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Egyptian Agriculture: Its Characteristics, Historical Development and Current Challenges

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Abstract. The following inherent characteristics of Egyptian agriculture have been a burden slowing down its evolution throughout history: the scarcity of land and water resources, Egypt's entire dependence on the Nile water for irrigation, the Central State's intervention in agricultural activities.

Egyptian agriculture is also characterized by a high degree of intensification: perennial irrigation, intense fertilizers utilization per unit of land, cultivation of the farmland twice or thrice annually.

In spite of intensification, agriculture in Egypt continues to undergo crises since the late sixties which are mainly: food deficit, deficit of the agricultural balance of trade, and environmental deterioration.

An analysis of the historical evolution and of the different stages of agricultural policies in Egypt could help to detect the origins of the on-going agricultural crisis.

Keywords. Holding pattern – Cropping systems – History – Agricultural situation.

Résumé. L'agriculture égyptienne a des caractéristiques qui ont pesé lourdement sur son évolution tout au long de l'histoire : la rareté des ressources en terre et en eau, l'entière dépendance de l'eau du Nil pour l'irrigation, l'intervention de l'Etat central dans l'activité agricole.

L'agriculture égyptienne se caractérise aussi par un haut niveau d'intensification : irrigation pérenne, forte utilisation des engrais à l'unité de surface, culture de la surface agricole deux à trois fois par an.

Malgré cette intensification, l'agriculture égyptienne est en crise depuis la fin des années 1960. Les principaux éléments de cette crise sont les suivants : le déficit alimentaire, le déficit de la balance commerciale agricole, la détérioration de l'environnement.

Les origines de la crise agricole actuelle pourraient s'expliquer à travers l'analyse de l'évolution historique et des différentes étapes des politiques agricoles en Egypte.

I – Features of Egyptian Agriculture

Egyptian agriculture possesses certain features that make it unique among other agricultural systems all over the world. Such uniqueness is the outcome of the combined effects of these features which include the following:

1. Limitedness of the Arable Lands

Egyptian agriculture is characterized by the limitedness of the cultivable land in view of Egypt's geographical location in a dry desert region, with the exception of a rain-fed strip on the northern coast. Egypt's cultivable land has been determined by the Nile River which formed the Egyptian soil millions of years ago. The cultivated area in the Nile Valley and Delta does not exceed 2.61 million ha, almost 2.6% of the country's total area; the rest is desert land.

Considering Egypt's limited water resources (a constant share of 55.5 milliard m³ in the Nile water), the high cost of rationalizing water use and of land reclamation and development, the total area of Egypt's arable lands is prone to decrease under the current stagnation in horizontal expansion programs and the loss of agricultural land to urban uses. Even if an increase in the total cultivable area occurs, it tends to

be very limited. *Table 1* shows the changes in the cultivated area and the negative effect of a high population growth rate on the decrease in the acreage per capita in the agricultural land during the 1970–1990 period.

Table 1. The Cultivated Area and the Per Capita Share in Land Resources

Year	Cultivated Area (thous. ha)	Population (thousands)	Population Working in Agriculture	Per Capita Share (%)	
				General	In Agriculture
1970	2 834	33 053	4 765	0.09	0.59
1975	2 825	36 289	4 902	0.08	0.58
1980	2 445	40 875	5 133	0.06	0.48
1985	2 497	46 511	5 506	0.05	0.45
1990	2 607	52 426	5 880	0.05	0.44

Source: FAO, AGROSTAT.

2. Dependency on Irrigation

Egyptian agriculture depends mainly on the Nile water for irrigation. Deep groundwater does not constitute a major water resource as it does not exceed 0.5 milliard m³ (1% of Egypt's share in the Nile water). Surface groundwater in the Nile Valley and Delta, originating from the Nile, constitutes about 2.6 milliard m³ of Egypt's water resources. Therefore, it is important to rationalize the use of water resources to satisfy the increasing demand for water. This issue has become crucial and is linked to many political, socio-economic and production problems.

