



The problems of Edible Oils and the Means of Their Development in Egypt: A Study in Economic Geography

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ABSTRACT

Plant oil industry is one of the important industries in Egypt as it is considered an important food for the population, a source of energy and an important strategic good. The amounts produced in Egypt are low as the consumptive gap in oils amounts to about 84% of Egyptian plant oil. In this study the researcher used several research Approaches such as the historical, the fundamental, and the objective methods so as to identify the elements of economic study (i.e., production, consumption and trade). The researcher also use the quantitative method and cartography besides intensive field visits to some plant oil factories in Tanta and Mansoura: examining the oil industry on site and collecting as much data as possible to identify the general reality of the industry, identifying the sources of food oils in Egypt, how they are transported and the countries from which Egypt imports food oils, and identifying the problems of the food oil industry in Egypt. The study focused on studying the production and consumption of edible oils in Egypt, knowing the problems faced by this vital sector in Egypt, and participating in their treatment.

Keywords: production, consumption, planning, development, Egypt.

The industry and trade plant oil are considered among the most important food industries in different countries of the world. They are considered important pillars of economic and industrial development in terms of contribution to national product, employment of labor force, and possibility of exportation to some countries of the world.⁽¹⁾

Plant oil industry is one of the important industries in Egypt as it is considered an important

food for the population, a source of energy and an important strategic good. The amounts produced in Egypt are low as the consumptive gap in oils amounts to about 84% of Egyptian plant oil consumption.

The present study aims at the following:

- Highlighting the general reality of the plant oil industry in Egypt due to the paramount importance of this crucial industry in Egypt.

⁽¹⁾ Hugget .R & Mayer, L.: Geography: Theory in Practice, Book 3, Industry, Harper & Pow Inc., London, 1981, p. 8 .

- Studying foreign trade of food oil due to the little production of these oils in Egypt, which does not exceed 16% of Egyptian needs.
- Identifying the countries from which Egypt imports food oils and the most important types of imported oils.

Attempting to identify the most important problems of the oil industry in Egypt and provide suggestions for diagnosing and remedying them.

In this study the researcher used several research Approaches such as the historical, the fundamental, and the objective methods so as to identify the elements of economic study (i.e., production, consumption and trade). The researcher also use the quantitative method and cartography besides intensive field visits to some plant oil factories in Tanta and Mansoura:

- Examining the oil industry on site and collecting as much data as possible to identify the general reality of the industry.
- Identifying the sources of food oils in Egypt, how they are transported and the countries from which Egypt imports food oils.
- Identifying the problems of the food oil industry in Egypt and providing suggestions for remedying them.

After collecting data and conducting the field study, the natural sequence of the present study was formed through addressing the following points:

- The development of the plant oil industry in Egypt.
- The development of the production of the most important oil products in Egypt.
- The production of plant food oils in Egypt.
- The consumption of plant food oils in Egypt.
- Food oil foreign trade in Egypt.
- The Geographical factors affecting food oils in Egypt.

- The problems of food oils and suggestions for remedying them.

The production and consumption of plant oils in Egypt are studied through addressing the following points:

The Development of the Plant Oil Industry in Egypt:

The food oil industry was introduced into Egypt at the beginning of the twentieth century through squeezing cottonseeds with the hydraulic mill due to the fact that the cotton crop was the main crop in the Egyptian crop structure. The first two factories for milling cottonseeds were established in the cities of Alexandria and Kafr El-Zayat in 1888, as Egypt was one of the cottonseed exporters before World War II and used to direct most of its cottonseed exports to Britain. This situation lasted until the first Egyptian legislation banning the export of Egyptian cottonseeds was passed in 1942, and since that date, the Egyptian cottonseed production was used locally in the plant oil industry. In the early sixties Egypt started to expand the establishment of oil factories. Egypt had 29 mills that had 156 hydraulic presses that could mill 300 tons per day. In addition, there were four establishments for extracting oils using solvents that were sufficient for about a million and a quarter of a million tons of cottonseeds per year.⁽¹⁾ After that, Egypt continued to establish oil mills in the cities of Cairo, Alexandria, Tanta and Menya.

Since the mid-twentieth century, Egypt has begun to use sunflower oil - soybean - as food oil because of the apparent decrease in the quantities domestically produced from cottonseeds and the increase in population, which required companies to extract oil from sunflower and soybean, as the soybean crop came to be a part of the Egyptian crop structure in the late sixties after it proved its success in the world as a main source of food oil, and the Permanent

⁽¹⁾ Yousef Mohamed Yousef Salem: Economics of Plant Oil Industry in Egypt, Unpublished Ph.D. Dissertation, Faculty of Agriculture, Mansoura University, 1998, pp. 62-63.

Council of Soybeans was established in 1972 to work to develop the crop, and since 1977 the era of the soybeans seed milling industry for the production of oil has begun because it contains 20% oil.

With increasing the population and the food oil consumption gap, Egypt began to export raw palm oil from abroad and complete the stages of its manufacturing domestically in local factories so that it might be usable. Finally, canola oil was introduced into Egypt in 1995. Canola contains 40% oil and it is grown in winter. It can endure salinity and does not need much water.

With the widening of the consumption gap, Egypt came to have 69 oil factories: 22 for cottonseed oil, 11 for soybean oil, 15 for sunflower oil, and about 21 for palm, canola and

other kinds of oil.

Development of the Most Important Oil Crops in Egypt:

In our study of the production of food oil crops, we focus on the most important kinds, which include cottonseed, soybean, sunflower and canola.

(1) Cottonseed Production:

The production of cottonseed oil is closely linked to the quantity of cottonseeds, and the percentage of extraction amounts to 18.5 kg oil per ardeb of seeds. The following table shows the development of the area of the production of the cottonseed crop from 1990 to 2008.

