

トルコ半乾燥地域農業開発現地実証調査
市場流通・経営調査報告書
付属資料

平成7年1月

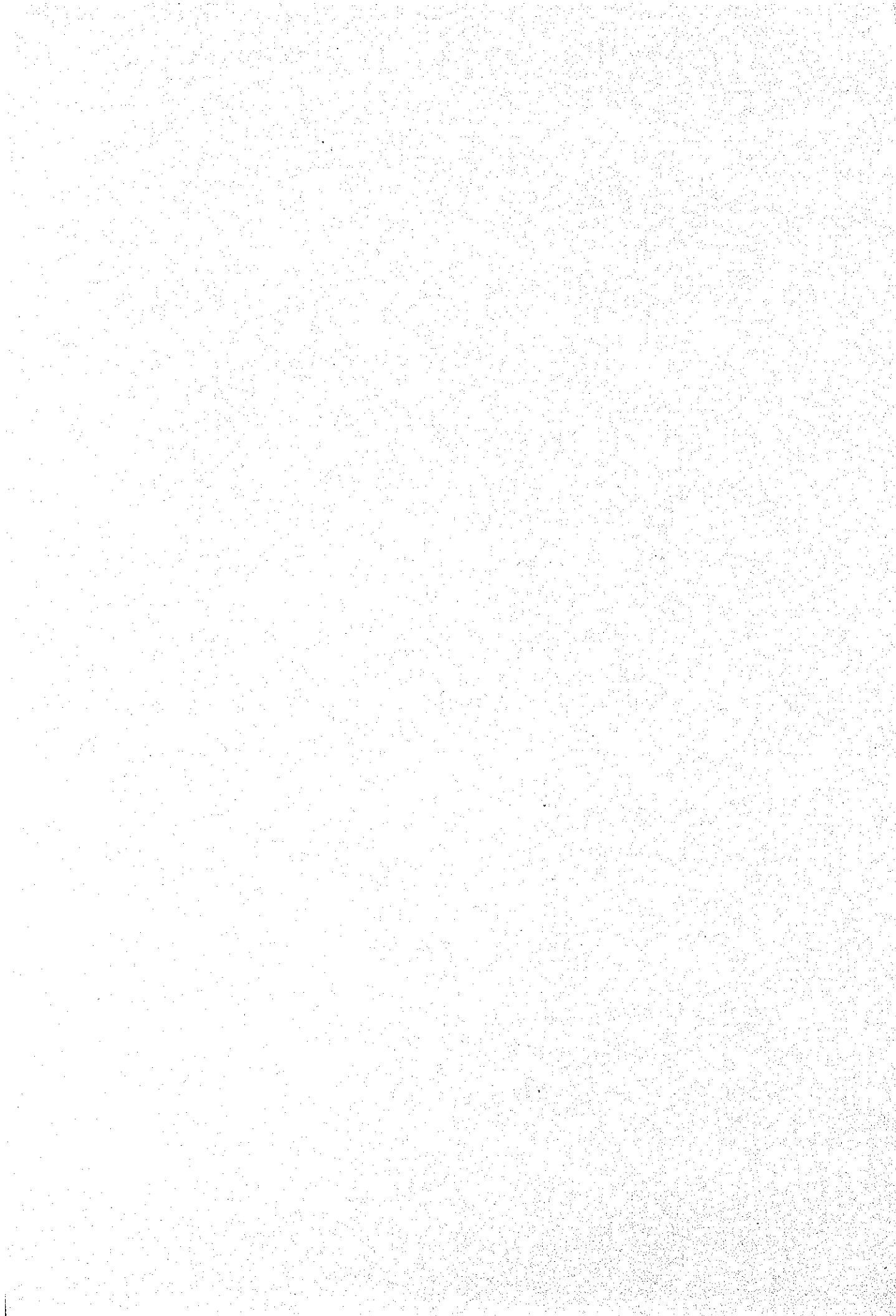
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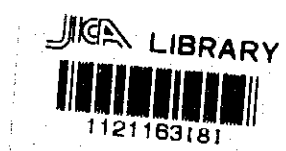
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まえがき

同付属資料は「トルコ半乾燥地域農業開発現地実証調査市場流通・経営調査」において収集した資料を以下に示す項目に従って編集したものである。

第1編では、トルコの農業に関連する基本的情報（経済における農業の位置づけ、特徴、開発計画の動向）及び、野菜・果実及び種子の生産量及とその輸出入量について記載した。

第2編では、トルコ地中海沿岸地域（アダナ、アンタリア、ガージャンテップ、ハタイ、メルシン）における野菜・果実の生産量を記載した。

第3編では、野菜・果実の輸出量・額を対象品目及び輸出相手国別に記載した。

第4編ではトルコにおける野菜・果実の流通システム及び流通に関連するデータについて記載した。主な内容は、流通システムの構造と機能、主要な輸出メーカ、取引経路、卸売市場等である。なお、イスタンブールにおける調査対象品目の月別卸売価格、アンカラ卸売市場における年間取扱量及び取扱額を表に示した。また、流通段階における農作物のロス率を作物別に示した。

第5編では、トルコ農業に関連する組織（農業共同組合、アダナ農業会議所）及び関連制度について記述し、トルコ全国及びアダナにおける農業信用の利用状況を表に示した。

第6編では、野菜・果実の加工産業について解説し、そのおよその生産費について記載した。

第7編では、トルコからECに農作物を輸出する際の関税同盟について記述した。第8編ではドイツでの調査結果で得られた農産物輸入の動向、市場競争力、農作物の価格動向について記載した。また、事例としてハンブルグ卸売市場の状況を記述した。第9編では、イタリアでの調査結果として、農業の概要、政策及び流通制度、主要品目の輸出動向等を示した。

第10編では、ECの共通農業政策（CAP）の生鮮野菜・果実及び加工品に関連する事柄について解説し、参考として「CAP WORKING NOTES 1994」を掲載した。

Annex では、ECにおけるトマト、モモ、スモモの品質基準、本調査で訪問した会社名、収集資料を示した。

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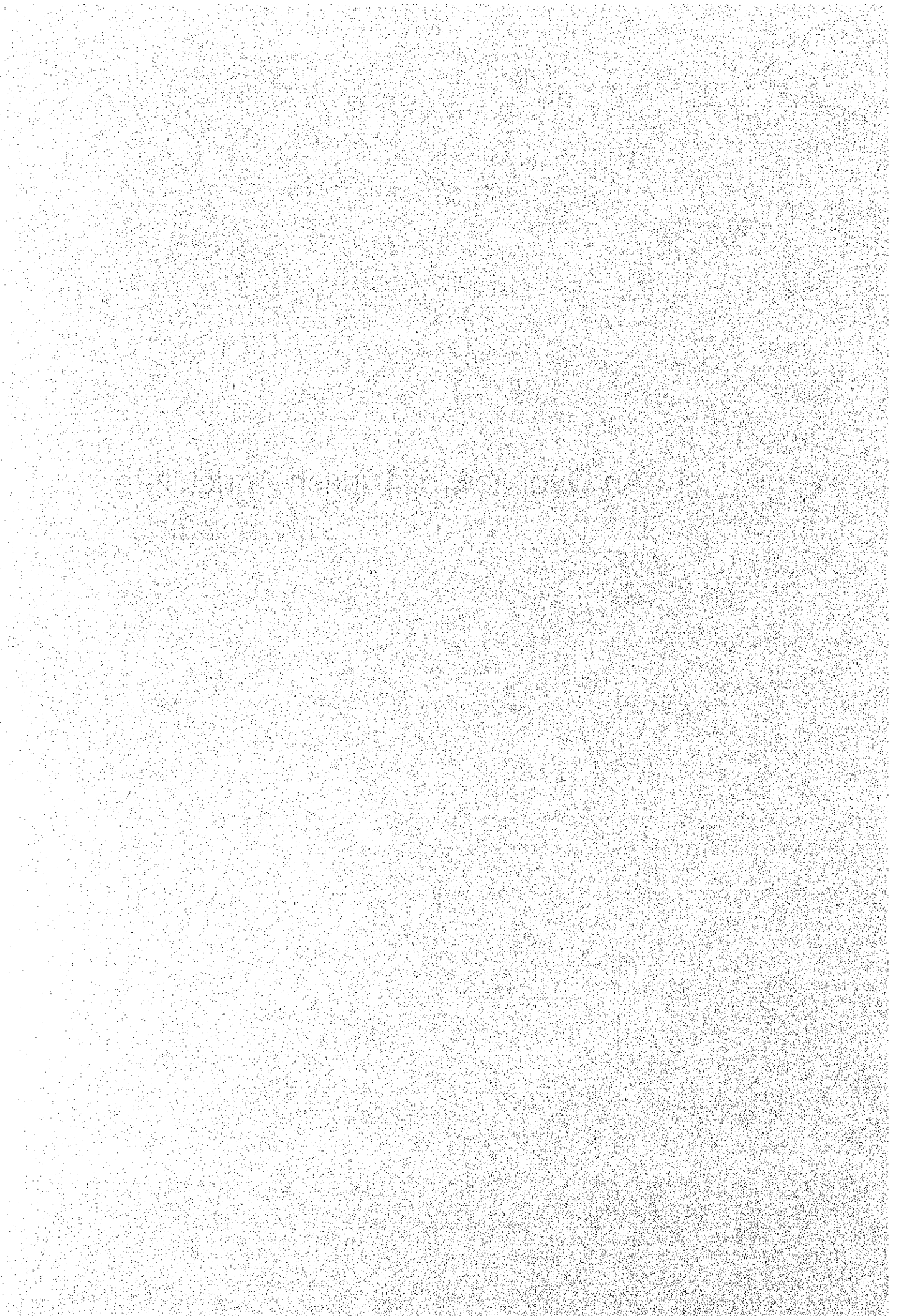
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ACRONYMS

CAP	: Common Agriculture Policy
DM	: Deutsche Mark (German Currency)
EC	: European Community
EFTA	: European Free Trade Area
EU	: European Union
FAO	: Food and Agriculture Organization (FAO)
GATT	: General Agreement on Tariffs and Trade
GDP	: Gross Domestic Product
GNP	: Gross National Product
HA	: Hectares
IGEME	: Export Promotion Center of Turkey
ISTA	: International Seed Testing Association
MARA	: Ministry of Agricultural and Rural Affairs
NPC	: National Productivity Centre
OECD	: Organization for Economic Cooperation and Development
SIS	: State Institute of Statistics
SPO	: State Planning Organization
TEBD	: Turkish Seed Industry Association
TIGEM	: General Directorate of Agricultural Enterprises
TSI	: Turkish Standards Institution
VAT	: Value Added Tax
JICA	: Japan International Cooperation Agency
GAP	: Southeastern Anatolia Project (Turkey)
TL	: Turkish Lira (Currency)

1. An Overview of Turkish Agriculture

(トルコの農業概要)



1. An Overview of Turkish Agriculture (トルコの農業概要)

1.1 Agriculture in Turkish Economy (トルコ経済における農業の位置づけ)

Agriculture has long been a significant sector in the Turkish Economy. This significance stems from its high capacity for production which is attributable to the presence of a rich resource base in terms of soil and water. In addition, the different agro-ecological conditions throughout the country provide the sector with a unique production diversity. This high capacity for production and the ability to have a rich cropping pattern have enabled Turkey to meet the domestic demand for food since the beginning of her history.

Agricultural production is also of special importance to Turkey due to the increasing population and the great contribution it makes to the national economy. Until 1978, the share of the agricultural sector claimed a top position in gross domestic product (GDP). This share, however, have fallen since due to the increasing emphasis on industrialization, from 17.5 percent in 1988 to 16.5 percent in 1992 and about 16.2 percent in 1993. This development must not be interpreted as a decrease in the importance attached to agriculture. The fall of the share in GDP reflects the rapid development in other sectors (tables 1.1 and 1.2).

Agriculture also plays a key role in supplying raw materials to the industry. In addition, it has contributed, and still does, to the evolution of the industry which supply basic inputs for agriculture such as fertilizers, pesticides and machinery.

The relative shares of sub-sectors in the national agricultural income are as follows: crops 56.5 percent, animal production 34.8 percent, aquatic products 3.0 percent and forest products 5.7 percent in 1993 (table 1.3).

About 61.3 percent of Turkey's population were in rural areas in 1972. The proportion of the population living in rural areas declined to 58.1 percent in 1980 and 49 percent in 1990. A major proportion of the economically active population is employed in the agricultural sector.

1.2. Growth Performance of Agriculture (農業開発の経緯及び現状)

During the Fifth Five Year Development Plan (1985-1989) while the added value had increased by 3.6 percent per annum, the agricultural sector had increased on the average by 3.3 percent per annum. Within the Sixth. Five Year Development Plan (1990-1994) it has been foreseen that the added value for the agricultural sector be

increased by 4.1 percent per annum. The added value has been increased by an average of 4.9 percent per annum between 1990-1992 period.

As a matter of fact, some of the principles and measures that have been taken for the development of agriculture are as follows;

- to promote the appropriate use of resources, to increase the productivity through the application of new technologies and input,
- to form a workable market chain between the producers and the consumers, to establish integrated market system which provides inputs and services,
- to encourage the appropriate use of land according to its characteristics, so as to solve certain problems such as erosion and to protect land resources, to take measures that prevent the pollution of agricultural land by fertilizers and chemicals,
- to encourage seed production that allows for high quality seeds or improvement of standard production.

Although a large part of agricultural production is carried out in small family enterprises, the high production capacity is utilized to grow a wide range of crops in Turkey. The total of Turkey's useful surface and underground water resources is 104.4 billion cubic meters. At present, 47 percent of economically irrigable land is under irrigation. For certain crops the production of seeds has reached a level that exceeds the local demand thus creating a potential for export. The country owns the largest number of animals. Steps have already been taken to upgrade livestock population through various measures.

The exports of agricultural products have increased five folds from 447 million dollars to 2,365 million dollars between 1970-1993. During the five-year planned period (1963 - 1993) especially after 1980 the percentage of the exports of agricultural products have decreased in the total export. (In 1970 75%, in 1980 57.4%, in 1993 15.4% tables 1.4 & 1.5).

In the frame of liberal economy and changing of consumption habits there is increasing in the field of the imports of agricultural products. In 1993 the imports of agricultural products increased 41.3 percent. Also in 1993 total import is 29.4 billion dollars, the percentage of agricultural products is 5.7 percent (tables 1.6 & 1.7). The import and export trends (1987-1992) by countries are shown in tables 1.8 and 1.9.

1.3. Main Characteristics of Agriculture (農業セクターの特徴)

Turkey has a great agricultural production potential arising from her ecological and climatological conditions, land and rich crop-pattern. Due to these factors, Turkey

is one of the most favoured countries in terms of agricultural production. Agriculture is of particular importance for feeding the rapidly increasing population as well as for contributing to the national development efforts.

Total area of Turkey is 78 million hectares of which 27.3 million hectares are cultivated. Total cultivated area is 27.3 million hectares of which 18.6 million hectares (67.9%) are sown area, 5.1 million hectares (18.8%) are fallow land, 663 thousand hectares (2.4%) are vegetable area, 576 thousand hectares (2.1%) are vineyard, 1.6 million hectares (5.6%) are fruit trees and 871 thousand hectares (3.2%) are olive groves (table 1.10).

The tables 1.11 and 1.12 present information on the production of major agricultural products in recent years.

1.4 Production of Fresh Fruit and Vegetables in Turkey (生鮮野菜・果実の生産動向)

In Turkey, about 75 kinds of fruits are produced in the total area of 2,986 thousand hectare, while about 50 kinds of vegetables are produced in 610 thousand hectares. When wild kinds are also taken into account, these figures will increase further. The production figures of fruit and vegetables in 1992 are shown in tables 1.13 and 1.14. In 1992 a total of about 10.98 million tons of fruits were produced, which comprised 2.62 million of pome fruits (23.8%), 1.96 million tons of stone fruits (17.9%), 1.67 million tons of citrus (15.2%), 0.80 million tons of nuts (7.3%) and 3.93 million tons of grape-like fruits (35.7%). Turkey is among the biggest ten producers.

The production figures of vegetables in 1992 is shown in table 1.14, and it amounts to 17.47 million tons comprising in the categories of 1.42 million tons of leafy/stem edible vegetables, 0.58 million tons of leguminous vegetables, 14.86 million tons of fruit-bearing vegetables, 0.53 million tons of root, bulb and tuberous vegetables, and 0.07 million tons of other vegetables (cauliflowers & asparagus).

The Figs. 1.1 to 1.8 show the production of tomatoes, melon, lettuce, radish, plum, peach, pears and persimmons. Tomatoes are mainly produced in the coastal areas of the Marmara Sea, Aegean Sea and the Mediterranean Sea. Some 75 percent of the total production of tomatoes are produced in these areas. The coastal areas of the Marmara sea, in particular, has immense irrigation facilities. Farms in these areas are directly tied up with agricultural processing firms. About 60 percent of the total production of melons are produced in the central northern area centered around Ankara and the coastal regions of the Aegean Sea. About 85 percent of production of peaches

are produced in the coastal areas of Marmara Sea, the Aegean Sea and the Mediterranean Sea. Plums are produced in the coastal regions of the Black Sea, the Marmara Sea, the Aegean Sea and Mediterranean Sea. About 60 percent of production of lettuce is centered in Adana, the coastal area of Mediterranean Sea.

Although the proportion of orchards in the total agricultural land has risen since 1970, due to the agricultural policies and the fact that production of fruit and vegetables is more profitable, it is still very little when compared to the other products' proportions.

The major producing countries of tomatoes, melon, plum, peaches and pears are shown in tables 1.15 -1.19. In 1992, Turkey ranks third in the production of tomatoes (6.45 million tons or 9% of world production) and second in melons (1.62 million tons or 13% of world production); and in the production of plum, peaches, nectarines and plum it ranks eighth.