The agricultural sector is the main consumer of the Nile water, with a consumption reaching about 84%. In view of the scarcity of water, cooperation among the Nile Basin countries is an urgent requirement for the joint implementation of such projects that ensure the common wealth of the nine countries. Efforts should be geared towards improving the efficiency of internal irrigation systems through reducing water loss from 50% in 1990 to about 20% in the year 2000. To enhance these efforts, an attempt should be made towards changing the cropping pattern to include the less water-consuming crops and growing such varieties that can benefit from low quality water. On account of the increasing scarcity of water, Egypt's irrigated agriculture constitutes a major challenge that could only be encountered by well-conceived projects designed to increase water resources, on one hand, and to rationalize demand for water, especially in agriculture, on the other.

In addition to external political challenges and concerted work with the Nile Basin countries, securing investments for water projects is, however, a challenge in itself that cannot be solely taken up by the state. For these reasons, certain proposals were made for water pricing and cost recovery from farmers in order to assist the state in securing necessary investments for the development of water resources.

3. Crop Intensification Programs

The scarcity of land resources and the availability of permanent irrigation water supply were the bases for intensive agriculture which concerns more than one crop during the Crop Year. This does not depend on seasonality or changing the cultivated area as is the case with rain-fed land.

Table 2 shows that the crop intensification coefficient has reached about 1.86 feddan, i.e., almost two crops are cultivated annually per unit of land (feddan).

Table 2. Cultivated Area, Crop Area and Crop Intensification Coefficient

Year	Cultivated Area (thousands ha)	Crop Area (thousands ha)	Crop Intensification Coefficient
1970	2 834	4 552	1.61
1975	2 825	4 692	1.66
1980	2 445	4 674	1.91
1985	2 497	4 703	1.88
1990	2 607	4 861	1.86

Sources: FAO, AGROSTAT; MOALR.

The high crop intensification coefficient between 1970 and 1980 is attributed to the considerable increase in the area of vegetables, “that lasts for a shorter time”, and to the decrease in the area of cotton, “which lasts for a longer period (7 months)”. The low crop intensification coefficient between 1980 and 1990 decreased by 0.05 because of the increase in the area of horticultural crops (which are permanent crops).

4. Prevalence of the Small Holding Pattern

One of the prominent characteristics of Egyptian agriculture is the prevalence of small-scale, household agricultural systems. Most of the land holdings are less than 5 feddans (totalling 2.1 ha) and small holders representing 90.1% of the total number of holders (*Agricultural Census 1981/1982*).

The concept of “household agriculture” does not necessarily implies total dependence on the family members only. It rather indicates the merger of labour and management towards fulfilling first the household needs, and second the market demands, with the exception of crops grown for governmental marketing such as cotton and sugarcane.

Moreover, Egyptian agriculture is characterized by a large base of very small holders of less than two feddans, referred to by the World Bank as poor holders, whose holdings represent about 57.5% of the total number of holdings (*Agricultural Census 1981/1982*). Such a holding pattern reflects the social strata of the holders. The percentage of illiteracy among poor holders is about 59.5% while those who can read and write constitute about 36% of the total number of holders (*Agricultural Census 1981/1982*).

The small holding pattern and the low level of social features of this social group impede modernization and the development of production techniques; especially, in the absence of elements that are conducive to good performance such as large-scale holdings, income and education.

5. The Cropping Pattern

An analysis of the cropping pattern of Egyptian agriculture over the period 1970–1991 indicates that it is based on eight basic groups: cereals, legumes, fibres, sugar crops, oil crops, fodder, vegetables and horticultural crops. *Table 3* shows that the strategic crops retained their relative position, mainly cereals and fodder crops. Vegetables moved to a higher position and fibre crops moved to a lower position on the scale of importance. The area and relative importance of horticultural crops have increased substantially.

Table 4 shows the major crops within each group in 1990 and 1991. It shows that berseem (Egyptian clover) comes first on the scale and is followed by maize, wheat, rice and cotton, which collectively occupy 73.7% of the cropland. The dominance of these five crops over almost 74% of the area confirms the fact that Egyptian agriculture specializes more in field crops than in vegetables and horticultural crops which have recently begun to increase. The increased area of berseem is attributed to its being the major green fodder crop in Egypt.

