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# Horticultural Sub-Sector Map

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# ACRONYMS LIST

| *ACRONYM* | *DESCRIPTION* |
|---|---|
| AC | Agricultural Census |
| AERI | Agriculture Engineering Research Institute |
| AHD | Aswan High Dam |
| AIC | Agricultural and Irrigation Committee of the People's Assembly |
| ALCOTEXA | Alexandria Cotton Exporters Association |
| APRP | Agricultural Policy Reform Program |
| ARC | Agriculture Research Center |
| ATUT | Agricultural Technology Utilization and Transfer Project |
| AY | Agricultural Year Locator (October 1st to September 30th of the following year |
| BOD | Board of Directors |
| CAGA | Central Administration for Governorates Affairs |
| CAPMAS | Central Agency for Public Mobilization and Statistics |
| CAPQ | Central Administration for Plant Quarantine. MALR |
| CAWD | Central Administration for Water Distribution |
| CBE | Central Bank of Egypt |
| CIDA | Canadian International Development Agency |
| CIF | Cost, Freight and Insurance |
| CMA | Capital Market Authority |
| Co. | Company |
| COP | Chief of Party |
| CSPP | Egyptian-German Cotton Sector Promotion Program |
| CTS | Cargill Technical Services |
| DA | Development Associates, Inc. |
| DAI/B | Development Alternatives, Inc./Bethesda |
| ELS | Extra Long Staple Cotton |
| EMEPAC | Egyptian Company for Production Marketing and Exporting Ag. crops |
| ERSAP | Economic Reform and Structural Adjustment Program |
| ESAs | Employee Shareholder's Association |
| ESOPs | Employees Stock Ownership Program |
| EU | European Union |
| FAO | Food and Agricultural Organization of the United Nations |

| *ACRONYM* | *DESCRIPTION* |
|---|---|
| FDIs | Foreign Direct Investments |
| Fed. | Feddan = 4200 square meter |
| FIHC | Food Industries Holding company |
| FOB | Free on Board |
| FSR | Food Security Research Unit |
| GA | General Assembly |
| GASC | General Administration for Supply Commodities |
| GATT | General Agreement on Tariffs and Trade |
| GDP | Gross Domestic Product |
| GOE | Government of Egypt |
| HC | Holding Company |
| IDA | International Development Association |
| IFC | International Financial Cooperation |
| IFPRI | International Food Policy Research Institute |
| IPPC | International Plant Protection Convention |
| IPO | Initial Public Offering |
| IIMI | International Irrigation Management Institute |
| IR | Intermediate Results |
| Kg. | Kilogram |
| Kt. | Kentar |
| Libra | Pound of 0.45359 kilogram, also abbreviated as lb. |
| LE | Egyptian Pound |
| LK | Lint Kentar of cotton. 50 kgs. |
| LS | Long Staple cotton |
| MALR | Ministry of Agriculture & Land Reclamation |
| MENA | Middle East North Africa |
| MEIC | Ministry of Economy & International Cooperation |
| MIMW | Ministry of Industry & Mineral Wealth |
| MMT | Million Metric Ton |
| MoTS | Ministry of Trade & Supply |
| MPE | Ministry of Public Enterprises |
| MPWWR | Ministry of Public Works & Water Resources |
| MLS | Medium-Long Staple cotton |
| MVE | Monitoring, Verification & Evaluation Unit |

| *ACRONYM* | *DESCRIPTION* |
|---|---|
| NARP | National Agricultural Research Project (a former USAID Project) |
| NBE | National Bank of Egypt |
| NCF | National Consulting Firm |
| NGO | Non-Governmental Organization |
| O & M | Operation & Maintenance |
| OSAF | Office for Studies And Finance |
| PA | People's Assembly |
| PBDAC | Principal Bank for Development and Agricultural Credit |
| PEO | Public Enterprise Office |
| P&L | Privatization & Liberalization |
| PIDP | Partnership In Development Project |
| PMU | Project Management Unit |
| PPC | Program Planning Committee |
| PRA | Participatory Rapid Appraisal |
| PU | Purdue University |
| RDI | Reform, Design & Implementation Unit |
| ROW | Rest of the World |
| SCC | Sugar Crops Council |
| SCRI | Sugar Crops Research Institute |
| SIIC | Sugar and Integrated Industries Company |
| SK | Seed Kentar of cotton (157.5 kgs.) |
| SS | Short Staple cotton |
| STTA | Short Term Technical Assistance |
| SWG | Sugarcane Working Group |
| TA | Technical Assistance |
| TAMIS | Technical & Administrative Management Information System |
| TAT | Technical Assistance Team |
| TF | Task Forces |
| TO | Training Officer |
| TOR | Terms of Reference |
| TNA | Training Needs Assessment |
| TRG | Training Resources Group |
| TSG | The Services Group |
| UMD | University of Maryland |

| *ACRONYM* | *DESCRIPTION* |
|---|---|
| USAID | United States Agency for International Development |
| US$ | United States Dollar |
| WB | World Bank |
| WTO | World Trade Organization |
| WUA | Water User Association |

# Executive Summary

The Egyptian horticultural sub-sector is large and diverse. Egypt produces over 40 different fruits and vegetables and over 21 million metric tons (MMT) of produce per year, a number which has been increasing nearly 10% per year. Over 2 million feddans of horticultural crops are harvested per year. The total value of horticultural output in 1995 was LE 13.7 billion, which was 27.4% of the total value of output of the agricultural sector. Total supplies of produce, after exports of fresh produce, are sufficient to provide 332 kg per person per year.

Egyptian horticultural production is quite widespread in the country but not uniformly distributed. The produce is marketed through a system of village, district and official and unofficial wholesale markets, with producers, retail traders, wholesale traders and large firms involved in the sector. Although tremendous potential exists in Egypt for processing of fruits and vegetables, the current processing sector is in its infant stage, meaning that the majority of horticultural produce is marketed as fresh produce.

Marketing of fruits and vegetables in Egypt is generally free of government interference. Producers face no production or delivery quotas and no prices are fixed. No subsidy programs exist which involve these commodities. The downside of this freedom, for the purposes of studying the market, is the scarcity of data on quantities marketed. For this report, the only data found on marketed quantities was that provided by the Ministry of Trade and Supply (MOTS) regarding the governorate wholesale markets.

Europe and the Arab gulf countries have been in the past, and will remain in the future, the main markets for Egyptian fresh exports. The European market should be considered the major target for future development because of its size in terms of population and consumer income. However, Europe is a very competitive market. Countries all around the Mediterranean are looking to Europe as their main market for horticultural products, and many of these countries are competitive producers. It will not be an easy battle for Egypt to win and hold these markets.

Major issues and problems facing the Egyptian horticultural sector include:

- High airfreight rates to Europe. Foreign charter companies are not permitted to compete in this market, giving Egypt Air a virtual monopoly on the air freight business.
- Lack of grades and standards. There are currently no grades and standards for Egyptian horticultural products, a fact, which handicaps contracting for export sales.
- Insufficient market information. Market information, demand analysis, and market window analysis are necessary services for successful exports. While there are nascent projects to provide such information, current information services are inadequate. These services could be provided by a competent extension marketing service.

- High post-harvest losses. Producers must change their method of handling perishable produce from harvest time through packing, sorting and transport. A cold-chain is needed for the handling of perishable commodities.
- High cost of seeds. Seed costs for vegetables and potatoes need to be lowered through private or public breeding programs. The GOE should do everything possible to encourage breeding of new and better varieties to reduce or eliminate the dependence on seed imports.

## Introduction

The Egyptian horticultural sub-sector is large and diverse, producing over 40 different types of fruits and vegetables and over 20 MMT of produce per year. The total value of Egyptian horticultural produce in 1995 was LE 1.7 billion, or 27.4% of the total value of output of the agricultural sector. Given its size, the Egyptian horticultural sub-sector is of vital importance to the Egyptian economy.

An agricultural sub-sector includes all the players – producers, traders, firms and government agencies – that are engaged in, or have an effect on, the processing and movement of a specific agricultural commodity from the producer to the consumer. A sub-sector map provides an overall view of a sub-sector and identifies the steps through which the commodity moves from producer to consumer. It is the first step in the traditional analysis of the structure, conduct, and performance of a marketing system.

This report is a sub-sector map of the Egyptian horticultural sector, detailing the types and amounts of horticultural production in Egypt, the role of the various actors in the sub-sector, and the marketing channels that are used. Devoting special attention to some selected commodities that are of major importance to Egypt, the report identifies the major constraints to efficient marketing and competitive exporting of horticultural produce and makes recommendations to improve the functioning of the sub-sector.

## Horticultural Production

The total land area planted to vegetables declined in Egypt from 1987 to 1993 but has expanded sharply since 1993. The area planted to vegetables (excluding potatoes) has increased by an annual rate of 7.6%, and total output has expanded at a rate of 9.9% per year. Since 1993, the area planted to potatoes has expanded by 35% and production has expanded by 40%.

Annex Tables 1 and 2 present data on horticultural production in Egypt in 1996. Total 1996 horticultural production consisted of 11,840,000 tons of vegetables excluding potatoes, 2,626,000 tons of potatoes, and 5,866,000 tons of fruit for a total output of 20,332,000 tons. Total fresh exports in 1996 were about 650,000 tons (Annex Table 30), which represents just 3% of production. The population of Egypt in 1996 was reported at 59.3 million[1], meaning available supplies of produce after exports were 332 kg per person per year or 909 grams per person per day.

While horticultural production is quite widespread in the country, it is not uniformly distributed. The data in Annex Tables 3 and 4 show that production is concentrated in certain governorates. For example, over 70% of the mangos are produced in three

[1] CAPMAS Statistical Bulletin, 1996.

governorates: Sharkia, Ismailia, and Giza. Also, over 63% of the oranges are produced in three governorates: Behira, Menofiya, Qalubiya; over 57% of the grapes come from three governorates: Behira, Gharbiya and Minya; and over 70% of the bananas from four governorates: Behira, Qena, Qalubiya, and Menofiya. Overall, 39% of all fruit production in Egypt is produced in two governorates: Behira and Sharkia.

In any examination of the potential of the horticultural sector in Egypt one must be cognizant of the two distinct production areas, the old traditional Nile Valley and the new desert lands. The differences between these regions are more important for horticultural crops than with any other crops and will be discussed throughout the report.

**Desert Lands**

Annex Table 4 illustrates the importance of climate and land in the production of horticultural crops.[2] The desert areas are heavy fruit producing areas, with 47% of desert cropland area devoted to fruit production in 1996. In comparison, the cropland area devoted to fruits was only 9% in the Delta, 8% in Middle Egypt, and 4% in Upper Egypt.

An area of developed desert lands called Nuberia is included as a part of the Behira governorate. Nuberia has become a major area in fruit and vegetable production. The tillable land in Nuberia is estimated at 935,000 feddans; however, much of this land has not been developed. An estimated 675,120 feddans of the land is developed and useable. In 1997-98, farmers in Nuberia grew 298,945 feddans of fruit crops, 278,886 feddans of winter field crops, and 97,289 feddans of winter vegetables.

Located near Alexandria on the Cairo-Alexandria desert road, Nuberia is also known as the "old new lands". Development of Nuberia began in the early 1970's. Further south along the Cairo-Alexandria desert road there are more recent developments. Large horticultural projects are located along the entire length of this desert road.

In the Eastern desert, an area called Salehia has been developed which includes 33,000 feddans in Ismailia governorate and 23,000 feddans in Sharkia governorate. The Salehia project has had an enormous impact on the horticultural output of these two governorates and is one of the reasons why Ismailia has 69% of its cropland in horticultural crops.

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[2] The percentages presented in Table 4 are based on comparing the area planted to vegetables and fruits with the total cropland area. Since crops can be grown throughout the year, this percentage, or ratio, can exceed 100. Actually, three crops per year could be grown with some short season vegetable crops. Thus the data for the governorate of Alexandria, which produces a lot of vegetables, shows the area in vegetables exceeding the land area by 67 percent.

**Proximity to Urban Centers**

Proximity to a market is a key determinant in the location of production of many agricultural products. This is especially true with horticultural products that are of a low value per ton. The data in Annex Tables 3 and 4 show that those governorates close to high population areas are the major horticulture producing areas. For example, Alexandria governorate has a ratio of all horticultural crops to cropland of 167%, in Giza (immediately south of Cairo) the ratio is 72% and in Qalubiya (immediately north of Cairo) the ratio is 45%.

**Geographical Flows of Produce**

Sub-sector maps can be drawn to show the geographical flow of produce or the movement from producer to consumer. Such flows naturally go from areas of production to urban centers. Data needed to map these flows include production, population, and per capita consumption estimates. Production data for each type of fruit and vegetable are available from the Ministry of Agriculture and Land Reclamation (MALR) by governorate. Only regional and national production data are presented in the Annex to this report. Population data for 1996 by governorate are available from the Central Agency for Public Mobilization and Statistics (CAPMAS).

Consumption estimates are not available for each governorate. Total national production less fresh exports and quantities used for processing gives estimates of per capita consumption nation-wide. Applying the nation-wide per capita consumption estimates to the population of each governorate gives estimates of the quantities needed for each governorate. These 'demands' can then be compared with the production of each governorate's 'supplies' to identify the surplus and deficit governorates and the quantities likely to move in or out of each governorate. Data in Annex Tables 25-28 were obtained to help identify in which direction these flows are going or are likely to go. Analysis of these data were anticipated in this study but were not completed for lack of time.

## Horticultural Marketing

Horticultural produce markets in Egypt are essentially free and very competitive markets. Mandatory delivery quotas for horticultural products do not exist nor is there any GOE interference in the pricing of the products. The GOE has provided wholesale markets in most governorates, and while there is a charge for produce passing through these markets, they are generally a positive intervention in the marketing system. There is very little other GOE involvement in these markets.

One side effect of this freedom of the Egyptian horticultural markets is the scarcity of horticultural marketing data. We know little about the number of rural markets or the number of traders or wholesalers; nor do we have information on operating costs and

margins. Data are available on governorate wholesale markets that will be presented below.

Most of what we can say about horticultural markets involves qualitative descriptions with little accompanying data. The number of fruit and vegetable retail markets is estimated at 100,000.[3] This suggests that each retail market serves 600 people on average. Also, if all horticultural production were consumed as fresh produce, the daily volume of the average retail market would be 600-650 kg, which is a relatively small volume of product per market.

**Village Markets**

There are several levels of markets, or methods of marketing, in the Egyptian horticultural sector. Beginning with the producer, many families set up shop on an individual basis to sell their produce directly to consumers. There are also retail produce markets in the villages that receive fruits and vegetables directly from producers for resale in the village.

The next level is the village markets. Practically every village has a regular, weekly market day. All types of produce are sold at these markets -- not only fruits and vegetables, but other farm-produced commodities and a wide variety of manufactured goods that are brought to the village by traveling traders.

**District Markets**

The next level is the district markets, which are held in the capital cities of each district on a specific day of the week. The day of the week generally differs for neighboring districts, allowing traders to be in a different district market each day of the week. Traders can buy in one location and sell in the next or just sell in all locations if they deal in manufactured goods. There are 186 legal administrative districts in Egypt, and each of the 26 governorates is composed of five to 14 of these districts.

Village and district markets are retail markets, not assembly markets. Produce is brought to these markets by farmers or traders. Traders may buy produce from farmers or at village markets to bring to the district markets. Data are not available on the volume of such transactions, but due to the perishability of these products, it is expected that very little horticultural produce is moved from village markets to district or governorate wholesale markets.

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[3] See pages 1-2, Vol. I, Ref. No. 4.

**Governorate Wholesale Markets**

Most governorates have one fruit and vegetable wholesale market located in the capital city of the governorate. The volume of these markets varies depending on the size of the city and the volume of local horticultural production. Wholesale markets are operated under the supervision of the Ministry of Trade and Supply (MOTS). Following is a description of operations at a few of these markets.

El-Obour Market in Cairo

Opened in 1994, the El-Obour market covers 300 feddans east of Cairo, on the road to Ismaili. The market was developed by the GOE at a cost of LE 300 million and is currently managed by a private sector service company called Care Dalla Co., a subsidiary of Care Services (CDSCO). Since 1994 it has been the only official wholesale produce market in Cairo, although a new market was recently opened at 6th of October. El-Obour is the major horticultural market in Egypt in terms of price determination. Traders in other markets keep in close contact with traders or wholesalers in El-Obour to learn the price trends in that market.

Of the 300 feddans at El-Obour, the present wholesale market spans 140 feddans. 50 are set aside for future market expansion, and 110 are set aside for industrial development. Some vegetable processing companies and ice making companies are beginning to build facilities at El-Obour, but for the most part, this industrial area has seen very little development thus far.

The wholesale market is subdivided into five areas, each of which differs somewhat in the facilities provided. Currently, there are 548 stalls (also called outlets) for vegetables, 336 for fruit, 62 for fresh fish, 36 for bananas, and 24 for frozen poultry. Many outlets are shared by two or more traders, so about 600-700 vegetable wholesale traders operate in this market. A total of 1,200 outlets are available, but only 1,006 are now in use. The remaining outlets are to be leased by auction. All are now leased on 25-year leases. The traders in the old Cairo wholesale market at Rod El Farag were given first chance at obtaining outlets in El-Obour when it opened.

Each of the stalls for bananas has a refrigeration unit and gas to ripen the bananas. The market has facilities for four government co-ops, a meat co-op and three vegetable co-ops. These are consumer co-ops under the MOTS. The market also has facilities for four banks.

Fish, poultry and fruit are marketed at El-Obour between 6 and 10 a.m. Vegetables are marketed between 2 and 10 p.m. About 3,000 tons of fruits and vegetables are sold each day at El-Obour. In 1997 the total volume of fruits and vegetables sold at the market was about 1,000,000 tons. Data on the volume of sales at El-Obour during 1995, 1996 and 1997 by type of vegetable are presented in Annex Tables 5-10. Data on the governorate source of some major fruits and vegetables coming into El-Obour during 1997 are given in Annex Tables 25-28.

Wholesale traders at El-Obour operate on a commission basis with commissions ranging from 4% for cash transactions up to 8% when the wholesaler provides financing. These wholesale traders apparently do not take title to any produce.

The market administration charges LE 3 per ton of produce entering El-Obour and LE 7 per ton of produce leaving the market for a total of LE 10 per ton or 1 piaster (P) per kg. These fees are collected for maintenance of the market facilities.

The El-Obour market officials report that there are 205 unofficial wholesale markets in Cairo, 166 in Giza, and 34 in Qalubiya. These markets, called "shalaish", operate without GOE permits or supervision, and they are subject to much pollution and contamination. The El-Obour market has government health inspectors who also check for pesticide residues, although the market has no graders.

6th of October Market in Cairo

A second wholesale produce market has been constructed by the GOE for the Cairo area. It is located in the new industrial city of the 6th of October. It was officially opened in December 1997, but business to date has been very limited. The 6th of October market will serve Middle and Upper Egypt, as it is more accessible from the south. Producers and traders from the Delta will likely use El-Obour, as this market is more accessible from the North and the East.

Wholesale traders have thus far been reluctant to move to the 6th of October market for fear of losing their old customers. A similar situation existed when El-Obour was first opened. In an effort to force activity in the new market, the Governor of Giza issued a decree in February 1998 prohibiting wholesalers from operating outside the market.