1.5 Production of Seeds (種子の生産動向)

(1) Seed industry

According to the Seed Industry Association (TEBD) there are about 29 private firms involved in seed production, export and import of cereals, industrial crops, forage crops and vegetables. These firms are all collaborating with foreign firms. The list of the firms and the type of seeds they are involved is shown in Table 1.20. Of the 29 firms, eight firms are dealing in vegetables, namely pepper, bean, tomato, carrot, squash, watermelon, eggplant, cucumber and onion. According to discussion with the chairman of the Association, about 700 tons of vegetable seeds were produced in 1993; of which 140 tons were exported.

(2) Seed production

The trends of domestic seed production, export and import from 1989 to 1993 are shown in tables 1.21, 1.22 & 1.23, and it covers cereals, pulses, vegetables, etc. These data were provided by the Directorate of Agriculture Production and control (MARA). However, the breakdown on the type of vegetable seeds are not available. According to this data, the supply of vegetable seeds increased from 741 tons in 1989 to 1025 tons in 1993.

(3) Import/export of vegetable seeds by seed firms

Data on the import and export of vegetable seeds by private seed firms for 1993 was obtained. However, the data on import and export does not tally with those obtained from MARA. There were about 20 items of vegetables amounting to 666.75

tons of seeds were imported by various firms as shown in table 1.24. Of the total amount, 585.4 tons were of hybrid type and the rest 81.35 tons were of standard type. Import by type of seeds and firms is shown in table 1.25. There are about 33 firms involved in importing. The major firms in terms of quantity imported are MAY, SANDOZ, TAT, SAPEKA, BETA, and ANT. In 1993, about 74 tons of water melon seeds, 17 tons of tomato seeds, 3.9 tons of melon seeds 1.7 tons of lettuce seeds and 0.5 tons of radish seeds were imported.

In 1993 about 130 tons were exported by 18 firms and the leading firms are SARIOGLU, MAY, SAPEKA, BETA and AKFA (table 1.26).

(4) SAPEKA

SAPEKA, a seed company located in Adana, involved in wheat, soybean, maize and vegetables namely cucumber, cabbage, cauliflower, broccoli, lettuce. It has joint-venture business with Japanese firm for vegetables seeds, with French firm for Hybrid maize and USA firm for soybean. SAPEKA has production permit from MARA for producing seeds as well as registration of variety.

SAPEKA has about 5000 tons processing/storage facilities in Adana for soya bean, wheat and maize. Marketing facilities are located throughout Turkey.

According to the General Manager, production of winter vegetables is recommended, particularly broccoli, lettuce, Brussels sprout and cauliflower for European markets. Vegetable production is recommended but not vegetable seeds. Tomato processing is not feasible in Adana region because there are other alternatives for farmers to produce other agricultural products. The yield of tomato is low in this region. Marmara region is good for tomato.

SAPEKA produces standard broccoli seed for export. Hybrid broccoli seeds are imported for domestic uses. Hybrid seeds are preferred because it matures same time, uniform in quality and size and high yield. Standard seeds can be used for local area because of low cost of product.

(5) Production cost

The production cost of tomato, melon, broccoli and kiwi is shown in table 1.27 and the breakdown cost for brocolli according to SEPASKA is shown in table 1.28.

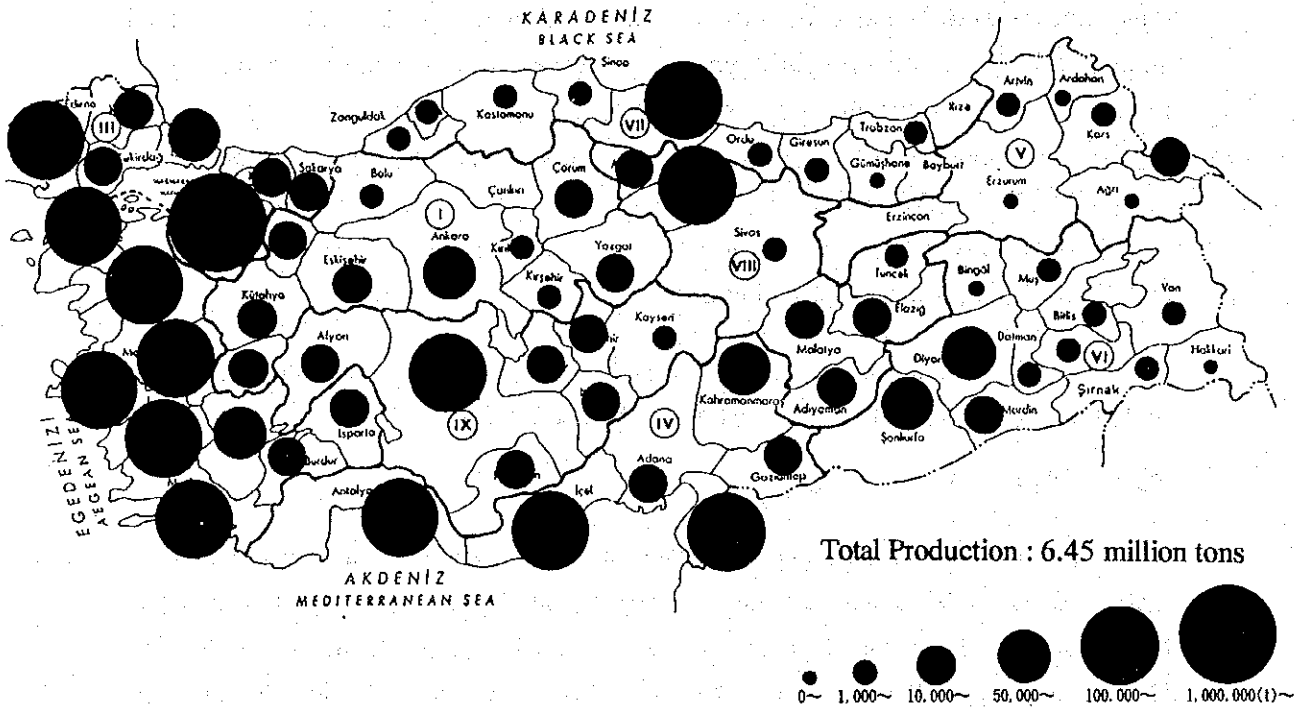


Fig. 1.1 Production of Tomato (1992)

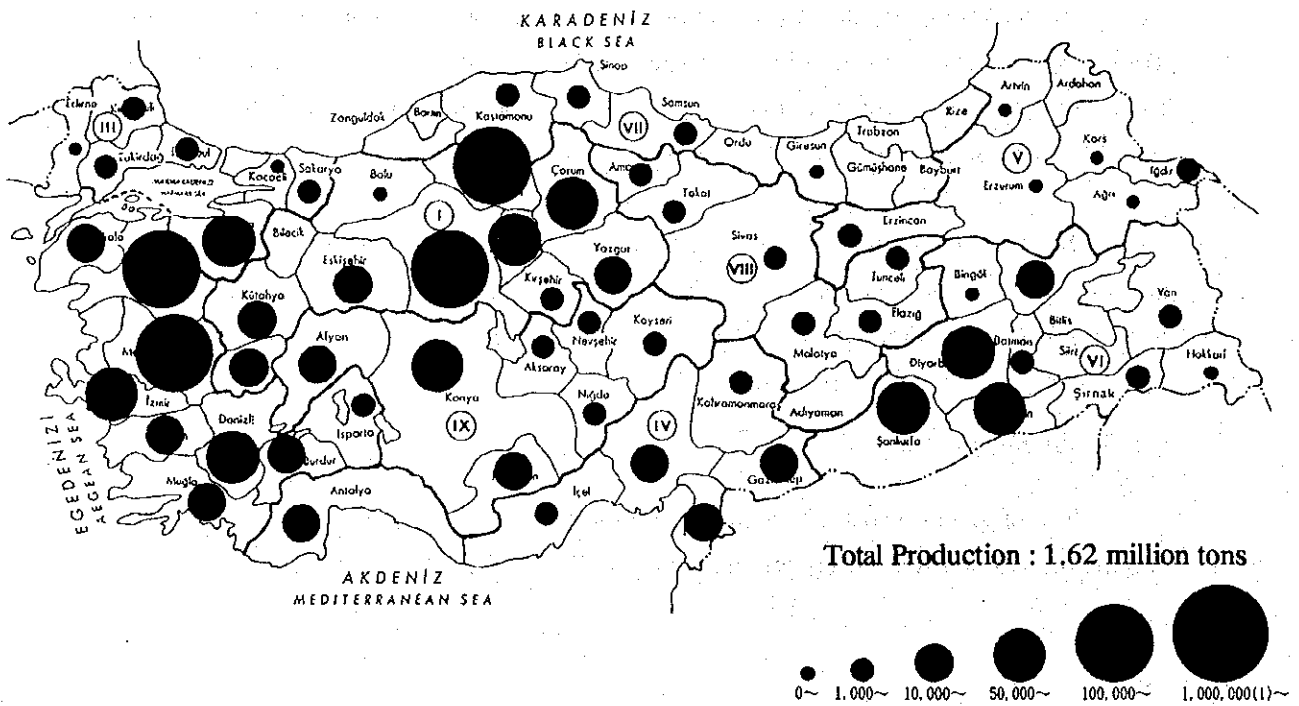


Fig. 1.2 Production of Melon (1992)

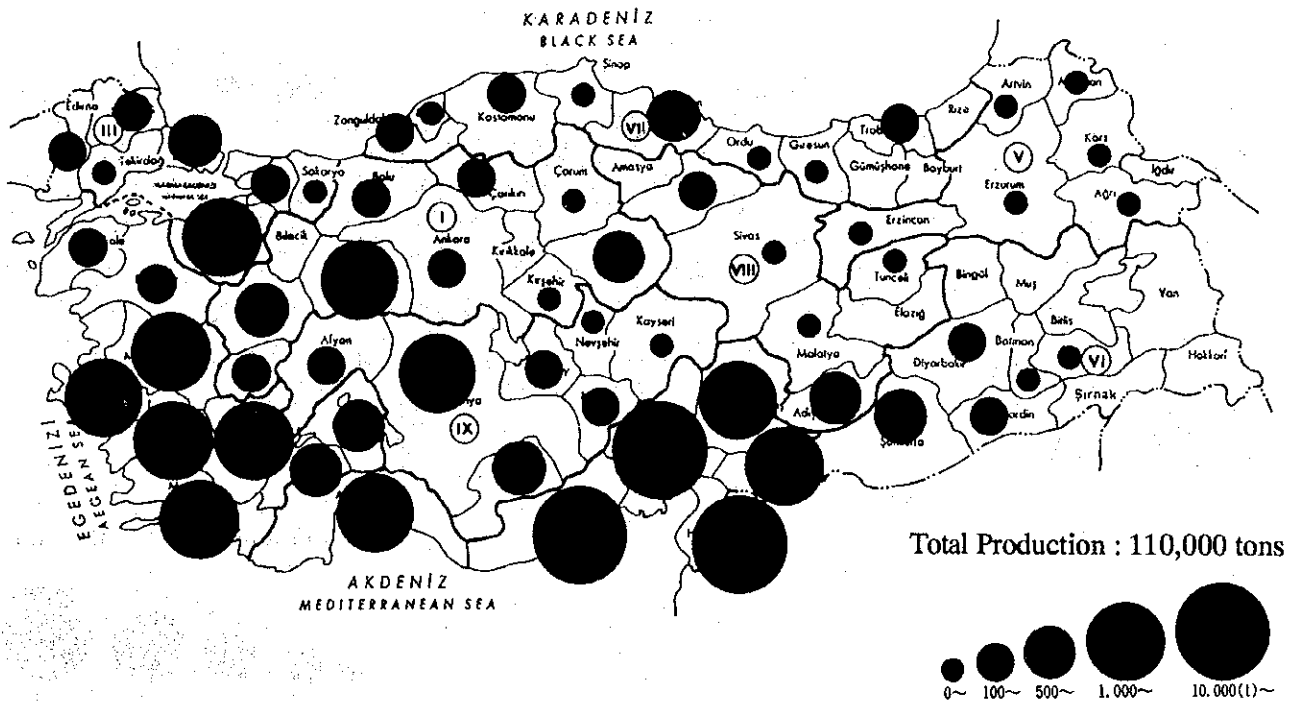


Fig. 1.3 Production of Lettuce (1992)

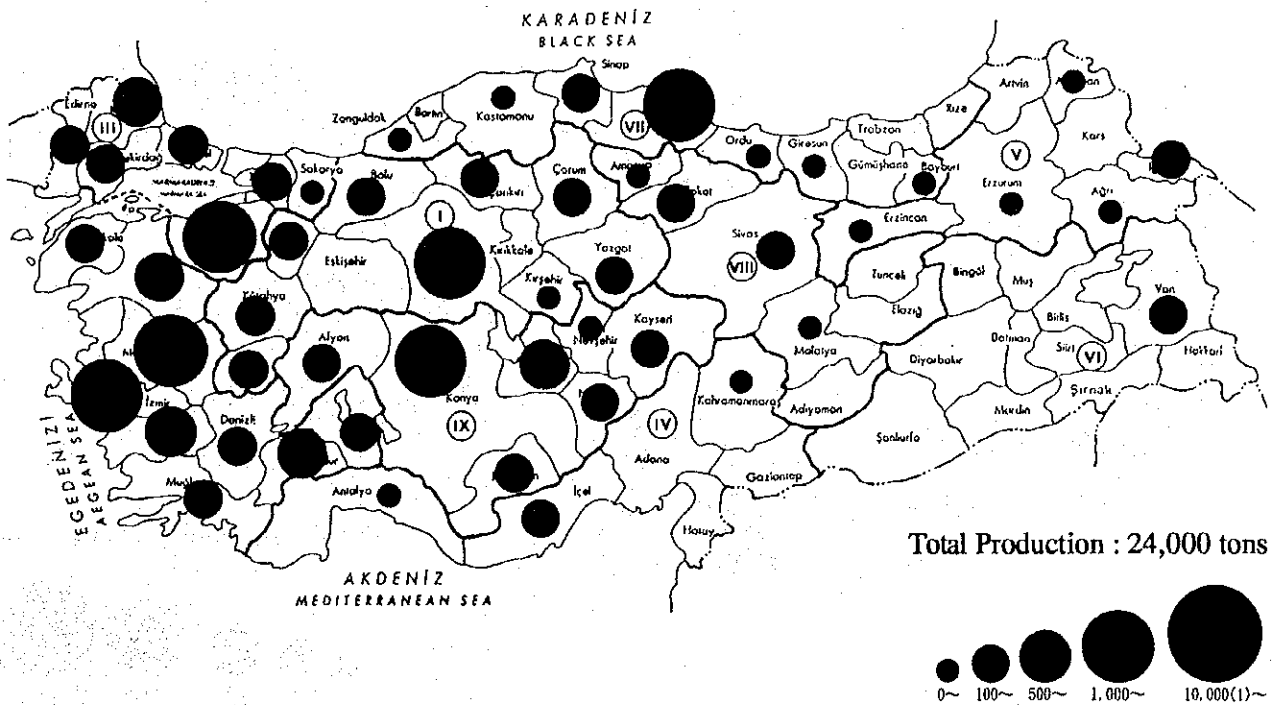


Fig. 1.4 Production of Radish (1992)

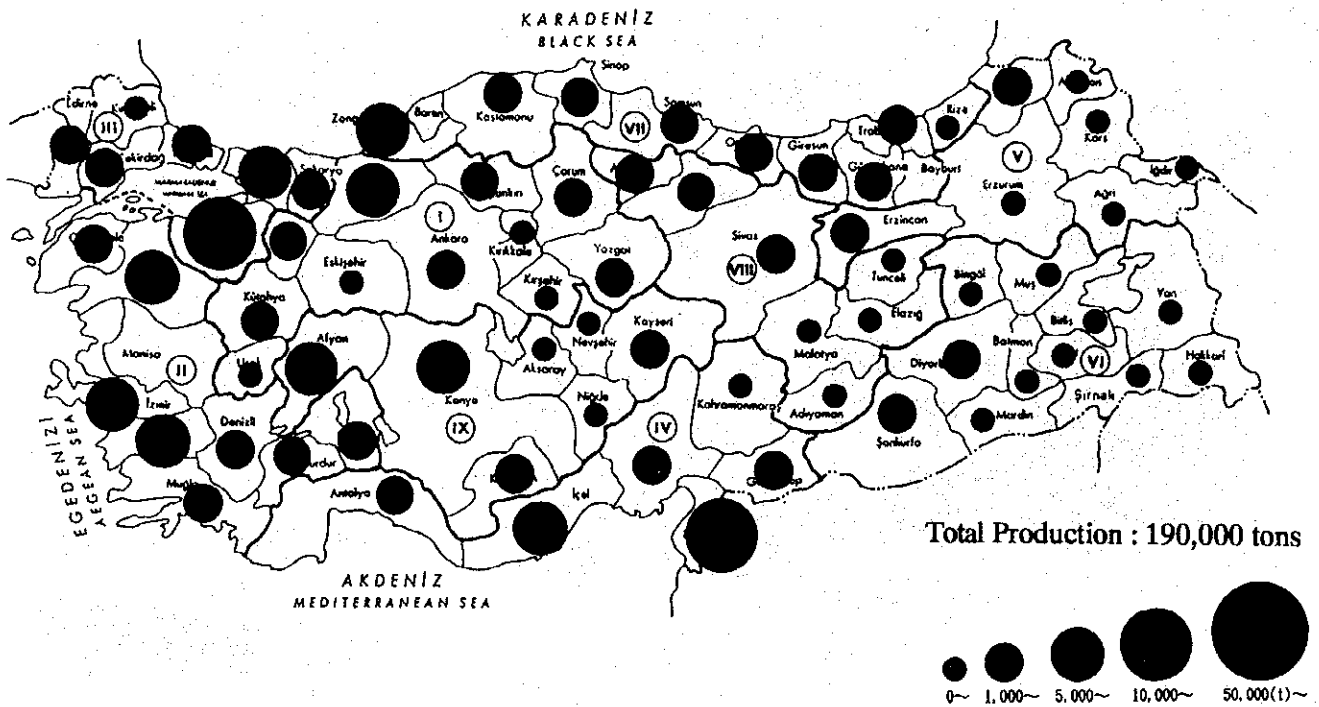


Fig. 1.5 Production of Plum (1992)