6. Components of the Agricultural Production

The cropping pattern illustrated in *Tables 3* and *4* affects the components and value of the agricultural production. The decreasing importance of the area of clover reflects the increasing importance of animal production in the overall agricultural output. Similarly, the relative importance of fresh products and other crop groups is also reflected. *Table 3* shows the value of the agricultural output including fish production.

Table 3. Value of the Agricultural and Fish Output and Its Components

Components	Value	% of Each Group	% of the Total
Plant Production	19 369 617	100.00	70.05
. Field Crops	12 679 094	65.46	45.86
. Vegetables	3 188 733	16.46	11.53
. Fruits	3 229 259	16.60	11.68
. Medicinal & Aromatic	272 531	1.41	0.98
Animal Production	6 992 401	100	25.29
. Livestock	3 082 643	44.09	11.15
. Poultry	1 034 803	14.8	3.74
. Dairy	1 921 382	27.48	6.95
. Eggs	482 318	6.90	1.75
Crude Wool	21 710	0.31	0.08
Honey & Wax	61 148	0.87	0.22
Manure	388 397	5.55	1.40
Fish Production	1 287 935	100.00	4.66
Total	27 649 953	-	100

Table 4. Major Crops within Each Group, 1990 and 1991

Crop Group	Area (ha)	% of the Crop Group	% of the Total Crop Area
Cereals	2 247 469.4	100.0	46.2
. Wheat	780 654.0	34.7	16.0
. Maize	847 450.4	37.7	17.4
. Rice	447 454.1	19.9	9.2
Legumes	155 584.0	100.0	3.2
. Broad Beans	139 736.9	89.8	2.9
Fibers	402 914.2	100.0	8.3
. Cotton	387 309.3	96.1	8.0
Sugar Crops	126 933.9	100.0	2.6
. Sugarcane	111 329.0	87.7	2.3
Oil Crops	91 087.1	100.0	1.9
. Soybean	41 840.6	45.9	0.9
. Sesame	20 836.2	22.9	0.4
Fodder Crops	1 125 683.0	100.0	23.1
. Berseem	1 125 683.0	100.0	23.1
Horticultural Crops	234 629.2	100.0	4.8
. Citrus	86 019.4	36.7	1.8
. Grapes	36 431.4	15.5	0.7
Vegetables	480 858.0	100.0	9.9
. Tomatoes	142 288.2	29.6	2.9
. Potatoes	79 774.2	16.6	1.6
. Others	258 795.4	53.8	5.3
Total	4 865 750	-	100

Source: MOALR.

The implication of the value of the agricultural output and its components in Egypt is the remarkable decrease in the importance of animal production due to the absence of natural pastures and the high cost of land use for meat and dairy production.

7. Intensive Use of Inputs

Dependence of Egyptian agriculture on irrigation and the relative stability of the cultivated areas and crop intensification programs make it imperative to preserve soil fertility being tapped all the year round. One of the major features of Egyptian agriculture is the intensive use of chemical fertilizers (far more intensively than in developing and developed countries) (*Table 5*).

Table 5. Average per ha Share of Fertilizers in Egypt, Compared to Other Regions and Countries

Regions/Countries	1970–1971	1989–1990
Egypt	131.2	404.3
Low Income Countries	17.8	94.6
Middle Income Countries	36.3	69.3
Sub-Saharan Countries	3.3	8.9
East Asia & Pacific	36.4	190.3
South Asia	13.5	68.9
Europe	87.8	142.4
Latin America & Caribbean	20.1	46.8
UK	263.1	350.2
France	243.5	319.2
Germany	384.4	370.5
Canada	19.1	47.2
USA	81.6	98.5
Japan	354.7	417.9

Source: World Bank, World Development Report.

II – The Historical Development of Egyptian Agriculture

Egyptian agriculture has been fully dependent on the Nile water for irrigation since its ancient inception in the Nile Valley. A central authority to undertake the following water management functions was thus inevitable:

- a) distribution of irrigation water among various regions;
- b) digging and maintaining irrigation and drainage networks; and
- c) building dams and other public works to control floods.