The 6th of October market is large. It covers 123,000 square meters (29 feddans) and includes 617 shops and stalls for fruit, vegetables, and poultry that can be rented on 25-year leases. Shops covering 150 square meters will be leased for 25 years for LE 257,000. Stalls of 72 square meters will be leased for LE 120,000 for vegetables or LE 100,000 for fruit.

El-Nozha Market in Alexandria

The El-Nozha wholesale market is an old market located well within the city of Alexandria. This market covers 14 feddans with space for 432 outlets, some of which are held in partnership. About 25% of the traders at El-Nozha deal in bananas, 25% in other fruits and 50% in vegetables. Some traders deal in both fruits and vegetables, but most do not.

Some processors and exporters buy produce at this market, but most buy from traders or farmers in order to avoid the market commissions. Vegetable traders in this market charge commissions of 4-6%. Fruit traders charge 6-10%. These commissions do not

vary with volume of the sale; rather, they depend upon whether it is the off-season or full season for the item.

The traders rent the outlets for 25P per sq. meter per month. The average outlet is 50 sq. meters so the average rental cost of an outlet is LE 12.50 per month. These rental rates are quite low because the leases have been in existence for many years.

The Alexandria market has no scales to weigh produce. The market authorities charge 13P per container, whether big or small, and they plan to charge 1P per kg when they obtain scales. Most containers are 16-20 kg. The general inspector of the market sends a weekly report to the MOTS office in Alexandria reporting quantities sold and prices by type of vegetable and by source. This market directly employees about 150 workers. Market authorities estimate that each trader has 8-9 employees and that 3,000 retailers come here to buy produce on a regular basis.

Each trader conducts his own auction on his own schedule, so many auctions occur simultaneously. Buyers have to circulate and talk to each other to learn about price movements. Most retail buyers deal with the same trader all the time. The market is open 24 hours a day for traders bringing produce into the market. Buyers can take things out only between 6 a.m. and midnight. The busiest sales period is about 5 a.m. Data on the volume of fruits and vegetables going through the El-Nozha market are presented in Annex Tables 11-16.[4]

Like Cairo, Alexandria has many unofficial markets or "shalish", especially in the village of El-Amereya, which is along the Alexandria-Cairo desert road. It is estimated that 25-40% of the vegetables sold in Alexandria or in Cairo retail markets go through these unofficial markets. A new official wholesale market is being planned for Alexandria, to be located on the southern edge of the city.

Ismailia Market

The Ismailia market was started in 1964 by the local Chamber of Commerce but was brought under GOE control in 1987. It is directed by a committee appointed by several ministries including MOTS and MALR. The Ismailia market is small, with only 4 feddans of land. It has 78 stalls of about 80 square meters each, which rent for about LE 12 per month. About 100 traders operate in this market. Market officials are thinking about building a new and larger market for Ismailia.

This Ismailia market authority charges 10P per container or 15P per sack leaving the market. This charge is less than 1P per kg since most sacks are 50-100 kg. Farmers and traders bring produce to this market. The main buyers at Ismailia market are local retail

[4] Data on the quantities of produce entering the Alexandria market by governorate, similar to the data in Annex Tables 25-28 for Cairo's El-Obour market, may be available from the ACDI market information project.

market owners, but some processors, including Foodico, & Edfina (Edfina has a plant in Qalubiya), buy at here as well.

Ismailia is a major mango production area. In 1996 the Ismailia and Sharkia governorates together produced 58% of the mangos in Egypt. Some traders purchase mangos and watermelon in Ismailia for transport to the wholesale markets in Cairo and Alexandria. This market also supplies produce to the Sinai, Port Said and Suez.

Most of the wholesale traders in the market specialize by commodities, trading in only one or two types of fruit or vegetables. No doubt each trader specializes in different commodities during other seasons. The market traders report that, while there are auctions for mangos in the Ismailia market, traders watch the El-Obour market for prices of most other commodities.

Data on the volume of fruits and vegetables sold at Ismailia in 1997 are presented in Annex Table 23.

Other wholesale markets

Annex Table 24 contains a list of 21 governorates and the tonnage of fruits and vegetables marketed in each wholesale market during a nine-month period in 1996. The tonnage reported during this period varied from less than 1,000 tons in Minya to over one million tons in Giza. A comparison of the quantities marketed in the wholesale markets with production in those governorates is made in Table 1 below.[5] This method of estimate indicates that wholesale markets handled 23.3% of total horticultural production. These data produce a slightly upward bias in this estimate because some produce is moved through more than one wholesale market. This bias applies to a small share of the total volume marketed in any wholesale market, however, so the total share going through these wholesale markets is about 22%. Similar data by type of vegetable were not provided to this study but may be available.[6]

The estimates in Table 1 for individual governorates contain some results that are difficult to interpret. For example, in the governorates of Middle and Upper Egypt (Beni Suef, Fayoum, Minya, Sohag, Qena, Aswan) the percentage of production going through the wholesale markets averaged about 3-4%. This may indicate that much of the production in those governorates is being marketed in other governorates, such as in Cairo or Giza, or it may indicate that most sales to consumers in these governorates bypass the wholesale markets.

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[5] Data were not available for the Menofiya governorate wholesale market so the production for this governorate was omitted from Table 1.

[6] The Ministry of Trade and Supply administers these wholesale markets and provided these data. Some markets have data on volumes of sales by type of vegetable but some markets probably do not have such data. For instance, see data in Tables 5-23. Additional efforts with the MOTS will likely produce additional useful data.

An analysis of the Beni Suef data leads one to believe that most produce is bypassing the wholesale market in this governorate. Production in 1996 was 572,800 tons of horticultural products. The population in 1996 was 1,860,180.[7] Earlier it was estimated that the per capita availability of horticultural products in Egypt as a whole is 332 kg. On this basis, Beni Suef residents would require 617,500 tons of horticultural produce for consumption, suggesting that this governorate is a deficit area. This governorate therefore probably does not send much of its output to Cairo, leading to the conclusion that a small share of the produce in this governorate goes through the wholesale market.

Table 1. Comparison of total production of fruit and vegetables with quantity marketed in wholesale market, by governate, 1996.

| Governorate | Total Prod. Fruit & Veg. (Tons) | Marketings in 9 months (Tons) | Marketings X 1.33 | Ratio of Mkt/Prod |
|---|---|---|---|---|
| Alexandria | 970,400 | 657,160 | 876,191 | 0.903 |
| Behira | 6,041,800 | 289,280 | 385,697 | 0.064 |
| Gharbiya | 677,000 | 363,008 | 483,999 | 0.715 |
| Kafr El Sheikh | 577,700 | 62,000 | 82,665 | 0.143 |
| Dakaqliya | 638,500 | 74,940 | 99,918 | 0.156 |
| Damietta | 195,000 | 40,133 | 53,509 | 0.274 |
| Sharkia | 1,495,800 | 23,400 | 31,199 | 0.021 |
| Ismailia | 1,094,200 | 72,250 | 96,331 | 0.088 |
| Port Said | 400 | 81,810 | 109,077 | 272.693 |
| Suez | 50,200 | 23,000 | 30,666 | 0.611 |
| Qalubiya | 1,071,900 | 100,000 | 133,330 | 0.124 |
| Cairo | 17,900 | 502,152 | 669,519 | 37.403 |
| Giza | 1,504,900 | 1,011,300 | 1,348,366 | 0.896 |
| Beni Suef | 572,800 | 1,650 | 2,200 | 0.004 |
| Fayoum | 664,100 | 1,800 | 2,400 | 0.004 |
| Minya | 795,800 | 685 | 913 | 0.001 |
| Assuit | 460,600 | 26,000 | 34,666 | 0.075 |
| Sohag | 522,700 | 2,850 | 3,800 | 0.007 |
| Qena | 1,123,600 | 2,150 | 2,867 | 0.003 |
| Aswan | 126,300 | 7,316 | 9,754 | 0.077 |
| North Sinai | 515,900 | 3,111 | 4,148 | 0.008 |
| **Grand Total** | 19,117,500 | 3,345,995 | 4,461,215 | 0.233 |

[7] CAPMAS Statistical Report, 1996.

The high ratio of quantity marketed to total production in Port Said is explained by the fact that horticultural production in that governorate is very low (see Annex Table 4). Produce must be brought to this wholesale market from other governorates.

In Alexandria the wholesale market is reported to handle 90% of the production of the governorate (Table 1). But the population of this governorate is 3,338,196 and at the national average availability of 332 kg the governorate would require 1,108,216 tons of horticultural produce. Production is reported at 970,000 tons. This suggests a deficit of 138,000 net tons of produce, which would presumably be met by imports from other governorates. These data seem to indicate that 80% of the produce consumed in the governorate passes through the wholesale market. These are only crude estimates since no consideration was given for the type of product. Certainly some types of vegetables must be imported and others exported to make supplies meet demands.

A look at the Cairo market is more difficult since there are several governorates involved. The greater Cairo area includes the governorates of Cairo, Giza and Qalubiya. Adding these three governorates together we see that total production in 1996 was 2.59 MMT and estimated wholesale marketings were 2.15 MMT. Total population was 14.9 million, leading to an estimated total consumption (availability) of 4.94 MMT. These estimates imply that 2.35 MMT of produce was brought into the three-governorate area from outside, and they also imply that the wholesale markets in the area handled only 43.5% of the quantity consumed.

**Shalaish**

As mentioned above, unofficial wholesale markets (shalaish) exist in Alexandria and Cairo and no doubt in other urban areas. These wholesale markets are located outside of areas designated by the GOE for wholesale markets. Currently the existence of such markets in the Giza area is keeping traders from using the 6th of October market. The GOE is attempting to close down these unofficial markets in order to force the traders to use 6th of October. The GOE contends that shalaish markets are located in congested areas, that they pollute the area, and that they are unsanitary -- allegations which are probably true.

Since these markets are unofficial, no data exist on their frequency, the number of traders that operate in them, or the volume of produce traded in these markets. Market researchers estimate that these markets handle 25-30% of the produce that reaches consumers in Alexandria and up to 40% of that coming into Cairo. In the analysis above of the Table 1 data, it appears that the estimate of 40% going through these unofficial markets in the Cairo area is entirely reasonable.

**Farmers Outlets**

As Figure 1 below illustrates, there are many possible channels for horticultural produce to flow between the producer and the consumer. It is almost impossible through survey methods or government agencies to quantify these flows, but judgements can be made regarding which are the major and which the minor channels. The subsector map in Figure 1 identifies the major channels.

Not all farmers have all of these options. For example, only those farmers living close to governorate capitals will have access to district markets. Also, only a few large-scale farmers can export directly. And some farmers are vertically integrated with trading companies. This is particularly true in the case of potatoes.

Private traders are major outlets for many farmers. Traders can move the produce quickly from the farm to any one of several large markets where it can then quickly reach a retail outlet. The trader can move the produce to a district wholesale market, a rural governorate market, a central urban wholesale market or into an unofficial wholesale market.

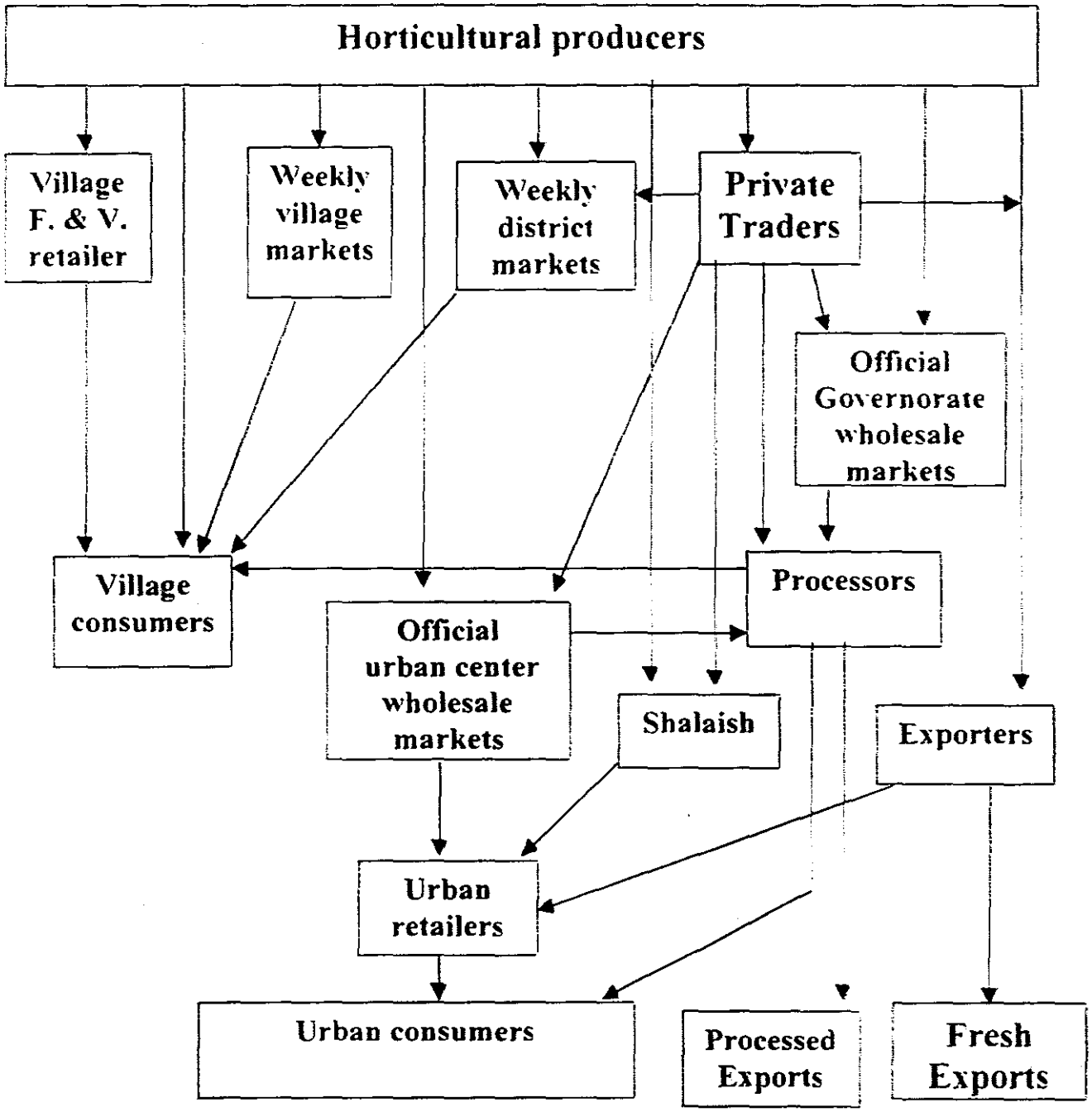
The village consumer will most likely obtain his fruits and vegetables directly from the producer, through a village retailer at a weekly village or district market, or, less commonly, through a trader.

The route from the producer to the urban consumer is longer and more uncertain. Very little produce moves directly from the producer to the urban consumer. Some large-scale desert-land producers package their specialty products and deliver them to urban retail outlets. This is one of the shortest routes between producer and urban consumer. Some roving traders buy from producers and sell directly to urban retailers.

Produce does not move upward from the village market to the district market and then to the governorate market, as such a route would take too much time. Very little produce moves beyond a village or a district market. These markets are basically weekly retail markets for the local residents.

Most produce coming into urban centers is harvested on day one and is hauled that same day or overnight by a trader, in his own truck or in a rented truck, to the urban wholesale market. Early on day two the produce is sold to a retailer and becomes available to the urban consumer later that same day. This is particularly true for the most perishable types of produce. More durable types, such as apples or potatoes, may move from one wholesale market to another before reaching the consumer.

**Figure 1. General Sub-sector map of Horticultural Products.**



**Private Traders**

Private traders buy most of their produce directly from producers, for sale mainly to wholesale traders at the wholesale markets or to processors. Traders that are buying for processors may buy from wholesale markets when the best quality is not required. Traders usually specialize in one or a few commodities in a season. As intermediate buyers, traders take a price risk and therefore must remain knowledgeable regarding the price movements for that commodity.

Kelala

A common method of sale, particularly with tree fruits, is a method called "kelala", in which a trader purchases the producer's crop in the field before it is harvested. The sale may be contracted many months before harvest. In this type of arrangement, the trader may pay a total price per feddan, in which case the buyer is estimating the yield and price. In other cases the buyer contracts for a specific price per ton, and in some cases the price is to be determined in some particular manner by the market.

In a kelala arrangement, the buyer takes over ownership at the time of sale and provides the capital for all costs incurred after that point for that crop. Kelala is popular with producers who are short on capital and who want to avoid payment of high interest rates on bank loans. Some producers also choose this method because it simplifies their marketing process.

Traders like the practice because it guarantees them a supply of the product at a price that they are satisfied with -- the price agreed to under these sales is often lower than the market price. Traders who are buying for processors or exporters often use this method of sale to guarantee a supply in advance. Kelala is often used for fruit purchases but also for tomatoes and other vegetables in off-seasons when the supply is limited. Also, the kelala process allows the buyer to supervise the harvest, packing and shipping and thus to have greater control over the quality of the produce coming to him.

Kelala is not only a method of sale and of finance, but the practice also brings new technology into use. The trader, who probably specializes in one type of product, often has as much experience in the production of that item as does the farmer and often is able to bring new pesticides or new practices with him.[8] Kelala is generally looked upon as a way for traders to take advantage of poor uneducated farmers, but, as noted above, it offers benefits to both parties.

**Wholesale Traders**

Wholesale traders operate on a commission basis inside the wholesale markets. At the El-Obour market in Cairo, there are 600-700 wholesale vegetable traders and about 500 wholesale fruit traders. There are about 500 wholesale traders at the market in

[8] Private communication with Dr. Ali El-Saied, ATUT.

Alexandria and about 100 wholesale traders operating in the Ismailia market. Based on MOTS data on volumes traded in 23 official governorate wholesale markets, it is estimated that there are about 4,000 wholesale fruit and vegetable traders operating within these markets.

Wholesale commissions range from 4-6% on vegetables and 6-10% on fruit in Alexandria. At El-Obour the wholesale commissions range from 4-8%.

It is reported that some wholesalers have agents who go into the countryside to buy produce directly from producers. These agents may work exclusively for one wholesaler, but most of these agents are simply the traders that buy from producers and deliver to the wholesale markets.

Wholesalers have played a dominant role in horticultural markets in the past, but their role is now diminishing slightly. The wholesaling market is a natural 'choke point' in the horticultural markets. In the old Rod El Farag market in Cairo the number of wholesalers was considerably less than there are now in the El-Obour market. The Rod El-Farag wholesalers were commonly known as the 'mafia', or 'the syndicate". They acted as oligopolists, holding a lot of market power because of their small numbers.

Wholesalers have market power because they have financial power. They often finance the local traders and the kelala deals with farmers, and they make other financial arrangements with farmers. As long as farmers are short of operating capital, the wholesalers will continue to have market power.

## Horticultural Price Data

Data on prices of horticultural products were not collected or analyzed in this study. However, two aspects regarding prices of horticultural products will be briefly mentioned here. Cairo's El-Obour market is currently regarded as the major market for price determination for most horticultural products. This is as can be expected. It is the largest individual market in the country, and it is close to the largest center of demand. Prices are almost always set in those markets with the largest volume. Produce tends to move from all areas of production to the center of demand. Very little produce moves from El-Obour market to other wholesale markets.[9]

Prices may be determined in a central market even though that market handles a small share of the total sales. Cairo's El-Obour market reports that it marketed one million tons of produce in 1997. Total horticultural production in Egypt in 1996 was about 21 million tons (and probably more in 1997). Thus, most horticultural prices were set in a market that handled less than 5% of the production.

