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MVE UNIT
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EFFECTS OF POLICY REFORM UNDER APRP: PROGRESS INDICATORS, 1990-1999

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LIST OF ACRONYMS

ALCOTEXA	Alexandria Cotton Exporters Association
APCP	Agriculture Production and Credit Project
APRP	Agricultural Policy Reform Program
CAAE	Central Administration for Agricultural Economics
CAPMAS	Central Agency for Public Mobilization and Statistics
CATGO	Cotton Arbitration and Testing General Organization
cif	Cost, insurance and freight
CIT-HC	Cotton and International Trade Holding Company
CY	Calendar Year
EAS	Economic Affairs Sector
ELS	Extra long staple cotton (Gizas 45, 70, 76, 77)
ERSAP	Economic Reform and the Structural Adjustment Program
EVI	Export value index
fob	Free on board
GDP	Gross Domestic Product
GOE	Government of Egypt
GTZ	Deutsche Gesellschaft fur Technische Zusammenarbeit
HC	Holding Company
HC-SWRMC	Holding Company for Spinning Weaving and Ready Made Clothes
ICAC	International Cotton Advisory Committee
IFDC	International Fertilizer Development Center
IIP	Irrigation Improvement Project
lk	lint kentars
LS	Long-staple cotton (Gizas 75, 85, 86, 89)
MALR	Ministry of Agriculture and Land Reclamation
mlk	million lint kentars
MLS	Medium long staple varieties (Gizas 80 and 83)
MPE	Ministry of Public Enterprise
MPWWR	Ministry of Public Works and Water Resources (former name of MWRI)
MSHT	Ministry of Supply and Home Trade (formerly MTS)
MTS	Ministry of Trade and Supply (former name of MSHT)
MVE	Monitoring, Verification and Evaluation Unit (APRP)
MWRI	Ministry of Water Resources and Irrigation (formerly MPWWR)
PBDAC	Principal Bank for Development and Agricultural Credit
RMG	Ready Made Garment(s)
TCF	Textile Consolidation Fund
TMT-HC	Textile Manufacturing and Trade Holding Company
UD	Universal density bale (of lint cotton)
USAID	United States Agency for International Development
USDA/ERS	United States Department of Agriculture, Economic Research Service
WPI	Wholesale price index
WUA	Water User Association

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There are individuals too numerous to name who gave their time and effort to make useful information available to the staff and consultants of the MVE Unit. This includes, but is not limited to, individuals in the following institutions: MALR, MWRI, MSHT, CATGO, the cotton textile holding companies, Textile Consolidation Fund, ALCOTEXA Information Center, PBDAC, and MPE/Fertilizer Bureau. Some of these individuals hold high positions in the Government; many are in the private sector. All of them have busy schedules. To all we extend our gratitude for their cooperation.

PREFACE

The MVE Unit measures some of the first effects of agricultural policy reforms implemented under APRP through the progress indicators reported herein. The long-run impact of policy reform is analyzed in the Unit's impact assessment program, so long-run measures of impact are generally not included in these progress indicators.

In December 1999 when the MVE Unit's first monitoring report (Ender et al., 1999) was published, data were only available to measure the progress indicators for a period before APRP began. With the passage of time and some acceleration in the availability of data, this report is now able to report progress indicators for years (1996/97 through 1999/2000) covering about two-thirds of APRP[1], in addition to the baseline period (beginning about 1990). These progress indicators generally provide a good picture of some of the short-and medium-term effects of some key APRP reforms.

The first monitoring report included a wide range of progress indicators that had been suggested by the staff of the APRP technical assistance units and our colleagues in the GOE and USAID. After compiling the required data, analyzing them, and reporting on those indicators, the Unit made a preliminary assessment of the utility of the indicators as progress indicators for APRP. Those indicators considered best for continuation as progress indicators for APRP are those that bear a direct relationship to specific reforms under way in APRP. Data can be found to measure these indicators, and their interpretation is generally straightforward. At the other end of the spectrum are indicators that are only indirectly or remotely linked to specific reforms (although they may measure ultimate impact), or complex in themselves and therefore hard to interpret. Based on the assessment made in the first report, the indicators no longer being calculated and reported are: nominal protection coefficients for urea and rice, the correlation coefficient between prices of US Pima and Egyptian cotton, the real value of ready-made garment exports, the ratio of earnings of non-banking activities to total earnings for PBDAC, and agricultural resource income. Those indicators remaining in the report are not perfect combinations of the attributes mentioned above, but the indicator data, when viewed in the light of the analysis provided in the report, should be useful to those interested in the progress of APRP reforms.

Preparation of a report like this one requires a significant amount of time and effort. The MVE Unit assembled time-series data from various sources, most notably MALR (especially EAS), MWRI, CAPMAS, MSHT, MPE and many other agencies and private companies. These data should be interpreted with caution. Despite this caveat, the Unit feels that these data, once interpreted, provide a reasonably accurate picture of important developments in the agricultural sector and leading subsectors in the agribusiness system.

[1]APRP technical assistance began in November, 1996. It will decline significantly in the first half of 2002 and terminate completely by September, 2002.

EXECUTIVE SUMMARY

This report is based on progress indicators for years (1996/97 through 1999/2000) covering about two-thirds of APRP[2], in addition to the baseline period (beginning about 1990), on which indicators were previously published. These progress indicators generally provide a good picture of some of the short-and medium-term effects of some key agricultural policy reforms carried out under APRP. Longer-run impacts of the reforms are being assessed under the Unit's impact assessment program.

Of the twelve separate indicators presented, ten were generally increasing during APRP, and all but one of these ten seems to have been positively affected by policies during the period. Only one progress indicator, for yarn exports, was falling during APRP.

Some of the types of progress during APRP that have already led to these changes in the indicators include:

- privatization of two of the five public cotton ginning companies[3]
- gradual improvements in various policies affecting cotton exports
- privatization sales, leases, and other policy improvements inducing the private sector to invest in modern cotton spinning
- consolidation of the return to private marketing of fertilizer through an early policy benchmark

Many other types of progress are under way, but for these it is too early to see the results. There are many types of improvement in water management, including the matching of irrigation supply and demand through the collection of real-time planting intentions data and the coordination of planting of short-season rice varieties and its irrigation, leading to a shorter irrigation season and water savings; ALCOTEXA is now run by a truly private management team that is contemplating important changes in export pricing and grading of cotton; commodity councils are taking part in policy formulation; and MALR is making many improvements in its systems for collection, analysis and publication of production (including pre-harvest forecasts) and farm-income data, which will assist farmers and traders in making important planting and marketing decisions, to name just a few.

The progress indicators are summarized individually in a matrix, below. The matrix provides a brief narrative of the effects that policy reforms during the 1990-99 period seem to have had on the level of the indicator. Special emphasis is given to the 1996-1999 period (i.e., the portion of APRP for which data are available). Next to each narrative is a graph of the indicator values, so the reader can assess the trend during the baseline and APRP periods. In the last column of the matrix is an

[2]APRP technical assistance began in November, 1996. It will decline significantly in the first half of 2002 and terminate completely by September, 2002.

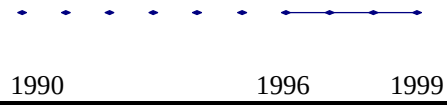
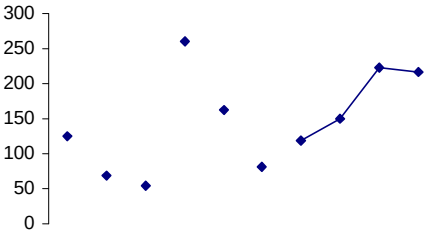
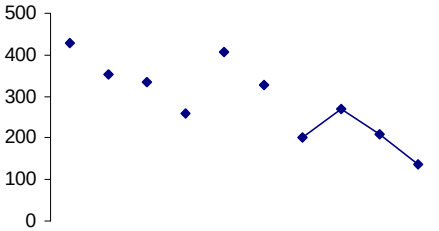
[3]See Krenz and Mostafa, Special Study No. 3.

assessment of the effect of policies during APRP. The full details of the progress indicators, including data sources, tables, figures, and analysis, are given in the body of the report.

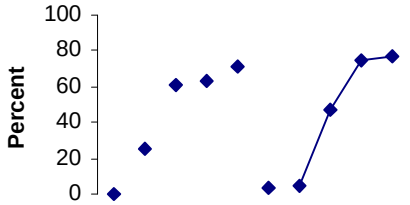
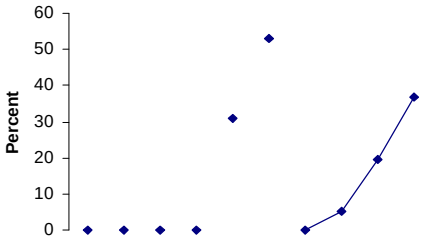
It may be pointed out that the data for a significant number of indicators are unpublished. This can be seen by perusing the sources of the tables in the body of the report. Of the data for the twelve progress indicators, data for four is completely published, data for four is completely unpublished, and the data for the remainder are a mixture of published and unpublished. In some cases the MVE Unit needed to carry out a survey to collect the data directly. In some cases, even the published data are not disseminated very widely, or they are available only in highly aggregated form (e.g., spinning industry employment and output) and cannot be cross-checked. If the transition to a market-based economy is to proceed smoothly and efficiently, the Government should remedy this situation by publishing all such essential data in a careful, timely, and open manner[4].

[4]Some of the ministries with which APRP is collaborating have made serious efforts to improve data collection and dissemination. Among those efforts that should be mentioned are the MALR program to publish data on agricultural production by season in a much more timely fashion, its publication of the incipient farm income data series and gender-disaggregated data, its excellent improvements to the agricultural census (including first-time data for the New Lands and rapid publication of all data), and its program to forecast key crop yields during the growing season to benefit both private traders and policy makers. MEFT is beginning a program to publish trade data on a more timely basis through a web site and monthly bulletins.

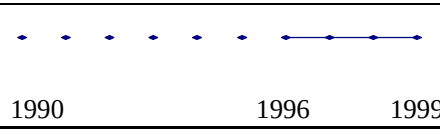
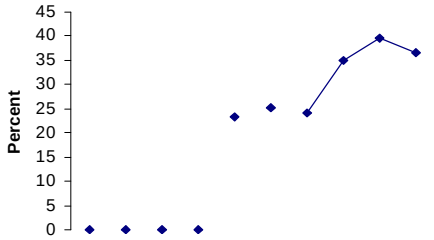
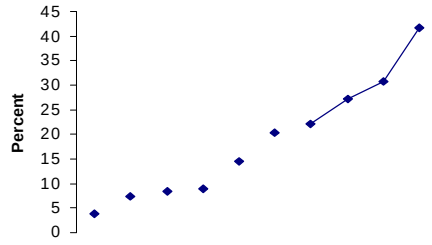
PROGRESS INDICATORS: SUMMARY OF POLICY EFFECTS DURING APRP

Indicator	Effects of Policy Reforms	Indicator Trend Before APRP APRP	Policy Effect during APRP
			
1.a) **Real value of cotton lint exports**	Cotton exports were volatile (no significant trend) during the decade ending 1999/2000. In the early years of agricultural reform (1986/87 to 1992/93), the real value of cotton lint exports declined by 38 percent per year, while later and during APRP (1995/96 to 1999/00) they increased at an annual rate of 29 percent**.** Cotton lint exports have frequently been hampered by policies, including minimum export prices and/or minium export grades that are set too high or by bans or quotas on exports. Exports have been volatile partly due to world supply and demand conditions, and partly due to domestic supply constraints (production shortfalls and decisions to allocate most of the crop to domestic spinners). Data shown are in constant LE of 1986/87, in millions.		Mixed but improving
1.b) **Real value of cotton yarn exports**	The real value of cotton and cotton-blend yarn exports declined at 9.3% percent per year from 1991 to 1999. Yarn exports are hindered by some policies, including minimum export prices. Moreover, the difficulty of importing lint (because of a rather rigid phytosanitary policy) restricts the flexibility of spinners and results in lower yarn exports when seed cotton production is lower in Egypt. Like lint exports, exports of yarn have been volatile partly because of world supply and demand conditions. Yarn output and exports are down in large part because spinning remains dominated by public companies, which are in financial difficulty and operating at low capacity. Data shown are in constant LE of 1986/87, in millions.		Mostly negative

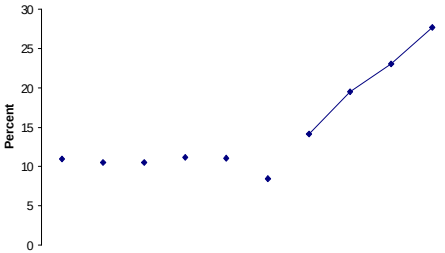
PROGRESS INDICATORS: SUMMARY OF POLICY EFFECTS DURING APRP, cont'd

Indicator	Effects of Policy Reforms	Indicator Trend Before APRP APRP 1990 1996 1999	Policy Effect during APRP
2. **Private sector share of distribution of nitrogenous fertilizer**	This indicator is a direct measure of the effects of reforms undertaken under APCP and APRP and of an intervening "crisis." After significant progress toward putting fertilizer distribution in private hands, the GOE put it back with PBDAC in 1995/96 before gradually liberalizing again in the aftermath of the problems. By 1997/98 the private share of distribution had reached almost 50 percent; by 1999/00, it had surpassed 75 percent. PBDAC no longer takes much fertilizer from the factories, but may retain some sales leverage over farmers (to reduce its stocks) through its provision of credit. The PBDAC share has stabilized at less than 10%.		Positive
3.a) **Private sector share of seed cotton trade (volume)**	This indicator is a direct measure of changes in cotton marketing and pricing policies. The private sector was allowed to enter this area in 1994/95. Since that time the GOE has made annual changes in policies, including minimum export prices and qualities, seed cotton floor prices, allocation of PBDAC-run seed cotton purchasing sites, and deficiency payment schemes. These changes have often hampered the ability, and reduced the willingness, of the private sector to participate in seed cotton marketing, despite a clear desire by many companies and individuals to do so. After reaching 53 percent in 1995/96 before dropping to zero in 1996/97, private sector deliveries of seed cotton to the gins climbed back to 37 percent by 1999/2000.		Mostly positive

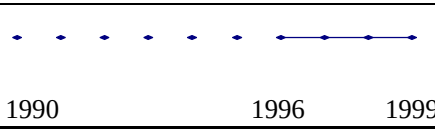
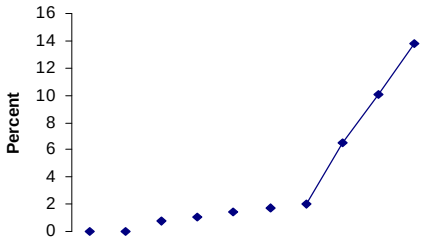
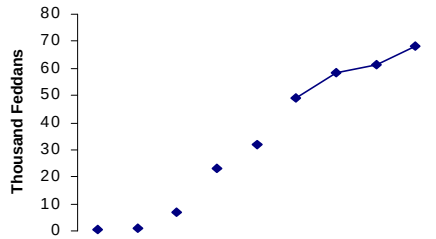
PROGRESS INDICATORS: SUMMARY OF POLICY EFFECTS DURING APRP, cont'd

Indicator	Effects of Policy Reforms	Indicator Trend Before APRP / APRP	Policy Effect during APRP
			
3.b) **Private sector share of cotton ginning (volume)**	At the beginning of APRP, the GOE took clear and positive steps in the area of privatizing cotton ginning: it privatized two of the five public ginning companies. Privatization followed leasing of some gins that began in 1994/95. These steps, as well as improvements to ginning in the private companies, are reflected directly in the significant share of lint that is now produced in private gins (35-40 percent in 1998/99 and 1999/00). Currently privatization in ginning is stalled, mostly over the proper method for handling the transfer of the valuable land on which many gins are situated. Excess national ginning capacity also deters private investment, especially when two of the three remaining public companies have been offered as large multi-gin entities, rather than gin by gin.		Mostly positive
3.c) **Private sector share of cotton spinning (volume)**	The share of yarn spun by the private sector increased steadily (at an annual rate over 20 percent) in the 1990s to over 40 percent by 1999/2000. The GOE has privatized two affiliated spinning companies since 1997/98 and leased out three major units of others. The private sector invested in a dozen new medium-scale operations, and the smaller traditional spinners also continued to increase in number and size. The complex set of policies affecting the decision to invest in spinning seems to be more conducive to private investment in this industry at the end of the 1990s than at the beginning.		Mostly positive

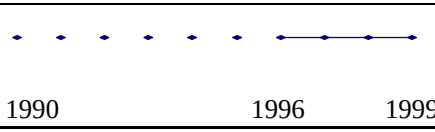
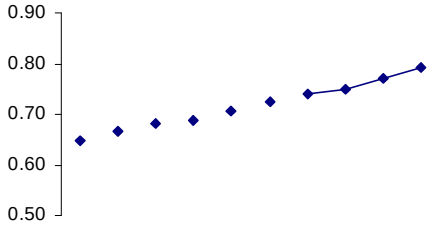
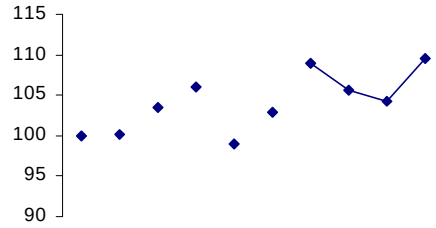
PROGRESS INDICATORS: SUMMARY OF POLICY EFFECTS DURING APRP, cont'd

Indicator	Effects of Policy Reforms	Indicator Trend Before APRP APRP 1990 1996 1999	Policy Effect during APRP
4. **Private sector share of volume of wheat milling**	Commercial private mills are not allowed to purchase domestic wheat. Investment in wheat milling, however, is open, and has expanded rapidly since 1995 with imported wheat as input. The private share of all wheat milling reached almost 28 percent in 1999, while the private sector's share of fine wheat (72% extraction) flour milling reached nearly 70 percent. A significant potential problem exists for these new modern mills, however, if there is no privatization of the older public mills: the latter have unfair cost advantages.		Positive
5.a) **Private sector share of employment, cotton ginning**	Privatization of the cotton ginning industry started well, but has stalled since 1997. The private share of employment in ginning reached more than 42 percent in 1998/99, then dropped to 41 percent in 1999/2000. The effects of an aggressive early retirement program at Arabeya Ginning were offset by declines in employment at Delta, a public ginning company. It is unlikely that there would be further gains in this indicator until privatization resumes.		Mostly positive

PROGRESS INDICATORS: SUMMARY OF POLICY EFFECTS DURING APRP, cont'd

Indicator	Effects of Policy Reforms	Indicator Trend Before APRP APRP	Policy Effect during APRP
			
5.b) **Private sector share of employment, cotton spinning**	This indicator moves in the same direction as the private share in cotton spun. The amount of labor in private spinning accelerated in the latter half of the 1990s with the accumulated effects of policy reforms, reflecting the new modern investments and expansion by the traditional private spinners, who use more labor. The private sector's share of spinning of cotton and blended yarn by volume is now over 40 percent, whereas its share in spinning employment is only about 14 percent. This difference mostly reflects the higher productivity of labor in private spinning, although there are some unavoidable measurement problems that may exaggerate the amount of labor counted in public spinning.		Mostly positive
6. **Irrigated areas under private water user associations** (WUAs)	WUAs started on a limited basis under IIP, and at present they cover a very small percentage of the total cultivated area (more than 7 million feddans) in Egypt. They may be ready for a more rapid expansion under APRP, as WUAs are formed on branch canals, and if MWRI promotes water boards.		Positive

PROGRESS INDICATORS: SUMMARY OF POLICY EFFECTS DURING APRP, cont'd

Indicator	Effects of Policy Reforms	Indicator Trend Before APRP / APRP	Policy Effect during APRP
			
7. **Volume of paddy rice production per unit of water**	Attempts by the GOE to control total rice acreage to conserve water generally did not meet with great success. The indicator nevertheless reveals some apparent efficiency gains in the use of water to produce rice (from .65 kg./m^3 in 1990 to .79 kg./m^3 in 1999). These improvements probably resulted from the adoption of higher-yielding short-season varieties that were largely bred and distributed before APRP. Recent efforts of MALR and MWRI to capture the water-saving benefits of short-season rice varieties through coordinated planting and irrigation and a shortened irrigation season are likely to increase the level of the indicator significantly, beginning as early as 2000. This would be a major policy impact of APRP.		Very little
8. **Agricultural production per unit of water**	This indicator measures the overall impact of a wide range of policies on agricultural production and on water availability and conservation. The data do not cover tree crops or any production on the New Lands, which creates a bias in the indicator, probably downward. The index number (1990=100) reached its highest level in 1996 and 1999. Despite the very high percentage of Egyptian agriculture that is fully irrigated, this indicator remains somewhat volatile, partly due to weather-related crop yield variations.		Unclear

1 REAL VALUE OF EXPORTS OF COTTON LINT AND COTTON AND COTTON-BLEND YARN

Definition of Progress Indicators

These indicators are defined simply as the level of exports, in value terms. The total value of exports is deflated to ensure that the indicator reflects real increases in exports (as valued by the market), not simply an increasing trend in the prices of all goods. The wholesale price index is used for deflating, and the result is then expressed in constant Egyptian pounds of 1986/87. Adding up the volume of exports would also give an indication of whether the amount of exports was increasing or not, but the volumes of different counts of yarn (or different varieties/grades of lint) should not be added together directly; this would omit the valuable information contained in their differing prices and thus not reveal whether the increased exports were more or less highly valued by importers. Exports of lint and yarn that are valued in international trade in nominal US dollars are converted to Egyptian pounds at the official exchange rate. Thus the deflated indicator does not attempt to compensate for any possible effects of misalignment of the exchange rate.

