



Project no. **SSPE-CT-2004-502457**

Project acronym : **EU-MED AGPOL**

Project full name

**Impacts of agricultural trade liberalization between the EU and
Mediterranean countries**

Instrument type : **Specific Targeted Project**

Priority name : **8.1 Policy-oriented research**

Deliverable D3

**Characterization of agricultural and agro-industrial sectors in
Turkey**

Due date of deliverable : **Sept. 2004**

Actual submission date : **Oct. 2004**

Start date of project: **01 March 2004**

Duration: **36 month**

**Organisation name of lead contractor for this deliverable : Middle East Technical
University, Ankara, Turkey**

Project co-funded by the European Commission within the Sixth Framework Programme (2002-2006)

Dissemination Level

Dissemination Level		
PU	Public	PU
PP	Restricted to other programme participants (including the Commission Services)	
RE	Restricted to a group specified by the consortium (including the Commission Services)	
CO	Confidential, only for members of the consortium (including the Commission Services)	

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Part I - Major Determinants of Agricultural and Agro-Industrial Production

I. Natural Resource Endowments

I.1 Water Resources and Quality

Although Turkey has an adequate amount of water in general, it is not always in the right place at the right time to meet present and anticipated needs. As regards hydrology, Turkey is divided into 26 drainage basins. The rivers in general have irregular regimes, and natural flows cannot be taken directly as usable resources. The average annual precipitation, evaporation, and surface runoff geographically vary greatly.

Turkey has 665,000 ha of inland waters, excluding rivers and small streams. There are 200 natural lakes, with a total area of 500,000 ha, and 775 dam lakes and ponds with a total surface area of 165,000 ha (about 0.85% of the total surface area of the country).

The amount of precipitation in any particular region usually varies from year to year but, over a long period, the average remains relatively constant. Turkey averages about 643mm of precipitation annually, but the distribution is quite uneven. The range is from less than 250 mm in the inland areas of the Central Anatolia to more than 3000 mm in the northeastern Black sea coastal region. Autumn marks the start of the rainy season, which continues until late spring on the western and southeastern coasts; whereas the Black sea coast receives rain throughout the year.

This average annual precipitation corresponds to an average of 501 km³ of water per year. While 274 km³ of this quantity returns to the atmosphere through evapotranspiration (from ground and water surfaces as well as from plants). 69 km³ feeds the aquifers through infiltration from the surface. Thus the average annual surface water potential is 186 km³, of which 158 km³ comes from surface runoff and 28 km³ of groundwater feeds the rivers. With a surface runoff of 7 km³ coming from neighboring countries, the total surface runoff within the country reaches 193 km³. However, from the economic and technical points of view, the exploitable water potential amounts to about 110km³ / year.

In the view of the considerable variation in runoff in terms of seasons, years and regions, it is absolutely necessary for the major rivers in Turkey to have water storage facilities, to allow for the use of the water when it is necessary. Consequently, priority has always been given to the construction of water storage facilities. Significant progress has taken place in the construction of dams throughout the 48 years that have elapsed since the establishment of the State Hydraulic Works (DSI).

With projects developed primarily by DSI and other institutions engaged in water resources development, water consumption in Turkey reached 39.3 billion m³ by 2000, corresponding to only 36% of the economically exploitable water resources. Actual and projected water consumption figures in Turkey between 1990 & 2030 are given in Table 1. As can be seen in the Table, most of the water is consumed through irrigation, which is also the greatest consumer of the funds allocated for water resources projects. During water consumption estimates on a sectoral basis, it is accepted that all of the economically irrigable land (gross 8.5 million ha, net 7.34 million ha) will be irrigated with irrigation schemes constructed by the year 2030 and water consumption for irrigation will be 71.5 billion m³. Hence, while its share in total consumption was 75 percent in 1999, the share of irrigation water in the total water consumption will be decreased to 65 percent by the year 2030, through the utilization of modern irrigation techniques.

It has been accepted that per capita water consumption of 250l/day (in 2000) will reach 500 l/day (which is the case for most European countries) by 2030. By taking into consideration that about 5 billion m³ water is needed in tourism sector, the total water consumption for domestic purposes will reach 25.3 billion m³ by 2030. With the assumption of 4 percent annual growth rate in the industrial sector, it is expected that industrial water consumption

will increase from 4.2 billion m³ in 2000 to 13.2 billion m³ in 2030. Thus, considering all of these issues, it can be seen that 100 percent of the total economically exploitable water resources (i.e. 110 billion m³) will be under use by the year 2030.

The water potential of countries is usually evaluated based on water potential per capita. According to international criteria, countries with a water potential greater than 10,000 m³ per capita per year are accepted as water-rich; countries with a potential of 3,000 m³ to 10,000 m³ are accepted as self-sufficient; countries with a potential of 1,000 to 3,000 m³ are accepted as having a water deficit; and those with water potential of less than 1,000 m³ per capita per year are regarded as water poor countries.

In Turkey, while the gross water potential per capita was 3,700 m³ at the beginning of 1997, this fell to 3,000 m³ at the beginning of 2000 and it is estimated to decrease to 2,000 m³ in 2010 as a result of the population increase. However, when evaluated on the basis of the average annual exploitable potential, this figure will be about 1,300 m³. Thus, as understood from these figures, some regions of the country will face water scarcity in drought seasons and Turkey will become a water deficit country in the future (Turkey, Ministry of Energy and Natural Resources, State Hydraulic Works – DSI).

The possibility of people to have access to safe drinking water is considered as vital. Under Turkish law no. 1053 ('Supply of Drinking and Utilization Water to the Settlements with Population greater than 100,000'), many projects have been developed to supply drinking water to cities. 15 projects are in operation, providing 1.931 billion m³ of water (corresponding to 21,557,060 population according to the 1997 population survey) and 27 are either under construction or in the investment program, which will provide 0.854 billion m³ water. At full development, the domestic water supply will thus reach 2.785 billion m³ water per year, and its share in total consumption will rise from 15 percent in 2000 to 23 percent in 2030.

An estimated 25 percent of the whole population is connected to sewerage system, equivalent to more than 50 percent of the urban population.

I. 2 Agricultural Resource Base and Climate

Turkey occupies a total area of about 78 million hectares, of which about 1.1 million is inland lakes. On the east Turkey has borders with Iran, Azerbaijan, Georgia and Armenia. On the southeast Turkey's neighbors are Iran, Iraq and Syria. On the south and west Turkey is surrounded with the Mediterranean and Aegean Sea. On the northwest, Turkey has borders with Bulgaria and Greece. The Black Sea lies in the north of Turkey.

Anatolia, except its eastern parts is surrounded by seas and has a total coastline of over 10,000 km, including the Thrace and islands. Turkey forms a bridge between Europe and Asia, with about 3 percent of its land in Europe and the rest in Asia. Turkey is characterized by extreme geoclimatic diversity which permits a wide range of crops to be grown under both rainfed and irrigated conditions. Topographically, it consists mostly of an eastward-rising central plateau of 800-2000 meters of elevation, bordered by mountains in the north and in the south, with fertile plains along the coast and inland valleys. Much of the country is mountainous or hilly, with about 17 percent of the area above 30 percent slope, a further 21 percent between 20-30 percent and 18 percent between 12-20 percent slopes.

Turkey's climate varies widely across the country and within geoclimatic zones. The northeastern coastal zone receives the highest annual rainfall (1,260-2,500 mm) and has mild temperatures throughout the year. The central Anatolia receives the lowest rainfall (200-600 mm) and has hot, dry summers. The northeastern Anatolia because of its higher elevation has cooler summers but more severe winters. The southern and western coastal regions have a Mediterranean type climate with hot, dry summers and mild winters. In most of Turkey, rainfall is scarce during the growing season even in normal years. Important fluctuations in precipitation occur from year to year (Olgun, Kasnakoğlu and Gürkan; 1987 and World Bank; 1983).

Turkey has a subtropical, semi- arid climate with extremes in temperatures. On the east, summers are not hot and dry; winters are cold, rainy and snowy. Along the coastal area, a Mediterranean climate is dominant with long, hot, dry summers and short, mild, rainy winters. Although Turkey is situated in a geographical location where climatic conditions are quite temperate, the diverse nature of the landscape, and the existence in particular of the mountains that run parallel to the coasts, results in significant differences in climatic conditions from one region to the other. While the coastal areas enjoy milder climates, the inland Anatolian plateau experiences extremes of hot summers and cold winters with limited rainfall.

Turkey has both maritime and continental weather patterns. The Aegean and Mediterranean regions are essentially sub-tropical, characterized by hot dry summer and mild, rainy winters. The black sea region receives precipitation throughout the year and has mild summer and winters. Central Anatolia is a vast high plateau and a semiarid continental climate with extremities in temperature. The average annual temperature varies between 15C and 20C on the coastal zones, falls to 4C and 18C in the inland area. The mean annual temperature is the lowest in the region of Eastern Anatolia, while the Mediterranean Region has the highest mean annual temperature. Cloud cover index decreases from North to South. Black sea region has the highest index while the Marmara, Central Anatolia; South Eastern regions have the lowest cloud index.

As for the regional distribution of sunshine distribution, the west and mid of the black sea region and also Marmara region have the lowest duration for sunshine, while South-eastern Anatolia and Mediterranean regions have the longest sunshine duration during the year. Similarly, the average humidity values of Turkey, is at the highest level in the region of Black Sea, while being at the lowest level in the region of South-Eastern Anatolia.

Turkey has a climate that is characterized by great extremes and wide temperature variations between regions and seasons. The narrow coast land mountain slopes to the north, west and south have wetter and milder winters than the interior as well as moderately hot summers. The interior plateau winters are cold with frost while the summers are hot. Eastern Turkey has bitter cold winters and hot summers. Due to the variation in topography, four main types of climate are observed in the country, namely Mediterranean, Black Sea, Interior region, East high region. Air flow coming to Turkey is controlled by Asor Anticyclone, Siberian Anticyclone, Polar Front Depressions, Mediterranean Depressions, Basra Low pressure Center. Three types of rainfall occur over Turkey: These are convective rainfall which is observed in Central Anatolia in Spring and summer months; frontal rainfall which is observed in all regions, mainly in winter and spring months; and orographic rainfall which is observed on the seaward slopes of Black sea and Mediterranean sea.

Due to the country's complex topographical structure, climate conditions vary by the region:

- **Black Sea Coast:** All seasons are rainy. In the summer it is quite hot and in the winter quite mild.
- **Mediterranean:** These regions experience Mediterranean conditions, with a hot dry summer and a mild winter.
- **Anatolian Plateau:** Substantial differences in both temperature and amount of precipitation are evident in Anatolia's sub-regions. Rains fall in the winter, with some summer rains in the north. Summers are humid and warm, winters are cold.
- **Eastern Turkey:** A dry mountain climate prevails. The altitude and the topography have a major influence on the climate. The summer is cool, while the winter is extremely cold. Precipitation falls in the winter, mostly in the form of snow.
- **The South East:** this region is exposed to the influence of the Syrian an Arabian peninsula deserts, resulting in a hot semi-arid climate. The area experiences very hot summers and mild winters.

To conclude, meteorological data shows that over 96 percent of the country plants get inadequate moisture during their growing periods. Therefore application of irrigation water is necessary over the whole country to get optimum benefit from the land resources.

I.3. Overall and Rural Infrastructure

The village electrification from 1990 to 2003 has increased. In the year 1990, 35191 villages had electricity, whereas the number of villages reached to 37411.

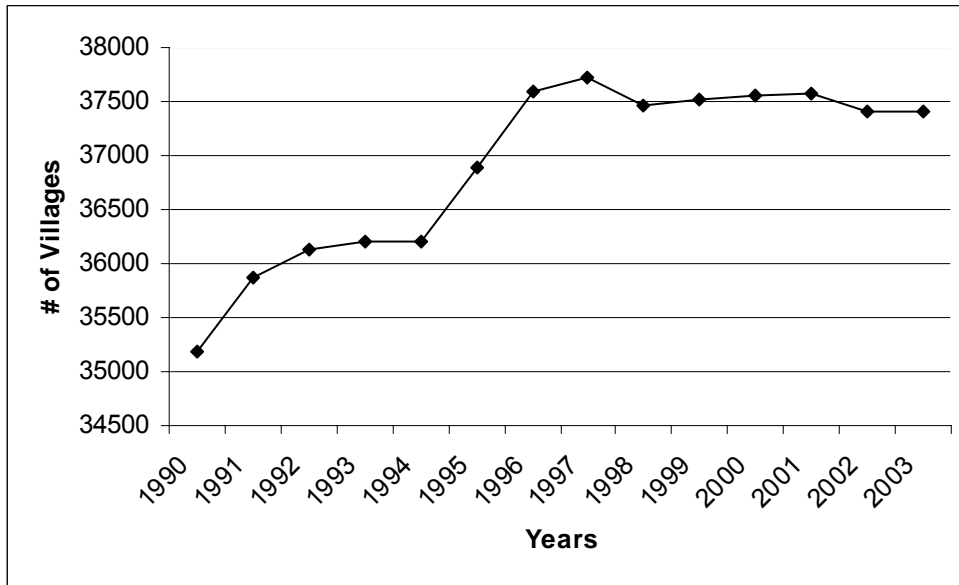
Table 1.1. Electrification and Asphalt Roads

YEARS	Electricity Production (GWh)	Number of Village with Electricity	State Highway Provincial Roads ASPHALT (%)	Village Roads Asphalt (%)
1990	57543	35191	80	7
1991	60246	35872	82	8
1992	67342	36124	81	8
1993	73727	36196	83	9
1994	78322	36204	84	9
1995	86247	36890	85	11
1996	94862	37588	86	14
1997	103296	37714	87	16
1998	111022	37454	89	19
1999	116440	37520	90	22
2000	124922	37551	92	27
2001	122725	37582	92	29
2002	129400	37411	93	31
2003	141650	37411	93	32

Source : SPO, 2004

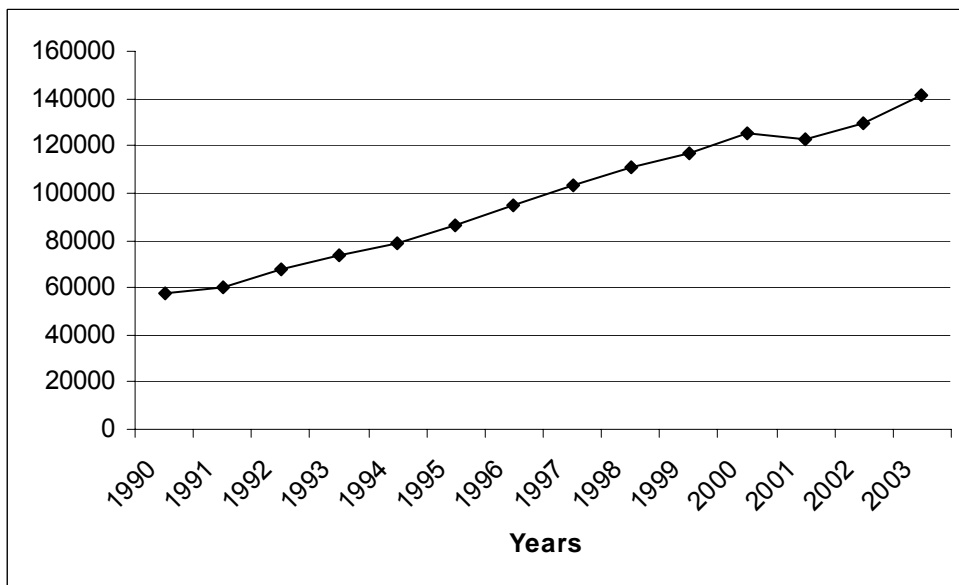
Electricity in Turkey has significantly increased in Turkey form 1990 to 2003, it was 57543 GWh in 1990, by the year 2003, and it increased 141650 GWh. About two thirds of the electricity production is thermal and the remaining one third is hydraulic in Turkey.

Figure 1.1 Village Electrification



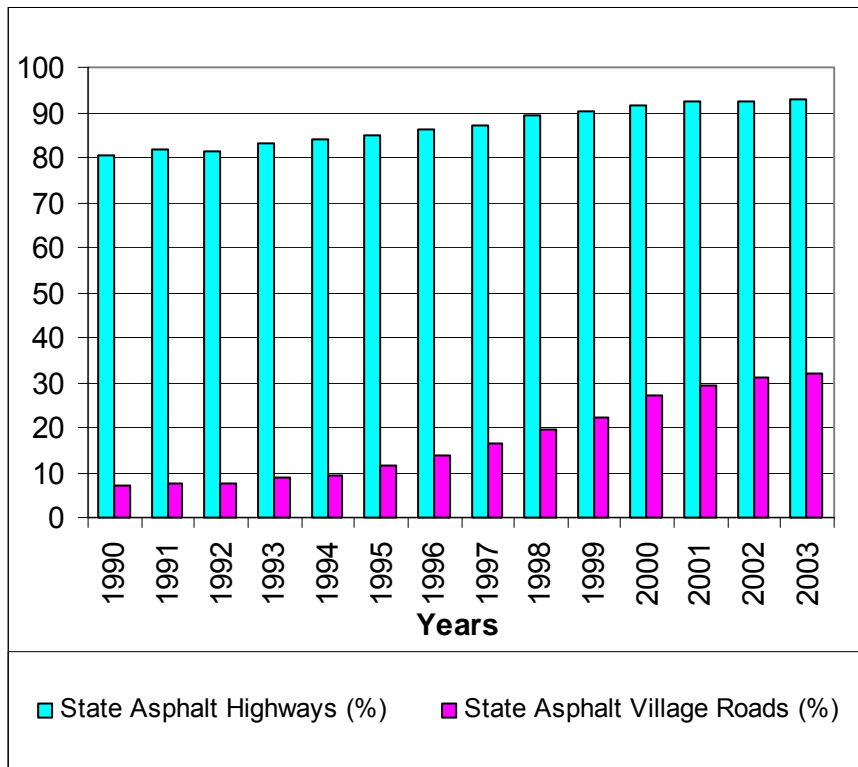
Source: SPO, 2004

Figure 1.2. Electricity Production (GWh)



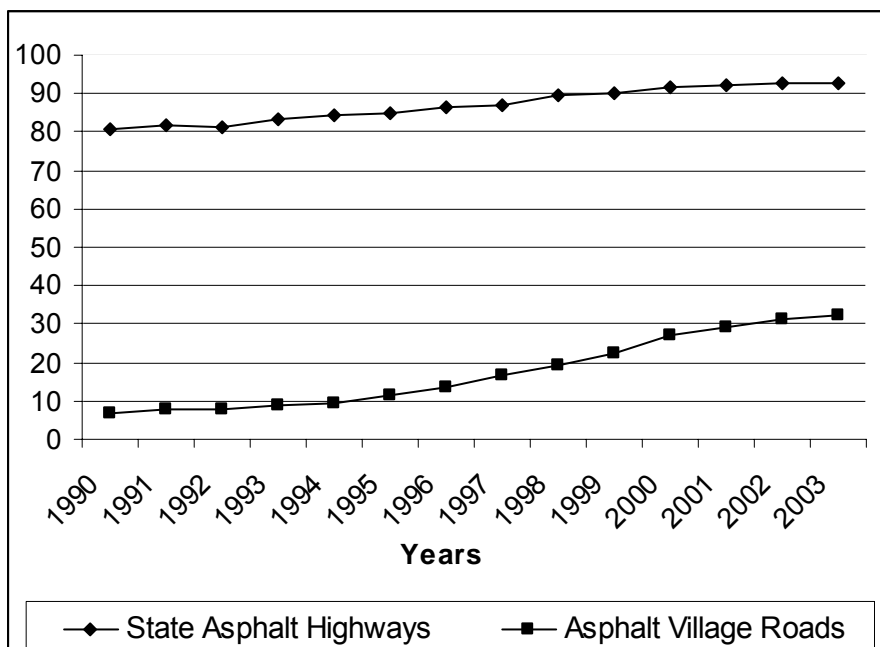
Source: SPO, 2004

Figure 1.3 Asphalt Highways & Village Roads (%)



Source: SPO, 2004

Figure 1.4. Asphalt highways and Village Roads (%)



Source: SPO, 2004

In Turkey, it is apparent that the asphalt percentage of state highways is bigger than the asphalt village roads. While the asphalt state highways are increased from 80 percent in 1990 to 93 percent in 2003, the asphalt village roads have been increased from 7 percent in

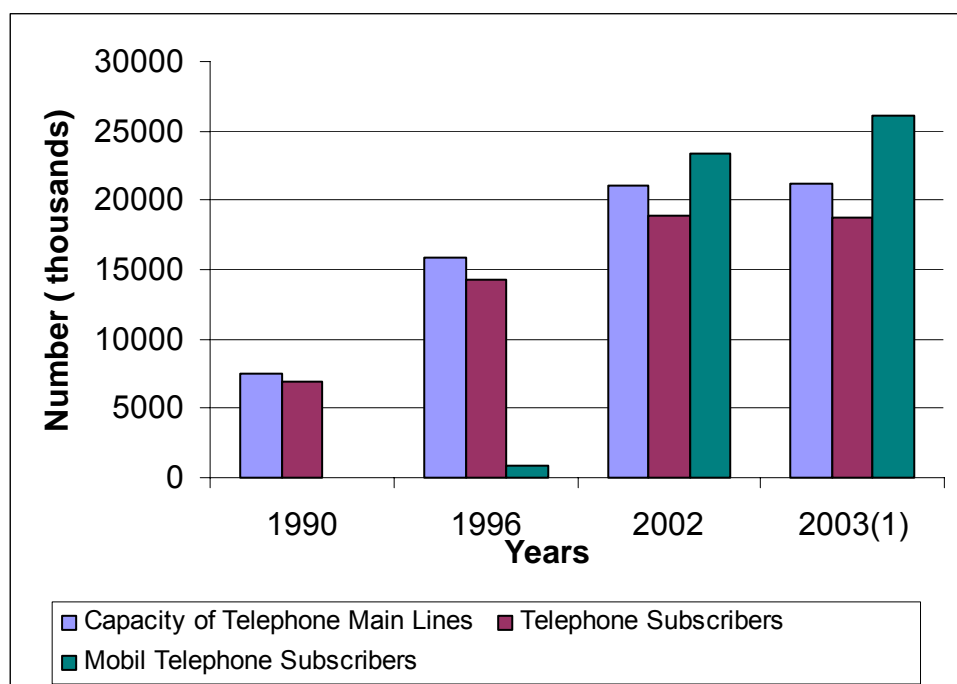
1990 to 32 percent in 2003. There is a significant jump in the asphalt village road percentage as it can be seen, however it is still in far lower levels compared to asphalt state highways.

Table 1.2. Telecommunication Services

Years	Number of villages with phone connection	Telephone Subscribers (thousands)	Mobil Telephone Subscribers (thousands)	Letters (million)	Number of Television (thousands)
1990	39245	6862	-	1432	12988
1991	41195	8147	-	1485	14525
1992	42898	9472	-	1511	16000
1993	43896	11020	-	1459	17284
1994	45500	12306	-	1233	18006
1995	46500	13227	-	1261	18958
1996	47000	14286	806	1312	20589
1997	50605	15744	1610	1290	23019
1998	48329	16959	3454	1031	24341
1999	50083	18054	7621	1045	26962
2000	51335	18395	13498	1025	29791
2001	52780	18904	18299	858	-
2002	52786	18915	23374	942	-

Source : SPO, 2004

Figure 1.5. Telecommunication Services

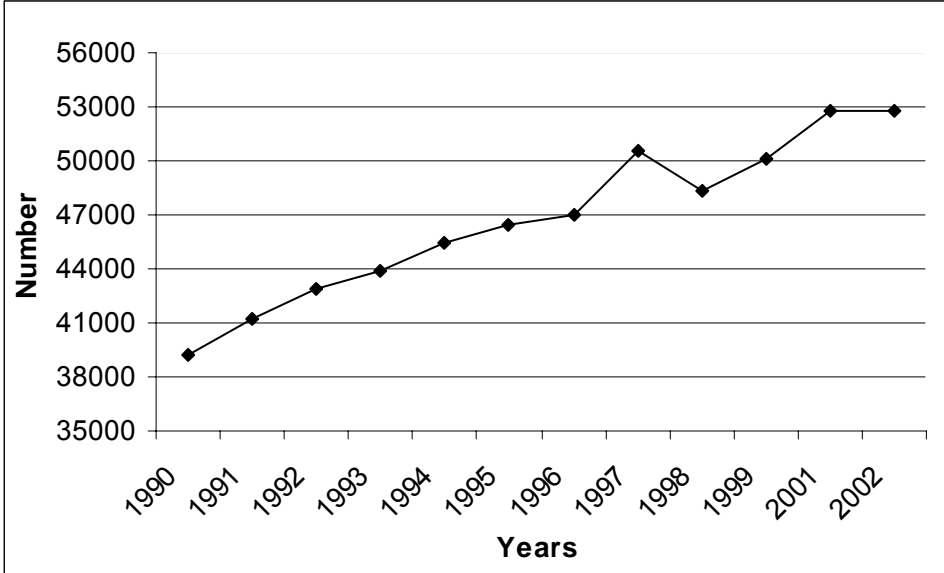


Note : (1) Estimate

Source: SPO, 2004

There have been significant developments in telephone services in 1990's. Capacity of main telephone lines were 7,521,000 in 1990 which tripled in 12 years and reached to 21,083,000. Number of telephone subscribers is another indicator which has been tripled from 1990 to 2002. In 1990, it was 6,862,000, and the number is determined as 18,915,000 according to SPO data. The third jump in Turkish telecommunication systems is mobile telephone subscribers which followed the world trend. While there were no mobiles in 1990, it reached 23,374,000 at the end of the year 2002.

Figure 1.6 Rural Telephone Connection



Source: SPO, 2004

The telephone infrastructure in Turkey is an organized, efficiently working direct dialing system. Turkey's systems are the 6th in Europe and 12th in the world. All residential areas in whole Turkey are linked to this system. The main service provider is the Turk Telekom, half-privatized telecommunication company.

All telecommunications were state-owned. The first private telecom firms were the cellular networks. The telecom part of the ex PTT has been separated from the postal service in 1995.

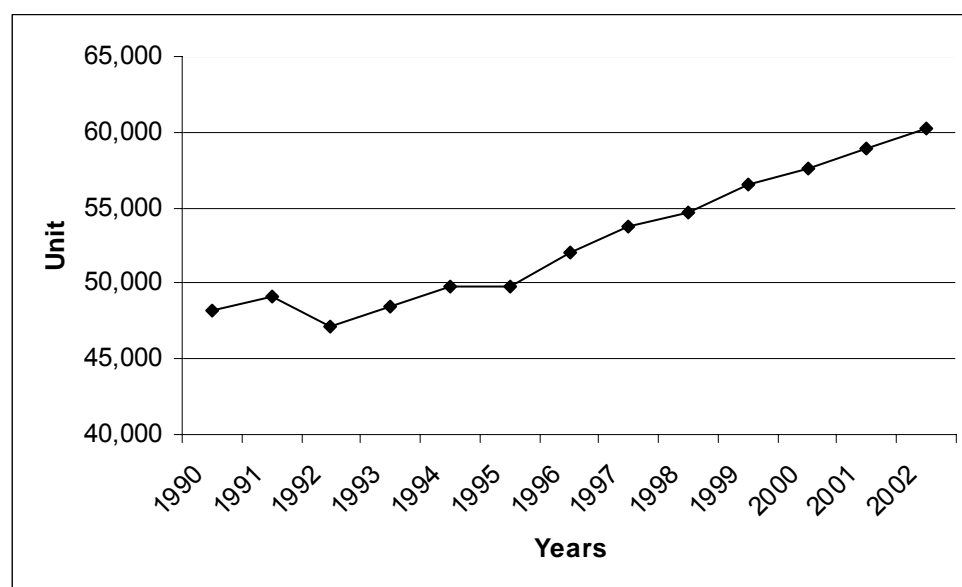
Television has also been a very important mode of communication in Turkey starting in late 60's with the introduction of first Black and White TV's. In mid 70's the color TV's entered Turkey, and the black and white TV's replaced in urban areas were moved to rural areas. By mid 80's most families in Turkey owned color TV's. Starting in late 80's number of TV channels received has increased thanks to the satellite technology and two the new public and private TV stations opened. Today, 5 public channels and about 20 private channels exist in Turkey in addition to international channels received through private antennas and cable networks.

Table 1.3 Water Services to Villages

With Drinking Water (Unit)	Not Enough Water (Unit)	Without Water (Unit)	Total (Unit)
48,179	10,425	20,723	48,210
49,167	10,593	18,915	49,197
47,115	13,477	17,506	78,098
48,500	12,331	16,666	65,178
49,767	11,343	15,677	76,787
49,767	11,343	15,677	49,794
52,046	10,582	13,847	65,904
53,813	9,881	12,763	76,457
54,662	8,940	11,337	74,939
56,508	8,587	10,536	75,631
57,570	8,725	10,122	76,417
58,886	7,970	9,575	76,431
60,264	7,577	9,199	77,040

Source: SPO, 2004

Figure 1.7 Drinking Water Services to Villages



Source: Table 1.3

From 1990 to 2002 drinking water services to villages significantly increased. In 1990, it was 48,179 which jumped to 60,264 at the end of the year 2002.

I.4. Agricultural Infrastructure

Our analysis of the structure of Turkish agriculture depends on the agricultural census of 2001 that is held by the DIE. The census consists of surveys answered by firm and mukhtars (the elected head of a village or of a neighborhood within a village). DIE's agricultural covers a wide range of information. The main variables to be analyzed which are relevant to the purposes of this report are number and distribution of firms land size, number of machinery and livestock, distribution of rural population and agricultural employment, and structure of irrigation.

1.4.1 Irrigation

According to the general agricultural statistics in 1991, the aggregate irrigated land constitutes 3, 7 million hectares area. 2,6 million hectares of irrigated land is farm crops while fruits and vegetables production constitutes the rest 1 million hectares. The total irrigatable land in the country is estimated to be around 13 million hectares.

The area which can be irrigated economically is estimated to be between 6-8 million hectares. Therefore, at the present about half of the total irrigation potential has been exploited in Turkish agriculture. The total irrigated area in Turkey is estimated to increase to 5 million hectares with the completion of the South Eastern Anatolia Project in 2010. Of the 3.7 million hectares of irrigated area, about one third is served by large-scale irrigation facilities built by DSİ (State Hydraulics Works), about one third is served by small-scale facilities developed by the Ministry of Village Affairs, and the remaining one third is private irrigation by the farmers. According to the 1991 General Census of Agriculture 18 percent of the field crop area is irrigated. The irrigated farming is more widespread in the case of perennial crops and vegetables. 27 percent of the tree area and 78 percent of the vegetable area are irrigated.

1.4.2. Research and Development

Turkey has started to compile Research and Development Indicators after 1991. According to the first findings, total R&D expenditures in Turkey amounted to disappointing 0.54 percent of GNP. Agricultural research and development expenditures constituted little over 4 percent of this modest total. Most of the R&D activities in agriculture are concentrated in the Ministry of Agriculture and in the universities.

A 70 million dollar World Bank loan has been received in 1992 to improve the agricultural research activities in Turkey. One of the objectives of the loan is to help the establishment of a new agricultural economics research institute to help the government in its policy making process.

1.4.3 Overview of Land Distribution and Crop Patterns

1.4.3.1. Land Distribution

Farms in Turkey are generally family-owned, small, and fragmented. The average cultivated area per holding was about 5.2 ha in 1991, and it increased to about 6 ha in 2001. About 85 percent of holdings, on 41 percent of the land, were smaller than 10 ha. Fifteen percent of holdings were from 10 to 50 ha, and they cultivated almost half of the cultivated land. The average size increases from west toward southeast, due to the climate and fertility differences. The proportion of the irrigated land increased from 14 percent in 1991, to 20 percent in 2001. The share of irrigated land is much higher in the west than elsewhere in Turkey. A third of the holdings smaller than 1 ha are irrigated.

The distribution of agricultural land remained skewed, with a slight tendency towards the medium ranges from smaller sizes in the considered decade . Irrigated land is distributed slightly more evenly than cultivated land.

Table 1.4. Size Distribution of Land, 1991 and 2001 (percent).

Size of Holdings (ha)	1991		2001	
	Farm HH's	Cultivated Area	Farm HH's	Cultivated Area
No Land	2.50		1.77	
< 0.5	6.19	0.29	5.78	0.26
0.5 - 0.9	9.37	1.08	9.44	1.02
1 - 1.9	18.49	4.28	17.54	3.82
2 - 4.9	31.33	16.28	30.91	15.48
5 - 9.9	17.53	19.80	18.21	20.41
10 - 19.9	9.42	21.21	10.64	24.05
20 - 49.9	4.27	20.23	5.00	23.69
50 - 99.9	0.59	6.49	0.57	6.32
100 - 249.9	0.25	5.63	0.14	3.07
250 - 499.9	0.05	2.88	0.01	0.40
500 +	0.01	1.83	0.00	1.50
Total	100.00	100.00	100.00	100.00
Gini Coefficient ^a		0.60		0.59
	(1000 HH's)	(1000 ha)	(1000 HH's)	(1000 ha)
Village Census	4,092	21,103	3,698	22,156
HH Survey	4,068	21,449	3,076	17,164

Note: ^a calculated by the authors from grouped data.

Sources: SIS (1994), SIS (2004c).

1.4.3.2. Structure and Diversity of Agricultural Production

Field crops have occupied 87 percent of cultivated area since 1985 (Table 1.5). The share of vegetable production has been increasing steadily. Land left fallow declined from 21 percent to 18 percent of the cultivated land, causing an increase in cropping intensity of 2 percentage points. The decline in fallow land was more intense before the mid -80's due to the fallow land reduction project implemented. In the Central Anatolian customary crop rotation, the project encouraged planting of pulses instead of leaving land fallow. Yet, the decline in the world prices of pulses limited the fallow reduction in the last decade.

Table 1.5. Turkey: Use of Cultivated Area (period averages)

	1985-87		1995-97		2000-02	
	Area (million ha)	Share (percent)	Area (million ha)	Share (percent)	Area (million ha)	Share (percent)
Field Crops	24.07	87.1	23.62	87.8	23.02	87.3
Area Sown	18.28	66.1	18.57	69.0	18.15	68.8
Fallow	5.79	20.9	5.05	18.8	4.87	18.5
Vegetable	0.64	2.3	0.78	2.9	0.80	3.0
Orchards	2.94	10.6	2.50	9.3	2.55	9.6
Total	27.65	100.0	26.90	100.0	26.37	100.0
Cropping intensity (percent. of cultivated land)	-	79.1	-	81.2	-	81.5

Source: SIS (2003b).

The field crop pattern showed no drastic changes, apart from the increase in cereals and a steady decrease in the share of oilseeds (Table 1.6).

