotton, which maintains a softness and silkiness relative to pima, ginned on rotary knife gins. International spinners note that using 100 percent pima requires replacement of card fittings, which are costly ($8,000 per card), more often than for Egyptian cotton lint, which also leads to down time (see Breginc, 1998).

- The GOE must tightly control the seed cotton marketing process (keeping the participation of small registered traders to a minimum) in order to prevent adulteration of seed cotton with foreign matter, varietal mixing, and other irregularities. In other words, market participants themselves and a competitive marketplace cannot be trusted or expected to provide the requisite discipline. *MVE Comment:* Only increased private sector participation and world market forces will bring about discipline, use of better technology, and serious efforts to economize on costs.

- As a corollary to the above, seed cotton buying outside of sales rings (run by PBDAC) will lead to chaotic and unsatisfactory procurement. *MVE Comment:* Exporters are willing to buy seed cotton purchased by small buyers/traders outside of sales rings once the cotton grade has been established at a gin (by CATGO graders). This big trader buying practice will work against shoddy seed cotton procurement or adulteration of content.

- Lint cotton export prices should not be cut during the course of the marketing season so that earlier buyers of cotton at higher prices will not protest or become discouraged (feel betrayed). *MVE Comment:* Cotton lint prices must be responsive to world market conditions, though deep price cuts would lead to cancellation of earlier contracts and undercut world prices for fine cotton. This underscores how critically important it is (until pricing is fully liberalized) to set opening ALCOTEXA export prices at levels that reflect world stocks and market conditions for LS and ELS cotton. These opening prices need to be adjusted upward or downward, however, as market conditions change.

- Deep discounting of old carryover stock is not allowed for fear of undercutting the world market for the new year's lint cotton. (Modest discounts on old stock have

been offered to local spinners). *MVE Comment:* This is probably a good strategy to avoid a collapse in world market prices. Note that traders report that much of the carryover stock is not of export grade, so this fear may be exaggerated.

- Imports of cheaper, short- and medium-staple lint cotton cannot be allowed during years when carryover stocks are high. This will undercut the domestic market for Egyptian MLS and LS cotton. *MVE Comment:* There is some truth in this widely held view among GOE and HC officials. Opening up of the Egyptian market for lint and yarn to foreign competition will discipline the local industry, however, and allow spinners to procure the cheapest sources of lint to meet their low- and medium-count spinning requirements.

- Egyptian lint cotton, sold by types, does not allow for varietal mixing. *MVE Comment*: It is common for foreign fine-count spinners to mix U.S. pima and Egyptian ELS varieties, particularly Gizas 70 and 77, in spinning 80s count yarn. This mixing is done to maximize fiber strength and quality while containing cost. 60s count yarn uses mainly pima lint cotton, though Giza 86 and 75 can substitute for pima if priced attractively.

8. POLICY RECOMMENDATIONS

8.1 Future Directions in Price Policy Reform

A fundamental consideration in cotton and textile price policy reform is whether industry committees and GOE ministries will continue to set prices, or whether transparent markets will be allowed to operate competitively. Competition leads to efficient operations. Inefficient companies do not survive, although part of their asset and labor/management base may be acquired by other firms. In the competitive struggle to lower costs of production, marketing and processing, firms seek out improved technology, strengthen their management and functional organization, improve their access to timely technical and market information, and make a whole series of medium to micro adjustments to remain operating in business profitably.

8.1.1 Eliminate Seed Cotton Floor Prices

In light of the massive financial losses incurred by the GOE in 1996/97 and 1997/98, this should not require any elaboration. By removing floor prices, private trade in seed cotton will flourish. If floor prices must be set for political purposes and to protect farmers, they need to be set at levels well below world prices. As discussed in 8.1.3, the GOE is attempting to link seed cotton prices to export prices.

8.1.2 Flexibility in Export Pricing

ALCOTEXA sets opening export prices at levels that do not drop during the course of the marketing season. Prices were fixed in 1995/96, and sales only took place during a one-week period. In 1996/97, minimum export selling prices were increased 6.3-7.6 percent for Gizas 76, 70, 77 and 75 between the opening week (15 September 1996) and mid-February 1997. Virtually all of the minimum price increases took place by the end of December 1996, and the vast majority of the export commitments were made within the first two months of the marketing season.