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[5] Traders in the Ismailia wholesale market reported buying imported apples in El-Obour and Alexandria.

Estimates of the share of total horticultural production going through the El-Obour market are shown in Table 2. Differences between vegetables cannot be explained from the available data. For instance, 15% of cucumbers go through El-Obour but only 3.5% of tomatoes are marketed there. Exports of fresh produce for both of these vegetables are minor as is processing. Perhaps the difference is due to the fact that tomatoes are more perishable and require a more direct route from producer to consumer.

The small share of the oranges going through El-Obour is also hard to explain. The degree of perishability does not answer our question here. Tomatoes are more perishable than oranges, yet a larger share of tomato production goes through the El-Obour market.

Table 2. Comparison of quantities marketed in El-Obour market with total production in Egypt, 1996.

| | Produced In Egypt | Marketed in El-Obour | Percent |
|---|---|---|---|
| Tomatoes | 5,995,300 | 207,938 | 3.5 |
| Cucumbers | 459,700 | 70,327 | 15.3 |
| Squash | 498,200 | 52,629 | 10.6 |
| Onions | 747,600 | 33,686 | 4.5 |
| Total vegetables | 14,466,500 | 734,817 | 5.1 |
| Oranges | 1,613,256 | 18,819 | 1.1 |
| Bananas | 570,300 | 45,725 | 8.0 |
| Total fruit | 5,865,700 | 196,072* | 3.3 |

Sources: See Annex Tables 1-10: Total fruit marketed in El-Obour in 1995. Data for 1996 not available.

**ACDI Project**

A price-reporting project managed by ACDI under US government funding has been in existence at El-Obour, Alexandria and Mansoura for about four years. Under this project, enumerators record price data for all types of vegetables in each of these markets. The number of sales at each price is reported. These data are sent by fax to the central office

by 9 a.m. each market day. At 10 a.m. the summarized price data are sent by fax to radio and TV stations and all newspapers. Monthly summaries of the data are also published.[10]

Some producers have criticized the ACDI project, saying that the price data are reported too late in the day. They would like to have such data early in the morning so that they can make decisions regarding harvesting vegetables early in the day. At El-Obour, fruit is marketed between 6 and 10 a.m., and vegetables are marketed between 2 and 10 p.m. At 6 a.m., an enumerator is reporting prices from the ongoing fruit market, but he is reporting yesterday's vegetable market prices. The ACDI project could speed the delivery of price data by having a second crew of enumerators who work in the afternoon to report vegetable prices which could be made public late in the evening or early the next morning. The TV reporting was also criticized. Some stations receive the data at 10 a.m. but do not broadcast it until late in the day or not at all.

## Grading of Horticultural Produce

Currently, there are no grades and standards for horticultural products in Egypt. Grades and standards become important when there are many steps in the marketing of a product. The lack of grades and standards hurts export of Egyptian horticultural produce -- sales of produce prior to shipment are nearly impossible unless grades and standards are available, and export shipment without sales contracts is very difficult.

The MALR should take the lead in the establishment of grades and standards for Egyptian produce. Since the European market is the main export market targeted by Egypt, European grades and standards should be taken as a starting point and adapted to Egyptian conditions.

## Processing

Horticultural processors obtain their raw material from a variety of sources, but most major processors indicated that they buy the bulk of their raw material through traders. Many processors put out tenders for specified quantities of produce with quality specifications, then meet with a group of traders and agree with them on a price for a specified quantity, delivered to the processors gate, during a specified period. Some processors also buy directly from producers or produce the raw materials themselves.

Processors purchase a minor portion of their raw materials at village or wholesale markets. This is understandable given that purchases in these markets require payment of the market commissions. More importantly, most processors want the freshest produce possible. Because processors want to minimize the number of hours from the field to the

[10] This project was the source of the data reported in Annex Tables 5-22.

factory, produce that goes through the intermediate wholesale market step is less attractive.

The major types of processing include freezing, canning, and juicing. See Annex Table 29 for a list of processors classified by type of raw material and type of product. These 1996/97 data need to be updated since many new companies are coming into production and many old companies are adding new product lines. The table does not provide any product quantity estimates. It does give data on the size of the firm by classifying the number of employees into broad categories, but this is not very helpful in determining produce quantities for firms with multiple products.

A recent study provided the following data on Egyptian exports of processed foods:[11]

| | |
|---|---|
| Frozen vegetables & fruits | 14.363 Tons |
| Dehydrated vegetables | 21.596 Tons |
| Fruit & Veg. juices and concentrates | 2.389 Tons |
| Jams & preserves | 461 Tons |
| Canned and glass packed vegs. pickles & Tomato products | 1.226 Tons |

Although the total quantity of exports of these items is still rather small, the volumes are growing.[12] Faragalla and Montana companies indicate they are now expanding their capacity in frozen vegetables. Several companies are looking at expansion in juices in tetra packs. Mango and guava are big juice items. Another good potential is in the processing of tomato purees, pastes, juices, etc.

There are two public sector companies in the Horticultural processing sector, Edfina and Kaha. Both are fairly large companies, but they do not dominate the sector. There are a large number of private companies in this line also. Both companies have been trying to trim down their excess labor in preparation for privatization. Through early retirement programs. Edfina has reduced the number of their employees from 4,500 to 2,500 and Kaha has reduced from 3,200 to 2,500. Both companies are anticipating privatization through the sale of shares of stock on the stock exchange. Edfina in particular appears to be a well-managed company.

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[11] Private communication with James Maxwell.

[12] Data on the quantity of fruits and vegetables going into processing is reportedly available from the Egyptian Chamber of Commerce but time was insufficient to make the proper contact at that source.

## Fresh Exports

Many types of fruits and vegetables are exported from Egypt as fresh produce. Annex Table 30 provides data on the quantities of fresh exports in 1996 or 1997 to Europe and the Arab Gulf countries. Because of their proximity to Egypt, these two groups of countries represent the major demand centers for Egyptian horticultural products.

Shipping cost is a major variable in the horticultural export business. Sea freight is quite adequate for export of products such as potatoes, citrus, and processed foods, but air-freight is necessary for highly perishable items. A producer in Ismailia governorate described how he himself exports fresh produce to European markets. He has a contract with Egypt Air to ship up to three tons twice a week during a five-month period from November to March. He ships strawberries, peppers, green beans and cherry tomatoes to Germany, Austria, Holland and England. This is a fine example of individual marketing initiative (Although he is being assisted by the Agricultural Technology Utilization and Transfer project -- ATUT).[13]

A major obstacle to exporting fresh produce is the lack of cooling facilities close to the producer. Fresh produce should be cooled immediately after harvest and a 'cold-chain' provided all the way to the buyer. Such cooling facilities are lacking in the traditional farming areas.[14] The large corporate farms on the desert lands that engage in fresh exports must provide their own cooling and packing facilities.

The Egyptian Company for Production Marketing and Exporting of Agricultural Crops (EMEPAC) has proposed developing five rural centers for the preparation of produce for export. Services to be offered include sorting, grading, pre-cooling, packing, and transport to the airport. The first center would be located in Shoubra, about 20 km north of Cairo. Later centers would be located in Beni Suef, Fayoum, Ismailia, and Nuberia. These centers would be used to process produce for EMEPAC and for others on a fee basis.[15]

### Market window analysis

The ATUT project and earlier activities under the New Initiatives Component of the National Agricultural Research Project (NARP) have focused on market window analysis in regard to exportation of Egyptian horticultural products (Ref. No. 3 & 4). While this current report does not describe the results of the analysis performed by ATUT, market window analyses are invaluable tools for exporters of fresh produce.

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[13] Private interview with Ahmed El-Memr, producer in Ismailia.

[14] Private interview with Ricardo Frohmader, Marketing specialist for ATUT.

[15] Private interview with Eng. Ehab Abd Allah and Eng. Mohamed Abd El Kader of EMEPAC.

The concept is based on the idea that there exists various specific and perhaps very short periods during the year when any country can find it advantageous to export produce to each importing country. The size and timing of this market window will depend upon the season of production of the commodity in the exporting country, in the importing country, and in competing export countries. Analysts using this methodology examine the tax laws, the export costs, the import protection policies of the importing countries, the inspection regulations of the importing countries and the demand and price patterns of the commodity throughout the year. The analyst then tries to identify those periods of the year when exports to each country are possible and profitable.

Expansion of exports of fresh produce, particularly into Europe, will be a highly competitive activity and will require a large amount of market data. Market window analysis must be maintained over time, as market forces are dynamic and require constant appraisal and analysis. The ATUT project's nascent market window analysis activity must be sustained, either through public funds or by producer-financed systems. Market price data is only a small part of the total market information needs. Market outlook forecasting will be a critical part of export marketing in the future.

## Post Harvest Losses

Post harvest losses are defined as "the economic losses that occur after the product has been harvested and may include: (1) the rendering of a product as totally inedible, (2) the loss of weight, or (3) any deterioration in quality which reduces the price of the product." (Ref. No. 3, Vol. I, page 20). Fresh fruits and vegetables suffer high post harvest losses due to their perishable nature. Estimates of quantitative losses have been as high as 15-50% for Egyptian fruits and vegetables. This does not include losses in value associated with deterioration in quality of the remaining fruits and vegetables.

Reduction of post harvest losses will require major changes in the produce handling system from the farm to the consumer. The use of palm rib crates is one of the major problems in the present system as the sharp edges of the ribs bruise much of the produce. Furthermore, the crates are not uniform in size and shape and do not stack well, so that crates on top fall into the bottom crates.[16] Refrigeration systems are also needed to diminish post harvest losses of fresh exports.

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[16] Dr. Kamla Mansour in the Horticultural Unit of MALR is regarded as an expert on post-harvest losses. We were unable to arrange an interview with her on this subject.

## Potatoes

Potatoes are one of Egypt's major horticultural products. Potato production represents about 18% of total vegetable production (on a tonnage basis) and 21% of the land planted to vegetables. Total potato production in Egypt in 1996 was 2.6 MMT from 309,000 feddans, of which 66.9% was grown in the Delta, 18% in Middle Egypt, 14% in Nuberia, and 1.5 % in Upper Egypt. The number of traditional small farmers is estimated at 100,000, each producing about one feddan. On the desert lands there are corporate farms producing up to 5,000 feddans each.[17] The share of total production coming from the desert lands is estimated at 40-50% and is growing rapidly.

Of the total 1996 potato production of 2,626,000 MT, about 405,000 MT (15.4%) was exported. 250,000 MT (9.5%) was used for seed, 220,000 MT (8.4%) went into local processing, and the balance of 1,751,000 MT (66.7 %) went to the local fresh market. This implies that the local per capita potato consumption in 1996 was 29.7 kg of fresh potatoes (excluding post harvest losses) and about 3.7 kg of processed potatoes.

Marketing

Potato production and marketing is a very complicated process, involving production at many different seasons (some say three, some say five) by producers in both the Nile Valley and in the new desert lands, use of both imported and locally produced seed, and a large number of end uses (Ref. No 4. Vol. IV).

About 80-90% of the production of the traditional Nile valley farmers goes to meet the needs of the local people or for the fresh wholesale markets in Alexandria and Cairo, with only 10-20% exported.

It is reported that the Egyptian farmer receives 53% of the consumers' expenditure on fresh potatoes. The balance is divided as follows: 29% for the retailer, 11% for wholesalers, and 7% for transport costs and packaging (Ref. No. 4. Vol. IV. Page 45). Over time, the share going to the wholesaler has been increasing, which suggests some degree of market control at this level. In the Egyptian potato market the wholesalers are considered to be the point in the marketing chain at which some price control exists. Wholesalers are reported to finance many traditional farmers' production, thereby gaining a certain amount of influence over prices at harvest time.

[17] Data on production of potatoes by governorate can be found in Annex Table 3. However, in these data the area of potatoes produced in Nuberia is included in the estimate for Behira and the data for potatoes grown in Salehia is included in the estimates for Ismailia and Sharkia. Data on area and production of potatoes on all desert lands is likely available if the proper source can be found.

Exports and Seed Imports

The potato production subsector in Egypt is wholly dependent upon European countries for disease resistant seed potatoes.[18] No breeding program exists in Egypt to produce the disease resistant varieties needed to meet the specifications of the European potato importing countries. Imported seed sells for an average of LE 2,000 per ton and the total annual cost of imported seed potatoes is estimated at LE 120 million.

The General Potato Growers Co-operative represents 45,000 small traditional farmers and assists them through 17 governorate organizations. The co-op assisted in importing 25,000 tons of potatoes for seed in 1997, and its members produce about 47,000 tons of local seed. The co-op activities are closely monitored by the MALR, which sets the prices that the co-op is permitted to charge for imported seed, local seed, and cold storage of seed. The co-op reports that it finds it impossible to export potatoes due to MALR regulations. The co-op markets 35,000 tons of small potatoes through local fresh markets. These are potatoes that do not meet specifications for export. The co-ops do not now have any processing capabilities but soon will have chipping and french fry processing facilities with a capacity of 70,000 tons per year.

Large corporate farms on the desert lands sell mainly to local processors or for export. These corporate operations often are involved in seed import and distribution to contract farmers, cold storage of seed, import and distribution of some inputs, production under contract and/or on owned land, harvesting, packing for export, export, and in some cases also processing. Many of these corporations are vertically integrated, such as Farm Frites, which has 3,000-4,000 feddans of land in Salehia producing 32,000 tons of potatoes which are processed as frozen french-fries and sold primarily to fast-food outlets. Currently there are only two companies producing frozen french-fries in Egypt, with a third to start production soon. Another large corporate potato producer-importer-exporter, Daltex, has a contract to produce potatoes for Frito-Lay. The major processed products are potato chips (77%) and french-fries (23%).

The 1996-1997 potato exports of 405,000 MT were unusually high. Previous export levels have averaged 200,000 - 250,000 MT per year. Almost all 1996 potato exports (93%) went to European countries with most of the remaining exports going to Arab gulf countries. The Egyptian market window for exports of potatoes to Europe extends for five months, from December through April, when no potatoes are being produced in Europe. Potatoes are now being shipped successfully to Europe by sea in refrigerated containers.

In the early 90's the top three exporters had 57% of the export market and the top eight had 83%. There are now about 10-15 private companies that import seed potatoes and 24 private companies exporting potatoes.

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[18] See Krenz., reference No. 5 for a brief review of the potato seed situation and reference No. 4, Vol. IV for additional material on the subject.

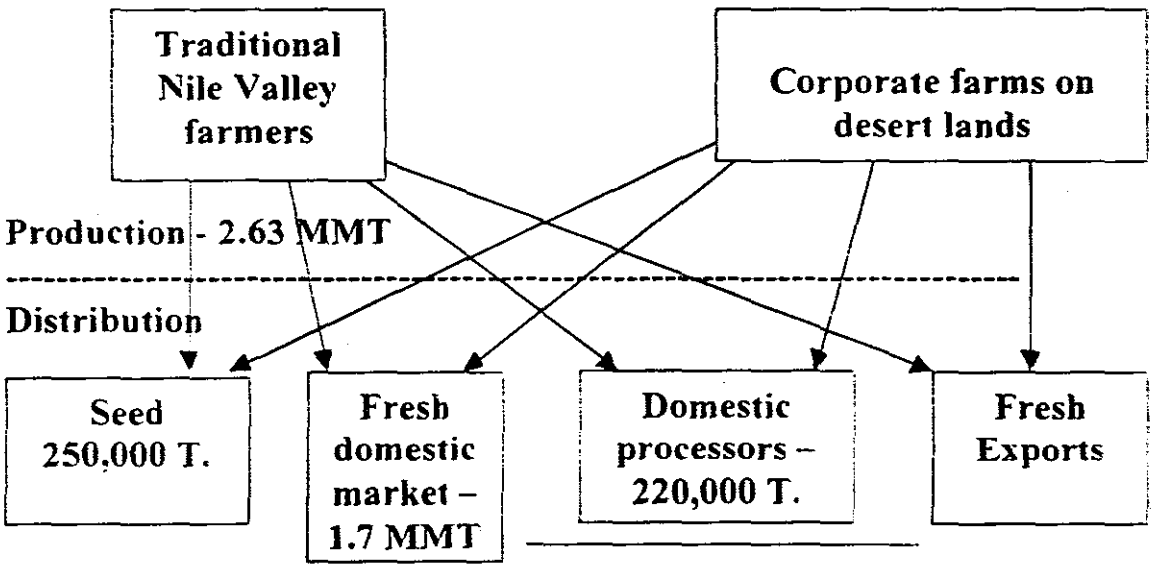
These limited data indicate that the potato sub-sector, in terms of exports and seed imports, is fairly concentrated in the hands of a few large companies. The GOE should encourage additional investors to enter the market and should monitor prices to determine if the markets remain competitive.

Market analysts believe that Egypt could become a prime exporter of certified seed potatoes to countries in the Southern Hemisphere (Ref. No. 4, vol. IV, page 22).

Post-harvest losses

Post harvest losses are incurred throughout the marketing process. Traditional farmers store seed potatoes in unrefrigerated traditional storage facilities. It is reported that new, well-built, traditional types of storage have losses of only 10-20 % while losses in poor storage facilities are as high as 50%. Refrigerated storage facilities keep losses down to 1% but are too expensive for most traditional farmers to own.[19] ATUT reports that large, but unknown, losses occur in the wholesale markets due to the lack of refrigeration. Exporters report culls of 10%, but these culls are sent to the domestic fresh wholesale markets. The total economic loss was not reported.

**Figure 2. Potato Sub-sector map**




[19] See Ref. No. 4, Vol. IV, Chap. 4)

## Oranges

The total area in orange groves in 1996 was 218,300 feddans, which was 21% of the total area in all fruits, making oranges the major fruit in terms of land area. At 1.6 MMT, orange production represents 24% of total fruit production on a tonnage basis. The production of oranges is quite heavily concentrated in the Nile Delta. In 1996, 82.1% of the oranges were produced in the Delta, 8.2% in the new desert lands, 5.6% in Upper Egypt, and 4.1% in Middle Egypt. The major citrus area includes the governorates of Behira, Qalubiya, Sharkia, Menofiya and the desert land area of Nuberia.

Citrus production has been increasing in Egypt for a number of years from about 200,000 feddans in 1980 to about 350,000 feddans in 1996. Egypt is an arid production region which tends to produce fruit of low juice content but high flavor. As a result, the bulk of the citrus in Egypt is used as fresh fruit with only a small share going into processing.

Kelala

Kelala is a particularly common marketing practice with oranges, although no data could be found indicating the share of the crop that is sold in this manner. As reported above, in this practice a private trader or wholesaler buys the entire crop 'on the tree' before picking and handles the harvesting, sorting, packing and transport.

Volume II of "Market Oriented Development for Major Horticultural Crops in Egypt," which is devoted to citrus, refers to kelala as "on tree storage" (Ref. 4, Vol. II, Fig. 3.1). This study reports that orange growers who have financial difficulties normally make kelala sales in June even though crop maturity is in December or later. The study also reports that buyers using this method of purchase have a profit margin of 47%. However, given that buyers incur considerable production and marketing costs with this type of arrangement, it is difficult to tell if this margin estimate is excessive.