Relationship of Progress Indicators to Reforms under APRP

The textile industry is one of the largest industries in Egypt. Exports of cotton as lint and yarn are among the main sources of foreign exchange. For these reasons, under APRP considerable effort has been devoted to streamlining and opening up the cotton subsector. These efforts have taken the form of privatization of producing companies (as well as cotton ginning and spinning companies), liberalization of the domestic market and its price and phytosanitary trade barriers, and attempts to allow the production of American or upland cotton in Egypt. The MVE Unit discovered (see Holtzman, Mostafa et al., 2000) a significant number of private spinners who have invested in spinning, particularly open-end spinning, since 1994/95 in part because of the more conducive policy environment. The one new ring spinner, established in late 1998, and one open-end spinner are attempting to make use of unfilled export quotas for cotton yarn.

1a. Real Value of Cotton Lint Exports

Sources of Information

ALCOTEXA – dollar export values and export volumes by variety, 1995/96 to present
Cotton and International Trade Holding Company (merged with the Spinning, Weaving and Ready-Made Clothes Holding Company in June 2000) – cotton utilization, including exports
CAPMAS – wholesale price index, exports
Central Bank of Egypt – monthly exchange rates

Calculation of Progress Indicator

See definition. ALCOTEXA reports seed cotton area (data are published officially by MALR) and lint production, exports, domestic utilization and carryover by cotton marketing year, which runs from September of one year, following the seed cotton harvest, to the end of August of the following year. The crop marketing year is a more appropriate period for grouping, analyzing and presenting data for a crop than the calendar year, which cuts across more than one crop marketing year. In using market years, it is easier to relate marketed and exported volumes and

values to crop production in the current year, carryover from earlier years, and domestic utilization in the current year.

The deflator used in this indicator is the wholesale price index (WPI) for a cotton marketing year, which is calculated as an annual average of monthly index values for the period September to the following August. Export values, stated in nominal dollars, must first be converted to Egyptian pounds using an annual exchange rate calculated from monthly exchange rate data for the September to August period. Then the lint export value data, expressed in nominal Egyptian pounds, are deflated using the annual wholesale price index for the cotton marketing year.

A second deflator used for comparative purposes is the index of total export revenues (EVI). This is calculated, using 1986 as the base year, as an index of the nominal value of Egypt's total merchandise exports, including agricultural and non-agricultural products (industrial, petroleum).

Results and Analysis

In this year's monitoring report, we use cotton lint marketing year statistics rather than calendar year data, used in last year's report. Calendar year data cut across two marketing seasons and are hard to interpret. We also include some analysis of production and export data over the entire agricultural policy reform period, 1986/87 to 1999/2000, which completes the picture and helps us to relate export values to physical output and flows, as well as to world market conditions. (See the Annex for supplementary tables).

Policy can have a major impact on lint exports, in the setting of either minimum export prices or minium export grades that are too high. Quantitative restrictions (QRs) on exports have also been imposed at certain times by the GOE. These QRs have taken the form of export quotas for certain varieties, particularly long-staple varieties used in the domestic spinning industry, or outright bans on exports of particular varieties. Note that exports of three popular long-staple varieties have been subject to unwritten overall quotas during the 2000/01 marketing season. During 1995/96, no exports of long-staple varieties were allowed in order to meet the requirements of the domestic spinning industry. Only ELS exports were permitted during a short period in February 1996. In addition to policy variables, exogenous events in the world market, particularly shifts in the supply of competing types of ELS and LS cotton lint (e.g., U.S. pima production) and dips in demand for fine cotton (e.g., caused by the Asian financial crisis in 1997/98), have affected Egyptian lint export levels and prices.

Using the marketing year data, *some highlights of cotton production and exports during the 1990s* were:

- Cotton production declined steadily from 1980/81, a near record year, to a three-year low period from 1990/91 to 1992/93. Low output during the first two of these years was coupled with high levels of domestic utilization of Egyptian lint, averaging 5.5 million lint kentars (mlk) per year (over the three-year period) and representing 86%, 81% and 71% of total supply (production plus carryover, as shown in the Annex).[5] *Domestic*

[5] These high levels of domestic utilization were only surpassed during two other periods (5.584 mmt from 1985/86 to 1987/88, and 5.939 mmt from 1978/79 through 1981/82).

utilization declined from over 5.3 mlk per year or higher during the first four years of the 1990s to the 4.0-4.1 mlk range from 1994/95 through 1998/99, with the exception of 1997/98, when it rose to 4.6 mlk. Egyptian cotton production dropped to the lowest levels since World War II in 1994/95, 1995/96, 1998/99 and 1999/2000.

- The 1993/94 export season, which was completed before the three laws to liberalize the cotton market were passed in 1994, was exceptionally good, as 2.35 million lint kentars were exported, largely due to a bumper crop of 8.3 mlk. Yields in 1993 were the highest ever recorded, 9.4 lint kentars/feddan. Export revenues were 4-5 times higher than in 1991/92 and 1992/93, reaching $221.0 million, only surpassed in 1998/99 and 1999/2000 since the beginning of agricultural policy reform in Egypt. 1994/95 was also a good export year, with 1.3 million kentars shipped and export revenues of $146 million. The average export price per pound was only $0.86/lb in 1993/94 and rose in 1994/95 to $1.00/lb. but remained low. Carryover from 1993/94 into 1994/95 was also high, permitting strong exports, despite a 39% smaller 1994 cotton crop. Domestic utilization took a steep drop from 1993/94 (5.424 mlk) to 1994/95 (4.1 mlk), as the domestic industry suffered from financial problems and the loss of the captive Soviet and Eastern European markets. *Declining domestic utilization freed up lint for export during the 1990s.*

- *In 1998/99 the nominal value of cotton lint exports reached $242.5 million, the highest during APRP and since 1988/89.* This increase was the result mainly of higher export volume than other years, with the exception of 1986/87 and 1993/94. The real value of cotton lint exports increased from 1995/96 to 1998/99. Following high lint export prices in 1995/96, a year of limited exports restricted to ELS varieties, (nominal) export unit prices (in $/lb.) declined from 1996/97 on, contributing to higher export volumes. A decline in U.S. pima production in 1999/2000 led to higher export prices that marketing season relative to 1998/99 and similarly strong export volume, despite two successive years of lower seed cotton production in Egypt. ALCOTEXA set opening prices lower each year from 1996/97 on, in response to lower world prices, before raising prices in 2000/01 in recognition of tighter world supply conditions.

- Following large areas sown to cotton and large crops in 1996 and 1997, *area planted and cotton output declined successively in 1998, 1999 and 2000,* while rice area and output soared in 1999 and 2000. Farmers reduced area to cotton in response to uncertainty about government pricing policy at the time of planting, declining seed cotton prices, and lower real returns to cotton since 1996. Rice area expanded as prices and returns were higher to rice cultivation, as well as to the rice rotations with other crops (berseem, wheat, fava beans). Because cotton must be planted early (by the end of March) to obtain maximum yields, many farmers prefer to harvest another cut of berseem or to grow wheat (which is harvested from mid-April to mid-May) before planting rice. Paddy can be planted in nurseries for transplanting in late May or early June, so growers who choose to plant rice can delay field planting for 1.5-2.5 months beyond the optimal planting dates (2-3 week range in March) for cotton.

- Over the first years of the extended policy reform period (1986/87 to 1992/93), export revenue from ELS lint comprised from 60% to 80% of the total value of lint exports. This dropped to the 35% to 45% range during most years of the later reform period (1993/94 to 1999/00), with the notable exceptions of 1995/96, when no long-staple cotton exports were permitted, and 1998/99, when the value of ELS exports hit a low 24%. The 1998/99 marketing season was an anomaly in that respect, as ELS exports comprised a more normal 46% of total export revenues in 1999/2000.

While area planted to cotton declined 41% from 1996/97 to 2000/01, export volume and revenues rose steadily from 1995/96 to 1998/99 and were maintained at high levels in 1999/2000. Export volume, as a percentage of total lint supply (production plus carryover), was 24.8% in 1998/99 and 31.9% in 1999/2000. The proportion of the crop exported was higher during these two years than for any other years during the reform period. This is a positive achievement, which shows that Egypt is committed to maintaining significant shares in foreign markets, which was not considered the case during the early 1990s, when exports represented only 4-6% of total supply over a three-year period (1990/91 to 1992/93) and was only 6.4% of total supply in 1995/96.

The increasing relative importance of exports is also evidence of how distressed the domestic spinning industry has become; utilization fell 49% from 1992/93 (5.7 million lint kentars) to 1999/2000 (2.9 million lk). Exports in the current marketing year, 2000/01, will likely exceed 35% of total Egyptian lint supply and $200 million of revenue, evidence of continued GOE commitment to promoting lint exports. Domestic use of Egyptian lint may only reach about 2.5 mlk in the current marketing year.[6]

Figure 1-1 shows the nominal and real value of lint exports over the extended agricultural policy reform period, 1986/87 to 1999/00. What is most impressive is the *volatility of export volume and real export revenue.* This volatility is a function of multiple factors:

- seed cotton production in the current year
- lint cotton carryover from earlier years
- the requirements of the domestic spinning industry (administrative requirements until recent years, when more market-based demand intervened)
- Egyptian lint export prices, relative to U.S. pima, the main competitor (administered minimum export prices have only recently been relaxed somewhat)
- foreign (and domestic) demand for Egyptian spinners' yarn, spun from Egyptian lint

[6] Domestic spinners' utilization of Egyptian lint is being supplemented by large-volume imports of Greek and Syrian cotton in 2000/01 (over 20,000 mt contracted as of early February 2001).

- policy uncertainty associated with pricing at multiple levels of the cotton subsector, ability to export lint (vs. administratively determined domestic lint requirements), and administration of subsidies (reimbursement of deficiency payments to growers, e.g.)
- MALR decisions regarding cotton varieties (phasing out/introduction of new varieties; area planted to each variety)

Both the nominal value and the real value of cotton lint exports (with both deflators) fluctuated over the extended policy reform period, 1986/87 to 1999/2000 (see Figure 1-1). Breaking the extended reform period into segments reveals that nominal and constant export trended downward strongly (at an annual rate of 38 percent) from 1986/87 to 1992/93 before spiking upward in 1993/94, dropping in the two successive years, and then trending upward from 1996/97 on (at the rate of 29 percent). *The trend for export revenues during the APRP period is therefore strongly positive, matching the expansion in lint export volume.*

The constant (deflated) value of exports in 1998/99 reached its highest level during APRP, it remained at a high level in 1999/2000, and it will likely remain high in 2000/01 and beyond. Following a downturn in world demand for fine cotton at the time of the Asian financial crisis (1997-98), demand for Egyptian lint has been strong during the past couple of years, which has resulted in high export prices and the highest export volumes since 1993/94.

Table 1a-1: Nominal and Constant Values of Cotton Lint Exports, 1986/87-1999/00

Year	Nominal Value ($ '000)	Average Exch. Rate (LE/$)	Nominal Value (LE '000)	Wholesale Price Index (1986/87= 1.00)	Value, Constant LE of 1986/87 (LE '000)	Export Value Index (1986= 1.00)	Value, Constant LE of 1986/87 (LE '000)
1986/87	328,824	2.04	670,801	1.00	670,801	1.00	670,801
1987/88	329,179	2.25	740,652	1.14	651,687	1.48	499,442
1988/89	288,866	2.43	701,945	1.43	489,198	1.94	360,990
1989/90	221,225	2.63	581,822	1.83	318,557	2.79	208,380
1990/91	87,564	3.04	266,194	2.13	124,797	3.39	78,626
1991/92	52,806	3.31	174,788	2.52	69,490	5.73	30,515
1992/93	45,807	3.34	152,996	2.82	54,285	5.05	30,295
1993/94	221,049	3.38	747,146	2.88	259,516	5.16	144,845
1994/95	146,440	3.39	496,430	3.05	162,604	5.81	85,514
1995/96	78,055	3.39	264,605	3.25	81,542	5.82	45,466
1996/97	122,601	3.39	415,616	3.52	118,207	5.98	69,523
1997/98	160,777	3.41	548,250	3.66	149,713	6.49	84,447
1998/99	242,499	3.42	829,347	3.71	223,303	5.38	154,245
1999/00	225,142	3.61	812,763	3.75	216,910	5.92	137,242

Sources: Export quantities and prices: ALCOTEXA, Cotton Gazette, different issues;
WPI: CAPMAS, Statistical yearbook, different issues;
Exchange rate: CBE.

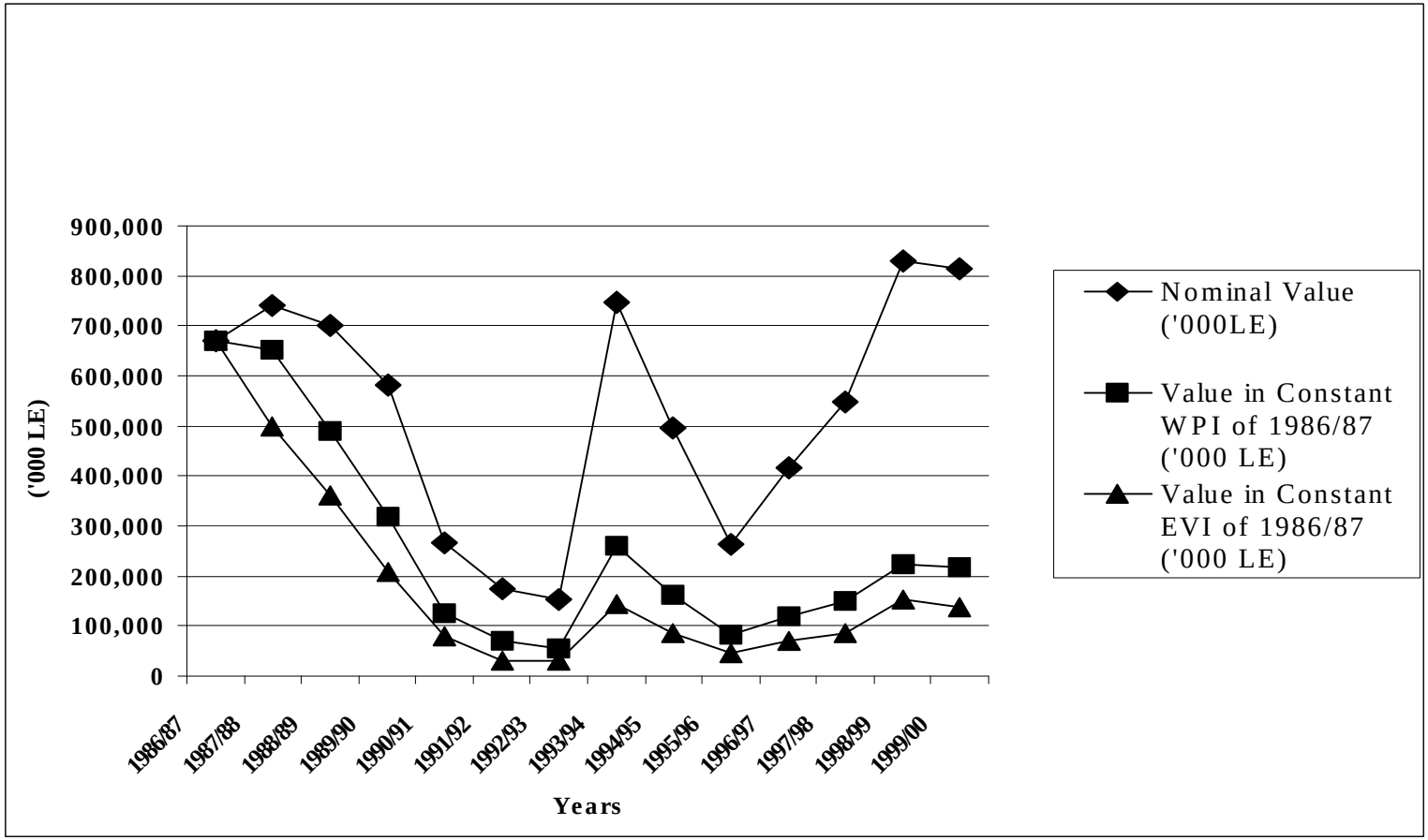
Notes: 1) The nominal value of lint exports is reported in dollar terms by ALCOTEXA for 1998/99 and 1999/00; before that it was calculated from minimum export prices and export quantities reported by ALCOTEXA in the Cotton Gazette.

2) These nominal values are converted to Egyptian LE at an average exchange rate between the pound and the dollar for the marketing year (September-August).

3) These nominal LE export values are then deflated by the WPI (wholesale price index), where 1986/87 = 100. The annual WPI is calculated as an average of monthly index values for the marketing year from 1990/91 to 1999/00. From 1987/88 to 1989/90, the calendar year index value is used for the first year noted, as historically 80-90% of the export commitments (contracts) are made during the first four months of the marketing year.

4) The nominal LE export values are also deflated by the EVI (export value index), where 1986 = 100. The export value data cover product exports only, not services. The index is calculated for calendar years, as the export value data are only available from CAPMAS for calendar years. Again the index value applied to each cotton marketing year is for the first year (first four months) of the marketing year.

Figure 1-1: Nominal and Real Value of Cotton Lint Exports, 1986/87 to 1999/00



1b. Real Value of Cotton and Cotton-Blend Yarn Exports

Sources of Information
CAPMAS
TCF

Calculation of Progress Indicator
See definition. Yarn export volumes and values are reported by calendar year. Yarn refers to both 100% cotton yarn, which comprises 84% to 97% of the total volume of cotton and blended cotton/synthetic yarn exports, and blended yarn exports. Blended yarn generally ranges from 35% to 60% cotton, with the synthetic component generally being polyester.

