

PROSPECTS OF EGYPTIAN COTTON IN THE 1990s

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For more than 160 years, Cotton has been playing a prominent role in the Egyptian economy.

When Mohamed Ali, Viceroy and founder of modern Egypt, introduced high quality Cotton and expanded its production, and in parallel built a national and flourishing textile industry, no one thought or even imagined that cotton will play such a role for such span of time not only in the country economy but also in its social development.

However, in recent years a big exclamation mark arouse about the future of Egyptian Cotton.

After a period of substantial increase in both yield and total production extended for about ten years, both yield and total production witnessed a gradual and rapid decrease which seemed to many people unexplainable and unacceptable.

Such situation, no doubt, deserves careful examination to find out whether this decrease in yield and production is a temporary one that could be corrected, and how are the potentials of Egyptian Cotton in the near future, i.e. the 1990s.

To clarify this, one should start with the situation in the 1980s.

Abstract

Cotton crop plays a crucial role in Egyptian economy and social development. After an upward trend which lasted till the first 80s, cotton production has recently decreased. There are several causes for this drop, among which: low market prices in relation to other crops, bad climate and pest attacks. However, as cotton is so important for the Egyptian economy, its relaunch will be possible, thanks to market reorganization, cultural technic modernization, namely irrigation and drainage, and a more effective phytosanitary control.

Résumé

La culture du coton joue un rôle de toute première importance dans l'économie et le développement social de l'Égypte. Après une période positive, jusqu'aux années 80, la production du coton a récemment connu une diminution accrue. Différents facteurs en sont responsables, parmi lesquels: les prix de marché faibles par rapport aux autres cultures, les conditions climatiques défavorables et les envasements de parasites. Etant donné que le coton est une culture importante pour l'économie de l'Égypte, on prévoit de la relancer, à travers une réorganisation du marché, une modernisation des techniques culturelles, notamment de l'irrigation et du drainage, et une lutte phytosanitaire plus efficace.

Cotton situation during the 1980s

Table 1 summarizes the cotton statistics in the near past.

From the data shown, it could be seen that yield per faddan exhibited two distinct periods, a first one of gradual increase (started 1978) followed by a second one of steady decrease (as from 1986).

The first period-yield increase

The increase in yield per faddan during this

period could be attributed to several positive factors, the most important among them are:

1) The reduction of the area by about 150.000 Faddans which eliminated the lower productivity farms, the expansion in using fertilizers, beside better growing conditions in general. All these factors contributed about two thirds of the increase in the yield.

It is worthwhile to notice also that the grown acreage started a downward trend during this period of high levels of productivity. This trend is attributed to two main factors; the first one is the accumulation of

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Year	Area (Million Faddan)	Yield (Kentar/ Faddan)	Total production (Kentar)	Local industry consumption (Million Kentar)	Exports (Million Kentar)	Stocks (Million Kentar)
1952/54	1.623	4.52	7.34	4.92	4.80	2.19
1975/77	1.339	5.86	7.85	5.05	2.94	1.55
1978	1.188	7.38	8.77	5.75	3.02	1.30
1979	1.196	8.09	9.67	5.65	3.26	2.12
1980	1.245	8.50	10.57	6.52	3.30	2.94
1981	1.178	8.47	9.99	5.84	3.87	4.48
1982	1.066	8.64	9.21	5.16	3.61	4.22
1983	.998	8.02	8.00	5.31	3.33	3.74
1984	.984	8.12	7.98	5.22	3.04	2.01
1985	1.081	8.05	8.71	5.71	2.96	1.62
1986	1.055	7.64	8.06	5.63	2.43	2.10
1987	.980	7.17	7.02	5.36	1.76	1.47
1988	1.014	6.13	6.21	5.07	1.20	1.28
1989	1.006	5.73	5.72	4.96	0.82	0.81
1990*	.993	5.98	5.94	—	—	—

* Preliminary
Notice: 1 Faddan = 4.200 m²
1 Kentar = 100 pounds

a large stock of unexported cotton largely because of higher yield associated with difficulties in exporting to eastern block countries, and thus the willingness of the government to reduce total production assuming that productivity will remain the same if not increased. The second factor is the shift of the farmers for growing more profitable crops associated with shortage in labour due to temporary emigration to oil countries.

2) The introduction of new varieties of higher yield potential contributed about one third of the increase in yield. An example of the impact of introducing new varieties of higher yield potential on productivity in the introduction in the late seventies of three varieties; (a) The ELS Giza 70 and Giza 77 to replace the two old varieties Giza 68 and Menoufi, (b) The LS Giza 75 to replace the old variety Giza 67.