Table 1.6. Turkey: Field Crop Areas (period averages)

Crop	1985–87		1995–97		2000–02	
	Area (million ha)	Share (percent)	Area (million ha)	Share (percent)	Area (million ha)	Share (percent)
Cereals	13.82	50.0	13.85	50.4	13.93	52.8
Wheat	9.37	33.9	9.36	34.1	9.38	35.6
Barley	3.34	12.1	3.61	13.1	3.63	13.8
Maize	0.57	2.0	0.54	2.0	0.55	2.1
Rice	0.06	0.2	0.05	0.2	0.06	0.2
Pulses	1.74	6.3	1.83	6.7	1.55	5.9
Chick peas	0.53	1.9	0.75	2.7	0.64	2.4
Lentils	0.75	2.7	0.61	2.2	0.48	1.8
Industrial crops	1.24	4.5	1.48	5.4	1.37	5.2
Tobacco	0.18	0.7	0.25	0.9	0.22	0.8
Sugarbeet	0.35	1.3	0.40	1.5	0.38	1.5
Cotton	0.61	2.2	0.74	2.7	0.67	2.5
Oilseeds	0.93	3.4	0.72	2.6	0.62	2.4
Sunflower	0.70	2.5	0.57	2.1	0.53	2.0
Soybeans	0.09	0.3	0.02	0.1	0.02	0.1
Tuber crops	0.29	1.0	0.34	1.2	0.32	1.2
Onion, dry	0.08	0.3	0.12	0.4	0.10	0.4
Potatoes	0.20	0.7	0.21	0.8	0.20	0.8
Total cultivated area	27.65	65.2	26.90	66.3	26.37	67.5

Source: SIS (1989), (1999), (2003b).

The share of crop production in total value of farm output varied from 70 to 75 percent, and the remaining 25-30 percent came from livestock output during the last decade. Wheat constitutes the largest share in cereal value with slightly higher than 65 percent, followed by barley (20 percent) and maize (9 percent). Cotton (50 percent), sugar beet (30 percent) and tobacco (15 percent) constitute almost all of the production value of industrial crops. Chickpeas, dry-beans and lentils are the important pulses, while sunflower and potato are the two important oil and tuber crops, respectively (SIS, 2003).

By international standards, Turkey is a major producer of grain, cotton, tobacco, grapes, figs, apricots, pulses (chickpeas and lentils), nuts (hazelnuts, pistachios), fresh fruits (apples and citrus), tomatoes, tea and in some small ruminants products. Table 1.7 shows the rank of Turkey in the world and volume of production.

Table 1.7. Rank of Turkey in the Top-10 of the World, Selected Products, 2003

Crop	Rank	Production (1,000 mt)	Crop	Rank	Production (1,000 mt)
Field Crops			Perennials		
Barley	6	8,000	Almonds	7	50
Chick-peas	3	630	Apples	5	2,200
Chillies and Peppers	3	1,500	Apricots	1	580
Cotton	5	946	Figs	1	265
Cucumber	2	1,750	Grapes	5	3,850
Eggplants	3	970	Grapefruit	7	140
Lentils	2	545	Hazelnuts	1	600
Onion	4	2,050	Lemons	9	400
Rye	9	240	Olives	4	1,800
Sugarbeet	5	13,355	Pistachios	4	50
Tobacco	6	154	Tea	6	150
Tomatoes	3	9,000	Livestock Products		
Watermelons	2	3,900	Goat meat	9	47
Wheat	10	19,000	Sheep meat	6	290
			Sheep milk	3	723

Source: FAO (2004).

The regions exhibit high diversity in crop and livestock production. Wheat and barley, the two largest crops in Turkey, are grown throughout the country; however Central Anatolia grows more than any other region (about 40 percent). Turkish agriculture in general, but especially, cereal production is heavily dependent on seasonal rainfall. Vegetables occupy a small proportion of the cultivated area, but the value of vegetable production forms more than one fourth of the total value of crop production. Vegetables are produced mainly in the Western regions, where climatic conditions are ideal. Perennials are concentrated in the West. Some special crops, like hazelnuts and tea are grown in the Eastern Black Sea region, whereas pistachios can be found only in the Southeast. Small ruminants stock is mainly in the Central and Eastern Regions, whereas commercial cattle production is concentrated in the West.

Conditions for livestock production are deteriorating. Small herd sizes, overgrazed pastures and meadows, and social unrest in the Southeast combined with domestic agricultural policies contributed to the steep downward trend in livestock (Table 1.8).

Table 1.8. Livestock and Livestock Production in Turkey, 1997-2002

	1997	1998	1999	2000	2001	2002
	(1000 head)					
Cattle	11,185	11,031	11,054	10,761	10,548	9,803
Sheep	30,238	29,435	30,256	28,492	26,972	25,174
Goat	8,376	8,057	7,774	7,201	7,022	6,780
	(1000 MT)					
Beef ^a			621	625	610	580
Sheep and Goat Meat ^a			373	355	300	280
Cow milk	8,914	8,832	8,965	8,732	8,489	7,491
Sheep and Goat Milk	1,076	1,059	1,041	995	943	867

Note: ^a based on estimated slaughtered livestock.

Sources: SIS (1999), SIS (2003b), AERI (2002).

Even though Turkey produces large quantities of cereals and has millions of cattle, partial productivity indicators are not at par with the international averages. Average wheat yield was 2.1mt/ha in 2002, ranging from 3.5mt/ha in East Mediterranean to 1.0mt/ha in the East. Similar patterns can be observed for barley. Sunflower yield is about 1.5mt/ha. The average yields for sugar beet and cotton are 45mt/ha and 3.5mt/ha, respectively. These figures indicate the potential and the need for technology transfer and productivity improvement.

Instability of the macroeconomic environment has important consequences for the Turkish agriculture. Prices received by farmers in real terms declined sharply to half of what it was in 1997, after the recent crises. This indicates that macroeconomic fluctuations may have adverse effects on agricultural incomes, although agricultural sector is supported by various instruments throughout the years.

Farm output therefore remains low in comparison to the country’s enormous potential and farmers’ average income is also low. Small farm size, dependency on rainfed agriculture combined with the inability of the policy makers to form and deliver proper policy measures prevent the movement towards the actual production possibility frontier. Agriculture in Turkey has kept its role as a major employer and contributor to the GNP throughout the last two decades. The multi-functionality in agriculture arises not only from the public goods provided by the farm activities, but from its ability to refrain rural-urban migration, and hence it continued to be as a reserve for labor. However, the prevailing conditions in agriculture combined with the mismanagement in macro and agricultural policies prevented an overall structural transformation of the sector.

I.5. Farm Structure

According to 2001 census there are a total of 3.075.516 agricultural households in Turkey.

The distribution of households according to size of land they own is shown in figure-1.7. As can be seen from the figure the distribution is close to a normal distribution. An important part of farm households are accumulated in the 20-49 da. We see that the number of farms owning a specific land scale did not changed much from 1991 to 2001.

Figure 1.7. Percentage distribution of number of farm households according to size (decare)

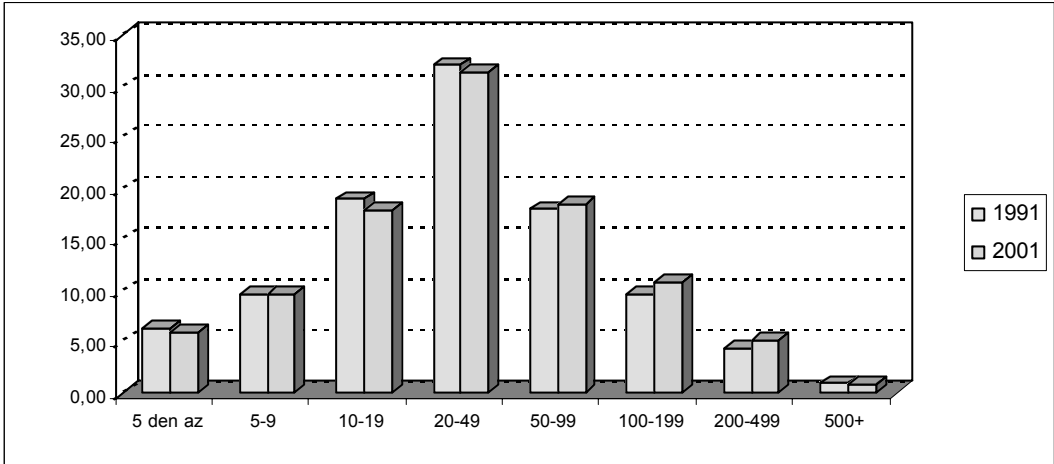
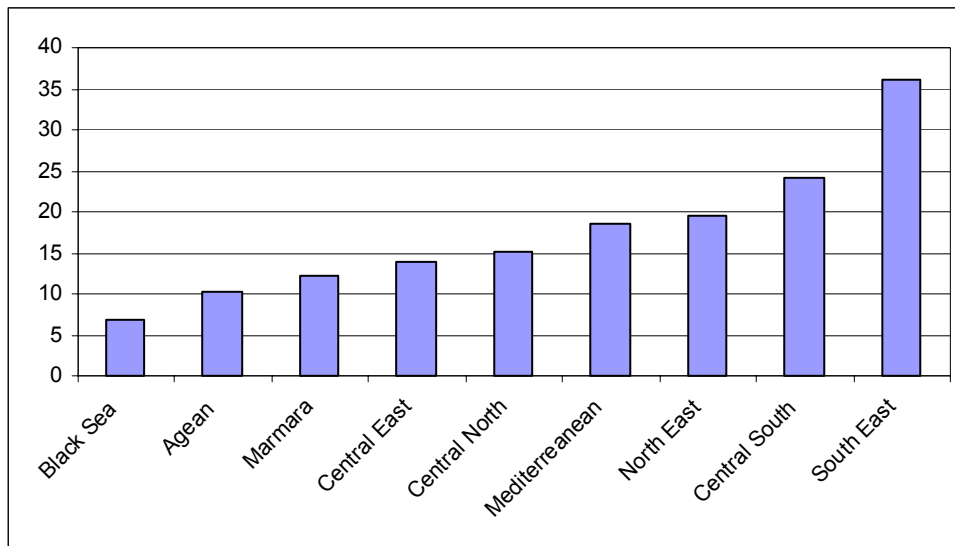


Figure-1 in the structural annex shows the total area of land owned by the farms in each size group. We see that the the total area of land which are owned by firms in the group of 100-199 da. of land is the highest. In general distribution is skewed towards 100-199 group.

The average parcel size can be seen in figure-1.8. As can be seen from the figure, average parcel size changes drastically throughout the country from 6.94 to 35.98 decares.

Figure-1.8: Average parcel size (dectare)



Another important thing worth noting is the number of farms with greenhouses and their distribution amongst the geographic regions. There are 47.085 farms that make production using greenhouses. Figure-2 structural annex depicts this information. The greenhouses of Turkey are accumulated in Mediterranean region.

66.36 percent of total households who live in the villages and settlements of which population is under 25.000 are employed in agricultural sector. The number of households varies largely between geographical regions. The share of households engaged in agricultural production is highest in Northeast region with 80.82 percent and it is lowest in Marmara with 43.47 percent.

Figure-3 of structural annex shows the regional distribution of male and female agricultural labor. The highest agricultural employment is in Black sea region. Moreover in Black Sea region women participates in agricultural production far more than men. Agricultural employment is minimal in Marmara and Central South. The former is developed in industry while seasonal workers are employed largely in large scales. An important part of active population of Southeast is employed as seasonal worker in these regions.

Agricultural labor is mainly comprised of self-employment and unpaid family members. The vast of women engaged in agricultural production are unpaid family members (above 90 percent compared to 40 percent of men). It is the male population who is largely involved in self-employment. This fact is visualized in figure-4 of annex.

1.5.1. Structure of Irrigation

The first row of table-1.9 shows the percentage of area of irrigated land in total irrigated area according to the irrigation methods. The most widely used sources of irrigation are wells and river.

The remaining columns show the distribution of firms that uses the corresponding irrigation system according to size. For example firms possessing 2-4.9 ha. of land irrigates 15 percent of the land they control by using spring water. The table reveals the fact that the firms that possess large amounts of land prefer to use wells for irrigation. The mid-sized firms, on the other hand, prefer river water. This pattern offers that only very big firms can overcome the cost of building wells. The smaller firms are dependent on natural and traditional ways of irrigation.

Table 1.9. Distribution of irrigated land among firm size

Firm Size	Area of land Irrigated by: (hectares)						
	Well (%)	Spring (%)	River (%)	Lake (%)	Pond (%)	Dam (%)	Other (%)
Total	38	10	29	2	3	16	3
Less than 0.5	17	24	46	1	2	6	4
0.5-0.9	24	19	38	3	2	12	2
1-1.9	24	20	37	4	2	10	4
2-4.9	28	15	35	3	4	13	3
5-9.9	33	12	34	1	3	15	2
10-19	40	10	29	1	2	15	2
20-49	46	5	21	3	3	18	3
50-99	48	5	20	1	2	17	9
100-249	38	0	20	0	3	31	8
250-499	42	1	5	0	0	52	0
500+	69	1	14	0	1	12	3

Source: SSI 2001 Agriculture Census Results

Figure-1.9 shows the share of irrigated land owned by each size group, in total irrigated land. As can be seen the small sized firms own a larger part of irrigated land.

Figure 1.9: Size specific share of irrigated land in total irrigated area (percent)

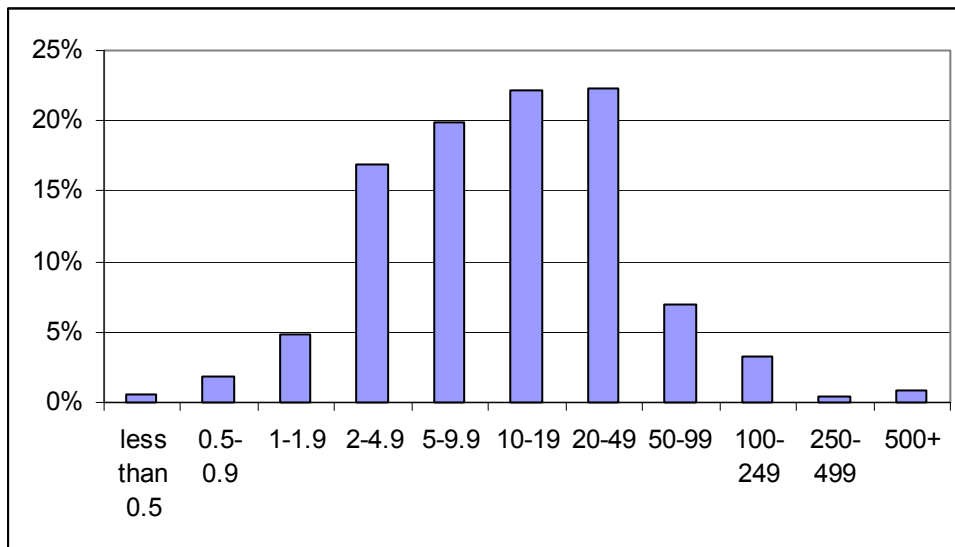
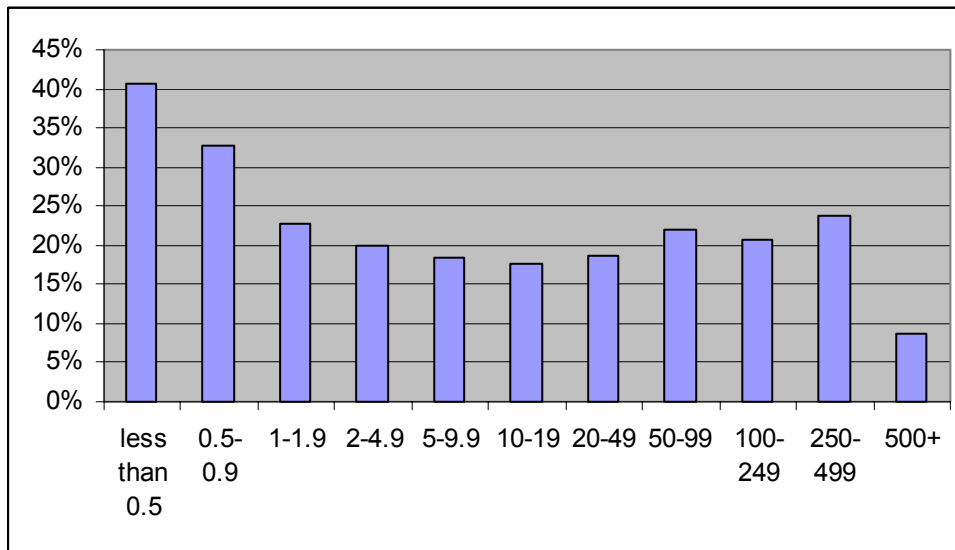


Figure-1.10 below on the other hand shows the percentage of irrigated area in total land used for agricultural production, as classified according to the size. Only a 19 percent of the land used by agricultural firms is irrigated. As figure-1.10 depicts the share of irrigated land falls as the size of firms increases. This is an expected result since firms needs more efficient production to cover the costs as their sizes falls.

Figure 1.10: Share of irrigated land in total land owned by firms



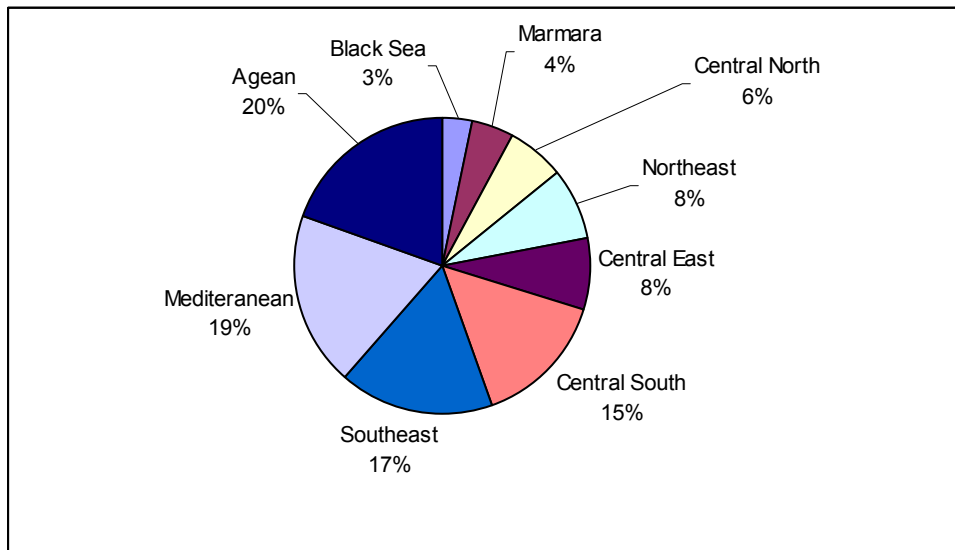
When we look at the irrigation methods, we see that all groups of firms use gravity method extensively. Table-1.10 below depicts the share of land irrigated by different methods. Firms at the extremes in terms of size of land owned uses gravity method more than middle sized firms. The middle sized firms utilize sprinkling more than the other groups. Dropping is used by small firms more because most of the greenhouses are in this group.

Table 1.10: Share of land irrigated by different methods

Firm Size	Irrigation by:		
	Gravity (%)	Sprinkler (%)	Drip (%)
Total	81,73	16,62	1,65
less than 0.5	87,71	2,07	10,22
0.5-0.9	93,18	2,92	3,90
1-1.9	93,51	3,45	3,04
2-4.9	90,54	7,09	2,37
5-9.9	87,59	11,18	1,24
10-19	77,23	21,01	1,76
20-49	73,11	26,46	0,44
50-99	66,64	31,20	2,16
100-249	92,07	5,77	2,16
250-499	96,08	1,02	2,90
500+	94,87	3,93	1,20

The structure of irrigation changes widely from a region to another due to climate, geographical structure and the differences in agricultural infrastructure. Mediterranean, South East and central south regions comprises more than 50 percent of total irrigated land. South east region enjoys the advantage of Atatürk Dam and other infrastructural investments made by GAP to enhance the irrigation in the region.

Figure 1.11: Distribution of irrigated land among regions



The distribution of irrigated land according to the source of water as percentage of total irrigated land in each region is given in table-1.11. The table clearly states the fact that source of irrigation varies widely from region to region. The regions that cover the largest part of irrigation, are also the regions which uses dam water extensively, which states the importance of dams in irrigation. The weight of rivers as water source in regions that include the least irrigated land such as Black Sea, Marmara and Central North points out the need and feasibility of building new dams in these regions.

Table 1.11. Source of water in irrigation in each region (percent)

	Well	Spring	River	Lake	Pond	Dam	Other
Black Sea	31	10	43	1	6	4	6
Marmara	24	6	40	9	4	8	8
Central North	42	6	36	1	3	8	5
Northeast	8	15	65	0	5	5	2
Central East	13	23	46	3	7	7	1
Central South	74	4	7	1	1	7	5
Southeast	44	11	20	0	2	22	1
Mediterranean	30	9	30	2	1	26	2
Aegean	36	10	22	3	3	22	3

Table-1.12 shows the distribution of irrigated land in each region by irrigation method. Gravity is the major irrigation method in all regions except the southeast. Sprinkling has started to substitute gravity method in Central South and Central North. Dropping which is used by greenhouses is accumulated in Mediterranean and Marmara region but it is very rare through out the country and even in these regions.

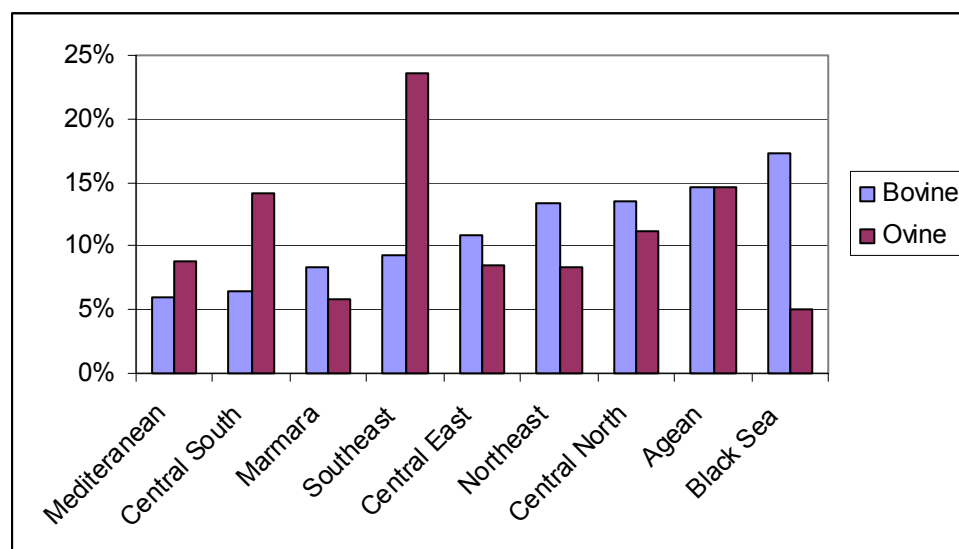
Table 1.12 Method of irrigation by regions (percent)

Regions	Irrigation by		
	Gravity	Sprinkler	Drip
Mediterranean	92,5	3,8	3,7
Aegean	94,0	3,5	2,6
Southeast	75,8	24,0	0,2
Black Sea	89,2	10,3	0,6
Northeast	97,1	2,3	0,6
Marmara	69,8	27,5	2,7
Central East	94,9	3,3	1,8
Central South	55,3	44,6	0,1
Central North	57,9	40,7	1,4

1.5.2. Livestock Raising

Raising livestock is an important source of income for Turkish agricultural sector. However, Turkey cannot realize its potential in livestock raising because of primeval methods in raising and animals of poor quality. According to 2001 agriculture census there are about 10 Million bovine and 23 Million ovine in Turkey except the ones raised for livestock fattening. The distribution of these animals among the agricultural regions can be seen in figure-1.12.

Figure 1.12. Livestock in each region as percentage of total livestock



The figure divulges that livestock raising is very weak in the southwest regions and Marmara region. However, southeast region leads ovine raising while black sea leads the bovines. Central east and North East can be recognized as the regions that cannot realize their potential.

1.6. Marketing systems : farm marketing, storage, processing, distribution

There are three main types of farm marketing systems in Turkey :

- Public purchases both by public organisations and by agricultural sales cooperatives that concern, in majority, either supported commodities like tobacco, cereals, tea, sugar beet, or export-oriented traditional agricultural products as hazelnuts, pistachios, dried figs or dried raisins.

The agricultural exchange markets, (totalling 99 exchange markets), are not very efficient to trade the agricultural bulk products as around four fifth of the total agricultural production are traded outside these exchange markets, which weakens the control of the conformity of the traded products to national and international standards (TZOB, 2001). Unions of Sales Cooperatives are established as early as in the 1930s in order to regulate the market distortions related to the lack of marketing and storage functions among small farmers.

- Traditional spot markets where farmers sell their products on the base of market prices adjusted by free market mechanisms. A great majority of the agricultural products are marketed by this way and marketing channels include, in many cases, a number of intermediary agents that link the farmers to final consumers.

An ordinary marketing channel would comprise:

farmer ➡ middleman (usually a merchant of the nearest city where the farmer has purchases on credit for his agricultural input supplies or for his household needs) ➡ rural area wholesaler ➡ transporter ➡ urban area wholesaler (municipality commissioner) ➡ industrial or urban area retailer ➡ consumer

Of course, this channel changes shape according to the type of product marketed. It will include a new player, exporter, in the case of export-oriented products like fruits and vegetables. In the case of processed food and drinks, there will be an additionnal link, trader and/or transporter, in the supply chain of the SME (small and medium sized enterprise), while large entreprise will probably take in charge its raw material supply by its own means.

Different kinds of payments are practiced then, between the farmers and the buyers (traders, industrials) (TZOB, 1978; 2000):

- *Cash payment:* the transaction takes place on the field, at the buyer's office or shop. If the farmer is a small landholder without any storage facilities, he is often obliged to accept the offer of the buyer without any negotiation on the price. The price is generally the market price.
 - *Down payment: (paiment par acompte):* the farmer receives cash before the harvest and has no possibility to change the prefixed price.
 - *Contract payment :* The date and payment intervals, the price and the volume to be purchased are decided between the contractuals at the moment of the signature of the transaction. This kind of paiment remains the least practiced purchase type.
 - *Credit payment:* this kind of payment is somewhat different from the down payment mentionned above, by its traditionnality. The buyer, who is in general the small town merchant or a rich landowner lends money to the farmer for his everyday needs. In return, he buys, in general, the entire harvested produce of the farmer at a price that he decides alone (mostly, previous year's price) to resell on the Agricultural Stock Market at current prices.
- Contract farming system where industrial firms sign an agreement with farmers to buy a part or the totality of their harvested products. Except sugar beet, which is the most considerable example of this type of purchase system to farmers, there are also industry-oriented field tomatoes (30% of the national production), potatoes (1% of the national production), American type of tobacco, some other fresh vegetables destined to be frozen and exported (A. Ozçelik et al., 1999). Some dairy processing companies, namely Pinar Süt A.S. practices equally contracting farming within the Aegean region of Anatolia since the 1970s.

The Turkish Union of Agricultural Chambers (TZOB) estimates that three fourth of the national agricultural products are traded through spot markets. Around 80% of those are traded outside the Agricultural Stock Markets and probably supply informal sector. Around 6-7% of these products are bought by Unions of Sales Cooperatives and 14% are purchased by Türkiye Malzeme Ofisi (TMO, Turkish Grain Board).

The modern marketing functions including all logistic services like storage, conditioning and transportation are lacking in Turkey. Only large farms that are in direct relation with exporting agencies or industrial firms, and large food retailers (e.g. Migros, Carrefour, Tansaş) have their individual sorting, cold storage and transportation facilities. In this wise, it is reported that 800 out of a total 900 slaughtering houses belonging to urban municipalities work without regular certificate and do not have any conditioning facility. Only some large supermarket chains (Migros, CarrefourSA, Ismar, Tansas, Anet) and two municipal slaughtering houses (Balıkesir province and Bolu province) possess cold storage facilities (*Radikal*, 13/12/2000). For which concerns the fresh fruits and vegetables, out of 71 provinces of Turkey, only 8 have City Halls with cold storage facilities belonging to private traders (7) and agricultural development co-operatives (1) :

Table 1.13 -: Wholesale City Halls with cold storage facilities in Turkey in 2003/2004

Province	Name of the trader
Ankara	Murat Fatso Soğuk Hava Depoları
Afyon	Hancıoğlu Sebze ve Meyve Ticaret Ltd Şti Öz-Anmak Ltd Sti
Antalya	Belhan Soğuk Hava Deposu Yeni Ticaret Tarım Ürünleri Soğuk Hava Tesisleri
Bursa	Esen ve Asya Soğutma Tesisleri Rahmi Kocaeve Soğuk Hava Depoları
Canakkale	Çırpılar Tarım Kalkınma Kooperatifi Yeşilköy Soğuk Hava Deposu
Konya	Erbuz AŞ
Nevşehir	Havalı Narenciye Soğuk Hava Depoculuğu ve Ticaret
Yalova	Esen ve Asya Soğutma Tesisleri

Source : Authors' work based on Türkiye Toptancı Halleri, <http://hal.gen.tr>

Turkey's total cold storage capacity is around 900 000 m³ while France has a total capacity of 1,5 million m³, Greece 2 million m³, Italy 2,5 million m³. Only 4 % of the total fresh produce can be stored in these cooling warehouses whilst some years with high production surpluses, at least 40% of the fresh produce should be stores in these latter in order to avoid high rates of wastes occurring after harvesting (*Eksi, A., 2003*).

A great part of agricultural products are stored, sorted and transported by traditional methods without any quality control. An important proportion of those are wasted through marketing channels because of this lack of logistic services. For example, refrigerated trucks are still used only for cross-border transportation and not at all at domestic market (*S. Tozanlı-Oncuoglu, 1989*). Of course, modern food retailers have their private cold supply chains including refrigerating trunks for the transportation of perishable products like meat, fish, fresh fruits and vegetables and dairy products. But, more than three fourth of the food produce are transported without any modern conditioning and by traditional transportation means.

I.7. Agro-industrial structure overview

Stemming from rich agricultural sources, food processing industry is a rather established sector in Turkish economy. In fact, Turkish industrialisation process started within this sector, after the foundation of the Turkish Republic in 1923. The first modern food processing plants were State initiatives in bulk products like sugar or flour manufacturing, or beer processing. Political and economic liberalisation with the multiparty democracy in the 1950s bring along private investments in high valued food processing even if these companies can not be taken as large processing firms. However, the major development of the Turkish food and beverages industry came along from 1960s thanks to the planned economy.

Hence, the real development of the Turkish food and beverages industry was realised throughout the planned economy which started in 1963. An import substitution policy marked the period covering 1960s and 1970s with an important part of the State investments in the food processing and beverages industry, mainly in bulk produce like dairy industry or meat and fish processing. 1980 is the turning point of the Turkish economy towards international markets with a deliberate liberalisation policy marking all economic sectors. An export-oriented industrialisation programme is set promoting the private investments. The Turkish food and beverages industry is one of the most major sectors to attract private investments. The share of the public sector diminished at a rapid pace since the beginning of 1980s to be established around 20% of national industrial output and around only 5% of the gross fixed investments in the manufacturing industry (State Planning Organisation, 2004).

Food and beverages industry exhibited a positive evolution throughout these last four decades. However, as the entire manufacturing industry had the same pace of growth throughout this period, the relative share of this former diminished gradually within the overall production value of the manufacturing industry. So, food and beverages industry accounted for 38% of the manufacturing industry at the beginning of 1960s; for 24% at the end of the 1970s (*Selma Tozanli-Oncuoglu, 1981*), and only for 17.5% in 1990 and 17% in 2000 (cf. Table 1.13).

In 2000, food and beverages industry employed more than 1.1 millions registered workers in more than 11 thousand establishments with more than 10 employees (cf. table 1.13). By including small enterprises which employs less than 10 employees, we can count more than 28 thousand firms occupied in this sector. Large and modern firms are estimated to be around 2 thousand. In 1990, the total number of enterprises processing food and drink was around 25 thousand (*State Planning Organisation, 2004*).

It ranked at fourth place in the classification of output (in value) in 2000, behind manufacture of chemical and petrol products; manufacture of metal products, machines and equipments and textile and apparel industry whilst it had been the third most important branch of the manufacturing industry before the textile industry in 1990. The same fall is observed equally in the evolution of value added by branches : positioned at the third place in 1990, it left its place to textile and apparel industry in 2000 and ranked as the fourth branch of the manufacturing industry. We also can mention a certain restructuring, as it is the only branch where the number of establishments and the number of engaged workers diminished over the studied decade. This is largely due to the restructuring process undergoing in the public sector including the privatisation operations.

Table 1.14 - Evolution of manufacturing industry in Turkey (1990-2002)

Million € at current prices

Branches of manufacturing industry	1990				2000			
	Number of establishments	Annual average number of workers	Output	Value added	Number of establishments	Annual average number of workers	Output	Value added
Manufacture of food, beverages and tobacco	1 894	188 373	10 278	3 714	1 709	174 400	19 640	6 467
Textile, wearing apparel and leather industries	2 333	296 119	9 301	3 445	3 392	386 276	20 474	6 828
Manufacture of wood and wood products, including furniture	315	20 299	674	224	433	27 054	1 582	618
Manufacture of paper and paper products, printing and publishing	341	37 122	1 777	790	395	33 824	3 776	1 266
Manufacture of chemicals and chemical, petroleum, coal, rubber and plastic products	822	101 262	16 371	6 813	1 021	108 293	28 221	11 348
Manufacture of non-metallic mineral products, except products of petroleum and coal	686	77 554	3 244	1 863	855	73 812	5 541	2 837
Basic metal industries	385	84 298	5 850	1 562	383	60 733	9 302	2 344
Manufacture of fabricated metal products, machinery and equipment	2 003	217 968	11 158	4 497	2 804	257 432	26 140	9 228
Other manufacturing industries	92	5 201	135	69	125	8 650	735	263
Total Manufacturing	8 871	1 028 196	58 788	22 976	11 117	1 130 474	115 411	41 198
Part of food in total manufacturing	21,4%	18,3%	17,5%	16,2%	15,4%	15,4%	17,0%	15,7%

Source : DIE

PART II – Evolution of Agricultural Performance

I. Prices, Production and Yields of Major Crops

I.1. Prices

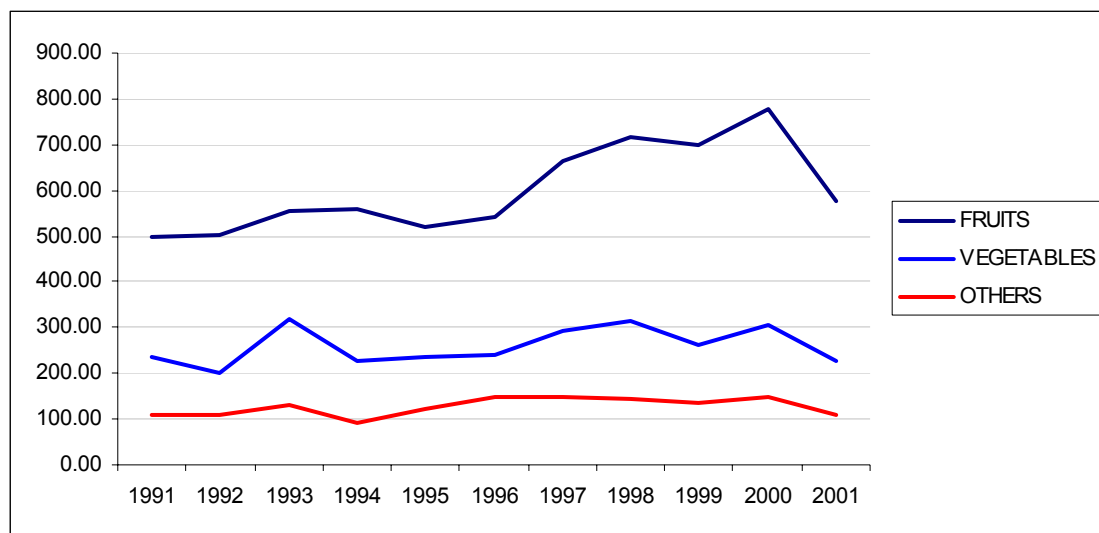
Turkey has been struggling with high and fluctuating inflation rates nearly for the last 30 years. Many attempts have been done to take the inflation under control by governments during this prolonged period. Although inflation rate remained under control during the tight fiscal policy periods, these terms did not last long because of political or financial instability. Agriculture, like as the rest of the economy, has been heavily affected from the lingering high inflation era. The price instability was caused mainly by the slanting macroeconomic policies. However the high levels of agricultural supports has been taking up an important share in government expenditures. Thus, irrational subsidy schemes have long been an underlying reason of financial instability.