Results and Analysis
Exports of cotton and blended cotton/synthetic yarn accounted for over 50% of the nominal value of total cotton and blended cotton/synthetic product exports (excluding lint) from Egypt during the early 1990s (note that this calculation excludes cotton lint). *This proportion steadily declined below 50% from 1993 on, dropping to only 20% in 1999.* The value of fabric exports, as a proportion of total textile product exports, also declined from over 15% of the total value from 1990 to 1994 (with the exception of 1992) to only 6.5% in 1999. The value of yarn and fabric exports fell at the expense of strongly rising exports of knits and woven garments. Only 18% of the total value of textile exports in 1990, knits and woven garments comprised 60% by 1999.

This stunning reversal was due to the declining competitiveness of Egyptian yarn exports in international markets during the 1990s, following the "loss" of the principal Soviet market, and the dramatic expansion of private weaving, knitting and RMG manufacture for export throughout the 1990s. Egyptian yarn was uncompetitive largely because domestic public spinners used almost entirely Egyptian cotton lint, paying high prices based on administered and often high lint export prices. Egyptian lint was expensive raw material to spin low- to medium-count yarn, which fared poorly in export markets against cheaper Indian, Pakistani, and other Asian yarn, spun from cheap short-staple cotton. In contrast, the private exporters of woven cloth, knits and RMGs were able to import cheap Asian yarn, without paying customs duties, at prices well below those of Egyptian yarn. Duties were waived if the manufactured textiles, using this cheap Asian yarn, were exported.

During the period 1993-1999, pure cotton yarn accounted for 88.7% of the volume and 91.5% of the value of pure plus blended cotton yarn exports. For the first six months of 2000, blended cotton yarn exports were nearly 20% of total cotton yarn exports, as many spinners were substituting cheaper polyester for expensive Egyptian cotton lint. Table 1b-1 shows the nominal and constant currency value of cotton yarn exports during the period 1990-1999.

Yarn exports were volatile during the 1990s, particularly after 1993, but they trended downward over the decade (- 3.7% in nominal terms and - 9.3% in constant terms). *A priori*, one might expect lint and yarn exports to increase or decrease in tandem, reflecting changes in the level of seed cotton production. In practice, this has not been the case. Lint and yarn exports were weakly correlated ($r = 0.15$) over the period 1990-1999, comparing calendar year data. When lint exports per market year (September-August) were compared to yarn exports per calendar year

(January-December), the correlation was found to be negative (r = - 0.34). Although these two periods differ by one quarter, they are probably suitable for purposes of analysis.[7] A negative relationship between lint exports and yarn exports is plausible, as increased exports of lint may make less lint available for domestic spinners, who will then produce and export less yarn.

The relationship between cotton production and lint exports was rather weak (r = 0.26), but it was much stronger (r = 0.66) between total lint supply (production plus carryover) and exports. Although the level of carryover stocks from one marketing season to the next is in part a function of seed cotton production in the prior year, world market conditions and policy variables are also important, particularly price policy decisions. High ALCOTEXA lint export prices have led to poor sales in some years (especially 1996/97) and have exacerbated the build-up of stocks. When lint export prices have been high, into-mill lint prices faced by domestic spinners have also been high, which has dampened demand for Egyptian lint. TCF's minimum yarn export prices, ostensibly set by an industry committee (comprised of almost entirely public spinning company chairmen and holding company officials), also affect the level of yarn exports, although exogenous world yarn supplies, exports from competitors and their (generally lower) prices influence Egypt's yarn export levels. Slow exports of Egyptian yarn can lead to decreased demand by domestic spinners for Egyptian lint (and hence overall reduced domestic utilization of Egyptian lint). This has been an important contributing factor to declining domestic consumption of Egyptian lint and the increased availability of lint for export.

The total value of cotton and blended yarn exported in 1996 dropped sharply, relative to 1994 and 1995, due to the sharp increase in the prices of raw cotton during the 1995/96 season and the concomitant increase in the prices of cotton yarn. This dampened foreign demand for Egyptian yarn exports.[8] The total value of cotton and blended yarn exports strengthened in 1997, when

[7] Egyptian cotton is harvested from September through mid-November. By the time the seed cotton is sold at the sales rings, moved to the gins, ginned, and ready to sell as lint to domestic spinners, one to three months have elapsed. Hence, domestic spinners begin receiving their initial lint shipments from the new cotton crop no earlier than mid-October and as late as January.

[8] Domestic spinners, particularly public companies, can use the yarn they produce as an input into weaving, knitting and manufacture of RMGs. In theory, high minimum export prices for yarn, set by TCF, could lead domestic spinners to use the yarn as an input into their own integrated operations (i.e., weaving and RMG units) or sell it to other public companies doing weaving, knitting or RMG production. MVE does not have access to time-series data on domestic public spinners' yarn production, utilization of this yarn in their own operations, sales to other domestic textile firms (public vs. private), and exports. Without this disaggregation, we do not

the volume of yarn exports returned to 1995 levels, but then dropped in 1998 and 1999, reaching the lowest level in nominal terms (LE 505.4 million) during the decade of the 1990s.

The main problem facing the Egyptian spinning industry in the second half of the 1990s was tough competition in the international yarn market, combined with the high cost of using Egyptian cotton lint as the main input into domestic spinning (equal to 60-70% of the variable cost of spinning, according to most Egyptian spinners). The inefficiency of the public spinning industry was, of course, a contributing factor. More importantly, Egyptian cotton lint, a high-quality and expensive raw material, has been used to spin low counts of yarn, generally used to produce cloth, knits and garments of low- to medium-quality for everyday use. This under-spinning of Egyptian lint has meant that costly, high-quality raw material has been used to produce low- to medium-value and quality textile products intended for consumers with modest incomes. Foreign spinners who use Egyptian lint have a very different strategy; they typically mix Egyptian lint in with other, somewhat lower-quality types of lint to produce high-quality and -count yarn used in making high-quality finished products–linen, 100% fine cotton shirts and blouses, scarves, bath towels and other goods–which can be sold at premium prices in high-income markets.

Table 1b-1: Cotton and Cotton-Blend Yarn Exports, 1990-1999

Year	Nominal Value (LE '000)	Wholesale Price Index (1986/87=1.00)	Value, Constant LE of 1986/87 (LE '000)
1990	917,720	2.14	428,841
1991	906,670	2.57	352,790
1992	912,461	2.73	334,235
1993	751,728	2.91	258,326
1994	1,301,938	3.19	408,131
1995	1,107,439	3.39	326,678
1996	726,821	3.63	200,226

know if periods of high yarn minimum export prices (and low export levels) coincide with periods of greater domestic use of the yarn in other textile operations.

1997	991,514	3.66	270,905
1998	778,914	3.71	209,950
1999	505,394	3.74	135,132

Sources: Exports: TCF, Quarterly Report, different issues;
WPI: CAPMAS, Statistical Yearbook, different issues .

2 PRIVATE SECTOR SHARE OF DISTRIBUTION OF NITROGENOUS FERTILIZER

Definition of Progress Indicator
This indicator is defined as the share of the domestically produced nitrogenous fertilizer that is sold by the producing factories to private entities.

Relationship of Progress Indicator to Reforms under APRP
Under APCP and under tranches I and II of APRP, there were significant efforts to ensure that the wholesale and retail trade of fertilizer be open to participation by the private sector. This indicator measures whether that is the case.

Beginning in 1989 direct production subsidies on fertilizer were eliminated. In July, 1991, subsidies to PBDAC on distribution were eliminated[9] and fertilizer distribution by the private sector was legalized.[10] During the fertilizer "crisis" of 1995 and 1996, however, distribution of domestically produced fertilizer was removed from private control and returned to PBDAC. Since that time, PBDAC's share has again declined.

Sources of Information
Abu Qir company
El Nasr company
PBDAC
MPE, Fertilizer Bureau

Calculation of Progress Indicator
See definition.

Results and Analysis
The removal of subsidies in the late 1980s and early 1990s allowed the private sector to become active in chemical fertilizer distribution in Egypt. Private traders both re-sell fertilizers to retailers located at the regional or village levels and sell directly to relatively big farmers.

[9] El Guindy et al., "Marketing and Price Policies for Nitrogen Fertilizers in Egypt," APRP RDI Unit Report No. 22, December, 1997, p. 68.

[10] World Bank, "Arab Republic of Egypt: An Agricultural Strategy for the 1990s," Report No. 11083-EGT, December, 1992, p. 63.

By July, 1992–only one year after legalization–private sector traders dominated the market. By December, 1992 there were over 6,000 private fertilizer dealers in Egypt; they handled about 60 percent of fertilizer distribution (IFDC, 1993, cited in Zalla and Saad, 1999, p. 9).

By 1995 the fertilizer market had been transformed into a competitive market with minimal presence of the public sector. There was an interruption in this trend in 1995, however, when the Government reintroduced the monopoly of PBDAC with respect to domestically produced nitrogen fertilizer. Exports from the producing factories, decreased production due to simultaneous shutdowns for maintenance at more than one factory, and import duties brought on a "crisis" in nitrogenous fertilizer supplies and prices. The GOE temporarily exempted fertilizer from duties, and large quantities of imports flowed in. Since then the private sector has gradually regained its position as the dominant distribution channel for chemical fertilizers.

The results (see Table 2-2 and Figure 2-1) illustrate the effect of the reforms and the crisis. The private sectors's share increased from zero at the beginning of the decade to about 70% in the summer of 1995, after which PBDAC became the only entity to receive fertilizer from the factories. When the effects of the "crisis" receded, the Bank's share was gradually reduced, so that for 1999/00, the share of the private sector had returned to more than 75%. PBDAC has continued to purchase just under 10 percent of the nitrogenous fertilizer sold by the factories, despite having had significant stocks recently. The share of the cooperatives has declined over the past few years, but is still greater than 10 percent.

Table 2-1 shows that production of nitrogenous fertilizer nearly doubled in the last ten years, mainly through increases in the production of urea and AN. The increase in urea production is largely due to a new factory, Abu Qir 3, which opened in the latter half of 1998/99 but only reached full production in 1999/00. The increased share of the private sector, combined with the increase in production, means that the private sector is distributing domestically a much larger volume of fertilizer now than it was before, as very little is exported.

Table 2-1: Domestic Production of Nitrogenous Fertilizers, 1989/90 to 1999/00

('000 mt, 15.5% Nitrogen Equivalent)

Year	Urea	AN	CN	AS	Total
1990/91	2,742	1,256	226	84	4,308
1991/92	2,594	2,418	212	89	5,313
1992/93	2,481	2,890	95	89	5,555
1993/94	2,763	2,903	107	93	5,866
1994/95	2,721	3,231	25	89	6,067
1995/96	3,107	3,411	5	104	6,626
1996/97	3,089	3,365	0	124	6,578

Year	Urea	AN	CN	AS	Total
1997/98	2,882	3,127	0	86	6,095
1998/99	2,558	3,173	0	85	6,816
1999/00	4,897	3,095	0	113	8,105

Source: Ministry of Public Enterprise, Fertilizer Council, unpublished data.

Table 2-2: Distribution Shares of Nitrogenous Fertilizer, by Sector, 1989/90 to 1999/00

(Percent)

Year	PBDAC	Private[a]	Cooperatives	Public Sector[b]
1990/91		0.0[c]		
1991/92	48.3	24.7	18.0	9.0
1992/93	24.8	60.4	14.9	0.0
1993/94	13.5	63.7	20.9	1.8
1994/95	8.6	70.7	20.2	0.5
1995/96[d]	94.2	3.5	1.3	0.9
1996/97	59.1	4.1	19.1	17.7
1997/98	17.6	47.6	18.8	4.4
1998/99	8.6	74.8	15.0	1.5
1999/00	9.2	76.6	12.7	1.4

Sources: Ministry of Public Enterprise, Fertilizer Council, unpublished data; *Fertilizer Policy Impact Study* (Final Report) International Fertilizer Development Center, June 1993.

Notes:

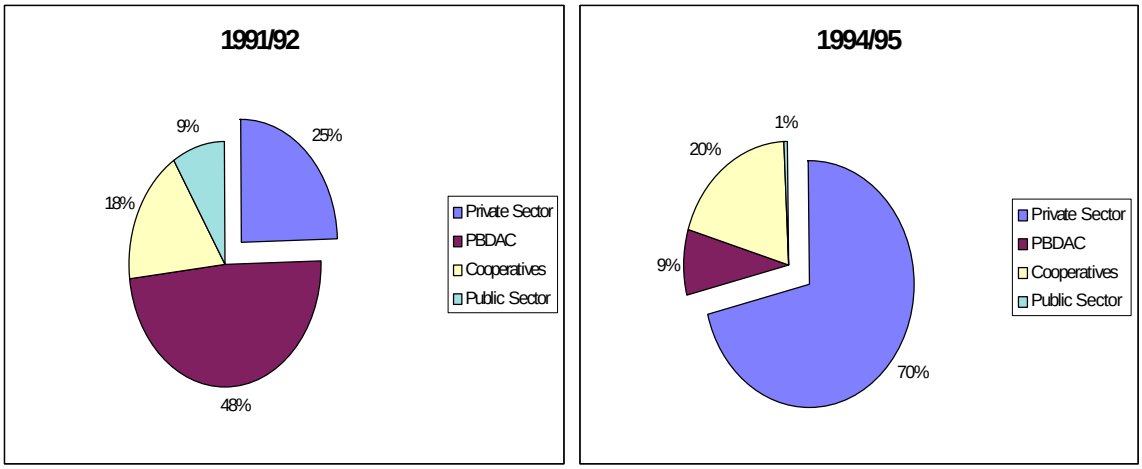
[a] Most of this fertilizer goes to the domestic market; a very small part is exports.

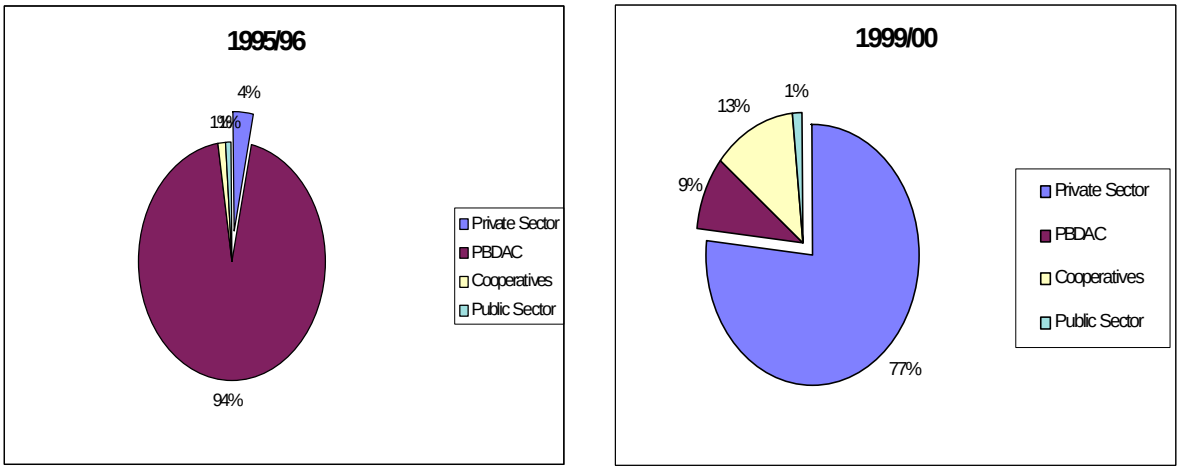
[b] These are public companies that receive fertilizer from the factories, earn a commission, and resell to wholesalers. See Zalla and Saad (1998).

[c] It was illegal for the private sector to distribute fertilizer before July, 1991.

[d] From August 5, 1995 through December, 1995 PBDAC handled 100% of the nitrogen fertilizer. This estimate does not cover the period from July 1 to August 4, 1995.

Figure 2-1: Distribution of Nitrogenous Fertilizer





3 PRIVATE SECTOR SHARE OF VOLUME OF SEED COTTON TRADE, GINNING, AND SPINNING

Definition of Progress Indicators

These indicators are defined simply as the share going to the private sector of the trade and processing of cotton products, namely seed cotton, lint, and yarn. Each indicator shows the amount of the activity carried out by private agents as a proportion of the total. In the case of yarn, the indicator is based on data that include both pure cotton yarn and cotton/synthetic blends.

3a. Private Sector Share of Volume of Seed Cotton Trade

Relationship of Progress Indicator to Reforms under APRP

Under APRP, and before it APCP, the GOE has been working toward a cotton marketing system in which the private sector plays the dominant, if not the exclusive role. It has used both privatization and liberalization to accomplish this goal. The private sector was allowed to enter into seed cotton marketing and ginning in 1994/95. These indicators show directly whether this goal has been achieved in the specific areas of seed cotton marketing, ginning of seed cotton into lint, and spinning of lint into yarn.

Sources of Information

CATGO
Cotton textile holding companies
ALCOTEXA
Private ginning companies
MVE survey of private spinners

Calculation of Progress Indicator

The measurement of these indicators is fairly straightforward. The only choices for calculation are whether to use the input or the output side of the processing operations. For ginning the data are the quantities of lint produced, and for spinning the indicator measures the amount of yarn produced. These choices were dictated by the availability of data, but they do not introduce any significant bias into the results.

Results and Analysis

Table 3-1 shows the volatile nature of this indicator, which has been influenced directly by the Government's policies. It should be stated first that because of the structure of the seed cotton market in Egypt, this indicator is always an *understatement* of the actual participation of the private sector. That is, seed cotton is usually sold by producers in "rings" operated by PBDAC, and it is also sometimes sold outside of those rings. Sometimes commission agents or traders–both registered and unregistered–buy the seed cotton from farmers and bring the cotton to larger trading companies, both public and private. These companies have the cotton graded in their name at the ring and then move the cotton to the gin. This indicator measures the seed cotton that arrives at the gins. By this time, some of the cotton has changed hands more than once, sometimes going from private ownership to public, whereas in the seed cotton form, it never goes from public ownership to private. The indicator is presented in the deliveries form because data are available for many years, whereas special efforts need to be made to estimate

the share of seed cotton bought, and these data are not consistently available for the early years of private seed cotton trading.

In 1994/95 the seed cotton marketing arena was opened to the private sector, which took an encouraging 30-percent stake in these activities. Participation by the private sector started with one main buyer (El Ahly Co.), which also leased a number of public gins, and two other companies. The following year showed an even more remarkable 53-percent share for private companies. This growth in private participation came through an increase in the number of private companies participating, which reached about a dozen[11]. This large increase came despite a ban on exports of lint that lasted until February, 1996. The Government sought to meet the needs of the domestic spinning mills first. Exports in 1995/96 were the second lowest in the decade; only ELS varieties were allowed to be exported.

In 1996/97, the private sector was hit with the impact of the Government's efforts to give farmers a high price for their seed cotton. The GOE estimated the support price based on what turned out to be a temporary spike in world cotton prices in early 1996. The private sector did not participate at all that year, because the floor prices were higher than world prices. Private sector representatives asked for a mechanism to compensate them for the difference between the two prices, but the reply came only in the following year.

In the fourth liberalized season, 1997/98, private sector deliveries of seed cotton to gins were limited to about 5% of the crop. There were only three private buyers, two of them– Modern Nile Company and Arabeya Ginning Company– under one group; the third buyer was Arab Trade and Investment Company.[12] Floor prices were again higher than world prices, but, partly on the advice of APRP, the GOE instituted a deficiency payment scheme to compensate traders for the difference. Unfortunately the scheme was developed too late in the season to be implemented successfully. It also included a prohibitive requirement for the private companies to make large cash deposits before starting their marketing activities, a requirement that did not apply to public sector companies.

In 1998/1999 at least eleven major private sector companies participated in seed cotton marketing and at least 66 smaller registered and non-registered private traders participated (see Holtzman

[11]The dozen figure refers only to companies that actually delivered to gins; more actually bought seed cotton (58 of the sample of 74 from the 1998/99 trader survey).