Traders and wholesalers work together in the kelala method of marketing. The wholesaler usually provides the financial backing for kelala sales while the local trader provides the contact, handles the negotiations, and handles the crop from the time of sale until maturity. Again, no data are available on the number of such traders in Egypt or their average volumes.

Exports

During the period from 1987-1993, exports of oranges varied from 177,000 tons up to 269,000 tons. Most of these exports went out of the port of Suez to Arab countries.

Processing

Several food processors that deal in fruit juices were interviewed for this study. A major processor of oranges, Comby (also known as Mohandes National food Products) is a

private sector company that produces orange and mango pulp. Comby processes 12,000 tons of oranges per year into juice concentrate, some of which is exported. They report that it is difficult to compete with Brazilian orange juice exporters on a price basis. Egyptian companies who purchase Comby's juice pulp include Vitrac, Fresh, and Milky Land. The company also uses oranges to produce jam.

Edfina (a public company) reported that it purchases 2,000 tons of oranges per year for production of juices and jams. Kaha (a public company) reported use of oranges for making jams but not juice. Faragalla will soon enter the juice processing business but does not plan to produce orange juice. Foodico is reported to be a major juice processor, but an interview could not be arranged.

All processors interviewed indicated that their major method of buying fresh produce for processing was through private traders. Some processors bought in the wholesale markets, but this method was not popular. None of the processors purchased through contracts with producers. Some processors are also producers.

The processors' usual method of purchase is to announce a tender for a specified quantity of product with product specifications. Traders then tender a price and the company responds by announcing a price at which they will buy from all traders. Traders are expected to deliver the specified product to the plant for that determined price.

Data on total purchases by processors could not be obtained. A rather unsophisticated estimate of the current level of total purchases of oranges by processors is between 30,000 and 50,000 tons per year. It is expected that processing of oranges will expand as people increase consumption of juices at a faster rate than consumption of fresh fruit, a trend which has occurred in other countries.

Per capita consumption

Total production, less fresh exports and processing, is about 1.3 MMT annually, meaning per capita consumption is about 22 kg/year. The per capita consumption has varied from 20 to 24 kg/year since 1981.[20]

Wholesale marketing

The two major wholesale markets in Egypt together handle only about 3% of the total production of oranges.[21] Retail markets exclusively for oranges can be found throughout the urban centers and even along the highways in make-shift stalls. It is likely that most

[20] The source of these estimates, Ref. 4, Vol. II did not describe the methodology used to make these estimates.

[21] Data for Rod El Farag market for 1987-93 also indicated relatively small quantities marketed at that wholesale market. During that 7 year period the average tonnage marketed was about 21,000 tons/year (Ref. 4, Vol. II, Table 3-1.)

of these oranges came to the retail market either directly from the producer or through a private trader, but not through a wholesale market.
Table 3. Volume of sales of oranges at some wholesale markets.

| Wholesale Market | Year 1995 | 1996 | 1997 |
|---|---|---|---|
| | | (Tons) | |
| El-Obour | 34,587 | 18,819 | 17,243 |
| Alexandria | 18,326 | 31,761 | 44,823 |
| Mansoura | 1,370 | 3,861 | 4,235 |
| Ismailia | N.A. | N.A. | 9,256 |

Source: MOTS and ACDI, 1998. Data for 1995 are for the last 9 months of the year.

## Tomatoes

Tomato production is more evenly distributed throughout Egypt than is the production of potatoes or oranges. Of the 5,995,000 tons of tomatoes produced in 1996, 37.3% was produced in the Delta, 24.6% in Upper Egypt, 20.5% in Middle Egypt, and 17.6% in the new desert lands. In 1996, tomatoes were grown on 412,100 feddans, which was almost 29% of the land devoted to vegetable production. On a tonnage basis, tomatoes represented 50.6% of total vegetable production in 1996.

Tomatoes are grown throughout the year. The high production season is the summer with periods of low supply in April and October. Most tomatoes are grown under open field conditions, but the share grown under plastic is increasing. The expansion of green house production will no doubt be aimed at specialty fresh domestic and export markets in the future.

Tomato production can also be divided between the traditional Nile Valley areas and the large corporate farms on the desert lands. The Nile Valley farmers generally grow tomatoes in open fields with open pollinated seeds. Fayoum is a major tomato-producing governorate and is a good example of open-field production. The desert corporate farms would more likely use the 'low plastic tunnels', the 'walk-in plastic tunnels', or full green houses and hybrid seeds. In Ismailia many producers use some type of tunnel system. However, a good estimate of the volume of production under these two systems is not available.

Tomato seed

An important aspect of green house production is the supplying of hybrid tomato seeds. These seeds must all be imported into Egypt and are expensive (Ref. No. 5, section on vegetable seeds). The best hybrid seed imported legally is priced at $2,000/ kg. Hybrid

tomato seeds imported illegally from Israel are reported to sell for nearly $10,000/ kg. Open pollinated seed is produced in Egypt, but about 35% of this type of seed is imported. Total costs of imported tomato seed is estimated at LE 17 million per year.

Marketing

The characteristics of tomato marketing are similar to that of many other vegetables in Egypt. The crop is grown throughout the country and the bulk of production goes to the fresh market. A very small share of fresh tomatoes is exported -- less than 6,000 tons (0.1%) in 1996. Some tomatoes are processed, but Egypt is a net importer of processed tomato products.

Tomatoes are highly perishable. They are harvested in Egypt as red ripe. The main marketing problem with tomatoes is the use of palm rib crates. The edges of the ribs are sharp and bruise the tomatoes. Market experts estimate that with the use of palm crates, the majority of the tomatoes are bruised before they reach the consumer.[22]

Tomatoes are difficult to export as fresh produce. The Arab countries have been in the past, and probably will be in the future, Egypt's main fresh tomato export markets. Exports to Europe are difficult. Exploitation of the European export markets will require revamping of the entire production, harvesting and marketing system to be able to reduce post harvest losses, beginning with the choice of varieties, the stage of maturity at harvest, packing and hauling methods, grading, sorting, and transport.

Tomatoes are moved through the local fresh market in one of five ways,[23] as shown in the following table compiled by Harrison in 1994 (Ref. No. 6).

| Method of sale | Small farms (%) | Corporate farms (%) |
|---|---|---|
| Kelala | 0.1 | 19.7 |
| Local trader | 43.6 | 4.1 |
| Wholesaler | 34.3 | 41.2 |
| Farm gate | 18.2 | 34.9 |
| Exporter | 3.8 | 0.06 |

In 1996 the El-Obour wholesale market in Cairo handled 208,000 tons of tomatoes, which represented 3.5% of the total production in Egypt. The wholesale market in Alexandria handled 106,000 tons, or 1.8% of total production. These percentages, which

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[22] See Ref. 4, Vol. V. Chapter 3.

[23] Harrison, K.M. et al., "Analysis of the Egyptian Food Marketing System With Special Reference to the New Lands" 1994. This classification does not seem to be definitive. Wholesalers use the kelala method extensively so these two methods of marketing overlap. Also, private traders usually buy at the farm gate so these two methods may mean exactly the same thing.

are much lower for tomatoes than for all vegetables in general, indicate that much of the tomatoes do not go through the wholesale markets.
The production of tomatoes in Alexandria governorate in 1996 was 320,000 tons, and total wholesale marketings were 106,000 or only 34% of the production in that governorate. The Mansoura wholesale market handled 7,170 tons of tomatoes in 1996 which was only 11.8% of the production of that governorate (see Annex Table 18). The Ismailia market handled 8,325 tons of tomatoes in 1997 although the governate produced 506,292 tons in 1996 (production data for 1997 not available). Thus, the percent marketed through the Ismailia wholesale market may have been less than 2%. The data from the MOTS (Annex Tables 5-23) seem to indicate that marketing of tomatoes through wholesale markets was far less than that indicted in the survey conducted by Harrison (Ref. No. 6)

Processing

While Heinz now has a processing plant in place, a great potential exists for expansion of tomato processing.[24] Due to the highly perishable nature of tomatoes, processing is a natural direction for future production. Plants producing several types of tomato concentrate could be located close to wholesale markets to utilize produce that does not meet retail standards. Tomatoes may be most easily exported in their processed and concentrate forms.

[24] An interview of the Heinz company officials could not be arranged until too late in this study. Heinz is probably the largest tomato processor in Egypt.

## Issues and Recommendations

There are many ways in which the various players in Egypt's horticultural sub-sector – the GOE, agricultural ministries, agricultural aid projects, traders, wholesalers and producers themselves – can improve the efficiency and competitiveness of Egyptian horticultural production. Major issues facing the sector along with recommendations for solving these issues follow:

- The potato producer's co-ops represent the small traditional farms. The co-op's operations are highly regulated by the MALR, which puts them at a disadvantage when competing with the large corporate potato producers located on the desert lands. The MALR sets prices of seed and storage rates that the co-ops must heed but the corporate farms can exceed. The co-op is also discouraged from exporting by GOE regulations, which appear to give an unfair advantage to the corporate farm. All producers should be permitted to compete on an equal basis in terms of exports, and all rules regarding phyto-sanitary regulations, seed variety registration and certification, and seed or input imports should be applied equally to all players in the market.

- The widespread use of the kelala method of sale by producers implies that many of the growers have financial difficulties during production. This points to the need for financial counseling for growers and for market news information. Traders and wholesalers frequently take advantage of those who are less knowledgeable about the markets. This method of sale need not be discouraged. The only need is to put the seller on an equal basis with the buyer in terms of market and financial information.

- Expansion of exports of fresh produce, particularly into Europe, will be a highly competitive activity and will require a large amount of market data. If Egypt is to become and remain competitive in this market, market window analysis must be maintained over time. The ATUT project is initiating this type of activity, but it will have to be sustained, either through public funds or by producer financed systems. Market price data is only a small part of the total market information needs -- market outlook forecasting will be a critical part of export marketing in the future.

- The level of air freight rates is a major factor in the Egyptian fresh export business. Many fruits and vegetables are highly perishable and must be shipped by air. Current air freight rates are high in comparison with shipping rates. Foreign charter companies are prohibited from operating in Egypt, leaving Egypt Air with a monopoly on the air freight business. Exporters also complain that the tonnage which Egypt Air will accept for shipment is too limited.

- Market contracting for fresh produce is almost impossible without product grades and standards. The MALR needs to develop grades and standards for horticultural products. It can began by taking the specifications used in a developed market and adapt them to fit the local produce and demand. Since the European market is the

major market for Egypt to be concerned with. European grades and standards should be used. Once such standards have been established, the training of producers in the understanding of what is needed to meet them will be the task of extension workers and buyers.

- Producers must change their method of handling perishable produce from harvest through packing, sorting and transport, in order to reduce post-harvest losses. Better-suited crates and a cold-chain are needed for the handling of perishable commodities.

- Producers of potatoes and tomatoes face unnecessarily high seed costs due to the lack of breeding programs in the country. In order to reduce production costs and keep Egyptian farmers competitive, the GOE needs to encourage private seed companies to invest in breeding programs to develop disease resistant potatoes and hybrid tomatoes and cucumbers.

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# ANNEXES

Annex Table 1. Vegetable production by region. Egypt. 1996.

| Crop and region | Area (000) FD | Yield MT/FD | Production (000) MT |
|---|---|---|---|
| **Tomatoes** | | | |
| Lower Egypt | 164.7 | 13.6 | 2,238.5 |
| Middle Egypt | 85.9 | 14.3 | 1,227.7 |
| Upper Egypt | 73.9 | 20.0 | 1,475.2 |
| New Lands | 87.6 | 12.0 | 1,053.9 |
| Total | 412.1 | 14.5 | 5,995.3 |
| **Cucumbers** | | | |
| Lower Egypt | 22.6 | 8.1 | 183.4 |
| Middle Egypt | 22.4 | 8.2 | 183.9 |
| Upper Egypt | 3.6 | 10.1 | 36.5 |
| New Lands | 7.2 | 7.8 | 55.9 |
| Total | 55.8 | 8.2 | 459.7 |
| **Green Peppers** | | | |
| Lower Egypt | 26.0 | 5.7 | 148.0 |
| Middle Egypt | 8.7 | 6.8 | 59.0 |
| Upper Egypt | 3.7 | 6.5 | 24.1 |
| New Lands | 15.5 | 5.9 | 91.4 |
| Total | 53.9 | 6.0 | 322.5 |
| **Egg plant** | | | |
| Lower Egypt | 28.2 | 9.2 | 260.7 |
| Middle Egypt | 10.0 | 9.7 | 97.1 |
| Upper Egypt | 8.3 | 8.5 | 70.3 |
| New Lands | 13.7 | 8.9 | 121.9 |
| Total | 60.2 | 9.1 | 550.0 |
| **Green Beans** | | | |
| Lower Egypt | 31.7 | 4.2 | 132.9 |
| Middle Egypt | 12.1 | 5.0 | 60.3 |
| Upper Egypt | 0.1 | 3.4 | 0.2 |
| New Lands | 5.5 | 1.5 | 8.4 |
| Total | 49.4 | 4.1 | 201.8 |
| **Green Peas** | | | |
| Lower Egypt | 23.3 | 4.8 | 111.1 |
| Middle Egypt | 3.3 | 4.5 | 14.7 |
| Upper Egypt | 0.2 | 4.4 | 0.7 |
| New Lands | 0.1 | 3.0 | 0.3 |
| Total | 26.9 | 4.7 | 126.8 |

Source: MALR

Annex Table 1. (Cont.) Vegetable production. Egypt, 1996.

| Crop and region | Area (000) FD | Yield MT/FD | Production (000) MT |
|---|---|---|---|
| **Squash** | | | |
| Lower Egypt | 40.6 | 7.8 | 316.5 |
| Middle Egypt | 9.3 | 7.5 | 69.7 |
| Upper Egypt | 1.2 | 6.7 | 8.0 |
| New Lands | 15.2 | 6.8 | 104.0 |
| Total | 66.3 | 7.5 | 498.2 |
| **Carrots** | | | |
| Lower Egypt | 8.2 | 11.2 | 91.8 |
| Middle Egypt | 0.9 | 9.7 | 8.7 |
| Upper Egypt | 0.1 | 12.0 | 1.2 |
| New Lands | 0.9 | 7.9 | 7.1 |
| Total | 10.1 | 10.8 | 108.8 |
| **Okra** | | | |
| Lower Egypt | 6.4 | 4.9 | 31.6 |
| Middle Egypt | 3.5 | 7.5 | 26.1 |
| Upper Egypt | 2.8 | 5.3 | 14.7 |
| New Lands | 0.2 | 2.5 | 0.5 |
| Total | 12.9 | 5.7 | 72.9 |
| **Onion** | | | |
| Lower Egypt | 22.9 | 10.4 | 238.7 |
| Middle Egypt | 24 | 9.1 | 217.9 |
| Upper Egypt | 14.4 | 11.9 | 171.8 |
| New Lands | 13 | 9.2 | 119.2 |
| Total | 74.3 | 10.1 | 747.6 |
| **Garlic** | | | |
| Lower Egypt | 3.4 | 8.4 | 28.5 |
| Middle Egypt | 20.1 | 10.6 | 212.7 |
| Upper Egypt | 1.4 | 8.2 | 11.5 |
| New Lands | 0.5 | 5.6 | 2.8 |
| Total | 25.4 | 10.1 | 255.5 |
| **Total vegetables** | | | |
| Lower Egypt | 550.4 | --- | 5,399.4 |
| Middle Egypt | 219.2 | --- | 2,511.2 |
| Upper Egypt | 118.6 | --- | 1,841.2 |
| New Lands | 243.7 | --- | 2,088.8 |
| Total | 1,131.9 | --- | 11,840.6 |

Source: MALR

Annex Table 2. Fruit production by region. Egypt, 1996.

| Crop and region | Area (000)FD | Yield MT/FD | Production (000) MT |
|---|---|---|---|
| **Oranges** | | | |
| Lower Egypt | 144.3 | 9.2 | 1,324.7 |
| Middle Egypt | 10 | 6.7 | 66.8 |
| Upper Egypt | 11.1 | 8.1 | 89.5 |
| New Lands | 34.9 | 3.8 | 132.3 |
| Total | 200.3 | 8.1 | 1,613.3 |
| **Limes** | | | |
| Lower Egypt | 19.5 | 11.4 | 222.7 |
| Middle Egypt | 6.1 | 4.2 | 25.7 |
| Upper Egypt | 3.0 | 6.9 | 20.7 |
| New Lands | 5.1 | 8.5 | 43.2 |
| Total | 33.7 | 9.3 | 312.3 |
| **Mandarines** | | | |
| Lower Egypt | 25.7 | 7.0 | 180.6 |
| Middle Egypt | 10.8 | 7.7 | 83.2 |
| Upper Egypt | 4.1 | 7.0 | 28.9 |
| New Lands | 27.9 | 5.6 | 156.0 |
| Total | 68.5 | 6.6 | 448.7 |
| **Mangos** | | | |
| Lower Egypt | 35.1 | 3.6 | 128 |
| Middle Egypt | 10.6 | 4.2 | 44 |
| Upper Egypt | 2.4 | 4.5 | 10.8 |
| New Lands | 3.5 | 5.9 | 20.5 |
| Total | 51.6 | 3.9 | 203.3 |
| **Grapes** | | | |
| Lower Egypt | 30.1 | 8.2 | 247.5 |
| Middle Egypt | 24 | 7.9 | 189.8 |
| Upper Egypt | 6.3 | 8.8 | 55.2 |
| New Lands | 58.5 | 7.7 | 451.1 |
| Total | 118.9 | 7.9 | 943.6 |
| **Figs** | | | |
| Lower Egypt | 1.7 | 3.4 | 5.7 |
| Middle Egypt | 0.8 | 8.1 | 6.5 |
| Upper Egypt | 0.3 | 6.3 | 1.9 |
| New Lands | 51.5 | 3.7 | 188.5 |
| Total | 54.3 | 3.7 | 202.6 |

Source: MALR

Annex Table 2. (Cont.) Fruit production. Egypt. 1996.

| Crop and region | Area (000) FD | Yield MT/FD | Production (000) MT |
|---|---|---|---|
| **Apples** | | | |
| Lower Egypt | 13.5 | 7.0 | 94.0 |
| Middle Egypt | 0.7 | 6.3 | 4.4 |
| Upper Egypt | 0.2 | 6.5 | 1.3 |
| New Lands | 44.8 | 7.0 | 312.6 |
| Total | 59.2 | 7.0 | 412.3 |
| **Bananas** | | | |
| Lower Egypt | 11.5 | 14.3 | 164.3 |
| Middle Egypt | 4.1 | 9.8 | 40.2 |
| Upper Egypt | 11.8 | 13.1 | 154.6 |
| New Lands | 9.2 | 23.0 | 211.2 |
| Total | 36.6 | 15.6 | 570.3 |
| **Peaches** | | | |
| Lower Egypt | 2.2 | 8.5 | 18.7 |
| Middle Egypt | --- | --- | --- |
| Upper Egypt | --- | --- | --- |
| New Lands | 81.3 | 5.7 | 463.8 |
| Total | 83.5 | 5.8 | 482.5 |
| **Pears** | | | |
| Lower Egypt | 7.7 | 3.5 | 26.6 |
| Middle Egypt | 0.3 | 5.0 | 1.5 |
| Upper Egypt | --- | --- | --- |
| New Lands | 4.7 | 6.3 | 29.8 |
| Total | 12.7 | 4.6 | 57.9 |
| **Dates** | | | |
| Lower Egypt | 22.6 | 13.2 | 299.3 |
| Middle Egypt | 6.9 | 28.5 | 196.6 |
| Upper Egypt | 5.3 | 27.6 | 146.1 |
| New Lands | 30.2 | 3.2 | 96.1 |
| Total | 65.0 | 11.4 | 738.1 |
| **Strawberries** | | | |
| Lower Egypt | 4.0 | 9.1 | 36.5 |
| Middle Egypt | 0.1 | 5.0 | 0.5 |
| Upper Egypt | 0.0 | 0.0 | 0.0 |
| New Lands | 0.0 | 0.0 | 0.0 |
| **Total** | 4.1 | 9.0 | 37.0 |