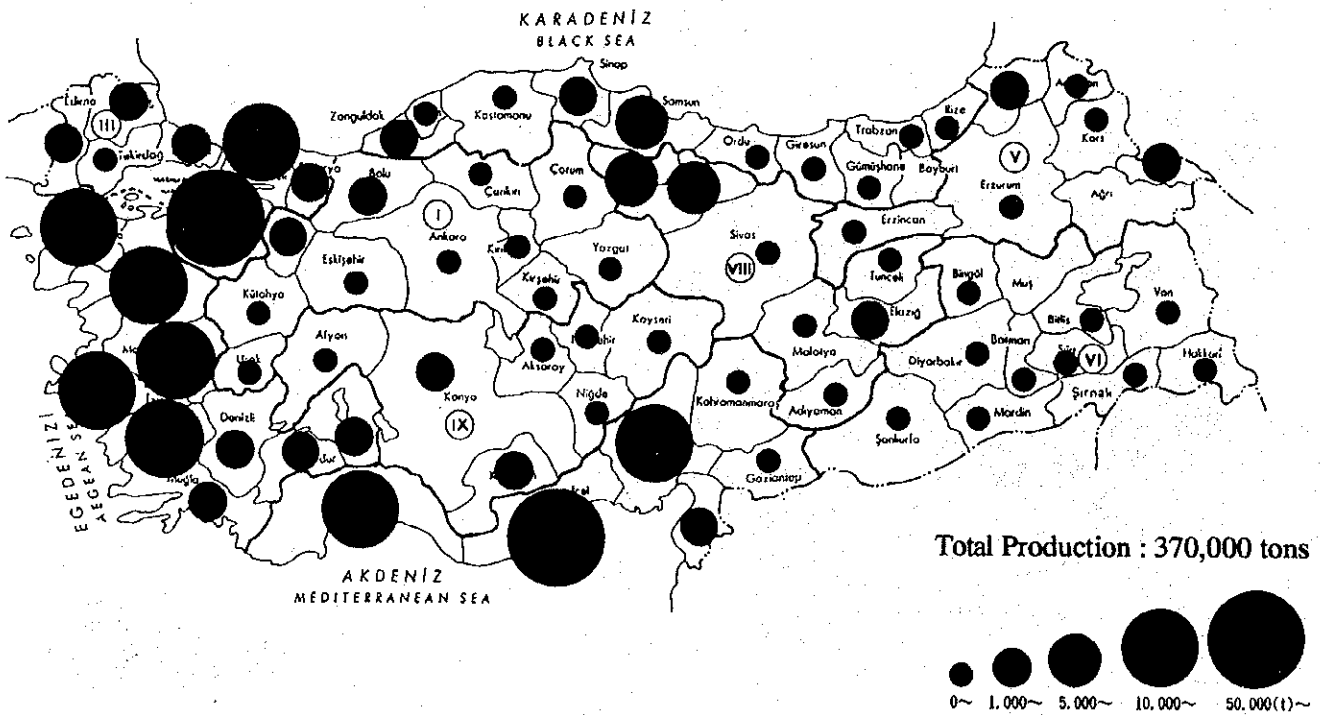


Fig. 1.6 Production of Peach (1992)

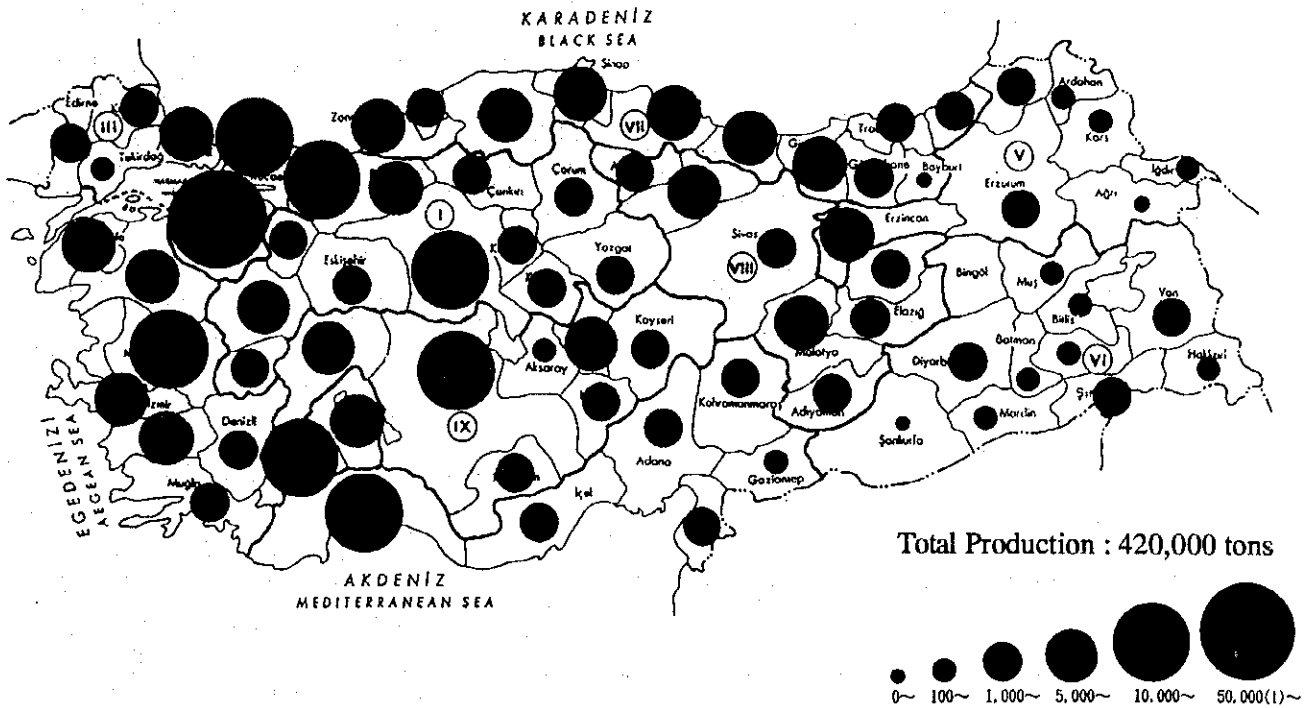


Fig. 1.7 Production of Pears (1992)

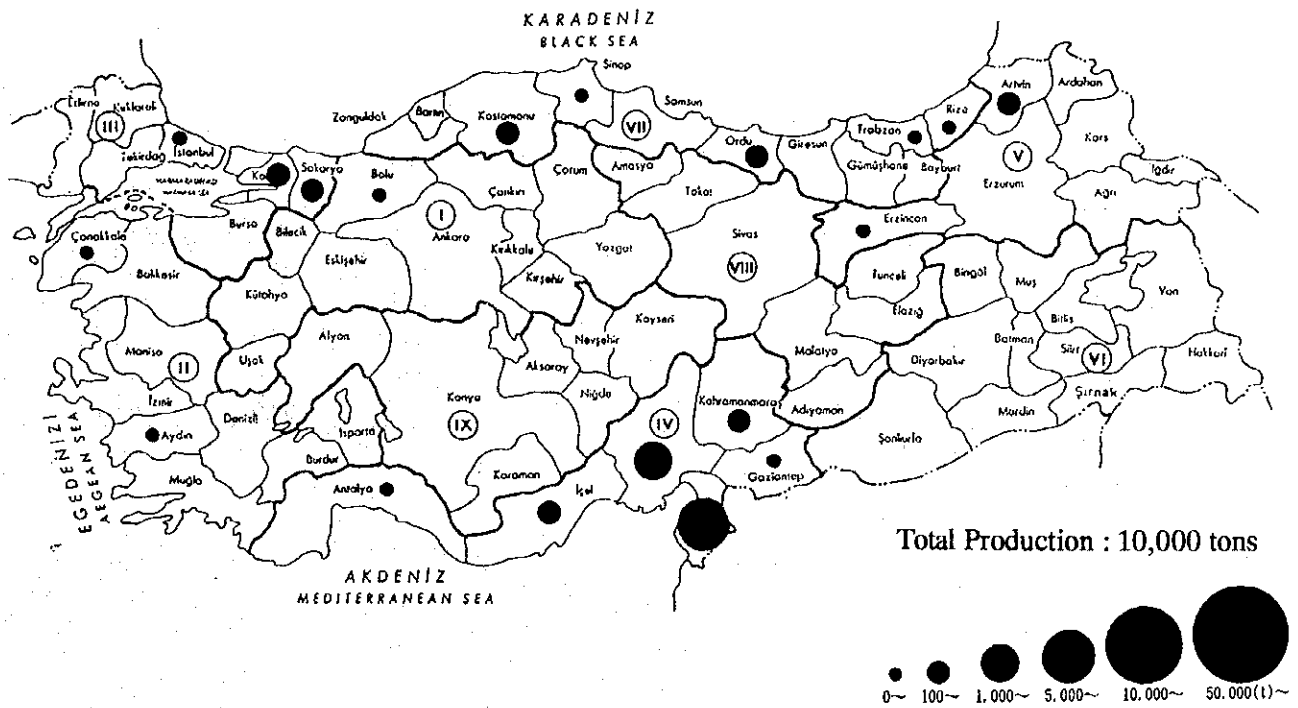


Fig. 1.8 Production of Persimmons (1992)

Table 1.1 GDP by Sectors, 1988 - 1993

	Unit: %					
	1988	1989	1990	1991	1992	1993
Agriculture	17.5	16.6	18.7	16.8	16.5	16.2
Industry	32.4	31.3	30.7	29.5	29.9	30.2
Services	50.1	52.1	50.6	53.7	53.1	53.6
GDP (At Factor Cost)	100.0	100.0	100.0	100.0	100.0	100.0

Source: SPO, Main Economic Indicators.

Remarks: At Current Prices

Table 1.2 Growth in GDP by Sectors, 1988 - 1993

(Percent per Annum at Constant Prices of 1988)

	Unit: %					
	1988	1989	1990	1991	1992	1993
Agriculture	8.0	-10.8	11.6	-0.8	3.5	3.0
Industry	3.1	3.1	9.0	3.2	6.6	6.0
Services	4.1	4.1	6.6	0.8	4.6	4.5
GDP (At Factor Cost)	4.7	0.6	8.2	1.1	4.9	4.7
GNP (At Market Prices)	3.6	1.1	9.2	0.3	5.4	5.0

Source: SPO, Main Economic Indicators.

Table 1.3 Composition of Agricultural Production, 1988 - 1993

(At 1988 Prices)

	Unit: %					
Sectors	1988	1989	1990	1991	1992	1993(*)
Crop Production	57.1	53.5	55.8	56.9	57.0	56.5
Animal Production	31.5	36.4	35.4	34.5	34.3	34.8
Aquaculture	4.5	3.1	2.5	2.4	2.9	3.0
Forest Products	6.9	7.0	6.3	6.2	5.8	5.7
Total	100.0	100.0	100.0	100.0	100.0	100.0

Source: SPO, Yearly Programmes

Remarks: (*) Estimation

Table 1.4 Exports by Main Sectors, 1988 - 1993

Sectors	Unit: Million US\$					
	1988	1989	1990	1991	1992	1993
Agriculture & Livestock	2,341.4	2,125.5	2,347.2	2,682.8	2,203.5	2,365.3
Mining & Quarrying	377.2	412.9	331.5	285.9	264.4	238.5
Industrial Products	8,943.4	9,086.3	10,280.6	10,624.8	12,246.7	12,744.3
Total	11,662.0	11,624.7	12,959.3	13,593.5	14,714.6	15,348.1

Source: Undersecretariat for Treasury and Foreign Trade, Office Records

Table 1.5 Export of Main Agricultural Commodities, 1988-1993

Sectors	Unit: Million US\$					
	1988	1989	1990	1991	1992	1993
Cereals	241.6	83.3	11.2	280	415.5	110.7
Pulses	371	210	292	242	200	184.8
Oil seeds	10.7	7.4	7.4	10	13.3	15.3
Industrial crops	472	686	655	795	414	540.1
Fruit & Vegetables	867	776	1068.2	1046.6	932	1157.9
Seeds	3.3	4.4	3.9	16.2	13.9	3.6
Live Animals	250.8	253.4	201.5	201.6	125.8	281.5
Wool	18.8	15.9	3.8	7.2	2.7	1.8
Other Animals Products	17.2	7.1	8.2	7.6	8.6	5.5
Agricultural Products	51	52	57	49.7	49.9	44.4
Others	38	30	39	26.9	27.8	19.7
Total	2,341.4	2,125.5	2,347.2	2,682.8	2,203.5	2,365.3

Source: Undersecretariat for Treasury and Foreign Trade, Office Records

Table 1.6 Imports by Main Sectors, 1988 - 1993

Sectors	Unit: Million US\$					
	1988	1989	1990	1991	1992	1993
Agriculture & Livestock	499.3	1,041.3	1,318.6	807.7	1,178.5	1,664.0
Mining & Quarrying	2,861.3	2,902.4	3,989.3	2,991.6	3,054.4	3040.8
Industrial Products	10,974.8	11,848.4	16,994.2	17,247.7	17,637.7	24,724.4
Total	14,335.4	15,792.1	22,302.1	21,047.0	21,870.6	29,429.2

Source: Undersecretariat for Treasury and Foreign Trade, Office Records

Table 1.7 Import of Main Agricultural Commodities, 1988-1993

Sectors	Unit: Million US\$					
	1988	1989	1990	1991	1992	1993
Cereals	56.4	570.3	560.6	103.0	155.7	342.7
Industrial crops	81.0	148.0	189.0	182.0	360.0	355.0
Oil seeds	13.6	25.1	32.6	32.1	57.6	72.0
Wool	97.0	83.0	84.4	59.4	74.2	101.6
Leather	78.0	100.0	129.0	116.1	166.0	178.5
Cleaned wood	109.0	64.0	126.0	133.1	145.0	190.0
Seeds	4.0	2.0	13.0	13.6	20.4	40.2
Live Animals	34.3	21.9	109.0	108.0	109.0	95.3
Others	26.0	27.0	75.0	60.4	90.6	288.7
Total	499.3	1,041.3	1,318.6	807.7	1,178.5	1,664.0

Source: Undersecretariat for Treasury and Foreign Trade, Office Records

Table 1.8 Value of Import by Countries, 1987-1992

	Unit: Million US\$					
	1987	1988	1989	1990	1991	1992
OECD	9,031	9,237	9,908	14,225	14,071	15,422
EC	(NA)	(NA)	6,055	9,328	9,222	10,049
West Germany	2,109	2,054	2,205	3,497	3,232	3,754
UK	697	739	728	1,014	1,166	1,187
France	609	829	748	1,340	1,227	1,351
Italy	1,076	1,006	1,070	1,727	1,845	1,919
USA	1,365	1,520	2,088	2,282	2,255	2,600
Japan	860	555	530	1,120	1,092	1,113
Islamic countries	3,152	2,935	2,927	3,854	3,175	3,414
Iraq	115	1,441	1,650	1,047	-	2
Saudi Arabia	168	229	212	724	1,829	1,665
Iran	947	660	233	492	91	365
East Bloc	969	1,102	1,493	2,209	2,026	2,196
Others	1,006	1,061	1,435	2,014	1,775	1,839
	14,158	14,335	15,763	22,302	21,047	22,871

Source: Statistical Yearbook of Turkey, 1993

Table 1.9 Value of Exports by Countries, 1987-1992

	Unit: Million US\$					
	1987	1988	1989	1990	1991	1992
OECD	6,443	6,707	7,184	8,810	8,857	9,346
EC			5,408	6,893	7,042	7,600
West Germany	2,184	2,149	2,177	3,064	3,413	3,660
UK	541	576	612	745	676	796
France	500	499	599	737	689	809
Italy	851	955	978	1,106	972	943
USA	713	761	970	968	913	865
Japan	156	209	233	239	226	162
Islamic Country	3,084	3,530	2,876	2,464	2,666	2,771
Iraq	945	986	446	215	122	212
Saudi Arabia	408	359	365	338	485	486
Iran	440	546	561	495	487	455
East Bloc	334	609	1,029	990	1,152	1,315
Others	328	816	539	696	919	1,282
	10,190	11,662	11,627	12,959	13,593	14,715

Source: Statistical Yearbook of Turkey, 1993

Table 1.10 Distribution of Cultivated and Forest Area

Unit: 1000 HA

Years	Area Cultivated		Vegetable Area	Area of			
	Area Sown	Fallow Land		Vineyard	Fruit Trees	Olive Groves	Forests
1970	15,591	8,705	448	845	1,019	731	18,273
1988	18,995	5,179	612	590	1,531	856	20,199
1989	18,744	5,234	610	597	1,568	857	20,199
1990	19,023	5,324	635	580	1,586	867	20,199
1991	18,754	5,204	652	586	1,560	877	20,199
1992	18,551	5,089	663	576	1,565	871	20,199

Source: Summary of Agricultural Statistics, SIS Turkey, 1992

Table 1.11 Production and Yield of Some Field Crops

Crops	Production (Thousand Tons)						Yield kg/ha (*)
	1988	1989	1990	1991	1992	1993	
Wheat	20,500	16,200	20,000	20,400	19,300	21,000	2,143
Barley	7,500	4,500	7,300	7,800	6,900	7,500	2,152
Maize	2,000	2,000	2,100	2,180	2,225	2,500	4,545
Rice	158	181	139	120	130	135	2,727
Lentils	1,040	520	850	640	600	735	1,030
Chickpeas	778	683	860	855	770	740	902
Dry bean	211	193	210	214	200	200	1,235
Tobacco	657	565	623	537	606	514	925
Cotton (lint)	214	270	296	228	334	324	991
Sugarbeet	11,534	10,929	13,986	15,474	15,126	15,563	33,594
Sunflower	1,150	1,250	860	800	950	815	1,365
Soyabean	150	161	162	110	95	63	2,355
Dry onion	1,350	1,360	1,550	1,600	1,700	1,650	19,186
Potato	4350	4,060	4,300	4,600	4600	4,650	24,218