[12]In a survey of 74 seed cotton traders in November-December, 1998, MVE learned that 21 sample traders bought 50,700 seed kentars in 1997/98. Excluding one large trader, who became an ALCOTEXA member in 1998/99, these 20 companies bought 20,700 kentars of seed cotton(though they generally do not appear in statistics regarding deliveries to the gins).

and Mostafa, 1999). In this year, the GOE did not announce a floor price before planting, but eventually declared that it would be the buyer of last resort and tied the support price to the opening export prices of lint announced by ALCOTEXA. Prices for some export cottons were sufficiently reasonable that the private sector returned to the marketing arena with a 20-percent share. That is, at these prices the private sector could compete with public trading companies, who were also buying seed cotton, and make a profit.
In 1999/00 the private share reached 37% (see Krenz and Mostafa, Impact Assessment Report No. 11) of the total seed cotton deliveries. In fact the private sector bought about 45% of the seed cotton from farmers, but sold some of it to public sector companies, which then delivered it to the gins.

During the 1990s the Government opened seed cotton marketing to the private sector by changing the marketing system. Previously PBDAC or cooperatives had operated all marketing rings (where farmers had been required to deliver their seed cotton). In 1994/95 seed cotton was sold in cooperative collection centers, and PBDAC played a very small role in the system. A similar system was used in 1995/96. From 1996/97 on, PBDAC returned to the marketing system in a significant way as the administrator of the marketing rings. In this year of high prices, the private sector did not accept the Government's offer of marketing rings, because the mechanism for compensation for paying fixed prices above world prices levels was not clear. The following year, 1997/98, the private sector was given first choice of rings, and it chose to buy seed cotton in 55 rings out of the 857 rings in the country. In 1998/99, the private sector again had first choice among the rings. Despite some uncertainty during the production season about the Government's plan for price interventions, by the end of the season the plan became clear, and the private sector chose to buy in about 150[13] out of the total of 892 rings.

The area cultivated to cotton in 2000/2001 was about 518,000 feddans, which is the lowest during the last century. The allocation of rings by PBDAC generated complaints from most of the cotton traders as the share of HSU was 26% of the crop. The Cotton Marketing Supervisory Committee allocated 200 sales rings to private companies in 2000/2001, of which 134 were operated by ALCOTEXA members, and 60 by other registered traders.

Table 3a-1: Deliveries of Seed Cotton to Gins, Private Companies and Total, 1990/91-1999/00

(Seed qentars)

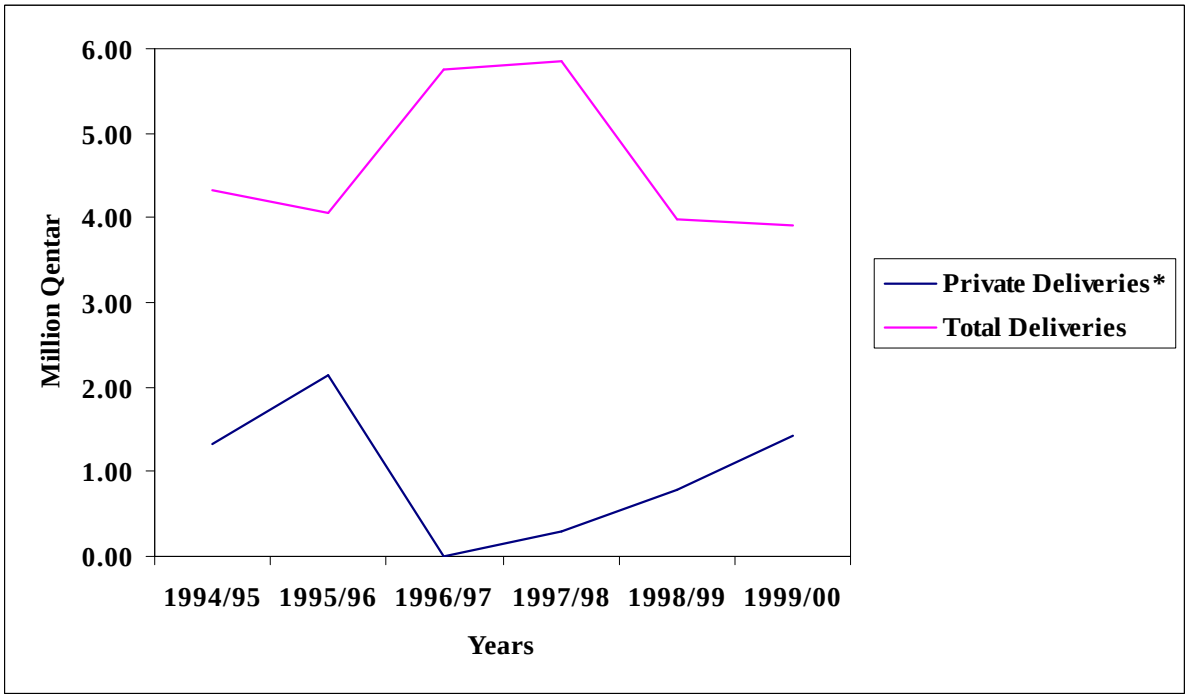
Marketing Year	Private Deliveries	Total Deliveries	Private Share (Percent)
1990/91 - 1993/94	0		0
1994/95	1,331,413	4,317,219	30.8
1995/96	2,146,586	4,061,843	52.8
1996/97	7,410	5,761,146	0.1

[13]The actual number is 149, plus the number of private rings in Fayoum, data for which date were not available.

1997/98	296,181	5,841,666	5.1
1998/99	782,260	3,985,357	19.6
1999/00	1,438,430	3,920,795	36.7

Sources: 1990/91-1998/99: CIT-HC, "*Cotton*," different issues;
1999/00: CATGO, Annual Report, 1999/00.

Figure 3-1: Private Sector Share in Seed Cotton Trade, 1994/95 to 1999/00



* EMEPAC is not included in the share of the private sector in 1999/00.

3b. Private Sector Share of Volume of Cotton Ginning

Relationship of Progress Indicator to Reforms under APRP

Under APRP the GOE has undertaken to privatize the ginning industry. Two ginning companies have been privatized, and the remainder were expected to be privatized by the end of 1990s. This indicator shows the results of those privatizations and the results of new investment in ginning by measuring the amounts of lint produced by private gins as a share of the total.

Sources of Information

Holding Company for Cotton and International Trade

Calculation of Progress Indicator

See definition.

Results and Analysis

During the period 1961-94, all cotton trading, ginning, spinning, weaving and exporting in Egypt were carried out by the Government. Thus before 1996 the five cotton ginning companies were owned by the public sector. Beginning in 1996, two of these companies (Arabeya and Nile) were sold to private investors. Reflecting these highly successful privatizations[14] and other investments and leases by the private sector, the private sector's share of cotton ginning increased from zero in 1993/94 to about 40 percent in 1998/99. It declined slightly in 1999/00 to 37 percent. Since 1997, the pace of privatization in ginning has slowed; until it picks up, the private share of ginning is not likely to increase dramatically.

[14]See Krenz and Mostafa, Special Study No. 3.

Table 3b-1: Cotton Ginned by Ginning Company (Lint & Scarto), 1990/91 - 1999/00

(Lint kentars)

Company	1990/91	1991/92	1992/93	1993/94	1994/95	1995/96	1996/97	1997/98	1998/99	1999/00
Al Ahli* **	0	0	0	0	1,101,60	1,015,78	572,125	0	0	0
Modern Nile* **	0	0	0	0	11,710	36,769	0	0	0	0
Nefertiti* **	0	0	0	0	168,824	137,781	170,300	104,159	51,634	32,717
Egypt* **	0	0	0	0	0	23,033	12,900	0	0	0
Arabeya Ginning**	1,084,50	1,076,86	1,404,81	1,707,10	623,357	682,915	898,286	1,290,44	940,800	892,281
Nile Ginning**	1,013,17	1,008,04	1,333,56	1,735,42	988,958	959,858	1,011,10	990,399	822,689	754,073
Delta Ginning	1,490,91	1,388,33	1,732,64	1,964,65	879,962	991,221	1,463,16	1,541,76	*1,051,19	1,238,97
Misr Ginning	1,383,05	1,437,86	1,531,96	1,609,99	933,808	469,426	1,328,78	1,524,31	971,179	755,526
El Wadi Ginning	930,703	946,976	1,127,75	1,283,37	771,792	499,328	1,402,76	1,376,13	741,264	900,589
Total	5,903,35	5,858,08	7,130,74	8,300,55	5,480,01	4,816,11	6,888,04	6,827,21	4,578,760	4,457,16
Private Sector Share (cotton ginned in privately owned gins)	0	0	0	0	0	0	898,286	2,280,839	1,815,123	1,673,071
Percent	**0**	**0**	**0**	**0**	**0**	**0**	**13.0**	**33.4**	**39.6**	**36.6**
Private Sector Share (cotton ginned in privately owned or leased gins)	0	0	0	0	1,282,135	1,213,370	1,653,611	2,384,998	1,815,123	1,673,071
Percent	**0**	**0**	**0**	**0**	**23.4**	**25.2**	**24.0**	**34.9**	**39.6**	**36.6**

Source: CIT-HC, "Cotton," different issues.

Notes: Heavy line contains cotton ginned under private ownership or lease.

*Nassco had a contract with Delta Ginning in 1998/99 to gin its seed cotton and to use cleaning and pressing lines so Nassco could export directly from the gins, but none of this cotton is included as private because the gin is public.

**Arabeya Ginning and Nile Ginning were public sector companies until privatized in 1996/97 and 1997/98, respectively.

*** These private companies leased and managed public sector gins for several years beginning in 1994/95. Nefertiti had a five-year contract with Nile Ginning, which expired at the end of the 1998/99 ginning season, and Nile was privatized during this time. Cotton ginned by Nefertiti is included under privately leased in all five years. As of 1998/99, Nefertiti also operated its own gin. The breakdown of the cotton ginned by Nefertiti in 1998/99 is as follows: 32,971 lk (leased), 18,663 lk (owned).

3c. Private Sector Share of Volume of Cotton Spinning

Relationship of Progress Indicator to Reforms under APRP

Under APRP the GOE has begun the privatization of spinning mills. In addition, a substantial number of private investors have entered this industry. A recent MVE survey discovered about twenty private spinners of relatively large scale, in addition to more than one hundred smaller companies operating in the Fowah area using various types of cotton waste as input. The indicator shows the effects of the privatization and private investment as measured by the amount of yarn produced.

Sources of Information

MVE spinner survey
CAPMAS
CIT-HC

Calculation of Progress Indicator

See definition.

MVE conducted a survey of private cotton spinners in May and December 1999, and again in December 2000. Of the 35 spinners surveyed in 1999, 12 companies in Fowah are traditional spinners. In addition to the 12 spinners from Fowah, the survey covered 20 modern private spinners (5 privatized companies, 2 ring spinners and 13 open-end spinners). In updating the survey in 2000, the Unit found no additional cotton spinners operating, but 4 spinners left the sample because they are now spinning synthetics only. This is due to higher prices for cotton, relative to polyester, in 2000/01 compared to earlier years, and very limited domestic cotton lint supplies.

Results and Analysis

Table 3c-1 shows the share of the private sector in cotton and cotton-blend yarn spun in Egypt. The share increased from 7.4% in 1990/91 to 41.7 percent in 1999/00. This accompanied the increase in the number of companies. In 1990/91 there were about 55 companies operating in Fowah and about five other private spinners in production in Egypt, according to the MVE spinner survey. By 1999/00 these numbers had increased to 160 in Fowah and 20 private spinners.[15]

The share of yarn spun by the private sector increased rapidly in the 1990s. The rate of increase of the share was about 21.6 percent per year from a very low base. The GOE has privatized three

[15] The two joint investment companies, Misr Amriya and Miratex, are not considered private spinners as their ownership is entirely public.

affiliated spinning companies since 1997/98 and leased out one major unit of another. The private sector invested in more than a dozen new medium-scale operations, and the smaller traditional spinners also continued to increase in number and size. The complex set of policies affecting the decision to invest in spinning seemed to be more conducive by the end of the 1990s than at the beginning. In addition, spinners have been able to find productive niches, either by spinning the cotton waste of the spinning and weaving industry, or by producing high-quality yarns for specific foreign clients.

Conversely, the output from the public sector declined in the 1990s from over 267,000 mt in 1991/92 to about 130,100 tons in 1999/00. This reduction in the spinning output from the public sector is partly the result of the exit of a number of the public companies through privatization and leasing, as well as several liquidations. It is also the result of financial problems facing many public spinners, who were forced to operate at lower rates of capacity utilization and to decrease output. The total production of yarn decreased less steeply from 288,000 mt in 1991/92 to 223,000 in 1999/00, as private output increased from 21,000 mt in 1991/92 to nearly 93,000 mt in 1999/00.

Table 3c-1: Private Sector Share of Volume of Cotton[1] Spinning, 1991/92 - 1999/00

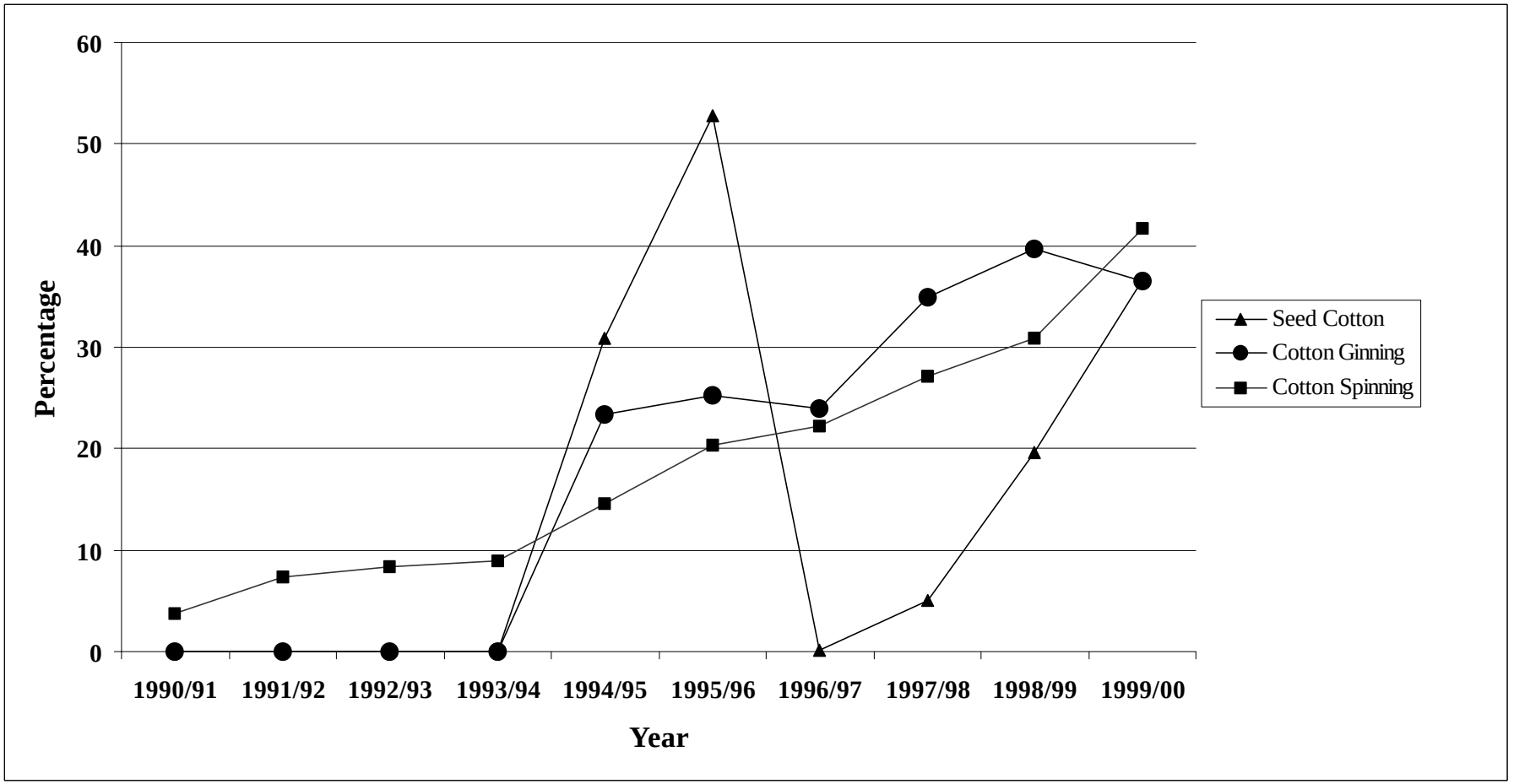
Year	Public Sector		Private Sector						Total Yarn (Tons)
	Quantity (Tons)	Share (%)	Number of Factories (Fowah) [1]	Production per Factory (Fowah) [2]	Total Production (Fowah)	Total Production (Non Fowah)	Total (Tons)	Share (%)	
1991/92	266,946	92.6	65	77.40	5,031	16,232	21,263	7.4	288,209
1992/93	279,196	91.7	70	120.56	8,439	16,742	25,181	8.3	304,377
1993/94	281,127	91	80	137.84	11,027	16,630	27,657	9.0	308,784
1994/95	269,375	85.5	90	174.89	15,740	30,054	45,794	14.5	315,169
1995/96	249,614	79.7	95	172.08	16,348	47,281	63,629	20.3	313,243
1996/97	239,447	77.8	110	162.88	17,917	50,426	68,343	22.2	307,790
1997/98	200,109	72.9	120	163.88	19,666	54,904	74,570	27.1	274,679
1998/99	201,959	69.2	134	233.88	31,340	58,611	89,951	30.8	291,910
1999/00	130,100	58.3	160	233.00	37,281	55,698	92,979	41.7	223,079

Sources: Public sector, 1991/92-1997/98: CAPMAS, "*Darasat a'n al sana'at al tahwileya: Sana'it ghazl al qotn wa al fibran* (Studies of Manufacturing: The Cotton and Other Fibers Spinning Industry)**";** 1998/99-1999/00: SWR-HC, unpublished data.
Private sector: MVE cotton spinner surveys, 1999 and 2000.

Notes: [1] Includes cotton and cotton/synthetic blends
[2] Estimated by Fowah informants.

[3] The number of Fowah companies surveyed in 1999, that were operating in 1990/91 was 3, 4 in 1991/92, 5 in 1992/93, 5 in 1993/94, 9 in 1994/95, 10 in 1995/96, 12 in 1996/97, 12 in 1997/98, and 12 in 1998/99.

Figure 3-2: Private Sector Shares in Seed Cotton Marketing, Ginning and Spinning, 1990/91-1999/00



4 PRIVATE SECTOR SHARE OF VOLUME OF WHEAT MILLING

Definition of Progress Indicator

This indicator is defined as the share of wheat that is ground in mills owned by the private sector. The intention of the indicator is to capture the effects of new private investment in mills. Thus the focus should be on milling by large, commercial mills. There are also a large number of small local mills that have existed for a very long time.

Relationship of Progress Indicator to Reforms under APRP

Reforms under APCP and under APRP tranche I attempted to liberalize the 72% wheat flour market for entry by the private sector. The private sector is not yet allowed to purchase Egyptian wheat for milling into 72% flour, but it may import wheat for this purpose. Milling was opened to the private sector in September, 1993 and it was officially confirmed in May, 1997 that the (commercial-scale) private sector could purchase only imported wheat.[16] Wheat is also milled to 82% extraction in the subsidized market, where some of the milling is done by the private sector on contract to the public sector. This indicator captures the effects of policy reforms promoting–and of any obstacles constraining–the opening of wheat milling to the private sector. Expansion of private wheat milling is likely to continue. A significant potential problem exists for these new modern mills, however, if there is no privatization of the older public mills: the latter have unfair cost advantages.