This central authority has taken the shape of a state (in the modern sense of the word) with military and administrative institutions. A source of income had to be generated to finance the state's administration and to recruit its public employees. The agricultural surplus, since the time of the Pharaonic dynasties, had always been used to cover the state's financial needs. Such agricultural surplus was collected from taxes imposed on farmers in the form of a predetermined part of their agricultural production delivered to the central authority or to its collectors. For this purpose, the volume of annual production had to be determined to define the state's share in the agricultural output. This may be considered as having been the first form of agricultural census in human history. A survey of production was conducted by the state's administrative representatives at the various districts to determine the quantities to be delivered to the state's warehouses.

Egyptian agriculture, from the Pharaohs to the end of the nineteenth century, had been characterized by the state's ownership of the agricultural land, with farmers entitled only to the right of land utilization. As a result, a well established relationship between the central government and the agricultural production had emerged in view of the state's ownership of the land and its authority in regulating its utilization and imposing taxes on the beneficiaries. This had almost marked the early beginning of the state intervention in agriculture.

1. The Historical Stages of the Development of Egyptian Agriculture

No major changes had come over the aforementioned features of Egyptian agriculture through the centuries, starting from the Pharaohs to the Islamic conquest and the Mamluks. Therefore, our historical review starts from the sixteenth century—the beginning of the Ottoman occupation—to end with the closing decade of the twentieth century, the early nineties.

A. The Ottoman Occupation (16th–19th Century)

During the Ottoman rule, the same state of affairs continued in Egyptian agriculture. The Ottoman government imposed taxes and levies on farmers, taking into consideration that the system of tax collection was changed into the “Forced delivery system”. A *multazim* was appointed to collect taxes from a number of villages. Part of these taxes was paid to the central government and the rest was kept by the *multazim* as a personal gain. Naturally, such a system had led to an over-estimation of taxes paid by the farmers. Moreover, the *multazims* were known for their harshness and cruelty with farmers.

Taxes to the *multazim* were not the only taxes paid by farmers. They had to pay additional taxes to the village leaders, district governors and bedouin chieftains living in the outskirts of the Nile Valley and Delta. During Napoleon's expedition in Egypt, the amount of taxes paid by farmers were estimated at FF 63 million annually.

This state of affairs shows the importance of agricultural surplus in financing the state's executive systems and institutions.

The three following major stages marked the beginning of the transformation of Egyptian agriculture during the Ottoman rule:

- a) abrogation of the forced delivery system of taxes by Mohammed Ali in 1809. Mohammed Ali was motivated to modernize Egyptian agriculture and introduce cotton as an industrial export crop;
- b) conducting the first survey of croplands and improving the irrigation system during Mohammed Ali's rule from 1809 to 1813, during which the agricultural land was estimated at 4.6 million feddans. The Kanater Dam was built at the entrance of the Nile Delta, 15 miles north of Cairo, and new irrigation canals were dug to improve irrigation facilities; and
- c) enforcing the law in 1872, during the reign of Khedive Ismael, marked the true beginning of private ownership of the agricultural land.

That law granted the right of ownership to the beneficiaries of land use provided that they paid the taxes required for six years in advance. However, this condition was annulled in 1891 and the holdings became the private properties of the holders.

B. From the Beginning of the 20th Century to 1952

Agricultural activities had not undergone any major changes during that period. However, the structure of land ownership in Egypt was the follows:

- a) Small holders represented almost 94% of total landholders. The size of each individual holding within this category, which constituted 19.8% of the Egyptian arable land, did not exceed 5 feddans;
- b) Medium-scale holders represented 5% of total holders and were in possession of 37% of the agricultural land. The size of each individual holding within this category ranged from 5 to 10 feddans; and
- c) Large-scale holders constituted 1% of the total holders and were in possession of 42% of the agricultural lands. The size of each holding within this category exceeded 500 feddans.

Despite the abrogation of the state's ownership of agricultural land, the state continued to play a tangible role in the agricultural activities. The state had intervened to settle conflicts between various social groups in rural areas enacting laws and legislations. An example of such an intervention was the Agricultural Credit Bank.