Table (1): Development of the Area and Production of Cottonseeds during the Period from 1990 to 2008

Year	Area in 1,000 feddans	Production in 1,000 ardebs	Rate of change
1990	993	4198	100%
1995	710	3167	71.50
2000	769	3300	77.4
2008	316	139,00	31.8

Source: Arab Organization for Agricultural Development, Agricultural Statistics Year Book, Vol. 22, 2004 & Statistics Year Book, 2008. (in Arabic)

It is clear from the table that the area cultivated with cotton is continuously decreasing. While the area was about a million feddans in 1990, it decreased to approximately one third in 2008, as the cultivated area amounted to 316,000 feddans. In fact, the reason for this is farmers' abstention from growing cotton because of the refusal of banks to finance cotton trade companies at the proper time; the accumulation of the crop for the farmer, which led to a decline in its prices; and the exploitation of foreign companies through small Egyptian companies to purchase the crop at less than 30% of its indicative price in return for commissions. When the government intervened to provide funding for the purchase of the crop through cooperative societies, it was too late, and did not have any effect on raising the purchase prices for the farmers. The cotton purchased by

cooperative societies went to foreigners and big Egyptian companies bought by some Gulf rich people at the same low prices. The result was that cotton farmers sustained a loss of 750 million pounds, which went to the pockets of foreigners. It is expected to import from abroad, from America, Russia and Japan, and it is noticed from the table the quantities of seeds declined to a third because they are also associated with the area cultivated with cotton.

As for the spatial distribution of the cotton crop, it is noticed that it is concentrated in Lower Egypt by 70%, in the governorates of Sharqiya, Boheira, Daqahliya, and Gharbiya, and in Upper Egypt governorates of Menya, Beni Suef, Assiut and Fayyoun.

Therefore, if interest in promoting the improvement of cotton as an oil crop increase, it will increase the provision of oil produced domestically in Egypt to provide the Egyptian people with a good abundance of oils.⁽¹⁾

(2) Soybeans:

The soybean crop entered the Egyptian crop structure in the late sixties with the establishment of the Permanent Council of Soybeans in 1972. In 1973 the soybean seed milling and extraction industry to produce oil began with the possibility of benefiting from it to feed livestock. The following table shows the development of the area cultivated with soybeans from 1990 to 2005.

Table (2): The development of and cultivated with soybeans from 1990 to 2005.

Year	Area in 1,000 feddans	Production in 1,000 Tons	Rate of change for feddans
1990	105	126	100
1995	60	63	57
2000	9	11	10.4
2005	20	25	19

Source: Ministry of Agriculture and Land Reclamation, Unpublished Data, Different Years.(in Arabic)

The above table shows that the area planted with soybeans is shrinking as it fell from 105,000 feddans in 1990 to 20,000 feddans in 2005 with a change rate of 19%. This was because the government stopped incurring half the cost of production with the decrease in the world prices from 1050 pounds per ton in 1995 to 800 pounds per ton at the beginning of the twenty-first century.

The table also shows that the production of the soybean crop also decreased from 126,000 tons due to the shrinkage of the cultivated area with the decrease in prices, which led farmers to abstain from growing this crop and replace domestic production by importation from abroad, either in the form of seeds or refined crude oil, which requires that the government support farmers to grow oil crops because of their importance for the country.

As for the spatial distribution of the crop, it is noticed that it is concentrated in the governorates of Beni Suef, Fayyoun, Assiut, the New Valley, Sohag in Upper Egypt, and

Menofiya, Gharbiya, Boheira in Lower Egypt.

(3) Sunflower:

Sunflower was grown in Egypt as an ornamental plant, then in 1949 Egypt imported seeds from France and planted them in Menya. Seeds were then re-imported in 1953 and were sown in Menofiya, Gharbiya, and Upper Egypt. After that companies were established to import seeds and make contracts to buy the crop which began to be grown in Lower Egypt and the Delta in 1960.⁽¹⁾

Sunflower is of two types: oil-rich and oil-free sunflower. We will confine discussion to oil-rich sunflower as shown in the following table.

⁽¹⁾ Mohamed Ibrahim Sha'alan, et. al.: Basics of Field Crop Production. Egyptian Bookstore, Alexandria, 2003. (in Arabic)

⁽¹⁾ Wafik Mohamed Gamal Ibrahim: Oil Sunflower Production in El-Fayoum Governorate: An Analytical Study in Agricultural Geography, Bulletin of the Egyptian , Geographical Society, No. 31, Year 30, Part 1, 1998, p. 360. (in Arabic)

Table (3): Development of the area cultivated with sunflower and the quantities of production in the period from 1990 to 2005

Year	Area in 1,000 feddans	Production in 1,000 Tons
1990	25	22
1995	31	29
2000	1.7	1.4
2005	31.4	30.4

Source: Ministry of Agriculture and Land Reclamation, Unpublished Data Different Years. (in Arabic)

It is noted from the above table that the cultivated area and production differ one time period to another, as the area in the baseline year was very low as it amounted to 25,000 feddans, then it shrank to 1.7 feddans in 2000 because of the low level of the world prices of sunflower seeds and the high cost of the feddan. Then the area and production increased once again to reach 31,400 feddans and about 30,400 tons of oil sunflower seeds. In general, the area of oil sunflower is a small area in the Egyptian crop structure. As for the spatial distribution of the sunflower crop, it is noticed that it is concentrated in Upper Egypt in the governorates of Assiut, Minia, Fayoum, Beni Suef and Boheira.

(4) Canola:

The canola crop was introduced into the crop structure only in 1995, and Egypt now has 6 strains that are characterized by their high productivity. It is the only oil crop that is grown in the winter and that does not need large quantities of water. Canola is considered one of the highest sources of oil as the percentage of oil it is about 40% and it contains 38% protein resulting from the oil industry. It can be widely grown in the areas of the new agricultural expansion away from the competition of other crops in the Valley and Delta as well as areas of high salinity.

The area cultivated with canola in Egypt is 322 feddans, which produces 600 tons of canola oil. It is grown in the New Valley in an area of 202 feddans and Nubariya in an area of 120 feddans. The following table shows the development of the

production of canola in the period from 1996 to 2005.

Table (4): the development of canola production from 1996 to 2005

Year	Production (Ton)	Rate of change
1996	158.5	100
2000	159.5	106
2005	600	379

Source: Central Agency for Public Mobilization and Statistics, Information Center, Unpublished Data, 2007.(in Arabic)

It is noticed that the production of the canola crop increased one year after another, as production increased from 158.5 tons in 1996 to 600 tons in 2005, with a change rate of 379%, given that the crop will increase in the future and that the Egyptian government has decided to plant 40,000 feddans in eastern Owainat for the production of canola oils using Canadian technology in the cultivation, production and marketing of canola.