Source: MALR

Annex Table 2. (Cont.) Fruit production. Egypt, 1996.

| Crop and region | Area (000)FD | Yield MT/FD | Production (000) MT |
|---|---|---|---|
| **Guava** | | | |
| Total | 26.8 | 7.6 | 204.2 |
| **Olives** | | | |
| Lower Egypt | 4.4 | 3.6 | 15.9 |
| Middle Egypt | 7.6 | 4.6 | 35.1 |
| Upper Egypt | 0.1 | 5.0 | 0.5 |
| New Lands | 43.7 | 3.6 | 156.7 |
| Total | 55.8 | 3.7 | 208.2 |
| **Watermelons** | | | |
| Lower Egypt | 60.5 | 12.4 | 750.6 |
| Middle Egypt | 2.5 | 14.3 | 35.8 |
| Upper Egypt | 4.1 | 10.3 | 42.3 |
| New Lands | 27.4 | 9.1 | 249.2 |
| Total | 94.5 | 11.4 | 1,077.9 |
| **Cantaloupe** | | | |
| Lower Egypt | 11.0 | 9.1 | 100.5 |
| Middle Egypt | 0.1 | 9.0 | 0.9 |
| Upper Egypt | 0.0 | 0.0 | 0.0 |
| New Lands | 1.5 | 6.1 | 9.1 |
| Total | 12.6 | 8.8 | 110.5 |
| **Total Fruit** | | | |
| Lower Egypt | 363.8 | --- | 2,673.0 |
| Middle Egypt | 98.5 | --- | 551.9 |
| Upper Egypt | 44.2 | --- | 389.5 |
| New Lands | 476.8 | --- | 2,251.3 |
| Total | 983.3 | --- | 5,865.7 |

Source: MALR

Annex Table 3. Total fruit and vegetable production by governorate,1996.

| Governorate | All vegetables Ex. potatoes | Potatoes | All vegetables Inc. potatoes | All fruit |
|---|---|---|---|---|
| | | (000) Tons | | |
| Alexandria | 853.1 | 62.8 | 915.9 | 54.5 |
| Behira | 3,110.0 | 777.5 | 3,887.5 | 2,154.3 |
| Gharbiya | 109.0 | 316.4 | 425.4 | 251.6 |
| Kafr El Sheikh | 513.9 | 13.5 | 527.4 | 50.3 |
| Dakahliya | 291.1 | 222.8 | 513.9 | 124.6 |
| Damietta | 133.9 | 29.5 | 163.4 | 31.6 |
| Sharkia | 801.5 | 77.2 | 878.7 | 617.1 |
| Ismailia | 801.4 | 155.3 | 956.7 | 137.5 |
| Port Said | 0.4 | 0.0 | 0.4 | 0.0 |
| Suez | 44.7 | 0.0 | 44.7 | 5.5 |
| Menofiya | 120.8 | 378.7 | 499.5 | 353.0 |
| Qalubiya | 480.9 | 81.3 | 562.2 | 509.7 |
| Cairo | 15.8 | 0.2 | 16.0 | 1.9 |
| **Delta** | 7,276.5 | 2,115.2 | 9,391.7 | 4,291.6 |
| Giza | 1,080.2 | 204.7 | 1,284.9 | 220.0 |
| Beni Suef | 473.7 | 30.0 | 503.7 | 69.1 |
| Fayoum | 554.6 | 1.4 | 556.0 | 108.1 |
| Minya | 402.7 | 238.3 | 641.0 | 154.8 |
| **Middle Egypt** | 2,511.2 | 474.4 | 2,985.6 | 552.0 |
| Assuit | 276.1 | 7.3 | 283.4 | 177.2 |
| Sohag | 441.7 | 27.3 | 469.0 | 53.7 |
| Qena | 1,002.8 | 0.4 | 1,003.2 | 120.4 |
| Asswan | 103.5 | 0.0 | 103.5 | 22.8 |
| Luxor | 17.1 | 0.0 | 17.1 | 15.4 |
| **Upper Egypt** | 1,841.2 | 35.0 | 1,876.2 | 389.5 |
| North Sinai | 105.2 | 1.3 | 106.5 | 409.4 |
| South Sinai | 0.6 | 0.0 | 0.6 | 4.0 |
| Matrouh | 72.0 | 0.0 | 72.0 | 206.6 |
| El Wadi El Gadid | 33.9 | 0.0 | 33.9 | 12.7 |
| Red Sea | 0.0 | 0.0 | 0.0 | 0.0 |
| **Total Desert** | 211.7 | 1.3 | 213.0 | 632.7 |
| **Grand Total** | 11,840.6 | 2,625.9 | 14,466.5 | 5,865.8 |

Source: MALR

Annex Table 4. Area of fruits and vegetables and total crop area. 1996

| Governorate | All Vegetables | All Fruit | All Cropland | Percent of cropland * In Veg. | In Fruit | V & F. |
|---|---|---|---|---|---|---|
| | (000 Feddans) | | | | | |
| Alexandria | 85.6 | 13.2 | 59.0 | 145 | 22 | 167 |
| Behira | 160.8 | 70.1 | 755.6 | 21 | 9 | 31 |
| Gharbiya | 12.2 | 29.6 | 377.6 | 3 | 8 | 11 |
| Kafr El Sheikh | 42.0 | 4.6 | 570.8 | 7 | 1 | 8 |
| Daqahliya | 30.2 | 15.7 | 628.3 | 5 | 2 | 7 |
| Damietta | 15.9 | 5.5 | 106.4 | 15 | 5 | 20 |
| Sharkia | 78.0 | 89.2 | 724.8 | 11 | 12 | 23 |
| Ismailia | 54.7 | 41.8 | 139.3 | 39 | 30 | 69 |
| Port Said | 0.0 | 0 | 5.7 | 0 | 0 | 0 |
| Suez | 5.6 | 2.4 | 12.7 | 44 | 19 | 63 |
| Menofiya | 26.9 | 38.2 | 302.9 | 9 | 13 | 21 |
| Qalubiya | 36.9 | 48.9 | 189.2 | 20 | 26 | 45 |
| Cairo | 1.6 | 4.5 | 7.7 | 21 | 58 | 79 |
| **Delta** | 550.4 | 363.7 | 3,880.0 | 14 | 9 | 24 |
| Giza | 92.1 | 42 | 186.3 | 49 | 23 | 72 |
| Beni Suef | 38.1 | 8.8 | 263.3 | 14 | 3 | 18 |
| Fayoum | 50.8 | 26.1 | 390.3 | 13 | 7 | 20 |
| Minya | 38.1 | 21.6 | 447.8 | 9 | 5 | 13 |
| **Middle Egypt** | 219.1 | 98.5 | 1,287.7 | 17 | 8 | 25 |
| Assuit | 25.1 | 21.1 | 329.6 | 8 | 6 | 14 |
| Sohag | 24.0 | 7 | 294.5 | 8 | 2 | 11 |
| Qena | 49.5 | 11.2 | 279.9 | 18 | 4 | 22 |
| Aswan | 18.5 | 3.3 | 128.4 | 14 | 3 | 17 |
| Luxor | 1.5 | 1.6 | 27.6 | 5 | 6 | 11 |
| **Upper Egypt** | 118.6 | 44.2 | 1,060.0 | 11 | 4 | 15 |
| North Sinai | 10.4 | 105.2 | 117.6 | 9 | 89 | 98 |
| South Sinai | 0.1 | 4.4 | 4.8 | 2 | 92 | 94 |
| Matrouh | 14.7 | 64.5 | 189.4 | 8 | 34 | 42 |
| El Wadi El Gadid | 4.4 | 3.7 | 63.8 | 7 | 6 | 13 |
| **Total Desert** | 29.6 | 177.8 | 375.6 | 8 | 47 | 55 |
| **Nuberia** | 214.1 | 298.9 | 960 | 22 | 31 | 53 |
| **Grand Total** | 1,131.8 | 983.1 | 7,563.3 | 15 | 13 | 28 |

Source: MALR Area in vegetables includes summer, winter and Nili crops.
In Alexandria the total area of vegetables exceeds the area of cropland.

Annex Table 5. Quantities of major vegetables marketed at El-Obour. Cairo.1995.

| Month | Green Beans | Peas | Squash | Onion | Garlic | Potatoes | Tomatoes | Cucumbers |
|---|---|---|---|---|---|---|---|---|
| | | | | (Tons) | | | | |
| Jan. | 1.391 | 4.928 | 5.644 | 6.506 | 790 | 13.419 | 12.700 | 381 |
| Feb. | 1.358 | 5.663 | 6.658 | 7.677 | 1.092 | 12.908 | 12.193 | 1.133 |
| March | 1.710 | 4.974 | 7.982 | 8.629 | 2.495 | 14.494 | 13.567 | 2.527 |
| April | 1.506 | 6.339 | 10.380 | 7.534 | 2.702 | 12.071 | 17.457 | 6.569 |
| May | 3.412 | 0 | 8.119 | 5.875 | 2.394 | 11.279 | 17.846 | 5.244 |
| June | 657 | 0 | 2.923 | 2.643 | 719 | 7.965 | 13.242 | 4.305 |
| July | 243 | 0 | 2.197 | 1.818 | 488 | 5.881 | 14.507 | 3.243 |
| August | 140 | 0 | 2.314 | 1.965 | 230 | 5.093 | 14.680 | 3.085 |
| Sept. | 237 | 0 | 1.905 | 2.084 | 218 | 4.243 | 17.481 | 3.198 |
| Oct. | 319 | 0 | 2.967 | 3.131 | 286 | 5.570 | 19.369 | 3.231 |
| Nov. | 595 | 119 | 3.091 | 2.358 | 176 | 7.648 | 16.830 | 1.794 |
| Dec. | 1.014 | 896 | 3.221 | 2.584 | 260 | 14.350 | 17.986 | 1.915 |
| Total | 12.582 | 22.919 | 57.401 | 52.804 | 11.850 | 114.921 | 187.858 | 36.621 |

| | Egg plant | Green peppers | Arti-chokes | Cabbage | Carrots | Cauli-flower | Sweet potato | Grand Total |
|---|---|---|---|---|---|---|---|---|
| Jan. | 2.030 | 1.508 | 0 | 602 | 1.144 | 237 | 1.805 | 57.383 |
| Feb. | 2.159 | 2.554 | 29 | 383 | 1.130 | 246 | 601 | 59.984 |
| March | 2.477 | 2.701 | 23 | 494 | 1.342 | 383 | 676 | 68.811 |
| April | 3.009 | 2.544 | 14 | 203 | 1.513 | 45 | 152 | 77.513 |
| May | 4.297 | 5.002 | 15 | 0 | 1.645 | 0 | 36 | 68.744 |
| June | 4.018 | 2.449 | 0 | 1 | 972 | 0 | 0 | 42.306 |
| July | 3.227 | 2.383 | 0 | 43 | 611 | 0 | 21 | 36.278 |
| August | 2.635 | 2.535 | 0 | 57 | 801 | 0 | 107 | 34.989 |
| Sept. | 2.473 | 2.035 | 0 | 57 | 963 | 0 | 358 | 36.466 |
| Oct. | 2.327 | 2.064 | 0 | 140 | 853 | 0 | 798 | 43.592 |
| Nov. | 1.592 | 1.604 | 0 | 304 | 829 | 32 | 688 | 39.699 |
| Dec. | 1.990 | 1.658 | 0 | 483 | 1.747 | 48 | 618 | 50.817 |
| Total | 32.234 | 29.037 | 81 | 2.767 | 13.550 | 991 | 5.860 | 616.582 |

Source: MOTS and ACDI Marketing Information Project

Annex Table 6. Quantities of major vegetables marketed at El-Obour. Cairo, 1996.

| Month | Green Beans | Peas | Squash | Onion | Garlic | Potatoes | Tomatoes | Cucumbers |
|---|---|---|---|---|---|---|---|---|
| | | | | (Tons) | | | | |
| Jan. | 685 | 2.668 | 3.189 | 2,293 | 277 | 15.495 | 21.623 | 2,051 |
| Feb. | 276 | 1.660 | 2,462 | 904 | 335 | 9.926 | 14.531 | 2,480 |
| March | 353 | 2.651 | 4.709 | 2.618 | 1.795 | 15,564 | 21.650 | 4,318 |
| April | 415 | 1,009 | 5.029 | 2,677 | 955 | 13.581 | 22.116 | 4,579 |
| May | 937 | 347 | 5.473 | 2,832 | 379 | 10,394 | 20,004 | 7,676 |
| June | 516 | 0 | 4.144 | 2.576 | 515 | 9.273 | 14.211 | 6,617 |
| July | 197 | 0 | 4,605 | 2,669 | 258 | 11.097 | 18.094 | 7,290 |
| August | 128 | 0 | 4.367 | 2.944 | 371 | 9.717 | 14.627 | 7,329 |
| Sept. | 539 | 13 | 3.641 | 2,679 | 707 | 9.273 | 13.296 | 7.036 |
| Oct. | 2,680 | 12 | 5,306 | 3.849 | 1.261 | 10.802 | 15.465 | 7,411 |
| Nov. | 4.103 | 3,074 | 4.926 | 3.844 | 1.802 | 10.419 | 12.076 | 8,062 |
| Dec. | 948 | 2,011 | 4.776 | 3,802 | 349 | 34.309 | 20.244 | 5,679 |
| Total | 11.778 | 13.446 | 52.627 | 33.686 | 9.004 | 159.850 | 207.938 | 70.327 |

| | Egg Plant | Green Peppers | Arti-chokes | Cabbage | Carrots | Cauli-Flower | Sweet potato | Grand Total |
|---|---|---|---|---|---|---|---|---|
| Jan. | 1,855 | 1,217 | 10 | 274 | 1,851 | 28 | 210 | 56.076 |
| Feb. | 1,557 | 971 | 78 | 325 | 1,465 | 27 | 58 | 39.942 |
| March | 2,004 | 1,710 | 395 | 249 | 3.006 | 44 | 47 | 64.227 |
| April | 2.272 | 1,067 | 226 | 150 | 1.872 | 5 | 40 | 59.735 |
| May | 3.320 | 3.257 | 3 | 71 | 2.765 | 1 | 24 | 62.730 |
| June | 3,511 | 3,069 | 3 | 12 | 1,812 | 0 | 35 | 48,673 |
| July | 4.671 | 4,820 | 0 | 44 | 1,227 | 0 | 437 | 57.131 |
| August | 4.603 | 5.765 | 0 | 137 | 2,414 | 0 | 2.149 | 56.381 |
| Sept. | 4,598 | 4,393 | 0 | 406 | 1,661 | 0 | 1.764 | 52.881 |
| Oct. | 3,894 | 4,568 | 0 | 1.723 | 2.652 | 41 | 3.031 | 69.704 |
| Nov. | 4,555 | 5,046 | 0 | 2,767 | 3,514 | 1,061 | 3.922 | 81.361 |
| Dec. | 2.012 | 2,395 | 0 | 702 | 3,338 | 257 | 1.367 | 85,940 |
| Total | 38,852 | 38,278 | 715 | 6,857 | 27,577 | 1,464 | 13,085 | 734,817 |

Source: MOTS and ACDI Marketing Information Project

Annex Table 7. Quantities of major vegetables marketed at El-Obour. Cairo,1997.

| Month | Green Beans | Peas | Squash | Onion | Garlic | Potatoes | Tomatoes | Cucumbers |
|---|---|---|---|---|---|---|---|---|
| | | | | (Tons) | | | | |
| Jan. | 365 | 1,132 | 2,656 | 2,641 | 248 | 17,845 | 16,532 | 4,809 |
| Feb. | 109 | 871 | 2,568 | 5,195 | 488 | 8,840 | 10,729 | 4,450 |
| March | 217 | 1,322 | 4,348 | 9,371 | 1,270 | 10,177 | 11,298 | 3,458 |
| April | 387 | 904 | 4,419 | 6,905 | 1,307 | 10,892 | 10,090 | 6,565 |
| May | 766 | 352 | 4,801 | 4,779 | 675 | 9,921 | 14,856 | 7,105 |
| June | 1,084 | 14 | 4,981 | 2,261 | 274 | 8,529 | 15,895 | 7,978 |
| July | 959 | 0 | 4,931 | 2,943 | 400 | 8,885 | 16,057 | 7,670 |
| August | 975 | 0 | 5,080 | 4,544 | 567 | 8,310 | 11,050 | 6,309 |
| Sept. | 1,033 | 0 | 7,538 | 4,461 | 859 | 8,286 | 12,471 | 7,834 |
| Oct. | 694 | 26 | 6,360 | 4,055 | 1,193 | 11,181 | 14,874 | 6,620 |
| Nov. | 583 | 727 | 4,260 | 2,219 | 580 | 15,076 | 16,442 | 4,637 |
| Dec. | 686 | 1,177 | 3,810 | 3,148 | 876 | 25,714 | 14,191 | 3,681 |
| Total | 7,858 | 6,525 | 55,752 | 52,520 | 8,737 | 141,456 | 164,483 | 75,116 |

| | Egg plant | Green Peppers |
|---|---|---|
| Jan. | 2,364 | 1,315 |
| Feb. | 1,795 | 1,285 |
| March | 3,403 | 1,461 |
| April | 2,892 | 1,082 |
| May | 3,863 | 1,932 |
| June | 4,502 | 3,155 |
| July | 4,758 | 3,500 |
| August | 3,815 | 3,627 |
| Sept. | 3,725 | 4,136 |
| Oct. | 3,467 | 3,442 |
| Nov. | 2,183 | 2,327 |
| Dec. | 2,964 | 2,371 |
| Total | 39,731 | 29,633 |