The agricultural credit system was originally initiated with foreign capital. The credit policy was very much correlated with cotton prices in the international market. Credit facilities were granted to large-scale pro-

ducers during the market boom. On the contrary, during the recession, foreign credit banks confiscated the land belonging to producers who were not able to repay their loans and accrued interests. That policy had led to creating crises for a large number of producers whose lands were lost to foreign banks. As a result, landlords appealed to state interventions which culminated in the establishment of the Agricultural Credit Bank in 1931. They also relied on the state to find a solution for the fluctuating prices of cotton in the world market. In this particular case, the state's intervention consisted in procuring and storing the local cotton production until the prices became lucrative again.

This was achieved by limiting the area planted with cotton, imposing tariffs on cotton exports and regulating the stored quantities of cotton surplus production...

These examples provide a sound argument, in the favour of state intervention in agricultural activities, along with the emergence of private ownership of the agricultural land and Egypt's direct link with the world market and the introduction of the capitalist economic system during that period.

C. From 1952 to the Early 1970s

The most conspicuous change was the enforcement of the Agrarian Reform Laws in 1952, 1961 and 1969. These laws had led to:

- a) changes in the structure of land ownership and subsequently of social groups in the Egyptian rural areas;
- b) the intensification of the state's intervention and control in the agricultural sector.

a) Changing the Structure of Land Ownership after the Agrarian Reform Laws

One of the major objectives of the Egyptian model of agrarian reform was to abolish the "class of landlords" by confiscating their lands and re-distributing them among the landless and small farmers. This was done by enacting laws whereby a maximum limit was declared for ownership of the agricultural land. The individual maximum ownership was fixed at 50 feddans and familial ownership at 100 feddans. As a result of the Agrarian Reform Laws, enacted between 1952 and 1970, almost 818 thousand feddans (about 12.5% of the total agricultural land area) were redistributed among 342 thousand rural households, i.e., 1.7 million individuals (about 9% of the rural population in 1970) (Abdel Fadiel 1978).

From *Table 6*, it is quite clear that the agrarian reform has had a slight influence on the number and relative weight of small holders. Their relative weight remained almost constant (94.4%), while the share of the area owned by poor holders (of less than one feddan) had increased from 35.4% to 52.1% of the total agricultural land. Such a major impact had also caused the area owned by holders of 5–50 feddans to increase. In this sense, Agrarian Reform laws have weakened the position of large-scale landlords (more than 50 feddans) inasmuch as their relative weight and area are concerned.

Table 6. Ownership Structure before and after the Agrarian Reform Laws (ARLs)

Size of Holding	Before 1952		After the 1st ARL in 1952		After the 2nd ARL in 1961		1985		1990	
	% of Holders	% of Cultiv. Area	% of Holders	% of Cultiv. Area	% of Holders	% of Cultiv. Area	% of Holders	% of Cultiv. Area	% of Holders	% of Cultiv. Area
Less than 5 feddans	94.2	35.4	94.4	46.6	94.1	52.1	95.4	53.9	95.8	56.3
5 to 10	2.8	8.8	2.6	8.9	2.6	8.6	2.4	10.5	2.3	9.7
10 to 20	1.7	10.7	1.6	10.6	2.1	10.7	1.2	10.2	1.1	9.8
20 to 50	0.8	10.9	1.0	13.6	0.8	13.4	0.7	11.5	0.5	9.2
50 to 100	0.2	7.2	0.2	7.2	0.2	7.0	0.2	7.4	0.2	6.5
More than 100	0.2	27.0	0.2	13.1	0.2	8.2	0.1	6.5	0.1	8.5

However, this trend was reversed until 1990. The area owned by medium-scale holders was reduced in favour of large-scale landlords (more than 100 feddans). This phenomenon was the outcome of an adjustment of the Agrarian Reform Law whereby the maximum individual ownership of agricultural land was 50 feddans.

b) State Intervention and Control of the Agricultural Sector

This was carried out according to a number of procedures:

- 1) Control of the volume and nature of the agricultural production.** The area assigned to strategic crops (cotton, wheat, rice, onion, faba bean and sesame) was determined by the state (Ministry of Agriculture and Land Reclamation-MOALR) under a binding crop rotation system, annually laid down.
- 2) Price control (government prices).** The state administered the prices of major crops and subsidized production inputs through cooperatives established under the Agrarian Reform laws. A forced delivery system was imposed on producers who received depressed prices for their crops.
- 3) Control of local and foreign marketing.** The state monopolized foreign trade of exportable crops and domestic trade in major crops through the forced delivery system under which producers had to deliver a predetermined percentage of their production to the cooperative at administered prices.