Production of Plant Food Oils:

The production of plant food oils in Egypt is of two types:

- 1) **Integrated Production:** which integrates agricultural materials up to packaging. This type produces 185,000 tons in Egypt, which represents 0.2% of world oil production which is estimated at 86 million tons, although the population of Egypt constitutes 1% of the world population.
- 2) **Supplementary Production:** through importation from abroad, as these quantities amount to about 420,000 tons of crude oil. Thus, Egypt produces about 605,000 tons although the total Egyptian consumption reaches 1.1 million tons, with a shortage of about 500,000 tons imported from abroad as refined oil ready to be packed. The following table shows the number oil factories and the quantities produced in 2007.

Table (5): Number of oil factories and the quantities produced in 2007

Type of Oil	Number of Factories	Production	Domestic and Imported Raw Production
Cottonseed Oil	22	102000	102000
Soybean Oil	11	70000	70000
Sunflower Oil	25	3000	3000
Palm, Canola and Other Oils	21	10000	10000
Imported	----	----	420000
Total	69	18500	605000

Source: Public Agency for Manufacturing, Unpublished Data, 2005. (in Arabic)

The number of food oil factories in Egypt is 69 factories, 32% of which are for cottonseed oil factories, because cotton, in the past, was the main crop in the crop structure. Sunflower oil factories come second with a percentage of 21.7%, followed by soybean oil factories with a percentage of 16%. This distribution is consistent with the distribution of the above-mentioned crops which account for about 70% of the total number of factories. The remaining factories are for palm, canola, corn and olive and other oils.

Spatial Distribution of Oil Factories:

As for the spatial distribution of oil factories, it is noticed from the map that the food oil industry in Egypt is characterized by spatial concentration, as the governorates of Alexandria, Gharbiya, Qaliobiya, Giza, Sharqiya, and Cairo have about 78% of the total number of factories, while the governorates of Daqahliya, /8 Kafr El-Sheikh, Gharbiya, Sohag, Assiut, Menya, Fayyoun, Suez, the New Valley, North Sinai, Menofiya, and Marsa Matrouh have 12.8% of the total number of factories. There are governorates in which there are no food oil factories, and these include Damietta, Port Said, Ismailia, Beni Sweif, Qena, Aswan, South Sinai, and the Red Sea.

The above presentation of oil factories in Egypt shows that they are distributed in three main axes: the north-east axis which starts from Alexandria through Damanhour, Kafr El-Zayyat

and Tanta along the Cultivated Road and the railway to Cairo and Alexandria.

The second axis is the north-south axis which starts from Mansoura, Meet Ghamr, Shubra El-Kheima, Cairi, Ayyat, Menya, Assiut and Sohag along the Damietta branch – the River Nile.

The third axis is the north-west – south-west axis from Zaqaziq to the 10th of Ramadan and Suez.⁽¹⁾

As for food oil production, the above table shows that Egypt produces 185,000 tons, which represents 30.5% of the total quantity of Egyptian food oils. Adding the quantities imported as crude oil from abroad, Egyptian production will amount to 605,000 tons, which represents 55% of total Egyptian needs. This puts the Egyptian market under the pressure of the world market. The above table also shows that the production of cottonseed oil comes first, as it amounts to 55% of the total Egyptian production due to its nature and the expansion of the area of land cultivated with cotton compared with other crops, something which led to the settlement of 22 factories for the production of food oil from cottonseeds. As for the production of other kinds, soybean oil represents 37.8% for soybean oil. Thus, the two kinds account for 93% of the total Egyptian oil production. This is followed by other kinds of oil such as palm oil, olive oil, sunflower oil, etc. See map No. (1).

⁽¹⁾ Mohamed Mahmoud Ibrahim El-Dib: Food Industries in Egypt: An Analysis of Place Organization, Structure and Performance. Egyptian Anglo Bookstore, Cairo, p. 515. (in Arabic)

Inspection of the table and figure No. (2) shows that the quantities of oils produced in Egypt are generally on the decrease, due to the decrease in the production of cottonseeds because of the shrinkage of the area cultivated with cotton. Production fell from 100,000 tons in 1990 to 99,000 tons in 2000, then it began to rise gradually again but in small quantities due to the recent increase in the production of soybean, sunflower and corn oils.

It is noticed that the quantities of production in Egypt which amounted to 185,000 tons in 2005 represent only 16.8% of total Egyptian needs. This is attributed to the shrinkage of the area cultivated with oil crops as a result of reduced selling prices compared to the actual cost and the

rise in cultivated land rents which amounted to L.E. 3,000 per feddan on the average in 2007/2008, especially after the issuance of the landlord-tenant relationship law, something which requires supporting the Egyptian farmer rather than the foreigner one and connecting prices to the world rate, especially that oil crops are among international strategic crops.

To sum up, the quantities of production in Egypt which amount to 185,000 tons of domestically produced oil and about 420,000 tons of imported crude oil, with a total of 605,000 tons meet only 50% of the needs of population. This requires that a strategy be developed to remedy the problem of the shortage of plant food oils in Egypt.