In the years of high inflation, the increase in the price level of agricultural products did not deviate much from the increase in the general level of prices. The repression of agricultural prices that started after the year 1999 which is the first year of large scale regulations in agricultural subsidy programs, has ended by 2002, and agricultural prices has started to increase faster than the prices of the remaining part of CPI basket.

When we look at the subgroups of agricultural goods –namely fresh fruits, vegetables and others, we have a different story. First of all for analytical convenience we only take the first three items with the highest average market value (AMV) for vegetables and grains while the first four are included for vegetables. AMV is simply the multiplication of average production amount and average euro price¹. The first three items with the highest market value adds up to 76% and 83% for vegetables (tomatoes, potatoes, green chilies and peppers) and others (wheat, barley, sugar beets), while first four items of fruits (grapes, hazelnuts, olives, apples) adds up to 73% of total AMV of these groups.

To analyze the price changes over the period 1991-2001 we used the weighted average of prices of the items in these groups in which weights are proportional to its share in the total AMV of the group. Figure- 2.1 plots the value of weighted prices.

Figure-2.1: Weighted Price Average of Groups



¹ For the years before 1999 we use ECU conversion rates of Central Bank of Turkey.

As can be seen from the figure-2.1, the price level of fruits is higher than that of vegetables and it is higher than that of the others, during the era under consideration. However, when we look at the stability we see the reverse order: Others are more stable than the other two groups. When we check the time dimension we see an increase in all prices between 1994 and 1998. However after 1998 there is a drive towards increase in fruits and vegetable while the price levels of other groups are stable. The attention-grabbing point is that in spite of the economic stabilization program of 1999 which aims to repress the inflation, prices of all groups of goods has continued to increase until the economic crises of 2001. In 2001 prices are below the 1991 level for vegetables and others group while it is 10 percent above the 1991 level for fruits.

I.2. Production

When we turn into the production side, we see that there hasn't been much difference between 1991 and 2003 production levels of items except the tomatoes and the olives. The increase in tomatoes turns out to be long-term trend, while the upsurge in the production of olives has transpired in the last ten years.

(See figure-2.2, figure-2.3 and figure-2.4)

Figure 2.2 Production of Fruits

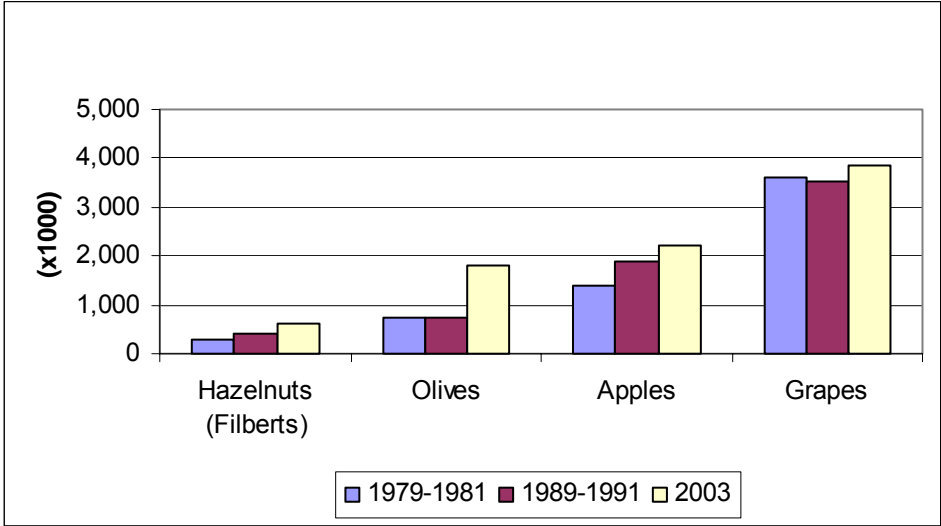


Figure 2.3 Production of Vegetables

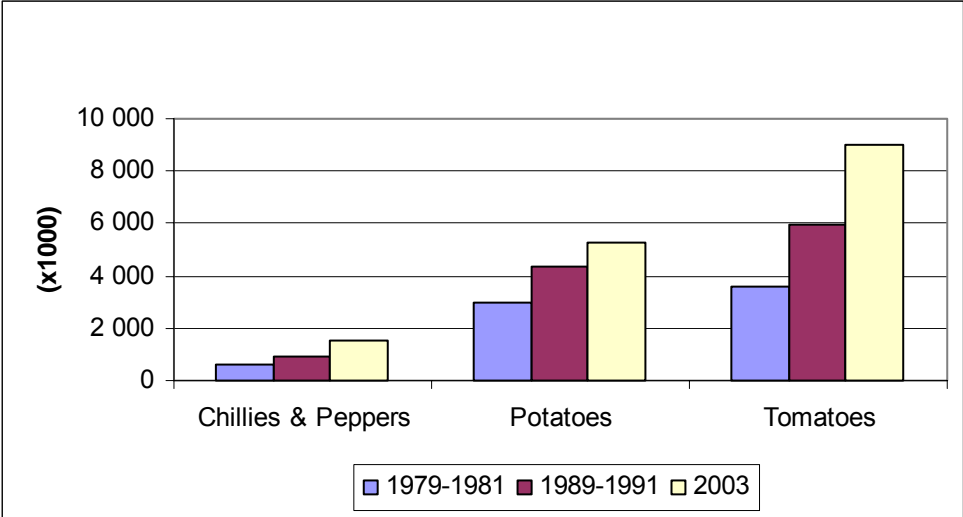
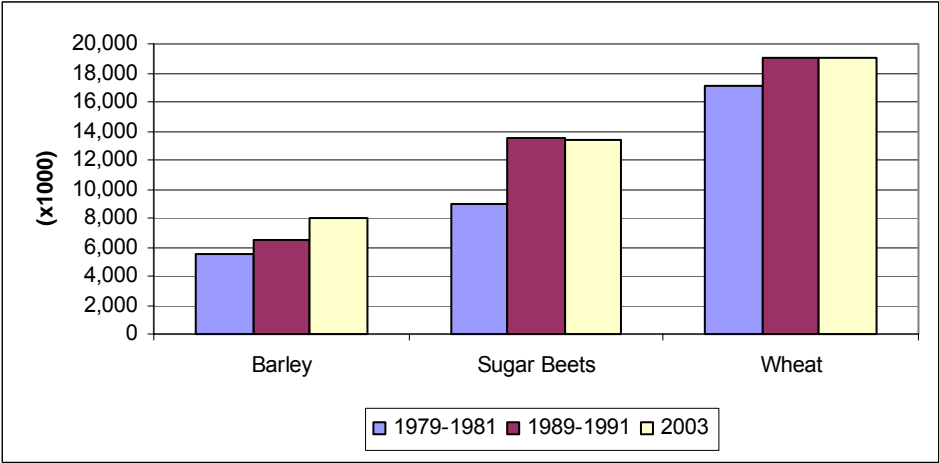


Figure 2.4. Production of Others



I.3. Yields

Lastly we examine the yields of these products. Figure 2.5, figure 2.6 and figure 2.7 shows the yields and growth of yields of the all items in groups, respectively. We see that there has been an increase in yields of all items. The most prominent increase is in the yield of olives. There has been a 120% increase in the yield of olives. The modest increase has come about in wheat and tomatoes correspondingly with 1% and 6%. The second utmost increase took place in the yields of hazelnuts (Filberts). The yield of remaining items grew between 10% and 20%.

Figure 2.5. Yields of Fruits and Growth of Yield

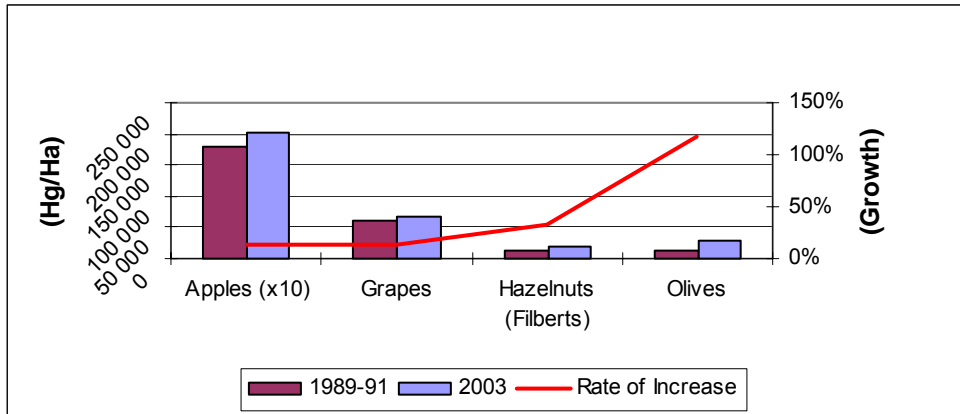


Figure 2.6 Yields of Vegetables and Growth of Yield

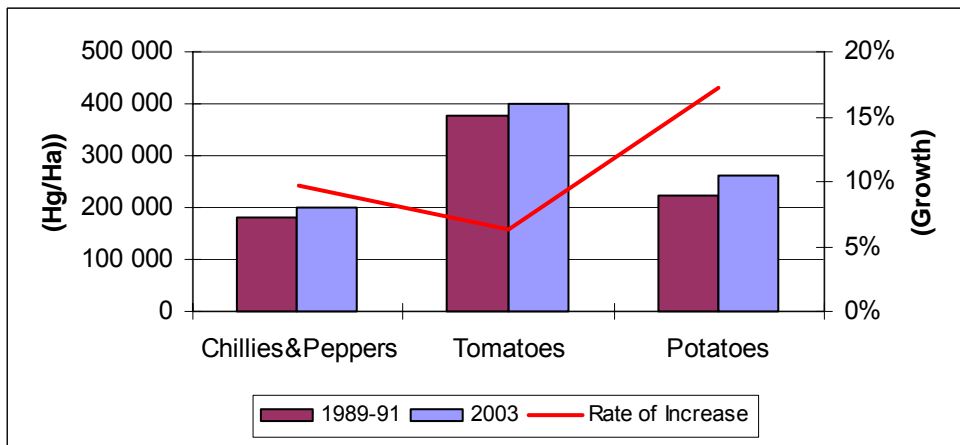
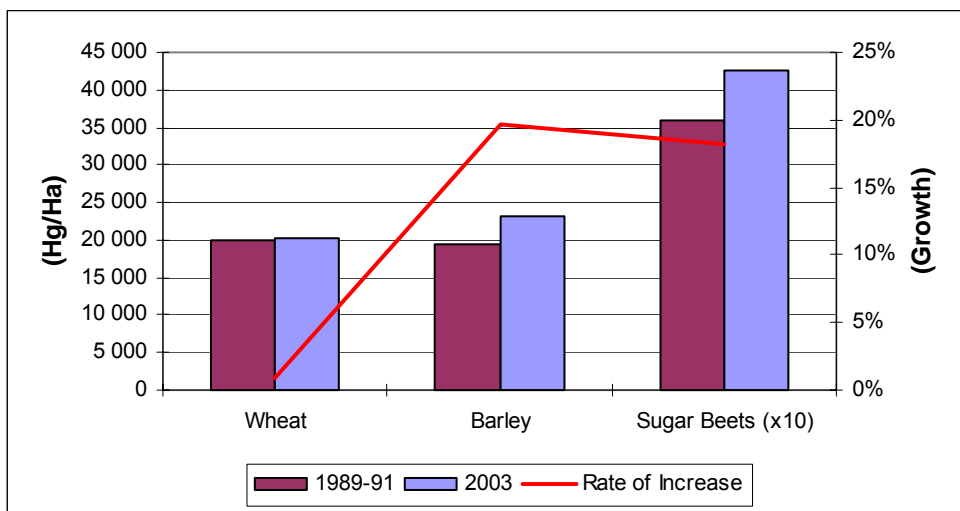


Figure 2.7. Yields for Others and Growth of Yields



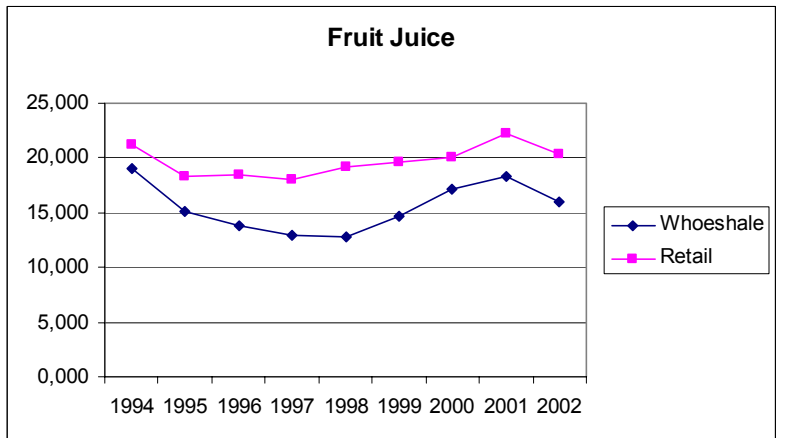
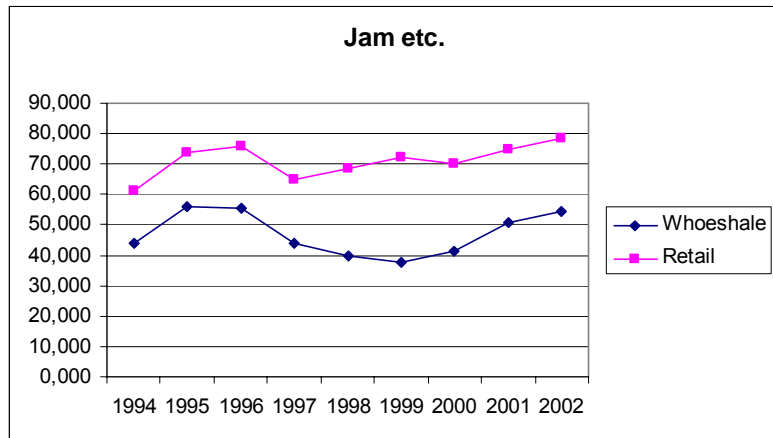
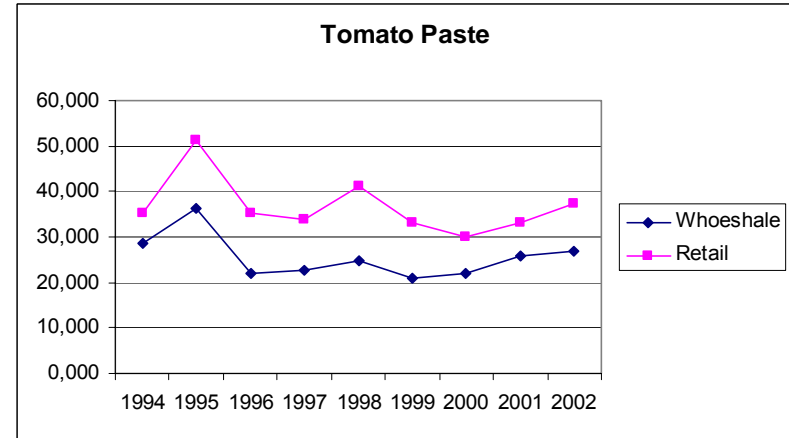
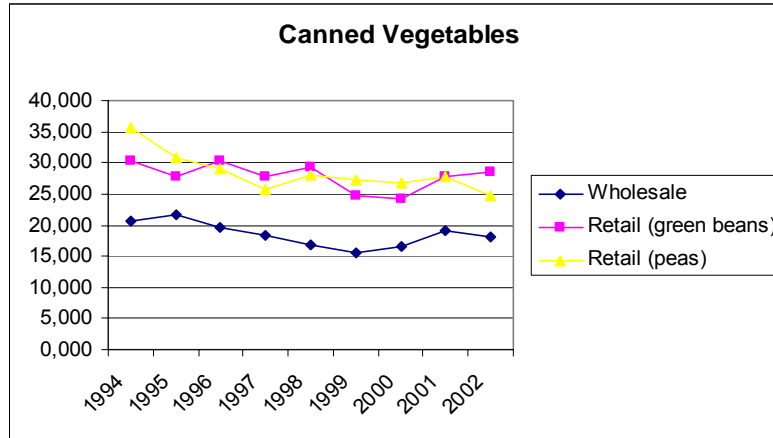
II. Prices at Producers', Wholesale and Retail Levels

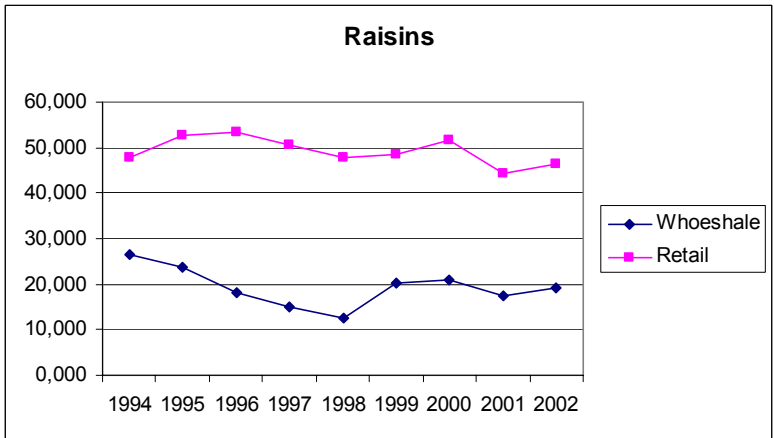
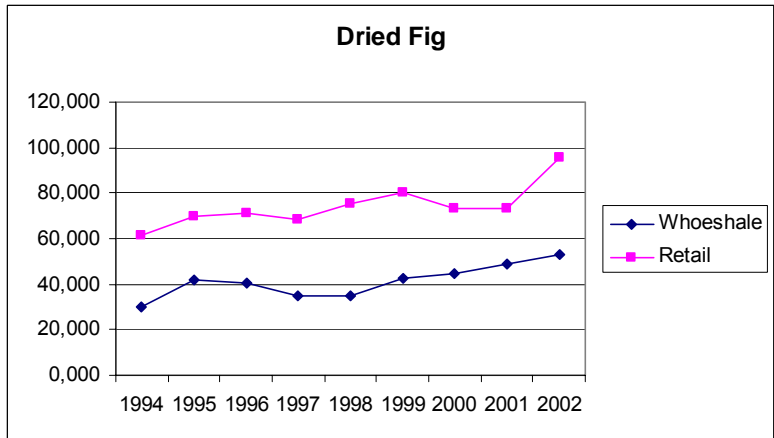
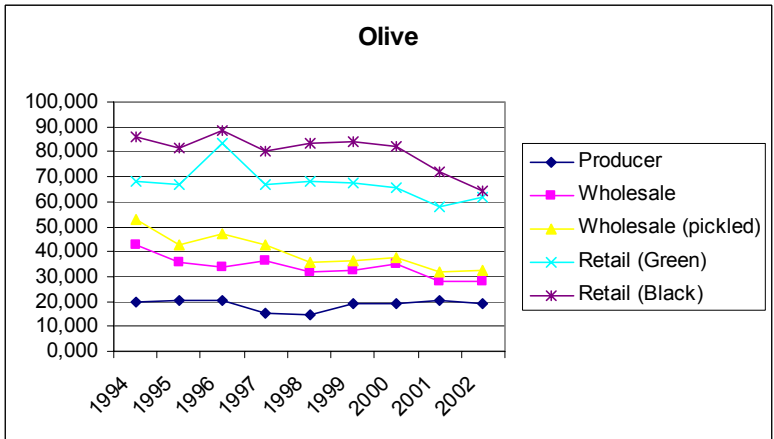
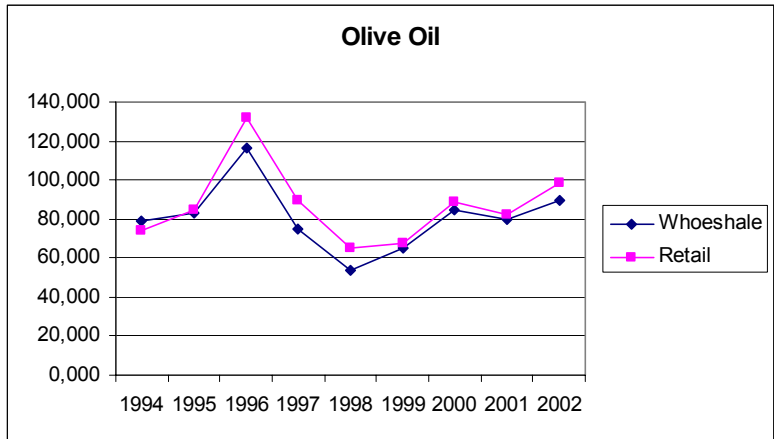
In fresh fruits and vegetables producer and wholesale prices are very close to each other. Retail prices follow the same trend with producer and wholesale prices from a higher level. Therefore the difference between wholesale and producer prices is smaller than the discrepancy among retail and wholesale prices. The largest gap between retail and wholesale prices emerges in unshelled hazelnuts and olives. The divergence between wholesale prices and producer prices is maximized in pickled olives.

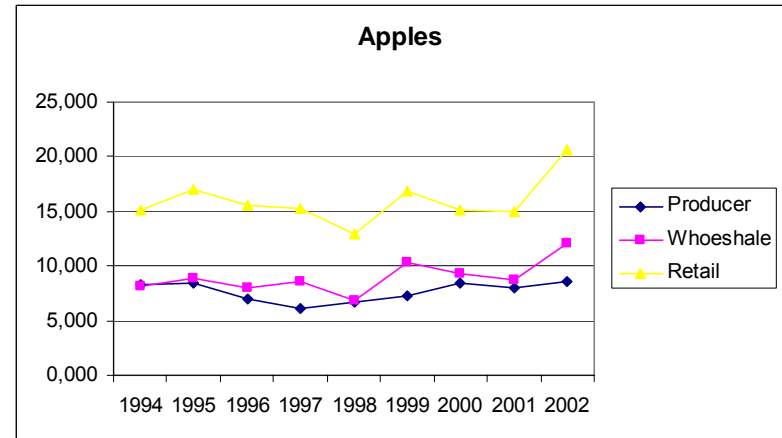
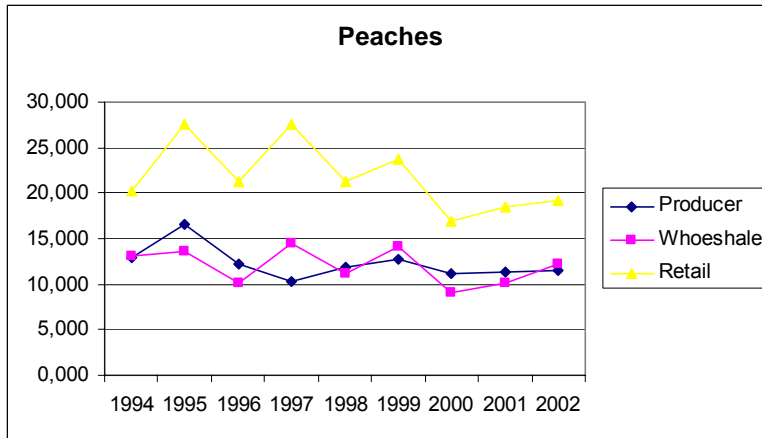
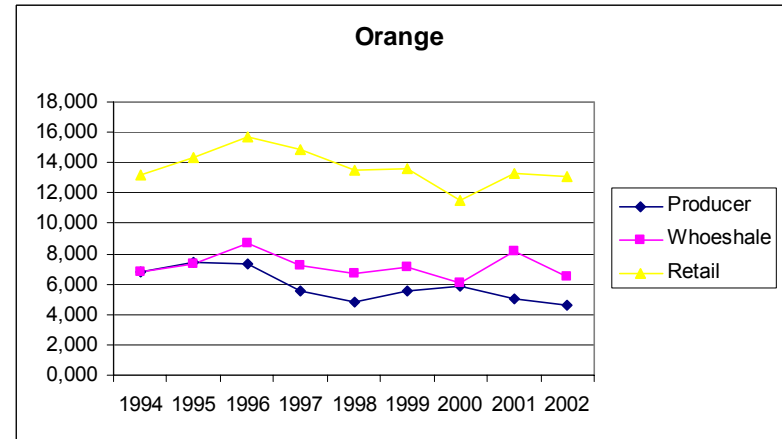
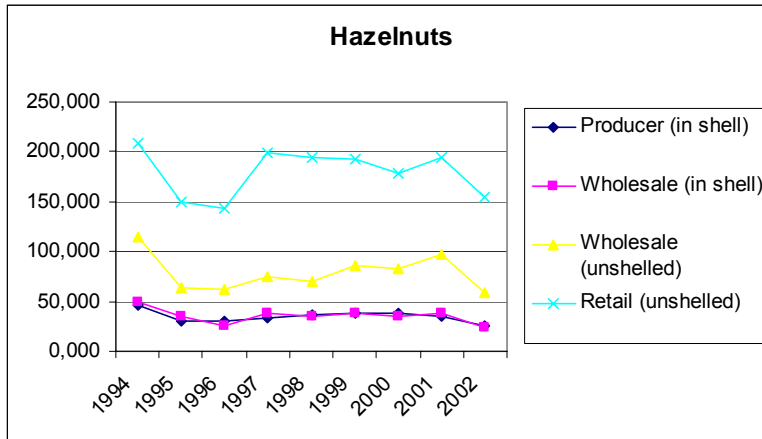
The difference between retail and producer prices among the fresh fruits and vegetables is at the maximum level for olive and apricot.

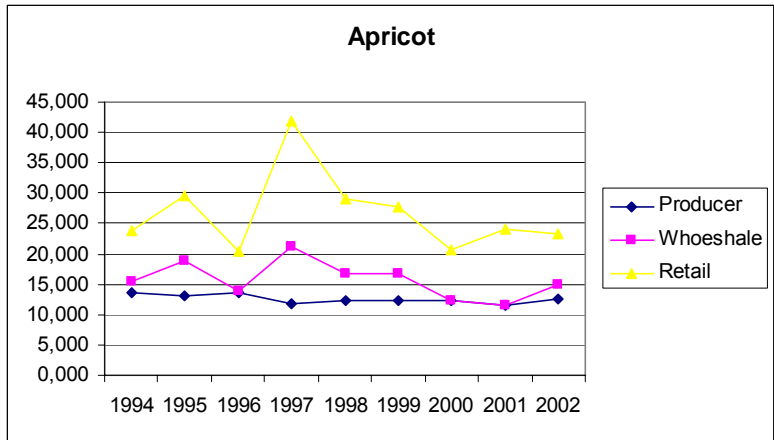
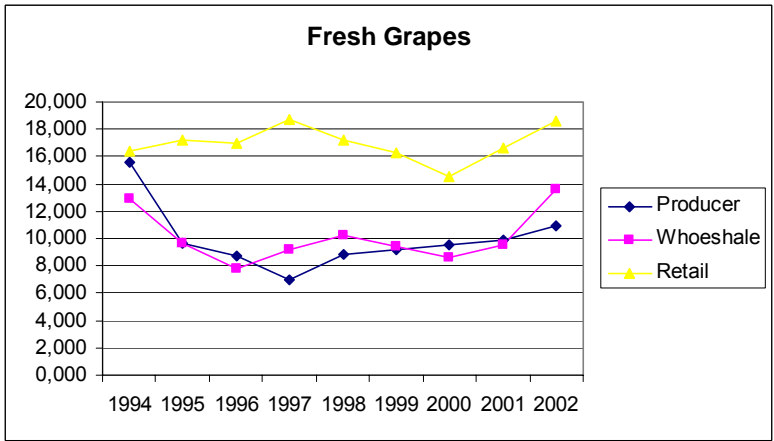
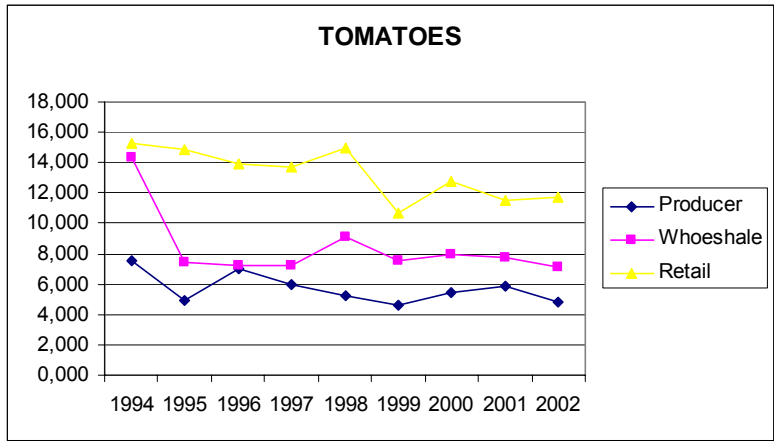
The real prices of important items, at different stages of production and consumption can be found in the price at each stages annex table-1. The graphical illustrations of prices of selected items are also given in figure-2.8

Figure-2.8 Price at the stages of production and consumption







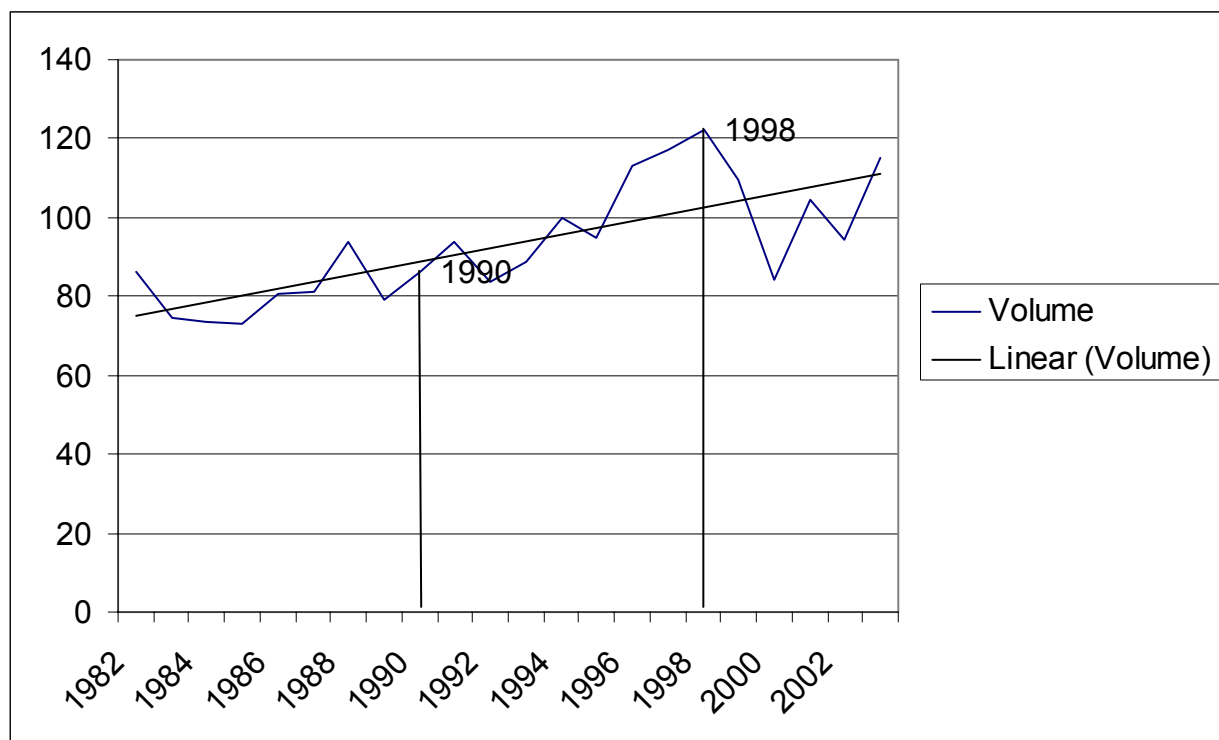


III. Trade in Agricultural Products

III.1 Overview of Agricultural Trade

In this part of the report we aim to introduce a detailed overview of international flow of agricultural goods both from and to Turkey. However, before proceeding to import and export patterns, it would be more convenient to sketch a brief picture of tradable goods of Turkey.