Source: Summary of Agricultural Statistics, SIS Turkey, 1992 and MARA

Remarks: (*) 1993 figures

Table 1.12 Fruits, Number of Trees and Production 1993

Fruits	Number of Trees			Production (1000 tons)
	Total	Bearing	Non-Bearing	
Pome fruits	56,860	46,942	9,918	2,594
Stone fruits	47,706	38,792	8,914	1,114
Citrus	25,797	22,933	2,864	1,737
Nuts	333,200	287,549	45,651	598
Grape-like fruits	109	15,668	2,365	4,209
Total	463,672	411,884	69,712	10,252

Source: Summary of Agricultural Statistics, SIS Turkey, 1992 and MARA

Table 1.13 Fruit Production and Number of Fruit Trees in Turkey (1992)

Fruits	Number of Trees			Production (Tons)
	Total	Bearing	Non-bearing	
General total	545,948,000	475,217,000	70,731,000	10,981,700
Pome fruits	57,181,000	46,672,000	10,509,000	2,616,000
Pears	14,600,000	11,870,000	2,730,000	420,000
Quinces	3,240,000	2,710,000	530,000	80,000
Apples	38,585,000	31,470,000	7,115,000	2,100,000
Medlar	445,000	391,000	54,000	6,000
Loquats	311,000	231,000	80,000	10,000
Stone fruits	134,096,000	119,455,000	14,641,000	1,965,700
Plums	8,440,000	7,140,000	1,300,000	190,000
Jujube	585,000	490,000	95,000	5,700
Apricots	10,420,000	7,940,000	2,480,000	320,000
Cherries	6,710,000	5,160,000	1,550,000	155,000
Cornel	1,603,000	1,230,000	373,000	14,000
Peaches	11,880,000	10,350,000	1,530,000	370,000
Sour cherries	4,470,000	3,440,000	1,030,000	96,000
Wild apricots	2,900,000	2,445,000	455,000	65,000
Olive	87,088,000	81,260,000	5,828,000	750,000
Citrus	25,754,000	22,595,000	3,159,000	1,674,000
Grape fruit	459,000	340,000	119,000	40,000
Lemons	5,135,000	4,650,000	485,000	420,000
Mandarins	7,950,000	7,150,000	800,000	390,000
Oranges	12,090,000	10,350,000	1,740,000	820,000
Sour oranges	120,000	105,000	15,000	4,000
Nuts	311,355,000	271,314,000	40,041,000	801,000
Pistachios	38,600,000	22,000,000	16,600,000	29,000
Walnuts	4,500,000	3,380,000	1,120,000	120,000
Almonds	4,727,000	3,980,000	747,000	47,000
Hazelnuts	261,000,000	240,000,000	21,000,000	520,000
Chestnuts	2,528,000	1,954,000	574,000	85,000
Grape-likefruits	18,145,067	15,764,067	2,381,000	3,925,000
Strawberries	5,935	5,935	-	50,000
Mullbery	3,410,000	2,780,000	630,000	80,000
Figs	10,704,000	9,580,000	1,124,000	250,000
Carobs	363,000	316,000	47,000	15,000
Bananas	1,132	1,132	-	20,000
Pomegranates	2,685,000	2,200,000	485,000	50,000
Persimmons	400,000	305,000	95,000	10,000
Grapes	576,000	576,000	-	3,450,000

Source: Agriculture Structure and Production, 1992, SIS Turkey

Table 1.14 Production of Vegetables in Turkey (1992)

Vegetables	Area (HA)	Production (tons)
Total Area (hectare)	662,551	
Total Production		17,467,920
Leafy or stem edible vegetables		1,419,638
Dill		268
Cabbages		585,000
Black cabbages		117,000
Artichokes		10,000
Celery		9,000
Leaf lettuce		85,000
Head lettuce		110,000
Parsley		20,000
Mint		2,200
Spinach		153,000
Leeks		310,000
Garden orache		11,500
Rocket		170
Purslane		5,000
Cress		1,500
Leguminous vegetables		583,132
Bean, fresh		452,000
Peas fresh		37,000
Broad beans, fresh		54,000
Calavence		35,000
Kidney bean		5,132
Fruit bearing vegetables		14,864,000
Melon		1,620,000
Water melon		3,680,000
Pumpkins		64,000
Squash		276,000
Cucumber		1,050,000
Eggplant		750,000
Okra		20,000
Tomato		6,450,000
Stuff pepper		380,000
Green pepper		574,000
Root, bulb and tuberous vegetables		531,630
Garlic green		27,000
Onion green		212,000
Carrots		190,000
Horse radish		24,000
Red radish		77,000
Turnip		730
Jerusalem artichokes		900
Other vegetables		69,520
Cauliflowers		69,500
Asparagus		20

Source: Agricultural Structure and Production 1992, SIS Turkey

Remarks: Except for total area, area sown by items is not available.

Table 1.15 Production of Tomatoes (1988-1992)

		Unit:1000 tons				
		1988	1989	1990	1991	1992
1	USA	8,349 (13%)	10,233 (15%)	10,923 (15%)	11,401 (15%)	9,601 (13%)
2	China	5,349 (8%)	5,430 (8%)	5,558 (8%)	8,466 (11%)	8,501 (12%)
3	Turkey	5,250 (8%)	5,750 (8%)	6,000 (8%)	6,200 (8%)	6,450 (9%)
4	USSR	7,300 (11%)	7,230 (11%)	6,800 (9%)	6,704 (9%)	6,205 (9%)
5	Italy	4,568 (7%)	5,730 (8%)	5,469 (7%)	5,798 (8%)	5,472 (8%)
World		64,262	68,827	73,151	75,246	72,362

Source: FAO Production Yearbooks, Vols. 44 , 46 & 47 (1990, 1992 & 1993)

Table 1.16 Production of Melon (1988-1992)

		Unit:1000 tons				
		1988	1989	1990	1991	1992
1	China	2,378 (24%)	2,430 (26%)	2,712 (23%)	3,176 (24%)	3,280 (26%)
2	Turkey	1,950 (20%)	1,500 (16%)	1,650 (14%)	1,880 (14%)	1,620 (13%)
3	Spain	903 (9%)	937 (10%)	947 (8%)	916 (7%)	865 (7%)
4	Iran	1,307 (13%)	440 (5%)	1,247 (10%)	1,049 (8%)	1,100 (9%)
5	USA	730 (7%)	730 (8%)	735 (6%)	921 (7%)	816 (7%)
World		9,862	9,191	11,983	13,064	12,448

Source: FAO Production Yearbooks, Vols. 44 , 46 & 47 (1990, 1992 & 1993)

Table 1.17 Production of Plum (1988-1992)

		Unit:1000 tons				
		1988	1989	1990	1991	1992
1	China	819 (12%)	900 (13%)	875 (15%)	942 (16%)	977 (15%)
2	USSR	1,000 (15%)	1,166 (17%)	1,000 (17%)	800 (14%)	800 (13%)
3	USA	667 (10%)	921 (14%)	799 (13%)	754 (13%)	752 (12%)
4	Yugoslavia	765 (12%)	819 (12%)	499 (8%)	550 (10%)	534 (8%)
5	Germany	413 (6%)	321 (5%)	337 (6%)	233 (4%)	594 (9%)
8	Turkey	175 (3%)	176 (3%)	188 (3%)	186 (3%)	190 (3%)
World		6,584	6,750	5,976	5,744	6,380

Source: FAO Production Yearbooks, Vols. 44 , 46 & 47 (1990, 1992 & 1993)

Table 1.18 Production of Peaches/nectarines (1988-1992)

		Unit:1000 tons				
		1988	1989	1990	1991	1992
1	Italy	1,442 (17%)	1,612 (18%)	1,720 (19%)	1,405 (16%)	1,886 (18%)
2	USA	1,292 (15%)	1,183 (13%)	1,224 (14%)	1,413 (16%)	1,420 (14%)
3	Greece	648 (8%)	641 (7%)	787 (9%)	835 (9%)	1,097 (11%)
4	Spain	649 (8%)	766 (9%)	629 (7%)	728 (8%)	1,024 (10%)
5	China	641 (8%)	774 (9%)	789 (9%)	809 (9%)	932 (9%)
8	Turkey	328 (4%)	317 (4%)	350 (4%)	350 (4%)	370 (4%)
World		8,344	8,838	8,892	8,811	10,326

Source: FAO Production Yearbooks, Vols. 44 , 46 & 47 (1990, 1992 & 1993)

Table 1.19 Production of Pears (1988-1992)

		Unit:1000 tons				
		1988	1989	1990	1991	1992
1	China	2,813 (27%)	2,702 (27%)	2,484 (26%)	2,625 (29%)	2,944 (27%)
2	Italy	997 (10%)	755 (8%)	968 (10%)	706 (8%)	1,138 (10%)
3	USA	781 (8%)	831 (8%)	874 (9%)	820 (9%)	840 (8%)
4	Spain	457 (4%)	548 (6%)	449 (5%)	387 (4%)	653 (6%)
5	Germany	413 (4%)	321 (3%)	380 (4%)	225 (3%)	547 (5%)
8	Turkey	410 (4%)	430 (4%)	413 (4%)	403 (5%)	420 (4%)
World		10,230	9,885	9,501	8,952	10,851

Source: FAO Production Yearbooks, Vols. 44 , 46 & 47 (1990, 1992 & 1993)

Table 1.20 List of Firms and Type of Seed Produced

TOHUM TÜRÜ TYPE OF SEED																													
	ALTA	ANADOLU İMFA	ANADOLU TOHUM	ANT-TOHUM	AR	BENİKET	BETA	CARILLI	CELA-GEBY	CAGDAR	DAKO	DONELANCO	GÖMEC	GÜNEŞ	MAY	PAN	PETOSERD	PIONEER	PTO	SANDOZ	SAPKER-ŞA	SEPA	SETO	SIGMA	TARİKS	TAT	TEKFEK	TÜRK-İKOCİKT	ULUSOY
ARPA Barley		•																											
BÜĞDAY Wheat						•	•				•					•		•			•				•			•	
MERKEZ Maize						•	•	•	•		•			•	•	•		•			•	•			•	•		•	
AYÇİÇEĞİ Sunflower						•	•	•	•		•			•	•	•		•			•			•	•			•	
KOLZA Rapeseed																													
PAMUK Cotton							•																						
PATATES Potatoes						•							•			•										•		•	
BOYA Soybeans											•				•			•			•	•			•	•		•	
Ş. PANCARI Sugar Beets														•		•					•						•		
ŞERB. OTU Common Hop		•																											
BİBER Pepper		•	•																		•			•		•		•	
FABULYE Bean		•	•																							•		•	
DOMATES Tomato		•	•									•									•			•		•		•	
HAVUÇ Carrot				•								•														•		•	
KABAK Squash				•								•														•		•	
KARPUZ Watermelon				•								•									•	•				•		•	
PATLIDAN Eggplant		•	•									•									•					•		•	
SALATALIK Cucumber		•	•									•									•	•				•		•	
SOĞAN Onion		•	•													•					•				•		•		
BORÇUM Grain Sorghum										•											•			•					
BUDAN OTU Sudan Grass															•						•								
YONCA Alfalfa																•					•				•				
DİĞER Others							•									•										•			•
ÇİÇEK Flowers																					•								
ÇİM Amenity Grass														•															•

Table 1.21 Trend of Domestic Seed Production (1989-1993)

	Unit: Tons					
	1988	1989	1990	1991	1992	1993
1 Wheat	286,139	231,816	131,753	125,058	150,678	113,944
2 Barley	59,572	26,082	15,747	10,768	16,406	11,508
3 Rice	144	635	41	86	300	527
4 Chickpeas	235	235	200	206	158	84
5 Lentils	2,168	102	100	100	1,878	20
6 Dry beans	10	38	55	38	24	45
7 Maize	1,756	4,490	4,665	8,060	7,376	6,532
8 Hib. Sunflower	1,887	3,676	2,657	1,891	3,509	2,278
9 Vib. Sunflower	826	1,320	1,044	245	193	170
10 Soyabeans	3,031	3,167	3,843	4,537	3,819	3,006
11 Groundnuts	13	16	113	220	186	21
12 Sesame	24	12	17	20	18	24
13 Potatoes	35,317	4,655	5,069	8,340	7,193	13,401
14 Kanola	55	60	-	-	-	-
15 Cotton	27,283	27,847	31,710	27,578	28,997	31,523
16 SEBZE (Vegetables)	726	438	635	640	750	940
17 Alfalfa	632	322	535	685	391	372
18 Korunga	1,451	1,235	535	156	272	211
19 Cow vetches	554	488	476	607	929	716
20 Sudangrass	96	15	77	28	59	37
21 Sorghum	33	44	248	68	363	44
22 Yemlik Pancar	56	-	11	57	32	47
23 Repok	31	-	-	-	-	-

Source: Directorate of Agriculture Production & Control, MARA

Table 1.22 Trend of Seed Import (1989-1993)

	Unit: Tons					
	1988	1989	1990	1991	1992	1993
1 Wheat	4,068	36,189	180	5,227	2,795	2,230
2 Barley	-	4,840	60	60	39	5
3 Maize	-	-	17	136	-	646
4 Rice	-	1,503	100	-	246	17
5 Sunflower	955	608	53	95	-	-
6 Potatoes	3,805	3,485	6,668	11,205	4,292	3,175
7 Canola	-	20	20	-	-	-
8 Soyabean	3,962	2,754	2,338	2,256	-	-
9 Cotton	-	-	1,500	-	27	130
10 SEBZE (Vegetables)	180	200	235	160	200	225
11 Alfalfa	16	-	30	20	-	193
12 Cowvetches	-	-	-	300	-	-
13 Sorghum	3	-	23	55	115	159

Source: Directorate of Agriculture Production & Control, MARA

Table 1.23 Trend of Seed Export (1989-1993)

	Unit: Tons					
	1988	1989	1990	1991	1992	1993
1 Wheat	-	35	5,030	1,005	750	651
2 Barley	-	-	-	-	53	-
3 Chickpeas	-	-	200	-	-	-
4 Maize	1,374	784	697	2,107	2,063	1,528
5 Sunflower	-	-	194	695	2,600	1,700
6 SEBZE (Vegetables)	165	120	128	80	140	140
7 Alfalfa	7	104	245	238	65	30
8 Sorghum	110	-	100	140	30	-

Source: Directorate of Agriculture Production & Control, MARA

Table 1.24 Import of Vegetable Seeds by Types (1993)

	Unit: Kgs		
	Standard	Hybrid	Total
1 Tomatoes	13,952	2,966	16,918
2 Lettuce	1,512	223	1,735
3 Radish	550	0	550
4 Watermelon	68,962	5,740	74,702
5 Melon	2,762	1,136	3,898
6 Beans	146,310	0	146,310
7 Carrot	14,998	7,950	22,948
8 Cucumber	5,417	31,383	36,800
9 Spinach	11,000	10,300	21,300
10 Cabbage	683	50	733
11 Beets	1,370	0	1,370
12 Pumpkin	580	18,175	18,755
13 Cauliflower	1,628	135	1,763
14 Celery	100	0	100
15 Cabbage	755	0	755
16 Parsley	1,450	0	1,450
17 Eggplants	60	588	648
18 Leeks	140	0	140
19 Rocket	1,000	0	1,000
20 Sogan	26,583	2,650	29,233
21 Others	285,586	52	285,638
Total	585,398	81,348	666,746

Source: Directorate of Agriculture Production & Control, MARA

Table 1.25 Import of Vegetable Seeds by Firms (1993)

Firms	Tomato		Watermelons		Melons		Lettuce		Radish		Others		Total		TOTAL SEEDS	
	Standard	Hybrid	Standard	Hybrid	Standard	Hybrid	Standard	Hybrid	Standard	Hybrid	Standard	Hybrid	Standard	Hybrid		
	Unit: kg															
1 ACUN													257	0	257	0
2 AKFA	315	150					350						315	150	465	
3 ALIIN		2	1,200				200		220				3,860	1,832	5,692	
4 ANADOLU		158	650		200	460	200						2,007	6,857	8,864	
5 ANT	420	240	9,000	3,500	155		150						11,115	21,877	32,992	
6 BATAS													10,500	0	10,500	
7 BETA	3,872	10	100	40									5,482	3,800	9,282	
8 BURSA		422	4,010		250	150	500						23,450	608	24,058	
9 CAGDAS		7	3,000		1,500	50							10,780	3,432	14,212	
10 EKIN			1,100										5,222	107	5,329	
11 ENEZ	250												250	0	250	
12 ERDISTAS	375		3,000				20						3,375	300	3,675	
13 GOLDENWEST		17			10				10				20	117	137	
14 GULISTAN	100		4,017										4,217	200	4,417	
15 GUNES		106											33	106	139	
16 ISTANBUL	250		500		500		12		215				15,167	310	15,477	
17 MARMARA	75		1,100		50		100						1,675	175	1,850	
18 MAY	289		11,000	924	97		10						116,155	9,411	125,566	
19 MERKO	45												0	45	45	
20 MESTAS	4,200	100											4,200	100	4,300	
21 OZTUSAN	1,835	40											71,835	40	71,875	
22 PETOSEED		61											0	133	133	
23 PIONEER	17		6,000										12,996	1,017	14,013	
24 SANDOZ	628	680	9,000	130	50		90	25					178,588	18,370	196,958	
25 SAPEKSA			6,330	205					105				6,441	4,429	10,870	
26 SERA	450				300		65						700	2,600	3,300	
27 SEITO	19		1,100		5								1,635	1,210	2,845	
28 SU TARIM								48					48	698	746	
29 SULTANKOY	1,432	102	1,200				10						2,642	432	3,074	
30 TAMEK													5,800	0	5,800	
31 TAT		10	1,500										45,200	10	45,210	
32 TEKFEN	200	38	2,755				5	150					2,960	219	3,179	
33 TURK HOECHST		3	3,500	950									0	953	953	
34 Others	13,952	2,966	68,962	5,749	2,762	1,136	1,512	223	550	0	497,660	71,274	585,398	81,348	666,746	