The state's intervention in the agricultural sector has indirectly led to taxing its output by the difference between government prices and world market prices. These policies have, consequently, weakened the sector's ability to secure investments and enlarge its production base.

However, this period has witnessed unrelenting efforts to increase the agricultural output through intensification policies. Water resources and subsidized inputs were made available during the year. The construction of the Aswan High Dam has facilitated the transformation to a permanent irrigation system, which in turn allowed for consecutive land use almost all the year round, and, as such, a multiple crop area. The availability of subsidized inputs, fertilizers in particular, has led to their excessive use to maximize production.

However, despite crop intensification policies and the marked increase of the agricultural output, crises in the agricultural sector started to take shape.

c) From the 1970s to the Early 1990s

This period can be fairly described as the most critical stage which witnessed the initial application of structural reforms. The Egyptian economy showed symptoms of a genuine structural crisis represented in a declining annual growth rate, increasing foreign debts, marked deficit in the balance of trade and the like. On the macro level, this situation has left a burden on the agricultural sector which became incapable to fulfill the population's food need and export crops requirements which is a major source of hard currency. Food gaps widened and agricultural imports became a heavy burden on trade balance in view of the smaller volume and quality of agricultural exports. Considering the significance of this contemporary stage, an analysis of the current policies is indispensable.

The Egyptian economy is currently undergoing reform policies known as "Economic Reform and Structural Adjustment" policies of which the agricultural sector is no exception. The pivot of these reforms in the agricultural sector is to annul the various forms of governmental intervention in agriculture.

Following are some of the procedures adopted in this direction:

- i) amending the Agrarian Reform laws to suit reform requirements;
- ii) liberalizing the landlord-tenant relationship concerning the value of rent which will be determined by market mechanisms;
- iii) phasing out subsidies to production inputs;
- iv) abrogating the state's intervention in pricing the major crops which will be subject to market forces;
- v) eliminating the forced delivery system, except for cotton and sugarcane, which will be fully liberalized in 1995;
- vi) abolishing the state's monopoly of local and foreign marketing of the major agricultural commodities and encouraging the private sector to enter into this domain;
- vii) privatizing trade and marketing of agricultural inputs.

The question now is how to deal with the present crisis in the agricultural sector under the current policies. Undoubtedly, the state's control of the agricultural sector, with the purpose of mobilizing the agricultural surplus, has weakened the sector's ability to secure investments to modernize and enlarge the base

of production. The state's divestiture will certainly be a step towards solving the crisis. But this gives rise to several questions. To what extent should the state's divestiture go? Should the gap obtained be filled in? What are the institutions that should manage the sector?

These questions can be answered through the proper understanding of the nature of free economy and the socio-economic conditions in other countries that preceded Egypt in the application of such reforms.

The state's role in free economy does not eventually vanish. It is rather modified into the role of a legislator and an overall monitor for applying laws and regulations that enhance free market mechanisms.

With regard to the agricultural sector, the gap created by the state's divestiture will bring about numerous problems. There are certain functions that cannot be undertaken by the private sector alone, e.g., agricultural research and extension. It is, therefore, necessary to establish institutions, other than the state's agencies, for the administration of the sector. These institutions are supposed to be producers' organizations. In this way producers can defend their interests and organize their activities and functions. In free market economies, these organizations perform extension services, in collaboration with specialists in this field. They also organize marketing and provide market information that help producers to take enlightened decisions.

Therefore, liberalization of the agricultural sector and the removal of all forms of state intervention is not an objective in itself. The major objective is to undo the current crisis and create a suitable atmosphere for raising the sector's productive efficiency. However, it appears that this objective cannot be attained if the reform policies are to be only confined to liberalization without giving an opportunity to non official institutions or organizations to emerge and play their expected role in promoting the Egyptian agriculture.

III – The Present Crisis in Egyptian Agriculture

The present crisis in Egyptian agriculture is multifarious. Following are some aspects thereof.