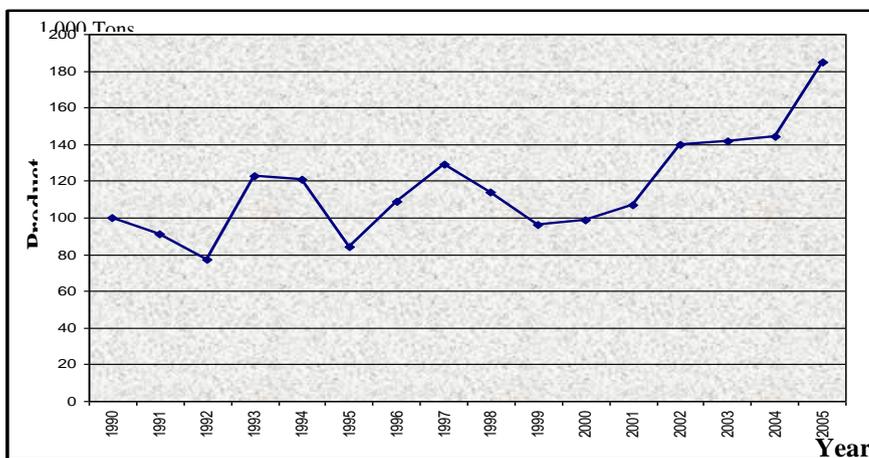


Figure (2): Development of Egyptian domestic food oil production from 1990 to 2005

Plant Food Oil Consumption in Egypt:

The study of Egyptian oil consumption is considered important in terms of the decisions taken on production and foreign trade⁽¹⁾, as the increase in Egyptian population is accompanied by an increase in plant oil consumption. The following table shows the consumption of domestic and imported food oils in 2008.

Table (7): Consumption of domestic and imported food oils in 2008

Type	Amount of consumption	% of the total
Cottonseed oil	269,190	24.5
Sunflower oil	205,050	18.6
Soya oil	125,770	11.4
Palm oil and others	49,999	45.5
Total	1,100,000	100

Source: Public Agency for Manufacturing. Percentages are calculated by the researcher. (in Arabic)

⁽¹⁾ Ahlam Mohamed El-Naggar: An Economic Study of Plant Food Oil Production and Consumption. Arab Republic of Egypt, Mansoura University Journal of Agricultural Science, Vol. 20, No. 5, 1995, p. 3227. (in Arabic)

The quantity of food oils consumed in Egypt amounts to 1.1 million tons. Palm oil comes first, accounting for 45.5% of total consumption, given that most of that quantity is imported from abroad except for some kinds such as corn and canola oils which represent 2% of that quantity. This requires thinking of a substitute for this kind such as canola, sunflower and soybean oils.

It is also noticed from the table that cottonseeds come second. This is natural and consistent with the history of cotton growing in

Egypt. Cotton had been the main crop in the Egyptian crop structure till the 1990s. Sunflower oil comes third, accounting for 18.6%, followed finally by soybean oil, which accounts for 11.4 of the total Egyptian oil consumption.

Development of Plant Food Oil Consumption in Egypt:

The general features of plant oil consumption in Egypt can be clarified through studying the development of plant oil consumption as shown in the following table.

Table (8): Development of plant oil consumption in the period from 1980 to 2008

Year	Consumption in 1,000 Tons	Rate of change
1980	454	100%
1985	585	28.9%
1990	464	20.2
1995	674	48
2000	726	60
2008	1100	142

Source: Ministry of Agriculture and Land Reclamation, Central Agency for Agricultural Economics, Agricultural Economics Bulletin, Different Issues. Percentages are calculated by the researcher. (in Arabic)

Inspection of the above table and figure No. (3) shows that Egyptian national consumption of plant food oils rose from 454,000 tons in 1980 to, 1,100,000 tons in 2008 with an increase of 142%. This means that the consumption rate tripled in 28 years due to over-population, increased awareness of people and the governmental support policy.

It is also noticed that Egyptian consumption of plant oils varied from time to time. While it increased by 28.9% in the period from 1980 to 1985, it decreased by 20.2% in the period from 1985 to 1990 due to the cancellation of the

governmental support policy and the rise in prices. Then it rose once again until it reached 142% in 2008 due to the increase in the quantities imported from abroad and in nutritional awareness of the increase in plant oil consumption at the expense of animal fats that have high calories and are high in cholesterol, something which led most consumers to partially turn from animal fats to plant oils. Another important factor that has recently led to an increase in consumption is the implementation of the trade liberalization policy, according to which importation is based on actual demand for plant oils.

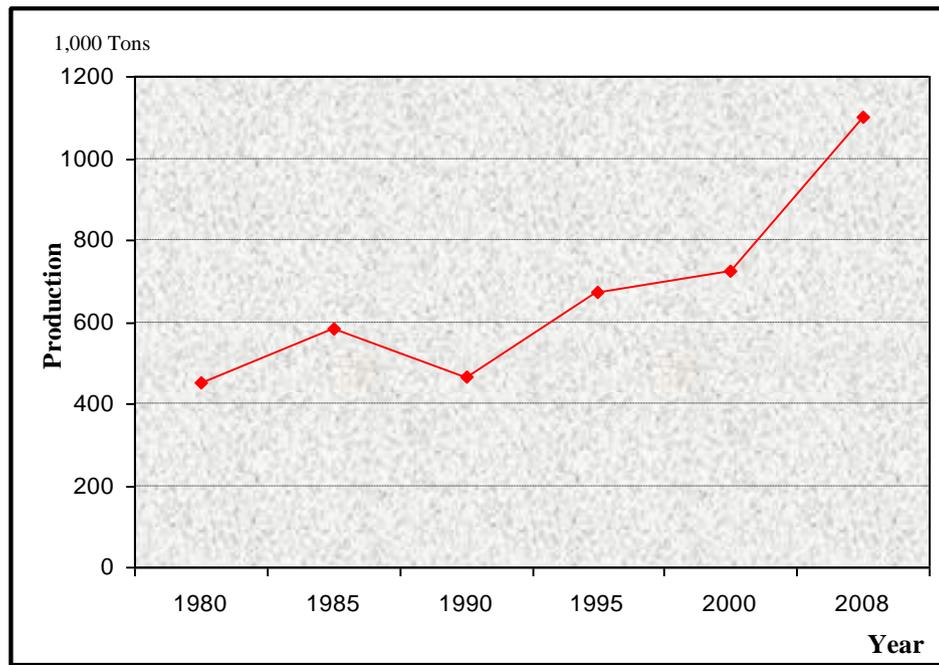


Figure (3): Development of plant oil consumption in the period from 1980 to 2008

Per Capita Share of Plant Oil:

Per capita share of plant oils is considered an important measure of knowledge of the degree of service provided by the State, as it is generally noticed that per capita share in Egypt which amounts to 16 kg per year is high compared with the Arab average which is 13.4 kg per year and the world average which is 12.8 kg per year.⁽¹⁾ The following table shows per capita share in Egypt in the period from 1980 to 2008.