Figure 2.9. Volume Index of Exports for 1983 - 2003

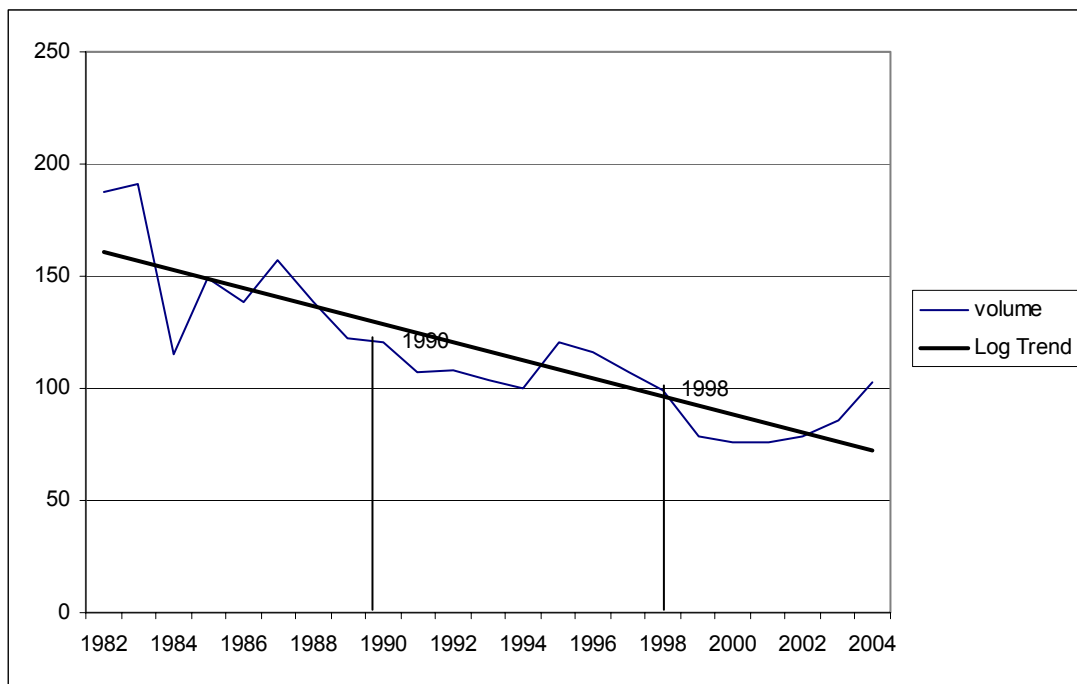


Source: SIS, 2004

The comparison of total imports and exports offers some significant patterns. Figure 2.9, above shows the index of volume of total agricultural exports for years 1982 and 2002². There is an upward sloped trend in volume of total exports. A major reason underlying this pattern is the high subsidies that are paid to agricultural producers. Following the regulations which have decreased the level of support for the agricultural production, both prices and quantity have started to fall until 2000. With the implementation of IMF program that depended on the over-valued fixed exchange regime volume of exports started to rise. After the currency crises of 2001, there is a sharp decline in volume. However following the recovery in 2002 there has been an increase in volume which has continued up to early 2004.

² These figures are recalculated from the price and quantity data of DIE.

Figure 2.10 Volume Index for Imports



Source: SIS, 2004

The progress of imports can be seen in Figure-2. The import figures expose a similar story. First of all there is a continuous downwards trend between 1982 and 2002, due to expanding production and processing in agriculture. After 2002 to now, the imports have turned upwards, mainly because of over-valued TL. The over-all outcomes of all these can be summarized as, Turkish agricultural exports, like the other tradable of country, are quite sensitive to changes in prices. In 1990s, the story about both subsidies and exchange rate has been quite effective on prices. However it seems that imports are less sensitive to the terms of trade than the exports in particular.

III.2. Structure of Imports and Exports

The explanation of agricultural trade would be more comprehensive with a closer investigation of the structure of exports and imports. The relationship between agriculture and industry cannot be revealed otherwise. As mentioned afore Turkey has a wide range of tradable goods due to geographic conditions varying around the country. However our detailed analysis will be focused on the most significant export and import items –the ones that exist in top 20 lists. We classify the items as processed and unprocessed.³ The list of items included in our analysis is given in Table-1.

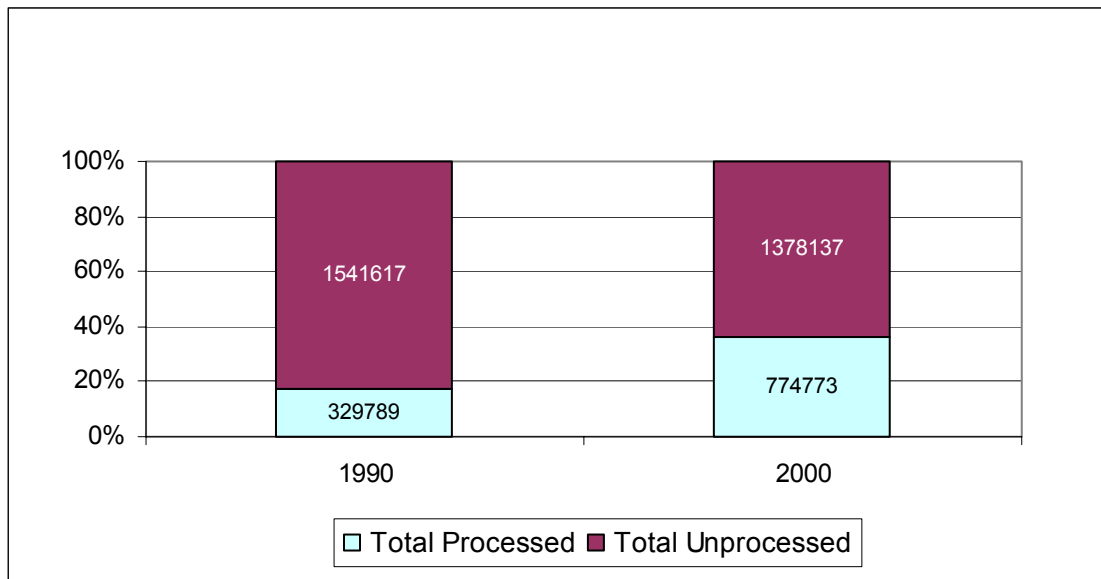
³ The data series are limited to 1990, 1998-2002 for convenience to the descriptive tools.

Table-2.1: Classification of Imported and Exported Items in Top 20 List

Processed Exports	Processed Imports	Unprocessed Exports	Unprocessed Imports
Prepared Nuts (Excluding Grnuts)	Oil of Palm	Figs, Dried	Skin With Wool Sheep
Pastry	Oilseed Cake Meal	Raisins	Wheat
Sugar Confectionery	Cake of Soya Beans	Dry Apricots	Cotton Lint
Fruit Prepared	Oil of Soya Beans	Hazelnuts Shelled	Soybeans
Cigarettes	Oil of Maize	Tobacco Leaves	Maize
Vegetables in Vinegar	Oil of Sunflower Seed	Lemons and Limes	Rice
Chocolate Products	Tallow	Tomatoes	Cocoa Beans
Tomato Paste	Tobacco Products	Mandarin etc...	Rubber Natural Dry
		Barley	Milled Paddy Rice
		Cherries	Rice, Paddy
		Chick-Peas	Sunflower Seed
		Lentils	Sesame Seed

A detailed graph that compares the volume of each export items in 1990 and 2002 can be found in the figure-3 of appendix. We can make out the fact that shelled hazelnuts and tobacco leaves, which are in the unprocessed products group, are the major export items of Turkey. These two products are responsible from an important part of the declining trend in exports between 1990-2002. However, they maintain to be the major export product status. There is an increase in processed product exports from 1990 to 2002. Prepared Nuts, Fruit prepared nes, cigarettes exports increased. While the processed exports added up to 329789 (1000\$), in the year 1990, it increased to 774773 (1000\$) in the year 2002. The unprocessed exports were 1541617 (1000\$) in 1990, after its %11 decline, it became 1378137 (1000\$) in 2002. Unprocessed exports still constitute the big part of Turkish exports, although they have a tendency to decline. In 1990, the unprocessed exports constitute %82 of total exports, whereas they constitute %64 of total exports in 2002. The following figure-2.11 gives the comparison of aggregated exports volumes for the processed and unprocessed items separately for 1990 and 2002. figure- of appendix, shows the same data for 1990 and 1998-2002.

Figure 2.11: Export Classification

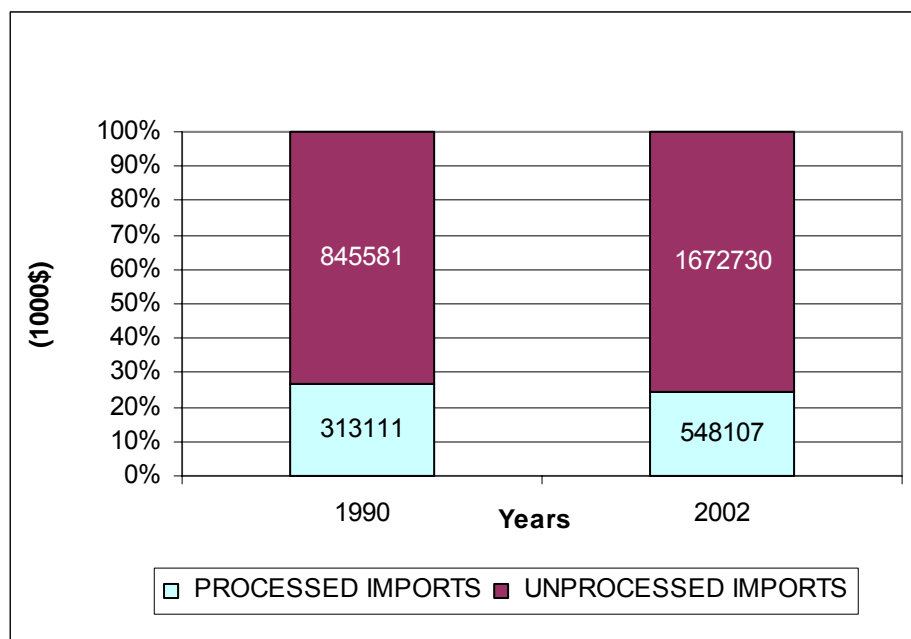


The exports of unprocessed items are far higher than the processed items. However in recent years export of processed items started to expand while the share of unprocessed items is started to deteriorate. The comparison of the rate of change in the volume of exports discloses an important fact: The processed exports are more stable than the unprocessed ones. Another point is again about the prices. After the regulation of agricultural support system, we see that unprocessed exports started to deteriorate. However the reform process was not a big deal for exporters of processed items. Additionally, they managed to sustain the export level in 2001 economic crises. This offers that the volatility in the agricultural exports of Turkey is mostly due to unprocessed exports. The rate of change is found to be higher in absolute value in all periods. .

In figure-5 of appendix, import data is for each items in top-20 list can be found. There is a striking increase in Cotton lint and skin with wool sheep imports which are the main input items in textile. The drastic expansion of textile in 1990s is the core reason of this desperate increase. In 1998 the imports of all goods reached at their peak. Tobacco product leaves, oil of soya beans, cake of soya beans, and oil of palm are the most strikingly increased ones. Similarly, exports peaked in 1998. preprd nuts, sugar confectionary, Fruit Prepared nes, Tomato Paste are the significant examples of those.

When we look at the aggregated data for processed and unprocessed imports we come up with a pattern which is similar to that of exports. Unprocessed imports sum up to a larger share of total imports, and they are more volatile which offers a higher sensitivity to variation in prices. This can be seen from figure-2 of appendix. The unprocessed imports are constitutes a larger part of imports. Unprocessed imports were 845581 (1000\$) in 1990 while it increased to 1672730 (1000\$) in 2002. Turkey is net importer of unprocessed products. These figures are summarized in figure-2.12.

Figure 2.12: Imports classification



There is a slight increase in the level of processed imports, from 1990 to 2002; however, it's share in total imports gets smaller.

To sum up, Turkey exports and imports unprocessed products more than processed ones. In 10 years period from 1990 to 2002, trade volume has significantly increased keeping the trade pattern almost the same.

III.3 Marketing systems of fruits and vegetables

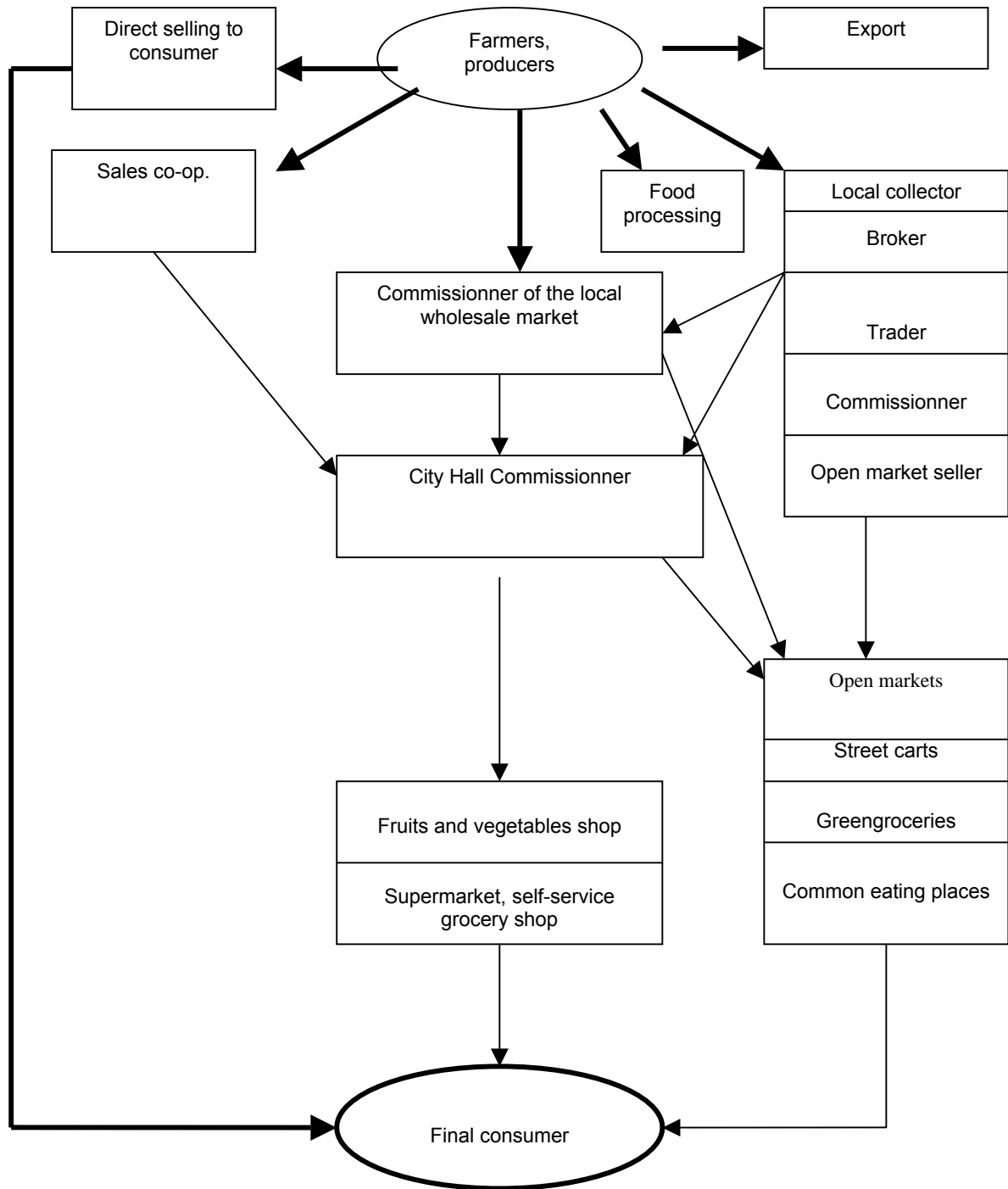
Dominant marketing systems of fresh fruits and vegetables are perfect examples of a prevailing archaic distribution channels with a significant number of players active at all stages of these channels from farm to final consumer. A normal marketing channel could be described as follows:

Farmer → Local market wholesaler (commissioner/broker) → City Hall commissioner (broker) → retailer → final consumer

Since the beginning of the 1970s to our days, only 20 to 40% of the total fruits and vegetables pass through the legally controlled marketing channels, the rest transiting by enregistered or informal channels (A. YÜCEL, 1977; TZOB, 2001). During an interview in October 2003⁴ Mr. Okay Senoglu, coordinator of the Open Market of Karsiyaka Municipality (Izmir), told that "74% of the fresh fruits and vegetables sold in Ankara, 83% sold in Istanbul and 96% sold in Izmir are marketed directly on open markets by middlemen. The farmers can not get in these channels". In these two cases (legally controlled or informal channels), increase in the number of intervening agents has a direct effect on the rise of the trading margins and consequently, on the rise of the final consumer price.

⁴ Interviews realised within the framework of Ecoconomics Project, undertaken on behalf of the EU Commission by Muich Technical University, INRA-ENSA de Montpellier, CIHEAM-IAMM and other Mediterranean partners. For further information, visit www.ecoconomics.de

Figure 2.13 - n usual marketing channel for fresh fruits and vegetables



Source : Authors' work based on State Planning Organisation, 1985 and E. Coudel, 2003

Even if the source is outdated, the table that is presented below is interesting to show the different marketing channels and the shares that each player has in this three types of channels. These shares changed more or less overtime, hence the structure remained the same, in spite of the modernisation process undergoing in Turkish economy.

Table 2.2. – Percent distribution of fresh fruits and vegetables marketed through different marketing channels

Marketing channels/marketing agents	Products											
	Apples	Oranges	Clementines	Lemons	Grapefruits	Watermelons and melons	Grapes	Other fruits	Tomatoes	Tubers (potatoes)	Leeks& carrots	Other vegetables
SHORT CHANNELS												
Producer → Consumer	10	5	5	5	3	5	5	10	2	10	5	10
Producer → Exporter	3	10	20	30	30	1	1	2	2	1	-	5
Producer → food processing industry	5	5	5	5	3	-	20	8	15	-	-	1
REGULAR CHANNELS												
Producer → Local wholesale market → trader → retailer → consumer	-	-	-	-	-	-	-	-	10	-	-	-
Producer → Local wholesale market → retailer → consumer	5	5	2	3	5	-	2	5	-	7	10	10
Producer → Local wholesale market → City wholesale hall → retailer → consumer	9	15	13	7	15	10	1	12	10	7	35	18
Producer → local collector → City wholesale hall → retailer → consumer	15	20	10	10	5	13	13	20	5	12	10	20
Producer → sales cooperative → City halls → retailer → consumer	5	3	3	3	2	-	-	-	1	3	-	2
Producer → sales cooperative → exporter	-	2	2	2	2	-	-	-	-	-	-	-
Producteur → Halles locales → IAA	-	-	-	-	-	-	2	2	-	-	-	2
INFORMAL CHANNEL												
Producer → local collector → retailer → consumer	46	30	30	22	7	21	50	39	45	56	39	29
Producer → transporter → retailer → consumer	-	-	-	-	-	30	-	-	-	-	-	-
Producer → retailer → consumer	-	-	-	-	-	20	-	-	10	-	-	-
Producer → local collector → exporter	2	5	10	13	28	-	1	2	-	4	1	-
Producer → local collector → food processing industry	-	-	-	-	-	-	5	-	-	-	-	3
TOTAL MARKETED FRESH FRUITS AND VEGETABLES	100	100	100	100	100	100	100	100	100	100	100	100

Note : Local collector may also be broker, trader, commissioner

Source : S. Tozanli-Oncuoglu, 1987, based on statistics presented in State Planning Organisation, 1985

- *Wholesale trade :*

- Local collectors (buyers): form normally the first link of the supply chain relating the farmer to local grossmarket, to exporting agency or to industry. Usually, they buy the product on the field, undertake the elementary logistic services (harvesting, sorting, packaging and transportation to the local wholesale market/hall). They lend money to farmers and take risks related to the weather hazards. But, on the other hand, they fixe a price inferior to the market price, in order cushion this risk taking.
- Brokers: are also actif players that link farmers to local wholesale markets. Their functioning is based on a deposit system: they pay cash the product on the field, before the harvesting period, ensure all the logistic services and the transportation. They pay the farmer, after deducing the waste, logistics costs and their trading margins from the price fixed according to current market prices (*E. KAYNAK, 1977; T. GUNES, 1986*).
- Traders : appear to be a very powerful group that act as a link between the local wholesale market and the retailer of the urban centre. If they are in direct relation with the producer, they undertake the harvesting, packaging and transportation of the product from the field to the retailer's shop. Their trading margin is about 12-15% of the final consumer price of many fresh fruits and vegetables.
- Commissionners of the local wholesale market : carry out the storage and packaging functions. Usually they work together with local collectors or brokers.
- Commissionners of City Hall : are also quite powerful. Their trading margins are fixed by the municipalities and are settled around 8%. With the adoption of the new law on wholesale markets, all transactions must be treated at City Halls. This rule strengthens the dominant position of the City Hall commissionners over the marketing channels and defines them as essential marketing agents.

There is also a great problem concerning the commissionners. Farmer have important cash problems and can not wait for a long time to get their money from the commissioner because of *tenesir vade*, which can be translated as mortal delay. So, farmers prefer to deal with middlemen like local collectors or brokers, who are good payers and undertake, as it is mentionned above, some conditioning tasks. (*interview with O. Sentoglu*).

- *Retail trade :*

Main players of the retail sector are large supermarket chains, self-service groceries, greeengroceries, open market sellers and street sellers. The supermarket chains started to emerge in the 1990s; they are increasing in number and starting to have a dominant position in the food retailing sector in metropolises. Beyond international retailers like Metro and Carrefour (in partnership with on of the largest industrial conglomerate, Sabanci Holding) are ranked domestic supermarket chains like Migros Türk (affiliate of Koç Holding), Gima, Tansaş, Begendik, İsmar⁵. The number of traditional grocery stores, greengroceries and butchers does not decrease as expected, because of their traditional credit system (*veresiye* : a notebook system for loyal clients letting credit for a month without interest rate), their practical opening hours (they stay opened till midnight and during weekends). Equally, in medium sized cities where supermarket chains are not

⁵ The food retailing sector will be detailed later in the third partie of this report

installed yet, small supermarkets, self-service grocery stores and greengroceries have larger market shares. Except some large greengrocers with individual packaging and conditioning facilities integrated in City Halls, most of these outlets are small and/or micro enterprises with very limited financing possibilities. They take in charge the transportation of the fruits and vegetables from City Halls to their store which increases considerably their overall costs. To counterbalance this high cost structure, they apply, in great majority maximum trading margins (around 40% of the retail price) and fix their net margin about 7 to 15% of the retail price. This lack of financing has significant fallouts on the storage and preservation of fruits and vegetables and bring along important proportions of waste (*S. Tozanli-Oncuoglu, 1987*).

Open market and street sellers are also numerous and play a dominant role in the marketing channels of fresh fruits and vegetables (*Emilie Coudel, 2003*). Since the application of the new City Halls regulation in 2002, producers have harder conditions to market directly their produce as they have to present their produce firstly to City Hall control and pay the municipality fees in order to have the permission to sell their product on open markets (*interview with O. Sertoglu, 2003*). Those who are not gathered around Sale Cooperatives or Agricultural Development Cooperatives have little chance to do so. This strengthens, on the one hand, the informal sector, as most of the producers bypass municipality control to sell their product; and on the other hand, empowers the middlemen who gain in scale economies as they collect the product of many smallholders and increase the marketed volume.

Table 2.3. – Percent distribution of fresh fruits and vegetables marketed by different retailers to final consumers

Retailer	Products												
	Apples	Oranges	Clementines	Lemons	Grapefruits	Watermelons and melons	Grapes	Other fruits	Tomatoes	Tubers (potatoes)	Leeks& carrots	Other vegetables	
Producers (on the field, stalls installed along the roads)	11,1	7,4	10,0	7,9	8,1	5,1	6,6	11,6	20,0	10,5	5,0	11,2	
Greengrocers, groceries, small supermarkets	32,2	41,0	40,0	41,3	37,8	15,2	17,5	37,2	17,0	24,3	45,5	44,9	
Open market sellers	56,7	51,6	50,0	50,8	54,1	49,4	73,1	45,3	63,0	56,9	49,5	32,6	
Informal stalls in medium sized and large cities	-	-	-	-	-	30,3	-	-	-	-	-	-	
Local retailers of production area	-	-	-	-	-	-	2,8	5,9	-	8,3	-	11,3	
TOTAL PRODUCTS	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0	

Source : S. Tozanli-Oncuoglu, 1987, based on statistics presented in State Planning Organisation, 1985

Marketing costs and trading margins

Marketing costs are composed of the expenditures on sorting, conditioning, storage and transportation of agricultural products and include equally the trading margins of the economic agents operating in the marketing channels.

At the wholesale level of the marketing chain, sorting and conditioning as well as transportation of the harvested products from the field to the local wholesale market and/or the City Wholesale Halls, and their storage at the warehouses of these gross markets compose the main factors of these marketing costs. If the product transits from the City Wholesale Halls, municipal taxes, value added taxes (VAT) et the commissions of enregistered traders (commissionaires) are also included.

At the retailing level, transportation costs, wastes occurred during this transportation and storage of the products and storage expenses compose the main parts of the marketing costs.

A national survey conducted in 1985 by State Planning Organisation and another carried out by Pr. Turan Gunes and his assistants in 1984, financed by TUBITAK (Turkish Scientific Research Organisation) and focusing on the marketing of fresh fruits and vegetables from Mersin as the production area to Ankara as the consumption urban centre, furnish very interesting information about these marketing costs and trading margins. Unfortunately no other survey of this scope has been realized since then. Even if the data is somewhat outdated, the opinions of operating agents seem to converge that the structure remains the same. In this wise, it would be interesting to expose this data.

According to the outcomes of these two surveys, trading margins of the local collector compose 4 to 14% of the retail price of the fresh fruits and vegetables; trading margins of the commissioner of the local wholesale market 8%; that of the transporter between 2 and 23% and that of the retailer between 14 and 17%. Of course the variation observable in these margins depends largely on the variety and perishability of the marketed fruit and/or vegetable. For those perishable products like watermelons or melons, the high proportion of wastes pulls the margin upside in relation to the risks that the traders and transporteurs face.

According to the survey of 1984 (Gunes, T. & all.,1987), three main marketing channels appear to be the most frequently used:

The first channel concerns the routing of citrus fruits, lettuce and watermelons (cf. table 2.5), where the part of the retail price payed to the farmer is less than 50%, with the exception of clementines. The local collectors has a gross margin of around 20% of the retail price and that of the open market seller around 30%. The part of gross margin of the transporter is around 15% for bulky products like watermelons and lettuce.

The second channel comprise an important number of operating agents and consequently the part of the farmer decreases in the composition of the retail price. The producer receives 47% of the retail price of green pepper. For the rest of the products, its part varies between 14 and 30% of the final price. The gross margins of the trader (or broker) and the retailer are relatively important for most of the products routed by this channel. The gross margin of the traders is 33% for watermelons while it is around 8% for green beans and 9% for green peppers. The gross margin of the retailier is around 49% for the zucchinis and only 13% for the lettuce. As mentioned afore, the gross margin of transporteurs are quite high for watermelons, eggplants and lettuce and less important for lemons, clementines and green peppers (cf. table 2.6)

The third channel is the most frequently used one. The part of the retail prices that the farmers receive is quite high excepting the tomatoes (13%) and the eggplants (7%). These products are bought by the trade cooperatives registered within the local gross markets and routed to big urban centres via the commissioners of City Wholesale Halls (cf. table 2.7).

Table 2.4. – Trading margins in the short marketing channel : farmer→ local collector → transporter → open market seller→ consumer

Products	Part of the retail price that the farmer receives (%)	Trading margin of the local collector (%)	Trading margin of the transporter (%)	Trading margin of open market seller (%)	Retail price %
Lemon	42,9	20,8	5,9	30,4	100,0
Lettuce	34,5	23,1	16,7	25,7	100,0
Clementine	56,4	16,3	3,4	23,9	100,0
Orange	45,4	21,4	6,6	26,6	100,0
Grapefruit	17,1	21,8	9,7	51,4	100,0
Watermelon	33,0	33,1	19,8	14,1	100,0

Note :The production area is Adana and İçel provinces and the consumption centre is Ankara

Source : Turan GUNES and all., op. cit., pp. 126-127

Table 2.5. Trading margins in the traditional marketing channel : farmer→ trader →local gross market commissioner→ transporter → Urban centre City Hall commissioner → retailer → consumer

Products	Part of the retail price that the farmer receives (%)	Trading margin of the trader (broker) (%)	Trading margin of the local gross market commissioner (%)	Trading margin of the transporter (%)	Trading margin of the City Wholesale Halls commissioner (%)	Trading margin of the retailer (%)	Retail price %
Lemon	14,5	32,7	6,2	2,0	10,1	34,5	100,0
Orange	29,0	19,5	11,2	4,0	9,8	26,5	100,0
Clementine	39,3	16,3	7,2	2,5	10,2	24,5	100,0
Peach	24,8	19,6	8,0	4,8	17,0	25,8	100,0
Prune	19,9	22,9	5,9	3,6	15,4	32,3	100,0
Grapes	38,9	10,1	9,9	5,2	11,0	24,9	100,0
Tomato	28,9	15,5	8,3	4,9	13,4	29,0	100,0
Green pepper	45,7	9,2	10,3	2,8	8,8	23,2	100,0
Eggplants	11,4	24,3	7,1	14,5	19,9	22,8*	100,0
Cucumber	17,3	16,6	6,0	4,4	17,8	37,9	100,0
Green beans	25,0	8,3	4,9	3,6	18,5	39,7	100,0
Zucchini	19,2	12,5	7,4	5,4	6,0	49,5	100,0
Lettuce	23,6	19,2	7,7	14,4	22,3	12,8	100,0
Potatoes	14,3	20,2	8,7	6,6	24,9	25,3*	100,0
Watermelon	33,1	33,1	-	19,8	-	14,0*	100,0

* Open market seller

Source : Ibid

Table 2.6. – Trading margins in the most frequent marketing channel : farmer → trading cooperative of local gross market→transporter→ trading cooperative of City Hall → open street sellers→ consumer

Products	Part of the retail price that the farmer receives (%)	Trading margin of the agricultural sales cooperative (%)	Trading margin of the transporter (%)	Trading margin of the trading cooperative of the local gross market (%)	Trading margin of the trading cooperative of the City Hall (%)	Trading margin of the open market seller (%)	Trading margin of the retailer (%)	Retail price%
Lemon	60,4	-	3,0	19,6	-	17,0	-	100,0
Orange	64,8	-	3,0	15,2	-	17,0	-	100,0
Clementine	56,9	-	6,9	23,1	-	13,1	-	100,0
Grapefruit	55,0	-	6,3	25,0	-	13,7	-	100,0
Peach	24,4	6,4	4,5	23,9	-	-	40,8	100,0
Prune	26,3	8,1	4,6	-	19,8	-	41,2	100,0
Grapes	35,2	9,6	9,0	21,5	-	24,7	-	100,0
Tomatoes	13,9	8,3	10,9	-	29,9	37,0	-	100,0
Green pepper	43,5	-	5,1	11,3	-	40,1	-	100,0
Eggplants	6,8	8,3	20,2	32,9	-	31,8	-	100,0
Cucumbers	24,7	-	8,5	12,9	-	53,9	-	100,0
Green beans	34,4	11,7	8,3	17,8	-	27,8	-	100,0
Lettuce	26,8	-	-	21,7	18,2	-	33,3	100,0
Potatoes	30,6	-	6,9	22,2	-	-	40,3	100,0

Source : *Ibid*

The composition of retail prices, beside the inclusion of marketing costs and trading margins, depends largely on the speculations authorized by the mechanisms of the market. Seasonality of most of the fresh fruits and vegetables and the perishability of this produce influence heavily the price increases relying on the scarcity of some fruits and vegetables in back seasons or for early products.

The lack of vertical integration and the continuity in logistics services increases the power of the intermediary agents operating in these marketing channels and diminish the bargaining power of the farmers. Institution of a vertical integration, like in the case of large retailers will decrease immediately the width of the trading margins.

This lack of vertical integration is also responsible for the insufficiency of sorting, storing and packaging and transportation facilities. Besides the fact that this former causes an important portion of the marketing wastes, it provokes a rupture linking the farmer to the consumer. However, many of the urban center retailers as well as industrial firms prefer the long channels including an important number of traders in order to avoid the marketing risks. On the other side, they prefer credit payments while this kind of payment is the least accepted way of payment by the farmers. This constraint helps the empowerment of a number of intermediate agents operating in the sector and who are cash payers, working mostly in the informal channels. A constraint that weakens the bargaining power of industrial firms in their raw material sourcing and increases their production costs.

III.4. Consumption of fruits and vegetables

In Turkey, The main demand for fresh or processed fruits and vegetables comes from the domestic market and exports seem to be a function of the production surplus, even if this trend is changing during these last two decades. The public authorities encourage largely the production of export-oriented products, mostly since the 1980s, marking the beginning of the economic liberalisation of the country by the adoption, in 1980, of Structural Adjustment Policies (SAP) advised by International Monetary Fund (IMF) and the World Bank. For example, the greenhouse production, dried tomatoes, chilled and/or frozen fruits and vegetables, tomato paste, are some of the export-oriented products recently put forward and encouraged by the public authorities.

Concerning the domestic market, demographic increase in relation with the rise of purchasing power seems to lead to a considerable increase of the domestic demand for horticultural products. Hence, the most significant driving force in the increase of the demand comes out to be the urbanisation factor that has a direct impact on the propensity to consume.

Since the acceleration of the industrialisation process since the beginning of the 1960s with the introduction of planned economy, the regional differences sharpened as the West Anatolia captured a great proportion of new industrial investments and welcomed an important part of the population migrating out from the rural areas. Today, Marmara region as well as Aegean region count for nearly the half of the urban population of Turkey. On the other side, Black Sea region, East and South-East Anatolia seem to be more under-developed economically and capture less industrial investments. This regional imbalances are even more pronounced with climatic differences that endow more the western and southern coasts of the country while eastern and northern Anatolia have less comparative advantages concerning the horticulture and arboriculture.