1. Deficiency in Self-Sufficiency Attainment

Since the beginning of the 1970s, Egypt has been facing a growing gap in food production, especially with respect to the strategic crops (wheat and plant oil crops). *Table 8* shows self-sufficiency ratios of key crops.

2. Deficit in the Agricultural Trade Balance

The deficit in the agricultural trade balance is a frequent phenomenon of the crisis in Egyptian agriculture, reflecting its inability to provide food for a growing population and to produce an exportable surplus to cover food imports.

This inability is more reflected in the stagnant and even decreasing value of agricultural exports and the increasing magnitude of agricultural imports during the period 1989/1990–1991/1992 (*Table 7*). Exports could only cover 10% of the imports during that period.

Table 7. The Egyptian Agricultural Trade Balance (millions of U.S. dollars)

Description	1989/1990	1990/1991	1991/1992
Exports (E)	407	226	355
Imports (I)	4 500	3 750	3 577
Deficit	4 093	3 524	3 222
E/I percentage	9.04%	6.03%	9.92%

Source: *Agricultural Situation, Annual Report* No. EG 3060, American Embassy, 1993, Cairo.

3. Decreased Per Capita Share in Arable Lands

The per capita share in arable lands is continuously decreasing, which reflects inability to expand proportionally the agricultural land to cope with the growing population.

4. Scarcity of Water Resources

The per capita share in the Nile water, which is the main source of irrigation and other water uses, is decreasing. This is shown by the decrease in the per capita share in the fixed quota of Egypt (55.5 milliard m³) in the Nile water. It decreased from 1,652 m³ in 1970 to about 1,000 m³ in 1990 and is expected to reach 700 m³ in the year 2000.

5. Deterioration of the Agricultural Environment

Deterioration of the agricultural environment is witnessed by the decrease in the area of highly fertile soils (class A land), high groundwater table, pollution of irrigation water as a result of irrational use of fertilizers and pesticides.

6. Low Efficiency of Research and Development Agencies

Despite the large number of the agricultural and veterinary research staff (6,177 Ph. D's, 3,548 research support staff and tens of thousands of agricultural engineers—MOALR 1993), the low efficiency of the performance of research and extension agencies constitutes a major constraint of the crisis in the agricultural sector as clearly stated in more than one international report. The latest is the World Bank's report (1992) entitled *A Strategy for Egyptian Agriculture in the 1990s*.

7. Low Efficiency of the Agricultural Cooperatives

Despite the widespread of the agricultural cooperatives in the Egyptian villages, their efficiency in providing proper production and marketing services is very low; thus paving the way for the private sector to exploit the situation and to be more inclined to monopolize the distribution of the major production inputs.

8. An Enlarging Base of Poor Holders and the Landless

The low wages of agricultural labourers is another constraint in the present status of Egyptian agriculture, in view of the emphasis on land ownership. The foregoing situation would lead to further inequality of land distribution and the development of such deteriorating socio-economic characteristics that would contribute negatively to the endeavours for improving the agricultural production.

IV – Causes of the Current Crisis in Egyptian Agriculture

The reasons behind the current crisis in Egyptian agriculture are numerous and mostly date back to the last four decades. The following are some of these reasons:

- i) The relatively low investments directed to the agricultural development, particularly in the fields of land reclamation and modernization of irrigation systems, especially at the beginning of the nineties.
- ii) Overpopulation at rates exceeding those of growth in the agricultural sector.
- iii) Biased pricing and marketing policies in favour of the urban population and the industrial sector. These policies were the outcome of the state's intervention in government prices and the forced delivery system.
- iv) Financial and monetary policies that do not encourage investment in agriculture.
- v) The low efficiency of state's control on foreign trade.
- vi) The absence of a comprehensive and integrated strategy for agricultural research and extension. This situation was further aggravated by the inability to adopt and implement research extension policies and programs with the required mechanism and efficiency.
- vii) Lack of efficient financial and monetary policies, especially the taxation policy, to mobilize the needed surplus for agricultural development. On the contrary, the agricultural sector has always been a major source for financing the public coffers through indirect taxes.

- viii) Lack of such strategies, policies, plans, programs and projects, all characterized by integration, balance and continuity needed for the realization of sustainable balanced socio-economic development.

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