Source: MOTS and ACDI Marketing Information Project

Annex Table 8. Quantities of major fruits marketed at El-Obour, Cairo, 1995

| Month | Oranges | Mandarin | Limes | Grape Fruit | Peaches | Water Melon | Cantaloupe | Straw-Berries |
|---|---|---|---|---|---|---|---|---|
| | | | | (Tons) | | | | |
| Jan. | 9.659 | 5.374 | 1.321 | 152 | 0 | 0 | 65 | 0 |
| Feb. | 4.246 | 2.430 | 605 | 240 | 0 | 0 | 0 | 0 |
| March | 4.110 | 2.221 | 480 | 230 | 8 | 31 | 0 | 15 |
| April | 3.251 | 1.969 | 728 | 63 | 837 | 229 | 195 | 0 |
| May | 4.578 | 6 | 1.141 | 11 | 4.565 | 2.619 | 3.795 | 1.464 |
| June | 698 | 0 | 450 | 26 | 2.914 | 5.528 | 3.547 | 4.235 |
| July | 204 | 0 | 304 | 0 | 811 | 3.416 | 1.126 | 0 |
| August | 158 | 0 | 468 | 0 | 1.094 | 1.909 | 843 | 1 |
| Sept. | 103 | 9 | 398 | 0 | 20 | 715 | 67 | 1 |
| Oct. | 1.197 | 1 | 475 | 2 | 0 | 563 | 103 | 0 |
| Nov. | 3.016 | 175 | 161 | 2 | 0 | 47 | 29 | 0 |
| Dec. | 3.387 | 1.765 | 65 | 4 | 0 | 0 | 2 | 0 |
| Total | 34.587 | 13.950 | 6.596 | 730 | 10.249 | 15.057 | 9.772 | 5.716 |

| | Mango | Guava | Grapes | Figs | Apples | Bananas | Dates | Grand Total |
|---|---|---|---|---|---|---|---|---|
| Jan. | 0 | 62 | 60 | 9 | 0 | 9.122 | 229 | 19.202 |
| Feb. | 0 | 6 | 0 | 10 | 0 | 8.005 | 28 | 8.955 |
| March | 0 | 3 | 86 | 0 | 0 | 6.640 | 5 | 9.084 |
| April | 0 | 477 | 52 | 0 | 0 | 4.364 | 0 | 11.060 |
| May | 0 | 78 | 147 | 0 | 160 | 2.394 | 0 | 24.162 |
| June | 948 | 0 | 2.024 | 16 | 314 | 1.464 | 0 | 29.770 |
| July | 2.220 | 0 | 2.270 | 377 | 375 | 1.337 | 0 | 15.883 |
| August | 6.056 | 1.040 | 4.550 | 2.546 | 201 | 1.786 | 1 | 24.131 |
| Sept. | 4.925 | 3.162 | 4.943 | 2.477 | 102 | 1.989 | 1.050 | 20.540 |
| Oct. | 734 | 3.309 | 2.287 | 2.142 | 100 | 3.107 | 3.037 | 17.617 |
| Nov. | 0 | 722 | 899 | 138 | 0 | 4.880 | 1.377 | 8.145 |
| Dec. | 0 | 161 | 286 | 8 | 0 | 5.427 | 599 | 7.523 |
| Total | 14.883 | 9.020 | 17.604 | 7.723 | 1.252 | 50.515 | 6.126 | 196.072 |

Source: MOTS and ACDI Marketing Information Project

Annex Table 9. Quantities of major fruits marketed at El-Obour, Cairo, 1996

| Month | Oranges | Mandarin | Limes | | Peaches | Water Melon | Cantaloupe | Straw-Berries |
|---|---|---|---|---|---|---|---|---|
| | | | (Tons) | | | | | |
| Jan. | 3,054 | 3154 | 134 | | 0 | 0 | 0 | 109 |
| Feb. | 1,934 | 1471 | 95 | | 0 | 42 | 0 | 295 |
| March | 2,629 | 1165 | 220 | | 10 | 327 | 23 | 909 |
| April | 1,206 | 204 | 66 | | 548 | 414 | 247 | 1,019 |
| May | 1,199 | 24 | 172 | | 3,549 | 1,735 | 4,652 | 780 |
| June | 363 | 0 | 130 | | 2,848 | 4,069 | 3,023 | 183 |
| July | 132 | 0 | 233 | | 802 | 3,093 | 877 | 0 |
| August | 111 | 0 | 161 | | 560 | 1,298 | 494 | 0 |
| Sept. | 221 | 0 | 340 | | 32 | 399 | 97 | 0 |
| Oct. | 2,160 | 83 | 508 | | 0 | 280 | 60 | 0 |
| Nov. | 2,659 | 712 | 159 | | 0 | 124 | 125 | 0 |
| Dec. | 3,151 | 1383 | 266 | | 0 | 11 | 22 | 18 |
| Total | 18,819 | 8196 | 2,484 | 0 | 8,349 | 11,792 | 9,620 | 3,313 |

| | Mango | Grapes | Apples | Bananas | Dates |
|---|---|---|---|---|---|
| Jan. | 0 | 0 | 0 | 5,748 | 349 |
| Feb. | 0 | 0 | 0 | 5,418 | 135 |
| March | 0 | 0 | 0 | 6,668 | 109 |
| April | 0 | 0 | 0 | 4,271 | 5 |
| May | 28 | 16 | 1,312 | 2,860 | 0 |
| June | 488 | 765 | 6,063 | 1,796 | 0 |
| July | 1,050 | 1,774 | 3,662 | 1,183 | 0 |
| August | 3,200 | 3,787 | 2,726 | 1,543 | 43 |
| Sept. | 3,682 | 2,356 | 779 | 1,831 | 1,113 |
| Oct. | 164 | 1,068 | 2 | 3,592 | 2,960 |
| Nov. | 0 | 325 | 0 | 4,988 | 2,135 |
| Dec. | 0 | 0 | 0 | 6,027 | 950 |
| Total | 8,612 | 10,091 | 14,544 | 45,925 | 7,799 |

Source: MOTS and ACDI Marketing Information Project

Annex Table 10. Quantities of major fruits marketed at El-Obour, Cairo, 1997

| Month | Oranges | Mandarin | Limes | Peaches | Water Melons | Cantaloupe | Straw-Berries |
|---|---|---|---|---|---|---|---|
| | | | (Tons) | | | | |
| Jan. | 2,559 | 1049 | 206 | 0 | 0 | 20 | 98 |
| Feb. | 1,980 | 909 | 145 | 0 | 127 | 19 | 126 |
| March | 2,212 | 1340 | 247 | 26 | 485 | 114 | 385 |
| April | 1,492 | 454 | 212 | 137 | 553 | 358 | 513 |
| May | 1,101 | 57 | 260 | 2,080 | 1,217 | 2,383 | 459 |
| June | 414 | 1 | 177 | 2,601 | 2,156 | 3,092 | 14 |
| July | 101 | 0 | 229 | 1,580 | 3,268 | 2,166 | 6 |
| August | 35 | 0 | 384 | 762 | 1,863 | 709 | 0 |
| Sept. | 52 | 0 | 436 | 30 | 979 | 287 | 0 |
| Oct. | 1,257 | 1 | 441 | 1 | 365 | 160 | 0 |
| Nov. | 3,321 | 177 | 436 | 0 | 62 | 45 | 0 |
| Dec. | 2,719 | 1032 | 309 | 0 | 0 | 22 | 31 |
| Total | 17,243 | 5020 | 3,482 | 7,217 | 11,075 | 9,375 | 1,632 |

| | Mango | Grapes | Bananas | Dates |
|---|---|---|---|---|
| Jan. | 0 | 0 | 6,463 | 364 |
| Feb. | 0 | 0 | 5,337 | 9 |
| March | 0 | 0 | 6,122 | 4 |
| April | 0 | 0 | 4,669 | 1 |
| May | 0 | 0 | 2,882 | 0 |
| June | 516 | 166 | 1,372 | 0 |
| July | 2,500 | 1,828 | 1,296 | 0 |
| August | 3,675 | 2,752 | 1,232 | 500 |
| Sept. | 3,742 | 2,812 | 1,361 | 1,020 |
| Oct. | 747 | 1,268 | 2,662 | 2,599 |
| Nov. | 0 | 543 | 4,588 | 2,191 |
| Dec. | 0 | 78 | 6,330 | 562 |
| Total | 11,180 | 9,447 | 44,314 | 7,250 |

Source: MOTS and ACDI Marketing Information Project

Annex Table 11. Quantities of major vegetables marketed at the Alexandria Wholesale market, 1995

| | Green Beans | Squash | Onion | Garlic | Potatoes | Tomatoes | Cucumbers |
|---|---|---|---|---|---|---|---|
| | | | | (Tons) | | | |
| April | 0 | 2,746 | 5,089 | 0 | 8,525 | 10,020 | 2,306 |
| May | 642 | 1,770 | 3,941 | 548 | 5,251 | 12,585 | 3,710 |
| June | 599 | 2,341 | 3,210 | 375 | 5,645 | 8,608 | 2,962 |
| July | 472 | 1,811 | 2,259 | 304 | 3,977 | 6,074 | 1,753 |
| August | 401 | 1,479 | 2,217 | 390 | 4,446 | 6,840 | 1,736 |
| Sept. | 346 | 790 | 1,786 | 271 | 4,967 | 7,370 | 834 |
| Oct. | 531 | 1,028 | 2,723 | 278 | 6,229 | 4,613 | 2,004 |
| Nov. | 748 | 999 | 2,883 | 448 | 6,572 | 5,970 | 886 |
| Dec. | 1,058 | 614 | 2,398 | 421 | 10,246 | 6,592 | 1,077 |
| Total | 4,797 | 13,578 | 26,506 | 3,035 | 55,858 | 68,672 | 17,268 |

| | Egg Plant | Green Peppers | Peas |
|---|---|---|---|
| April | 1,046 | 566 | 0 |
| May | 1,910 | 1,313 | 22 |
| June | 2,439 | 1,850 | 0 |
| July | 2,835 | 1,781 | 0 |
| August | 3,758 | 2,182 | 0 |
| Sept. | 2,705 | 1,558 | 0 |
| Oct. | 1,984 | 1,845 | 6 |
| Nov. | 1,598 | 1,452 | 965 |
| Dec. | 1,701 | 1,159 | 1,870 |
| Total | 19,976 | 13,706 | 2,863 |

Source: MOTS and ACDI Marketing Information Project

Annex Table 12. Quantities of major vegetables marketed at the Alexandria wholesale market. 1996.

| | Green Beans | Squash | Onion | Garlic | Potatoes | Tomatoes | Cucumbers |
|---|---|---|---|---|---|---|---|
| | | | | (Tons) | | | |
| Jan. | 939 | 403 | 3,087 | 372 | 6,717 | 10,742 | 1,304 |
| Feb. | 462 | 536 | 589 | 640 | 6,070 | 11,616 | 2,080 |
| March | 963 | 1,078 | 7,480 | 3,351 | 9,771 | 17,049 | 3,332 |
| April | 1,351 | 1,660 | 6,096 | 3,312 | 7,839 | 13,825 | 3,261 |
| May | 586 | 1479 | 4,329 | 886 | 6,539 | 8,232 | 3,871 |
| June | 510 | 1,121 | 3,042 | 1,287 | 6,363 | 7,759 | 1,347 |
| July | 824 | 1,591 | 3,389 | 348 | 4,780 | 7,569 | 2,945 |
| August | 226 | 1,178 | 2,297 | 212 | 4,794 | 5,780 | 1,436 |
| Sept. | 373 | 1,161 | 2,345 | 135 | 5,862 | 5,143 | 1,748 |
| Oct. | 833 | 1,194 | 2,778 | 285 | 8,942 | 5,530 | 2,648 |
| Nov. | 738 | 1,113 | 2,388 | 275 | 8,526 | 5,292 | 1,577 |
| Dec. | 661 | 488 | 2,949 | 288 | 8,330 | 7,926 | 1,602 |
| Total | 8,466 | 13,002 | 40,769 | 11,391 | 84,533 | 106,463 | 27,151 |

| | Egg plant | Green Peppers | Peas |
|---|---|---|---|
| Jan. | 1,520 | 813 | 1,871 |
| Feb. | 1,120 | 562 | 1,177 |
| March | 2,434 | 1,122 | 1,893 |
| April | 3,158 | 1,697 | 2,164 |
| May | 2,740 | 1,606 | 242 |
| June | 4,458 | 1,136 | 0 |
| July | 3,331 | 2,656 | 0 |
| August | 1,431 | 1,258 | 0 |
| Sept. | 1,218 | 985 | 0 |
| Oct. | 1,279 | 1,037 | 41 |
| Nov. | 1,039 | 973 | 1,186 |
| Dec. | 1,495 | 1,078 | 1,533 |
| Total | 25,223 | 14,923 | 10,107 |

Source: MOTS and ACDI Marketing Information Project

Annex Table 13. Quantities of major vegetables marketed at the Alexandria wholesale market, 1997.

| | Green Beans | Squash | Onion | Garlic | Potatoes | Tomatoes | Cucumbers |
|---|---|---|---|---|---|---|---|
| | | | | (Tons) | | | |
| Jan. | 274 | 406 | 2,948 | 353 | 8,421 | 11,442 | 154 |
| Feb. | 78 | 308 | 4,333 | 394 | 6,992 | 8,437 | 1,953 |
| March | 62 | 1,922 | 5,482 | 2,648 | 12,733 | 11,150 | 3,244 |
| April | 530 | 3,112 | 6,473 | 1,433 | 9,449 | 6,007 | 1,552 |
| May | 1,165 | 2,230 | 4,731 | 470 | 9,407 | 5,638 | 2,612 |
| June | 853 | 2,070 | 2,849 | 392 | 6,333 | 7,311 | 2,845 |
| July | 696 | 1,681 | 2,784 | 145 | 5,074 | 7,161 | 2,176 |
| August | 712 | 1,363 | 3,320 | 455 | 2,974 | 3,440 | 2,143 |
| Sept. | 1,091 | 1,676 | 2,176 | 459 | 4,113 | 4,422 | 1,051 |
| Oct. | 673 | 3,990 | 2,402 | 298 | 5,959 | 8,880 | 2,111 |
| Nov. | 504 | 760 | 2,622 | 448 | 6,637 | 9,064 | 937 |
| Dec. | 533 | 605 | 3,000 | 180 | 8,038 | 7,545 | 1,163 |
| Total | 7,171 | 20,123 | 43,120 | 7,675 | 86,130 | 90,497 | 21,941 |

| | Egg plant | Green Peppers | Peas |
|---|---|---|---|
| Jan. | 1,236 | 763 | 1,101 |
| Feb. | 1,075 | 431 | 771 |
| March | 966 | 1,078 | 1,055 |
| April | 657 | 387 | 610 |
| May | 1,699 | 1,511 | 319 |
| June | 2,876 | 2,057 | 0 |
| July | 3,364 | 2,088 | 0 |
| August | 1,299 | 1,707 | 0 |
| Sept. | 2,243 | 1,092 | 0 |
| Oct. | 1,286 | 1,016 | 100 |
| Nov. | 1,100 | 641 | 1,170 |
| Dec. | 1,367 | 1,107 | 1,350 |
| Total | 19,168 | 13,878 | 6,476 |

Source: MOTS and ACDI Marketing Information Project

Annex Table 14. Quantities of major fruits marketed at the Alexandria wholesale market, 1995.

| | Oranges | Mandarin | Limes | Peaches | Water Melon | Cantaloupe | Straw-Berries |
|---|---|---|---|---|---|---|---|
| | | | | (Tons) | | | |
| April | 5,372 | 0 | 621 | 0 | 0 | 0 | 0 |
| May | 1,218 | 74 | 1,010 | 5,069 | 6,931 | 5,828 | 761 |
| June | 136 | 0 | 535 | 837 | 10,006 | 2,605 | 51 |
| July | 80 | 0 | 1,009 | 686 | 11,003 | 1,633 | 0 |
| August | 74 | 0 | 956 | 146 | 6,102 | 1,094 | 0 |
| Sept. | 242 | 0 | 1,632 | 0 | 1,354 | 18 | 0 |
| Oct. | 1,581 | 37 | 1,496 | 0 | 1,348 | 8 | 0 |
| Nov. | 4,481 | 1,763 | 819 | 0 | 162 | 5 | 1 |
| Dec. | 5,152 | 7,047 | 753 | 0 | 0 | 0 | 7 |
| Total | 18,336 | 8,921 | 8,831 | 6,738 | 36,906 | 11,191 | 820 |

| | Mango | Grapes | Apples | Bananas | Dates |
|---|---|---|---|---|---|
| April | 0 | 0 | 0 | 1,895 | 0 |
| May | 33 | 0 | 1,077 | 3,415 | 0 |
| June | 1,063 | 895 | 11,133 | 1,661 | 0 |
| July | 3,195 | 3,748 | 5,796 | 1,766 | 21 |
| August | 6,627 | 3,332 | 1,197 | 1,457 | 1,382 |
| Sept. | 3,817 | 2,590 | 591 | 1,766 | 1000 |
| Oct. | 297 | 2,696 | 121 | 2,040 | 630 |
| Nov. | 2 | 1,662 | 0 | 4,128 | 5 |
| Dec. | 0 | 799 | 0 | 4,568 | 0 |
| Total | 15,034 | 15,722 | 19,915 | 22,696 | 3,038 |

Source: MOTS and ACDI Marketing Information Project

Annex Table 15. Quantities of major fruits marketed at the Alexandria wholesale market, 1996.

| | Oranges | Mandarin | Limes | Peaches | Water Melon | Cantaloupe | Straw-Berries |
|---|---|---|---|---|---|---|---|
| | | | | (Tons) | | | |
| Jan. | 4,515 | 9,994 | 343 | 0 | 0 | 2 | 77 |
| Feb. | 4,921 | 4,172 | 403 | 0 | 8 | 15 | 301 |
| March | 4,749 | 2,069 | 521 | 0 | 175 | 132 | 782 |
| April | 2,773 | 307 | 287 | 1,532 | 228 | 1,475 | 1,536 |
| May | 995 | 28 | 311 | 3,650 | 3,541 | 6,717 | 652 |
| June | 386 | 0 | 312 | 575 | 7,668 | 1,298 | 63 |
| July | 211 | 0 | 666 | 956 | 8,797 | 2,368 | 0 |
| August | 143 | 0 | 1,013 | 187 | 3,289 | 1,011 | 0 |
| Sept. | 347 | 0 | 972 | 0 | 624 | 35 | 0 |
| Oct. | 1,894 | 27 | 1,330 | 0 | 3,120 | 12 | 0 |
| Nov. | 4,255 | 2,736 | 1,069 | 0 | 134 | 2 | 7 |
| Dec. | 6,572 | 7,239 | 1,283 | 0 | 0 | 6 | 12 |
| Total | 31,761 | 26,572 | 8,510 | 6,900 | 27,584 | 13,073 | 3,430 |

| | Mango | Grapes | Apples | Bananas | Dates |
|---|---|---|---|---|---|
| Jan. | 0 | 44 | 0 | 3,944 | 1,071 |
| Feb. | 0 | 0 | 0 | 6,868 | 338 |
| March | 0 | 0 | 0 | 5,436 | 389 |
| April | 0 | 0 | 0 | 6,986 | 121 |
| May | 22 | 0 | 3,830 | 4,993 | 0 |
| June | 540 | 896 | 12,268 | 2,373 | 0 |
| July | 2,812 | 3,840 | 8,982 | 1,865 | 0 |
| August | 6,397 | 2,774 | 2,129 | 1,600 | 152 |
| Sept. | 2,660 | 2,722 | 422 | 1,515 | 441 |
| Oct. | 67 | 2,090 | 31 | 2,139 | 7,850 |
| Nov. | 1 | 1,231 | 0 | 6,969 | 4,613 |
| Dec. | 0 | 350 | 0 | 5,207 | 1,140 |
| Total | 12,499 | 13,947 | 27,662 | 49,895 | 16,115 |

Source: MOTS and ACDI Marketing Information Project

Annex Table 16. Quantities of major fruits marketed at the Alexandria wholesale market, 1997.