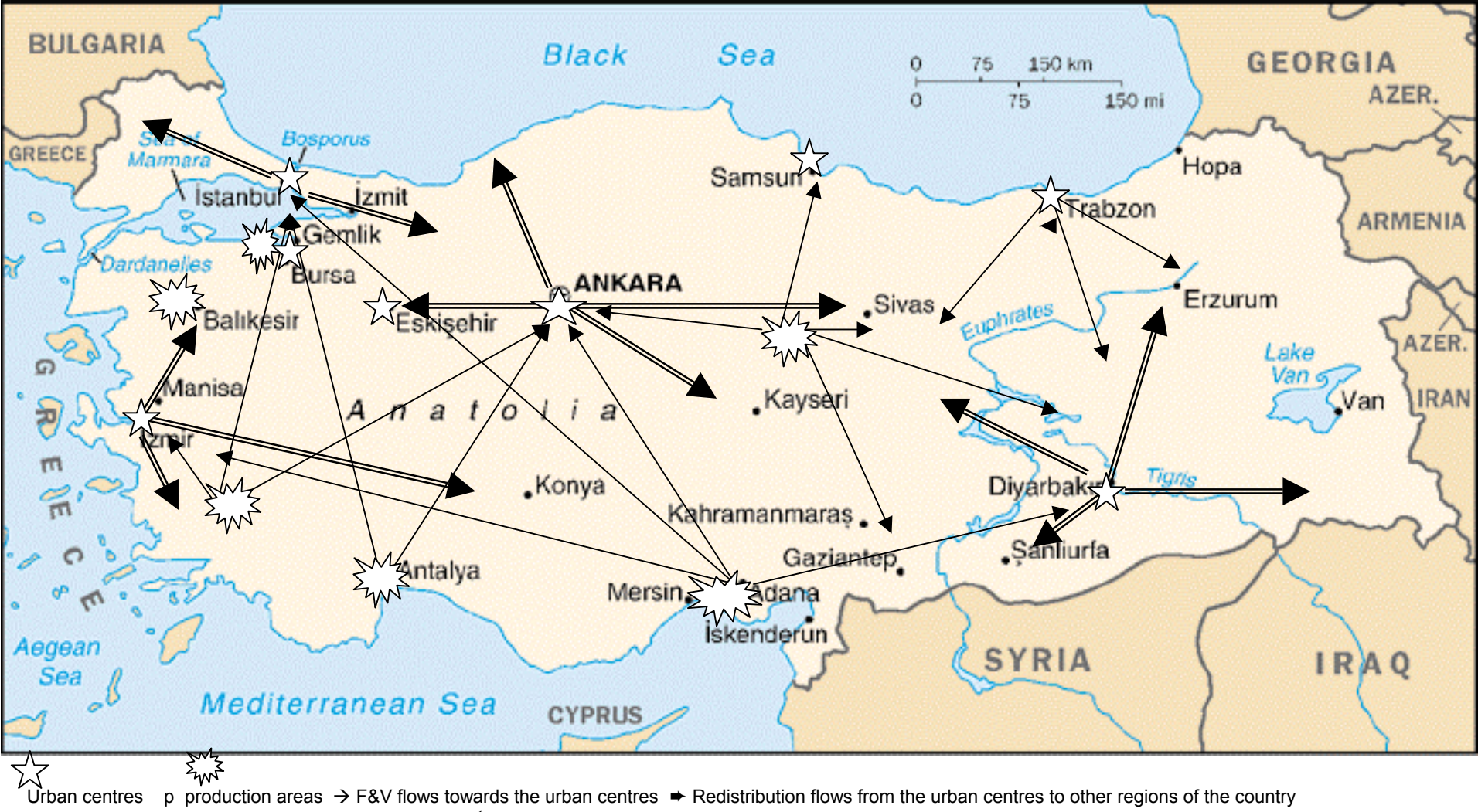
Income distribution is skewed in favour of the metropolises and large cities of the West Anatolia (Istanbul, Izmir, Kocaeli, Bursa, Eskisehir) while southern coast attract an important number of foreign and domestic tourists with high demand for fruits and vegetables. Central Anatolia, thanks to the presence of the capital city, Ankara, comes along as an important

attracting pole for fruits and vegetables as well as for other food products (fresh or processed).

The difference between a citizen living in Istanbul, sheltering about 10 million inhabitants and that of an inhabitant of the East Anatolia is ten to one in regard with their yearly consumption of fruits and vegetables (S. Tozanli-Oncuoglu, 1987). This difference is striking equally when we consider the variety of the fruits and vegetables consumed by the citizen of Istanbul and the inhabitant of the Eastern Anatolia : the third forth of the fruits and vegetables basket of the Eastern Anatolia inhabitant will be composed of potatoes, oignons, tomatoes, watermelons and cantaloupes, while that of the citizen of Istanbul will have a little more than of one third of these mentioned products. However, it must be noted that the frequent economic crisis that ponctuated the Turkish economy during the late 1990s and the beginning of the 2000s, resulted in important increases of the retail prices for foodstuffs, particularly that of fruits and vegetables. A phenomenon that pulls down the consumption of these products by a the large majority of the population, who saw their available income falling down drastically.

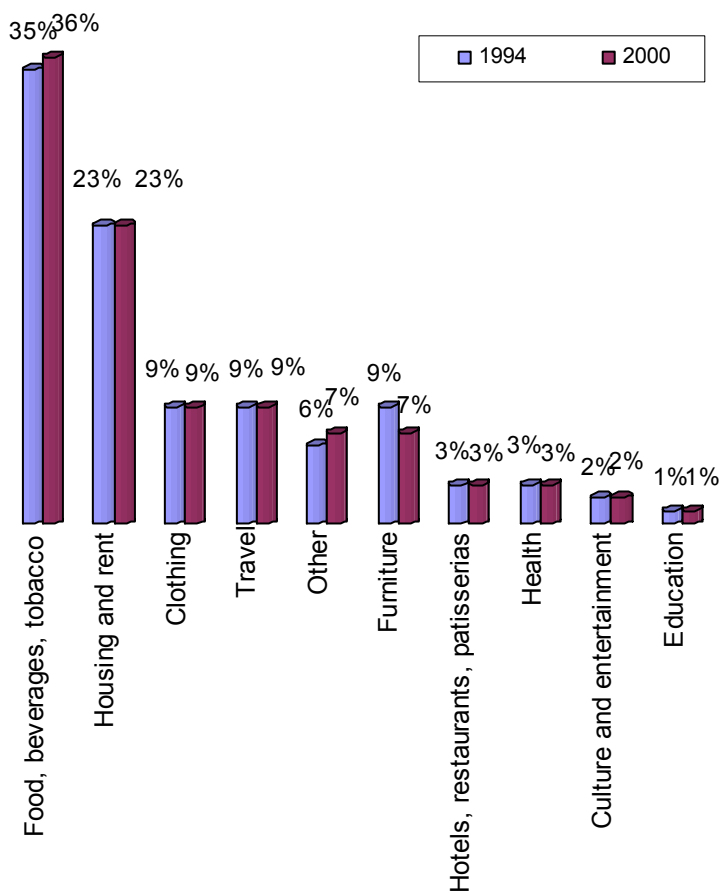
The following map indicates the direction of the flow of fresh fruits and vegetables, and gives a general idea about the importance of the urbanisation process as the driving force for the increase in the urban food demand.

Figure 2.14 : Distribution of fresh fruits and vegetables from the production areas to urban centres and redistribution from urban centres to the other regions of Turkey



Source : based on the study ralgone by GÜNES, Turan et al., 1986

Figure 2.15. – Composition of the average household expenditures in 1994 and 2000



Source : State Institute of Statistics, *Income and Consumption Expenditures Survey 1994 and 2002, News Bulletin, 14/04/2004*

Expenditures on food and beverages have been for 40 to 45% of the total household expenditures before the 1980s. However, the increase in available incomes and in purchasing power, changes in life styles and the inclusion of greater proportions of female population to economic activities are important change factors that pulled down the proportion of expenditures on food and beverages in advantage of other consumption items like traveling, culture and entertainment and away-from-home eating. However, we see that the frequent economic crisis and the fall in the purchasing power have negative effects on consumption patterns and increase the part of food and beverages in total consumption expenditures. Of course, it must be noted that the urban and rural consumption patterns stay still quite different.

The expenditures for fruits and vegetables compose a considerable part of the food spending of a great majority of Turkish households, even for the low income groups. The part of the fruits and vegetables in the total food expenditures increase with the increase in available income of the households, particularly for fresh fruits and to a less extent for vegetables. There still is a seasonal difference in the consumption of fresh fruits and vegetables, as these products have price sensitive elasticities. However, increase of the income level, shade off these seasonal differences, particularly for fruits (S. Tozanli-Oncuoglu, 1987).

Retail prices seem to be a real constraint for the demand increase. Seasonal and regional fluctuations of retail prices have a direct impact on the variety and quantity of the

consumption of fresh fruits and vegetables. A very slight increase in the imports of exotic fruits and vegetables (avocados, kiwis, ananas, mangos) witness the interest that have the urban consumers with high income levels for this variety richness of their basket of fruits and vegetables. But, the frequent economic crisis of these recent years and the fall in the average purchase power of the urban consumer, lead to a narrower variety choice, people preferring to consume less expensive fruits and vegetables. Anyway, this change in the consumption trend is a positive driving force for the increase in exports.

Table 2.7.- Consumption per capita of certain food products and their share in total food expenditures

Food product	Unit	Average per capita consumption (kg/year/capita)		Share in total food expenditures (%)	
		1994	2002	1994	2002
Rice	kg	7,5	7,3	2,3	1,9
Wheat flour	kg	58,7	45,3	4,9	4,9
Bread	kg	63,6	59,5	10,0	10,7
Pasta products	kg	3,9	5,7	0,9	0,9
Meat (beef, mutton)	kg	20,7	10,6	14,4	10,4
Poultry meat	kg	2,7	6,0	1,9	3,2
Milk	lt	28,8	33,6	3,3	3,6
Yoghourt	kg	15,9	18,5	2,4	3,0
Cheese	kg	7,8	5,2	5,9	3,2
Eggs	unit	109,1	115,5	2,2	2,8
Margarine	kg	4,7	3,7	2,3	1,4
Sugar powder	kg	18,0	13,7	3,8	3,7
Tea	kg	2,9	3,0	3,2	2,3
Orange	kg	8,7	10,6	0,8	1,1
Apple	kg	10,7	9,9	1,3	1,4
Watermelon	kg	18,5	20,8	1,0	0,7
Total fruits		37,9	41,3	3,1	3,2
Tomatoes	kg	26,6	31,0	2,7	2,3
Spinachs	kg	2,9	2,6	0,3	0,3
Eggplant	kg	7,7	7,0	0,8	0,7
Potatoes	kg	23,5	24,2	1,6	1,5
Dry beans	kg	2,5	2,0	0,9	0,7
Total vegetables		63,2	66,8	6,3	5,5

Source : State Institute of Statistics, Income and Consumption Expenditures Survey 1994 and 2002, News Bulletin, 14/04/2004

Part III – Evolution of Agro-industrial Performance

I. Food and beverages industry in Turkey

Turkey is a dynamic market for processed food and beverages. Demographic characteristics (more than 70 million of inhabitants with a high share of young people under the age of 25); a high urbanisation ratio; increasing purchasing power and propensity to consume; changing life styles mostly due to the growing numbers of working women and the growing distance between the living and working places are the pull factors appealing for the consumption of processed food and beverages. Besides, exports of processed food exhibit also an upward trend; these exports are destined mostly to Eastern and Central Europe, Black Sea and Central Asia, Middle-East and Gulf States. In this wise, we see the recent emergence of some sub-sectors, allotted with modern technology and receiving foreign investments in their capital structure, specialised in food products quasi-entirely destined to exports (e.g., dried and/or frozen fruits et vegetables, tomato paste, frozen or canned ready-to-eat meals, dehydrated vegetable soups).

The increase rate of the production of processed foods and beverages is estimated at 4-5% per year for the last decade (1990-2003) even if there is a subsequent fall during the crisis period covering the years from 1998 to 2000 (*USDA-FAS, 2000; State Planning Organisation, 2004*). Subsectors with highest growth rates are fish and sea products with 9% annual growth rate, followed by dairy products and sugar confectionery. An overall description of main subsectors of this industry seems to be necessary. Two main orientations can be pointed out from a first observation : subsectors which are oriented towards the domestic market as meat and fish processing, dairy processing, primary grain processing (flour, bakery products), prepared animal feeds, spirits and wines. Fruits and vegetables processing (including nuts and dried fruits and vegetables), high valued grain processing (pasta products, sweet and salted biscuits), edible vegetable oils including olive oil and margarine, confectionery and chocolate products and soft drinks form another group of subsector where the international competitiveness of the finished products is quite high and exports show a positive trend for the future. It must be noted that some of these subsectors like edible vegetable oils other than olive oil, chocolate confectionery are based on imported raw materials, a fact that does not seem to be a great constraint for their international competitiveness.

I.1. Meat and fish processing industries

The modern slaughtering houses for bovin and ovin meat, and poultry were founded and controlled by public sector till the 1990s. Meat and Fish Organisation, a State enterprise founded in 1961 as well as municipal slaughtering houses controlled the cattle and sheep slaughtering and continue to do so. Since the middle of the 1990s, Meat and Fish Organisation is privatised by the sale of its numerous plants implanted throughout the country. An important growth in beef based delicatessen products as well as in the preparations of poultry meat is observed since the beginning of 1980s. Large enterprises like Pinar A.S., Koc Holding (via its affiliate Maret A.S.) or medium enterprises specialised in the delicatessen products since the 1960s like Etsan A.S. (Apikoglu) are very competitive units in this sub-sector. Furthermore, meat processing is a very dynamic sub-sector attiring new investments as the number of enterprises and engaged workers showed an important increase between 1990 and 2000. Its share in the total output of food, beverages and tobacco industry increased from 5,9% in 1990 to 7,4% in 2001, whilst its share in total value added increased from 3,8 to 4,3%.

However, it must be mentioned that around 50% of the animal slaughtering is handled by informal sector and can not be controlled by legal establishments (*T. Kiyamaz, 2004*). This situation creates an essential bottleneck to the development of modern enterprises looking for a sustainable procurement of high quality meat in sufficient quantities and result in important over capacity problems in this sub-sector.

Another important problem is linked to the practice of high prices in cattle and poultry feed sub-sector. This problem affects largely the poultry sub-sector. In fact, approximately 70% of the production costs of this sub sector are composed of the feed prices, most of which are imported, with high import duties (*T. Kiyamaz, 2004*). Furthermore, there is an over capacity problem resulting from great number of small farming and transformation units not respecting hygienic and regulatory measures and escaping from veterinary controls. Their presence brings along an unfair price competition.

Fishing, in its majority, is practiced by small sized fishing units that are not always legally registered. Aquaculture is also practiced by micro enterprises mostly managed as family businesses. In 2002, there were 1 459 enterprises specialised in pisciculture of trout and prawn while 247 enterprises specialised in aquaculture of sea fish species (*Su Ürünleri Derneği*, mentioned by <http://www.haberx.com/n/152141/balikcilar-kayit-disi.htm>). Processing of fish and crustaceans, which is a recent export-oriented sub-sector appeals large enterprises like Pinar A.S. However, this sub-sector still has a very small share in the total output of food and beverages industry (0,5% in 1990 and 0,3% in 2001).

I.2. Dairy industry

Dairy industry witnessed a particular development during the last twenty years. Pioneered by SEK, a State Economic Enterprise founded in the 1960s and located in remote urban centres of the Anatolian Plate and of coastal areas of the country, this industry was essentially occupied in pasteurised milk production until the arrival of a private firm, Pinar AS, in 1974 with a modern technology and a growth strategy based on product differentiation. It opened the way to other large and medium private firms. Meanwhile, the production plants of SEK were sold to private sector one after another after the privatisation of the parent company in 1995. In the 1990s, dairy industry appeared to be the most attractive subsector hosting foreign direct investment, realised by large multinational firms like Nestlé and Groupe Danone. In our days, dairy industry has a highly dynamic profile with a net increase of its share in total output (3.4% in 1990 and 4.4% in 2001) and in total value added (2.9% in 1990 and 3.4% in 2001) of food and beverages industry.

The presence of informal sector in dairy sector seems to be the essential constraint to the full capacity use in the sector. According to estimations realised by agricultural economists and/or by professionals, 60 to 70% of the milk yearly produced is absorbed by self-consumption of farmers and, most of all, by informal sector composed of micro dairies and street sellers (*D. Tanriverdi, 2001*). The procurement of high quality raw milk in sufficient quantities and without seasonal fluctuations by modern manufacturing units is severely blocked by informal sector, which pays farmers in cash and at relatively higher prices, without any quality control on the raw milk. For example, in yoghurt and cheese processing, 80% of the existing establishments happen to be micro enterprises employing less than 10 workers, and exhibit a “cottage industry” style (*T. Kiyamaz, 2004*).

Another essential problem of the sector seems to be the loose links existing between industry and dairy husbandry sectors. In fact, aside Pinar A.S. that developed contracting husbandry in the Aegean coast of Turkey, the dairy processing firms prefer to buy their raw milk on spot markets and pay with a delay of three to six months; a very discouraging time lap for small farmers, constantly in need for cash money (*D. Tanriverdi, 2001*).

These problems stemming from the lack of upward integration in the dairy sector have very negative consequences on the efficient use of the overall production capacity and overcapacity ratios tend to be around 50% of the total production capacities.

Table 3.1.- Different subsectors of food, beverages and tobacco manufacturing for 1990 and 2000 in million Euros

Subsectors of food processing beverages and tobacco industry	1990								2001							
	Annual average number of workers		Gross additions to fixed assets during the year		Output		Value added		Annual average number of workers		Gross additions to fixed assets during the year		Output		Value added	
	workers	%	Million €	%	Million €	%	Million €	%	workers	%	Million €	%	Million €	%	Million €	%
Slaughtering, preparing and preserving meat	10 694	5,7%	12,1	4,9%	606,4	5,9%	141,0	3,8%	15 710	9,5%	26,0	3,8%	1 305,5	7,4%	288,7	4,3%
Manufacture of dairy products	5 602	3,0%	15,9	6,4%	352,7	3,4%	109,0	2,9%	8 227	4,9%	47,2	6,9%	775,9	4,4%	249,4	3,7%
Canning and preserving of fruits&vegetables	16 085	8,5%	35,9	14,4%	689,4	6,7%	235,1	6,3%	19 284	11,6%	32,8	4,8%	1 369,7	7,7%	463,1	6,9%
Canning, preserving & processing of fish, crustaceans and similar industries	1 531	0,8%	0,8	0,3%	55,5	0,5%	20,8	0,6%	1 315	0,8%	2,4	0,4%	54,2	0,3%	16,3	0,2%
Manufacture of vegetable and animal oils&fats	13 515	7,2%	49,5	19,9%	1 228,1	11,9%	402,4	10,8%	7 988	4,8%	26,3	3,9%	1 605,6	9,1%	467,3	7,0%
Grain mill products	9 744	5,2%	16,1	6,5%	702,8	6,8%	96,9	2,6%	7 621	4,6%	33,0	4,8%	961,7	5,4%	134,6	2,0%
Manufacture of bakery products	20 030	10,6%	21,3	8,6%	710,7	6,9%	245,3	6,6%	19 322	11,6%	37,7	5,5%	865,1	4,9%	277,4	4,2%
Sugar factories & refineries	25 964	13,8%	13,1	5,3%	1 158,6	11,3%	367,4	9,9%	21 801	13,1%	15,6	2,3%	1 422,3	8,0%	441,2	6,6%
Manufacture of cocoa, chocolate & sugar confectionery	5 284	2,8%	18,3	7,3%	210,7	2,1%	65,7	1,8%	11 173	6,7%	24,4	3,6%	1 126,4	6,4%	421,0	6,3%
Manufacture of food products not classified elsewhere	27 429	14,6%	6,1	2,5%	1 229,9	12,0%	324,7	8,7%	22 145	13,3%	52,6	7,7%	2 292,9	12,9%	516,8	7,8%
Manufacture of prepared animal feeds	6 130	3,3%	14,8	6,0%	514,8	5,0%	81,6	2,2%	4 604	2,8%	8,9	1,3%	546,3	3,1%	92,6	1,4%
Distilling, rectifying and blending spirits	3 091	1,6%	0,4	0,2%	401,9	3,9%	311,1	8,4%	3 349	2,0%	0,1	0,0%	596,7	3,4%	503,7	7,6%
Wine industries	747	0,4%	1,4	0,5%	29,5	0,3%	10,3	0,3%	693	0,4%	2,4	0,3%	32,8	0,2%	16,6	0,2%
Malt liquors and malt	3 414	1,8%	10,2	4,1%	294,1	2,9%	192,6	5,2%	1 711	1,0%	10,6	1,6%	367,4	2,1%	212,9	3,2%
Soft drinks, carbonated drinks&water industries	6 949	3,7%	17,2	6,9%	441,2	4,3%	198,0	5,3%	5 185	3,1%	185,1	27,2%	880,3	5,0%	315,3	4,7%
Tobacco industries	32 164	17,1%	15,6	6,3%	1 651,4	16,1%	912,5	24,6%	16 097	9,7%	175,9	25,9%	3 504,6	19,8%	2 246,6	33,7%
Food, beverages and tobacco manufacturing	188 373	100%	248,7	100%	10 277,6	100%	3 714,4	100%	166 225	100%	680,1	100%	17 707,3	100%	6 663,5	100%

Source : D.I.E.

I.3. Grain milling, bakery and pasta products, biscuits and starch processing

This subsector gathers three different ISIC classification codes at four-digit level⁶. As Turkish people are large consumers of cereal-based products, ranking as the second largest cereals consumers in the world, behind Russia⁷ (A. Gök, 1998), grains processing industry occupies a comfortable place amid the subsectors manufacturing industry. It totals more than two thirds of food, beverages and tobacco industry output and one tenth of manufacturing industry. Meanwhile, it seems that this subsector is undergoing an important restructuring process as the number of enterprises as well as the number of engaged workers show a quite sharp decreasing trend.

Wheat flour subsector together with bread making are main industries gathering a great number of small and medium sized enterprises with a high proportion of unused production capacity. However, Turkey has a high competitive position in world classification of wheat flour exports, ranking amid the top 10 largest exporters worldwide.

Pasta products industry, gathering about twenty modern enterprises based on high technology and endowed with large production capacities. High quality durum wheat procurement brings out high quality finished products and Turkey's pasta products are often granted with first prices in international fairs with regard to their quality standards. Highly concentrated since several years, this sub-sector has a quite acceptable capacity use ratio with only 25% of over capacity : 20% for large enterprises and around 50% for medium sized firms (A. GÖK, 1998). Turkey's exports of pasta products are destined to USA and European Union, but are exposed to anti-dumping sanctions. Second quality pasta products are mostly destined to Central Asia and Black Sea countries (A. Yurdakul, 1999). In recent years, this industry hosted foreign investments, realised by Italian multinational, Barilla SpA.

Biscuits processing industry started its production in 1924 in small "cottage industry" supplying principally local markets. The development of modern enterprises is situated around the 1950s and 1960s with the foundation of Ülker S.A. and Eti S.A. Ever since, around twenty large and medium sized firms share the domestic market and hosts foreign capital. Hence, we see a highly concentrated oligopolistic market structure with the leadership of these two "first comers." The average ratio of the use of total production capacity is situated around 45-60%, a ratio that seems quite low (A. Gök, 1998). As for pasta products, the Turkish biscuits are exported in large quantities towards Russia, Black Sea and Central Asia countries as well as towards Middle East countries. A very small proportion of biscuits' exports are destined to Western Europe.

I.4. Vegetable oils and fats

This sub-sector is distinguished from others by the fact that it depends on the oilseeds' imports since the mid 1970s. A great number of enterprises utilise a wide range of technologies laying from primitive manufacturing techniques to modern high technology. Establishments can be ranged in three categories according to their final product: raw oil producers using as raw material, sunflower, cotton or soya seeds; refined oil producers refining sunflower, corn oil, cotton, soya and canola oils and margarine processors using exclusively imported oil as raw material. Public sector, especially agricultural sales cooperatives (TARIS) have quite comfortable positions amid modern enterprises. Like the other subsectors, the main constraint prevailing in the processing industry of vegetable oils

⁶ According to ISIC Classification, Revision 2, 3116 : grain milling; 3117 : Bakery, pasta products and biscuits; 3121 : starch production, snack foods.

⁷ Around 150 kg of wheat flour per year and per inhabitant in the 1990s.

and fats is the overcapacity problem. In this case, political decisions to locate huge production plants with high capacities in areas with weaker natural endowments in cotton or sunflower production are in the very essence of these overcapacity problems. Consequently, it is estimated that only 50 to 67% of the total production capacity is actually employed in this sub-sector (SPO, 2004).

The figures presented in the table 2.6. witness that this subsector has undergone a considerable streamlining program during the 1990s; the number of establishments and enregistred workers has fallen drastically in parallel to a sharp fall observed in gross additions to fixed assets (from 49,5 million euros in 1990 to 26,3 million euros in 2001). Meanwhile the output as well as value added exhibited, both of them, upward trends, even if the share of this subsector in the grand total of food and beverages industry had a relative fall, because of the gain of importance of other subsectors.

Table : 3.2. - Worldwide ranking of the ten largest margarine producers

Unit : metric tons					
Country	1980	Country	1990	Country	2002
USA	2 590 000	USA	3 401 000	USA	4 085 000
EU (15)	2 125 548	EU (15)	2 301 933	EU (15)	2 219 700
USSR	1 263 000	USSR	1 403 000	India	1 455 000
India	679 200	India	880 839	Pakistan	1 180 000
Pakistan	452 000	Pakistan	797 000	Russia	515 000
Japan	359 106	Turkey	480 831	Brazil	485 000
Brazil	230 000	Japan	352 298	Turkey	460 000
Turkey	189 119	Brazil	320 000	Japan	375 316
Poland	184 481	Poland	179 100	Poland	371 000
Egypt	152 050	Canada	151 060	Malaysia	332 000

Source : Authors' work based on the data from the FAO Statistical Database; www.fao.org

Olive oil production is an important economic activity positioning Turkey among the top 5 of the world olive oil producers. Oil processing absorbs some 70% of the annual olive production; 30% being preserved as table olives (C. Göksu, 2003). Closely related to the biannual character of olive production, there are important yearly fluctuations in the production of olive oil which is also reflected in country's olive oil exports. These fluctuations create the most significant constraint of this subsector. Storage facilities of olives must be further developed in order to counterbalance this constraint qui weakens the competitiveness of the Turkish olive oil sector on international markets. We can see this ups and downs in the following table. Another important target must be the productivity increase in olive prouduction. The two largest firms operating in olive oil production is Unilever (recently it bought in the Turkish entreprise Komili, the leader of the Turkish olive oil sector) with a market share of 47% and the agricultural sales cooperative Taris, particularly dynamic in R&D activities (N. AlpKent, 2000).

Table : 3.3.- Worldwide ranking of the ten largest olive oil producers

Unit : metric tons

Country	1980-1982	Country	1989-1991	Country	2001-2003
Italy	575 667	Spain	594 400	Spain	1 197 200
Spain	470 371	Italy	509 193	Italy	566 150
Greece	307 504	Greece	300 667	Greece	396 151
Turkey	128 333	Tunisia	186 667	Syrian Arab Rep.	141 795
Tunisia	80 000	Morocco	65 000	Turkey	98 333
Syrian Arab Rep.	74 248	Turkey	58 333	Tunisia	53 333
Portugal	46 515	Syrian Arab Rep.	48 667	Morocco	51 667
Morocco	28 333	Portugal	42 269	Algeria	40 000
Libyan Arab Jama.	26 333	Algeria	14 888	Portugal	31 483
Algeria	18 380	Argentina	12 770	Jordan	24 469

Source : Authors' work based on the data from the FAO Statistical Database; www.fao.org

As it can be seen on the following table, the multinational giant, Unilever is far beyond the other processors of the sector, the leader of this subsector with very important market shares. The Turkish diversified food processing firm, Ülker and Marsa KJS (partnership between the US multinational Philip Morris/Kraft Foods and Turkish industrial and tertiary conglomerate Sabanci Holding) are the challengers. The presence of some Agricultural Sales Co-operatives (Taris) or Agricultural Development Co-operatives (Edirne Yag, Ege Yag, Trakya Birlik) try to upgrade the regional sunflower production, mostly concentrated in the Marmara and Aegean regions of the country.

Table 3.4. – Market shares of main processors of vegetables oils and margarine in 1999

Product	Firm	Brand	Market share in 1999 (%)
Sunflower oil	Unilever	Rama, Vitella, Kupa, Tadim	22,5
	Ülker	Besler	12,0
	Marsa KJS	Evin, Usta, Akbis, Akyag	9,9
	Trakya Birlik	Biryag	6,5
	Edirne Yag	Olin	5,1
	Supermarkets	Own labels	3,6
	Aysan	Aysan	3,2
	Ege Yag	Yonca	2,6
	-	Other brands	16,7
Corn oil	Unilever	Kupa, Becel, Ema	50,0
	Ülker	Besler	19,3
	Kirlangic	Kirlangiç	9,5
	Marsa KJS	A10, SPY, Proser	4,9
	Edirne Yag	Olin	4,6
	Paksoy	Neba, Doya, Reva	3,6
	Ege Yag	Yonca	1,7
	Doysan	Doly, Baykur, Migros, Sok	1,6
	Ticaret ve Sanayi Kontuari	Kristal	1,2
Olive oil	Unilever	Komili, Livio	47,1
	Ticaret ve Sanayi Kontuari	Kristal	16,7
	Kirlangic	Kirlangiç	16,1
	Ulker	Besler	7,2
	Taris	Taris	4,8
	-	Other brands	2,7
Margarine	Unilever	Sana, Vita, Ema, Becel	48,5
	Ülker	Besler	20,0
	Marsa KJS	Ona, Evin, Luna	13,7
	Turyag	Yayla	9,7
	Trakya Birlik	Bima, Birma	4,5
	-	Other brands	3,6

Source : Authors' work based on information in newspaper *Dünya Ekonomi-Politika, Dünya Dosyaları*, n° 23, *Yemeklik Yag*, 26/03/1999 and n°24, 01/04/1999

1.5. Sugar refining and sugar and chocolate confectionery

Sugar refining is based completely on the sugar beet production in Turkey. 3 private and 27 public refineries total a daily production capacity of more than 100 thousand tons (*Kiyamaz, T., 2004*). These three private firms are in fact owned and managed by *Pankobirlik* (Union of Sugar Beet Producers' Co-operative). Public sector refines 83% of the total sugar beet produced in Turkey (*Demir, A. 2004*). Sugar production is supported and encouraged by public policies since the beginning of the Turkish Republic and a particular contracting farming is developed since then to supply these refineries with sugar beets. The increase in the number of sugar factories and their even distribution over the country was encouraging for job creation in agricultural as well as in industrial sectors. However, all through the 1990s and in our days most of these privatised sugar factories are suffering from very low economic and financial performances and are at the border of severe bankruptcies. Turkey's aim is to

remain self-sufficient in refined sugar production and the exports continue to be dependent of domestic market surpluses.

Since 2001, according to the new Sugar Law, a quota system more or less similar to EU system is instaurated in Turkey in order to regulate the sugar domestic market.

Table 3.5.- World ranking of centrifugal sugar production in 2002

Unit : 000 metric tons

Rank	Country	Production	Imports	Exports	Domestic Consumption
1	India	20 475	100	1 130	19 760
2	Brazil	20 400	-	11 600	9 450
3	EU-15	16 153	2 025	4 793	14 088
4	China	8 305	1 375	460	9 355
5	United States	7 167	1 393	124	9 028
6	Thailand	6 397	-	4 157	1 832
7	Mexico	5 169	52	413	5 184
8	Australia	4 662	5	3 594	1 200
9	Cuba	3 600	80	2 700	700
10	Pakistan	3 453	32	-	3 450
11	South Africa	2 542	263	1 235	1 575
12	Colombia	2 465	64	1 085	1 425
13	Guatemala	1 965	12	1 310	508
14	Philippines	1 900	109	142	1 950
15	Turkey	1 796	1	378	1 850
16	Ukraine	1 790	250	90	2 020
17	Indonesia	1 725	1 600	5	3 350
18	Poland	1 674	97	61	1 728
19	Russian Federation	1 630	4 850	410	7 040
20	Argentina	1 600	1	137	1 480
21	Egypt	1 408	1 102	52	2 290
22	Japan	833	1 407	10	2 277
23	Dominican Republic	460	44	185	317
24	Canada	88	1 235	14	1 250
World Total		134 566	38 056	40 872	134 545

Notes :

- The U.S. PS&D estimates conform to those released in the World Agricultural Supply and Demand Estimates (WASDE) "miscellaneous" category allocated to domestic consumption. The U.S. PS&D includes Puerto Rico.
- The European Union (EU) includes French Overseas Departments of Reunion, Guadeloupe, and Martinique. EU trade data does not include intra-EU trade.
- Indian data includes production of khandsari sugar, a native type, semi-white centrifugal sugar.

Source : USDA Statistical Database, www.usda.gov

Sugar is a very appreciated sweetener in Turkish kitchen. However, like in developed Western countries, the majority of the sugar production supplies the industries processing high valued food products and beverages processors (soft drinks, sugar and chocolate confectionery, biscuits processing, pastry products) while the its direct human consumption has a stagnant trend without any important increase. This stagnation is reflected on the evolution of the studied eleven years, as a restructuring is observed by the fall in the engaged workers and the number of establishments and an increase in the overall output

and value added of this subsector. The gross additions to fixed assets are nearly doubled between 1990 and 2001.

Sugar based industries are quite competitive on international markets. Following the general consumption trends, these industries start to replace sugar by starch in their production, a substitution that dresses up important threats for the beet sugar production and sugar refining. By consequence, during these last years, the equilibrium between production and consumption is altered and the stocks are exported. This change may create important bottlenecks for the sugar refining at long term and cause, once more, considerable over capacity problems.

The quotas instituted in Turkey are above the country needs for sugar and creates important surplus problems and stocks are increasing. Crucial efficiency problems of recently privatised sugar factories, and their eventual closures could have high negative impacts on the sugar beet production and bring about an important decrease in agricultural production (*Kiyamaz, T., 2004*).

In the confectionery processing, sugar based sweets are the leading products followed by chocolate confectionery and chewing-gum. More traditional products like Turkish delight (lokum) and helva are also included in this subsector. However, in comparison with the per capita consumption of other countries, it seems that the Turkish market is far behind the European countries as reported by specialised Turkish press (*Gıda Teknolojisi, 1998, cited by Demir, N., Atalay, N., 2000*). One of the reasons is surely stemming from the presence of an important informal sector formed by micro-enterprises and operating in sugar confectionery and chewing-gum businesses. As their production is not registered and does not figure within the national statistics, the apparent per capita consumption seems to be less important than the real average consumption, according to 1998 figures :

Switzerland	9,2 kg/year/capita
Germany	6,2 kg/year/capita
Greece	3,0 kg/year/capita
Turkey	1,5 kg/year/capita

A potential development could come along with the increase of exports of the sector. Turkish firms prefer to export to Black Sea and Central Asian countries, to Russia, to Middle East and Gulf States, in order to bypass the highly constraint-creating EU and USA legislations; a choice that brings about certain competitive advantages for Turkish firms at these markets where these latter have lead positions. However, they accept also the risk to counter the fluctuations in volumes exported because of the difficult financial situation and unsolvability prevailing in these countries. On the other side, as Turkish confectioners do not look of increase the number of countries of destination, any economic instability in these recently liberalised economies result in drastic falls in their production and.

Sugar and chocolate confectionery is a dynamic subsector. It is the only subsector where the increase in the number of engaged workers was two-fold, and the increase in output was nearly five-fold between 1990 and 2001 (*cf. table 2.6*). In parallel, the value added of chocolate and sugar confectionery increased from 66 millions euros in 1990 to 421 million euros in 2001. However, beyond this fantastic evolution, this subsector witnesses considerable financing problems in close relation with the obligation to pay cash their raw material (sugar). The prices of sugar are also much higher than the world prices because of the protection that benefits the sugar beet and sugar. Another financial problem is linked to the fact that other raw materials (cocoa, lesithin, milk powder, gelatine, lactose) are largely imported and increase the productions costs, when the world prices increase. Only large

enterprises with comfortable financial positions can bring out high profits. The difficulties that SMEs witness to reach financing and credit sources influence negatively their competitiveness. Another important problem of the sector is high retail prices face to decreasing purchasing power of most of the consumers. It is evident that the competitiveness is price-based so that only high scale establishments can bring out high profits and can compete at international markets (*survey results conducted and presented by Demir, N., Atalay, N., 2000*).