Table 2 shows that: (a) During the period 1975-78 when the area occupied by the ELS varieties Giza 70 and Giza 77 reached nearly the same area occupied by the old ones Giza 68 and Menoufi, the average yield of the new varieties was higher by about 17%. (b) During the period 1978-79 when the area occupied by the LS variety Giza 75 nearly equaled that occupied by the old variety Giza 67, the average yield of the new variety was higher by about 19%. Thus, it is fair to conclude that the introduction of these three varieties resulted in an increase in productivity of about 18% on the average.

During the late seventies and the early eighties, five new varieties were put into commercial production: These included: Giza 75, Giza 76, Giza 77, Giza 80 and Giza 81. Giza 75 (LS) was introduced in 1975 (2.200 F). Its area increased rapidly and in 1980 reached 391.000 F., and realized a peak yield (9.14 K/F), and 529.000 F. in 1981 (8.81 K/f.), 530.000 F. in 1983 (8.76 K/F). Thus it seems that Giza was the main contributor to the increase in the average yield during the early eighties.

The second period-yield deterioration

This period started apparently in year 1986 when the yield per faddan dropped below the figure of eight kentars (7.64 K/F). In the second year it dropped further by one half of kentar (7.17 K/F) and in 1988 it dropped badly by more than a kentar (6.13 K/F). In 1989 it dropped further (5.77 K/F) and in 1990 it remained at the same level. Several factors contributed to this deterioration in yield, the most important of which are:

1) Pricing and Marketing

The government is the sole buyer of cotton from farmers through the cooperative marketing system. When this system was introduced in the early sixties, the prices paid to farmers were very close to world market prices. But, gradually, the gap between

	Area (F)	Yield (K/F)
ELS (1975-78)		
(i) Giza 68 + Menoufi	234.000	5.07
(ii) Giza 70 + Giza 77	268.000	5.92
Difference		0.85 (17%)
LS (1978-79)		
(i) Giza 67	180.000	7.65
(ii) Giza 75	166.000	9.14
Difference		1.49 (19%)

Rotation	1975	1985
Cotton preceded by berseem	100	100
Wheat + Maize	102	152
Broad beans + Maize	126	149
Berseem + Maize	165	178

	Cotton per capita (kg)	Total (1000 tons)	Polyester per capita (kg)	Total (1000 tons)
(A) 6 kg total consumption	4.5	315	1.5	105
	4.0	280	2.0	140
	3.5	245	2.5	175
(B) 7 kg total consumption	4.5	315	2.5	175
	4.0	280	3.0	210
	3.5	245	3.5	245

world market prices and local prices widened until in 1988 the prices paid to farmers were about one half that of world market. In the same time, prices of food, especially animal products such as meat and milk, increased substantially pushing up the prices of feed crops mainly berseem (clover). The result was that the net income of cotton growing farms became much less than that gained from growing food and feed crops. **Table 3** compares the main field crops rotations in the Egyptian agriculture (cotton preceded by berseem rotation = 100):

The cotton preceded by berseem rotation was not only the least profitable especially in 1985, but also 56% of the net income was contributed by berseem and cotton contributed only 44%. Added to this economic disadvantage, cotton growing is more effort consuming than other crops, and also farmers are not very happy with the cooperative marketing system. This situation result-

	(a)	(b)	(c)
Local consumption	6.3	5.6	4.9
Export-Manufactured	2.0	2.0	2.0
Export-Raw	2.5	2.5	2.5
Total	10.8	10.1	9.4

ed in the following consequences of deleterious effect on productivity, i.e. yield per Faddan:

i) Delay in cotton sowing

The optimum date of cotton sowing begins at the second half of February in Upper Egypt and extends over the first half of March in Delta. Extensive experiments proved that delay in sowing has a deleterious effect on yield, and generally, the loss reaches 32% for sowing in mid April and 54% for sowing in mid May. Farmers delay cotton sowing so as:

- to obtain two cuts of berseem, and sometimes three cuts instead of one delaying cotton sowing by 1-2 months;
- to grow broad beans preceding cotton, delaying cotton sowing by about 2 months;
- sometimes to grow wheat before cotton delaying cotton sowing by more than two months.

ii) Intercropping

Intercropping cotton and onion was first practiced in the delta in the early eighties but expanded in recent years. More recently intercropping with vegetables has been increasingly practiced. Intercropping causes a loss in yield because the agricultural practices of the two crops are not exactly the same, especially irrigation, beside increasing the severity of attack by sucking insects such as thrips, aphids and white fly.

iii) Neglecting the second pick because of



the cost of picking being higher than the price paid for picked cotton.

2) Severe insect attack, especially by sucking insects and mainly aphids and white fly. These insects, were generally of secondary importance. The white fly was virtually unknown till the mid seventies when it appeared in small locations in Upper Egypt, but nowadays it is widespread throughout the country. Attack by sucking insects is generally followed by fungi attack. The losses in yield due to these two insects were high especially in the years 1987-90. Bollworms, especially pink bollworm, attack was severe in 1990.