Sources of Information

MSHT

Calculation of Progress Indicator

The indicator is calculated based on only the amount milled in large, commercial mills, as data on milling by small village mills are not available. For additional detail, the share of 72% and 82% flour is also calculated.

Results and Analysis

Table 4-1 shows the amounts of wheat milled on a commercial scale by the public and private sectors. That is, milling by small village mills is not included here. Once GOE opened some flour milling to the private sector, investors began building mills and importing wheat (after 1995). The share of wheat milled increased from about 10 percent at the beginning of the decade to over 25 percent in 1999. According to Tyner (1999), the capacity of private *fino* (72%) mills operating at the end of 1997 was 2,510 mt/ day. By the end of 1998, it was estimated that the

[16]Verification Report, Agricultural Policy Reform Program, Tranche I: Policy Benchmarks for Accomplishment by June 30, 1997. July, 1997.

capacity would have increased by 2,820 mt/day and an additional capacity of more than 1,300 mt/day was in the serious planning stage by different potential investors.

In the last two years for which data are available (1998 and 1999), the overall share of the private sector continued to increase significantly, reaching 2,035 thousand ton in 1998 and then 2,686 thousand ton in 1999. This increase was virtually all due to the increase in production of *fino* flour (72% extraction rate), which more than doubled from 1997 to 1999. Private *fino* flour production went from zero in 1995 to about three-quarters of all private commercial flour production in 1999. The increase in *fino* production by the private sector was accompanied by an uneven decline in production of *fino* by the public sector, whose production in 1996-99 was on average about half of what it was in 1990-92.

Small village mills may currently grind about 4 million tons of wheat per year. If this wheat were added to that milled by the commercial-scale private sector, the overall share of the private sector would rise to more than 48% in 1999.

Table 4-1: Wheat Milled by the Public Sector and by Commercial-Scale Private Mills*, 1990-99

(000 tons)

CY	Private Sector*			Public Sector			Grand Total			Private Sector's Share (%)		
	82% Flour	72% Flour	Total	82% Flour	72% Flour	Total	82% Flour	72% Flour	Total	82% Flour	72% Flour	Total
1990	619	0	619	2,747	2,296	5,043	3,366	2,296	5,662	18	0	10.9
1991	593	0	593	2,841	2,233	5,074	3,434	2,233	5,667	17	0	10.4
1992	598	0	598	2,681	2,432	5,113	3,030	2,432	5,711	20	0	10.5
1993	635	0	635	4,250	788	5,038	4,885	788	5,673	13	0	11.2
1994	666	0	666	4,559	814	5,373	5,225	814	6,039	13	0	11.0
1995	645	0	645	5,962	986	6,948	6,607	986	7,593	10	0	8.5
1996	662	369	1,031	5,177	1,077	6,254	5,839	1,446	7,285	11	26	14.2
1997	690	863	1,553	5,283	1,143	6,426	5,973	2,006	7,979	12	43	19.5
1998	698	1,337	2,035	5,511	1,274	6,785	6,209	2,611	8,820	11	51	23.1
1999	680	2,006	2,686	6,124	893	7,017	6,804	2,899	9,703	10	69	27.7

Source: MSHT, unpublished data.

Note:

* Small village mills may currently grind about 4 million tons of wheat per year, but reliable annual estimates of these amounts are not available.

5 PRIVATE SHARE OF EMPLOYMENT IN COTTON GINNING AND SPINNING

Definition of Progress Indicator
This indicator is defined as the number of workers in private ginning or spinning divided by the total number of workers in that industry.

5a. Private Share of Employment in Cotton Ginning

Relationship of Progress Indicator to Reforms under APRP
See indicator 3. The effects of privatization and liberalization will appear in both output and employment.

Sources of Information
CAPMAS
Private and public ginning companies

Calculation of Progress Indicator
See definition.

Results and Analysis
Cotton ginning was a private industry until the 1960s, when it was nationalized. The investors in the ginning industry were mainly the large cotton traders and exporters, whose gins were integrated with other activities such as trade in seed cotton and export of cotton lint.

As a part of its reform policies, and through liberalization and privatization policies affecting the cotton trade and ginning, export, spinning, weaving and ready-made garment industries, the Government of Egypt began to privatize some of the ginning companies starting in 1996/97. Arabeya Ginning was privatized in 1996/97, and Nile Ginning, in 1997/98. There are three large public companies that have not yet been privatized–Delta, Misr, and Wadi. The Ministry of Public Enterprise attempted to privatize these public ginning companies in 1998/99 and 1999/2000 without success. In addition to this, there are some other ginning companies that started operating as private companies as a result of the new environment of reform and liberalization. These companies are Nefertiti, Baraka, and Nassco, which has a special agreement with Delta to gin all of its seed cotton. Nassco has provided cotton bale presses and new cleaning equipment at three Delta gins. Note that the Baraka Gin was owned by the Egypt Cotton Company until 1998/99, at which point it was sold to Arabeya Ginning.[17]

[17]The Baraka Gin has not been used in recent years to do ginning of Egyptian seed cotton. This gin was set up by the Egypt Cotton Company, using imported American rotary knife ginning technology, which was judged inappropriate for Egyptian extra-long and long staple cottons. The Baraka Gin is now used for export staging, including cleaning lint cotton, performing *farfarra* if desired by the client, and UD bale pressing. Bales pressed at this gin can be exported directly. While the Baraka Gin is owned by the Modern Nile Group, it is a distinct entity (not affiliated with Arab Ginning Company).

From 1989/90 to 1999/00 total employment in public ginning companies declined from 8,739 to 4,205 workers, with the largest drops in 1996/97, when Arabeya was privatized, and in 1997/98, when Nile Ginning was privatized. This overall decreased employment was due to two factors. The major factor responsible for declining employment in public sector ginning companies was the privatization of Nile and Arabeya Ginning Companies, leading to a decrease of 3,412 workers over a two-year period (1996/97 and 1997/98). Second, employment at two of the three public ginning companies, Delta and Misr, declined significantly, largely through attrition and the closure of several old gins. Employment at Delta dropped from a high of 2,096 workers in 1991/92 to 1,183 workers in 1999/2000, a decline of 43.6%. Misr Ginning's labor force decreased from 1,710 in 1989/90 to 1,335 in 1999/2000, a 21.9% decline. In contrast, El Wadi Ginning Company's labor force declined very little, dropping only 4.9% from 1,557 employees in 1992/93 to 1,480 in 1999/2000.

Note that there was also a decline in the numbers of workers at the two privatized companies. Employment at these two privately owned gins actually declined from 3,123 workers in 1997/98 to 2,620 workers by 1999/2000, due to selective gin closures, attrition, and an early retirement program at Arab Ginning. Overall private sector employment in the ginning industry increased from zero in 1994/95 to 3,363 workers in 1997/98 before dropping slightly to 3,150 in 1998/99 (despite Nefertiti's opening of a new gin in Minya that year that added 150 workers). By 1999/2000, the number of workers in private gins had dropped to 2,770, due largely to Arabia Ginning's aggressive early retirement program. The decline also reflects the general underlying trend of contraction across the ginning industry (in both private and public companies), which is a response to far smaller cotton crops in recent years relative to the 1980s and early 1990s. The overall decline in employment in ginning is therefore not a bad thing, as the industry suffered from gross overcapacity in the mid-1990s. The excess labor needed (and still needs) to be shed from the ginning companies and redeployed in other enterprises, as resources are more efficiently allocated in the agribusiness system.[18]

The net result of all the above changes was decreased overall employment in the ginning industry from a high of 8,799 workers in 1991/92 to 6,768 in 1999/2000, a 23.1% decline. Over the same period, the private share of employment increased from zero in 1994/95 to 24.0% in 1996/97 and to 42.6% in 1998/99, before decreasing to 40.9% in 1999/2000. The public sector share was 100% through 1994/95 and declined to a low of 57.4% in 1998/99 before rising to 59.1% in 1999/2000. Private and public shares are now roughly proportional to their respective ginning capacities.

[18]In addition to an overall more efficient allocation of resources within the economy and agribusiness system in Egypt through decreased employment in the ginning industry, private ginners are using the remaining workers more efficiently within their gins. More workers have been assigned to cleaning lines, bale presses (for direct lint export), and *farfarra*, which should lead to a higher quality ginned output. The productivity of private ginning companies has also increased.

In 1999/2000, employment declined at all of the five original (public and former public) ginning companies, probably in response to competitive forces and overcapacity in the industry existing after significant decreases in the production of seed cotton.

Table 5a-1: Employment in Public and Private Cotton Ginning Companies, 1989/90 - 1999/2000

Year	Public Companies			Privatized Companies				Private Companies		Total Employees			Shares (Percent)	
				Nile		Arabia								
	Delta	Misr	Wadi	Public	Private	Public	Private	Egypt Baraka	Nefertiti	Public	Private	Total	Public	Private
1989/90	2,073	1,710	1,508	1,633	0	1,815	0	0	0	8,739	0	8,739	100.0	0.0
1990/91	2,087	1,667	1,520	1,620	0	1,830	0	0	0	8,724	0	8,724	100.0	0.0
1991/92	2,096	1,630	1,535	1,665	0	1,873	0	0	0	8,799	0	8,799	100.0	0.0
1992/93	1,980	1,554	1,557	1,671	0	1,820	0	0	0	8,582	0	8,582	100.0	0.0
1993/94	1,946	1,529	1,494	1,652	0	1,835	0	0	0	8,456	0	8,456	100.0	0.0
1994/95	1,735	1,512	1,466	1,629	0	1,805	0	0	0	8,147	0	8,147	100.0	0.0
1995/96	1,290	1,578	1,540	1,628	0	1,779	0	210	0	7,815	210	8,025	97.4	2.6
1996/97	1,242	1,586	1,521	1,633	0	0	1,712	180	0	5,982	1,892	7,874	76.0	24.0
1997/98	1,487	1,640	1,518	0	1,548	0	1,575	240	0	4,645	3,363	8,008	58.0	42.0
1998/99	1,390	1,375	1,480	0	1,490	0	1,510	0	150	4,245	3,150	7,395	57.4	42.6
1999/00	1,183	1,335	1,480	0	1,403	0	1,217	0	150	3,998	2,770	6,768	59.1	40.9

Sources: Unpublished data from individual public and private cotton ginning companies.

Notes: 1) In 1998/99, Nassco hired 134 workers on contract to work on baling machines that Nassco installed at Delta Ginning Co. gins. These workers are included in the Delta employment figure for 1998/99. Delta had 1,256 employees that year.

2) The Baraka gin was sold to the Modern Nile Group in 1998 but was operated as a separate export staging entity in 1998/99 and 1999/2000. This gin did not do ginning, but it employed 254 workers in 1998/99 and 49 workers (excluding labor on short-term contracts) in 1999/2000 in cleaning, *farfarra*, and bale pressing.

3) Nefertiti leased gins from 1994/95 - 1998/99, but no employment is included in the Nefertiti column from those leased gins, because the employees remained employees of the lessor, Nile Ginning. The 150 employees of Nefertiti in 1998/99 and 1999/2000 worked at the new Nefertiti gin in Minya.

5b. Private Sector Share of Employment of Cotton Spinning

Relationship of Progress Indicator to Reforms under APRP
See indicator 5. The effects of privatization and liberalization will appear in both output and employment.

Sources of Information
HC-SWRMC
Egyptian Textile Manufacturers' Federation

CIT-HC (reconstituted as the Holding Company for International Trade in June 2000; all of its ginning, trading, spinning and other textile companies were transferred to the HC-SWRMC)
Private spinning companies

Calculation of Progress Indicator
See definition.

Results and Analysis
The spinning industry is one of the most important employers in Egypt. It operated as a private industry until the early 1960s, when it was nationalized. With the implementation of the Economic Reform and the Structural Adjustment Program (ERSAP), the Government allowed the private sector to re-enter this industry. It also undertook a privatization program that includes the textile industry. Specifically, in 1997/98, two textile companies began their first full year of operation as private companies, having been privatized during the previous months. They are KABO (a knitter) and Unirab (a spinning and weaving company). The following year Alexandria Spinning and Weaving, which does spinning only, joined them. In 1998/99 one unit of Esco leased by Dong-Il began private operation. Near the end of that fiscal year, two other private leaseholds followed: three plants at Minya El Kamh (part of Sharkeya Spinning and Weaving Company) and an open-end spinning unit at Cairo Dyeing and Finishing Company called El Alameya.

The private and public sectors now compete in domestic and international markets. The spinning industry currently faces tough competition, especially because of the lower prices of international producers compared to the local private and public ones. The private sector has the advantages of lower costs of production, some use of advanced technology,[19] flexibility in setting prices, and more efficient operations compared to the public sector. Flexibility in managing the labor force

[19]Use of advanced technology by the private sector needs to be qualified. The new ring spinning operation at Sadat City, Alcan Man'ai, is a ring spinning unit producing high-count yarn for export. Privatization has led to some investment in new machinery, particularly at DIP Egypt (Dong Il) but more often selective investments are made to upgrade old or deficient equipment. Most of the larger formal spinning companies established by private investors use open-end spinning technology, which is a high-speed and highly productive technology designed to spin low-count yarn largely for domestic weavers and knitters. Five of 13 private open-end spinners actually spin waste from other companies' ginning, spinning and weaving operations, as open-end spinning can be done using short fibers (10-15 mm). Egyptian ELS and LS lint is very expensive raw material for open-end spinners, nine of whom use Gizas 80/83.

includes the ability to retrain workers for new tasks, thus preserving the level of employment while making the overall operation more efficient.

Due to the reform policies, the new environment, and the liberalization and privatization efforts, private investment in spinning is growing, and the shares of the private sector in the production of yarn and employment are growing, too. It can be seen from Table 5-2 that the number of employees has been decreasing in the public sector, while it is increasing in the private sector. The number in the public sector was 206,653 in 1992/93, which declined to 136,500 in 1999/00, with an annual percentage reduction of around 5%. Also the percentage of the public sector was 99.2% of the total employees in 1992/93, declining to 86.3% in 1999/00. The reduction in the number of employees in the public sector can be related to the normal retirement and early retirement programs of the public companies. Many retiring workers have not been replaced during the past ten years.

While privatization is a rather recent phenomenon, investment in private spinning facilities has been going on for several years. Data from the MVE spinning survey show that significant investments in new facilities–as measured by the number of companies–have occurred since 1997, with the greatest investment in 1998 and 1999 (see Holtzman and Mostafa et al., 2000).

The 1999 MVE survey[20] covered traditional and modern spinners. The traditional sector is represented by a large number of companies in the area of Fowah in the northern Delta. These companies have been in existence for a long time, sell mostly to the local market, use the same technology, and often replicate themselves in the same area in the form of new plants with almost exactly the same features. These spinners use waste from cotton ginning, spinning and weaving as their input. Modern spinners, on the other hand, typically make new, individual investments in metropolitan areas or new communities like 6th of October, use newer technology, and often produce for the export market. Most of these spinners are not using waste products as input but

[20]MVE conducted a survey in May and December 1999 of 35 spinners of cotton or cotton blends. Of these, 12 spinners in Fowah are traditional spinners. MVE does not consider Misr Amriya and Miratex private. The rest included five privatized companies, five private ring spinners (of which three are twisters only), and 13 open-end spinners. Two of the privatized spinners have been privatized through ownership transfer to private investors (Alexandria S & W and Unirab). Three privatized spinners are leaseholds (DIP-Egypt, Minya Al Kamh and Al Alameya). Of the open-end spinners, eight use entirely cotton lint while four use waste. One uses both as inputs.

rather use cotton lint, typically Gizas 80/83, the cheapest Egyptian lint. Some of these spinners produce high-count yarns, whereas none of those in Fowah do so.

The privatization of two of the three spinning companies by 1998/99 transferred more than 11,000 employees from the public to the private sector. New investment in the private sector, in addition to privatization, brought the total employment in private spinning to more than 20,000 by 1999/2000. Thus the measured private sector share of employment reached 10%, compared to less than 1% in 1992/93, the earliest year for which data are available for the public companies.[21] MVE does not consider the two joint investment companies, Miratex and Misr Amriya, to be private sector companies, as their ownership is entirely public sector. MVE's estimates of private sector yarn output should be considered as on the low side, as some small traditional spinners are not included.[22] According to MVE's 1999 survey, there were at least five privately initiated modern spinning companies operating in 1990/91, and by 1998/99 there were at least 20 privately initiated or privatized modern spinners operating.[23]

The bulk of private sector employment in spinning (an estimated 13,468 workers, or 62% of the private labor force) in 1999/00 was in the privatized companies, which are larger units with greater assets and output (and hence need for workers). Estimated employment in the traditional spinning companies in Fowah comprised another 31% of private sector workers (an estimated 6,770). The remainder (1422 or 7%) was found in new start-ups, who could hire the minimum numbers of workers necessary to run their mills, rather than inheriting large labor forces, as was the case with several of the privatized spinning companies. Note, however, that the privatized spinners generally wish to reduce their labor force or to reallocate redundant workers to jobs where they can be more productive. Formal early retirement programs and attrition (cases where

[21] 1992/93 was the year in which the nationalized companies were transferred to holding companies that were to manage them in a commercial manner and prepare them for privatization.

[22] Note that there are traditional, low-capacity spinning units found in areas other than Fowah, Kafr El Sheikh, including Sohag, Assiut, Mehalla, Rashid and Akmim. MVE has not enumerated these units nor interviewed their managers.

[23] The number of private spinners of cotton or blended yarn varies from year to year as a function of Egyptian lint cotton prices and availability relative to competing synthetics, such as polyester fibre and filament. In 2000/01, four private open-end spinners who reported spinning at least some cotton in 1998/99 have not spun cotton (Rosetex, Daymtex, Shatex, and Fagr El Islam S&W).

normally retiring workers are not replaced) have contributed to downsizing of the labor force in public sector spinning.

Table 5b-1: Private Sector Share of Employment of Cotton Spinning, 1992/93 to 1999/00

Season	Public Sector[1]		Private Sector[2]					Total
	No. of Employees	Percent	Privatized	New	Traditional	Total	Percent	
1992/93	206,653	99.2	____	342	1,400	1,742	0.8	208,395
1993/94	203,329	98.9	____	435	1,840	2,275	1.1	205,604
1994/95	192,465	98.6	____	470	2,250	2,720	1.4	195,185
1995/96	183,796	98.3	____	473	2,625	3,098	1.7	186,894
1996/97	178,949	98.0	____	526	3,162	3,688	2.0	182,637
1997/98	172,690	93.5	7,550	725	3,740	12,015	6.5	184,705
1998/99	162,453	89.9	11,623	980	5,673	18,276	10.1	180,729
1999/00	136,500	86.3	13,468	1,422	6,770	21,660	13.7	158,160

Sources: Public sector: CIT-HC, TMT-HC, HC-SWRMC, annual "Monitoring" reports, different issues.
Private sector: MVE Cotton Spinner Surveys, 1999 and 2000.

Note: 1992/93 is the first year for which data are available from the public sector companies.

6 IRRIGATED AREA UNDER WATER USER ASSOCIATIONS

Definition of Progress Indicator

This indicator is defined as the irrigated area under private water user associations (WUAs). A WUA is a voluntary association established by farmers to serve their needs in irrigating their land. WUAs are responsible for a number of activities, including participating in the *mesqa* improvement process (selecting the type of *mesqa,* locating the new *mesqa,* locating *mesqa* turnouts), operating and maintaining the single point lift pump, scheduling turns among water users, resolving disputes, and *mesqa* maintenance.