Table (9): Development of per capita share of plant oils in the period from 1980 to 2008

Year	Per Capita Share of Plant Oils	Rate of Change
1980	11.00	3.6
1985	11.9	3.5
1990	8.5	2.00
2000	11.9	4.6
2008	16.00	6.2

Source: Ministry of Agriculture and Land Reclamation, Agricultural Economics Bulletin, Different Issues. (in Arabic)

The above table shows that per capita share of plant oils in Egypt fell from 11 kg per year in 1980 to 8.5 kg per year in 1990 due to the cancellation of the support policy and the rise in prices. Then per capita share began to rise from 11.9 kg per year in 2000 to 16 kg per year in 2008 due to the increase in the quantities imported from abroad and the economic openness policy.

As for per capita consumption of artificial fat, it amounted to 3.6 kg per year in 1980, then it fell to 2 kg per year in 1990. After that it began to rise until it reached 6 kg per year in 2008 due to the rise in oil prices, and it became a supplement to oils. This is in addition to the remarkable role of mass media in promoting artificial fat.

Plant Oil Consumption Gap:

Comparing production and consumption of plant oils, it becomes clear that there is a great gap in plant oil consumption in Egypt and the percentage of self-sufficiency as shown in the following table.

⁽¹⁾ Arab Organization for Agricultural Development, Agricultural Statistics Year Book, Vol. 2, 2007, 2008, different pages. (in Arabic)

Table (10): Consumption gap of plant oils in Egypt in the period from 1980 to 2008

Year	Production in 1,000 Tons	Consumption in 1,000 Tons	Difference in 1,000 Tons	Sufficiency Rate(%)	Shortage Rate (%)
1980	136	454	-318	30	70
1985	119	585	-466	20.3	79.7
1990	100	464	-364	21.6	78.4
1995	84	674	-590	12.5	87.5
2000	99	726	-627	13.6	86.4
2008	185	1100	-915	16.8	83.2

Source: Prepared by the researcher based on the records of the Ministry of Agriculture and Land Reclamation and the Ministry of Trade and Supply. Percentages are calculated by the researcher. (in Arabic)

The above table shows the seriousness of the plant oil consumption gap in Egypt and its rise from time to time. While it amounted to 318,000 tons in 1980, it rose to 590,000 tons in 1995 then to 920,000 tons in 2008. This means that it has tripled since the baseline year.

It is also noticed that the plant oil consumption gap had the effect of reducing self-sufficiency. While self-sufficiency was 30% in 1980, it fell to about 16% in 2008, which is a serious indicator that shows the importance of this industry for Egyptian food safety and its stability. The great increase in the food oil consumption gap may be attributed to several reasons, the most important of which are the decline of domestic production with the increase in consumption due to over-population, the economic openness policy which made available plant oils at any time of the year, something which, to the researcher's knowledge, put Egypt among the greatest plant oil importers of in the world.

Food Oil Foreign Trade in Egypt:

Foreign trade represents the final stage of the production process. It is reflected in the

international exchange process. It is also considered a mirror which reflects the economic status and developmental level of the country on the one hand, and a measure of its dependence on the outside world on the other hand.⁽¹⁾

The geographical study of food oil foreign trade is confined to imports alone, because there are no food oil exports, as plant oils used to be imported by the Ministry of Supply alone, and after the implementation of economic reform policies in the mid 1990s and the free trade policy, the door was wide-opened for the private sector to import main plant oils represented in cottonseed oil, soybean oil, sunflower oil, and palm oil, which the private sector was not allowed to import. All constraints imposed by the Ministry of Supply on the transportation, storage, manufacturing and circulation of these oils have been removed and the Egyptian market has become a market for buyers after it was a market for sellers.

The following table shows the quantities of oils and their prices in dollars in the period from 1980 to 2007.

⁽¹⁾ Ibrahim Ali Ghanem: Citrus Exports to Arab Gulf Countries: A Study in Foreign Trade Geography, Society of Geography, Geographical Research Series, No. 13, 2006, p. 4.

Table (11): Quantities of exported raw and refined oils and their prices in dollars in the period from 1980 to 2007

Year	Quantities of Exported Oils in 1,000 Tons	Average Price of Ton in L.E.
1990	414	273654
1995	429	288288
2000	708	325608
2008	920	487600

Source: Central Agency for Public Mobilization and, Different Years. (in Arabic)

The study of the development of the quantities of imported plant oils indicates that they tended to rise one year after another. It rose from 320,000 tons in 1980 to 414,000 tons in 1990 then to 920,000 tons in 2008. This means that the rate tripled due to the freeing of prices policy, the liberalization of domestic and foreign trade and the abolition of constraints on the private sector in the field of food stuff production, distribution and importation.

The table also shows that the value of oil imports has greatly risen. It rose from L.E. 224,960,000 in 1980 to L.E. 487,600,000 in 2008, i.e. about one billion dollars, which is nearly equivalent to the value of Egyptian agricultural exports, something which puts the State in a great dilemma in order to obtain hard currency and face international market.

All this shows the dangerousness of the continuous increase in food oil and oil seed importation. This may be attributed to the obvious deficit in domestic production and dependency on importation from abroad to obtain the quantities needed for domestic consumption, and this increases the burden laid on the Egyptian balance of trade, something which requires working to reduce the quantities imported from abroad and increase domestic production of oil seeds and food oils.

Food Oil Sources in Egypt:

The quantities of oils imported by Egypt, whether crude or refined, vary from one region to another as shown in the following table.