Source: Directorate of Agriculture Production and Control, MARA

Table 1.26 Export of Vegetable Seeds by Firms (1993)

Firms	Unit: Kgs		
	Standard	Hybrid	Total
1 AKFA	13,589		13,589
2 ANADOLU	1,650		1,650
3 ANT		300	300
4 BETA	15,648	49	15,697
5 BLAR		20	20
6 BURSA			
7 CAGDAS	1,500		1,500
8 DOW ELANCO	650		650
9 SARIOGLU	33,625		33,625
10 HAKAN	90		90
11 MAY	25,191		25,191
12 PETOSEED	2,741		2,741
13 SANDOZ	1,910		1,910
14 SAPEKSA	20,105		20,105
15 SETO	220	55	275
16 SULTANKOY	6,115		6,115
17 TAT	6,497	45	6,542
18 TURK HOECHST	343	31	374
	129,874	500	130,374

Source: Directorate of Agriculture Production & Control, MARA

Table 1.27 Production Cost of Some Seeds

Seeds	Type	Unit Price	Unit
Tomato	(Standard)	75-100	US\$/kg
	(Hybrid)	8000-9000	US\$/kg
Melon	(Standard)	20-30	US\$/kg
	(Hybrid)	300	US\$/kg
Broccoli	(Standard)	20	US\$/kg
Kiwi	(Hybrid)	5	Cents/seed

Table 1.28 Production Cost of Broccoli Seed

Items	Unit: TL	
	Cost	
Parent seed	700,000	
Labour cost	20,000,000	
Fertiliser	3,600,000	
Chemical applications	2,000,000	
Field inspection & certification	1,500,000	
Total production cost	27,800,000	

Remarks:

- 1) Overhead, administrative and general expense are not included.
- 2) Approximate parent seed rate 40g/0.1 ha
- 3) Approximate yield rate 100 kg/0.1 ha

Source: SAPEKSA

2. Production of Fruit and Vegetables in the Mediterranean Region

(トルコ地中海地域における野菜・果実の生産状況)

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2. Production of Fruit and Vegetables in the Mediterranean Region (トルコ地中海地域における野菜・果実の生産状況)

The Mediterranean zone (Adana, Antalya, Gaziantep, Hatay, Icel (Mersin) and Kahramanmaras) which is designated as IV Agricultural Zone, produced about 2.8 million tons of fruits in 1992 which was 25.5 percent of Turkey's production (table 2.1) The production of vegetables was about 4.5 million tons in 1992 which was 26.2 percent of the nation's production (table 2.2).

In Cukurova area which is the Mediterranean zone, fresh fruits and vegetables are intensively produced. About 13.3 percent of the production of major fresh fruit and vegetables, which have the largest shares in production and export (1985-87), are realized in this region as shown in table 2.3. This share is 16 percent for peach, 20 percent for water melon, 12 percent for tomato. In general, fresh fruit & vegetables are produced for the market. Out-of-season and green-house production are also intense in the region. That is why the importance of the region regarding the production of fresh fruit & vegetables has been emphasized. However it is not quite possible to provide a correct figure of the share of the Cukurova Region in the total export of fresh fruit & vegetables, although all the exporters have been registered in the Mediterranean Exporters Union since the actual figures are mostly different from the ones declared to the union. Customs is supposed to be the right organization to get the reliable figures, whereas there are also products coming from other regions to be exported via the region.

The production of fruit and vegetables in 1992 in the Adana, Antalya, Gaziantep, Hatay, Icel (Mersin) and Kahramanmaras are summarized below.

Category of Fruit and Vegetables	Adana	Antalya	Gaziantep	Hatay	Icel (Mersin)	Unit: tons
						Kahramanmaras
Vegetables (total)	1,482,052	1,325,596	219,870	646,414	772,956	127,601
(1) Leafy/stem edible	83,495	5,128	4,402	60,825	59,392	13,134
(2) Leguminous	10,627	33,719	838	37,424	30,935	1,944
(3) Fruit bearing	1,328,070	1,284,235	185,696	511,378	667,975	104,997
(4) Root, bulb, tuberous	56,785	2,110	6,084	33,807	5,993	7,526
(5) Others	3,075	404	-	2,980	8,661	-
Fruits (total)	469,988	568,644	315,456	343,546	954,067	152,317
(1) Pome fruits	11,909	176,353	1,223	5,614	53,570	25,149
(2) Stone fruits	36,144	40,106	13,786	70,719	143,883	14,093
(3) Citrus	381,551	310,788	-	208,539	30,579	-
(4) Nuts	1,272	5,445	5,999	1,934	6,361	6,460
(5) Grape-like fruits	39,112	35,952	294,448	56,740	182,191	106,615

The details of the production of fruit and vegetables are shown in tables 2.4 and 2.5, respectively.

Table 2.1 Fruit Production in the Mediterranean Region (1992)

Fruits	Number of Trees			Production (Tons)
	Total	Bearing	Non-bearing	
General Total	63,078,435	50,971,291	12,107,144	2,804,018
Pome fruits	5,922,383	4,944,129	978,254	273,818
Pears	1,207,166	952,532	254,634	41,556
Quinces	217,791	192,570	25,221	6,191
Apples	4,206,561	3,585,812	620,749	216,348
Loquats	290,865	213,215	77,650	9,723
Stone fruits	18,250,255	16,212,327	2,037,928	318,731
Plums	1,336,920	1,118,888	218,032	35,496
Jujube	8,050	8,050	-	80
Apricots	1,136,711	851,886	284,825	54,075
Cherries	397,455	269,248	128,207	7,182
Cornel	87,200	82,550	4,650	916
Peaches	2,812,031	2,496,231	315,800	104,131
Sour cherries	128,679	103,125	25,554	2,055
Wild apricots	138,520	106,825	31,675	2,489
Olive	12,204,689	11,175,504	1,029,185	112,307
Citrus	19,307,110	16,998,382	2,308,728	1,468,940
Grape fruit	439,005	321,910	117,095	38,868
Lemons	4,818,424	4,403,692	414,732	412,190
Mandarins	3,568,948	3,112,295	456,653	246,378
Oranges	10,375,451	9,069,035	1,306,416	767,871
Sour oranges	105,282	91,450	13,832	3,633
Nuts	16,690,918	10,366,228	6,324,690	27,471
Pistachios	15,619,078	9,526,845	6,092,233	7,160
Walnuts	453,583	321,841	131,742	10,106
Almonds	608,657	509,392	99,265	10,065
Hazelnuts	8,900	7,450	1,450	61
Chestnuts	700	700	NA	58
Grape-like Fruits	2,907,769	2,450,225	457,544	715,058
Strawberries	954	954	-	13,366
Mullberry	259,670	220,255	39,415	4,020
Figs	1,052,693	948,548	104,145	27,665
Carobs	328,343	285,150	43,193	14,552
Bananas	1,132	1,132	-	20,000
Pomegranates	939,659	751,860	187,799	17,833
Persimmons	327,404	244,412	8,182,992	7,944
Grapes	108,050	108,050	-	609,678

Source: Agricultural Structure and Production 1992, SIS Turkey

Table 2.2 Production of Vegetables in the Mediterranean Region (1992)

Vegetables	Area (HA)	Production (tons)
Total Area (hectare)	152,574	
Total Production		4,574,489
Leafy or stem edible vegetables		226,376
Dill		12
Cabbages		60,299
Black cabbages		1,100
Artichokes		48
Celery		199
Leaf lettuce		18,897
Head lettuce		59,164
Parsley		9,040
Mint		1,779
Spinach		22,316
Leeks		42,453
Garden orache		10,305
Rocket		-
Purslane		411
Cress		353
Leguminous vegetables		115,487
Bean, fresh		76,742
Peas fresh		13,735
Broad beans, fresh		23,607
Calavence		993
Kidney bean		410
Fruit bearing vegetables		4,082,351
Melon		140,194
Water melon		1,367,937
Pumpkins		845
Squash		136,034
Cucumber		427,398
Eggplant		248,987
Okra		3,082
Tomato		1,485,355
Stuff pepper		88,515
Green pepper		184,004
Root, bulb and tuberous vegetables		135,155
Garlic green		10,452
Onion green		49,052
Carrots		8,233
Horse radish		528
Red radish		66,760
Turnip		130
Jerusalem artichokes		-
Other vegetables		15,120
Cauliflowers		15,120
Asparagus		-

Source: Agricultural Structure and Production 1992, SIS Turkey

Remarks: Except for total area, area sown by items is not available.

Table 2.3 Production of Fruit and Vegetables in Cukurova Area (1985-87)

Product	Turkey	Cukurova Share of Cukurova	
	(tons)	(tons)	(%)
Orange	652,000	406,000	62.0
Clementin	276,000	135,000	49.0
Lemon	280,000	252,000	90.0
Daffodil	27,000	25,000	94.0
Grape	3,200,000	211,000	6.6
Strawberry	36,000	15,000	43.0
Peach	237,000	4,000	16.0
Apricot	227,000	17,000	7.3
Cherry	210,000	3,000	2.4
Plum	157,000	13,000	8.6
Pomegranate	37,000	8,000	22.0
Quinces	71,000	2,000	3.1
Pears	374,000	4,000	1.2
Apples	1,815,000	46,000	2.5
Potatoes	4,133,000	67,000	1.6
Dry onions	2,290,000	92,000	7.1
Dry garlic	68,000	3,000	3.7
Eggplant	713,000	453,000	64.0
Pepper	738,000	116,000	16.0
Tomatoes	4,967,000	600,000	12.0
Cucumber	767,000	159,000	20.4
Melon	2,002,000	6,000	3.2
Watermelons	3,281,000	665,000	20.2
Total	26,558,000	3,302,000	12.4

Source: Agricultural Statistics, Various Years, SIS Turkey

Table 2.4 Production of Fruit in the Mediterranean Region (1992)
(Adana, Antalya, Gaziantep, Hatay, Icel and Kahramanmaras)

	Adana	Antalya	Gaziantep	Hatay	Icel (Mersin)	Kahraman- maras	TOTAL
	Unit: Tons						
General Total	469,988	568,644	315,456	343,546	954,067	152,317	2,804,018
Pome fruits	11,909	176,353	1,223	5,614	53,570	25,149	273,818
Pears	2,038	31,967	265	1,544	4,010	1,732	41,556
Quinces	151	4,554	14	224	1,033	215	6,191
Apples	9,023	133,875	944	3,317	45,987	23,202	216,348
Medlar	-	-	-	-	-	-	0
Loquats	697	5,957	-	529	2,540	-	9,723
Stone fruits	36,144	40,106	13,786	70,719	143,883	14,093	318,731
Plums	3,680	3,885	1,662	19,448	6,537	284	35,496
Jujube	6	74	-	-	-	-	80
Apricots	748	1,798	1,939	6,263	35,202	8,125	54,075
Cherries	1,724	2,071	339	352	1,286	1,410	7,182
Cornel	331	252	-	-	185	148	916
Peaches	17,966	12,184	587	2,510	70,058	826	104,131
Sour cherries	399	651	211	32	8	754	2,055
Wild apricots	423	17	1,087	816	28	118	2,489
Olive	10,867	19,174	7,961	41,298	30,579	2,428	112,307
Citrus	381,551	310,788	0	208,539	568,062	0	1,468,940
Grape fruit	16,634	2,043	-	9,590	10,601	-	38,868
Lemons	51,728	33,622	-	11,766	315,074	-	412,190
Mandarins	93,406	18,323	-	55,270	79,379	-	246,378
Oranges	216,639	256,650	-	131,636	162,946	-	767,871
Sour oranges	3,144	150	-	277	62	-	3,633
Nuts	1,272	5,445	5,999	1,934	6,361	6,460	27,471
Pistachios	22	26	4,223	12	126	2,751	7,160
Walnuts	1,048	1,923	1,676	1,358	737	3,364	10,106
Almonds	202	3,399	100	564	5,498	323	10,086
Hazelnuts	-	39	-	-	-	22	61
Chestnuts	-	58	-	-	-	-	58
Grape-like Fruits	39,112	35,952	294,448	56,740	182,191	106,615	715,058
Strawberries	145	1,524	11	1	11,685	-	13,366
Mullberry	613	324	627	323	893	1,240	4,020
Figs	4,824	2,908	4,296	9,547	4963	1,127	27,665
Carobs	227	4,602	-	-	9723	-	14,552
Bananas	-	11,199	-	-	8,801	-	20,000
Pomegranates	2,115	1,485	2,266	4,752	7,073	142	17,833
Persimmons	1,141	39	8	5,763	745	248	7,944
Grapes	30,047	13,871	287,240	36,354	138,308	103,858	609,678

Source: Agricultural Structure and Production 1992, SIS Turkey

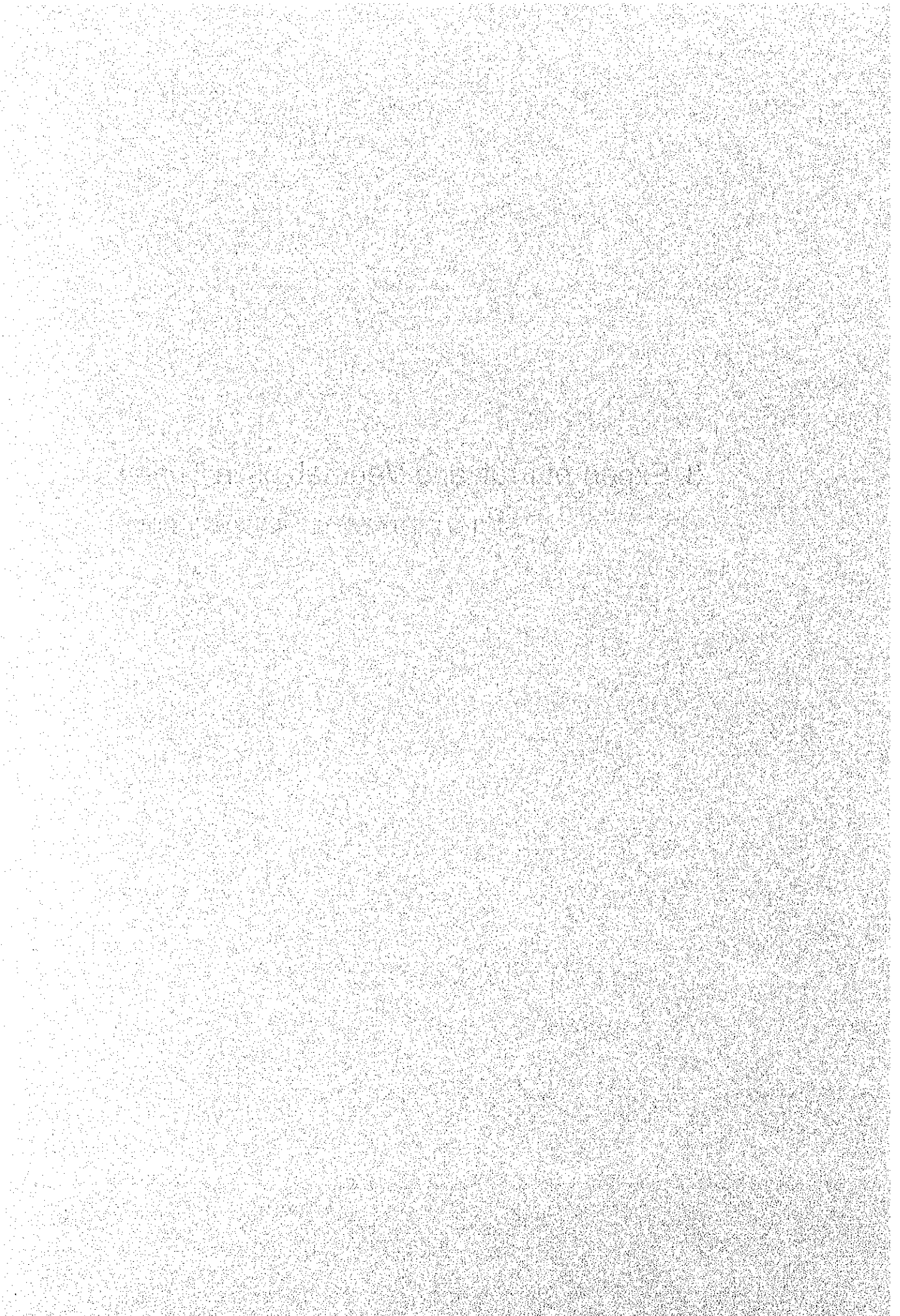
Table 2.5 Production of Vegetables in the Mediterranean Region (1992)
(Adana, Antalya, Gaziantep, Hatay, Icel and Kahramanmaras)