Relationship of Progress Indicator to Reforms under APRP

Formation of WUAs began under the IIP. Both APRP and other projects in which MWRI has enlisted foreign cooperation are attempting to spread the benefits of WUAs as broadly as possible. Water user associations may now be formed at the *mesqa* level. A ministerial decree allowed for the formation of some WUAs at the branch canal level, and in the future this may be possible in all of Egypt. This indicator will capture the spread of the WUA concept and its operationalization.

Sources of Information

Eng. Essam Barakat, MWRI

Calculation of Progress Indicator

The definition is straightforward. One distinction that emerged during the collection of data is that the total area covered by WUAs may be different from the area under WUAs that is actually improved and operated by the WUAs. These two sets of data are shown in Tables 8-1 and 8-2.

Results and Analysis

From Table 6-1 shows that the number of WUAs more than tripled from 1990 to 1997 and it is almost five times in 1999 what it was in 1990. Large parts of this increase occurred between 1990 and 1991, when the number of WUAs nearly doubled, and between 1998 and 1999, when another large increase of about 500 WUAs took place. The area served by these water user associations increased similarly from 31,244 feddans in 1990 to 164,246 feddans in 1999. The number of WUAs increased about 14% annually from 1990 to 1999, while the area covered by these WUAs increased annually at a rate of around 16% during the same period.

In terms of *mesqas* actually in operation, the area increased from a token amount to nearly 68,089 feddans by the end of 1999. This was related to the increase in the number of *mesqas* operating, which increased from 14 at the end of 1991 to 1,128 at the end of 1999. The number of *mesqas* increased by about 73% annually from 1990 to 1999, while the area covered by these *mesqas* increased at around 86%.

One may expect that if WUAs are formed on branch canals, the total area covered by WUAs will increase rapidly again. Similarly, if the MWRI promotes water boards, this may also increase the coverage of WUAs.[24]

Table 6-1: Number of WUAs Established and the Area They Serve, 1991 to 1999

Year	Number of WUAs	Area (Feddans)
1990	568	31,244
1991	1,043	58,285
1992	1,121	68,882
1993	1,228	78,684
1994	1,339	86,395
1995	1,485	90,517
1996	1,609	97,297
1997	1,816	111,147
1998	2,095	134,695
1999	2,508	164,246

Source: MWRI, Irrigation Improvement Project, unpublished data.
Note: The number of WUAs are reported for the end of the year.

Table 6-2: Number of *Mesqas* in Operation by WUAs and the Area They Served, 1991 to 1999

Year	Number of *Mesqas*	Area (Feddans)
1991	14	492
1992	28	943
1993	152	7,089
1994	344	23,109

[24]The Desert Development Center is evaluating the progress made by WUAs in collaboration with IDRC.

Year	Number of *Mesqas*	Area (Feddans)
1995	543	32,067
1996	854	49,050
1997	981	58,364
1998	1,029	61,412
1999	1,128	68,089

Source: MWRI, Irrigation Improvement Project, unpublished data.
Note: The number of *mesqas* are reported for the end of the year.

7 VOLUME OF PADDY RICE PRODUCTION PER UNIT OF WATER

Definition of Progress Indicator

This indicator is defined as the amount of rice produced divided by the amount of water used in rice production. Rice is measured as paddy. Water is measured as consumptive use, the scientific estimate of the amount of water used by a rice plant.

Relationship of Progress Indicator to Reforms under APRP

Rice is a major crop in Egypt because it is an exportable crop, a cash crop and an important food. In 1997 the area under rice was more than 1.5 million feddans, about 50% higher than in 1990. For these reasons the Government gives significant attention to this crop. For summer 2000 rice crop, paddy area estimates range from 1.6 to 2.0 million feddans.

Under APRP the GOE has undertaken a major program of water conservation in rice and sugarcane. This indicator will eventually reflect the benefits of part of that program. The GOE introduced short-season rice varieties several years ago (see Table B7-1) with yields the same or higher than the longer-season varieties, but the benefits of the shorter season have not been captured in the form of water savings. This is because there must be coordination among the farmers and the irrigation engineers to both grow the same or similar rice in large blocks of land and to shorten the irrigation season. Until recently the irrigation engineers were forced to release water as if all farmers were growing long-season rice. The new program promises major savings in water.

The GOE has also attempted to conserve water by restricting the acreage under rice. It has been very difficult for the Government to enforce such restrictions, and the area has increased rapidly in the 1990s. The effects of this policy do not create a problem in interpreting this indicator because the area effect enters the indicator in both the numerator and the denominator.

Sources of Information

MALR
MWRI

Calculation of Progress Indicator

For each variety of rice, the consumptive use per feddan is estimated based on its total days in the field and the number of days at the end of the season that irrigation is not required. Then the total consumptive use for that variety is estimated by multiplying by the area under cultivation. The total consumptive use for all rice is then estimated by summing the consumptive use over all varieties.

To estimate the indicator, the total production of paddy is divided by the total consumptive use for the actual area under rice, assuming that all varieties were long-season. This is the assumption that the irrigation engineers needed to make during this historical period, so the indicator reflects the productivity of the water that reached the rice growing areas for rice cultivation. Some of this water was "wasted" when short-season rice varieties were grown, because at the end of the season some of the water was not needed.

For comparison the indicator is recalculated to show what would happen if the consumptive use were the amount based on the actual varieties cultivated (i.e., a mixture a short-season and long-season). In addition one can examine the results for any given year if all varieties are assumed to be short-season.

Results and Analysis

Table 7-1 shows in 1999 that shortest season varieties (125 days) have increased to about 24 percent of the total by area. Medium-length varieties (135 and 145 days) covered another 37 percent of the rice area. Thus the average days to maturity for the 1999 mix of varieties was about 140.5 days. This is a significant decline compared to the all-variety average of 146 days in 1997 and the maximum 155 days-to-maturity for the standard, long-season varieties.

The productivity of water in the production of rice increased from 1990 to 1997 from 0.65 to 0.75 metric tons of paddy per thousand cubic meters of water, an increase in efficiency of about fifteen percent. It continued increasing in 1998 and 1999 to reach 0.77 and 0.79 metric tons of paddy per thousand cubic meters of water. However it may be somewhat misleading to measure the efficiency of water use in rice production by comparing the actual production with the presumed use of water (based on scientific estimates of water needs for the crop).

The increase in productivity may have been due to increases in water use efficiency at the *mesqa* level. These might have included a reduction in wastage of the released water reaching the *mesqa* during the period when there was a dramatic expansion in rice area. Farmers may have found more efficient schedules for planting and irrigation.

The amount of water savings that could have been realized if only short-season varieties (120-130 days) were grown is about 1.5 bcm, a very substantial amount of water. Of course this is the reason behind the push to implement the short-season rice program with coordinated irrigation and shortened irrigation season. This program began in 1998 with a pilot program that covered about 500 feddans. It expanded in 1999 to six governorates, covering about 10,000 feddans with short-season rice and an equal area with long-season rice for comparison.

For the year 2000, MWRI estimates that about 900,000 feddans were cultivated in short-season rice varieties[25]. Thus 2000 would be the first year for which an adjustment would have to be made in the calculation of the indicator. The calculation assumes that all water is provided on a long-season basis and estimates the consumptive use of water by the rice crop using the number of irrigation days in the long season. For 2000 and years beyond, the calculation will have to modified to take account of the shortening of irrigation schedules in areas where short-season rice is grown in blocks and the provision of irrigation water is terminated in August instead of

[25]The MWRI estimate is 2.0 million feddans, so more than 900,000 feddans are likely to be short season varieties. Short season varieties were cultivated on over 90% of paddy area in 1999 according to MALR estimates.

September. For 2000, there are no data available on the extent to which this was accomplished, but MWRI believes that this was done where it was possible.

In 2001, MWRI plans to implement a complete shift to early termination of irrigation for rice, based on the short-season schedule. If this is accomplished, it could achieve the large potential water savings mentioned above, although much of the water would be in demand for cultivation of other crops by many of the same farmers who are cultivating short-season rice.

Table 7-1: Production of Paddy Rice per Unit of Water, 1990 to 1999

Year	Paddy Production of (million tons)	Consumptive Use of Water (billion m^3)	Production per Unit of Water ($mt/1000m^3$)
1990	3.17	4.89	0.65
1991	3.45	5.18	0.66
1992	3.91	5.73	0.68
1993	4.16	6.04	0.69
1994	4.58	6.49	0.71
1995	4.79	6.60	0.73
1996	4.90	6.62	0.74
1997	5.48	7.31	0.75
1998	4.45	5.78	0.77
1999	5.75	7.25	0.79

Sources: Production: MALR, Agricultural Statistical Yearbook, different issues;
Water: MWRI, unpublished data. See Tables B7-1 and B7-4.

8 AGRICULTURAL PRODUCTION PER UNIT OF WATER

Definition of Progress Indicator

This indicator is defined as the aggregate level of agricultural production divided by the amount of water. Aggregate production refers to crops, since water use for the production of livestock is not significant. Major crops and areas of the country are selected for inclusion in the indicator based on their importance and the availability of data. Water can be measured as the total water that might flow onto agricultural fields, or the net amount that is available, not counting reuse. Further details are given below, under "Calculation of Progress Indicator." In both cases the water measured is that in the Nile System; it does not include groundwater in the New Valley and other sources of deep groundwater.

Relationship of Progress Indicator to Reforms under APRP

One of the overall goals of APRP is to increase productivity in the agricultural sector. Water is one of the most important inputs in the agricultural sector. Thus an indicator measuring the amount of production per unit of this scarce resource is particularly appropriate. The same indicator has been one of USAID's indicators for its Strategic Objective number 1.

Sources of Information

MALR
MWRI

Calculation of Progress Indicator

For aggregate production, crops that are included are those that are cultivated on the Old Lands, thus excluding cultivated area in some governorates (Alexandria, Ismailia, Port Said, Suez and Luxor). These crops do not include fruits, nor is livestock production included. Potatoes and tomatoes are the only two vegetables crops that are included; these two crops occupied 43.2% of the total cropped area under vegetables in 1998. Crops omitted were omitted either because their contribution to production was insignificant or because of a lack of reliable data.

A weakness of the indicator as calculated is that it does not include tree crops. These were omitted for lack of reliable and comprehensive data. Output and income of horticultural products is likely to have been growing rapidly in Egypt. The data also omit all production and income on the New Lands, another area where productivity and income are likely to have been growing. These data were also not available. Omitting all of these data creates a bias in the indicator, probably downward.

Aggregate production is estimated by combining the physical quantities of production through the use of price weights. These weights are the average farmgate prices of the crops during the period 1994-96.

Water productivity is examined in two ways: first, as water excluding the reuse of the water and the groundwater; second, as all water that goes to the agricultural sector. Water flowing to the agricultural sector is used to irrigate fields and then recharges the shallow groundwater in the same area. It can be and is pumped from the groundwater to supplement surface water supplies. There is some reuse of water also by pumping water out of agricultural drains (which are

basically canals at lower levels than the canals that supply the water to begin with). The two measures give alternate ways to view the water supply: gross water going to the sector and net water supplied.

While production is measured on the Old Lands, some of the water included in these calculations may be going to the New Lands. It is presumed that such amounts are quite small especially at the beginning of the period in question.

Results and Analysis

The results of the calculations are shown in table 8-1. Neither measure of water changes much over the period in question. This is because Egypt's supply of water in the Nile is fixed by agreement with other countries in the Nile basin and can only increase slightly when rainfall in the Nile watershed is very high (or if Egypt borrows from Sudan's allotment). Similarly the physical attributes of the Nile system do not change rapidly either, so the gross amount of water yields approximately the same net amount of water. If intermediate drainage reuse becomes more common, then the relationship between gross and net amounts of water may change. In addition if there are water savings from programs like short-season rice, which combines varietal changes with irrigation efficiency, and if the water saved goes to increased production of other crops, then this would cause the productivity per unit of water to rise.

The aggregate production for the crops under study increased during the period 1990-1999 by about 14%, and by around 3% in1999 compared to1997. This increment in aggregate production is due to increases in the production of long berseem, wheat, maize, summer rice and sugarcane; the production of these crops increased by about 20%, 10%, 6%, 4% and 11%, respectively, in 1999 compared to 1997. The amount of water reaching the High Aswan Dam (HAD) in 1998-99 (and 1999-2000) was very large. However, because Lake Nasser was already full and the HAD needs to be protected from excess strain, the extra water reaching the dam had to be released to the Toshka Depression or to flow to the Mediterranean Sea. Some of this water may have been used for cultivation, while possibly not having been recorded as a release to agriculture (note that 1999 releases are recorded as the same as 1998 and 1997). If so, this would increase the apparent productivity of water, while the actual productivity might not have increased.

The increase in productivity per unit of water was less than the increase in production, namely about 9 percent from 1990 to 1999. This reflects some increase in the releases of water during this period and any efficiencies of water use that may also have occurred. The 9-percent increase in productivity had also been achieved in 1996.

Table 8-1: Aggregate Agricultural Production per Unit of Water, 1990 - 1999

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Aggregate Production (LE '000)	17,682	17,697	18,456	18,803	18,086	18,930	20,104	19,964	19,649	20,157
Index Number	100	100	104	106	102	107	114	111	111	114
Water Available (bcm)										

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
[1]	38.2	37.6	38.1	37.8	39.4	39.3	38.9	39.1	38.5	38.6
Index Number	100	98	100	99	103	103	102	102	101	101
Water Available (bcm)[2]	47.7	47.6	48.1	47.9	49.3	49.6	49.8	50.2	49.7	49.6
Index Number	100	100	101	100	103	104	104	105	104	104
Production per unit of Water[1]	462	471	485	498	459	482	517	502	498	521
Index Number	100	102	105	108	99	104	112	109	108	113
Production per unit of Water [2]	371	372	384	393	367	382	404	91	386	405
Index Number	100	100	103	106	99	103	109	106	104	109

Sources: Production: MALR, Agricultural Statistical yearbook, different issues;
Water: MWRI unpublished data.

Notes:

[1] Water available excluding irrigation drainage re-use and groundwater

[2] Total water availability from all sources in Egypt

[3] The productivity of water excluding irrigation drainage re-use and groundwater

[4] The productivity of water including the re-use and groundwater (i.e., using total water availability as the denominator).

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ANNEXES

ANNEX A: FIRST FULL FISCAL YEAR OF PRIVATE OPERATION, PRIVATIZED TEXTILE AFFILIATED COMPANIES

Ginning Companies		**Spinning Companies**	
Arabia	1996/97	Unirab S&W	1997/98
Nile	1997/98	Alexandria S&W	1998/99
		DIP-Egypt (at Esco)	1998/99
		Minya al Kamh	1999/2000
		Al Alameya	1999/2000

Notes on Spinning Companies:

Unirab S&W: Unirab has weaving and dyeing and finishing units, in addition to its core spinning operations. Unirab was 63% private as of May 1997, with most of the shares sold on the stock market in December 1996. On 5 May 1997, Unirab changed from a Law 203 to a Law 159 company. The Holding Company share was still 33% as of March 2001, meaning that the Central Auditing Agency (CAA) of the GOE could still perform annual public sector audits. Other ownership shares as of March 2001 were numerous private shareholders (47%), Misr Insurance Company (10%), and the employees' union (10%). MVE considers that Unirab operated as a private company in GOE FY 1997/98.[26]

Alexandria S&W: This company does only spinning. As of in mid-April 1997, it was 45.6% private. It became over 50% privately owned in the GOE FY 1997/98. The conversion from a Law 202 to a Law 159 company took place in March, 1998. As of March 2001, Alexandria S&W's shares were distributed as follows: 57% to KABO/Samir Riad group; 17% to Misr Insurance; 6% to the employees' union; and 20% numerous private investors. MVE considers that Alexandria S&W operated as a private company as of GOE FY 1998/99.

DIP-Egypt at Esco: Dong-Il leased one of six units for use as a spinning facility. Dong-Il's operations began in August, 1998. Hence, it is considered as having operated as a private company during 1998/99.

Minya Al Kamh: Three spinning units of the public Sharkeya Spinning and Weaving Company were leased to an Egyptian private textile industry investor, who produces ready-made garments, on 1 July 1999. Hence, it is considered as having operated as a private company during 1999/2000.

[26] The GOE Fiscal Year runs from 1 July of one year to 30 June of the following calendar year.

Al Alameya: This is a small open-end spinning operation that is leased from Cairo Dyeing and Finishing Company, which began the process of liquidation in 1998.

Notes on Ginning Companies:

Arabia and Nile Ginning Companies: Both former public ginning companies were privatized in 1996/97. Arab Ginning was privatized early in the marketing season (October 1996), so MVE considers that it operated as a privately owned and managed gin during the entire 1996/97 ginning season. Nile Ginning was privatized in February 1997, after most of the ginning had been completed. Hence, MVE considers that Nile Ginning operated as private company as of 1997/98.

Ahly, Nefertiti, and Modern Nile Leases of Public Gins. These three cotton trading companies negotiated leases to manage and operate some gins at several of the public ginning companies. Ahly and Nefertiti negotiated five year leases, though Ahly canceled its leases by the end of 1997/98. Nefertiti leased one gin from Nile Ginning in Minya from 1994/95 through 1998/99; Nile was publicly owned during the first three years and privately owned during the final two years. Modern Nile only leased gins for two years; once the Modern Nile Group bought Arabia Ginning, it terminated its ginning leases.

Egypt (Baraka) Company built a gin (using second-hand U.S. equipment and rotary knife technology) on the Cairo-Alexandria desert road that became operational in 1995/96. This gin was sold to Arab Ginning by 1998/99 and operated as a pressing and export staging facility by the Modern Nile Group.

Nefertiti bought one of Arabia Ginning's gins on the west bank of El Minya and operated this as a private gin as of 1998/99.

ANNEX B: ADDITIONAL DATA TABLES

Table B1a-1 : Lint Cotton Production, Export Volume & Value, and Domestic Utilization, 1986/87 to 1999/2000

Year	Carryover Prev. Yrs. ('00 lk)	Prod-uction ('000 lk)	Total Supply (mt)	Lint Exports (mt)	Exports as % Tot. Supply	Value of Exports (mill. $)	ELS Value (mill. $)	ELS as % Tot. Value	Aver. Value per mt	Aver. Value per lb.	Domestic Utilizat. (mt)	Utilizat. as % Tot. Supply
1986/87	2,102	8,055	507,850	121,350	23.9%	$328.8	$185.8	56.5%	$2,710	$1.23	281,550	55.4%
1987/88	1,470	7,021	424,550	87,781	20.7%	$329.2	$205.1	62.3%	$3,750	$1.70	270,550	63.7%
1988/89	1,275	6,211	374,300	59,973	16.0%	$288.9	$202.3	70.0%	$4,817	$2.18	253,700	67.8%
1989/90	809	5,766	328,750	42,962	13.1%	$221.2	$177.9	80.4%	$5,149	$2.34	247,650	75.3%
1990/91	527	5,919	322,300	18,005	5.6%	$87.6	$69.3	79.1%	$4,863	$2.21	277,800	86.2%
1991/92	763	5,826	329,450	16,644	5.1%	$52.8	$32.3	61.2%	$3,173	$1.44	266,150	80.8%
1992/93	820	7,147	398,350	18,072	4.5%	$45.8	$27.6	60.2%	$2,535	$1.15	284,050	71.3%
1993/94	2,644	8,314	547,900	117,006	21.4%	$221.0	$87.1	39.4%	$1,889	$0.86	271,200	49.5%
1994/95	3,193	5,095	414,400	66,714	16.1%	$146.4	$66.7	45.5%	$2,195	$1.00	203,050	49.0%
1995/96	1,071	4,830	295,050	18,799	6.4%	$78.1	$78.1	100.0%	$4,152	$1.88	205,400	69.6%
1996/97	1,598	6,914	425,600	46,438	10.9%	$122.6	$55.5	45.2%	$2,640	$1.20	201,250	47.3%
1997/98	3,604	6,841	522,250	69,524	13.3%	$160.8	$55.9	34.7%	$2,313	$1.05	231,100	44.3%
1998/99	4,167	4,594	438,050	108,482	24.8%	$242.5	$57.9	23.9%	$2,235	$1.01	186,700	42.6%
1999/00	1,554	4,654	310,400	98,980	31.9%	$225.1	$102.8	45.6%	$2,275	$1.03	144,100	46.4%
2000/01*	982	4,123	255,250	81,974	32.1%	$196.6	$70.4	35.8%	$2,409	$1.09	90,754	35.6%

Source: ALCOTEXA, *The Egyptian Cotton Gazette*, October 2000, ALCOTEXA archives, and weekly ALCOTEXA export statistical updates (for 2000/01 and recent years).