Table (12): Oil exporters to Egypt

Area or Continent	Kind of Oil	Most Important Countries	Imported Quantities in 1,000 Tons	%
West Europe	Sunflower oil – Palm oil – Soybean oil	Britain – France – Germany – Holland – Belgium	12	1.3
North America	Palm oil	United States of America	45	4.9
Mediterranean Countries	Olive oil	Syria – Jordan – Greece – Spain – Tunisia – Lebanon – Saudi Arabia	82	8.9
South Asian Countries	Palm oil – Sunflower oil – Peanut oil	Philippines – United Arab Emirates – Malaysia – Indonesia – Singapore	493	53.6
South America	Palm oil – Sunflower oil – Peanut oil	Argentina – Brazil – Ecuador – Australia	259	28.1
Russian Federation	Sunflower	Russia – Ukraine	29	3.2
Total			920	100

Source: Central Agency for Public Mobilization and Statistics, Information Center, Unpublished Data, 2008, Research and Consultation Center of the Marine Transport Sector and the Statistical Manual, 2008. (in Arabic). Percentages are calculated by the researcher.

The above table shows that the most quantity of oil is imported from South Asia, especially palm oil with a percentage of 53% of the imported quantity, followed by South American countries with a percentage of 28.1% of the total imported quantity. Thus, South Asia and South America together represent more than

81% of the imported quantities.

The table also shows poor cooperation between Arab countries and Egypt in the field of oil trade. The quantities of oils imported from the Arab countries account for only 6% of the total imported quantity of oils.

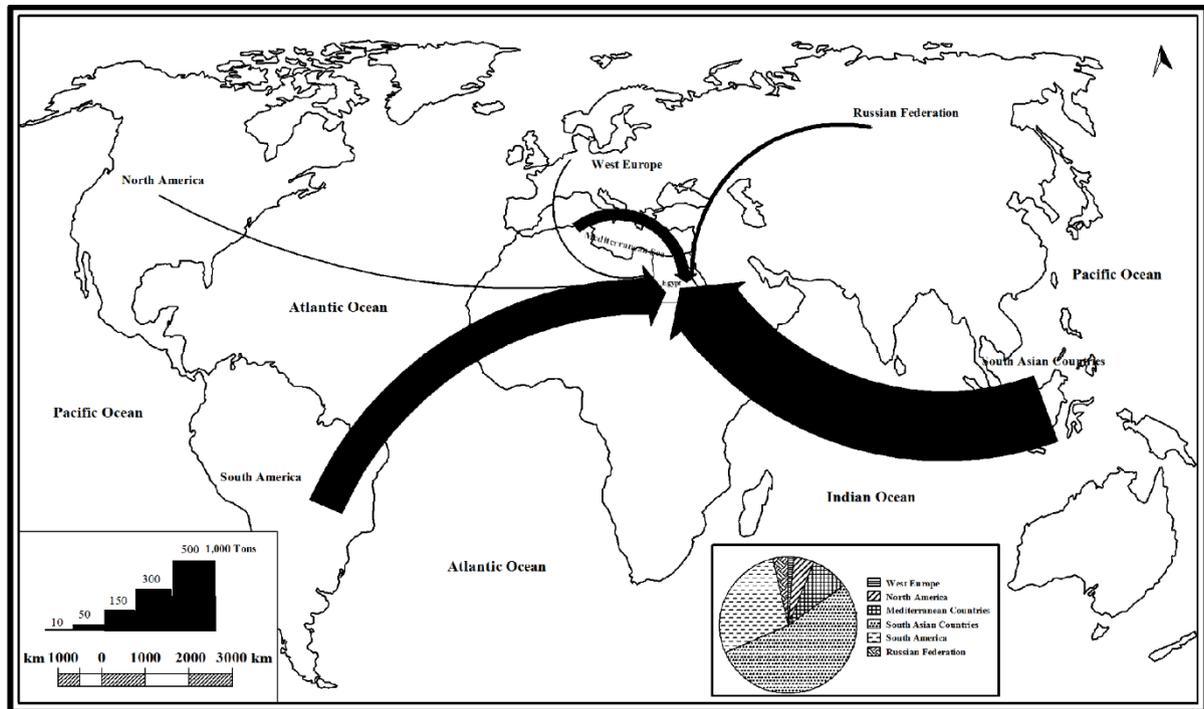


Figure (4) Oil exporters to Egypt

As for the kinds of imported oils, it is noticed that palm oil is the most imported kind of oil as it accounts for 45.5% followed by sunflower oil, then soybean and other kinds of oil.

The Factors Affecting Food Oil Production and Consumption in Egypt:

The food oil industry in Egypt is affected by a number of geographical, including population, the area cultivated with oil crops, and consumption patterns. We will address here the two elements of population and the area cultivated with oil crops, in addition to government policies as they have an obvious effect on the production and consumption processes.

(1) The Area Cultivated with Oil Crops:

One of the geographical factors which affect the production and consumption of food oils in Egypt is the area cultivated with oil crops as shown in the following table.

Table (13): Area of oil crops in Egypt in the period from 1990 to 2005

Year	Area in 1,000 Feddans	Rate of Change
1990	1123	—
2005	818.4	72%

Source: Prepared by the researcher based on the previous tables.

It is noticed that the area cultivated with the main oil crops in Egypt has decreased by about 30%, and this affects production and, therefore, foreign consumption which amounts to 83.2% of actual food oil needs in Egypt. There is a strong correlation ($R = 0.90$) between the area cultivated with oil crops and the quantities of production, and this confirms the hypothetical relation between area and productivity in Egypt.

(2) Population:

Population is considered one of the main factors affecting demand for food oils. The population represents the consumers of this vital industry, as demand for food oil is affected by the consumers' behaviors and affairs, such as income and lifestyle. Food oil consumption increases with the increase in population as shown in the following table

Table (14): Development of the number of population and the quantities of consumed oils in the period 1976 to 2003

Year	Population in 1,000,000	Increase Rate	Production in 1,000 Tons	Increase Rate	Consumption in 1,000 Tons	Increase Rate
1976	37.8	--	136	---	360	
1986	49.8	31.7	116	8.5	583	
1996	59.3	18.2	129	11.2	890	
2003	65.9	11.2	150	16.2	1049	

Source: The table is designed by the researcher relying on:

- Central Agency for Public Mobilization, Statistics, and Public Consensus of Population, Housing and Establishments, Different Years. (in Arabic)
- Statistical Year Book, 2003. (in Arabic)
- Production and consumption are calculated by the researcher based on the previous tables. (in Arabic)

Measuring the correlation between the number of population and the production and consumption of food oils in Egypt, a strong correlation was found between them ($R = 0.90$, $p = 0.98$). This validates the hypothesis that the consumption of food oils increases as population increases.