	Adana	Antalya	Gaziantep	Hatay	Icel (Mersin)	Kahraman- maras	TOTAL
Total Area (hectare)	49,615	29,003	12,725	26,690	29,896	4,645	152,574
Total Production (tons)	1,482,052	1,325,596	219,870	646,414	772,956	127,601	4,574,489
Leafy or stem edible vegetables	83,495	5,128	4,402	60,825	59,392	13,134	226,376
Dill	-	12	-	-	-	-	12
Cabbages	34,080	1,566	60	9,445	5,302	9,846	60,299
Black cabbages	150	-	-	950	-	-	1,100
Artichokes	-	48	-	-	-	-	48
Celery	-	199	-	-	-	-	199
Leaf lettuce	1,000	60	-	-	17,487	350	18,897
Head lettuce	22,085	1,327	2,220	18,105	13,038	2,389	59,164
Parsley	150	132	364	6,738	1,506	150	9,040
Mint	35	2	1,009	133	501	99	1,779
Spinach	6,698	710	668	9,130	5,110	-	22,316
Leeks	18,855	980	-	6,340	16,248	30	42,453
Garden orache	-	-	21	9,874	200	210	10,305
Rocket	-	-	-	-	-	-	0
Purslane	411	-	-	-	-	-	411
Cress	31	92	60	110	-	60	353
Leguminous vegetables	10,627	33,719	838	37,424	30,935	1,944	115,487
Bean, fresh	3,256	26,473	814	27,932	16,408	1,859	76,742
Peas fresh	2,923	2,092	-	2,791	5,929	-	13,735
Broad beans, fresh	3,908	5,154	24	6,311	8,205	5	23,607
Calavence	520	-	-	-	393	80	993
Kidney bean	20	-	-	390	-	-	410
Fruit bearing vegetables	1,328,070	1,284,235	185,696	511,378	667,975	104,997	4,082,351
Melon	26,693	39,466	37,969	31,454	2,052	2,560	140,194
Water melon	1,142,637	96,603	50,421	6,336	56,779	15,161	1,367,937
Pumpkins	29	13	352	162	93	196	845
Squash	23,142	47,864	1,046	37,369	23,476	3,137	136,034
Cucumber	30,725	244,033	14,285	49,952	83,133	5,270	427,398
Eggplant	47,632	81,600	18,971	53,764	43,681	3,339	248,987
Okra	741	432	315	319	1,261	14	3,082
Tomato	36,495	672,863	45,740	266,611	390,975	72,671	1,485,355
Stuff pepper	2,873	21,823	15,426	18,965	66,525	1,359	126,971
Green pepper	17,103	79,538	1,171	46,446	-	1,290	145,548
Root, bulb & tuberous vegetable	56,785	2,110	28,934	33,807	5,993	7,526	135,155
Garlic green	350	178	6,084	2,932	492	416	10,452
Onion green	3,945	1,151	12,900	22,684	4,412	3,960	49,052
Carrots	300	600	3,670	1,565	48	2,050	8,233
Horse radish	-	23	-	-	415	90	528
Red radish	52,190	158	6,280	6,626	626	880	66,760
Turnip	-	-	-	-	-	130	130
Jerusalem artichokes	-	-	-	-	-	-	0
Other vegetables	3,075	404	0	2,980	8,661	0	15,120
Cauliflowers	3,075	404	-	2,980	8,661	-	15,120
Asparagus	-	-	-	-	-	-	0

Source: Agricultural Structure and Production 1992, SIS Turkey

3. Export of Fruit and Vegetables in Turkey

(トルコにおける野菜・果実の輸出動向)



3. Export of Fruit and Vegetables From Turkey (トルコにおける野菜・果実の輸出動向)

The export trend of some selected fruit and vegetables from 1986 to 1993 is shown in table 3.1. The export of fresh fruit and vegetables has rapidly developed in the recent years. The overall quantity of fresh fruit and vegetables increased from 703,323 tons in 1986 to 894,926 tons in 1993, and in terms of value it increased twice from \$152.8 million in 1986 to \$316.7 million in 1993. Frozen and canned products increased from 13,781 tons (\$11.76 million) in 1986 to 46,338 tons (\$47.79 million) in 1993.

The distribution trend of export of fresh fruit and vegetables by destination from 1989 to 1993 is shown in table 3.2. Saudi Arabia, Germany, Iraq, Kuwait and other neighbouring countries are some of the major export destination of Turkish fruit and vegetables. The total export in 1989 was about 773,659 tons amounting to \$220.85 million and 894,926 tons amounting to \$316.73 million in 1993.

The export trends by destination of some selected agricultural produce, namely fresh tomatoes, pears, peach, plum, kiwi, lettuce, radish, water melons and melons, are summarized in tables 3.3.

Table 3.1 Export of Some Selected Fresh Fruit and Vegetables (1986-1993)

	1986		1987		1988		1989		1990	
	Qty	Value	Qty	Value	Qty	Value	Qty	Value	Qty	Value
Tomato	165,749	33,285	171,387	29,806	148,548	24,326	78,446	12,702	33,586	12,557
Vegetables (total)	389,969	65,308	391,012	65,970	421,028	69,881	327,955	65,551	210,836	71,369
Pears	4,304	1,531	1,839	886	3,266	978	4,467	1,159	2,518	965
Fruits (total)	313,354	87,500	344,553	88,658	447,234	124,115	425,382	148,547	526,289	208,878
Sub-total (veg + fruit)	703,323	152,808	735,565	154,628	868,262	193,996	753,337	214,098	737,125	280,247
Frozen fruit	5,295	4,055	7,149	7,020	8,506	7,842	11,329	10,631	15,603	17,787
Canned fruits	16	4	8	6	124	153	147	225	154	287
Frozen veg.	6,449	2,998	12,219	7,187	26,156	15,033	28,572	15,142	21,873	19,392
Canned veg.	1,281	879	5,931	3,962	1,601	27,087	1,826	2,224	2,905	4,554
Dried veg.	740	3,824	1,158	8,597	1,046	5,466	1,421	6,248	1,069	7,693
Sub-total	13,781	11,760	26,465	26,772	37,433	55,581	43,295	34,470	41,604	49,713
TOTAL	717,104	164,568	762,030	181,400	905,695	249,577	839,927	283,038	820,333	379,673

	1991		1992		1993	
	Qty	Value	Qty	Value	Qty	Value
Tomato	106,650	29,279	45,064	12,429	77,226	33,903
Vegetables (total)	595,410	149,320	678,902	128,353	487,452	138,151
Pears	3,348	1,951	3,484	1,532	3,925	1,881
Fruits (total)	491,360	206,951	437,442	164,430	407,474	178,582
Sub-total (veg + fruit)	1,086,770	356,271	1,116,344	292,783	894,926	316,733
Frozen fruit	18,658	21,241	13,420	16,735	17,153	18,027
Canned fruits	3,546	4,272	961	886	1,443	1,600
Frozen veg.	23,099	19,122	15,071	11,043	21,859	12,389
Canned veg.	2,485	4,165	4,594	5,789	3,405	4,784
Dried veg.	1,512	12,571	2,261	11,978	2,478	10,994
Sub-total	49,300	61,371	36,307	46,431	46,338	47,794
TOTAL	1,185,370	479,013	1,188,958	385,645	987,602	412,321

Remarks: Quantity in tons and Value in 1000 US\$.

Source: Sub-Dept. of Fresh Fruit & Vegetables, Dept. of Agriculture and Husbandry, SPO.

Table 3.2 Distribution of Export of Fresh Fruit and Vegetables (1989-1993)

Country	1989		1990		1991		1992		1993	
	Qty	Value	Qty	Value	Qty	Value	Qty	Value	Qty	Value
Saudi Arabia	138,199	21,318	146,280	37,478	282,085	69,173	123,700	37,725	252,860	81,588
Germany	68,735	36,672	104,205	59,401	122,258	71,942	105,563	61,464	79,504	53,432
Iraq	25,874	3,077	1,152	556	201,553	35,719	294,471	40,371	188,757	36,051
Switzerland	1,117	1,173	1,793	1,909	4,016	3,129	1,983	1,841	3,560	2,193
Italy	1,355	1,150	4,261	3,557	6,011	3,853	2,714	1,570	1,996	1,417
France	10,001	5,306	8,689	4,777	19,640	11,615	12,326	3,222	7,639	5,772
Austria	29,931	104	38,570	17,942	12,628	8,518	11,581	8,729	12,087	7,325
U.K.	17,335	8,071	23,213	10,853	27,079	11,317	23,368	10,272	36,579	17,344
Kuwait	281,396	68,976	88,831	29,057	3,172	1,028	13,207	2,739	13,048	3,247
Holland	4,253	1,965	5,330	2,542	8,702	4,625	11,022	5,616	17,164	9,557
Romania	3,415	763	32,845	10,184	25,273	5,385	155,303	23,055	82,899	19,936
Poland	5,477	1,746	17,039	6,470	35,510	12,877	26,189	9,888	5,794	2,505
Japan	8	14	365	68	458	160	214	63	96	10
Pakistan	19	5	20	11	5,495	543				
Bel.-Lux	8,471	2,791	9,233	3,864	30,551	11,184	20,615	8,580	16,186	8,181
Hong-Kong	0	0	0	0	245	148	0	0	48	17
Czechoslovakia	25,493	9,797	24,992	10,658	38,619	16,005	38,743	15,574	0	0
Hungary	9,199	2,562	10,808	4,176	12,762	5,944	8,794	3,857	6,857	2,906
Denmark	2,823	1,067	2,673	1,213	3,186	1,445	2,070	899	743	425
Finland	179	185	312	188	314	195	288	177	493	151
Norway	435	271	737	404	491	285	301	178	173	100
Sweden	4,343	1,853	5,835	2,606	8,418	3,828	6,531	2,749	1,954	1,183
Others	135,601	51,983	209,942	72,333	238,304	77,301	257,361	53,214	167,489	63,393
TOTAL	773,659	220,849	737,125	280,247	1,086,770	356,219	1,116,344	291,783	895,926	316,733

Remarks: Quantity expressed in tons and value in 1000 US\$.

Source: Sub-Dept. of Fresh Fruit and Vegetables, Dept. of Agriculture and Husbandry, SPO.

Table 3.3a Export of Selected Fruit and Vegetables from Turkey (1989-1992)

	1989		1990		1991		1992	
	Qty	Value	Qty	Value	Qty	Value	Qty	Value
Fresh Tomatoes								
Germany	1,936.99	\$1,095,336	3,340.54	\$3,119,839	4,107.08	\$2,659,256	4,084.60	\$2,659,256
Belgium-Lux	44.53	\$21,294	18.99	\$12,554	14.24	\$6,995	24.11	\$6,995
Denmark	0.00	\$0	5.92	\$3,349	16.33	\$15,490	9.13	\$15,490
France	510.62	\$514,634	93.00	\$88,832	1.51	\$1,609	183.61	\$1,609
Netherlands	75.49	\$54,584	24.19	\$22,225	35.40	\$25,562	59.29	\$25,562
UK	95.64	\$34,474	30.08	\$15,684	4.79	\$3,320	16.70	\$3,320
Italy	0.00	\$0	64.15	\$64,855	20.72	\$16,588	12.69	\$16,588
Greece	43.22	\$34,760	10.00	\$6,700	14.96	\$11,453	13.60	\$11,453
Austria	681.37	\$393,907	1,327.57	\$1,075,433	1,963.22	\$1,470,792	4,081.15	\$1,470,792
Kuwait	52,061.51	\$6,938,060	5,209.21	\$1,437,500	393.01	\$102,851	1,923.06	\$102,851
Jordan	15,623.74	\$2,477,073	9,374.67	\$2,031,871	7,415.59	\$1,619,950	2,331.20	\$1,619,950
Saudi Arabia	6,369.67	\$799,167	8,883.96	\$1,854,104	84,246.83	\$18,916,552	29,445.30	\$18,916,552
Others	1,003.49	\$339,043	5,203.72	\$2,824,516	8,415.84	\$4,428,894	2,879.82	\$4,428,894
Total	78,446.27	\$12,702,332	33,586.01	\$12,557,462	106,649.52	\$29,279,312	45,064.28	\$29,279,312
Fresh Pears								
Germany	513.28	\$264,316	689.00	\$457,478	1,564.31	\$1,120,111	1,247.31	\$1,120,111
Belgium-Lux	69.11	\$22,770	182.08	\$46,140	100.76	\$38,164	77.25	\$38,164
Denmark	3.03	\$1,250	0.81	\$485	3.95	\$3,085	12.17	\$3,085
France			0.00	\$0	19.60	\$10,871	14.84	\$10,871
Netherlands	18.20	\$9,145	2.27	\$1,236	66.14	\$43,561	46.19	\$43,561
UK	0.28	\$267	1.94	\$1,816	21.14	\$22,574	25.97	\$22,574
Italy	17.45	\$10,868	0.00	\$0	479.59	\$289,631	0.00	\$289,631
Austria	36.80	\$18,913	32.08	\$14,512	34.37	\$22,112	23.46	\$22,112
Sweden	10.17	\$4,914	64.13	\$29,367	253.50	\$135,284	204.83	\$135,284
Dubai	0.00	\$0	0.00	\$0	0.00	\$0	38.70	\$0
Kuwait	2,946.35	\$639,321	184.49	\$33,142	13.28	\$10,635	145.47	\$10,635
Saudi Arabia	137.70	\$25,229	439.26	\$95,098	315.99	\$73,814	979.80	\$73,814
Jordan	336.62	\$54,862	444.30	\$121,091	0.00	\$0	15.75	\$0
Cyprus T.C.	359.35	\$97,419	434.04	\$169,418	475.43	\$180,946	647.57	\$180,946
Japan	0.00	\$0	30.00	\$6,000	0.00	\$0	0.00	\$0
Others	18.47	\$9,485	13.98	\$9,100	0.00	\$0	4.95	\$0
Total	4,466.79	\$1,158,759	2,517.78	\$984,883	3,348.05	\$1,950,788	3,484.25	\$1,950,788

Remarks: Quantity expressed in tons and value in US\$.

Source: Undersecretariat of Foreign Trade

Table 3.3b Export of Selected Fruit and Vegetables from Turkey (1989-1992)

	1989		1990		1991		1992	
	Qty	Value	Qty	Value	Qty	Value	Qty	Value
Fresh Peach								
Germany	509.55	\$278,718	1,191.87	\$696,054	1,254.39	\$988,329	545.84	\$0
East Germany	0.00	\$0	4.23	\$2,580	0.00	\$0		
Austria	12.06	\$3,791	53.77	\$23,939	233.31	\$261,841	260.83	\$0
Abu Dhabi	0.00	\$0	2.70	\$540	0.00	\$0	6.25	\$0
Bel-Lux	15.58	\$6,027	56.10	\$15,033	92.89	\$65,993	104.52	\$4,413
Denmark	0.00	\$0	0.00	\$0	7.63	\$4,413	3.57	\$2,710
France	0.00	\$0	4.63	\$2,772	3.10	\$2,710	1.02	\$44,128
Holland	16.14	\$8,971	1.77	\$778	69.74	\$44,128	278.99	\$0
Iraq	6.99	\$4,237	2.81	\$1,505	0.00	\$0	12.78	\$5,008
UK	0.09	\$52	0.00	\$0	5.36	\$5,008	0.30	\$94,740
Cyprus T.C.	217.69	\$56,411	271.65	\$105,566	266.44	\$94,740	288.94	\$10,512
Kuwait	7,237.90	\$1,221,677	5,713.74	\$1,069,018	28.00	\$10,512	0.00	\$572,012
S.Arabia	471.73	\$88,789	434.90	\$106,311	3,117.04	\$572,012	8,009.54	\$32,954
Jordan	636.46	\$193,289	2,381.54	\$474,504	200.70	\$32,954	1,071.10	\$0
Italy	0.00	\$0	0.00	\$0	0.00	\$0	0.00	\$0
Japan	0.00	\$0	0.00	\$0	0.00	\$0	75.00	\$164,338
Others	5.45	\$1,639	68.04	\$36,913	287.05	\$164,338	679.95	\$2,246,978
Total	9,129.62	\$1,863,601	10,187.74	\$2,534,863	5,565.64	\$2,246,978	11,338.61	
Plum Fresh								
Germany	7,599.24	\$1,985,184	6,254.54	\$1,991,300	5,339.82	\$2,425,378	8,002.70	\$814,275
Belgium-Lux	698.20	\$514,335	927.87	\$759,822	2,407.22	\$814,275	1,055.68	\$20,376
UK	32.26	\$15,871	39.64	\$19,346	42.37	\$20,376	46.47	\$20,687
Cyprus T.C.	14.37	\$16,156	13.46	\$20,353	13.04	\$20,687	15.64	\$4,636
Sweden	0.00	\$0	8.89	\$3,870	16.87	\$4,636	5.05	\$72,397
Kuwait	17.85	\$11,799	48.07	\$57,449	55.62	\$72,397	46.09	\$1,876
Saudi Arabia	5,955.19	\$1,124,513	3,890.33	\$800,767	2.44	\$1,876	82.40	\$462,740
Japan	240.84	\$46,984	469.55	\$116,034	2,394.99	\$462,740	5,815.65	\$0
Jordan	0.00	\$0	0.00	\$0	0.00	\$0	115.00	\$21,368
Others	411.03	\$81,475	709.33	\$84,495	116.14	\$21,368	513.91	\$1,007,023
Total	7,599.25	\$1,985,184	6,254.53	\$1,991,300	5,339.82	\$2,425,378	8,002.70	

Remarks: Quantity expressed in tons and value in US\$.