While never allowing minimum export prices to drop during the marketing season may induce many buyers to make their commitments early during the season, it is not a tactic that will maximize exports. Public sector cotton traders argue that minimum export prices cannot go down, because buyers (foreign importers) will protest and that many praise ALCOTEXA for assuring them that the prices they buy lint at will never go lower in the same marketing season. Foreign buyers may say this, but Egyptian exporters end up absorbing the risk of not being able to respond to changing market conditions when cotton prices move lower.

In a liberalized, open export pricing regime, setting of minimum or indicative prices will become history. Until that time, though, ALCOTEXA should be free to vary export prices up or down in response to changing market conditions.

8.1.3 Linking Seed Cotton Prices to Export Prices: Let Markets Work

During the 1998 cotton production season, the GOE made a significant policy advance in not declaring seed cotton floor prices to producers before or at the time of planting. By the beginning of the 1998/99 marketing season, however, there was a link between ALCOTEXA's export prices and what cotton producers actually received. This link was announced in the joint Ministerial Decree on the Optional Domestic Marketing System for Cotton, 1998/99, signed by the Ministers of Agriculture, Trade and Supply, and Public Enterprise and published on 9 August 1998. The decree stated that prices would be announced weekly at the collection rings, based on export prices set by ALCOTEXA (less discounts for processing and handling costs).

A danger lies in setting export prices too high and linking seed cotton prices to these high export prices. Furthermore, the willingness of ALCOTEXA to make periodic adjustments in export prices that reflect changes in world market conditions remains to be seen. In the past, ALCOTEXA price adjustments have been infrequent and never downward. Minimum exportable grades are occasionally changed but not the actual price levels. Adjusting prices downward, as market conditions merit, could be politically difficult, as farmers might feel undercut and subject to market risk (which they have not faced in Egypt in decades). Hence, the setting of opening export prices by ALCOTEXA is critically important. If ALCOTEXA sets prices too high and is unwilling to adjust them downward, not only will export volume suffer, but producers will receive too high prices from the public sector buyers, who could (once again) lose money on lint sales.

A preferable pricing arrangement is to allow for competition among seed cotton buyers and the emergence of an efficient marketing system that would allow buyers to offer competitive prices to growers.[56] Competition among buyers would keep them operating at a modest profit but not allow for oligopsony behavior (pricing seed cotton at too low a level). At the same time, competitive pressure would assure a direct relationship between domestic and export price levels, but not one that tilted too much in favor of growers.[57] If the GOE sets seed cotton prices that are too high, private traders will not participate in cotton buying and the public sector companies will end up procuring most of the seed cotton crop (which happened in 1996/97 and 1997/98). Similarly, if the GOE links seed cotton prices to ALCOTEXA export prices, and the latter are set too high relative to competing growths and international demand (and not adjusted downward during the course of the marketing season), cotton growers will benefit but lint cotton exports and the domestic textile industry will be harmed.

8.2 Towards Improved Performance

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[56] The beginning of such a competitive system appears to be emerging again in 1998/99, as smaller registered cotton traders are buying seed for the first time since 1995/96 in addition to several private major cotton trading and export companies.

[57] In 1995/96, private sector traders competed vigorously for seed cotton in a short production season (small harvest). Farmers reported receiving numerous offers from private and public traders. Competition ensured that producers received attractive offers, well above the seed cotton floor prices announced by the GOE (see Krenz, 1997).

As the twentieth century closes and as the GATT agreement requires Egypt to lower trade barriers to textile products, cotton subsector liberalization takes on a special urgency. Important measures to push ahead on include the following:

- *Complete elimination of producer floor prices.* Encourage ALCOTEXA to set relatively low export prices, which are interpreted as indicative prices (that can be undercut in a transparent way). Do not set into-spinning mill prices; these should be negotiated between traders and spinners.

- *Rapid privatization of the three remaining public sector ginning companies.* Given their asset bases, this should be easier to do than privatizing many of the public textile companies. It will remove the GOE completely from one key industry, having excess capacity, in the cotton/textile subsector. This should help make it easier for the GOE to privatize other industry segments, where progress to date has been slow.

- *Privatize the public sector cotton trading companies.* Resolve the debt issue facing the public sector cotton trading companies. Employee and management buyouts should be encouraged. Redundant labor remains a problem, though not on the same scale as with the public spinners and weavers.

- *Liquidate spinning companies that would require too massive an infusion of resources in order to restructure technically.* Rapid privatization of the handful of the most promising firms (e.g., Shebin el Kom, Stia) is recommended. Concentrate financial and technical restructuring on mildly to moderately indebted firms with potential for improvement and rehabilitation. Close down, lease or sell off non- or poorly-performing units. This will, of course, require significant financial resources to provide early retirement packages for laid-off workers.