Notes: 1) The 2000/01 figures are provisional. The estimate of cotton production in lint kentars is based on deliveries to gins of seed cotton * average out-turn of 119%. Export data are commitments (not shipments) through mid-March 2001 but are probably close to final. Utilization data are through the end of March 2001. If utilization were 50% larger by the end of 31 August 2001, it would be 2 * 136,132 mt or 2.72 million kentars, which is low but plausible.

2) Export value data are available from ALCOTEXA for the past two seasons. Before 1998/99, export values are calculated by multiplying the opening price * export volume for each variety, and then aggregating the estimated values by variety across varieties.

3) Export values are in nominal dollar terms. The dollar, against which the Egyptian pound was pegged in the narrow range of 3.3-3.4 LE = $1.00 from 1991/92 through 1998/99, was subject to low rates of inflation during that same period.

4) Carryover estimates should be treated with caution. They are an approximation, and not all carryover is of exportable quality.

Table B1a-2: Exports of Egyptian Cotton Classified by Varieties

(all in mt)

Varieties	1986/87	1987/88	1988/89	1989/90	1990/91	1991/92	1992/93	1993/94	1994/95	1995/96	1996/97	1997/98	1998/99	1999/00
Extra Long Staple														
Giza 45	2,894	2,718	2,111	1,342	1,156	1,098	833	632	728	1,156	927	903	170	399
Giza 76	8,465	6,782	4,876	3,356	1,411	998	1,472	2,221	2,441	1,425	1,953	2,053	1,084	986
Giza 70	6,219	12,091	8,344	8,875	3,499	4,727	4,365	15,393	16,305	11,650	10,340	10,067	15,065	31,606
Giza 77	42,586	28,437	22,826	18,765	7,028	2,084	2,657	22,566	7,840	4,568	4,839	6,247	7,384	5,721
Giza 88												215	51	526
Giza 84									953			-		
Sub Total ELS	**60,163**	**50,028**	**38,157**	**32,338**	**13,095**	**8,907**	**9,327**	**40,811**	**28,268**	**18,799**	**18,058**	**19,486**	**23,754**	**39,239**
Long Staple														
Giza 86											9,980	31,350	54,224	39,924
Giza 75	48,623	29,626	18,251	9,730	4,749	7,711	7,942	43,726	33,868		18,040	11,115	17,927	326
Giza 69	12,473	6,773	3,396	893										
Giza 89												2,572	7,330	9,386
Giza 85								1	124		181	3,027	2,427	3,159
Giza 81	91	217	128			27		3,617	318					
Giza 80								18,759	3,902		179	1,679	1,339	3,192
Giza 83								6,177	235			174	454	2,578
Dandara					126			3,773						
Type Exportateur		1,136	41		36		803	142				120	1,026	1,175
Sub Total LS	**61,187**	**37,753**	**21,816**	**10,624**	**4,911**	**7,737**	**8,745**	**76,194**	**38,447**	**0**	**28,379**	**50,037**	**84,728**	**59,741**
GRAND TOTAL	**121,350**	**87,781**	**59,973**	**42,962**	**18,005**	**16,644**	**18,072**	**117,006**	**66,714**	**18,799**	**46,438**	**69,524**	**108,482**	**98,980**

Source : Cotton & International Trade Co. through 1994/95. Alexandria Cotton Exporters' Association as of 1995/96.
Note : ALCOTEXA began reporting exports in mt, instead of bales, in 1997/98.

Table B1a-3 : Minimum Prices for Lint Cotton Exports, by Variety

(cents/lb.)

Varieties	1986/87	1987/88	1988/89	1989/90	1990/91	1991/92	1992/93	1993/94	1994/95	1995/96	1996/97	1997/98	1998/99	1999/00
Extra Long Staple														
Giza 45	149.02	200.03	275.02	285.06	285.06	200.02	195.00	165.00	150.00	207.00	194.00	239.00	214.00	148.00
Giza 76	143.03	192.01	257.05	267.07	257.01	168.01	138.00	108.00	112.00	193.00	144.00	132.00	117.00	102.00
Giza 70	139.05	184.02	237.00	247.01	234.03	160.02	129.00	101.00	107.00	188.00	137.00	127.00	114.00	100.00
Giza 77	139.05	184.06	235.02	245.02	232.03	155.01	121.00	91.00	102.00	183.00	132.00	119.00	109.00	98.00
Giza 88	-	-	-	-	-	-	-	-	-	-	-	117.00	109.00	98.00
Giza 84									102.00					
Average of ELS	142.54	190.03	251.02	261.04	252.03	170.77	145.75	116.25	114.60	192.75	151.75	146.80	132.60	109.20
Long Staple														
Giza 86	-	-	-	-	-	-	-	-	-	-	108.00	102.00	97.00	92.00
Giza 75	106.02	149.03	180.00	185.04	170.05	120.02	95.00	81.00	95.00		107.00	97.00	91.00	89.00
Giza 69	106.02	149.03	180.00	185.04	-	-	-	-	-	-	-	-		
Giza 89	-	-	-	-	-	-	-	-	-	-	-	95.00	91.00	89.00
Giza 85	-	-	-	-	-	-	-	78.00	91.00	-	104.00	93.00	89.00	86.00
Giza 81	106.02	149.03	180.00			115.01		78.00	93.00					
Giza 80	-	-	-	-	-	-	-	78.00	87.00	-	100.00	89.00	85.00	80.00
Giza 83	-	-	-	-	-	-	-	78.00	87.00	-		89.00	83.00	80.00
Dandara		-			138.06		-	78.00						
Type Exportateur		149.03	174.00		138.06		91.00	78.00				89.00		
Average of LS	106.02	149.03	178.50	185.04	148.72	117.52	93.00	78.43	90.60		104.75	93.43	89.33	86.00

Source : Cotton & International Trade Co. through 1994/95. Alexandria Cotton Exporters' Association as of 1995/96.

Note : The minimum export prices are also for the minimum exportable grade. They should be viewed as a lower limit for unit export values.

Table B1a-4: Total Estimated Value for Lint Cotton Exports, by Variety

(in '000 dollars)

Varieties	1986/87	1987/88	1988/89	1989/90	1990/91	1991/92	1992/93	1993/94	1994/95	1995/96	1996/97	1997/98	1998/99	1999/2000
Extra Long Staple														
Giza 45	9,507	11,988	12,802	8,431	7,268	4,840	3,582	2,301	2,408	5,276	3,963	4,760	732	1,356
Giza 76	26,691	28,709	27,630	19,760	7,994	3,698	4,479	5,287	6,027	6,064	6,202	5,975	2,836	2,256
Giza 70	19,063	49,054	43,597	48,331	18,054	16,676	12,413	34,274	38,464	48,285	31,229	28,187	36,187	83,560
Giza 77	130,548	115,390	118,268	101,364	35,952	7,121	7,088	45,271	17,630	18,430	14,081	16,390	18,039	14,438
Giza 88	-	-		-	-	-	-	-	-	-	-	555	122	1,145
Giza 84	-	-		-	-	-	-	-	2,144	-	-	-	-	-
Sub Total ELS	***185,808***	***205,141***	***202,297***	***177,886***	***69,267***	***32,336***	***27,562***	***87,133***	***66,672***	***78,055***	***55,475***	***55,866***	***57,916***	***102,755***
Long Staple														
Giza 86	-	-	-	-	-	-	-	-	-	-	23,763	70,496	121,306	83,717
Giza 75	113,648	97,338	72,427	39,694	17,805	20,402	16,635	78,083	70,932	-	42,556	23,770	36,754	656
Giza 69	29,154	22,252	13,476	3,644	-	-	-	-	-	-	-	-	-	-
Giza 89	-	-		-	-	-	-	-	-	-	-	2,819	15,364	18,644
Giza 85	-	-		-	-	-	-	1	250	-	414	3,954	4,866	6,068
Giza 81	214	714	509	-	-	68	-	6,220	651	-	-	-	-	-
Giza 80	-	-	-	-	-	-	-	32,258	7,483	-	394	3,294	3,588	5,840
Giza 83	-	-	-	-	-	-	-	10,623	451	-	-	342	983	4,605
Dandara	-	-	-	-	383	-	-	6,489	-	-	-	-	-	-
Type Exportateur	-	3,733	157	-	109	-	1,611	244	-		-	236	1,722	2,857
Sub Total LS	**143,016**	**124,038**	**86,569**	43,338	*18,297*	*20,470*	*18,245*	*133,916*	*79,768*	*0*	*67,126*	*104,911*	*184,583*	*122,387*
Grand Total	**328,824**	**329,179**	**288,866**	**221,225**	**87,564**	**52,806**	**45,807**	**221,049**	**146,440**	**78,055**	**122,601**	**160,777**	**242,499**	**225,142**

Source : Cotton & International Trade Co. through 1994/95. Alexandria Cotton Exporters' Association as of 1995/96.

Note: From 1986/87 through 1997/98, the value of lint exports (export earnings in US dollars) is calculated by multiplying export volume for each variety by the minimum export price for that variety (for the lowest exportable grade). Appropriate lb. to kg conversion factors are used. The estimates should be viewed

as a lower bound for the true value of exports. Export values by variety are summed across variety to arrive at a grand total. As of 1998/99, actual reported export receipts are used, not estimated values.

Table B3a-1: Private Companies Participating in Seed Cotton Trading, 1994/95 to 1999/00

Company	1994/95	1995/96	1996/97	1997/98	1998/99	1999/00
Ahly (National)	X	X				
Egypt Comp.	X	X				
Nefertity	X	X			X	X
Modern Nile		X		X	X	X
El-Mabrouk		X			X	X
T. Harb		X				X
Sodasia		X				
Alacon		X				
Kantoush		X				
El-Watany		X			X	X
Mostafa		X				
Arabia Ginning		X		X	X	
Arab Trade and Investment				X	X	X
Nile Ginning					X	X
Nassco					X	X
El-Attar					X	X
Tanta Cotton Trading					X	X
North Upper Egypt						X
Abo Madawy						X
Dawlia For Crops						X
Other		X				X
Total	3	12	0	3	10	13

Source: Cotton and International Trade Holding Company
*Others companies are not including in the Total
**Horticultural service Unite is not includes in this list

Table B5-b: Employment Generated in Private Spinning, 1998 to 2000

Governorate	May 1998			May 1999			May/June 2000		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
Qalubia									
Basioutex Trade & Industry	30	10	40	30	10	40	42	18	60
DIP Egypt	165	15	180	570	30	600	590	30	620
Al Alameya (Intl. Co. for Imp., Exp. & Spin.)	0	0	0	60	19	79	63	19	82
Egyptian Co. for Cotton Spinning	0	0	0	30	10	40	60	20	80
Total	**195**	**25**	**220**	**690**	**69**	**759**	**755**	**87**	**842**
Giza									
Fager Al Eslam for Spinning & Weaving	0	0	0	100	0	100	100	0	100
Giza Spinning	382	2	384	400	2	402	400	2	402
Total	**382**	**2**	**384**	**500**	**2**	**502**	**500**	**2**	**502**
Beheira									
Hassan Gaber Darwish	0	0	0	14	3	17	14	4	18
Total	**0**	**0**	**0**	**14**	**3**	**17**	**14**	**4**	**18**
Menoufia									
Alcan Mana'ai	0	0	0	96	4	100	96	4	100
Total	**0**	**0**	**0**	**96**	**4**	**100**	**96**	**4**	**100**
Alexandria									
Spinco	105	45	150	105	45	150	112	23	135
Unirab Co.	7,420	130	7,550	7,400	150	7,550	7,360	143	7,503
Alexandria for Spinning & Weaving	3,352	217	3,569	3,285	188	3,473	3,265	183	3,448
Egyptian International for Investment	64	6	70	64	6	70	64	6	70
Attalla Trading	85	85	170	85	85	170	85	85	170
Total	**11,026**	**483**	**11,509**	**10,939**	**474**	**11,413**	**10,886**	**440**	**11,326**
Dakahlia									
Dowitex (Abdel Mona-em Moh. Dowidar)	18	2	20	18	2	20	18	2	20
Total	**18**	**2**	**20**	**18**	**2**	**20**	**18**	**2**	**20**
Sharkia									
10th of Ramadan Co.	75	0	75	90	0	90	0	0	0

Governorate	May 1998			May 1999			May/June 2000		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
Al Midani	80	0	80	90	0	90	0	0	0
Menia El Khamh	1,800	150	1,950	1,800	150	1,950			1,815
Rosetex Textile	0	0	0	105	0	105	0	0	0
10th of Ramadan S & W (Daymtex)	0	0	0	76	0	76	0	0	0
Shatex Spinning & Weaving	0	0	0	135	0	135	0	0	0
Total	**1,955**	**150**	**2,105**	**2,296**	**150**	**2,446**			**1,815**
Kafr El Sheikh									
Wezza for Spinning Cotton	0	0	0	34	2	36	38	4	42
Total	**0**	**0**	**0**	**34**	**2**	**36**	**38**	**4**	**42**
Gharbia									
Mosa'adtex (Mohamed Metwalli & Sons)	0	0	0	30	30	60	45	30	75
Al Dawlia for Spinning	0	0	0	50	0	50	55	0	55
Total	**0**	**0**	**0**	**80**	**30**	**110**	**100**	**30**	**130**
Grand Total	**13,576**	**662**	**14,238**	**14,667**	**736**	**15,403**	**12,407**	**573**	**14,795**
Subtotal for Privatized Companies	12,737	512	13,249	13,115	537	13,652	11,278	375	13,468
Subtotal for Ring Spinners	382	2	384	496	6	502	496	6	502
Subtotal for Twisters	173	2	175	198	2	200	18	2	20
Subtotal for Open-End Spinners	284	146	430	858	191	1,049	615	190	805
Final Numbers for Priv. Spinners, Adj. For Dates of Effective Privatization	**8,424**	**295**	**8,719**	**12,807**	**567**	**13,374**	**12,407**	**573**	**14,795**

Source: MVE surveys of private spinners in Egypt, 1999 and 2000.
Note: Minya al Kamh did not provide a breakdown of the labor force into men and women workers. Hence, the total men + total women do not equal the grand total employment figure.

Table B7-1: Area, Yield and Production of Summer Rice by Variety, 1990 to 1999

		Total			Giza 171			Giza 172			Giza 175		
	Summer Rice	Area	Yield	Production	Area	Yield	Production	Area	Yield	Production	Area	Yield	Production
		Feddan	Tons / Fed.	Tons	Feddan	Tons / Fed.	Tons	Feddan	Tons / Fed.	Tons	Feddan	Tons / Fed.	Tons
	Total Valley	1,034,830	3.06	3,162,642	486,192	3.03	1,472,826	294,029	2.63	771,906	57,856	3.48	201,294
1990	Desert & New Land	1,515	2.30	3,485	0	0.00	0	0	0.00	0	0	0.00	0
	Total Egypt	1,036,345	3.06	3,166,126	486,192	3.03	1,472,826	294,029	2.63	771,906	57,856	3.48	201,294
	Total Valley	1,094,608	3.14	3,437,478	530,646	3.08	1,633,613	218,538	2.76	603,642	42,178	3.44	145,113
1991	Desert & New Land	5,051	1.80	9,092	0	0.00	0	0	0.00	0	0	0.00	0
	Total Egypt	1,099,659	3.13	3,446,570	530,646	3.08	1,633,613	218,538	2.76	603,642	42,178	3.44	145,113
	Total Valley	1,209,141	3.22	3,897,926	595,314	3.14	1,870,710	180,780	2.98	538,432	31,399	3.52	110,555
1992	Desert & New Land	5,386	1.93	10,408	5,386	1.93	10,408	0	0.00	0	0	0.00	0
	Total Egypt	1,214,527	3.22	3,908,334	600,700	3.13	1,881,118	180,780	2.98	538,432	31,399	3.52	110,555
	Total Valley	1,276,295	3.25	4,147,613	615,741	3.13	1,926,701	137,170	2.98	408,134	30,210	3.37	101,948
1993	Desert & New Land	5,495	2.10	11,522	5,495	2.10	11,522	0	0.00	0	0	0.00	0
	Total Egypt	1,281,790	3.24	4,159,135	621,236	3.12	1,938,223	137,170	2.98	408,134	30,210	3.37	101,948
	Total Valley	1,371,017	3.33	4,566,681	691,263	3.23	2,231,059	165,598	3.14	519,849	38,903	3.44	133,643
1994	Desert & New Land	6,693	2.27	15,220	6,693	2.27	15,220	0	0.00	0	0	0.00	0
	Total Egypt	1,377,710	3.33	4,581,901	697,956	3.22	2,246,279	165,598	3.14	519,849	38,903	3.44	133,643
	Total Valley	1,386,449	3.43	4,755,220	750,438	3.42	2,565,773	150,587	3.27	492,216	24,015	3.64	87,466
1995	Desert & New Land	13,571	2.42	32,878	1,271	2.22	2,826	2,375	1.58	3,743	140	2.60	364
	Total Egypt	1,400,020	3.42	4,788,098	751,709	3.42	2,568,599	152,962	3.24	495,959	24,155	3.64	87,830
	Total Valley	1,386,198	3.49	4,843,685	709,875	3.45	2,448,591	85,726	3.26	279,477	9,403	3.59	33,762
1996	Desert & New Land	19,070	2.71	51,703	6,566	2.65	17,388	900	2.75	2,475	774	2.00	1,546
	Total Egypt	1,405,268	3.48	4,895,388	716,441	3.44	2,465,979	86,626	3.25	281,952	10,177	3.47	35,308
	Total Valley	1,525,756	3.55	5,412,448	742,001	3.51	2,607,743	98,529	3.30	325,063	919	3.35	3,081
1997	Desert & New Land	24,116	2.80	67,562	8,951	2.43	21,795	296	2.66	788	45	3.00	135
	Total Egypt	1,549,872	3.54	5,480,010	750,952	3.50	2,629,538	98,825	3.30	325,851	964	3.34	3,216
	Total Valley	1,201,730	3.64	4,375,813	447,756	3.58	1,604,512	12,843	3.25	41,783	2,296	3.06	7,032
1998	Desert & New Land	23,225	3.20	74,424	17,835	3.40	60,683	830	2.09	1,737	0	0.00	0
	Total Egypt	1,224,955	3.63	4,450,237	465,591	3.58	1,665,195	13,673	3.18	43,520	2,296	3.06	7,032
	Total Valley	1,511,877	3.74	5,661,879	310,441	3.52	1,092,278	9,908	3.22	31,870	0	0.00	0

1999	**Desert & New Land**	25,000	3.39	84,691	1,399	3.00	4,198	0	0.00	0	0	0.00	0
	Total Egypt	1,536,877	3.74	5,746,570	311,840	3.52	1,096,476	9,908	3.22	31,870	0	0.00	0