The above table shows that the population increased by 32.3% between 1986 and 2003. This increase in the population was accompanied by an increase in food oil production by 29.3% and in consumption by 79.7%. The table also shows that the population doubled during the period under study. As for consumption, it tripled during the same 27 years. This is attributed to the increase in

the quantities imported from abroad and in nutritional awareness of the increase in plant oil consumption at the expense of animal fats.

(3) Government Policies:

The settlement of some industries is affected by government policies and personal considerations.⁽¹⁾ The role of government policies in the oil industry is accounted for by the multiplicity of regulatory authorities controlling the oil industry. There is some sort of overlapping and repetition in the work of these authorities. Among these authorities are the Ministry of Industry including the Industrial Regulation Authority and the Egyptian Organization for

⁽¹⁾ Hugget, R. ; Mayer, L. & Geogropy:, ,op. cit , p. 8.

Standardization and Quality Control; the Ministry of Health and Population; the Ministry of Supply and Domestic Trade; the Ministry of Environmental Affairs; and the Ministry of Agriculture – Department of Fodder Control. All this overlap creates some sort of conflict, something which requires the establishment of trust between regulatory authorities and the producers. It also requires determining the role of each authority and coordinating among them.

The role of government policies in this industry is to give priority to increasing domestic production of plant oils in order to reduce the gap between production and consumption and achieve a greater degree of food safety. Because of economic reform policies, the direct role of the government in economic activity has become very limited, but its influence is great due to its different economic policies and varied management represented in the provision of different financial incentives for the domestic production of oils such as the reduction of or exemption from taxes, the provision of cash subsidies for farmers, and the provision of subsidized loans. The role of government policies is also represented in developing five- or ten-year plans for the cultivation of crops so that they may catch up with Egyptian plant food oil needs.

Plant Oil Problems in Egypt and Suggestions for their Solution:

The most important problems are as follows:

(1) Shrinkage of the Area of Oil Crops in Egypt:

The present study has shown that food oil production in Egypt does not meet the population's need. Egypt produces 185,000 tons of food oils and imports 420,000 tons of crude oils. Thus, Egyptian production is 605,000 tons, while consumption is 1.1 million tons per year. Therefore, production as such meets only 16% of Egyptian consumption. The shrinkage of the area

cultivated with oil crops is attributed to several factors such as the following:

- Competition over the production of different crops such as wheat, maize and cotton in the limited cultivated area of land in Egypt
- The lower economic return of the cultivation of oil crops compared with other more profitable crops. For example, according to 2008 prices,⁽¹⁾ the rice crop gives L.E. 2,700 per feddan after subtracting the cultivation costs as opposed to L.E. 800 per feddan for the soybean crop.
- The high prices of domestic oil crops compared with their prices when they are imported.
- Exposure of some crops to pests and diseases.

To overcome the problem of the shrinkage of the area cultivated with food oil crops, the following must be done:

- Increasing the area cultivated with oil crops by growing these crops in the reclaimed land outside the Valley and the Delta.
- Growing some kinds of oil crops with other crops; e.g. growing soybeans with maize.
- Incorporating the canola crop into the Egyptian crop structure, even at the expense of a small area cultivated with clover, especially that the residuals of this crop is used as livestock feed. Besides, it is characterized by the high proportion of oil which amounts to 40% compared with the proportion of oil in sunflower which is 35%.⁽²⁾ This will increase the production of oil in Egypt due to the high proportion of oil in canola.
- Using the olive crop to extract oils.
- Encouraging farmers to expand the cultivation of oil crops within the crop

⁽¹⁾ The field study conducted by the researcher, 2008.

⁽²⁾ Oil and Fat Technology, Faculty of Agriculture, Mansoura University, 2004, p. 150.

structure in the new lands in Toshka and Al-Awayanat.

(2) Idle Capacity in Egyptian Oil Factories:

There is an idle capacity in oil factories. This idle capacity amounts to 436,000 tons, which is three times greater than the current production capacity which amounts to 185,000 tons. This requires the exploitation of this idle capacity, whether by increasing the domestic production of oil products or by importing oil seeds from abroad, taking into account the economic effect so as to raise the level of self-sufficiency to approximately the half. The following table shows the development of idle capacity in oil factories in Egypt.

Table (15): Development of idle capacity in oil factories in Egypt in 1,000 tons

Year	Idle Capacity in 1,000 Tons
1986	21
1990	97
1995	348
2000	423
2007	436

Source: Central Agency for Public Mobilization and Statistics, Bulletin of the Movement of Production, Foreign Trade and Consumptions of Some Goods, Cairo, Different Years.

The above table indicates an increase in idle capacities in factories from 21,000 tons in 1989 (i.e., 6% of the total maximum capacity available for the production of oil) to 436,000 tons in 2007 (i.e., 26% of the capacity available for the production of food oil. This requires changing the crop structure, especially in desert margins to add 25% of the current quantity of seeds to be milled without the need for additional investments.

(3) High Prices of Oils:

One of the problems related to food oils is their prices rise from one year to another as shown in the following table.

Table (16): Development of food oil prices in Egypt

Year	Price (L. E /Kilo)
1985	0.30
1990	1.80
1995	3.30
2000	3.50
2007	5.5
2008	9.00

Source: Ministry of Supply and Foreign Trade, Unpublished Data, except for the years 2007(in Arabic) and 2008 which are based on the field study conducted by the researcher.