3) Generally, various unfavourable growing conditions prevailed throughout the last five years including: abnormally high temperature especially in Upper Egypt during the period of boll setting in 1988, abnormally low temperature during the first stage of plant growth in 1990 ... ect. Also, irrigation difficulties including shortage of water and misuse by farmers, drainage problems especially in northern delta.

Egypt's cotton requirements during the 1990s

Egypt needs total cotton lint production for the fulfilment of the three following main objectives:

- i) To satisfy the local population consumption of cotton textile products,
- ii) to export a reasonable amount of manufactured products; yarns, fabrics, ready made garments, ... etc., and
- iii) to maintain the presence of Egyptian cotton in world market by exporting a reasonable quantity of raw cotton.

Defining the total requirements is essential and a prerequisite for planning a cotton future policy.

1) Local population requirements: several factors determine the local population consumption requirements of the various textile fibres during the 1990s, the most important of which are:

i) Population: The population growth will continue to be the main factor. A total population of 70 millions is expected by the year 2000.

ii) The average consumption per capita: there are two levels of consumption expected by the year 2000, the first is similar to nowadays rate of consumption of 6 kg/year of the three fibres: cotton, polyester and viscous rayon. The second is somewhat higher, 7 kg/year. The total amount of viscous rayon is fixed at 9000 tons and thus cotton and polyester are the only variables.

iii) Cotton position among the textile fibres: cotton will continue to be the main textile fibre, and polyester will come second to cotton but with increasing percentage of total consumption. Nowadays local production of polyester is estimated at 29.000 tons, and is planned to increase by 37.000 tons, and studies for further increase are underway. Per capita consumption of cotton is expected to diminish from the nowadays level of 4.5 kg/year to 4 kg/year and possibly to 3.5 kg/year. The difference will be fulfilled by polyester which will increase from the present level of 1.5 kg/year to 2.0 kg/year and possibly to 2.5 kg/year. In the case of higher rate of total consumption per capita of cotton and polyester (7kg/year) it is polyester which will fill the gap and cotton consumption will remain as mentioned before, as could be seen from **table 4**.

Therefore, the total requirements of cotton to satisfy the needs of the local population is expected to range between 315.000 tons (6.3 million kentars) as a maximum, and 245.000 tons (4.9 million kentars) as a minimum, according to the availability of polyester (either locally produced or imported) and the capability of the national industry.

2) Requirements of exports as manufactured products are estimated at 100.000 equivalent tons of lint (2 million kentars).

3) Requirements of exports as raw cotton is estimated at 2.5 million kentars.

Total requirements, according to per capita consumption of (a) 4.5 kg, (b) 4.0 kg and (c) 3.5 kg, will be as shown in **table 5** (in million kentars).

In conclusion it could be stated that if Egypt cotton production dropped below 10.8 million kentars by the year 2000, the difference would be compensated for either through importation of cotton or expanding the use of polyester or both.

Cotton production objectives by the year 2000

Because of the limited cultivated area and the growing demand for food crops, the area allotted for cotton is expected to be maintained at one million faddans throughout the 1990s. In this case, to achieve an ultimate goal of total production of 10 million kentars, the average yield per faddan should be 10 kentars. There is strong evidence that this goal could be achieved to the level previously attained during the early eighties, i.e. 8.5 K/F. This phase will take three years and relies mainly on economical measures and improvement in agricultural practices and pest control. The second phase will extend for 6 years to achieve the yield of 10 K/F, and will rely mainly on the introduction of new varieties. Several measures are/or/ to be taken ensure the achievement of these goals, the most important of which are:

1) Prices and marketing: There is a general understanding that the prices paid to farmers will be increased gradually and finally normalized with export prices within few years, possibly three years. Such a step will mean paying much higher prices to producers which will undoubtedly have a positive effect on yield. Also, the marketing system will be improved to allow farmers to sell their cotton freely. Buyers are expected to be producers associations, cooperatives, ginning and exporting companies as well as private traders. There is no doubt that such pricing and marketing system will encourage farmers to sow cotton in the appropriate time, abandon intercropping, do not neglect second pick, and generally pay more attention to their cotton crop.

2) Modernization of irrigation and drainage system and solving irrigation bottle-necks at the ends of irrigation canals, improving subterranean drainage and clearing open drainage ditches.

3) Developing agronomical practices recommendations more appropriate to the different types of soil, locations and varieties including methods of land preparation and sowing, irrigation, weed control, fertilization ... etc., beside extensive effort to transfer the new technologies to farmers through strengthening the agricultural extension service and the close cooperation between researchers and extension agents.

4) Re-adjusting the system of pest control, more use of ground spraying of insecticides instead of aerial spraying, rationalization of use of insecticides ... ect.

5) Intensification of the breeding programme to accelerate the introduction of new varieties having higher yield potential and better quality. ●