Source: Undersecretariat of Foreign Trade

Table 3.3c Export of Selected Fruit and Vegetables from Turkey (1989-1992)

	1989		1990		1991		1992	
	Qty	Value	Qty	Value	Qty	Value	Qty	Value
Plum Frozen								
Germany	1,579.40	\$1,145,743	3,477.56	\$3,550,582	3,363.42	\$4,608,001	1,222.39	\$1,604,212
Austria	0.00	\$0	2.00	\$3,013	31.79	\$51,993	8.50	\$7,583
Belgium-Lux	38.83	\$22,691	60.00	\$57,500	320.79	\$371,214	103.96	\$103,764
Denmark	39.00	\$29,973	0.00	\$0	0.00	\$0	0.00	\$0
France	141.85	\$115,013	295.00	\$318,796	351.90	\$483,999	427.53	\$712,571
Holland	672.62	\$502,995	1,081.71	\$1,045,174	1,039.36	\$1,334,512	29.13	\$42,405
UK	252.35	\$235,098	282.90	\$429,446	286.03	\$416,915	175.47	\$264,487
Swiss	0.00	\$0	260.09	\$284,725	324.67	\$483,242	200.35	\$287,618
Italy	40.00	\$39,067	356.05	\$436,711	332.30	\$468,733	159.00	\$245,802
Saudi Arabia	0.00	\$0	0.00	\$0	0.00	\$0	0.00	\$0
Others	2.80	\$3,978	0.36	\$490	60.02	\$70,638	1.00	\$1,768
Total	2,766.85	\$2,094,558	5,815.67	\$6,126,437	6,110.27	\$8,289,247	2,327.32	\$3,270,210
Kiwi								
Germany	0.00	\$0	2.80	\$1,275	0.71	\$914	1.06	\$988
Australia	0.00	\$0	0.70	\$259	0.00	\$0	0.00	\$0
Bel-Lux	0.00	\$0	0.45	\$98	0.00	\$0	0.00	\$0
Holland	0.00	\$0	0.00	\$0	0.00	\$0	0.75	\$455
Iraq	0.20	\$142	0.00	\$0	0.00	\$0	0.00	\$0
UK	0.00	\$0	0.00	\$0	0.00	\$0	0.00	\$0
Cyprus T.C	0.00	\$0	0.00	\$0	0.00	\$0	0.00	\$0
Swiss	0.00	\$0	0.07	217.00	0.00	\$0	0.20	\$132
Norway	0.00	\$0	0.00	\$0	0.10	\$343	0.00	\$0
Jordan	0.00	\$0	13.50	\$2,600	0.00	\$0	0.00	\$0
Lebanon	0.00	\$0	0.00	\$0	0.00	\$0	0.00	\$0
Total	0.20	\$142	17.52	\$4,449	0.81	\$1,257	2.00	\$1,575

Remarks: Quantity expressed in tons and value in US\$.

Source: Undersecretariat of Foreign Trade

Table 3.3d Export of Selected Fruit and Vegetables from Turkey (1989-1992)

	1989		1990		1991		1992	
	Qty	Value	Qty	Value	Qty	Value	Qty	Value
Lettuce								
Germany	5.10	\$2,116	6.20	\$1,180	70.31	\$59,874	6.69	\$3,172
Austria	10.00	\$3,806	35.63	\$21,678	10.98	\$6,588	8.75	\$4,364
Belgium-Lux	0.00	\$0	1.07	\$573	15.03	\$19,458	0.00	\$0
Iraq	13.65	\$5,220	4.23	\$2,423	0.00	\$0	6.00	\$2,040
Kuwait	149.57	\$24,798	52.31	\$12,155	1.01	\$2,211	10.41	\$1,690
Others	3.23	1644	1.73	\$615	116.51	\$20,682	8.62	\$2,316
Total	181.55	\$37,584	101.17	\$38,624	213.83	\$108,813	40.46	\$13,582
Radish								
Germany	105.09	\$42,224	181.37	\$91,535	141.53	\$39,292	186.73	\$51,572
Belgium-Lux	1.00	\$109	5.90	\$719	6.75	\$1,092	7.35	\$1,695
Holland	6.66	\$1,779	27.78	\$10,227	22.14	\$6,220	34.35	\$8,675
Iraq	23.84	\$9,022	1.60	\$554	0.00	\$0	0.00	\$0
Kuwait	35.68	\$4,471	109.57	\$34,563	0.00	\$0	0.00	\$0
Japan	8.00	\$13,620	8.90	\$15,082	0.00	\$0	0.00	\$0
Others	1.37	296	19.68	\$14,799	8.70	\$4,645	2.06	\$1,193
Total	181.64	\$71,521	354.79	\$167,479	179.12	\$51,249	230.49	\$63,135
Kaki								
Germany	31.49	\$15,181	13.69	\$5,889	13.03	\$8,497	20.89	\$9,057
Cyprus T.C	20.47	\$7,065	22.21	\$7,556	12.56	\$5,456	29.14	\$6,884
Dubai	0.00	\$0		\$0	0.00	\$0	38.22	\$3,523
Greece	0.00	\$0	80.00	\$56,000	0.00	\$0	0.00	\$0
Jordan	17.78	\$1,778	12.00	\$6,600	0.36	\$44	0.00	\$0
Kuwait	137.35	\$17,684	86.59	\$28,042	3.00	\$700	16.05	\$3,683
Others	12.01	1978	49.75	\$23,892	73.05	\$109,007	42.98	\$8,799
Total	219.09	\$43,686	264.23	\$127,979	101.99	\$123,704	147.28	\$31,946

Remarks: Quantity expressed in tons and value in US\$.

Source: Undersecretariat of Foreign Trade

Table 3.3e Export of Selected Fruit and Vegetables from Turkey (1989-1992)

	1989		1990		1991		1992	
	Qty	Value	Qty	Value	Qty	Value	Qty	Value
Watermelons								
Germany	5,888.39	\$24,721	9,993.22	\$2,227,200	12,438.46	\$2,320,207	12,454.96	\$2,055,159
Belgium-Lux	591.05	\$85,645	766.82	\$102,741	1,602.03	\$200,883	1,470.10	\$240,270
Denmark	76.38	\$19,433	77.09	\$18,649	262.48	\$70,261	125.94	\$15,410
France	200.68	\$66,821	68.76	\$20,758	140.73	\$34,081	43.31	\$8,650
Netherlands	498.18	\$117,065	547.28	\$105,305	1,098.11	\$162,647	1,288.02	\$163,776
UK	210.33	\$33,458	1,219.97	\$290,374	1,847.72	\$399,297	1,280.36	\$231,440
Italy	110.68	\$33,818	164.15	\$41,722	1,100.13	\$295,824	1,339.88	\$326,890
Greece	111.90	\$24,721	0.00	\$0	275.66	\$74,640	338.25	\$137,576
Austria	393.38	\$76,156	949.12	\$177,704	5,178.44	\$1,337,974	5,782.02	\$1,496,785
Norway	157.44	\$45,260	85.09	\$33,000	146.84	\$46,086	18.82	\$5,344
Sweden	537.43	\$139,697	935.40	\$262,803	2,000.10	\$451,780	2,081.20	\$393,211
Poland	0.00	\$0	269.79	\$65,877	2,283.73	\$469,649	537.44	\$76,033
Czechoslovakia	0.00	\$0	0.00	\$0	2,219.36	\$482,385	1,367.51	\$336,063
Yugoslavia	0.00	\$0	1,613.72	\$536,578	3,768.44	\$711,310	926.87	\$125,226
Hungry	0.00	\$0	0.00	\$0	203.77	\$51,568	135.00	\$33,706
Romania	0.00	\$0	0.00	\$0	0.00	\$0	2,641.55	\$292,951
Japan	0.00	\$0	47.85	\$16,902	0.00	\$0	0.00	\$0
Iraq	34.06	\$10,190	10.06	\$3,098	602.00	\$41,752	356.77	\$40,885
Kuwait	1,760.44	\$259,133	310.37	\$50,515	2.40	\$360	112.00	\$14,937
Jordan	71.06	\$9,316	89.38	\$10,619	0.00	\$0	0.00	\$0
Saudi Arabia	79.34	\$8,940	15.10	\$1,510	22.82	\$2,336	0.00	\$0
Others	882.48	\$1,311,528	300.12	\$65,798	1,137.31	\$190,143	504.27	\$72,456
Total	11,569.17	\$2,265,901	17,463.29	\$4,031,153	36,330.56	\$7,343,180	32,804.28	\$6,066,770

Remarks: Quantity expressed in tons and value in US\$.

Source: Undersecretariat of Foreign Trade

Table 3.3f Export of Selected Fruit and Vegetables from Turkey (1989-1992)

	1989		1990		1991		1992	
	Qty	Value	Qty	Value	Qty	Value	Qty	Value
Melons								
Germany	3,680.80	\$1,190,710	3,887.40	\$1,445,812	5,270.05	\$1,700,912	4,532.17	\$1,468,811
Belgium-Lux	473.62	\$79,100	523.33	\$100,625	753.08	\$146,461	672.31	\$96,714
Denmark	14.67	\$5,788	15.09	\$5,012	77.23	\$23,261	71.28	\$20,399
France	0.00	\$0	5.19	\$2,066	22.00	\$7,658	16.25	\$11,064
Netherlands	319.24	\$92,213	337.34	\$68,282	566.95	\$131,369	444.32	\$113,940
UK	23.25	\$11,408	116.74	\$72,648	36.44	\$9,390	110.18	\$56,364
Italy	0.00	\$0	0.00	\$0	0.00	\$0	0.00	\$0
Greece	176.84	\$54,065	20.00	\$6,742	79.70	\$30,519	22.00	\$6,511
Austria	326.49	\$93,343	392.34	\$143,209	458.72	\$151,230	443.96	\$205,425
Norway	22.37	\$8,364	31.57	\$16,489	36.64	\$12,780	53.60	\$14,264
Sweden	211.69	\$101,089	99.19	\$43,512	147.72	\$73,005	106.88	\$75,722
Kuwait	15,039.83	\$2,011,473	2,068.84	\$361,448	55.12	\$13,130	341.55	\$58,562
Jordan	1,609.64	\$150,265	2,102.88	\$225,508	945.59	\$103,393	60.00	\$10,150
Saudi Arabia	1,336.30	\$162,788	819.38	\$126,079	1,886.94	\$300,662	1,626.81	\$195,116
U.A.E	0.00	\$0	392.51	\$44,385	0.00	\$0	3.60	\$420
Others	47.20	\$16,921	136.74	\$85,943	263.24	\$77,330	112.02	\$26,565
Total	23,281.94	\$3,977,528	10,948.53	\$2,747,759	10,599.42	\$2,781,100	8,616.92	\$2,360,026

Remarks: Quantity expressed in tons and value in US\$.

Source: Undersecretariat of Foreign Trade

4. Marketing/Distribution System Linking Producers to Market Places

(流通システム)

THE UNIVERSITY OF CHICAGO
PHYSICS DEPARTMENT

4. Marketing/Distribution System Linking Producers to Market Places (流通システム)

4.1 Structure and Function of Distribution System (流通システムの構造と機能)

Marketing is considered to be the major problem of the Turkish fresh fruits and vegetables sector. Lack of any organized distribution system linking producers to the markets is the base of this problematic feature. Marketing of fresh fruits and vegetables is directed without involving of any legal organization, but by commissioners, exporters and farmers. Thus, the structure brings along wide variety of complaints.

There is no cooperative or organization in the marketing of fresh fruits and vegetables to mediate between the producer and the seller neither for the domestic market nor for the international market.

Although there are some institutions which are expected to be functional in the marketing process, none of them has a very influential function throughout. Chamber of Agriculture which is made up of the producers working in the related regions, is one of these institutions. Though it is a farmers' organization engaged in developing solution for relative problems of the producers, it does not have any role on systemizing the marketing process. Another related institution is the Agricultural Directorate in the provinces and districts who is responsible only for gathering the related data on agriculture for the the Ministry of Agriculture and Rural Affairs and State Institute Statistics . Thus it does not play any role of mediation between the producers and the market. Instead, it acts as a political pressure mechanism on the government, sometimes effecting the legislation process about agriculture with the lobbying activities. In some cases the organization presents indirect opposition against the existent laws and decrees.

In the domestic market, the major mediation role belongs to the commissioners, while farmers are actually financed by the commissioners. Commissioners have taken over the role of representing the farmer and his product in the wholesale market, where direct contacts with the exporters or the industrial enterprises are usually formed. The commissioners act as the mediators between producers and the market.

This complicated feature of the process becomes more complicated when the export activity is in question. In evaluation of the system of export, different regulations about trade, several limits and incentives and different demands due to specific consumer behaviors of each importer country should be taken into consideration. Export of fresh fruits and vegetables is a more complex one than other goods of trade, because fruits and vegetables obviously are easy to spoil, difficult to be transported and faced with a competitive international market.

For the export market the only institution is "The Mediterranean Exporters Union" in Mersin. It has been specialized in fresh fruits and vegetables as one of the twelve exporters' unions in Turkey. The main role of the union is to register the export activities, regarding the fresh fruits and vegetables. All fresh fruits and vegetables are obliged to be registered to the union, so their activities. Thus only the figures of those realized activities are provided by the union for the State Institute Statistics . The union does not provide any facility to the exporters, neither creates new markets nor undertakes some steps of export process.

The union of exporters has branches or independent organizations in each relevant region of the country. However, instead of organizing activities of support for the individual exporters, the organization only is able to accomplish a subjective registration of export activities. The information available in these unions regarding export activities have been collected directly from individual exporters who have reported to the union of their activities. Since registration of the amount of activity undertaken is optional, the unions have very limited information. Exporters organize their activities based on personal initiatives mostly.

4.2 Exporter Firms (輸出企業)

The issues presented above all require strong exporter firms who are capable of facing problems. However, export firms are most usually lacked of detailed information about international markets. Another disadvantage of exporter firms is that they usually have not specialized either on the base of the product groups or on the sector. "citrus" as one of the product groups has been somewhat exceptional at this point of concern. Exporter firms also encounter deficiencies regarding qualified staff. Most of them have stated that they have difficulties in employing qualified staff who is fully required for well-being of the process i.e., the stages of packing, storing, transporting, etc.\ Fifty percent of them have also stated that they do not employ professional managers at all, which may also be problematic in terms of management and optimization.

As a consequence of all these problems, exporter firms can not supply the products to the international markets in desirable quality, quantity and in time. They also suffer from the restrictions imposed by EC; 50 percent of the firms interviewed have stated that they have incurred losses from "Reference Price Restriction" and another 20 percent from "Health Standards". The interviews have also shown that 40 percent of these firms export all kind of agricultural products i.e.; no specialization, 50 percent of them do not employ professional managers, 50 percent of them are not informed about export promotion & subsidy schemes, 70 percent of them provide the

information about the international markets only through importer firms i.e.; there is no direct channel of information.

Exporting process is much more complicated than domestic marketing. The firms intending to export should be specialized in their fields and have power to compete in the international markets. The export of fresh fruits & vegetables is more difficult due to the various factors such as; easy deterioration of those products, so difficulty in transportation, variable prices and heavy competition in the related sector.

One of the major problems regarding the export of fresh fruits & vegetables is the fact that the majority of the exporter firms have not specialized on the sector nor on the products. About 50 percent of the exporter firms have not employed professional managers, instead they still act as family firms, this is another problem for these firms.

An interview with a major exporter in fresh fruit and vegetables, SERA Tarimcilik AS, is summarized here to provide an overview of the general situation in the fresh fruits and vegetables market .

Turkey appears as a competitive country in production of fresh fruit and vegetable for the last five years under universal standards. This is due to factors such as using high quality raw material, seeding in world standards, fertilizing with soluble NPK, watering with high tech methods (dripper is so effective that watering is possible in all four seasons). Turkey with its 25, 000 thousand hectare area for plantation seems to be a candidate for being one of the leaders in fresh fruit and vegetable market.

Aware of the requirements to create grounds for universal competition, this exporter firm specifically, has been importing high quality seeds from countries such as the United States, Israel, Holland to increase the quality of production. For example, tomato seeds "long shelf life" type is imported from Israel. Therefore, within the past five years exporters firms have not exactly been suffering from low levels of quality hindering competition in international markets.

Besides these developments, however, a neglected area is healthy and high quality packaging that has been requiring more attention and better opportunities. There are not so many packaging companies in the market but to give an example Cargel brand is mostly preferred in packaging. Exporters believe that their own structure to provide high quality packaging is more efficient than having to deal with other individual packaging companies, to decrease the costs and to achieve control of quality packaging.

Turkey is considered to have a high potential to both meet the domestic and international demand for fruits and vegetables. Fresh fruit and vegetable production is important not only for exportation but also for meeting the domestic demand. Turkish people consume fresh fruit and vegetables in large amounts as they are used to find all seasonal fresh foods whenever they want. Therefore, exporters try to penetrate into the international markets introducing all season Turkish products. Even though canned fruits and vegetables are of higher demand in other countries, the only organizations involved in exports of canned fruits and vegetables are the ones like TAT and TAMEK, rather than independent exporters.

The distribution channels that exporters work through in reaching the products of concern are as follows. In the marketing phase of the products, commissioners are the contact persons between farmers and exporters, each commissioner financing or representing one or more of the producers in the field/ region. Commissioners usually work on 8 percent profit margin. The addition of the profit and commissioning lobbies of the wholesale market administration/ related municipality brings the product a total of 14 to 15 percent commissioners rate before reaching the exporter or the sales persons in other regions of the country. Whole salers are powerful in price determination of the products.

The transportation mostly utilized by the exporters in international trade activities of the products is by two ways; either by frigoraphic vans or by ships. For example for citrus fruits, shipping is preferred and for other more sensitive products frigoraphic trucks are used. An average cost for one truck load of fruits and vegetables to be transported to Europe for example is 7000-8000 DM.

The latest trends in Turkish fruit and vegetables market show that producers have been more dominant in determination of the prices of the related products. Another major development is the advantage of increase in production also in winter, which enabled an abundance of goods both in the winter and the summer.

4.3 Buying and Selling Process (取引経路)

The commissioners as the mediators between producers and the market are the major distribution channels in the system. They purchase the crop directly from the farmers and package it, then they transport it to the wholesale markets in the destination points. Transportation is undertaken either by commissioners or by transportation firms by trucks. The commissioners take a certain percentage from the sale (7-8% in general). Some of them are also the sellers in the wholesale markets. From the wholesale markets, the products are passed to the retailers and reached the costumers.

(1) Domestic market

For the domestic market, it is mostly the commissioners who purchase the product from the producers (as explained above). Then they handle all stages until the destination point. In general they agree with the farmers before the crop is harvested. The crop is either purchased "in the lump" or in "kilos" (but the second way is not so common). They package the product, load it and then transport it to the wholesale markets in the destination points. However, it can not be claimed that the process is always in that way, sometimes it is the farmer who handles all these stages. So there is no distinct way of marketing.