9. ANTICIPATED IMPACTS OF APRP POLICY REFORMS

9.1 MVE's Prediction of Likely Impacts

Table 8-1 lists and discusses briefly some anticipated impacts of policy and regulatory reform on the cotton subsector. Some of the major changes expected by MVE over the next 3-10 years include the following:

- Fewer *barbadense* varieties will be cultivated in the Nile River Valley. One or more *hirsutum* varieties will be grown in the new lands.

- Among *barbadense* varieties, ELS and LS area and production will likely decline, while MLS production will increase. MLS production (including Giza 85) will increase in the Delta.

- Lint cotton exports and the private sector share will continue to increase overall, with expanded exports of LS and perhaps MLS cotton.

- The domestic spinning industry will contract with closure of numerous public sector mills. Some private sector investment will offset this decline.

- Spinning of MLS and upland cotton will increase, leading to a relatively greater proportion of low and medium count yarns. ELS spinning will decline. Use of imported cotton lint could rise slightly in the short run, but it is likely to decline (and disappear) with the shift in Egyptian cotton production to LS, MLS and upland varieties.

- Capacity in the ginning industry will decline, though ginning will be largely (if not entirely) a private sector activity. Private owners will close down small, inefficient mills in crowded urban locations. There will be some (though limited) investment in new, more technically efficient gins in rural areas. Much of this new capacity (in rotary knife gins) could be used to gin MLS and upland cotton.

- Private sector investment in weaving and RMG production will continue, though the rate of growth of these industries should tail off, reflecting already significant private sector capacity. Public sector weaving and RMG production will largely disappear.

- Imports of cotton and blended cotton/polyester yarns will probably decline by 2005 as Egyptian spinners produce relatively more low and medium count yarn to meet the requirements of domestic weavers, knitters and RMG manufacturers.

- Public sector cotton trading companies will either be liquidated or taken private by their existing management and workers (assuming that many workers will receive early retirement packages funded by the GOE). Seed cotton buying, supplying of lint cotton to domestic spinning mills, and lint exports will be dominated by private sector firms.

Table 8-1: Some Anticipated Impacts of Policy and Regulatory Reform on the

Cotton/Textile Subsector

Variable	Direction & Relative Magnitude of Change	Likely Lag from 1996/97	Comments
Number of varieties	reduction in # to 5-6	2-6 yrs	Giza 75 will be replaced by Gizas 86 & 85 or 89. 1-3 ELS varieties (Giza 76, 77, 70) dropped. New MLS variety to replace Giza 80 & 83 in Upper Egypt.
Cotton area planted & production: 0) Aggregate 1) ELS 2) LS 3) MLS 4) Upland	 moderate decrease moderate decrease moderate decrease strong increase modest increase strong increase	 3-4 yrs 3-4 yrs 3-4 yrs 3-4 yrs 4-5 yrs 7-10 yrs	Overall area in the Nile River valley will decline; MLS (incl. Giza 85) will substitute in part for ELS and LS. Upland will be grown in the new lands but not in the Nile valley. Not clear which crops will expand to replace declining area to cotton & rice.
Lint cotton exports 0) Aggregate 1) ELS 2) LS 3) MLS 4) Upland	 strong increase moderate decrease moderate increase modest increase no exports	 1-2 yrs 3-4 yrs 1-2 yrs 3-4 yrs	LS exports (of new varieties G86 & 89) will increase. Giza 75 will be phased out. ELS exports decrease due to overall decreased output. Upland used entirely domestically.
Domestic spinning industry (lint cotton input): 0) Aggregate 1) ELS 2) LS 3) MLS 4) Upland	 modest increase strong decrease no net change strong increase strong increase	 3-4 yrs 3-4 yrs 3-4 yrs 3-6 yrs 7-10 yrs	Domestic spinners will increasingly use MLS cotton and upland cotton produced in Egypt.
Textile Industry Capacity: 1) Ginning 2) Spinning 3) Weaving	 moderate decline moderate decline moderate increase	 3-4 yrs 3-4 yrs 3-4 yrs	Some excess ginning capacity will be closed down with privatization. Least profitable spinning companies will be liquidated, offset by some private investment. Some continued private investment in weaving will more than offset public companies' decline.
Lint cotton imports	a) no change or slight increase b) decrease (relative to medium run (3-4 yrs).	3-4 yrs 7-10 yrs	Some imports could replace local lint in the short-run if local production declines. Local upland will replace imports.