Source : Department for Agricultural Economics Affairs , MALR

Table B7-1: Area, Yield and Production of Summer Rice by Variety, 1990 to 1999

		Giza 176			Giza 181			IR 28			Reho (Giza 173)		
	Summer Rice	Area Feddan	Yield Tons / Fed.	Production Tons	Area Feddan	Yield Tons / Fed.	Production Tons	Area Feddan	Yield Tons / Fed.	Production Tons	Area Feddan	Yield Tons / Fed.	Production Tons
	Total Valley	59,197	3.61	213,638	45,949	3.85	176,699	73,407	3.72	273,091	11,876	2.89	34,283
1990	Desert & New Land	0	0.00	0	0	0.00	0	0	0.00	0	0	0.00	0
	Total Egypt	59,197	3.61	213,638	45,949	3.85	176,699	73,407	3.72	273,091	11,876	2.89	34,283
	Total Valley	211,348	3.46	732,029	42,422	3.42	145,282	18,586	4.21	78,317	23,603	3.23	76,312
1991	Desert & New Land	0	0.00	0	0	0.00	0	0	0.00	0	0	0.00	0
	Total Egypt	211,348	3.46	732,029	42,422	3.42	145,282	18,586	4.21	78,317	23,603	3.23	76,312
	Total Valley	310,082	3.39	1,052,653	43,082	3.60	154,894	18,755	4.11	77,159	15,369	3.13	48,031
1992	Desert & New Land	0	0.00	0	0	0.00	0	0	0.00	0	0	0.00	0
	Total Egypt	310,082	3.39	1,052,653	43,082	3.60	154,894	18,755	4.11	77,159	15,369	3.13	48,031
	Total Valley	398,969	3.45	1,376,227	37,857	3.55	134,218	26,909	4.21	113,402	27,820	2.93	81,545
1993	Desert & New Land	0	0.00	0	0	0.00	0	0	0.00	0	0	0.00	0
	Total Egypt	398,969	3.45	1,376,227	37,857	3.55	134,218	26,909	4.21	113,402	27,820	2.93	81,545
	Total Valley	429,062	3.53	1,515,078	8,499	4.01	34,076	681	3.44	2,341	35,572	3.53	125,537
1994	Desert & New Land	0	0.00	0	0	0.00	0	0	0.00	0	0	0.00	0
	Total Egypt	429,062	3.53	1,515,078	8,499	4.01	34,076	681	3.44	2,341	35,572	3.53	125,537
	Total Valley	377,535	3.54	1,334,955	6,600	3.98	26,256	16	3.88	62	39,652	3.17	125,879
1995	Desert & New Land	8,526	2.66	22,689	0	0.00	0	0	0.00	0	0	0.00	0
	Total Egypt	386,061	3.52	1,357,644	6,600	3.98	26,256	16	3.88	62	39,652	3.17	125,879
	Total Valley	264,432	3.42	903,830	4,696	4.03	18,929	0	0.00	0	51,180	3.35	171,680
1996	Desert & New Land	8,164	2.88	23,500	0	0.00	0	0	0.00	0	0	0.00	0
	Total Egypt	272,596	3.40	927,330	4,696	4.03	18,929	0	0.00	0	51,180	3.35	171,680
	Total Valley	159,424	3.38	538,901	1,866	4.09	7,634	652	4.42	2,884	55,562	3.43	190,708
1997	Desert & New Land	11,852	3.11	36,807	0	0.00	0	0	0.00	0	0	0.00	0
	Total Egypt	171,276	3.36	575,708	1,866	4.09	7,634	652	4.42	2,884	55,562	3.43	190,708
	Total Valley	58,488	3.38	197,438	0	0.00	0	270	3.72	1,004	39,804	3.46	137,529
1998	Desert & New Land	3,312	2.60	8,601	0	0.00	0	0	0.00	0	0	0.00	0
	Total Egypt	61,800	3.33	206,039	0	0.00	0	270	3.72	1,004	39,804	3.46	137,529
	Total Valley	65,437	3.24	212,267	201	3.99	802	0	0.00	0	48,424	3.47	167,990

1999	Desert & New Land	136	3.50	476	0	0.00	0	0	0.00	0	0	0.00	0
	Total Egypt	65,573	3.24	212,743	201	3.99	802	0	0.00	0	48,424	3.47	167,990

Source : Department for Agricultural Economics Affairs , MALR

Table B7-1: Area, Yield and Production of Summer Rice by Variety, 1990 to 1999

	Summer Rice	Giza 178			Giza 177			Other		
		Area Feddan	Yield Tons / Fed.	Production Tons	Area Feddan	Yield Tons / Fed.	Production Tons	Area Feddan	Yield Tons / Fed.	Production Tons
1990	**Total Valley**	**0**	**0.00**	**0**	**0**	**0.00**	**0**	**6,324**	**2.99**	**18,905**
	Desert & New Land	0	0.00	0	0	0.00	0	1,515	2.30	3,485
	Total Egypt	0	0.00	0	0	0.00	0	7,839	2.86	22,390
1991	**Total Valley**	0	0.00	0	0	0.00	0	7,287	3.18	23,170
	Desert & New Land	0	0.00	0	0	0.00	0	5,051	1.80	9,092
	Total Egypt	0	0.00	0	0	0.00	0	12,338	2.61	32,262
1992	**Total Valley**	0	0.00	0	0	0.00	0	14,360	3.17	45,492
	Desert & New Land	0	0.00	0	0	0.00	0	0	0.00	0
	Total Egypt	0	0.00	0	0	0.00	0	14,360	3.17	45,492
1993	**Total Valley**	0	0.00	0	0	0.00	0	1,619	3.36	5,438
	Desert & New Land	0	0.00	0	0	0.00	0	0	0.00	0
	Total Egypt	0	0.00	0	0	0.00	0	1,619	3.36	5,438
1994	**Total Valley**	0	0.00	0	0	0.00	0	1,439	3.54	5,098
	Desert & New Land	0	0.00	0	0	0.00	0	0	0.00	0
	Total Egypt	0	0.00	0	0	0.00	0	1,439	3.54	5,098
1995	**Total Valley**	3,670	3.68	13,519	23,742	3.41	80,889	10,194	2.77	28,205
	Desert & New Land	0	0.00	0	0	0.00	0	1,259	2.59	3,256
	Total Egypt	3,670	3.68	13,519	23,742	3.41	80,889	11,453	2.75	31,461
1996	**Total Valley**	126,570	4.12	521,580	134,069	3.47	465,044	247	3.21	792
	Desert & New Land	0	0.00	0	0	0.00	0	2,666	2.55	6,794
	Total Egypt	126,570	4.12	521,580	134,069	3.47	465,044	2,913	2.60	7,586
1997	**Total Valley**	294,149	3.82	1,123,050	167,939	3.55	596,649	4,715	3.55	16,735
	Desert & New Land	1,430	3.13	4,477	317	2.43	769	1,225	2.28	2,791
	Total Egypt	295,579	3.81	1,127,527	168,256	3.55	597,418	5,940	3.29	19,526
1998	**Total Valley**	282,214	3.82	1,078,856	279,962	3.57	1,000,761	78,097	3.93	306,898
	Desert & New Land	756	2.88	2,179	492	2.49	1,224	0	0.00	0
	Total Egypt	282,970	3.82	1,081,035	280,454	3.57	1,001,985	78,097	3.93	306,898
1999	**Total Valley**	346,493	3.97	1,374,723	285,048	3.59	1,023,388	445,925	3.94	1,758,561
	Desert & New Land	5,747	3.60	20,670	8,572	3.44	29,523	9,146	3.26	29,824

	Total Egypt	352,240	3.96	1,395,393	293,620	3.59	1,052,911	455,071	3.93	1,788,385

Source : Department for Agricultural Economics Affairs , MALR

Table B7-2: Area Under Rice, by Variety (Shares), 1997

Varieties	Days to Maturity	Share (Percentage)	Weighted Average Days to Maturity
G 171	155	48.45	75.10
G 172	155	6.38	9.88
G 175	125	0.06	0.08
G 176	145	11.05	16.02
G 181	145	0.12	0.17
IR 28	125	0.04	0.05
G 173	155	3.58	5.56
G 178	135	19.07	25.75
G 177	125	10.86	13.57
			146.19

Source: Table (10-1) and (10-3)

Table B7-3a: Consumptive Use of Water, Giza 171 Rice, 1990 to 1999

Years	Area (fed) 1	Days to Maturity 2	Days Not Irrigated 3	Number of Irrigated Days 4	Consumptive of Water (m^3/fed,) 5	Amount of water per fed. per day 6	Total Amount of Water m^3 7
1990	486,192	155	10	145	4714	32.51	2,291,909,088
1991	530,646	155	10	145	4714	32.51	2,501,465,244
1992	600,700	155	10	145	4714	32.51	2,831,699,800
1993	621,236	155	10	145	4714	32.51	2,928,506,504
1994	697,956	155	10	145	4714	32.51	3,290,164,584
1995	751,709	155	10	145	4714	32.51	3,543,556,226
1996	716,441	155	10	145	4714	32.51	3,377,302,874
1997	750,952	155	10	145	4714	32.51	3,539,987,728
1998	465,591	155	10	145	4715	32.52	2,195,261,565
1999	311,840	155	10	145	4716	32.52	1,470,637,440

Source: Table (10-1)& MALR
Notes: 4=2-3 , 6=5/4, 7=6*1*4

Table B7-3b: Consumptive Use of Water, Giza 172 Rice, 1990 to 1999

Years	Area (fed) 1	Days to Maturity 2	Days Not Irrigated 3	Number of Irrigated Days 4	Consumptive of Water (m^3/fed,) 5	Amount of water per fed. per day 6	Total Amount of Water m^3 7
1990	294,029	155	10	145	4714	32.51	1,386,052,706
1991	218,538	155	10	145	4714	32.51	1,030,188,132
1992	180,780	155	10	145	4714	32.51	852,196,920
1993	137,170	155	10	145	4714	32.51	646,619,380
1994	165,598	155	10	145	4714	32.51	780,628,972
1995	152,962	155	10	145	4714	32.51	721,062,868
1996	86,626	155	10	145	4714	32.51	408,354,964
1997	98,825	155	10	145	4714	32.51	465,861,050
1998	13,673	156	10	146	4715	32.29	64,468,195
1999	9,908	157	10	147	4716	32.08	46,726,128

Source: Table (10-1)& MALR
Notes: 4=2-3 , 6=5/4, 7=6*1*4

Table B7-3c: Consumptive Use of Water, Giza 175 Rice, 1990 to 1999

Years	Area (fed) 1	Days to Maturity 2	Days Not Irrigated 3	Number of Irrigated Days 4	Consumptive of Water (m^3/fed,) 5	Amount of water per fed. per day 6	Total Amount of Water m^3 7
1990	57,856	125	10	115	4714	40.99	272,733,184
1991	42,178	125	10	115	4714	40.99	198,827,092
1992	31,399	125	10	115	4714	40.99	148,014,886
1993	30,210	125	10	115	4714	40.99	142,409,940
1994	38,903	125	10	115	4714	40.99	183,388,742
1995	24,155	125	10	115	4714	40.99	113,866,670
1996	10,177	125	10	115	4714	40.99	47,974,378
1997	964	125	10	115	4714	40.99	4,544,296
1998	2,296	125	10	115	4714	40.99	10,823,344
1999	0	125	10	115	4714	40.99	0

Source: Table (10-1)& MALR
Notes: 4=2-3 , 6=5/4, 7=6*1*4

Table B7-3d: Consumptive Use of Water, Giza 176 Rice, 1990 to 1999

Years	Area (fed) 1	Days to Maturity 2	Days Not Irrigated 3	Number of Irrigated Days 4	Consumptive of Water (m^3/fed,) 5	Amount of water per fed. per day 6	Total Amount of Water m^3 7
1990	59,197	145	10	135	4714	34.92	279,054,658
1991	211,348	145	10	135	4714	34.92	996,294,472
1992	310,082	145	10	135	4714	34.92	1,461,726,548
1993	398,969	145	10	135	4714	34.92	1,880,739,866
1994	429,062	145	10	135	4714	34.92	2,022,598,268
1995	386,061	145	10	135	4714	34.92	1,819,891,554
1996	272,596	145	10	135	4714	34.92	1,285,017,544
1997	171,276	145	10	135	4714	34.92	807,395,064
1998	61,800	145	10	135	4714	34.92	291,325,200
1999	65,573	145	10	135	4715	34.93	309,176,695

Source: Table (10-1)& MALR
Notes: 4=2-3 , 6=5/4, 7=6*1*4

Table B7-3e: Consumptive Use of Water, Giza 181 Rice, 1990 to 1999

Years	Area (fed) 1	Days to Maturity 2	Days Not Irrigated 3	Number of Irrigated Days 4	Consumptive of Water (m^3/fed,) 5	Amount of water per fed. per day 6	Total Amount of Water m^3 7
1990	45,949	145	10	135	4714	34.92	216,603,586
1991	42,422	145	10	135	4714	34.92	199,977,308
1992	43,082	145	10	135	4714	34.92	203,088,548
1993	37,857	145	10	135	4714	34.92	178,457,898
1994	8,499	145	10	135	4714	34.92	40,064,286
1995	6,600	145	10	135	4714	34.92	31,112,400
1996	4,696	145	10	135	4714	34.92	22,136,944
1997	1,866	145	10	135	4714	34.92	8,796,324
1998	0	145	10	135	4714	34.92	0
1999	201	145	10	135	4714	34.92	947,514

Source: Table (10-1)& MALR
Notes: 4=2-3 , 6=5/4, 7=6*1*4

Table B7-3f: Consumptive Use of Water, Philipino Rice, 1990 to 1999

Years	Area (fed) 1	Days to Maturity 2	Days Not Irrigated 3	Number of Irrigated Days 4	Consumptive of Water (m^3/fed,) 5	Amount of water per fed. per day 6	Total Amount of Water m^3 7
1990	73,407	125	10	115	4714	40.99	346,040,598
1991	18,586	125	10	115	4714	40.99	87,614,404
1992	18,755	125	10	115	4714	40.99	88,411,070
1993	26,909	125	10	115	4714	40.99	126,849,026
1994	681	125	10	115	4714	40.99	3,210,234
1995	16	125	10	115	4714	40.99	75,424
1996	0	125	10	115	4714	40.99	0
1997	652	125	10	115	4714	40.99	3,073,528
1998	270	126	10	116	4715	40.65	1,273,050
1999	0	127	10	117	4716	40.31	0

Source: Table (10-1)& MALR
Notes: 4=2-3 , 6=5/4, 7=6*1*4

Table B7-3g: Consumptive Use of Water, Giza 173 Rice, 1990 to 1999

Years	Area (fed) 1	Days to Maturity 2	Days Not Irrigated 3	Number of Irrigated Days 4	Consumptive of Water (m^3/fed,) 5	Amount of water per fed. per day 6	Total Amount of Water m^3 7
1990	11,876	155	10	145	4714	32.51	55,983,464
1991	23,603	155	10	145	4714	32.51	111,264,542
1992	15,369	155	10	145	4714	32.51	72,449,466
1993	27,820	155	10	145	4714	32.51	131,143,480
1994	35,572	155	10	145	4714	32.51	167,686,408
1995	39,652	155	10	145	4714	32.51	186,919,528
1996	51,180	155	10	145	4714	32.51	241,262,520
1997	55,562	155	10	145	4714	32.51	261,919,268
1998	39,804	155	10	145	4715	32.52	187,675,860
1999	48,424	155	10	145	4716	32.52	228,367,584

Source: Table (10-1)& MALR
Notes: 4=2-3 , 6=5/4, 7=6*1*4

Table B7-3h: Consumptive Use of Water, Giza 178 Rice, 1990 to 1999

Years	Area (fed) 1	Days to Maturity 2	Days Not Irrigated 3	Number of Irrigated Days 4	Consumptive of Water (m^3/fed,) 5	Amount of water per fed. per day 6	Total Amount of Water m^3 7
1990	0	135	10	125	4714	37.71	0
1991	0	135	10	125	4714	37.71	0
1992	0	135	10	125	4714	37.71	0
1993	0	135	10	125	4714	37.71	0
1994	0	135	10	125	4714	37.71	0
1995	3,670	135	10	125	4714	37.71	17,300,380
1996	126,570	135	10	125	4714	37.71	596,650,980
1997	295,579	135	10	125	4714	37.71	1,393,359,406
1998	282,970	135	10	125	4715	37.72	1,334,203,550
1999	346,493	135	10	125	4716	37.73	1,634,060,988

Source: Table (10-1)& MALR
Notes: 4=2-3 , 6=5/4, 7=6*1*4

Table B7-3i: Consumptive Use of Water, Giza 177 Rice, 1990 to 1999

Years	Area (fed) 1	Days to Maturity 2	Days Not Irrigated 3	Number of Irrigated Days 4	Consumptive of Water (m^3/fed,) 5	Amount of water per fed. per day 6	Total Amount of Water m^3 7
1990	0	125	10	115	4714	40.99	0
1991	0	125	10	115	4714	40.99	0
1992	0	125	10	115	4714	40.99	0
1993	0	125	10	115	4714	40.99	0
1994	0	125	10	115	4714	40.99	0
1995	23,742	125	10	115	4714	40.99	111,919,788
1996	134,069	125	10	115	4714	40.99	632,001,266
1997	168,256	125	10	115	4714	40.99	793,158,784
1998	280,454	125	10	115	4714	40.99	1,322,060,156
1999	285,048	125	10	115	4714	40.99	1,343,716,272

Source: Table (10-1)& MALR
Notes: 4=2-3 , 6=5/4, 7=6*1*4

Table B7-4: Consumptive Use of Water if All Rice Varieties are Long Season, 1990 to 1999

Years	Area (fed)	Days to Maturity	Days Not Irrigated	Number of Irrigated Days	Consumptive of Water (m^3/fed,)	Amount of water per fed. per day	Total Amount of Water m^3
	1	2	3	4	5	6	7
1990	1,036,345	155	10	145	4714	32.51	4,885,330,330
1991	1,099,659	155	10	145	4714	32.51	5,183,792,526
1992	1,214,527	155	10	145	4714	32.51	5,725,280,278
1993	1,281,790	155	10	145	4714	32.51	6,042,358,060
1994	1,377,710	155	10	145	4714	32.51	6,494,524,940
1995	1,400,020	155	10	145	4714	32.51	6,599,694,280
1996	1,405,268	155	10	145	4714	32.51	6,624,433,352
1997	1,549,872	155	10	145	4714	32.51	7,306,096,608
1998	1,224,955	155	10	145	4715	32.52	5,775,662,825
1999	1,536,877	155	10	145	4715	32.52	7,246,375,055

Souce: MALR

Notes: 4=2-3 , 6=5/4, 7=6*1*4

Table B7-5: Consumptive Use of Water if All Rice Varieties are Short Season, 1990 - 1999

Years	Area (fed) 1	Days to Maturity* 2	Days Not Irrigated 3	Number of Irrigated Days 4	Consumptive of Water (m^3/fed,) 5	Amount of water per fed. per day 6	Total Amount of Water m^3 7
1990	1,036,345	125	10	115	3739	32.51	3,874,572,331
1991	1,099,659	125	10	115	3739	32.51	4,111,283,728
1992	1,214,527	125	10	115	3739	32.51	4,540,739,531
1993	1,281,790	125	10	115	3739	32.51	4,792,215,013
1994	1,377,710	125	10	115	3739	32.51	5,150,830,125
1995	1,400,020	125	10	115	3739	32.51	5,234,240,291
1996	1,405,268	125	10	115	3739	32.51	5,253,860,934
1997	1,549,872	125	10	115	3739	32.51	5,794,490,413
1998	1,224,955	125	10	115	3739	32.52	4,580,698,103
1999	1,536,877	125	10	115	3739	32.52	5,747,125,044

Source: MALR

Notes: 4=2-3 , 6=5/4, 7=6*1*4

* Days of Maturity assumed for the Sakha 102 which is the Lowest Varaity