I.6. Beverages sector

Beverages can be gathered around three main categories :

- Fermented beverages with low alcohol like beer and wine
- Spirits like raki, vodka, cognac, liquor, gin and whisky
- Soft drinks like sodas, fruit based drinks, mineral sparkling water, bottled water

Spirits production is entirely controlled by the State Monopoly (Tekel) while beer and wine processing is largely handled by private enterprises. Nearly the totality of soft drinks production is, also, realized by private enterprises. Highly concentrated, this subsector has high capacity use ratios and exhibit a good economic efficiency level. Beer is the most produced and consumed beverage, followed by the traditional alcoholic beverage, raki and by wine production that is increasing its market share as the young urban consumer prefers more and more a bottle of good wine to traditional raki (*TZOB, 2001*). Bottled water and mineral sparkling water are also two segments with climbing demand both at domestic market and by foreign countries.

Mature segments with high concentration ratios, like spirits and beer market, are exposed to restructuring programs: the number of workers are decreasing e.g. in beer processing the number of engaged workers declined from 3 414 thousand in 1990 to 1 711 in 2001) while the increases in output and in value added follow a slow and steadily growing trend. On the other hand, soft drinks sector, which can be considered as relatively young and dynamic segment, exposed a two-fold increase in its output (441 million euros in 1990 and 880 million euros in 2001) and in its value added (198 million euros in 1990 and 316 million euros in 2001).

II. General structure of fruits and vegetables processing subsector

Processing and preserving fruits and vegetables, based on a large range of fresh fruits and vegetables, has always been a subsector of food processing that has been encouraged by the State as to increase its export potentialities and improve its competitiveness on international markets. Important investments by public sector but also by the savings of workers installed in foreign countries were realized in the 1970s in the promising activities like canned fruits and vegetables and fruit juices. However, these production plants were allotted with production capacities overpassing considerably the horticultural and arboricultural production capacity of these regions. (*Tozanli-Oncuoglu, 1981*). Because of these excessive production capacities, these plants could hardly achieve the scale economies; an inefficiency that was worsen by seasonal fluctuations of agricultural produce. Transportation costs, high prices paid for packaging material and electric energy increased the overall production costs of canned fruits and vegetables. The nonconformity of packaging material to international standards restrained even more, most of the export possibilities.

Nevertheless, new dynamic segments are developed since the 1970s in parallel to those "traditional" activities; namely the frozen fruits and vegetables, an entirely export-oriented

industrial branch; dried fruits and nuts and tomato paste processing that bring about an promising and increasing competitiveness degree to Turkey in international markets (Gök, 1998).

II.1. Canned Fruits and vegetables

The first canning plant of fruits and vegetables dates from 1900 under the Ottoman Empire regime. However the real development of this activity is rooted in the 1960s with the beginning of economic planning. It is interesting to note that at the beginning of 1960s, the total output of the fruits and vegetables canning industry was only 10 tons per year, whilst in the 1990s, the national output reached 86 000 tons and in 2001 to 242 000 tons (IGEME, 2003). Most of the processing units are concentrated in the Marmara and Aegean regions where natural endowments facilitate the collect and transfert of fresh fruits and vegetables. In canned vegetables the most demanded varieties are green peas, green beans, ocras, zucchinis (courgettes), eggplants and peppers. For ready-to-eat meals, green beans and black eyed peas, eggplants boiled in oil, pepper, traditional eggplant meals, and stuffed vineleaves. Canned fruits are mostly export-oriented products; the most demanded varieties are cherries, apricots, peaches, plums, strawberries, grapefruit and clementines.

Turkey is competitive worldwide, in the production and exports of vegetables in vinegar (cornichons), canned mushrooms, tomato processing, vegetable mixes, preserving of citrus fruits, cherries, apricots, strawberries and fruit cocktails. The packaging industry realized significant improvements in quality and can in our days respond positively to the demand of the canning industry for tin boxes corresponding to international standards. The growth in exports are encouraging. As reported by Dr. Irfan Demiryol (*Eksi, A., 2003*), in 1993, 77% of the 141 000 tons and in 2000, 79% of the 225 000 tons of of canned fruits and vegetables processed were exported. Ready-to-serve meals, fruits jams and marmelates as well as pickles and other preserved vegetables in vinegar are the most demanded products on European markets, mostly those hosting a great number of emigrated Turkish workers. Countries with important Turkish populations, like Germany, Netherlands but also Romania, USA, France and UK are those with highest shares in total Turkish exports of canned fruits and vegetables. However, these segments remain "traditional" activities while frozen fruits and vegetables increase their volume sales with a very rapid pace.

Table 3.9. – The number of establishments and their total sales in volume and in value between 1997 and 2002

Processed products	Volume : metric tons									Value : thousand euros								
	1 997			1 998			1999			2000			2001			2002		
	# of estab.	Sales in volume	Sales value	# of estab.	Sales in volume	Sales value	# of estab.	Sales in volume	Sales value	# of estab.	Sales in volume	Sales value	# of estab.	Sales in volume	Sales value	# of estab.	Sales in volume	Sales value
Canned fruits, compotes	10	16 448	20 500	7	17 367	20 767	7	20 996	24 180	8	18 688	24 922	9	17 832	27 160	7	13 617	16 562
Citrus fruit jams; marmelades; jellies	2	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cultivated mushrooms, preserved other than by vinegar	-	-	-	-	-	-	-	-	-	1	-	-	1	-	-	1	-	-
Onions and garlic in powder	-	-	-	-	-	-	-	-	-	1	-	-	1	-	-	-	-	-
Pickles	7	57 547	47	7	48 412	37	6	39 952	27	6	36 172	26	8	44 036	34	8	56 252	42
Vegetables and fruits prepared or preserved by vinegar or acetic acid	1	-	-	1	-	-	1	-	-	1	-	-	2	-	-	2	-	-
Vegetables and mixtures of vegetables, n.e.c.	2	-	-	3	9 046	6 177	3	12 940	7 327	2	-	-	2	-	-	2	-	-
Potatoes in thin slices, cooked in fat or oil	1	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Potatoes prepared or preserved in the form of flour; meal or flakes	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Preserved tomatoes; whole or in pieces	2	-	-	2	-	-	3	3 603	1 700	4	7 546	3 446	2	-	-	3	25 599	11 507

Notes : data comprises only public enterprises as well as large scale private enterprises with more than 10 registered workers. Their added value totalises near to 80% of the sector's total added value.

Information for segments with less than 3 enterprises, is kept secret

Source : Authors' work based on the unpublished data from D.I.E. (State Institute of Statistics)

II.2. Tomato paste

The Mediterranean countries of the European Union control, together, produce more than two thirds of the tomato paste. Turkey comes behind Italy and Spain as the third producer in world ranking during the 2001/2002 campagne and realise 14% of the top 10's total. In regard with export data for the same year, Turkey has the forth place behind Italy, Greece and Portugal but before Spain⁸. It has a 36% share in the total exports of the world's top 10. However, it is an evidence that the tomato paste production in Turkey is an export-oriented industrial activity as near to two third of the national production is exported. The main clients of Turkey are Japan, Russia, Saudi Arabia, Italy and Germany.

Table 3.9. - Tomato Paste: Production, Supply and Distribution in Selected Countries in 2001/2002

(In Metric Tons)				
Country	Production	Imports	Exports	Domestic Consumption
Italy	340 000	96 000	398 000	74 000
Spain	225 849	8 296	95 867	125 000
Turkey	185 000	-	117 831	100 000
Portugal	158 387	-	130 745	34 142
Greece	147 500	10 000	145 000	18 000
Brazil	130 000	400	1 000	127 500
Chile	111000	-	100 120	11 680
France	42 200	43 773	3 941	80 000
Mexico	12 000	24 360	4 763	31 597
Israel	1 058	990	4 780	14 870
Total	1 342 996	188 115	861 608	718 286

Source : www.usda.gov

Tomato paste producers are large private companies, affiliates of giant Turkish industrial conglomerates and have an efficient and profitable industrial management system, established since a long time. 30% of their raw material sourcing (industrial tomatoes) is guaranteed by contrat farming so as to soften the seasonal fluctuations in raw material procurement and resolve in an extense the overcapacity problem. For example, Penguen Gida Sanayii A.S., contracts 7 000 farmers out of its 8 000 farm suppliers (www.penguen.com.tr). The results are quite encouraging as they work at 85% of their full production capacity. Today 63 processing plants, located in the Marmara region (especially near to Bursa) total 610 thousand tons of production capacity per year. The total sales of main large scale processing plants are given in the table thereafter.

⁸ *Intra Eu trade is included in these figures*

Table 3.10.- Evolution of number of establishments and sales in volume and value of tomato puree and paste between 1997 and 2001

Year	Indicator	Concentrated tomato paste	Unconcentrated tomato puree and paste
1997	Number of establishment	15	1
	Volume sales (tons)	131 830	-
	Sales value (000 euros)	97 313	-
1998	Number of establishment	13	3
	Volume sales (tons)	143 213	2 268
	Sales value (000 euros)	126 610	1 770
1999	Number of establishment	14	3
	Volume sales (tons)	139 089	3 660
	Sales value (000 euros)	104 059	2 854
2000	Number of establishment	11	3
	Volume sales (tons)	143 912	3 928
	Sales value (000 euros)	108 011	3 161
2001	Number of establishment	12	2
	Volume sales (tons)	157 897	-
	Sales value (000 euros)	104 030	-
2002	Number of establishment	12	3
	Volume sales (tons)	167 832	3 396
	Sales value (000 euros)	119 507	2702

Notes : data comprises only public enterprises as well as large scale private enterprises with more than 10 registered workers. Their added value totalises near to 80% of the sector's total added value.

Information for segments with less than 3 enterprises, is kept secret

Source : Authors' work based on the unpublished data from D.I.E. (State Institute of Statistics)

Table 3.12. - Main companies active in tomato paste processing that own these large scale processing plants (2000/2002)

Company name	Ownership	Products	Sales for 2002 (million euros)
Tat Konserve	Affiliate of Koc Holding, JV with Kagome (Japanese co.)	Tomato paste, pepper paste, green peas, ketchups, canned vegetables, cornichons, mushrooms	193
Merko Gida San.	Turkish	Tomato paste, frozen food, fruit concentrates, purees, aseptic diced tomato	65
Tukas Gida Sanayii	Oyak Group (Army pension fund)	Tomato paste, canned vegetables, jams, preserves, pickles, sauces, soups & powder bouillon, powder desserts, frozen food, others	64
Tamek Gida Sanayii	Joint-venture with Coca-Cola in fruited soft drinks	Fruits juices, tomato paste, tomato products, canned vegetables, canned ready-to-eat meals, jams, marmelates, soups, frozen food, catering	44
Penguen Gida Paz.	Participation of 14% of the German DEG bank	Frozen food, tomato paste, canned vegetables, pickles, jams and preserves	33
Dardanel		Tomato paste, canned vegetables, canned tuna fish, petfood, catering	26

Source: Authors' work based on web sites of the named companies, ISO Best 500 Industrial Companies of Turkey 2002, Capital Best 500 Private Companies of Turkey

II.3 Frozen fruits and vegetables

As it is attested above, most of the processors of canned fruits and vegetables, tomato paste and fruits juices are also active in frozen fruits and vegetables segment. Frozen food was first initiated at the beginning of 1990s by the foundation of Dardanel A.S. as an export-oriented industry. However, Turkish urban consumer habits and preferences are changing at a very rapid pace and many high income urban households increase the domestic demand for frozen ready-to-eat meals, frozen pizzas as well as frozen fruits and vegetables. Increase in the number of working women, the increasing distance between the living and working places for all the members of the urban households are the pull factors that appeal for frozen food. However, the domestic market rest for the moment a nich market quite away from a mass consumption demand. The reasons might be explained by the composition of the retail prices of these products :

Table 3.13. – The breakdown of production costs by different types of inputs in the frozen fruits and vegetables industry in1999

Production inputs	Share in the total production costs
Raw materials and intermediary consumption goods	50-55 %
Electric energy	7-11%
Labour	10-15%
Depreciation of property, plant and equipment	14-28%
Packaging material	5-6%

Source : DPT, 2001, *Dondurulmus Gida Özel İhtisas Komisyon Raporu, Ankara, p. 23*

Table 3.14. – Marketing costs included in the retail price of frozen fruits and vegetables

Production inputs	Share in the total production costs
Margin of the industrial processing company	10-20%
Wholesaler's margin (main distributor)	14-20%
Delay in credit payments (difference in interest rate)	15-20%
Retailer's margin	20-25%
VAT	17%
Total marketing costs	226%

Source : DPT, 2001, *Dondurulmus Gida Özel İhtisas Komisyon Raporu, Ankara, p. 55*

So, it can be calculated that the difference between the factory price and retail price actually paid by the consumer is as enormous as 226%. This difference can, in fact, explain why the domestic market can not expand beyond its present size. As the processors of tomato paste, frozen fruits and vegetables industries also practice contract farming for their raw material procurement. This helps them to avoid seasonal fluctuations, but also to better control the total quality chain. The search for quality and continuity in raw material procurement increases the part of the raw materials comprised in total production costs, but this component alone does not explain this abyssal difference between the farm price and the retail price. Actually, extension of a vertical coordination could help to reduce the trading margins along the marketing channels by pulling down the risks that the middlemen take at different stages of the marketing process.

As the operating companies in frozen fruits and vegetables subsector are all recently founded enterprises, they benefit from high technologies and realize upward integration by contract farming. According to Igame's information, around 30 establishments are using modern freezing methods (www.igeme.org.tr). Approximately 40% of the production capacity drives from the old cold storage establishments that switched their activity to fruits and vegetables freezing, a sector with higher added value (Akbay, C., 1993).

3.15. - The main companies of this segments are listed below :

Company name	Ownership	Prod. Capacity	REGION/ City	Products
Ozgu-Ozgorsey Gıda Ürünleri	Turkish	20 000 t/yr potatoes 25 000 t/yr of fruits & vegetables	Aegean Izmir	Frozen fruits& veg., frozen potatoes, catering
Sanex Inc	Sara Lee (US)		Izmir	Organic frozen fruits & veg., fruit juices, concentrates
	Turkish		Izmir	Tomato paste, frozen fruits and vegetables, exports
Merko Gıda San. ve Tic.	Turkish	37 000 t/yr tomato paste	Marmara	Frozen food, tomato paste, fruit concentrates, purees, aseptic diced tomatoes
		18 000 t/yr frozen food	Istanbul	
		18 000 t/yr fruit concentrates		
		8 000 t/yr purees		
		10 000 t/yr aseptic diced tomato		
Apeks	Foreign invest	15 000 tons/year	Bursa	Frozen fruits&vegetables
Bidas	Turkish	10 000tons/year	Bursa	Frozen fruits&vegetables
Fine Food Gıda San. AS	Fine Foods (Australia)	3 000 tonnes/year	Bursa	Frozen fruits&vegetables
Martas Marmara Tar. Ur. Deg	Turkish	30 000 tons/yr	Bursa	Frozen fruits & vegetables
Penguen Gıda Pazarlama AS	DEG German bank (14%)	21 000 t/yr frozen fruits&vegetables, 8 400 t/year jams, 4 500 rt/yr tomato paste	Bursa	Frozen food, tomato paste, canned vegetables, pickles, jams and preserves

		tomato paste			
Yenice Gida San. ASa	ASa	Holding	1 500 t/yr dehydrated 1 500 t/yr frozen veg. 2 million jars of jam	Canakkale	Dehydrated and frozen fruits&vegetables, roasted peppers
Dardanel AS				Istanbul	Tomato paste, canned vegetables, canned tuna fish, petfood, catering
Frigo-Pak AS		Gerber Foods (US)	4 800 tons/year	Istanbul	Fruit juices, iced tea
Kerevitas San	Gida	Turkish	28510t/yr FFV, 7242 t./yr of seafood , 3635 to./yr of pizza	Istanbul	Frozen fruits&vegetables, frozen seafood and frozen bakery products and pizzas
Capo Foods		Capo Food Ltd (Canada)	1 500 t/year	Sakarya	Frozen fruits and vegetables
Lamb-Weston Dogus Patates		Dogus Holding & Conagra JV		Black Sea Bolu	Frozen potatoes
Bamex Dis. Ve Gida San	Tic.	Turkish, multinational		Mediterranean Hatay	Fresh produce, frozen and canned fruits&vegetables
Ayfrost Food Prod.	Frozen	Aydeniz Grp		Central Anatolia Ankara	Fruits, vegetables, seafood
Gökay Tes.	Sogukhava	Turkish	7 500 tons/year	Eskisehir	Frozen pepper, tomatoes and frozen plums
Ozgul Mad. Ur. Paz.	Gida Iht.			Kayseri	
Detkoop Food Indus.	Frozen			Konya	

Source: Authors' work based on information from the web site : www.igeme.org.tr,

DPT, 2001, Dondurulmus Gida Özel İhtisas Komisyon Raporu,

web sites of the above companies

Scale economies are the key factor to catch up with the international competitiveness. Today, the frozen fruits and vegetables sector is still an infant industry, protected by high customs duties. This protection brings along some advantages but on the other side reduces the capacity of the local companies to acquire the necessary strength to compete worldwide. The companies must reach higher economic efficiency levels and increase their capacity use ratios while they continue to pay particular attention to total quality control in their supply chain. Strategic alliances between these medium sized companies or their re-assembling within professional associations can help them to face main constraints related to small scale economies.

II.4. Fruits and vegetables juices

Turkish fruit juice industry started its production in the late 1960s as an export-oriented activity largely supported by State subsidies. The aforementioned overcapacity problem

stems largely from this investment waste of the 1970s, where the State accorded investment credits to a number of projects that did not present any feasibility report. Consequently, large scaled industrial plants with significant production capacity remained inefficient because of lack of raw material and strong seasonal fluctuations. Procurement from other production areas increased the transportation costs as well as waste proportions of roaded products and had highly negative impact on the economic efficiency of these establishments. Nevertheless, in our days, there are dynamic, high technology using industrial establishments with great economic efficiency. They co-existe with small scaled, inefficient local SMEs.

The fruit species that are processed are particularly apples, apricots, peaches, oranges, tangerines, grapefruits, lemons, sour cherries, cornel, strawberries, pomegranates and grapes. Some vegetable species (like carrots, tomatoes) also are processed into vegetable juice. Sour cherry juice, peach and apricot nectars are mostly directed to the domestic market while apple and citrus juice concentrates are export-oriented products (www.igeme.org.tr). Meanwhile, it must be remembered that there is a fierce competition on the international markets based on cost efficiency and low prices. For example, concerning the orange juice production, Turkey, despite its rich natural resources, is only the ninth of the top 10, in regard with its volume production. Besides, there are important annual fluctuations in exports, because of lacking storage infrastructure that disadvantage the country on international markets. However, an important increase in the size of domestic market is encouraging for the processing companies.

Table 3.16. - Orange Juice: Production, Supply and Distribution in Selected Countries in Metric Tons (65 Degrees Brix)

Country	1990			2000		
	Production	Exports	Domestic consumption	Production	Exports	Domestic consumption
Brazil	863 000	812 000	20 000	1 354 000	1 250 000	15 000
USA	463 980	63 990	755 298	992 843	128 907	1 021 224
Spain	18 000	18 000	15 000	41 167	55 000	13 167
Mexico	47 500	46 000	1 750	34 000	30 710	4 000
Italy	44 939	22 162	18 516	31 521	13 375	39 550
Australia	20 012	1 636	27 845	26 077	2 491	49 000
South Africa	19 849	12 534	7 315	24 570	11 588	12 000
Greece	12 431	10 896	5 630	16 000	10 500	18 344
Turkey	7 400	2 370	5 030	12 500	240	14 500
Morocco	15 116	22 079	2 478	1 600	2 800	1 600
Total of top 10	1 526 227	1 022 597	861 582	2 532 738	1 510 934	1 185 485

Notes: Includes all processed orange juice whether or not concentrated.

One metric ton of 65 degrees brix equals 344.8 gallons at 42 degrees brix and 1,405.88 gallons at single strength equivalent.

For Brazil, includes small quantities of tangerine juice.

Source ; www.usda.gov

Table 3.17. – The number of establishments and their total sales in volume and in value between 1997 and 2002

Processed products	Volume : metric tons									Value : thousand euros								
	1997			1998			1999			2000			2001			2002		
	# of estab.	Volume sales (tons)	Sales value (000 €)	# of estab.	Volume sales (tons)	Sales value (000 €)	# of estab.	Volume sales (tons)	Sales value (000 €)	# of estab.	Volume sales (tons)	Sales value (000 €)	# of estab.	Volume sales (tons)	Sales value (000 €)	# of estab.	Volume sales (tons)	Sales value (000 €)
Tomato juice	3	1 130	491	3	1 764	973	3	1 051	375	3	1 151	473	3	1 077	413	6	1 754	1126
Apple juice	2		0	4	2 150	1 265	4	816	398	4	1 331	946	4	1 529	756	6	1 611	1076
Cherry juice	5	18 444	7 816	6	38 532	20 641	6	44 355	24 982	7	51 739	36 249	7	40 168	22 369	11	42 575	24469
Grape juice (incl. Grape must)	3	910	267	4	393	4	4	231	79	3	1 108	260	2			2		0
Juice of any single fruit/vegetable, not fermented and not containing added spirit	10	148 764	85 114	9	86 518	47 421	8	74 341	43	10	84 531	52 626	12	105 812	54 399	11	65 697	36314
Juice of apricot	5	10 913	4 674	6	30 709	17 439	6	33 264	18 947	7	34 972	23 512	7	27 598	14 975	10	23 862	13572
Peach juice	5	17 466	7 298	6	44 164	24 483	6	42 893	24 880	7	51 611	35 422	7	41 380	22 628	11	47 040	27044
Orange juice	3	4 972	2 059	4	4 663	2 066	4	6 572	3 329	3	6 545	3 960	5	11 545	6 174	9	13 722	8549
Clementine juice										1			1					
Grapefruit juice										1								
Juice of other citrus fruits							1											
Pineapple juice	2			1			2			2			2			5	1 782	1270
Concentrated fruit and vegetable juices (incl. Mixtures of juices; excl. tomato juice)	14	69 471	62 935	9	48 506	44 674	8	32 318	35 703	10	29 689	32 129	9	43 163	47 496	11	26 945	23283
Mixtures of unconcentrated fruit and vegetable juices	4	7 943	5 568	5	19 020	12 295	3	37 430	23 088	4	13 592	10 587	7	20 135	11 482	4	14 759	9833

Notes : data comprises only public enterprises as well as large scale private enterprises with more than 10 registered workers. Their added value totalises near to 80% of the sector's total added value.

Information for segments with less than 3 enterprises, is kept secret

Source : Authors' work based on the unpublished data from D.I.E. (State Institute of Statistics)

As it can be observed on the table 3.17, there are important increases in some segments of fruit juices both in volume and in value sales. In fact, cherry, peach juice, apricot juices as well as orange juices are demanded products both on domestic and international markets. Tomato juice also has an important increase between 1997 and 2002. Another important remark concerns the higher increases in the value of sales than those observed in sales in volume, indicating that the best-price products or private labels are drawing back. The value sales are in thousand euros in order to soften the high stagnation rates that were prevailing in the 1980s and the 1990s in Turkey.

As in the other subsectors of the Turkish food processing industry, there is a dual structure in fruit and vegetable juices processing; large scale companies with high processing technologies and modern marketing systems work aside traditional SMEs economically inefficient. The first-comers, Dimes, Tamek, Meysu Aroma, Asya are still active players (Eksi, A., 2003).

There are approximately 30 industrial establishments processing fruit and vegetable juices. 9 of them deal with both fruit concentrate production and fruit juice bottling (Aroma, Asya, Dimes, Ersu, Golden, Gülsan, Oguz, Tamek and Yummy); 8 companies process only fruit concentrates and purees (Arisu, Elmasu, Etap, Gökür, Konfrut, MeyKon, PenKon, Targid) and 13 of these companies deal only with the bottling of ready-to-use fruit juices (Ak, Atom, Aytaç, Balsu, Coca-Cola, FrigoPak, Fruko, Kestas, Mar, Nestlé, Pinar, Sek and GidaSa) (Eksi, A., 2003).

Table 3.18 – Market shares of major companies operating in the fruit and vegetable juices segment between 2000 and 2001

Company	Brand	2000	2001	2002
Saber AS	Stute	22,2	26,7	29,6
Coca-Cola Icecek	Cappy	23,3	20,3	18,7
Dimes Gida	Dimes	9,6	9,4	9,4
Pinar Süt Mamulleri	Pinar	4,9	5,1	5,8
Wild GmbH & Co KG	Capri-Sun	2,9	3,6	5,3
Aytaç Gida AS	Aytaç	4,0	4,4	4,9
Sek AS	Sek	3,9	4,3	4,7
Meysu Gida	Meysu	3,1	3,2	3,2
FrigoPak Gerber	Sunpride	3,2	2,9	2,7
Tamek Gida	Tamek	2,3	2,0	1,8
Afsar AS	Fruit Aqua	2,0	1,7	1,5
Dogadan Gida	Dogadan	1,1	1,2	1,3
Aroma Bursa	Aroma	1,8	1,5	1,3
Dimes Gida	Zuzzi	0,4	0,4	0,3
Coca-Cola Icecek	Bibo	1,9	2,5	-
Private labels		1,3	1,4	1,6
Other labels		12,1	9,4	7,9
Total market		100,0	100,0	100,0

Source : *Soft Drinks in Turkey, march 2004,*

There seems to be a difference in market strategies of medium sized national processors and food multinationals ; while national enterprises advantage a differentiation strategy with a high market segmentation (e.g., Pinar Süt, Dimes present in all segments of the fruit juices subsector), Coca-Cola is present only in the segment of nectars and juice drinks targeting the segment leadership with the highest market share possible (Soft Drinks in Turkey, 2004).

II.5. Dried fruits and nuts

The main products that are included in this segment of fruits and vegetables subsector are dried figs, apricots and raisins as dried fruits and hazelnuts, almonds and pistachios as

treenuts. Turkey is world leader for most of these products for centuries now even if it is challenged more and more by other producer countries that would like to raise their competitive advantages on world markets. Preserved olives can also be included in this segment. Most of these products and mainly treenuts are supported by State during the 1960s and 1970s. The State also created Agricultural Sales Co-operatives and Co-operatives Union in a complete vertical coordination process..

Export-oriented since the beginning of the 20th century, treenuts and dried fruits are also very demanded by the chocolate confectionery, pastry and biscuits subsectors. Besides, Turkish people likes quite well to consume these products without any further transformation. This triple demand for treenuts and dried fruits appeal for a great number of industrial and commercial companies ranging from performant large scale enterprises to small specialized stores called "kuruyemisci" with less than three salaried workers.

In dried fruits and nuts, there is a certain natural distribution between regions as each product is geographically specific in some provinces. In dried apricots, a special production zone, Malatya should be mentioned. This province situated at the South-East of Anatolia procures 49% of the Turkey's total annual production 95% of which are dried. Other apricot producing provinces are also situated in Central and East Anatolia regions (Erzincan, Kahramanmaras, Kayseri, Icel, Konya, Ankara, Sivas and Nevsehir). Fig and raisins production is concentrated in Aegean region while hazelnuts, almonds are specific to Black Sea region and pistachios to South-East Anatolia (Gaziantep and Siirt are provinces that give their names to high quality pistachio varieties). Olives are mostly concentrated in Aegean and South of Marmara regions as well as in GAP region (South-East Anatolia).

There is a great number of micro-enterprises installed in these regions of production using traditional handicraft processing methods and without any quality control. On the other hand, there are also State supported Agricultural Sales Co-operatives and Co-operative Unions that realized a successful vertical coordination between small farmers and processing industry and marketing functions. The most organized and active of these co-operatives, are Fiskobirlik for hazelnuts marketing; Güneydogu Birlik for pistachios marketing, Taris for dried figs and raisins as well as for olives marketing. All of them were privatized during the 1990s. As it can be observed on the following table, they are powerful co-operative companies but unfortunately are economically inefficient. It also be noted that there is a great number of exporting agents in this subsector, as these products are high value-added products.

Table 3.19. – Major players operating in dried fruits and nuts subsector ranked by their 2003 net sales in thousand euros

Company	Sector	Net sales (1 000 €)	Net income (1000 €)	Exports (thousand €)	Salaried workers
CP Standart Gida Sani ve Tic. AS	Multiproduct	162 615	13 665	1 609	1 780
Oltan Gida Mad. Ihr. Ith. ve Tic. Ltd Sti	Multiproduct	145 111	1 722	145 573	280
Altinmarka Gida Sanayi ve Ticaret AS	Multiproduct	115 974	5 171	51 758	206
Beypi Beypazari AS	Multiproduct	96 212	4 861	615	1 120
Osman Akca Tarim Urunleri AS	Multiproduct	93 479	-63	93 026	470
Poyraz Karlibel Findik Entegre AS	Hazelnuts	73 998	5 068	43 507	287
Birlik Pazarlama Sanayi ve Ticaret AS	Multiproduct	63 124	2 509	249	175
Unikom Gida San ve Tic AS	Multiproduct	61 327	7 884	-	132
SS Taris Zey. ve Zeytinyagi Tarim Satis Koop.	Olives &Olive oil	59 954	-7 587	24 355	263
Ozlem Tarim Urunleri AS	Multiproduct	52 287	2 814	430	116
Findik Tarim Satis Kooperatifleri Birligi	Hazelnuts	51 551	-118 433	19	1 700
Keskinkilic Gida San ve Tic AS	Multiproduct	39 428	1 736	95	160
Sagra Gida Uretim Pazarlama AS	Multiproduct	39 194	6 001	6 064	631
Tansas Perakende Magazacilik Ticaret AS	Food retailing	38 863	-38 572	0	4 251
Oltan Findik San ve Ticaret Ltd Sti	Hazelnuts	36 259	236	0	190
SS Marmara Zeytin Tarim Satis Kooperatifleri	Preserved olives	36 172	-7 489	5 821	429
Aytaç Dis Ticaret Yatirim Sanayi AS	Multiproduct	34 921	-	-	433
Yavuzlar Findik Gida Ltd Sti	Hazelnuts	34 018	532	18 605	74
Gursoy Tarimsal Urunler Gida AS	Multiproduct	33 933	20	26 516	300
Eksun Gida Tarim San ve Tic AS	Multiproduct	32 076	1 276	9 390	120

Source : ISO Dergisi Sanayi, Agustos 2004, Sayi 461

Table 3.20. – The number of establishments and their total sales in volume and in value between 1997 and 2002

Processed products	Volume : metric tons									Value : thousand euros								
	1 997			1998			1999			2000			2001			2002		
	# of estab.	Volume sales	Sales value	# of estab.	Volume sales	Sales value	# of estab.	Volume sales	Sales value	# of estab.	Volume sales	Sales value	# of estab.	Volume sales	Sales value	# of estab.	Volume sales	Sales value
Apricot paste			-			-			0	1	-		0	-		0	-	
Fig paste	3	2 459	51	2	-		2	-		4	2 095	2 211	4	4 785	3 764	4	890	926
Dried apricots (packed)	15	13 033	3 302	13	15 796	32 974	15	14 268	28 755	13	15 016	27 357	15	27 295	33 523	15	24 192	50 078
Dried figs (packed)	18	23 051	3 720	16	28 505	48 292	15	25 427	43 839	15	27 066	44 475	14	26 696	48 002	13	21 629	40 411
Dried raisins	1	-		2	-		0	-		0	-		1	-		0	-	
Dried sultanas	22	147 183	14 849	20	138 132	136 529	20	125 321	129 550	20	138 216	144 613	17	132 526	110 544	19	133 795	118 081
Olive paste	1	-		1	-		1	-		2	-		2	-		2	-	
Other dried fruits	3	1 401	170	2	-		2	-		1	-		4	959	863	2	-	
Bleached hazelnuts	10	21 528	8 715	9	19 685	774	11	36 812	142 542	13	38 011	140 202	14	43 578	138 343	13	40 467	114 790
Almonds (shelled, roasted, salted)	2	-		1	-		1	-		1	-		2	-		0	-	
Grounded hazelnuts bleached	4	5 207	101	7	4 885	959	7	4 734	19 009	8	3 951	13 222	8	7 341	24 076	7	8 455	18 377
Hazelnuts butter	3	915	400	3	1 158	550	3	2 128	6 797	2	-		3	836	2 693	3	5 656	15 798
Hazelnuts unshelled, raw, not bleached	23	82 588	763	24	100 369	294	23	100 092	344 035	23	97 767	332 053	22	141 841	414 693	21	122 185	267 869
Hazelnuts, defected			-	11	7 175	180	9	5 817	14 395	11	7 403	16 852	10	6 145	9 601	8	5 235	6 055
Peanuts processed or canned	2	-		3	333	660	2	-		2	-		2	-		2	-	
Pistachios (unshelled, roasted and salted)	3	185	83	3	157	76	3	426	2 621	3	42	322	3	376	1 267	0	-	
Pistachios (shelled, roasted and salted)	1	-		1	-		3	72	613	1	-		1	-		2	-	
Shelled and processed hazelnuts	9	952	122	9	1 024	4 499	7	309	515									

Notes : data comprises only public enterprises as well as large scale private enterprises with more than 10 registered workers. Their added value totalises near to 80% of the sector's total added value.

Information for segments with less than 3 enterprises, is kept secret

Source : Authors' work based on the unpublished data from D.I.E. (State Institute of Statistics)

III. Size of the agro-food market and major processing firms

The competitiveness of a sector can also be observed by CR4 ratios where the total shares of the four largest establishment in the total production in volume are calculated. These ratios indicate, in a way, if the markets and/or segments are mature, with oligopolies or duopolies. In this case the CR4 ratios will be situated at very high levels, like more than 70% of the total production. On the contrary, in other markets or segments, a relatively low CR4 ratio situated at around 30-50 will indicate that the segment is more evenly shared amid a greater number of operators and is more competitive in regard with the definitions of industrial economics.

In developing countries like Turkey, some subsectors are at their emerging stage from the point of view of their industrialisation process. So that, an increase in the number of establishments and the decreasing CR4 ratio must not be taken as an indicator of an inverse movement in development. It would rather be an indicator of the industrialisation process as a greater number of small enterprises get restructured to form larger production units and start to appear in the national statistics. So the competitiveness is better off with the arrival of those enterprises that were forgotten in the informal sector. This is, for example, the case of grain milling; semoulina, boulgour, pastry and pasta products; slaughtering and meat processing; soft drinks and bottled water. This situation can be defined as an oligopoly with frindge where a few number of large scaled establishments gather more than 60-70% of the market while a multitude of SMEs share the rest of the market within a high competitive environnement (*Rastoin, J.-L., 1992*). On the contrary, in the case of cocoa, chocolate and sugar confectionery, miscellanous food products n.e.c., and beer, the decrease in the number of establishments is directly correlated with the increase in the CR4 ratio (cf. table 2.11).