Variable	Direction & Relative Magnitude of Change	Likely Lag from 1996/97	Comments
Yarn imports (cotton and blended)	decrease	4-5 yrs	Yarn spun from locally produced LS, MLS and upland cotton will become competitive with imported coarse and medium counts.
Private sector market share in: 1) seed cotton buying 2) ginning 3) lint cotton export 4) spinning 5) weaving	 strong increase strong increase strong increase moderate increase moderate increase	 2-3 yrs 1-3 yrs 1-3 yrs 2-4 yrs 3-4 yrs	Most of the increase in market share in 2, 4 & 5 will come from privatization, 1 & 3 from new entrants.
Total net employment: 1) seed cotton buying 2) ginning 3) lint cotton export 4) spinning 5) weaving	 decrease decrease decrease decrease modest increase?	3-6 yrs	With closure/privatization of public companies, which are overstaffed, overall employment will decrease. Overall decline in cotton production, ginning and spinning will reduce employment. Remaining private firms will use labor more efficiently.
Yarn Output and Exports 1) Low counts 2) Medium counts 3) High counts	 decrease (short run) increase (long run) modest increase unchanged or decrease	 3-4 yrs 7-10 yrs 3-4 yrs	Low count yarn output and exports will decrease in the short run but expand as upland cotton becomes available. Less under-spinning of LS & MLS cotton as spinners rehabilitated. Egypt will have trouble developing competitive advantage in high count spinning, which is done more efficiently offshore (Turkey, India, Italy).
Cloth/fabric output for: 1) domestic market 2) export market	 modest increase moderate increase	 3-5 yrs 4-10 yrs	As population and incomes rise. As domestic spinning becomes more competitive and does less under-spinning of Egyptian cotton, though MFA phase-out will put pressure on Egyptian weavers.
Net resource allocation to (total investment in) the cotton subsector	may decline but indeterminate	4-10 yrs	Likely decrease in domestic production, ginning and spinning of *barbadense* cotton may be offset by increased output, ginning, spinning of *hirsutum* varieties. Private share & volume in weaving & RMG production could continue to grow.

MVE is less confident about making predictions concerning changes in the weaving, dyeing and finishing and RMG industries. Suffice it to say that private investment will continue, though the lowering of trade barriers under GATT may increase import pressure on Egypt and force some less efficient firms out of business. Public companies will all but vanish in these industries, which require state-of-the-art technology, a disciplined labor force, nimble management responding to frequent changes in consumer tastes and preferences, and other attributes which are not present in public textile firms. *GATT provisions may also remove special quotas that Egypt has been alloted by the U.S. and the EU, which have guaranteed a certain degree of market access.* As trade barriers decline worldwide, though not as deeply in textiles relative to other consumer goods, Egyptian private textile manufacturers will face tough competition in both external and domestic markets.

The broad vision underlying the anticipated impacts laid out in Table 8-1 is that domestic production of *barbadense* cotton will decline, as will trading, ginning and spinning and weaving of this cotton. There will be significant trimming of capacity in public sector trading, ginning, and spinning that will only be partly offset by new private investment. The public sector ginning companies and some of the public spinners (Shebin El Kom, Delta spinning and weaving) will be privatized, resulting in a simple resource transfer from public to private sector but not in new investment. Many workers will be laid off from the public spinning and weaving companies. Some may find employment in the private sector, but quite a few may not. Providing early retirement packages for tens of thousands of workers could prove to be very costly for the GOE. Private investment in weaving, knitting, dyeing and finishing, and RMG production will continue, though increases in exports of woven cloth, knit shirts, T-shirts and other RMGs will likely be constrained by U.S. and EU quotas (due to phase out when?).

The extent to which the GOE allows *hirsutum* production to develop quickly in new lands outside the Nile River valley will influence whether domestic spinners, particularly public companies and recently privatized ones, can respond to the competitive challenge represented by Indian and Pakistani yarn exports. *Hirsutum* would be a lower cost raw material for Egyptian spinners, who report that cotton lint represents 60-70 percent of their total operating costs.[58] *Hirsutum* could be used to produce lower-count yarns that would be an input into domestic weaving and RMG production for both export and the domestic market.