Prices are determined by the administrations working with union of commissioners of the wholesale markets daily (daily minimum and maximum prices). Since wholesale markets work under the municipalities, a certain percentage of the sale of the seller -3% in general- is taken by the "administration" as a revenue to the municipality. Because of this obligatory payment, only few quantities are registered in the market administration. Thus, the figures showing the quantities in the wholesale markets are not so reliable, since many people do not register anything. There are some other reasons of this unreliability; the registration offices of the wholesale markets have not yet been computerized in general, so all of the calculations are hand-made. Another reason is the "political character" of the municipalities. When new local elections are held, all personnel of the municipalities change, not only the mayors. It also brings a new persons to the administrations of the wholesale markets, causing many confusions. In some cases, almost all documents and records of the administrations have been damaged by the precedent ones. Thus, the system has not been able to be controlled very well.

(2) Export market

For the export market, all stages of the process after production are handled by exporter firms. The most common way is to purchase the production directly from the producer. In addition to this direct way, purchasing through "merchants" (60%) and through "commissioners" (20%) are also practiced in Äukurova. A small percentage of the firms export their own crop gathered from their own orchards. They are very big firms in general, having a traditional landlord character.

To get the high quality in the products, exporter firms' control is required over some of the production steps, since the producers have not yet been informed enough about the new techniques, methods, chemicals, etc. In the production of fresh fruits & vegetables these technical points are very important. It is a labor intensive production. In order to prevent the possible errors in production and to get high quality product, the

producers should be educated and they should be given the technology or their production process should be controlled.

For fruits, all of the exporters interviewed have stated that they use the way of direct purchase, while 60 percent of them also practice the mediation via merchants, 20 percent purchase through commissioners or export their own crop. For vegetables, 60 percent of the exporter firms purchase directly from the producer, while 20 percent purchase from the merchant and 50 percent purchase from the commissioner.

The agricultural produce is generally purchased "in lumps", however in some cases purchasing "in kilos" is also applied. The steps of collecting, packaging, storing and transportation are also realized by the exporter firm. Grading and packing are mostly made in the firms' own packing-houses (about 60 percent). For most of the fruit kinds they are made by machines in the packing-houses, for some kinds of fruits and it is a hand-made process realized in the production fields. For all kinds of vegetables it is made by hand either in packing-houses or in the fields.

Stages after the production are very important in export of fresh fruits & vegetables to EC countries because the community have strict rules and regulations about the quality standards of the concerned products. Besides the restrictions and current demand through quality and taste, there are also restrictions about the shape, freshness and packing. Keeping the products fresh and in a good shape require cool storage-houses.

The products provided through commissioners are mostly inappropriate for the standards of the international markets. Only 25-30 percent of those products are exported, as stated by the exporter firms. In this case, the firms sell the products to the domestic market. It has been claimed that it is very difficult to provide the high quality products in-time and that usage of hormones (especially in tomato) makes export more difficult.

(3) Wholesale prices of selected items

The following depicts the overall changes in the wholesale prices during the last three years as observed in the Istanbul Wholesale market (refer table 4.1), the most important facility in determining the prices for fresh fruit and vegetables. These changes in price trends will allow an evaluation of the overall situation in the domestic market for the related goods.

The prices of the selected goods are the lowest in their relative seasons of production. 1992 figures of the Istanbul wholesale market shows that pears are more

expensive in June, July and August. Melon and water melon are not available in the winter months. Peaches have the highest price in the winter months. Tomatoes are found all throughout the year, hitting their maximum price in November.

In 1993, prices follow the same trend with a general increase in the total average prices compared to the year 1992 due to inflation. The highest prices overall are observed in the month of February, which shows that in the fresh fruits and vegetables market in Turkey February is the period where there is insufficient amount of supply of the related goods.

In 1994, the seemingly unexpected change in the average prices between April and the following months, depicted on the table for figures of 1994, is a result of the economic crisis experienced in that month in Turkey. From April on in May and June in 1994, even though prices have increased on the bases of Turkish Lira, the prices have gone down on the bases of USD. The past two months portray a more stable price trend.

(4) Transportation costs

Export of fresh fruits and vegetables is transported in two ways: by trucks (especially for European Countries and Middle-East) and by ships. For instance, a normal truck (without any cooling system) goes to Germany by "DM 6.000", while the cost of the truck with cooling system is "DM 7.500". Because of the war in Ex-Yugoslavia, this high-way transportation has become longer, because the route has changed. Since the war, sea-transportation has become more preferable. The cost of ship transportation is "25 fenics/kg". For example, a 20-ton cooled-truck costs \$1,500-2,000 to go to either one of the Balkan States, Bulgaria.

When the local transportation stages in Turkey concerning fresh fruits and vegetables are in question, the numbers vary. Usually, the cost of local transport from the farm to the Adana wholesale market is not exactly defined because the farmer generally transports his product with his own facilities, meaning the rate varies depending on the location of the farm in the country. The costs for the transportation of one ton of fresh fruits and vegetables from Adana to Istanbul (1000 km approximately) is \$30 to 60 on the average. The range varies depending on the usage of frigo trucks or standard trucks. Costs for unloading in the markets are not exactly known based on a similar reasoning as is the case with local transports from the farm to the market, since the unloading is also done by the same staff of transport instead of hiring independent workers. Additionally such costs are considered negligible amounts and are automatically included in the price bids for local transport itself.

4.4 Wholesale Markets (卸売市場)

Wholesale markets are typically geared towards the local conditions of the major towns and they are generally constructed and financed by municipalities. Four wholesale markets (Adana, Izmir, Istanbul and Ankara) were visited and they were all managed by the respective municipalities.

The recently built wholesale and export food terminal in the Adana region (area: 35 hectares turnover of about one million ton per annum) could have considerable influence on the marketing system in the GAP region in future. In relation to the future production in the GAP region, at full maturity, in the year of 2010, and when presuming a bypass of future market facilities of 50 percent (direct delivery; informal bypass), the terminal in Adana could handle about 35 percent of the entire GAP fruit, vegetable and tuber output that will be marketed through wholesale terminals.

A general observation and discussion of the markets visited are given below.

The wholesale markets visited are all away from the center of the city except the Izmir wholesale market which is near the center of the city which causes general operational limitations due to traffic congestion, and have, therefore, little opportunities for further improvements or extension.

There are 664 shops in Istanbul wholesale market, Izmir has 149 shops, Adana 350 shops and Ankara has 212 shops including 14 shops for fish. Even those markets constructed in recent years, the facilities are generally not suitable for handling the traded quantities of perishable produce.

The facilities at Izmir wholesale market are limited and the market is congested, and the surface areas are devoted to stalls/depots and parking. Stalls are too small. Wholesale markets have no cold storage or mechanical grading and packing facilities at its premises. Izmir municipality has a plan for new wholesale market which will located away from the city.

Cold storage, assembly, grading and packing centers are practically non-existent in the markets and are thus not fulfilling any function in the flow of products between production area and wholesale markets. Therefore, relatively high percentage of quality deterioration and produce losses are expected. With trade of perishables mainly based on commission, producers are thus facing the losses of the inefficiencies that occur at higher levels in marketing channels.

These shops are rented mainly to commissioners and a few producers/farmers. Daily records of quantity sold and prices are submitted to market authorities by the commission agents for collection commission.. The main source of revenue earned by the wholesale markets are the three percent of the total sales collected from commission agents. Adana wholesale market collected 6.8 billion lira in 1993. Izmir wholesale market collected 16.5 billion lira in 1992 and 30.2 billion lira in 1992, and Ankara wholesale market earned 48 billion lira in 1993.

Only Ankara wholesale market was able to provide its handling volume of fruits and vegetables for three years as shown in table 4.2. The handling volumes of fruits and vegetables have been decreasing; in case of vegetables from 244,495 tons of in 1991 to 210,900 tons in 1993, though the value increased from \$72.60 million in 1991 to \$83.29 million in 1993. A similar trend is also observed for fruits. Export transactions from the region are frequently arranged by by-passing wholesale markets in the region.

4.5 Post-harvest Loss (ポストハーベスト・ロス)

The post-harvest losses in fresh fruit and vegetables during harvest, storage and marketing compiled by the Turkish National Productivity Center is shown in Table 4.4.

Table 4.1 Monthly Average Wholesale Price of Selected Agricultural Produce in Istanbul Wholesale Market (1992, 1993 & 1994)

	Unit: TL/kg											
	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Pears	2,716	3,128	3,526	4,507	3,610	4,290	4,384	4,080	3,427	2,405	3,308	5,672
Melon	N/A	N/A	N/A	N/A	N/A	3,234	1,705	1,502	1,758	2,250	3,000	N/A
WaterMelon	N/A	N/A	N/A	2,172	1,960	1,818	808	805	1,080	1,500	N/A	N/A
Peach	N/A	N/A	N/A	N/A	4,000	3,120	2,340	2,980	3,373	4,475	4,647	N/A
Plum	N/A	N/A	N/A	12,570	6,357	2,220	1,618	2,200	2,064	5,060	3,417	N/A
Tomato	2,214	2,893	4,563	4,308	3,484	1,803	1,200	1,045	1,295	1,766	2,744	5,199
Radish	1,210	1,200	1,706	1,000	N/A	N/A	N/A	N/A	N/A	N/A	1,000	1,800
Lettuce *	N/A	N/A	3,459	1,927	566	515	585	N/A	N/A	1,424	1,746	2,043

	Unit: TL/kg											
	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Pears	5,150	8,239	9,484	8,085	10,426	8,357	6,757	4,284	5,074	6,113	6,387	11,086
Melon	N/A	N/A	N/A	N/A	N/A	5,206	6,802	4,890	3,480	5,114	8,079	N/A
WaterMelon	N/A	N/A	N/A	N/A	4,000	3,327	4,603	3,560	2,838	3,433	N/A	N/A
Peach	N/A	N/A	N/A	N/A	10,200	6,900	6,456	8,375	8,750	9,870	N/A	N/A
Plum	N/A	N/A	N/A	23,348	10,200	4,057	4,079	3,837	2,722	6,857	N/A	N/A
Tomato	6,725	6,864	7,654	6,285	7,640	5,710	5,318	2,825	3,661	2,817	3,574	6,674
Radish	1,500	1,650	1,840	1,850	N/A	N/A	N/A	N/A	1,700	2,500	N/A	2,900
Lettuce *	3,679	2,971	1,463	1,725	1,744	1,442	1,553	647	796	1,015	876	1,117

	Unit: TL/kg											
	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Pears	10,300	12,851	14,226	16,480	20,688	19,509	11,630	10,057				
Melon	33,050	94,615	N/A	42,325	27,612	11,603	6,348	3,215				
WaterMelon	20,000	140,000	20,000	20,000	28,435	10,991	1,777	1,405				
Peach	N/A	N/A	N/A	N/A	N/A	17,000	13,500	18,000				
Plum	N/A	N/A	27,500	33,217	12,917	8,890	7,141	5,109				
Tomato	7,167	11,669	11,518	11,664	10,685	5,946	6,060	3,811				
Radish	2,800	2,800	N/A	2,875	N/A	N/A	N/A	N/A				
Lettuce *	1,744	2,205	4,488	6,252	2,644	1,972	2,458	6,562				

Source: Istanbul Wholesale Market
 Remarks: * refers to per unit (piece) of lettuce.

Table 4.2 Volume and Value of Fruit and Vegetables Handled at Ankara Wholesale Market

	1991			1992			1993		
	Quantity	Value (TL)	Value (\$)	Quantity	Value (TL)	Value (\$)	Quantity	Value (TL)	Value (\$)
FRUITS									
Pears	4,134.59	8,128,843,272	\$1,944,234	4,548.38	12,071,412,251	\$1,753,801	3,746.49	21,405,603,738	\$1,947,557
Plums	5,586.40	12,767,320,999	\$3,053,652	8,249.90	18,744,516,158	\$2,723,306	7,435.23	40,410,219,183	\$3,676,664
Kiwi	70.07	1,014,591,060	\$242,667	87.79	1,832,994,655	\$266,308	333.81	6,220,243,845	\$565,940
Melons	12,192.18	9,314,660,021	\$2,227,855	13,565.85	12,856,197,764	\$1,867,819	10,082.70	29,185,307,216	\$2,655,382
Water Melons	105,425.93	51,782,882,990	\$12,385,287	113,976.25	71,898,847,334	\$10,445,859	67,529.78	170,760,236,608	\$15,536,369
Malta Plum	1,388.33	4,129,379,380	\$987,654	1,593.79	5,253,275,736	\$763,225	1,245.04	7,727,849,105	\$703,107
Peach	10,678.69	20,427,663,406	\$4,885,832	11,788.88	25,732,533,939	\$3,738,564	10,733.79	58,561,167,260	\$5,328,102
Sub-total	139,476.20	107,565,341,128	\$25,727,180	153,810.84	148,389,777,837	\$21,558,881	101,106.84	334,270,626,955	\$30,413,122
Other Fruits	105,018.46	195,965,646,056	\$46,870,520	111,532.86	331,020,474,557	\$48,092,471	109,793.23	581,187,403,960	\$52,878,483
Total	244,494.66	303,530,987,184	\$72,597,701	265,343.71	479,410,252,394	\$69,651,352	210,900.07	915,458,030,915	\$83,291,605
VEGETABLES									
Tomatoes	52,695.04	65,837,340,139	\$15,746,793	51,486.60	100,580,822,771	\$14,612,934	41,433.93	188,839,108,284	\$17,181,249
Lettuce	1,392.51	1,770,876,785	\$423,553	1,288.54	3,970,560,125	\$576,865	1,087.96	6,345,145,158	\$577,304
Radish	4,102.53	1,825,510,545	\$436,621	5,524.73	6,488,935,000	\$942,748	4,346.27	6,963,466,890	\$633,561
Sub-total	58,190.09	69,433,727,469	\$16,606,967	58,299.87	111,040,317,896	\$16,132,547	46,868.16	202,147,720,332	\$18,392,114
Other Vegetables	140,483.50	165,847,985,790	\$39,667,062	135,418.25	279,743,542,637	\$40,642,677	127,219.18	494,908,993,140	\$45,028,568
TOTAL	198,673.58	235,281,713,259	\$56,274,029	193,718.12	390,783,860,533	\$56,775,223	174,087.35	697,056,713,472	\$63,420,682

Source: Ankara Wholesale Market

Remarks: Exchange rates (annual averages) of US\$1=4181 TL (1991), US\$1=6883 (1992) and US\$1=10,991 (1993)

Table 4.3 Monthly Average Wholesale Price of Selected Agricultural Produce in Ankara Wholesale Market (1993 & 1994)

1993		Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Pears		4,770	6,250	6,140	8,360	9,300	8,660	6,200	4,730	5,270	5,320	6,650	8,800
Melon		N/A	N/A	N/A	13,110	12,300	5,530	4,130	2,500	2,300	2,400	3,050	4,380
WaterMelon		N/A	N/A	N/A	4,500	4,240	2,350	2,950	1,950	1,700	1,760	2,770	N/A
Peach		N/A	N/A	N/A	N/A	7,290	5,150	5,770	5,220	5,260	6,660	N/A	N/A
Plum		N/A	N/A	N/A	9,700	6,730	4,940	4,890	3,630	3,540	3,810	4,250	N/A
Kiwi *		2,020	2,030	1,830	1,630	1,860	2,660	2,800	3,750	4,500	3,290	2,350	2,230
Tomato		7,090	7,890	7,190	6,100	6,680	4,710	4,660	2,830	2,410	2,650	4,420	6,420
Radish		1,320	1,520	1,640	1,360	1,050	N/A	N/A	1,920	2,680	1,980	2,070	1,610
Lettuce *		2,910	2,610	2,130	3,780	1,630	1,990	2,310	2,640	2,210	2,390	1,970	2,220

1994		Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Pears		9,670	12,330	14,160	14,350	16,380	15,250	11,700					
Melon		15,000	N/A	N/A	27,870	24,000	9,480	4,150					
WaterMelon		N/A	N/A	N/A	8,890	7,030	4,170	2,820					
Peach		N/A	N/A	N/A	N/A	13,750	11,400	10,530					
Plum		N/A	N/A	N/A	17,610	11,690	8,420	7,050					
Kiwi *		3,060	4,190	4,560	5,250	5,750	6,640	7,610					
Tomato		7,280	12,410	9,460	9,910	9,340	6,490	6,090					
Radish		1,690	1,770	1,590	1,570	2,640	1,720	2,370					
Lettuce *		2,120	2,400	2,460	2,140	2,480	3,180	2,840					

Source: Ankara Wholesale Market

Remarks: * refers to per unit (piece) of lettuce and kiwi.

Table 4.4 Post-Harvest Losses in Fresh Fruits and Vegetables in Turkey

Kinds	Loss (%)			Total Loss(%)
	During Harvest	During Storage	During Marketing	
Fruits				
Pears	6	8	6	20
Quinces	3	4	3	10
Strawberries	15	-	15	30
Apple	6	5	4	15
Plum	8	3	9	20
Grapefruit	1	0.5	1	2.5
Cherry	8	-	15	23
Lemons	3	3	4	10
Mandarins	1	0.5	1	2.5
Pomegranates	3	3	4	10
Oranges	4	2	4	10
Peach	8	2	10	20
Morella cherry	10	-	15	25
Apricot	10	-	15	25
Grapes	7.5	2.5	15	25
Loquat	2	-	8	10
Vegetables				
Green pepper	5	-	10	15
Tomatoes	10	-	15	25
Egg-plants	7	-	13	20
Cucumber	7	-	13	20
Watermelon	8	-	7	15
Melon	8	-	7	15
Okra	5	-	8	13
Peas	2	-	8	10
Green beans	2	-	8	10
Pumpkin	3	-	12	15
Cabbage	2	-	8	10
Leek	1	-	9	10
Cauliflower	2	-	8	10
Carrots	3	-	7	10
Onions	5	3	7	15
Potatoes	7	5	8	20

Source: National Productivity Center, Turkey (Compiled from Turkey Second Fruit and Vegetable Project, Fruit and Vegetable Subsector Master Plan and Sector Surveys, TUMAS, Ankara, 1988)