Table 3.6.- Number of establishments and concentration ratios of main subsectors of foods and beverages industry in Turkey (1990 and 2001)

Subsector	Number of establishments		CR4 (%)	
	2001	1990	2001	1990
Starch and starch-based products	6	-	95,8	-
Beer and malt processing	8	9	77,2	75,3
Soft drinks, bottled water	54	42	75,0	39,2
Wine processing	13	14	73,5	76,4
Spirits and ethilic alcohol production	13	10	71,3	79,8
Processing and preservation of fish and crustaceans	16	10	68,1	84,2
Semoulina, pastry, pasta products	114	96	51,8	59,6
Dairy products	85	60	61,4	53,8
Cocoa, chocolate and sugar confectionery	19	40	61,6	44,6
Tobacco products	25	50	66,7	58,0
Slaughtering, processing and preservation of meat	99	69	34,7	29,5
Animal and vegetable oils and fats	95	79	35,1	44,8
Prepared animal feeds	130	101	33,0	16,7
Bakery products	372	-	35,5	-
Refined sugar	39	26	35,9	31,2
Miscellanous processed food nec	113	143	38,2	28,8
Processing and preservation of fruits and vegetables	234	80	20,0	27,2
Grain milling	264	151	18,1	13,5

CR4 : total of market shares (total volume production) of the first four largest establishments in each subsector

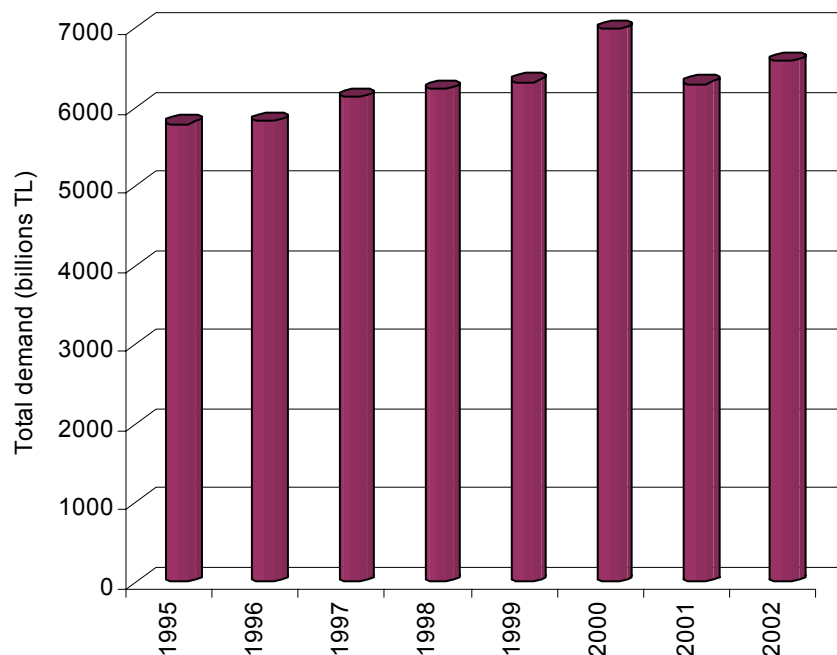
Number of establishments : all establishments with 10 or more engaged workers for 2001 and all establishments with 25 or more engaged workers for 1990

Source : SIS, concentration ratios in manufacturing industry, News Bulletin, 27/08/2004 and 25/04/1997

As it can be observed by the data presented in table 2.11, the Turkish food and beverages sector is not yet a mature and stable market concerning most of the subsectors. The segments of user friendly packaged foods, frozen foods, soft drinks and bottled water, processed and preserved meat have high development potentialities. The most serious problem however seems to be the high consumer prices for these high valued processed products facing a shrinking purchasing power due to repeated economic crisis as afore mentioned. Consumer behaviour is encouraging as high income household groups have no difficulty to spend money on these modern food products. However for the great majority of Turkish consumers, with relatively low monthly available income, price seems to be determining factor in their shopping orientations. In this wise, the private brands or “best value” products are often preferred to national brands for cost efficiency (*Pricewaterhouse Coopers, 2004*).

The total processed food and beverages domestic demand seems to be stagnant since the mid-1990s with a relatively small growth until 2000. The economic crisis of 2000 and that of 2001 had an immediate effect of the shrinking of the market, as unemployment and fall in available income became marking features of the economy of this recent period. However, it is an evidence that the Turkish economy recovered since then and the annual growth rate for 2003 and 2004 seems to be situated at around 10% increase per year. This positive trend will evidently have repercussions on the enlargement of the domestic market of processed foods and beverages.

Figure 3.1 - Evolution of estimated total demand for processed food products and beverages between 1995 and 2002 (at 1994 constant prices in billion TL)



Source: Kiyamaz, T., *Gıda Sanayi Raporu, (2004) TMMOB, Ankara*

In this unstable economic environment, large food processing and beverages firms also have important financial difficulties. In fact, publicly owned firms are, as mentioned before, in very risky positions with sometimes negative social equities and negative gross value added figures. These bankruptcies are huge bottlenecks for the government budget and give rise to blind alleys. Privatisation process does not advance as quickly as the public authorities would like, and many of the production units risk plant closures in the near future. These difficulties increase the uncertainty of the socio-economic environment and effects negatively the consumer behaviour.

Most of the private enterprises opt for sectoral diversification (corresponding to “multiproduct” definition of sectoral activity) and try to realize scope economies by enlarging their products range. In this wise, among the 93 food processing and beverages firm including to the 500 largest Turkish industrial firms ranking in 2003, 24 are multiproduct firms. 12 firms are specialized in fruits and vegetables processing (including hazelnuts packaging and frozen food processors that have their main activity in frozen fruits and vegetables); 11 firms are active in grain milling subsector (including the high value products like pastry, pasta products and biscuits); 9 firms are specialized in vegetable oils and fats (most of them are regional producers or agricultural sales cooperatives); 7 firms process and preserve poultry products, meat and fish; 6 firms are operating in beverages sector (including the State Monopol that is the largest tobacco processor but also is the first and only firm specializing in spirits production), 5 firms are active in sugar refining; and 3 of them are confectioners.

Table 3.7. - Ranking of the largest food and beverages processing enterprises of Turkey according to their total net sales in 2003

Rank	Firm	Sector of main activity	Ownership	Total net sales (million ₺)	Gross value added (million ₺)	Social Equity (million ₺)	Total assets (millions ₺)	Net income (million ₺)	Exports (million ₺)	Salaried workers
1	Turkiye Seker Fabrikalari	Sugar	Public	1 056	560	1 026	1 723	223	39	17 795
2	Tekel Tutun, Tutun mamulleri, tuz ve alkol isletmeleri	Tobacco	Public	604	2 533	818	1 448	104	62	28 373
3	Philisa Philip Morris Sabanci AS	Tobacco	Private	388	1 553	177	349	67	0	692
4	Coca Cola Icecek AS	Soft drinks	Public	297	105	227	300	38	5	648
5	Cay Isletmeleri Gene Mudurlugu	Tea	Public	277	87	130	229	-40	5	7 664
6	Anadolu Efes Biracilik ve Malt Sanayii AS	Beer	Private	233	304	225	361	96	16	1 008
7	Ulker Gida San. Ve Tic. AS	Multiproduct	Private	219	45	152	252	22	69	1 888
8	Ustun Gida San ve Tic AS	Multiproduct	Private	218	45	31	163	10	6	1 359
9	Konya Seker Fabrikalari	Sugar	Private	197	93	110	167	61	0	875
10	Trakya Yagli Tohumlar Tarim Satis Kooperatifleri Birligi	Vegetable oils	Private	194	25	-4	94	16	0	836
11	Tat Konserve Sanayii AS	F&V canning	Private	193	8	63	164	-6	22	1 871
12	Unilever Sanayi ve Ticaret Turk AS	Multiproduct	Private	191	52	77	110	12	17	344
13	Besler Gida ve Kimya Sanayi AS	Multiproduct	Private	191	22	50	141	11	28	200
14	?		Private	188	0	0	0	0	0	
15	JTI Tutun Urunleri Sanayi	Tobacco	Private	180	427	93	143	0	83	459
16	Marsa Kraft Foods Sabanci. AS	Multiproduct	Private	167	17	24	58	5	45	461
17	CP Standart Gida Sanayi ve Ticaret AS	Multiproduct	Private	163	36	35	64	14	2	1 780
18	Banvit Bandirma Vitaminli Yem San AS	Animal feeds	Private	162	43	47	91	21	5	1 910
19	Oltan Gida Mad. Ihr. Ith. Ve Tic. Ltd Sti	Multtiproduct	Private	145	4	8	46	2	146	280
20	Kayseri Seker Fabrikasi AS	Sugar	Private	143	52	55	80	11	0	1 200
21	Pinar Sut Mamulleri Sanayii AS	Dairy	Private	139	16	38	120	6	12	685
22	Sutas Bursa ve Havalisi Pastorize Sut ve Sut Mam. Gida San. Ve Tic. AS	Dairy	Private	120	17	21	54	2	0	1 453
23	Altinmarka Gida Sanayi ve Ticaret AS	Multiproduct	Private	116	13	17	78	5	52	206
24	Fruko Mesrubat Sanayii AS	Soft drinks	Private	112	35	42	84	6	2	687
25	Pinar Entegre Et ve Un Sanayii AS	Meat, flour	Private	112	22	33	97	5	1	552
26	Eti Gida Sanayi ve Ticaret AS	Biscuits	Private	106	41	35	55	9	14	2 005
27	Kent Gida Maddeleri Sanayii ve Tic. AS	Confectionery	Private	97	35	47	88	20	36	1 683
28	Beypi Beypazari Tarimsal Uretim ve Pazarlama Sanayi ve Ticaret AS	Multiproduct	Private	96	15	23	30	5	1	1 120
29	Osman Akca Tarim Urunleri AS	Multiproduct	Private	93	0	23	70	0	93	470
30	?		Private	92	0	0	0	0	0	
31	Erpilic Entegre Tavukculuk Uretim Pazarlama ve Tic Ltd Sti	Poultry	Private	91	24	24	34	8	0	837
32	Abalioglu Yem-Soya ve Tekstil San AS	Animal feeds	Private	86	18	20	53	8	2	640

Rank	Firm	Sector of main activity	Ownership	Total net sales (million euros)	Gross value added (million euros)	Social Equity (million euros)	Total assets (millions euros)	Net income (million euros)	Exports (thousand euros)	Salaried workers
33	Et ve Balık Urunleri AS Genel Mud.	Meat,fish	Public	85	-18	14	30	-36	0	1 500
34	Kucukbay Yag ve Deterjan San AS	Vegetable oils	Private	79	0	0	0	0	26	
35	Poyraz Karlibel Findik Entegre AS	Hazelnuts	Private	74	-5	16	43	5	44	287
36	Tukas Gida San ve Tic AS	Vegetable oils	Private	74	7	11	62	-2	28	447
37	Senpilic Gida San ve Tic AS	Poultry	Private	73	22	29	35	14	0	762
38	Biskot Biskuvi Gida San ve Tic AS	Biscuits	Private	70	13	7	26	2	15	1 442
39	Keskinoglu Tavukculuk ve Damizlik Isletmeleri Sanahyi Ticaret AS	Poultry	Private	69	13	14	34	3	2	1 493
40	Beyyem Beypazari Yem San ve Tic AS	Animal feeds	Private	66	14	35	38	9	0	279
41	Birlik Pazarlama Sanayi ve Ticaret AS	Multiproduct	Private	63	8	19	34	3	0	175
42	Lio Yag San ve Tic AS	Vegetable oils	Private	63	4	25	52	1	43	135
43	Amasya Seker Fabrikasi AS	Sugar	Private	62	25	5	44	7	0	890
44	Unikom Gida San ve Tic AS	Multiproduct	Private	61	11	11	17	8	0	132
45	Ankara Un Sanayii AS	Flour& products	Private	61	8	23	45	3	12	353
46	SS Taris Zeytin ve Zeytinyagi Tarim Satis Kooperatifleri Birliigi	Olive oil	Private	60	-3	-11	54	-8	24	263
47	Yorsan Gida Mamulleri San ve Tic AS	Dairy	Private	53	7	29	33	3	0	309
48	Turk Tuborg Bira ve Malt Sanayii AS	Beer	Private	52	58	118	204	2	4	290
49	Ozlem Tarim Urunleri AS	Multiproduct	Private	52	5	2	9	3	0	116
50	Findik Tarim Satis Kooperatifleri Birliigi	Hazelnuts	Private	52	-108	-558	250	-118	0	1 700
51	Seker Pilic ve Yem Sanayi ve Ticaret AS	Sugar, poultry, animal feed	Private	51	8	9	24	2	1	827
52	Edirne Yag Sanayi ve Ticaret AS	Vegetable oils	Private	48	4	4	8	1	1	206
53	Ucak Servisi AS	Catering	Private	48	48	24	40	16	0	1 134
54	Pak Tavuk Gida San ve Tic AS	Poultry	Private	47	6	16	26	2	1	302
55	Tam Gida Sanayi ve Ticaret AS	F&V canning	Private	47	16	10	15	6	8	650
56	Nuh'un Ankara Makarnasi AS	Pasta products	Private	45	10	13	22	3	1	397
57	Camli Yem Besicilik Sanayi ve Ticaret AS	Animal feeds	Private	45	9	15	47	3	0	176
58	Yonca-Ege Yag Sanayi ve Ticaret AS	Vegetable oils	Private	44	9	25	43	0	8	794
59	Tamek Gida ve Konsantre Sanayii AS	F&V canning	Private	44	2	5	24	1	1	200
60	Solen Cikolata Gida San ve Tic AS	Chocolate	Private	44	8	24	52	1	24	560
61	Dimes Gida Sanayi ve Tic AS	Wine, fruits juices	Private	43	8	12	22	2	4	253
62	Ideal Gida San ve Tic AS	Multiproduct	Private	41	10	0	46	0	7	320
63	Koy-Tur Ege Entegre Tavukculuk AS	Poultry	Private	41	-4	2	21	-6	0	550
64	Filiz Gida Sanayi ve Tic AS	Pasta products	Private	40	0	0	14	0	5	295

Rank	Firm	Sector of main activity	Ownership	Total net sales (million euros)	Gross value added (million euros)	Social Equity (million euros)	Total assets (millions euros)	Net income (million euros)	Exports (thousand euros)	Salaried workers
65	Keskinkilic Gida San ve Tic AS	Multiproduct	Private	39	0	7	18	2	0	160
66	Beşler Makarna Un Irmik Gida AS	Pasta products	Private	39	2	4	12	1	7	97
67	Sagra Gida Uretim Pazarlama AS	Multiproduct	Private	39	13	-20	18	6	6	631
68	Tansas Perakende Magazacilik t AS	Food retailing	Private	39	22	88	211	-39	0	4 251
69	Fresh Cake Gida Sanayi ve Ticaret AS	Pastry products	Private	39	8	12	23	4	1	124
70	Dardanel Onentas Gida San AS	Frozen food	Private	38	4	-84	30	16	21	867
71	Progida Tarim Urunleri AS	Multiproduct	Private	37	2	2	10	0	33	250
72	Istanbul Halk Ekmek Un ve Unlu Maddeler	Bakery products	Public	37	8	20	22	0	0	462
73	Ari Rafine ve Yag San AS	Vegetable oils	Private	37	5	6	13	2	1	139
74	Oltan Findik San ve Ticaret Ltd Sti	Hazelnuts	Private	36	1	1	6	0	0	190
75	SS Marmara Zeytin Tarim Satis Koop. Birg	Preserved olives	Private	36	0	-42	41	-7	6	429
76	Aroma Bursa Meyve Sulari AS	Fruit juices	Private	36	10	24	43	3	9	613
77	Arbel Bakliyat Hububat San ve Tic AS	L	Private	36	1	3	16	2	77	49
78	Perfetti Van Melle Gida San ve Tic AS	Confectionery	Private	36	11	8	21	3	21	503
79	TTL Tutun San ve Dis Tic AS	Tobacco	Private	36	18	13	42	7	33	394
80	Merko Gida San ve Tic AS	Multiproduct	Private	36	4	31	87	1	41	249
81	Besan Besin San ve Tic AS	Multiproduct	Private	35	14	12	21	8	2	255
82	Aytaç Dis Ticaret Yatirim Sanayi AS	Multiproduct	Private	35	0	50	67	0	0	433
83	Ordu Yag Sanayii AS	Vegetable oils	Private	35	7	16	19	6	2	105
84	Yavuzlar Findik Gida Sanayi ve Ticaret Uluslararası Tasimacilik Ltd Sti	Hazelnuts	Private	34	3	3	9	1	19	74
85	Gursoy Tarimsal Urunler AS	Multiproduct	Private	34	1	3	10	0	27	300
86	Hekimoglu Un Fab Tic ve San AS	Flour& products	Private	33	2	13	14	1	2	119
87	Baha Esat Tekand Kutahya Seker Fab. AS	Sugar	Public	33	19	13	23	9	0	441
88	Ova Un Fabrikasi AS	Flour & products	Private	33	4	10	15	2	0	133
89	Penguen Gida Sanayi AS	Frozen food	Private	33	1	-1	31	-6	22	308
90	Spierer Tutun Ihracat Sanayi ve Ticaret AS	Tobacco	Private	32	13	18	49	4	23	381
91	Eksun Gida Tarim San ve Tic AS	Multiproduct	Private	32	3	9	26	1	9	120
92	?		Private	31	0	0	0	0	0	
93	Buzcular Un Celtik Yag San ve Tic AS	Flourand products	Private	31	2	3	13	0	0	257
Total of 93 enterprises operating in food and beverages industry*				9 489	6 619	3 839	9 073	697	1 382	109 552
Total of largest 500 enterprises				61 038	27 574	28 863	63 632	4 949	13924	518 532

Source : ISO Dergisi Sanayi, August 2004, Number 461

An important characteristic of the major players is their heavy orientation towards the domestic market. A look at their export sales show that they are not really export-oriented enterprises and the average ratio of export to total sales is situated around 15 % for those enterprises that have an export activity. The most export-oriented enterprises (Arbel Bakliyat ve Hububat San ve Tic A.S., Merko Gida and Oltan Gida) are specialized in the conditioning and packaging of pulses and cereals, and processing of frozen fruits and vegetables. 29 out of 93 food processing and beverages firms have no export activity.

This inward orientation does not really help the major players to resolve their problems and bring about overcapacity question which seems to be the most serious problem affecting the food and beverages industry.

Prevailing problems of the food and beverages industry

The most important problem prevailing in this sector is the over-capacity arising from difficulties linked to the sourcing of raw materials. There is a fierce competition between the large firms with high production capacities and small and micro enterprises concerning the raw material procurement. The lack of an efficient coordination between agriculture and industry, and atomised farming structure of the Turkish agriculture are major factors that enforce this problem of over-capacity.

The informal sector is very active in this branch of the manufacturing industry, because of the reasons argued in the section of this report on marketing channels. It is important to remember that the need of small holders for cash money and the refusal or the impossibility of the commissioners of the wholesale markets (both at production areas and in large urban centres) to pay cash the farmers provoke an important bottleneck in the marketing channels and advantage the intermediary agents who are cash payers or who have privileged relations with farmers, working for informal sector. The problem of raw material supply with a continuous flow over the year at constant quality and quantity is in the very essence of this over-capacity problem that paralyses a great number of agro-industrial establishments. However, it changes from one subsector to another and depends also on the location of the industrial plant near to a production area with high productivity levels or not. The table 3.8 gives important hints on the proportional use of total production capacities of the agro-industrial establishments according to their main activity sector.

Those subsectors that increased their average capacity use ratio between 1990 and 2003, are sugar refining, other food products (comprising tea, coffee, spices, babyfoods, dehydrated soups, diet food), alcoholic beverages, bakery and pastry products. Pasta products, meat processing, starch production have stagnating trends while dairy products, cocoa, chocolate and sugar confectionery; wines; grain mill products; vegetable and animal oils and fats; prepared animal feeds; soft drinks; processing and preserving of fruits and vegetables and preserving of fish exhibiting decreasing trends. The capacity use ratio for processing of fruits and vegetables followed a parallel trend during the studied period.

Figure 3. 2. - Average capacity use in food and drink industry of turkey (1990-2003)

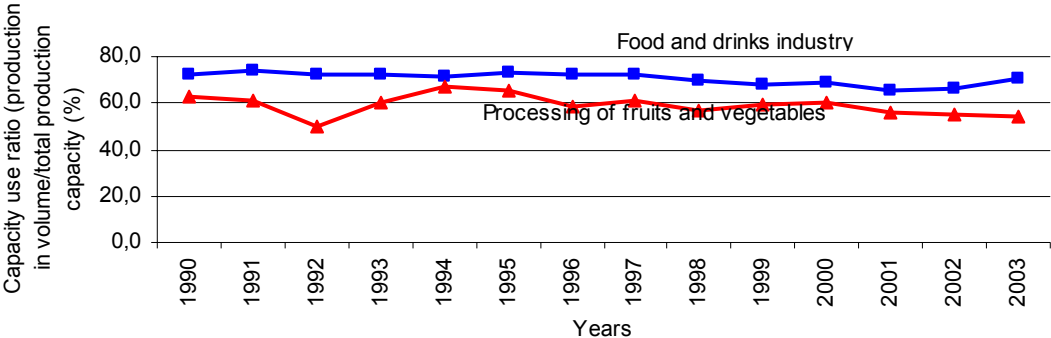


Table 3.8. - Capacity Use Ratios (Based on data concerning the production in volume)

Industrial branches	Year/annual averages (%)													
	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Food processing and beverages	72,3	73,6	72,6	72,5	71,6	72,8	72,3	72,3	69,4	67,7	68,4	65,6	66,0	70,8
Sugar	90,6	84,5	69,2	75,6	70,4	80,7	78,5	73,0	66,2	70,2	76,9	79,6	80,4	93,7
Other food products	78,9	79,0	80,3	75,4	73,8	75,4	77,6	73,7	72,5	68,3	71,0	69,7	73,7	80,2
Distilling, rectifying & blending of spirits	81,9	88,4	89,0	85,0	82,7	86,2	87,6	86,9	91,1	90,6	88,9	84,3	78,6	79,2
Bakery and pastry products	77,3	76,7	72,3	67,4	63,4	72,4	73,9	73,2	63,6	59,3	66,5	66,2	72,3	78,2
Starches and starch products	55,1	54,4	80,8	80,1	80,5	93,0	83,7	78,9	79,1	77,3	80,5	81,0	80,2	76,9
Macaroni, noodles & similar products	77,6	82,6	70,6	82,0	80,6	78,8	73,8	80,6	67,0	59,0	60,8	56,5	71,2	75,7
Processing/preserving of meat	64,8	58,6	59,5	63,9	62,4	67,2	74,7	77,0	67,7	66,0	68,0	64,5	71,6	74,9
Malt liquors and malt	78,9	85,5	85,2	70,2	78,8	77,0	76,4	76,7	64,8	62,9	68,8	67,0	68,5	71,4
Dairy products	81,7	83,8	78,0	79,6	76,3	77,8	80,6	77,3	71,4	68,0	55,8	68,0	66,3	70,1
Cocoa, chocolate and sugar onfectionnery	67,0	75,3	81,2	75,5	70,8	77,1	69,6	69,0	63,1	61,3	67,2	57,4	63,1	69,7
Wines	60,1	53,2	53,3	54,6	49,8	68,9	72,4	71,5	71,3	71,5	62,2	63,5	57,3	67,1
Grains mil products	67,8	69,6	72,6	74,4	70,8	69,9	68,2	71,2	68,8	67,1	66,7	61,5	63,0	65,8
Other food products, n.e.c.	74,3	70,9	60,8	67,1	72,3	62,4	73,1	67,8	64,6	66,7	63,4	63,1	71,0	65,8
Vegetable and animal oils and fats	65,0	71,5	65,0	69,2	67,8	66,8	64,4	66,3	65,1	61,4	64,9	63,0	60,8	65,1
Prepared animal feeds	73,9	66,0	70,3	72,8	68,4	70,9	67,6	65,0	69,5	69,1	68,5	58,5	58,8	64,5
Soft drinks; mineral water	69,8	62,2	61,6	69,4	69,2	73,4	76,3	66,8	65,4	66,3	59,2	57,3	52,8	63,1
Processing/preserving of fruits & vegetables	62,6	60,9	50,2	60,2	67,5	65,4	58,5	61,0	57,1	59,5	60,0	55,9	54,8	53,9
Processing/preserving of fish	66,5	68,9	64,1	72,5	66,8	67,8	73,7	75,1	63,1	60,1	66,8	52,2	47,9	35,6

Source : State Institute of Statistics

IV. Food retailing system in Turkey : structural evolution

IV.1. Historical background

Retailing sector is one of the most rapidly growing sector in Turkey. It is an evidence that the modern retailing sector gained a spectacular pace since the end of the 1980s, yet it would be interesting to have a rapid look at the historical development of this sector since the 1950s⁹.

Since the foundation of the Turkish Republic, public authorities intervened in the control and regulation of the retailing sector because of the general food security of the national population. As the wholesale trade could not respond to the population needs, State created consumer cooperatives in order to better organize the distribution of foodstuffs. However, this initiative did not yield to positive results and these cooperatives closed down.

During the 1950s, State tried to create “self-service” retailer chains, first under the brand of Sümerbank, a State bank, then later by inviting the Swiss retailer cooperative *Migros* to invest in Turkey. The arrival of Migros created important spill-over effects in Turkey’s retail sector, mostly in Istanbul, where the cooperative was installed. Packaged food products, shopping bags, sales ticket are some of the innovations introduced by Migros. On the other hand, it initiated vertical integration in pasteurized milk and apple cidar under its private brand name. In 1956, *Gima A.S.*, established in Ankara, as a Turkish para-public initiative serving as a multistore and including food products and beverages. During these years, apart Migros in Istanbul and Gima at Ankara, the retailing sector is entirely dominated by micro grocers (*bakkal*, *manav*) established as family businesses.

Multistores started to open one after another during the 1960s, but did not include food products in their activities. State tried to regulate the food retailing by insisting on the creation and development of consumer cooperatives by city municipalities, or public administration (the army had a large chain of self-service outlets, *Ordu Pazari* and Izmir Municipality founded a consumer cooperative under the name of *Tansas*). By these outlets, they tried to reduce the trading margins and procure best price products to their own staff and employees. These cooperative outlets had a rather considerable place in the Turkish food retailing till the 1980s.

The lack of infrastructure and low technology, product conditioning, standardization, labeling were drastically absent within the country’s marketing channels (*Ozcan, 1997*). The increasing demand for larger retail outlets could not be satisfied because of these insufficiencies. On the other side, food processing sector could not respond, because of the inefficiency of its production techniques, to this increasing urban demand for high quality food products. Another negative factor restraining the retail sector’s development was the insufficient number of individual cars, a necessary factor for a higher mobility of consumers.

The change that marks the 1980s is the reorganization of the supply side. In fact large food processing enterprises tried to realize a downward vertical by internalizing the distribution of their finished products. They signed up agreements with regional marketing agencies as well as with small retailers in order to bypass the powerful local wholesalers who were taking over an important slice of the trading margins. In order to reach a certain efficiency, they decided to distribute a wide range of packaged consumer products comprising food, beverages, cleaning products, soaps and vegetable oils. However, they could not achieve their challenge and continued to deal with these local wholesalers even if they continued, in parallel, to use their proper distribution agencies (*Erdogan, 2003*). On the other hand, the retailers also started, during this same decade, to get specialized. Most of them ceased to

⁹ This part on the historical evolution of the Turkish retailing sector is largely inspired by the Post-Graduate Thesis of ÜLGEN, Ö. cited in ERDOGAN, T, 2003

sell everything going from cigarettes, parfums and beauty products to pencils and notebooks ranged in line with foodstuff and fresh produce. Self-service stores, larger than traditional grocers and arranged in a modern way, emerged in large cities.

Liberalisation of the Turkish economy after 1980, opened the customs gateways to imported products. Increasing purchasing power and changing life styles created the necessary conditions for an urban demand for these new, higher quality products. "Consumer cooperatives" under the control of public sector or small traditional retailers were lacking the necessary logistics technology to respond to this growing demand. The number of multistores installed within large malls, modern retail outlets and supermarkets chains started to increase from 1985 on. However the real development of modern distribution in Turkey was observable during the 1990s. This development coincides, of course, with the public regulations that emerged in the same period in Europe, most particularly in France, to restrict the number and the windthness of the hypermarkets. These restrictions were one of the main drives pushing the large European retailers outside the EU borders. First, it is the German retailer *Metro* that invested in Turkey in 1988. This investment was followed by the coming of the French *Carrefour* in 1991 and that of *Continent* in 1992.

A great technological transfer was then observed in the retail sector; from huge refrigerators and freezers for food products to the automation of the cash desks, introduction of coding systems, scanning, automatised packaging and labeling systems, and so on. It had equally important spill-over effets as the number of local processors of coding, scanning, cashdesk, labeling and packaging machines increased considerable in a ten years time. Another important impact has been, of course, in the food marketing as these supermarket chains started to use refrigerated and computerized trucks for the transportation of fresh produce.

By centralizing their sourcing, these large retailers optimized their services in quality while they achieved high scales of economy. Facing these large retailers, some of the small retailers chose to gather their force by founding procurement unions: Anmar, Ismar, Karmar , which are all procurement unions of small retailers, are, in our days, fierce challengers of retail giants like Carrefour or Metro. Retailers belonging to public sector like Sümerbank, Gima or Migros-Türk were privatized since 1984. Gima wa bought-in bu FIBA group while Migros-Türk joined Koç Holding, one of the largest industrial conglomerates of Turkey.

IV.2. Current Structure of the Turkish food retail sector

There is a radical change in the structure of the food retail sector, with the coming and growth of larger retailers in Turkey. Nevertheless, it must be mentioned that the majority of the Turkish population continues to shop in traditional grocers (bakkals) and only 7-8 million inhabitants go shopping in large hypermarkets. Reasons, as mentioned before, are numerous. Low purchasing power of the majority of the national population, very price-sensitive consumer behaviour, lack of locomotion means and the limited use of credits cards in spite of the rapid expansion of this payment system are amid the most important reasons that direct the consumer toward bakkals. These latter offer, traditional credit system to their loyal customers (*veresiye defteri*), offer a larger range of best price products and benefits from their proximity to their customers. However, the number of the bakkals and their share in the overall food retail market diminish considerably since the second half of the 1990s; a fact that pushes the public authorities to take the necessary measures to somewhat hinter the development of hypermarkets and hard discount shops and to stop the fall of the traditional retailers. The evolution of the structure of the Turkish food retailing can be observed on the tables 3.14 and 3.15. Before, it seems necessary to give some information on the classification of food retail outlets, based on outlet size (*FAS-USDA, 2004*) :

- Hypermarkets are over 2 500 square metres (m²)
- Large supermarkets between 1 000 and 2 500 m²
- Supermarkets between 400 to 1 000 m²
- Small supermarkets between 100 to 400 m²
- Markets between 50 to 100 m²
- Bakkals (traditional grocers) 50 m² or less

Table 3.21 – Evolution of the number of retail food outlets in Turkey (1996-2002)

	1996	1997	1998	1999	2000	2001	2002
Hypermarkets	37	51	100	105	130	149	151
Supermarkets over 100 m ²	1 279	1 631	2 035	2 316	2 850	3 490	3 855
Markets	10 750	11 417	12 190	13 247	13 230	13 210	13 555
Bakkals (grocers)	164 366	159 171	155 420	148 925	136 760	128 580	122 340
Others*	22 030		24 375		26 505	26 835	23 170
Total	198 462		194 120		179 475	172 264	163 071

* convenience stores, kiosks, open markets, etc

Source : Turkey's Retail Food Sector Report, 1999, 2001 and 2004, www.fas.usda.org, based on the AC Nielsen-Zet field survey

The number of hypermarkets had a three-fold increase between 1996 and 2002 and the annual growth rate was around 17% with considerable peaks between 1997 and 1998 and 1999 and 2000. Meanwhile the supermarkets of all sizes exceeding 100 m² surface doubled, the markets had an overall growth of 26% and others outlets grew by 5%. On the contrary, as it is mentioned afore, the bakkals total number shrunked by 26% pulling down the total number of food retail outlets from 198 462 to 163 071.

Table 3.22. – Regional distribution of retail food outlets according to their size (1998)

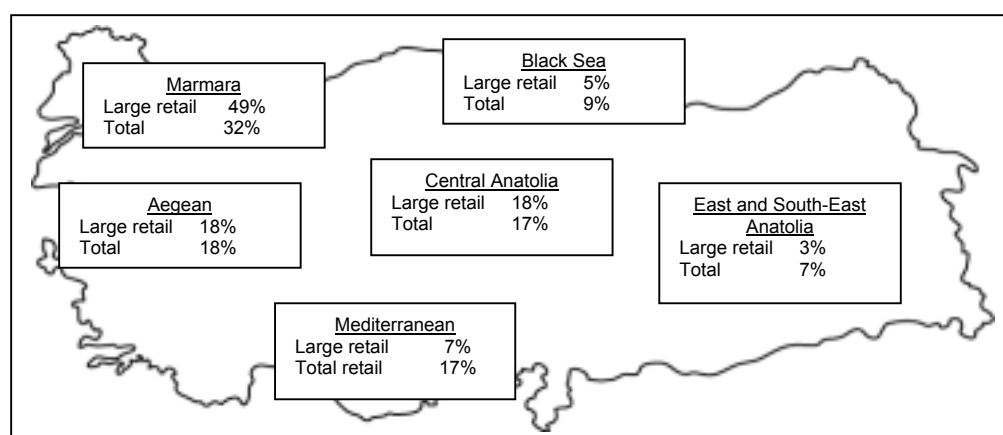
Region	Supermarkets with more than 100m ²		Markets		Bakkals		Others		Total	
	Number	%	Number	%	Number	%	Number	%	Number	%
Marmara	1 044	48,9	5 361	44,0	43 669	28,1	16 618	39,7	66 962	31,6
Aegean	375	17,6	2 134	17,5	28 549	18,4	7 688	18,3	38 691	18,3
Central Anatolia	388	18,2	1 642	13,5	27 742	17,8	7 288	17,4	37 070	17,5
Mediterranean	145	6,8	1 165	9,6	28 108	18,1	6 211	14,8	35 629	16,8
Black Sea	110	5,2	963	7,9	14 311	9,2	2 680	6,4	18 064	8,5
East & South East Anatolia	73	3,4	927	7,6	13 011	8,4	1 474	3,5	15 505	7,3
Turkey	2 135	100,0	12 192	100,0	155 420	100,0	41 904	100,0	211 651	100,0

Source : Bocutoglu, E., Atasoy, Y., 2001

As it can be observed on the table 3.15, regional distribution of these different food outlet types is quite skewed as the regions with metropolises (Marmara, Aegean and Central Anatolia) absorb an important number of hyper and supermarkets.