The anticipated impact of a decline in high-count spinning is likely to be a controversial forecast. MVE considers that the absence of a rigorous quality control program from the farm to wholesaler or exporter of cotton textiles will prevent Egypt from being competitive in technically demanding high-count spinning. Competitive high count spinning requires excellent raw material free of trash and foreign matter, expensive, well-maintained and well-managed spinning equipment, a skilled and disciplined labor force, systematic practice of measures to ensure the cleanest, highest quality seed and lint cotton,[59] and an overall attention

[58] One recently privatized spinner, Alexandria S&W, reports that lint comprises only 58 percent of its operating costs due to excellent control over lint procurement.

[59] Such a quality control system would include, among other things, better harvesting and bagging of seed cotton, transport to/from gin under much cleaner conditions, removal of trash and

to detail that is rarely found in Egypt. Getting prices and incentives right can do a lot to improve worker attitude and performance in the short run, but fine-count spinning is exceptionally demanding of discipline and quality. Egypt will increasingly export its ELS cotton lint offshore to fine-count spinning mills that can ensure production of uniformly high quality yarn.

9.2 Data Sources and Access Issues

Data concerning the inputs, throughput, and output of cotton trading companies, private ginners and exporters have been relatively easy to obtain. There is a transparency of operations and information that generally does not characterize public companies in spinning, weaving, knitting, and RMG production. Data from the three textile industry holding companies, which are an authoritative source of information concerning the AC's, are available only intermittently, generally with a significant lag, and usually in a highly aggregated form that does not permit in-depth analysis. In order for MVE to do a timely and rapid assessment of the situation of the textile industry (and public sector ginning and trading companies) toward the end of the project (30 June 2000), data access needs to improve. Otherwise, given the usual lags and difficulties in obtaining data, MVE will only have information about textile industry performance through the 1998/99 marketing and processing season.

Access to information and transparency of rules, regulations, GOE policies, and the operations of publicly owned companies are key elements of agribusiness system and economic reform programs, such as APRP and related sector (USAID's Sector Policy Reform program) and macroeconomic reform programs (such as the (now lapsed) IMF stand-by agreements). In addition, during an era of privatization and globalization of markets, information dissemination and transparency of policies and regulations are critical to facilitating privatization and foreign investment in Egypt. Providing access to information and ensuring transparency are essential elements to creating a positive enabling environment for agribusiness system reform. Egypt's discussions with the IMF regarding information dissemination is a first step in the right direction.

Inadequate and incomplete information about markets, prices, and the costs, assets, employment and plans of public sector companies has slowed the liberalization and privatization process. This goes against the spirit of APRP and the GOE's stated objectives for the agricultural sector and the Egyptian economy overall. Prospective anchor investors and shareholders cannot make well-informed judgements about the financial viability of public sector companies without open and transparent accounting of assets, inventories, input purchases and product sales, debts, and labor costs, as well as clearly arrived at valuations. Nor can the GOE, APRP and other reform programs track progress in liberalization and privatization in a timely and accurate manner.

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contaminants using expensive equipment (rather than manual picking), improved storage of lint cotton bales at gins and spinning mills, and air-conditioning of fine-count spinning mills (most of Egypt's mills are open to the elements, excessively hot, and very dirty).

In order to facilitate timely impact assessment, the key APRP partners, including the cooperating ministries and agencies of the MALR and its agencies and institutes, MTS (including GOCEI and the EEPC), MPE (including holding companies and their AC's), MEIC and MPWWR need to assist MVE in obtaining accurate, timely data.

For the textile industry in particular, APRP requires quarterly or semi-annual reports on key performance indicators, such as the following:

- volume and value of output by AC, disaggregated by product type.
- inventory volume and value by AC, disaggregated by product type.
- domestic and export prices of yarn, fabric and other important textile exports.
- volume and value of yarn, fabric and important textile products, disaggregated by product type and broken down by exports vs. domestic market sales.
- annual financial performance indicators by AC, including assets, inventories, accounts receivable, new investment, wage payments, product sales and net profits. The more disaggregated information are by AC, the better (particularly for different product types).
- employment figures by AC and numbers of employees taking early retirement.

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ANNEX

This annex includes detailed tables referenced in the text and other supporting materials.

List of Annex Tables:

Seed Cotton Procurement, 1994/95 to 1997/98

Ginning of Seed Cotton, 1994/95 to 1997/98

Lint Cotton Exports, 1994/95 to 1997/98

Lint Cotton Export Commitments and Shipments, 1995/96 to 1997/98, by Company

Prices of Fine Count Combed Yarns

APRP/RDI Vision for the Cotton Subsector