| | Oranges | Mandarin | Limes | Peaches | Water Melon | Cantaloupe | Straw-Berries |
|---|---|---|---|---|---|---|---|
| | | | | (Tons) | | | |
| Jan. | 6,328 | 5,606 | 1,070 | 0 | 0 | 4 | 103 |
| Feb. | 5,377 | 3,370 | 656 | 14 | 92 | 10 | 107 |
| March | 8,006 | 3,241 | 732 | 0 | 86 | 173 | 365 |
| April | 7,946 | 791 | 957 | 805 | 184 | 1,874 | 1,112 |
| May | 3,095 | 0 | 584 | 3,774 | 2,617 | 5,857 | 508 |
| June | 728 | 177 | 508 | 2,246 | 7,044 | 2,249 | 52 |
| July | 104 | 0 | 706 | 960 | 8,618 | 2,743 | 0 |
| August | 52 | 0 | 772 | 1,151 | 4,226 | 0 | 0 |
| Sept. | 243 | 0 | 400 | 0 | 2,974 | 487 | 0 |
| Oct. | 1,372 | 123 | 1,574 | 0 | 624 | 20 | 0 |
| Nov. | 5,302 | 2,526 | 892 | 0 | 0 | 0 | 52 |
| Dec. | 6,270 | 6,657 | 885 | 0 | 0 | 0 | 57 |
| Total | 44,823 | 22,491 | 9,736 | 8,950 | 26,465 | 13,417 | 2,356 |

| | Mango | Grapes | Apples | Bananas | Dates |
|---|---|---|---|---|---|
| Jan. | 0 | 0 | 0 | 8,826 | 665 |
| Feb. | 0 | 0 | 0 | 5,254 | 45 |
| March | 0 | 0 | 0 | 9,204 | 0 |
| April | 0 | 0 | 184 | 10,049 | 0 |
| May | 0 | 0 | 1,812 | 9,630 | 0 |
| June | 686 | 796 | 5,349 | 2,011 | 0 |
| July | 2,404 | 3,206 | 8,199 | 1,199 | 0 |
| August | 6,965 | 3,352 | 4,781 | 1,639 | 57 |
| Sept. | 2,034 | 1,866 | 1,867 | 1,721 | 1,204 |
| Oct. | 501 | 2,775 | 521 | 3,645 | 403 |
| Nov. | 0 | 1,550 | 0 | 4,585 | 3,548 |
| Dec. | 0 | 261 | 0 | 6,270 | 1,063 |
| Total | 12,590 | 13,806 | 22,713 | 64,033 | 6,985 |

Source: MOTS and ACDI Marketing Information Project

Annex Table 17. Quantities of major vegetables marketed at the Mansoura wholesale market, 1995.

| | Green Beans | Squash | Onion | Garlic | Potatoes | Tomatoes | Cucumbers |
|---|---|---|---|---|---|---|---|
| | | | | (Tons) | | | |
| April | 140 | 220 | 350 | 80 | 800 | 650 | 230 |
| May | 140 | 220 | 300 | 50 | 800 | 650 | 230 |
| June | 160 | 300 | 600 | 0 | 720 | 750 | 100 |
| July | 0 | 200 | 800 | 0 | 100 | 750 | 150 |
| August | 0 | 30 | 300 | 0 | 310 | 600 | 140 |
| Sept. | 0 | 150 | 220 | 0 | 200 | 310 | 150 |
| Oct. | 40 | 300 | 300 | 0 | 400 | 150 | 80 |
| Nov. | 80 | 220 | 200 | 0 | 300 | 290 | 0 |
| Dec. | 50 | 200 | 220 | 110 | 400 | 0 | 40 |
| Total | 610 | 1,840 | 3,290 | 240 | 4,030 | 4,150 | 1,120 |

| | Egg plant | Green peppers | Peas |
|---|---|---|---|
| April | 500 | 220 | 0 |
| May | 500 | 230 | 0 |
| June | 270 | 320 | 0 |
| July | 700 | 350 | 0 |
| August | 250 | 200 | 0 |
| Sept. | 450 | 400 | 0 |
| Oct. | 400 | 300 | 0 |
| Nov. | 400 | 230 | 20 |
| Dec. | 350 | 80 | 110 |
| Total | 3,820 | 2,330 | 130 |

Source: MOTS and ACDI Marketing Information Project

Annex Table 18. Quantities of major vegetables marketed at the Mansoura wholesale market, 1996.

| | Green Beans | Squash | Onion | Garlic | Potatoes | Tomatoes | Cucumbers |
|---|---|---|---|---|---|---|---|
| | | | | (Tons) | | | |
| Jan. | 0 | 290 | 300 | 100 | 820 | 850 | 0 |
| Feb. | 0 | 260 | 190 | 40 | 600 | 800 | 50 |
| March | 0 | 13 | 280 | 210 | 600 | 400 | 80 |
| April | 160 | 350 | 300 | 60 | 900 | 850 | 290 |
| May | 0 | 410 | 450 | 50 | 900 | 850 | 310 |
| June | 310 | 420 | 410 | 20 | 800 | 810 | 420 |
| July | 100 | 220 | 650 | 0 | 500 | 650 | 180 |
| August | 0 | 300 | 80 | 0 | 300 | 600 | 150 |
| Sept. | 0 | 100 | 200 | 0 | 300 | 400 | 0 |
| Oct. | 50 | 285 | 280 | 0 | 350 | 200 | 90 |
| Nov. | 130 | 200 | 200 | 0 | 240 | 500 | 100 |
| Dec. | 0 | 180 | 270 | 0 | 350 | 250 | 10 |
| Total | 750 | 3,028 | 3,610 | 480 | 6,660 | 7,160 | 1,680 |

| | Egg plant | Green peppers | Peas |
|---|---|---|---|
| Jan. | 300 | 130 | 210 |
| Feb. | 180 | 124 | 210 |
| March | 150 | 5 | 160 |
| April | 250 | 150 | 0 |
| May | 550 | 190 | 0 |
| June | 650 | 300 | 0 |
| July | 0 | 310 | 0 |
| August | 310 | 210 | 0 |
| Sept. | 500 | 200 | 0 |
| October | 450 | 320 | 0 |
| Nov. | 500 | 300 | 250 |
| Dec. | 400 | 50 | 0 |
| Total | 4,240 | 2,289 | 830 |

Source: MOTS and ACDI Marketing Information Project

Annex Table 19. Quantities of major vegetables marketed at the Mansoura wholesale market, 1997.

| | Green Beans | Squash | Onion | Garlic | Potatoes | Tomatoes | Cucumbers |
|---|---|---|---|---|---|---|---|
| | | | | (Tons) | | | |
| Jan. | 0 | 200 | 250 | 0 | 850 | 750 | 0 |
| Feb. | 0 | 60 | 180 | 0 | 650 | 750 | 0 |
| March | 0 | 15 | 300 | 220 | 500 | 380 | 60 |
| April | 25 | 400 | 500 | 20 | 650 | 600 | 0 |
| May | 80 | 200 | 500 | 50 | 500 | 400 | 0 |
| June | 105 | 450 | 450 | 50 | 700 | 850 | 430 |
| July | 90 | 225 | 800 | 0 | 450 | 700 | 200 |
| August | 100 | 280 | 90 | 0 | 305 | 610 | 0 |
| Sept. | 40 | 80 | 210 | 0 | 280 | 450 | 0 |
| Oct. | 2 | 300 | 150 | 0 | 300 | 300 | 0 |
| Nov. | 6 | 180 | 400 | 0 | 250 | 520 | 0 |
| Dec. | 2 | 120 | 350 | 0 | 400 | 300 | 2 |
| Total | 450 | 2,510 | 4,180 | 340 | 5,835 | 6,610 | 692 |

| | Egg Plant | Green peppers | Peas |
|---|---|---|---|
| Jan. | 270 | 150 | 220 |
| Feb. | 140 | 50 | 80 |
| March | 20 | 7 | 190 |
| April | 500 | 0 | 15 |
| May | 510 | 320 | 0 |
| June | 700 | 310 | 0 |
| July | 1,050 | 320 | 0 |
| August | 330 | 250 | 0 |
| Sept. | 520 | 210 | 0 |
| Oct. | 0 | 325 | 0 |
| Nov. | 510 | 280 | 90 |
| Dec. | 390 | 40 | 5 |
| Total | 4,940 | 2,262 | 600 |

Source: MOTS and ACDI Marketing Information Project

Annex Table 20. Quantities of major fruits marketed at the Mansoura wholesale market, 1995.

| | Oranges | Mandarin | Limes | Peaches | Water Melon | Cantaloupe | Straw-Berries |
|---|---|---|---|---|---|---|---|
| | | | | (Tons) | | | |
| April | 300 | 150 | 5 | 450 | 300 | 300 | 3 |
| May | 300 | 0 | 4 | 450 | 130 | 300 | 3 |
| June | 0 | 0 | 5 | 510 | 1,200 | 360 | 3 |
| July | 0 | 0 | 6 | 0 | 550 | 0 | 0 |
| August | 0 | 0 | 25 | 0 | 0 | 0 | 0 |
| Sept. | 30 | 0 | 25 | 0 | 0 | 0 | 0 |
| Oct. | 90 | 0 | 0 | 0 | 0 | 0 | 0 |
| Nov. | 150 | 20 | 0 | 0 | 0 | 0 | 0 |
| Dec. | 500 | 250 | 5 | 0 | 0 | 0 | 0 |
| Total | 1,370 | 420 | 75 | 1,410 | 2,180 | 960 | 9 |

| | Mango | Guava | Grapes | Apples | Bananas | Dates |
|---|---|---|---|---|---|---|
| April | 0 | | 0 | 0 | 200 | 0 |
| May | 0 | | 0 | 80 | 200 | 0 |
| June | 50 | | 30 | 250 | 300 | 0 |
| July | 40 | | 110 | 250 | 0 | 0 |
| August | 45 | | 500 | 0 | 0 | 120 |
| Sept. | 0 | | 450 | 0 | 250 | 120 |
| Oct. | 0 | | 700 | 0 | 200 | 800 |
| Nov. | 0 | | 200 | 0 | 250 | 500 |
| Dec. | 0 | | 0 | 0 | 210 | 0 |
| Total | 135 | 0 | 1,990 | 580 | 1,610 | 1,540 |

Source: MOTS and ACDI Marketing Information Project

Annex Table 21. Quantities of major fruits marketed at the Mansoura wholesale market, 1996.

| | Oranges | Mandarin | Limes | Peaches | Water Melon | Cantaloupe | Straw-Berries |
|---|---|---|---|---|---|---|---|
| | | | | (Tons) | | | |
| Jan. | 500 | 280 | 15 | 0 | 0 | 0 | 0 |
| Feb. | 900 | 300 | 0 | 0 | 0 | 0 | 0 |
| March | 650 | 0 | 1 | 0 | 0 | 0 | 40 |
| April | 240 | 0 | 0 | 350 | 0 | 360 | 0 |
| May | 320 | 0 | 0 | 480 | 180 | 400 | 0 |
| June | 250 | 0 | 0 | 90 | 250 | 350 | 0 |
| July | 8 | 0 | 0 | 30 | 750 | 550 | 0 |
| August | 3 | 0 | 0 | 0 | 5 | 0 | 0 |
| Sept. | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Oct. | 40 | 0 | 0 | 0 | 0 | 0 | 0 |
| Nov. | 350 | 90 | 0 | 0 | 0 | 0 | 0 |
| Dec. | 600 | 300 | 8 | 0 | 0 | 0 | 0 |
| Total | 3,861 | 970 | 24 | 950 | 1,185 | 1,660 | 40 |

| | Mango | Guava | Grapes | Figs | Apples | Bananas | Dates |
|---|---|---|---|---|---|---|---|
| Jan. | 0 | | 0 | | 0 | 3 | 0 |
| Feb. | 0 | | 0 | | 0 | 250 | 0 |
| March | 0 | | 0 | | 0 | 250 | 0 |
| April | 0 | | 0 | | 0 | 200 | 0 |
| May | 0 | | 0 | | 0 | 250 | 0 |
| June | 0 | | 30 | | 90 | 210 | 0 |
| July | 5 | | 110 | | 300 | 0 | 0 |
| August | 150 | | 300 | | 0 | 0 | 5 |
| Sept. | 50 | | 500 | | 0 | 200 | 400 |
| Oct. | 0 | | 710 | | 60 | 220 | 750 |
| Nov. | 0 | | 400 | | 30 | 300 | 50 |
| Dec. | 0 | | 0 | | 200 | 250 | 0 |
| Total | 205 | 0 | 2,050 | 0 | 680 | 2,430 | 1,205 |

Source: MOTS and ACDI Marketing Information Project

Annex Table 22. Quantities of major fruits marketed at the Mansoura wholesale market, 1997.

| | Oranges | Mandarin | Limes | Peaches | Water Melon | Cantaloupe | Straw-berries |
|---|---|---|---|---|---|---|---|
| | | | | (Tons) | | | |
| Jan. | 520 | 300 | 5 | 0 | 0 | 0 | 0 |
| Feb. | 910 | 310 | 0 | 0 | 2 | 0 | 2 |
| March | 700 | 30 | 0 | 0 | 0 | 0 | 15 |
| April | 400 | 0 | 0 | 250 | 30 | 350 | 0 |
| May | 300 | 0 | 0 | 310 | 350 | 500 | 0 |
| June | 150 | 0 | 0 | 180 | 850 | 400 | 0 |
| July | 0 | 0 | 0 | 35 | 2 | 600 | 0 |
| August | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sept. | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Oct. | 55 | 0 | 0 | 0 | 0 | 0 | 0 |
| Nov. | 400 | 80 | 0 | 0 | 0 | 0 | 0 |
| Dec. | 800 | 310 | 9 | 0 | 0 | 0 | 0 |
| Total | 4,235 | 1,030 | 14 | 775 | 1,234 | 1,850 | 17 |

| | Mango | Grapes | Apples | Dates |
|---|---|---|---|---|
| Jan. | 0 | 0 | 0 | 0 |
| Feb. | 0 | 0 | 0 | 0 |
| March | 0 | 0 | 0 | 0 |
| April | 0 | 0 | 0 | 0 |
| May | 0 | 0 | 280 | 0 |
| June | 0 | 0 | 210 | 0 |
| July | 4 | 90 | 350 | 0 |
| August | 110 | 310 | 0 | 0 |
| Sept. | 60 | 480 | 5 | 450 |
| Oct. | 0 | 120 | 0 | 800 |
| Nov. | 0 | 100 | 0 | 70 |
| Dec. | 0 | 0 | 0 | 0 |
| Total | 174 | 1,100 | 845 | 1,320 |

Source: MOTS and ACDI Marketing Information Project

Annex Table 23. Quantities of fruits and vegetables marketed at the Ismailiya wholesale market, 1997.

| | (Tons) | | (Tons) |
|---|---|---|---|
| **Vegetables** | | **Fruit** | |
| potatoes | 5,545 | bananas | 4,565 |
| tomatoes | 8,325 | oranges | 9,256 |
| cucumbers | 2,589 | mangos | 5,567 |
| squash | 1,375 | grapes | 1,665 |
| onion | 4,236 | watermelon | 1,514 |
| egg plant | 715 | dates | 369 |
| green beans | 575 | apples (imp.) | 412 |
| peas | 925 | apples (Egy.) | 745 |
| peppers | 682 | strawberries | 99 |
| garlic | 1,001 | cantaloupe | 796 |
| faba beans | 150 | plums | 202 |
| okra | 153 | apricots | 86 |
| olives | 60 | peachs | 203 |
| others | 2,109 | pineapple | 465 |
| **Total** | 28,440 | melons | 135 |
| | | figs | 576 |
| | | pears | 630 |
| | | guava | 815 |
| | | others | 356 |
| | | **Total** | 28,456 |

Source: Ismailia market authority.

Annex Table 24. Fruits and vegetables marketed at governorate Wholesale markets, June 1997- March 1998.

| Governorate | Quantity |
|---|---|
| | (Tons) |
| Cairo | 502,152 |
| Alexandria | 657,169 |
| Port Said | 81,810 |
| Suez | 23,000 |
| Ismailia | 72,250 |
| Damietta | 40,133 |
| Behira | 289,280 |
| Gharbiya | 363,008 |
| Daqahliya | 74,940 |
| Kafr El Sheikh | 62,000 |
| Sharquia | 23,400 |
| Qalubiya | 100,000 |
| Giza | 1,011,300 |
| Beni Suef | 1,650 |
| Fayoum | 1,800 |
| Minya | 685 |
| Assuit | 26,000 |
| Sohag | 2,850 |
| Qena | 2,150 |
| Aswan | 7,316 |
| North Sinai | 3,111 |
| **Total** | 3,345,995 |

Source: MOTS

Annex Table 25 Quantities of major fruits entering El-Obour Market by governorate, 1997.

| Governorate | Oranges | Mandarins | Grapes | Bananas* | Melons |
|---|---|---|---|---|---|
| | | | (Tons) | | |
| Qalubiya | 4,443 | 1,558 | 1,465 | 12,681 | 1,104 |
| Behira | 2,973 | 501 | 1,014 | 1,329 | 4,314 |
| Alexandria | 1,840 | 123 | 970 | 787 | 441 |
| Sharkia | 1,651 | 648 | 609 | 429 | 684 |
| Giza | 1,422 | 672 | 1,755 | 3,309 | 210 |
| Menofiya | 760 | 263 | 459 | 3,827 | 138 |
| North Sinai | 566 | 76 | 224 | 0 | 152 |
| Ismailia | 561 | 394 | 581 | 143 | 377 |
| Assuit | 486 | 118 | 290 | 5,252 | 550 |
| South Sinai | 444 | 41 | 68 | 0 | 43 |
| Fayoum | 338 | 127 | 542 | 0 | 161 |
| Kafr El Sheikh | 315 | 75 | 93 | 424 | 1,565 |
| Sohag | 278 | 89 | 162 | 4,940 | 197 |
| Gharbiya | 275 | 73 | 240 | 749 | 274 |
| Daqahilya | 247 | 71 | 264 | 581 | 327 |
| Minya | 240 | 95 | 158 | 314 | 59 |
| Qena | 120 | 34 | 54 | 5,238 | 58 |
| Beni Suef | 93 | 25 | 91 | 681 | 0 |
| Damiatte | 85 | 14 | 0 | 3,096 | 70 |
| Matrouh | 67 | 0 | 295 | 0 | 105 |
| Aswan | 0 | 0 | 0 | 266 | 155 |
| Suez | 0 | 0 | 51 | 0 | 0 |
| New Valley | 0 | 13 | 0 | 0 | 0 |
| Port Said | 0 | 0 | 0 | 0 | 48 |
| Other | 40 | 8 | 69 | 295 | 40 |
| Total | 17,244 | 5,018 | 9,454 | 44,341 | 11,072 |

Source: El-Obour Market Authority

* 11,470 tons of bananas imported in 1997 and sold at El-Obour

Annex Table 26. Shares of major fruits entering El-Obour Market by governorate, 1997.