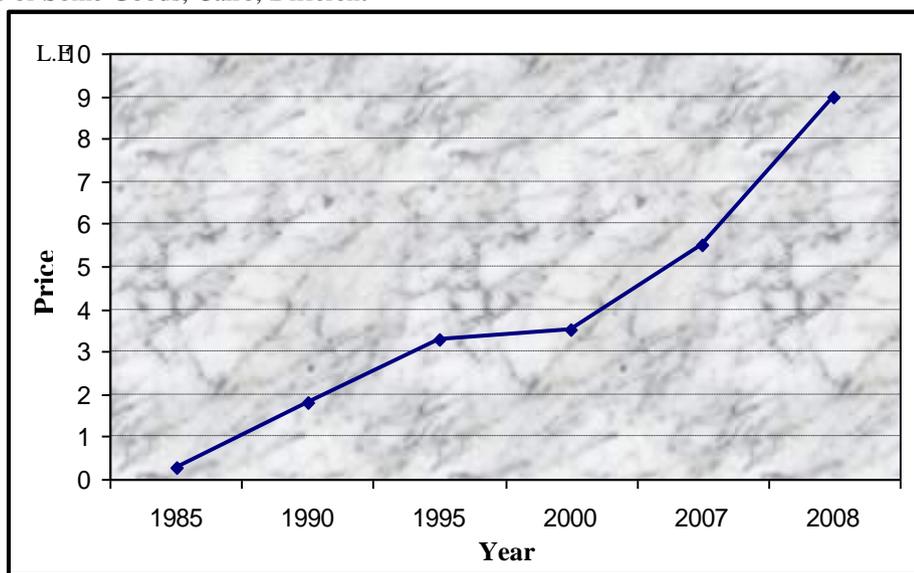


Figure (5): Development of food oil prices in Egypt

The above table shows that the prices of food oils have greatly risen. They rose from L.E. 0.30 per kilogram in 1985 to L.E. 1.80 per kilogram in 1990 then to L.E. 9.00 per kilogram in 2008. This means that the prices of food oils have risen thirty times greater than the baseline year. In other words, they have risen thirty times over a period of 23 years. This may be attributed to the increased demand for oils in a way that exceeds production, the freeing of exchange rate, the abolition of control over the prices of goods and leaving the pricing of these goods to the forces of supply, demand and free market. As a result, the market has become an object coveted by merchants, and this requires governmental intervention to price and control oil prices.

The field study of the local market during the month of October, 2008, has indicated that the price of sunflower oil produced by public sector companies has risen from .E. 6.75 to L.E. 7.50 and the price of a bottle of mixed oil has risen from L.E. 7.75 to L.E. 8.25. The field study has also shown that for the private sector, the price of a bottle of corn oil has risen from .E. 7.50 to L.E. 8.75, and the price of sunflower oil has risen from .E. 6.50 to L.E. 8.75 in the same month.

There are many kinds of domestically refined and imported food oils in the local market. As for domestically produced oils, they include cottonseed oil mixed with sunflower oil. The greatest quantity of mixed cottonseed oil is produced by public sector factories. In the local market there are also soybean oil, palm oil mixed with sunflower oil (Olean), sunflower oil, and corn oil. As for the fully refined food oils imported from abroad, they mainly include corn oil and small quantities of sunflower oil.

The kinds of oils that are most widely consumed in Egypt are sunflower oil, soybean oil, and Olean (palm oil mixed with sunflower oil), which is relatively less expensive. As for corn oil, it is one of the excellent kinds of oil circulated in the Egyptian market and is the most expensive.

(4) The High Waste Rate:

One of the problems related to food oils is the problem of wastes because of the multiplicity of the stages of their manufacturing. The oil industry goes through several stages which include the seed preparation stage, the cooking stage, the extraction stage and the refining stage. All these stages lead to a high rate of wastes, something which requires the development of modern quality systems including well-equipped factories, trained labor, high quality, and maintenance of equipment and measuring and calibration devices.

(5) The Multiplicity of Regulatory Authorities:

One of the problems related to food oils is the multiplicity and overlapping of regulative authorities which supervise and control the oil industry. This leads to the repetition of the tasks assigned to them by the Ministries of Industry, Health, Trade, Environmental Affairs, and Agriculture. This requires a certain coordination among ministries; the establishment of trust among the different regulative authorities and the agencies working in the field of plant food oil industry and trade.

Summary

The present study has come up with the following results:

- Cottonseed, soybean, sunflower and canola crops are the most important oil crops in Egypt and the area of land for these crops is 818,000.4 feddans.
- The quantity of food oils produced in Egypt is 185,000 tons and about 420,000 tons of crude oil. Thus, the total quantity of domestically produced oil and imported crude oil is about 605,000 tons.
- The number of oil factories is 69 factories. 80% of these factories are concentrated in Alexandria, Gharbiya, Qaliobiya, Giza, Sharqiya, and Cairo.
- The total food oil consumption in Egypt is about 1.1 million tons with a shortage of

500,000 tons. Palm oil comes first, followed by cottonseed oil, sunflower oil and soybean oil.

- The average per capita share of plant oils in Egypt in 2008 is about 16 kg per year, while the world average is 12.8 kg per year and the Arab average is 13.4 kg per year.
- The food oil consumption gap is about 84%, which is a very serious indicator for Egyptian food safety and its stability.
- The present study has shown that the most important problems related to food oils in Egypt are the shrinkage of the area of land cultivated with oil crops, the rise of idle capacity in oil factories to 436,000 tons with the rise in food oil prices, especially in recent years, the rise in the oil waste rate and the multiplicity of the authorities supervising food oil industry and trade.
- Finally, the study has come up with some recommendations, the most important of which are the following:
 1. In order to overcome the shrinkage of the area cultivated with oil crops in Egypt, the following should be taken into account:
 - Growing oil crops in the reclaimed land outside the Valley and the Delta.
 - Growing some kinds of oil crops with other crops, e.g. growing soybeans with maize.
 - Incorporating the canola crop into the crop structure, especially that this crop is characterized by the high proportion of oil which amounts to 40% and can endure salinity and thirst.
 2. Operating factories with all their power to produce 436,000 tons of oil.
 3. Government authorities should supervise and control markets to determine and control the prices of oils.
 4. Having modern quality systems including well-equipped factories, trained labor, high quality, and maintenance of equipment and measuring and calibration devices.
 5. Coordination between ministries and regulatory authorities that have to do with plant oil production and consumption and establishing trust between various regulatory authorities and the agencies working in the field of plant food oil industry and trade.
 6. Rationalizing consumption by raising people's nutritional awareness through different mass media in order to advise consumers on healthy needs and the proper ways of using different kinds of food oil and clarify the advantages of canola in food.

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