| Governorate | Oranges | Mandarins | Grapes | Bananas | Melons |
|---|---|---|---|---|---|
| | | | (Percent) | | |
| Qalubiya | 25.77 | 31.05 | 15.50 | 28.60 | 9.97 |
| Behira | 17.24 | 9.98 | 10.73 | 3.00 | 38.96 |
| Alexandria | 10.67 | 2.45 | 10.26 | 1.77 | 3.98 |
| Sharkia | 9.57 | 12.91 | 6.44 | 0.97 | 6.18 |
| Giza | 8.25 | 13.39 | 18.56 | 7.46 | 1.90 |
| Menofiya | 4.41 | 5.24 | 4.86 | 8.63 | 1.25 |
| North Sinai | 3.28 | 1.51 | 2.37 | 0.00 | 1.37 |
| Ismailia | 3.25 | 7.85 | 6.15 | 0.32 | 3.40 |
| Assuit | 2.82 | 2.35 | 3.07 | 11.84 | 4.97 |
| South Sinai | 2.57 | 0.82 | 0.72 | 0.00 | 0.39 |
| Fayoum | 1.96 | 2.53 | 5.73 | 0.00 | 1.45 |
| Kafr El Sheikh | 1.83 | 1.49 | 0.98 | 0.96 | 14.13 |
| Sohag | 1.61 | 1.77 | 1.71 | 11.14 | 1.78 |
| Gharbiya | 1.59 | 1.45 | 2.54 | 1.69 | 2.47 |
| Daqahilya | 1.43 | 1.41 | 2.79 | 1.31 | 2.95 |
| Minya | 1.39 | 1.89 | 1.67 | 0.71 | 0.53 |
| Qena | 0.70 | 0.68 | 0.57 | 11.81 | 0.52 |
| Beni Suef | 0.54 | 0.50 | 0.96 | 1.54 | 0.00 |
| Damiatte | 0.49 | 0.28 | 0.00 | 6.98 | 0.63 |
| Matrouh | 0.39 | 0.00 | 3.12 | 0.00 | 0.95 |
| Aswan | 0.00 | 0.00 | 0.00 | 0.60 | 1.40 |
| Suez | 0.00 | 0.00 | 0.54 | 0.00 | 0.00 |
| New Valley | 0.00 | 0.16 | 0.73 | 0.67 | 0.36 |
| Port Said | 0.00 | 0.00 | 0.00 | 0.00 | 0.43 |
| Other | 0.23 | 0.16 | 0.73 | 0.67 | 0.36 |
| Total | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |

Annex Table 27. Quantities of major vegetables entering El-Obour market by governorate, 1997.

| Governorate | Tomatoes | Potatoes | Cucumbers | Peppers | Onions | Garlic |
|---|---|---|---|---|---|---|
| | | | (Tons) | | | |
| Qalubiya | 28,302 | 20,754 | 16,184 | 6,787 | 9,907 | 1,769 |
| Behira | 15,744 | 14,646 | 6,965 | 2,564 | 3,677 | 616 |
| Alexandria | 3,608 | 13,113 | 2,349 | 883 | 2,930 | 210 |
| Sharkia | 13,577 | 5,532 | 7,061 | 3,138 | 3,460 | 677 |
| Giza | 31,604 | 14,542 | 12,933 | 4,844 | 5,586 | 1,607 |
| Menofiya | 14,126 | 12,004 | 6,117 | 2,981 | 3,398 | 616 |
| North Sinai | 2,126 | 687 | 1,574 | 390 | 245 | 32 |
| Ismailia | 11,212 | 7,494 | 5,956 | 2,257 | 1,387 | 467 |
| Assuit | 5,808 | 7,387 | 1,714 | 549 | 3,400 | 331 |
| South Sinai | 236 | 355 | 74 | 81 | 14 | 0 |
| Fayoum | 4,569 | 1,714 | 1,462 | 517 | 565 | 148 |
| Kafr El Sheikh | 2,006 | 2,200 | 666 | 149 | 1,021 | 45 |
| Sohag | 4,681 | 1,917 | 1,436 | 465 | 1,012 | 189 |
| Gharbiya | 6,568 | 7,656 | 2,552 | 966 | 5,704 | 241 |
| Daqahilya | 6,922 | 10,406 | 3,125 | 1,217 | 3,790 | 577 |
| Minya | 4,247 | 14,869 | 1,790 | 451 | 3,049 | 677 |
| Qena | 3,004 | 759 | 608 | 187 | 583 | 90 |
| Beni Suef | 3,267 | 2,653 | 1,166 | 451 | 2,571 | 236 |
| Damiatte | 1,032 | 2,144 | 556 | 103 | 445 | 65 |
| Matrouh | 404 | 173 | 322 | 168 | 59 | 14 |
| New Valley | 51 | 26 | 30 | 5 | 0 | 6 |
| Suez | 427 | 212 | 325 | 279 | 108 | 34 |
| Aswan | 641 | 101 | 94 | 10 | 77 | 37 |
| Port Said | 115 | 160 | 48 | 6 | 9 | 8 |
| Other | 206 | 60 | 22 | 2 | 23 | 18 |
| Total | 164,483 | 141,564 | 75,129 | 29,450 | 53,020 | 8,710 |

Annex Table 28. Shares of major vegetables entering El-Obour market by governorate, 1997.

| Governorate | Tomatoes | Potatoes | Cucumbers | Peppers | Onions | Garlic |
|---|---|---|---|---|---|---|
| | | | (Percent) | | | |
| Qalubiya | 17.21 | 14.66 | 21.54 | 23.05 | 18.69 | 20.31 |
| Behira | 9.57 | 10.35 | 9.27 | 8.71 | 6.94 | 7.07 |
| Alexandria | 2.19 | 9.26 | 3.13 | 3.00 | 5.53 | 2.41 |
| Sharkia | 8.25 | 3.91 | 9.40 | 10.66 | 6.53 | 7.77 |
| Giza | 19.21 | 10.27 | 17.21 | 16.45 | 10.54 | 18.45 |
| Menofiya | 8.59 | 8.48 | 8.14 | 10.12 | 6.41 | 7.07 |
| North Sinai | 1.29 | 0.49 | 2.10 | 1.32 | 0.46 | 0.37 |
| Ismailia | 6.82 | 5.29 | 7.93 | 7.66 | 2.62 | 5.36 |
| Assuit | 3.53 | 5.22 | 2.28 | 1.86 | 6.41 | 3.80 |
| South Sinai | 0.14 | 0.25 | 0.10 | 0.28 | 0.03 | 0.00 |
| Fayoum | 2.78 | 1.21 | 1.95 | 1.76 | 1.07 | 1.70 |
| Kafr El Sheikh | 1.22 | 1.55 | 0.89 | 0.51 | 1.93 | 0.52 |
| Sohag | 2.85 | 1.35 | 1.91 | 1.58 | 1.91 | 2.17 |
| Gharbiya | 3.99 | 5.41 | 3.40 | 3.28 | 10.76 | 2.77 |
| Daqahliya | 4.21 | 7.35 | 4.16 | 4.13 | 7.15 | 6.62 |
| Minya | 2.58 | 10.50 | 2.38 | 1.53 | 5.75 | 7.77 |
| Qena | 1.83 | 0.54 | 0.81 | 0.63 | 1.10 | 1.03 |
| Beni Suef | 1.99 | 1.87 | 1.55 | 1.53 | 4.85 | 2.71 |
| Damiatte | 0.63 | 1.51 | 0.74 | 0.35 | 0.84 | 0.75 |
| Matrouh | 0.25 | 0.12 | 0.43 | 0.57 | 0.11 | 0.16 |
| New Valley | 0.03 | 0.02 | 0.04 | 0.02 | 0.00 | 0.07 |
| Suez | 0.26 | 0.15 | 0.43 | 0.95 | 0.20 | 0.39 |
| Aswan | 0.39 | 0.07 | 0.13 | 0.03 | 0.15 | 0.42 |
| Port Said | 0.07 | 0.11 | 0.06 | 0.02 | 0.02 | 0.09 |
| Other | 0.13 | 0.04 | 0.03 | 0.01 | 0.04 | 0.21 |
| Total | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |

Annex Table 29. List of Horticultural Product Processing Companies.

| Name of company | Fruit | Veg | Frozen | Proc. | Juice | Dry | Employ. Class * |
|---|---|---|---|---|---|---|---|
| Abed Meat & Poultry Cold Storage | x | x | | x | | | 3 |
| Abd & Co. Agricultural Industries | x | x | x | | | | 3 |
| Abdallah Mahmoud Nana Foodstuffs | x | x | x | x | | | 3 |
| Abd El-Latif Awad El-Sabahi Foodstuffs | | x | | | | x | 3 |
| Africa Export & Import | x | x | | x | | | 3 |
| Aga/Nile Agricultural Industries | | x | x | x | | | 6 |
| Aguizi Ind | | x | | | | x | 5 |
| Ahef/Adventist Health Educ. Found. | x | x | | x | | | 3 |
| Ahmed Mahmoud Juices & Foodstuffs | x | | | x | | | 3 |
| Ahmed Seif El-Yazel Trading | x | | | | | x | 3 |
| Alexandria Mills and Stores | x | | | x | | | 8 |
| Amerya Agricultural Research and Dev. | x | | | | | x | 4 |
| Agricultural Expertise House | x | x | | x | | | 3 |
| Alex Projects Bureau | | x | x | | | | 3 |
| Arab Union for Packing Egyptian Fruits | x | x | | x | | | 3 |
| Aroussa Tea/Badawy Sons | x | | | | | x | 5 |
| Assuit National Refrig & Ice | | x | x | | | | 3 |
| Atriss Ibrahim Factory | x | x | x | | | | 3 |
| Badr El-Din Farms | x | x | | | | x | 3 |
| Baraka MISR | | x | | | | x | 3 |
| Behwar Cooling & Freezing | x | x | x | | | | 3 |
| Bifawy Food Ind. | x | | | x | | | 3 |
| Bihmo el-Fayoum Dates Factory | x | | | | | x | 4 |
| Chipsy/Industrial Supplies | | x | x | | | | 4 |
| Corona/Alexandria Confect. & Chocolate | x | | | x | | | 8 |
| Dandara Food Ind. | | x | | x | | | 3 |
| Doha Export and Food Packing | | x | | | | x | 3 |
| Edfina Preserved Foods | x | x | x | | x | | 8 |
| Egyfood/ Egyptian Food Prod. & Storage | x | x | x | | | | 3 |
| Egyptian Canned Foods | | x | | x | | | 4 |
| Egyptian Swiss Food Establishment | x | x | | x | | | 3 |

Source: KOMPASS, Directory of Industry and Commerce of Egypt, 1996/97.

* Employee classes: 3 = 1-50, 4 = 51-100, 5 = 101-250, 6 = 251-500 7 = 501-1,000, 8 = 1,001-5000, 9 = 5,001 or more.

Annex Table 29 cont. List of Horticultural Product Processing Companies

| Name of company | Fruit | Veg. | Frozen | Proc. | Juice | Dry | Employ. Class * |
|---|---|---|---|---|---|---|---|
| Everest Refrigeration | x | x | x | | | | 3 |
| Faragalla | x | x | x | x | x | | 8 |
| Farag El-Masry Factory | | x | | | | x | 4 |
| Farag Alsuhagy for Seeds and Spices | | x | | | | x | 5 |
| Farm Frites/Inter. Agricultural Devel. | | x | x | | | | 4 |
| Fayrous Misr/Port Said Foodstuff Factory | x | x | x | x | | | 5 |
| Ferdy Agricultural Services | | x | | | | x | 3 |
| Foodlco/Ismailia Nat. Food Ind. | x | x | | x | | | 4 |
| Fresh/New Flamenco Food Ind. | x | | | x | | | 5 |
| Frozy Star / Nat food & Frozen Products | | x | x | | | | 3 |
| Fruits & Vegs. Packing Station | x | x | | x | | | 4 |
| Gambarica /Tiba Food Industries | | x | x | x | | | 3 |
| Givrex/ Robert Mansour & Co. | x | x | x | | | | 3 |
| Giza National dehydration | x | x | | | | x | 3 |
| Giza for Tobacco and Foodstuffs | | x | | | | x | 3 |
| Ghoneim Factory | | x | | x | | | 3 |
| Green Foods | | x | | x | | | 3 |
| Hadeir Spices and Pulses Trad. & Pack. | | x | | | | x | 3 |
| Hana Natural Products | | x | | | | x | 3 |
| Heinz Egypt/Cairo | | x | | x | | | 5 |
| Herat Pastry | x | | | | | x | 3 |
| Hoda | | x | x | | | | 3 |
| Hostess / Universal. Foods | x | x | x | x | | | 5 |
| Industrial Food Ltd | x | x | | x | | | 6 |
| International food Ind. Group/Sedco | x | x | x | x | | x | 3 |
| Islamic Mohamadia Food Industries | x | | | x | | | 3 |
| Islamic Vegs & Fruits Refriferation | x | x | x | | | | 3 |
| Jasmin Dried Fruits | x | | | | | x | 3 |
| Kaha Preserved foods | x | x | x | x | | x | 8 |
| Karama Foodstuffs Pkg & Distribut. | | x | | x | | | 3 |
| Kent Port Said Confectionary | x | x | | | | x | 3 |
| Khamisco Import & Export | | x | | | | x | 5 |
| Lasho Foodstuffs | | x | | | | x | 3 |

Source: KOMPASS, Directory of Industry and Commerce of Egypt, 1996/97.

Annex Table 29 cont. List of Horticultural Product Processing Companies

| Name of company | Fruit | Veg. | Frozen | Proc. | Juice | Dry | Employ. Class * |
|---|---|---|---|---|---|---|---|
| Libra Egypt Ltd | x | x | | | | x | 3 |
| Mahmoud Mahmoud Harb Foodstuffs | x | x | | | | x | 5 |
| Manzalah Food Industries | x | | | | | x | 4 |
| Mariam Amin Soliman Foodstuffs | | x | | | | x | 3 |
| Marei Foodstuffs Factory | x | | | x | | | 3 |
| Marwa Agricultural Crops | | x | | x | | | 5 |
| Medhat El-Dilrawi | x | x | | | | x | 5 |
| Middle East Sweets Factory | x | | | x | | | 3 |
| Middle East Foodstuffs & Drinks | x | | x | | | | 3 |
| Misr Saar-Mohamed Hegab & Co. | | x | | x | | | 4 |
| Mohandes Nat. Food Products/Comby | x | x | x | x | | x | 5 |
| Montana/United Food Ind. | x | x | x | | | | 5 |
| Nagah Foodstuffs / El-Melka | x | | | x | | | 3 |
| Narsh Preserved foods factory | x | | | x | | | 3 |
| NASR Dehydrated Ag. Products | | x | | | | x | 7 |
| National Cooking and Freezing | | x | | x | | | 3 |
| National Cooling and Freezing/KFCO | x | | x | | | | 3 |
| National Foods | | x | | x | | x | 3 |
| National Foods S.A.E./Kato | x | | | x | | | 6 |
| New Silvana Sweets & Chocolate | x | | | x | | | 3 |
| Nile Vegetables/United Cooling & Trade | x | x | x | | | | 3 |
| Nozha Food Inds. | | x | | x | | | 4 |
| Oasis Agricultural Produce | x | x | | | | x | 3 |
| Olives Factory/Olivee | | x | | x | | | 3 |
| Over Top/ Egyptian Agri. Investment | x | | | | | x | 3 |
| Plantrade | x | x | | | | x | 3 |
| Port Said Frozen and Dried Veg. Factory | | x | x | | | x | 3 |
| Port Said Agricultural Products | x | x | | x | | | 3 |
| Potato and Vegetable Factory | | x | x | | | | 3 |
| Prima Foods Industries | | x | | x | | | 3 |
| Queens Foodstuffs | | x | | x | | | 3 |

Source: KOMPASS, Directory of Industry and Commerce of Egypt, 1996/97.

Annex Table 29 cont. List of Horticultural Product Processing Companies

| Name of company | Fruit | Veg. | Frozen | Proc. | Juice | Dry | Employ. Class * |
|---|---|---|---|---|---|---|---|
| Salah Darwish Badawi Cold Storage | x | x | x | x | | | 3 |
| Salam Organization | | x | | x | | | 3 |
| Seoudi Legumes Pkg. Co. | | x | | | | x | 3 |
| Shams | x | | | | | x | 3 |
| Salam Organization | | x | | x | | | 3 |
| Seoudi Legumes Pkg. Co. | | x | | | | x | 3 |
| Shams | x | | | | | x | 3 |
| Shemto/Egyptian Foodstuffs Pkging &Dist. | x | | | | | x | 8 |
| Sheriff Cold Store | x | x | x | | | | 3 |
| Sheriff Refrigeration | | x | x | | | | 4 |
| Sherif Nocholas Habib | x | x | | | | x | 3 |
| Sixth October Cold Stores | | x | x | | | | 3 |
| Sorour Trade, Mkting and Ind. | | x | | | | x | 3 |
| Sweet Land Food Industries | x | x | | x | | | 3 |
| Sweet Source for Sweet & Food Products | | x | | | | x | 3 |
| Tagi El-Farouki Sweets Industry | x | | | x | | | 4 |
| Tambo Dehy. & Preserv Food Factory | x | x | | x | | x | 3 |
| Tato Door Touristic Est. | | x | | x | | | 3 |
| Techno-drying Factory | x | | | | | x | 3 |
| Tracool Cold Store | x | | | | | x | 3 |
| Tmaget/Alexandria Int.Industry and Trade | | x | | x | | | 3 |
| United Food Products | | x | | | | x | 3 |
| Vitrac | x | | | x | x | | 3 |
| Wadi El-Gedid/Bihmo El-Fayoum Dates | x | | | | | x | 3 |
| Wadi Exports for Agricultural Products | x | x | | x | | | 7 |
| Wafaa Mansour Foodstuffs | x | x | x | | | | 3 |
| Zakzouk Factory | x | x | x | | | | 3 |

Source: KOMPASS, Directory of Industry and Commerce of Egypt, 1996/97.

Annex Table 30. Exports of fresh fruits and vegetables, Egypt, 1996.

| Item | Importing Area | | | Total |
|---|---|---|---|---|
| | Arab Gulf | Europe | Other | |
| | | (Tons) | | |
| Potatoes | 28,062 | 376,934 | 77 | 405,072 |
| Oranges* | 39,573 | 67,291 | 5,240 | 112,105 |
| Dry onions | 53,435 | 18,085 | 1,495 | 73,015 |
| Fresh onions | 16,854 | 816 | 0 | 17,671 |
| Green Beans * | 1,175 | 8,782 | 0 | 9,957 |
| Garlic | 2,746 | 3,507 | 3 | 6,255 |
| Tomatoes | 5,697 | 154 | 0 | 5,851 |
| Dates | 3,831 | 725 | 2 | 4,558 |
| Sweet Potatoes | 2,744 | 1,354 | 0 | 4,098 |
| Grapes | 901 | 2,583 | 0 | 3,484 |
| Artichokes | 820 | 711 | 0 | 1,532 |
| Strawberries * | 889 | 483 | 79 | 1,451 |
| Mangos | 1,308 | 61 | 0 | 1,369 |
| Melons | 1,097 | 122 | 28 | 1,247 |
| Peaches* | 1,074 | 17 | 1 | 1,092 |
| Plums | 740 | 2 | 1 | 743 |
| Peas * | 91 | 642 | 1 | 734 |
| Cantaloupe* | 918 | 9 | 1 | 928 |
| Green Peppers | 63 | 239 | 1 | 302 |
| Figs | 99 | 1 | 0 | 100 |
| Apricots | 6 | 0 | 0 | 6 |
| **Total** | 162,123 | 482,518 | 6,929 | 651,570 |

Source: ATUT project, Marketing & Technology Information Unit.
* Data for these items are for 1997.