Even the distribution of traditional retail outlets (bakkals) disadvantages the East and South-East Anatolia and Black Sea regions with less than 10% of the national total. The Mediterranean region attracts more retail outlets thanks to the coastal tourism and the dynamism that this activity brings around to this region. As it can, once more observed, the modern retailing is a phenomenon directly linked to the urbanization process and to the propensity to consume that is directly linked to this former.

Figure 3. 3 – Regional distribution of large retailers and total retail outlets as a percentage of national total in 1998



Source: Authors' work based on the data presented in the table 3.15

In parallel to this spatial development, the market shares of hypermarkets, supermarkets with more than 100m² surface showed a drastic increase between 1996 and 2002. Cumulating only 11% of the total food retailing amounting to an estimated 19 billion US dollars in 1996, these large supermarkets climbed up to 37% of the total food retail market summing up 25 billion US dollars for 2002. At the same time, the share of traditional grocers fell from 68% to 40% and that of markets (self-service stores) from 16% to 9%.

Table 3.23. – Evolution of the market shares according to different outlets in Turkey (1996-2002) (%)

	1996	1997	1998	1999	2000	2001	2002
Large supermarkets*	11,1%	15,0%	17,1%	23,5%	28,0%	34,5%	37,1%
Markets	15,8%	16,0%	17,1%	12,5%	10,0%	9,5%	9,4%
Bakkals (grocers)	67,9%	63,0%	58,8%	49,5%	48,0%	42,0%	40,5%
Others**	5,3%	6,0%	7,1%	14,5%	14,0%	14,0%	13,0%
Total (in billion euros)***	15,1	17,7	18,7	20,6	24,9	26,8	26,4

* All supermarkets over 100 m² of surface

** Convenience stores, kiosks, open markets

*** Estimations for total food retail market (market price)

Source : Turkey's Retail Food Sector Report, 1999, 2001 and 2004, www.fas.usda.org, based on the AC Nielsen-Zet field survey

The most recent evolution in the food retailing sector is coming up of hard discount stores. A direct outcome of successive economic crisis since 1998, essentially that of 2000 and 2001,

consumers became, as mentioned afore, highly price sensitive. The decrease in the overall sales of national brands and look of best price, bulk products pushed the large retailers to open hard discount affiliates in order to avoid a dramatic fall in their consolidated overall sales. Migros Türk founded Sok hard discount chain; Gima founded Stop and Endi hard discount chains and CarrefourSa entered the hard discount segment with Dia supermarket chains. B.I.M. (Büyük İndirim Magazaları) is another independent hard discount chain, created in 1995 by Azizler Holding in partnership with Caravans, a Saudi Arabian company (Boturoglu, E., 2001). These medium sized supermarkets are located in the most dynamic districts of the large cities and compete directly with traditional grocers (bakkals).

The law proposition of 2000 for the regulation of retailing sector suggests the delocation of large supermarkets and hypermarkets outside the city centres in order to counter this “unloyal” competition between the large retailers and the actors of the traditional retailing (grocers, green grocers, butchers). Meanwhile, these latter organise their action within institutional framework. Chamber of Retail Stores of Dried Fruits and Nuts (Istanbul Kuruyemişçiler Odası) of Istanbul, in association with Chamber of Traditional Stores of Istanbul (Istanbul Bakkallar Odası) founded a procurement central (central d’achat) in order to procure higher amounts of finished products at lower prices and to counter the empowerment of large retailers. Another operation in this wise is the creation of Upward Procurement Central of Grocers by the Federation of Grocers and Trading Agents of Turkey in 1999 in order to pull down the purchasing prices of traditional stores and to help these small units to decorate and furnish their store with new technologies and modern design (Erdogan, 2003). The same federation develops commercial ads to strengthen the “trustful” image of bakkals and their notoriety.

Some of the large retailers reacted positively to this reorganisation of traditional retailing sector and adopted partnership strategies in stead of frontal attack. For example Türk Migros started the “Bakkalim (My grocer) operation in 2000. The large retailer contractualises some of the bakkals strategically located offering them a modern store format and revitalising their selling systems. This operations covers some 700 bakkals situated in Istanbul, Izmir and Ankara (www.migros.com.tr).

Metro Grosmarket followed this movement by introducing its project “Metro Bakkal Elele 2000” pointing out the inefficiencies of the existing management system prevailing in traditional retailing. In fact, these traditional stores comprise 44% of the overall sales of Metro that works as a “cash&carry” store procuring the grocers as well as final consumers. The project aims to check-out the malfunctioning factors and to propose measures for improvement (<http://arsiv.hurriyetim.com.tr/hur/turk/00/02/17/ekonomi/12eko.htm>).

The Turkish affiliate of the British cash& carry giant, Booker also proposes a 3 year agreement to bakkals situated in the Marmara region, within the framework of Booker Club Project since 2000. Booker invests in the stores included in this project and on counterpart asks fixes a quota proportional to the investment credit. The agreement-bounded stores have to fill their quotas even if they are free to buy from other wholesalers also. Booker’s employees organise fortnight promotional sales and control the management of the Club’s members. (<http://arsiv.hurriyetim.com.tr/hur/turk/01/01/24/ekonomi/05eko.htm>). It seems that the stores working under the Booker Club Project saw their sales increased by 30%. This system experienced in U.K. under the “Premier Project” label seems to work out quite well in Turkey also.

This sector is still in a structuring phase of its development with a dynamic competitive environment, as the top 5 of the major players of food retailing has only 13% of the

estimated national food retail market¹⁰. Some M&A operations are observed during the 2003/2004 period witnessing recent consolidation movements. Migros-Türk bought in Begendik supermarket chains, while Kipa was bought in by an agreement covering a 3 years period by Booker Plc. CarrefourSA is planning to create the largest hypermarket in one of the suburbs of Istanbul, in its attempt to challenge the sector's leader, Migros. The following table presents the major players of modern food retailing sector in Turkey.

¹⁰ CR5 is calculated by dividing the overall sales of the top 5 major large retailers (3,4 billion euros for 2002/2003) by the estimated national food retail market, totalling 26,4 billion euros for 2002.

Table 3.24. – Major players operating in the organised food retailing sector of Turkey in 2002/2003

Retailer	Parent company	Ownership	Starting date	Turnover (million euros)	Type of outlet	Number of outlets	Location (number of outlets)	Purchasing agent
Migros-Türk	Koç Holding	Turkish	1956	1195	Hyper&supermarkets	31 hypers, 137 supers	Nationwide	Direct
<i>Sok</i>		<i>Turkish</i>			<i>Discount stores</i>	270	<i>Nationwide</i>	
<i>Ramstore</i>		<i>Turkish</i>			<i>Multistores</i>	3	<i>International</i>	
B.I.M.	Azizler Holding	Turkish, US, Saudi Arabian	1995	956	Hard discount stores	750	Nationwide	Distributors
Metro	Metro	German	1991	620	Cash&Carry/club centers	9	Istanbul (3), Izmir, Bursa, Ankara, Adana, Bodrum, Antalya	Direct
Real		German		n.c.	Hypermarkets	7	Ankara, Gaziantep	Distributors
Tansas, Makro	Dogus Holding	Turkish	1985	398	Hyper and supermarkets	192	Nationwide	Distributors
Gima	FIBA	Turkish	1956	359	Supermarkets	78	Nationwide, International	Direct
<i>Endi & Stop</i>		<i>Turkish</i>			<i>Hard discount stores</i>	41		
CarrefourSa	Sabancı Holding & Carrefour	Turkish-Frech joint-venture	1993	332	Hypermarkets	12	Adana (2); Istanbul (3), Ankara, Izmit, Bursa, Mersin	Direct
<i>ChampionSa</i>					<i>Supermarkets</i>	4	<i>Istanbul</i>	
<i>Dia Sa</i>					<i>Hardi discount stores</i>	135	<i>Nationwide</i>	
Yimpas	Yimpas Holding	Turkish		279	Hyper&supermarkets	63	Nationwide&international	Distributors
Kipa	Tesco	Turkish & U.K.	1995	159	Hypermarkets	5	Izmir (Aegean region)	Distributors
Maxi	Hamoglu Holding	Turkish (JV with Carrefour)		120	Hypermarkets	4	Istanbul, Tekirdag (Marmara region)	Distributors
Afra	Kombassan	Turkish		120	Hypermarkets	5	Konya (3), Antalya (2)	Distributors
Pehlivanoglu	Pehlivanoglu AS	Turkish	1980	92	Supermarkets	71	Aegean region	Distributors
Ismar	Akyürek Holding	Turkish	1993	80	Supermarkets (franchising)	44	Istanbul (42), Zonguldak (2)	Distributors
Begendik	Begendik	Turkish		56	Hyper&supermarkets	9	Kayseri (5), Ankara (4)	Distributors
Marketim Aygün	Aygün Gıda AS	Turkish	2001	48	Small supermarkets	78	Marmara region	Distributors
Contour		Turkish		32	Hypermarkets	4	Istanbul (3), Ankara	Distributors
Booker	Booker PLC			n.a.	Cash&carry	12	Istanbul, Kocaeli, Izmir	Direct
Kiler		Turkish		n.a.	Supermarkets	34	Istanbul	Distributors

Source : Authors' work based on informations presented in Emilie Coudel, 2003; FAS-USDA 2004, Bocutoglu, E., 2001

IV.3. Fresh fruits and vegetables retailing

Open street markets are powerful challengers to supermarket chains in fresh fruits & vegetables retailing. Consumers prefer, in large cities as well as in smaller towns, open street markets, driven by the belief that the produce sold at street bazaars is coming directly from the producers farm, so it is fresher and cheaper. The open markets' share is estimated to be around 20-22% of the national food retail market. This share climbs to 80% or more for which concerns the marketing of fresh fruits and vegetables as reported by interviewed authorities¹¹. Specialised green grocers (manavs) also have a rather important share, even if they have high retail prices, as the consumers trust them more than the supermarkets fresh fruits & vegetables shelves. However large retailers seem to challenge the open market sellers and green grocers on two main factors : a strategy based on price-competition and focusing their advertising policy on the freshness and the high quality of their products, whilst they enrich the range of their supply by imported fruits and vegetables or by supplying early produce (Coudel, E., 2003).

Food safety is taken in consideration only by large retailers. The produce marketed through open markets or even by green grocers, are not really controlled by public authorities. Controls at the City Halls or on the road to urban centers are practiced by a random sampling and municipal policemen control one box out of a great number of boxes or choose a small number of fresh fruits and vegetables if they are transported in bulk¹². No quality standard is demanded on the fresh produce marketed at the domestic market.

According to E. Coudel, *even if the evolution of standards may be towards differentiation, the current preoccupation of large retailers is for food safety* (Coudel, E., 2003). If the large retailers increase their quality control and ask for production certification, they will probably forward to coordinated transactions, realizing a kind of backward integration in their procurement systems by increasing the number of contracts with farmers. Two main types of procurement systems are practiced by Turkish large retailers :

- Direct procurement from farmers. In this case, the retailer realize a backward integration by contracts. Anyhow, the producers like the retailer must transit from the City Halls (local wholesale market as well as Municipal City Halls), according the obligation instituted by the Wholesale Markets Law adopted since 1994 and revised in 2001, to pass by wholesale markets both for farmers and retailers. The market leaders like Migros, Metro, Gima and Carrefour prefer this direct procurement system, surely in order to achieve the total quality control and to reduce the waste due to inefficiencies in the supply chain.
- Procurement from local wholesale distributors: most of the supermarket chains opt for this system, as they don't have the necessary logistics nor the sufficient financing to enter into contractual procurement forms. There is no integration at any level of the supply chain and the transactions are realized on spot markets.

Of course, there are some hybrid systems of procurement, as analysed by E. Coudel: ranging from spot market procurement to backward integration. For example, *Kipa supermarket chains has a monosale level integration and forward market contracts with*

¹¹ Interviews of Mr. Nadir Aykut, Agricultural engineer working at the Agricultural Government Office of Menderes district of Izmir; Mr. Ahmet Ekiz, Director of the City Hall of Izmir; Mr. Okay Sentoglu, Coordinator of the Open Market of Karsiyaka Municipality, Izmir and Mr. Sinan Ataman, Regional Office of Food Safety Control Ministry of Agriculture, realised in October 2003 within the framework of Ecoponics project, financed by EU and leaded by Munich University

¹² Interview of Mr. Sinan Ataman, Regional Office of Food Safety Control, Ministry of Agriculture (october 2003).

collector-packagers , while Metro developed an integration all the way to the sorting-packaging function, with only spot market or market reciprocity contracts with City Hall Commissioners (Coudel,E., 2003).

Aside the large retailers, a very small number of green grocers have integrated systems that respect the total quality control in their supply chain. Amid thousands of registered green grocers (manav), only seven green grocers declared to have their own cooling storage facilities in the Municipal City Halls :

Table 3.25. – Green grocers that own their proper cooling storage facilities in the Municipal City Halls in 2003/2004

Region	Location	Title of the green grocer
Marmara	Istanbul City Hall	Sen Manav Itimat Manavi
	Sakarya City Hall	Hamit Celik Sadrettin Onbasoglu
Black Sea	Ordu City Hall	Kösem Manavi Ltd Sti
	Bayburt City Hall	Arif Koç
Aegean	Manisa City Hall	Cumhur Neseli

Source : authors' work based on the information at web site www.hal.gen.tr

V. Foreign investments in agro-food industrial sector

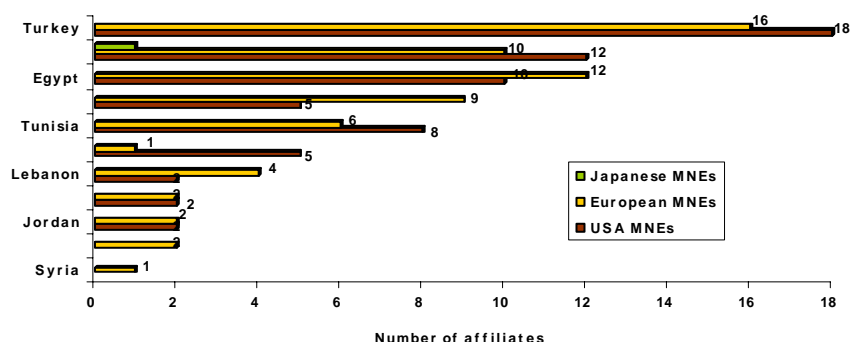
Turkey's attraction of foreign investment (FDI) are not as high as the expectations of government authorities that put a number of encouragement measures since the beginning of the 1980s marking the economic liberalization of this country. According to UNCTAD WIR report on 2001, Turkey's level of inward FDI stocks remained behind the world average with an average growth fo of 10-20% between 1996 and 2000 period (Demircan, H., 2003). However for 2003? Turkey appears to be among the promising host countries as stated by UNCTAD 2004 WIR Report (www.unctad.org). There is a great number of facilitating measures in order to simplify the administrative steps in parallel to promising economic development of these two last years. Inflation rate was pulled down, commercial code was simplified and liberalized and the Government accelerated privatization programme (WIR 2004, www.unctad.com). Nevertheless, beyond these positive developments, there are important constraints that dress a sharp wall against the investors. Production costs are quite expensive in Turkey, mostly the energy consumption seems to be more expensive than in European countries (Demircan, H., 2003); annual inflation rate is quite high despite the recent positive trends, and the profitability of investments in Turkey is much low than in the South East Asian countries.

The sectoral breakdown indicates that the manufacturing industry attracts less FDI than the service sector and that most of the realized investments appear to be short-term portfolio investments. In this wise, it is difficult for the country to expect a dynamic growth of the productive sector by FDI movements. The place of food and beverages industry within the total inward FDI stocks and flows is less than 10% for the studied period (1990-2003) (Dutz, M. & al., 2003). Nevertheless, even if the FDI inflows in food and beverages industry is not as high as expected, among the South and East Mediterranean countries, Turkey appears to be the most attractive host economy. The following figure exhibits the inward investments of the largest food processing multinationals in the Mediterranean region represented by the number of affiliates hosted by the South and East Mediterranean countries for 2002.

A further analysis of these inward FDI stocks in food and beverages sector is presented on the table 3.28. 30 companies out of 93 listed in the 500 best companies ranking of Istanbul Chamber of Commerce (ISO) for 2003 have foreign capital in their ownership structure.

Among these enterprises, export-oriented processors of fruits and vegetables are well represented.

Figure 3.4. – The number of affiliates of the top 100 food processing multinational enterprises in the South and East Mediterranean countries in 2002



Source : Authors' work based on the data from Agrodata databank, CIHEAM-IAMM, UMR-MOISA, 2004

Table 3.27.- Turkish food processing companies with foreign capital in 2003

Firm	Sector	Ownership	Industry chamber of registration	Capital structure (origin of the principal owner)		
				State	Private	Foreign
?		Private	Adana			100,00%
?		Private	Karaman		66,0%	34,00%
Unikom Gıda San ve Tic AS	Multiproduct	Private	Istanbul			100,00%
Besan Besin San ve Tic AS	Multiproduct	Private	Istanbul			100,00%
Unilever Sanayi ve Ticaret Turk AS	Multiproduct	Private	Istanbul		3,0%	97,00%
Progıda Tarım Ürünleri Sanayi ve Ticaret AS	Multiproduct	Private	Istanbul		30,0%	70,00%
Marsa Kraft Foods Sabancı Gıda AS	Multiproduct	Private	Adana		51,0%	49,00%
Merko Gıda San ve Tic AS	Multiproduct	Private	Istanbul		59,25%	40,75%
Ustun Gıda San ve Tic AS	Multiproduct	Private	Istanbul		62,0%	38,00%
Ulker Gıda San. Ve Tic. AS	Multiproduct	Private	Istanbul		67,0%	33,00%
Beypi Beypazarı AS	Multiproduct	Private	Bolu		87,8%	12,20%
Koy-Tur Ege Entegre Tavukçuluk AS	Poultry	Private	Ege-Izmir		78,39%	21,61%
Filiz Gıda Sanayi ve Tic AS	Pasta products	Private	Istanbul			100,00%
Fresh Cake Gıda Sanayi ve Ticaret AS	Pastry prts	Private	Istanbul		50,0%	50,00%
Kent Gıda Maddeleri Sanayii ve Tic. AS	Confectionery	Private	Kocaeli		34,64%	65,36%
Perfetti Van Melle Gıda San ve Tic AS	Confectionery	Private	Istanbul			100,00%
Tat Konserveler Sanayii AS	F&V canning	Private	Istanbul		89,36%	10,64%
Tam Gıda Sanayi ve Ticaret AS	F&V canning	Private	Eskisehir		93,78%	6,22%
Penguen Gıda Sanayi AS	Frozen food	Private	Bursa		85,35%	14,65%
Banvit Bandırma Vitaminli Yem San AS	Animal feeds	Private	Balıkesir		97,5%	2,50%
CP Standart Gıda Sanayi ve Ticaret AS	Beer	Private	Istanbul			100,00%
Türk Tuborg Bira ve Malt Sanayii AS	Beer	Private	Ege-Izmir		4,49%	95,51%
Anadolu Efes Biracılık ve Malt Sanayii AS	Beer	Private	Istanbul		100,0%	
Fruko Mesrubat Sanayii AS	Soft drinks	Private	Istanbul		0,6%	99,40%
Coca Cola İçecek AS	Soft drinks	Public	Istanbul		60,01%	39,99%
Tansas Perakende Magazacılık Ticaret AS	Food retailing	Private	Ege-Izmir		83,47%	16,00%
Uçak Servisi AS	Catering	Private	Istanbul		41,25%	58,75%
JTI Tütün Ürünleri Sanayi	Tobacco	Private	Istanbul			100,00%
Spieler Tütün İhracat Sanayi ve Ticaret AS	Tobacco	Private	Ege-Izmir		0,04%	99,96%
Philsa. AS	Tobacco	Private	Istanbul		25,0%	75,00%

Source : ISO Dergisi Sanayi, August2004, Number 461

3.8 – Recent foreign investments realized in Turkey’s agro-food sector between June 2003 and August 2004

<i>Hosting company name</i>	<i>Investment (000\$)</i>	<i>Investing country</i>	<i>Sector ÖRÜ</i>
Kilis Şampanya Üretimi Ve Gıda San. A.Ş.	42 244	Russia	Wine processing
Danone Tikveşli Gıda Ve İçecek.A.Ş.	22 222	France	Dairy products
Tat Konserve San.A.Ş.	17 045	Japan	Dairy products
Elsa Tarım Ve Hayvancılık Oto. A.Ş.	9 982	Australia	Fruits& vegetables processing
Kent Gıda Madd.San.Ve Tic.A.Ş.	8 948	U.K.	Cacao, chocolate and sugar confectionery
Doğadan Gıda Ürn.San.Ve Paz.A.Ş.	6 244	Switzerland	Miscellaneous food products n.e.c.
Türk Tuborg Bira Ve Malt San.A.Ş.	4 636	Denmak	Beer and malt production
May Tohumculuk Ziraat Ve Tic.Ltd.Şti.	2 962	USA	Fruits&vegetables processing
Friko-Pak Gıda Maddeleri San.Ve Tic.A.Ş.	2 590	U.K.	Soft drinks, bottled water
Coca-Cola İçecek A.Ş.	2 562	USA	Soft drinks, bottled water
Saray Bisküvi Ve Gıda Sanayi A.Ş.	2 447	S. Arabia	Bakery products
Coca-Cola İçecek A.Ş.	2 349	USA	Soft drinks, bottled water
Tat Konserve San.A.Ş.	2 072	Japan	Fruits& vegetables processing
Kent Gıda Madd.San.Ve Tic.A.Ş.	1 989	U.K.	Cacao, chocolate and sugar confectionery
Tarımsal Gıda San.Ve Tic.A.Ş.	1 791	Spain	Fruits& vegetables processing
Siemens Finansal Kiralama A.Ş.	1 489	Germany	Bakery products
Fersan Fermantasyon Ürünleri.A.Ş.	1 201	Germany	Miscellaneous food products n.e.c.
Pia-Frucht Gıda Loj. Ve Dış Tic.Ltd.Şti.	1 169	Germany	Fruits& vegetables processing
Penkon Penguen Konsantre San.A.Ş.	1 092	Germany	Fruits& vegetables processing
C.P. Standart Gıda San.Tic.A.Ş.	691	U.K.	Beer and malt production
Danone Hayat İçecek Ve Gıda A.Ş.	667	France	Soft drinks, bottled water
Unmaş Unlu Mamüller San.Ve Tic.A.Ş.	537	Netherlands	Bakery products
Hörrlein-Tutku Ö. G. Ür. San -Tic.Ltd.Şti.	505	Germany	Fruits& vegetables processing
Karmez Birleşik Et ve Gıda.A.Ş.	329	Germany	Bakery products
Anatolia Tarım Ürünleri San.Ve Dış Tic.A.Ş.	307	U.K.	Fruits& vegetables processing

Source :T.R. Treasury Undersecretary, unpublished confidential data

VI. Trade by Destination

Turkey has a wide range of fruits and vegetables production, as described afore. An important part of these items are exported to many countries. However it is obvious that the most important trade partners of Turkey is from Europe and Middle East. Exports and imports from the other parts of world turn out to be more volatile over time. So in our analysis of the most significant tradable items we will look at the

VI.1. Export and Import Structure in General

We will use the same classification for as before and group the items as processed and unprocessed. The list of items in each group can be seen in table-3.1 and table-3.2.

Table-3. 28: List of processed items and their values (as thousand USD) for selected years

Processed	Exports		Imports	
	1990-1991	2001-2002	1990-1991	2001-2002
Apple Related	15,048	26,407	16	1,643
Prepared Fruits	49,094	94,216	475	1,976
Grapefruit Related	1	0	21	10
Olive Oil	6,194	87,983	122	2,715
Preserved Olives	9,753	31,015	318	115
Orange Juice	190	427	11	330
Prepared Nuts	42,261	177,058	203	2,219
Sugar Related*	4,073	126,691	112,465	5,620
Sunflower Oil	50,021	10,749	64,815	33,253
Tomato Related	116,857	82,468	281	228
Dehydrated Vegetables	72	1,523	3,159	22,215
Vegetables in Vinegar	37,592	80,326	40	279
TOTAL	331,154	718,860	181,923	70,600
*1989-1991 and 2000-2002 averages for imports				

Table-3.1 also shows the arithmetic mean of values of exports and imports of unprocessed items for the years 1990-1991 and 2001-2002. To avoid the problems arising from volatility we have look at the averages of longer time period and made adjustments for sugar related exports and imports.

Despite the fact that these figures are biased due to the volatility of imports and exports, they reveal important characteristics of Turkish fruit vegetable and fruit trade. As can be seen from the table, the exports of Turkey have nearly doubled while its imports have fallen considerably. This offers a drastic change in the production and marketing structure of Turkish agro-industry. Another underlying reason is the expansion of market for Turkish tradable goods in EU.

A second pattern that table-1 discloses is the ratio of exports to imports. As an expected result of the long-lasting agricultural support of which main aim was making Turkey self-sufficient in agriculture, the imports are far below the exports. The ratio of imports to exports is nearly 10 percent.

The items that lead the boost in exports are prepared fruits, olive oil, preserved oils, prepared nuts, sugar related items (refined and centrifuged sugar).

The deterioration in the import of sugar related items is predominantly responsible from the harsh fall in imports.

The decline in exports of sunflower oil and tomato related items are of significant importance.

Table-3.29. - List of unprocessed items and their values (as thousand USD) for selected years

Unprocessed	Exports		Imports	
	1990-1991	2001-2002	1990-1991	2001-2002
Olives	0	0	137	42
Cherries	6,623	48,989	2	3
Avocado	2	11	1	8
Tomatoes	16,746	58,375	95	106
Chillies and Peppers	8,793	22,163	35	8
Lemon and Limes	31,754	75,133	16	27
Dry Apricot	45,507	100,690	349	752
Grapefruit and Pomelos	10,364	22,833	0	8
Mandarin	30,415	66,730	15	21
Oranges	20,996	45,833	19	29
Hazelnuts Total	259,834	426,867	248	1,629
Dried Bean	14,196	22,930	3,673	20,659
Dried Fig	57,109	68,387	254	525
Raisins	134,444	158,038	103	1,605
Cantaloupes and Melons	2,013	2,247	1	15
Dry Onions*	20,627	13,899	440	25
Lentils	100,467	65,584	0	4,573
Strawberries	41	20	0	0
Chick-peas	133,970	61,693	2,862	1,144
Potatoes	23,158	7,429	3,408	3,188
Apples	34,002	6,712	19	1,356
Onions and Shallots	190	0	2	0
String Bean	327	0	0	14
TOTAL	951,573	1,274,560	11,675	35,732

Table-3.2 shows the same data for the unprocessed fruit and vegetables. Exports of the unprocessed items have also increased about a 34 percent between two periods while their imports have nearly tripled. Exports of olives, cherries, avocado, and tomatoes have hugely increased. The decline in exports of apples, potatoes chick-peas and lentils has been severe. As can be seen from the table the exports are towering compared to moderate level of imports. The exports are 35 times higher than imports. We see a gradual jump in the imports of dried beans which is the main cause of the escalating import figures. When we leave dried beans out of our analysis the increase in imports become modest.

When we compare the overall processed and unprocessed exports we see that unprocessed exports are much higher than the processed exports in both periods (2.87 times in 1990-1991 period to a 1.77 times in 2001-2002 period). In spite of this, the rate of increase in unprocessed exports (34 percent) is much lower than that of processed exports (117 percent). Another important aspect which is disclosed by the comparison of these tables is that the unprocessed imports are far below the processed imports. This together with the lower processed export figures suggests that Turkish agro-industrial sector is still primitive compared to the trade partners of Turkey, which are mainly the European countries.

VI.2. Fresh Fruit and Vegetable Trade by Destination

Now let us look at the distribution of the important import and export items among the partner countries. We will look at the situation of sunflower oil, sugar related (centrifuged raw and refined), prepared nuts and tomato related goods from processed items in addition to tomatoes, raisins, hazelnuts (filbert and shelled), dried apricot, dry fig and lentils from unprocessed items. This choice is based on the total values of imports and exports in both periods. In this way we tried to look into items that are traded more stably.

The distribution of imports and exports of these items can be seen in table-3.3.

Table-3.30:- Distribution of imports and exports of selected items among destination

	EU-15		EU New		Non-EU Europe		MENA		Others		TOTAL		
	90--91	01--02	90--91	01--02	90--91	01--02	90--91	01--02	90--91	01--02	90--91	01--02	
Exports	Hazelnut	224,557	335,125	1,126	15,232	20,002	28,618	6,888	16,220	7,217	31,599	259,789	426,793
	Dried Apricot	31,925	46,877	150	8,555	990	2,096	4,546	4,767	7,897	38,396	45,507	100,690
	Lentils	21,666	8,781	168	227	455	168	52,569	19,787	25,610	36,622	100,467	65,584
	Dried Fig	42,945	48,870	531	2,125	6,972	5,377	2,544	4,193	4,118	7,823	57,109	68,387
	Tomato	2,801	9,313	502	22,535	57	10,916	13,281	11,287	106	4,325	16,746	58,375
	Raisin	92,557	128,811	1,102	4,323	17,182	3,262	2,030	1,670	21,575	19,972	134,444	158,038
	Unprocessed Total	416,450	577,777	3,577	52,995	45,657	50,436	81,857	57,922	66,522	138,737	614,061	877,866
	Sugar	9	1,263	151	1,185	7	16,099	3,906	34,484	0	73,655	4,073	126,685
	Nuts	36,534	139,641	650	10,389	562	6,529	3,032	4,425	1,485	16,076	42,261	177,058
	Tomato Related	23,326	13,089	24,456	25,588	19,601	5,501	35,435	13,591	14,039	24,699	116,857	82,468
Sunflower Oil	5,454	1,092	979	1,233	6,209	1,160	30,372	2,973	57,027	15,040	100,041	21,497	
Processed Total	65,323	155,084	26,236	38,394	26,378	29,288	72,745	55,472	72,551	129,470	263,232	407,707	
Imports	Hazelnut	59	961	0	224	0	48	12	0	236	1,357	248	1,629
	Dried Apricot	110	356	0	87	0	0	13	94	337	572	349	752
	Lentils	0	53	0	0	0	0	0	512	0	4,062	0	4,573
	Dried Fig	214	455	0	0	0	19	0	19	254	487	254	525
	Tomato	0	2	0	0	0	0	92	102	3	4	95	106
	Raisin	103	523	0	22	0	0	0	885	103	698	103	1,605
	Unprocessed Total	485	2,348	0	333	0	66	116	1,610	932	7,179	1,048	9,188
	Sugar	88,070	915	0	0	13	0	0	8	112,452	5,604	112,465	5,611
	Nuts	102	1,988	0	40	0	9	0	33	203	2,138	203	2,219
	Tomato Related	0	0	0	0	0	0	0	0	0	0	0	0
Sunflower Oil	11,005	915	0	0	0	5,630	0	211	64,815	27,428	64,815	33,269	
Processed Total	99,177	3,818	0	40	13	5,639	0	252	177,469	35,170	177,482	41,099	

Figure-3.1 below shows the distribution of processed and unprocessed exports graphically.

The exports of both processed and unprocessed items are concentrated on EU-15 countries.

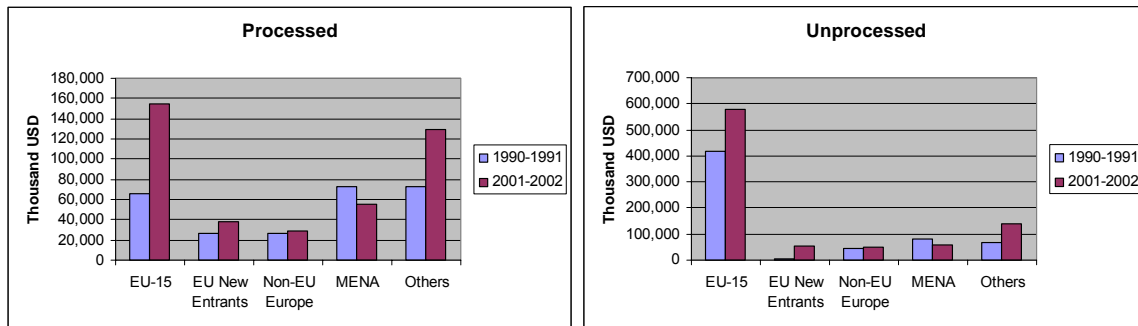
Both processed and unprocessed exports to new EU members have increased considerably from 1990 to 2002, by promising a potential of trade in future. Exports to European countries which are not a member of EU has not changed much over the period. However the difference between the growth rate of volume of exports to non-EU member European countries and new entrants of EU is worth noting. The volume of exports to the new EU

entrants has increased in the last 10 years while that of non-EU members has changed slightly.

We see that both the processed and unprocessed exports to MENA countries have declined slightly. The main reason of this fact is the instability in the region after the first and second Gulf wars which bring about a decline in exports to Arabian peninsula.

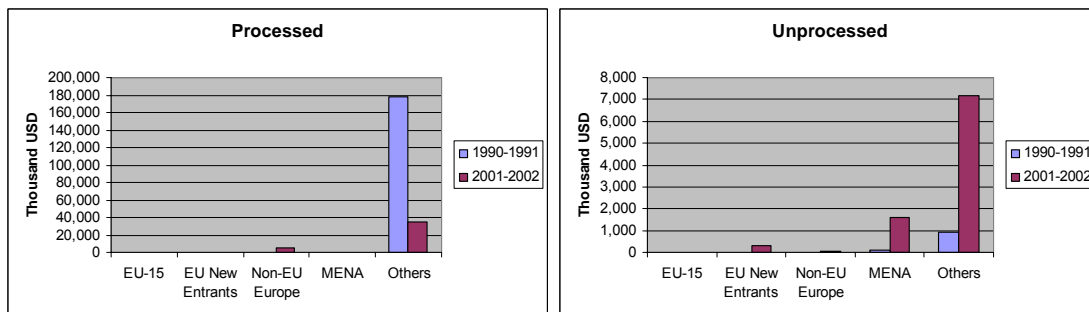
We also see an increase in the exports to the other parts of world, which is bring about mainly by Chinese demand to Turkish agricultural products.

Figure-3.5: Distribution of exports of selected processed and unprocessed items



There is a similar story in imports. First of all we see that unprocessed imports are negligible compared to processed imports. The processed imports are predominantly made from countries that are out of Europe and MENA regions. However there is a sharp decline in imports of processed items. There has been an increase in unprocessed exports from these countries as well.

Figure-3.6 : Distribution of imports of selected processed and unprocessed items



Processed Items

Sugar Related Items

Sugar related items consist of refined and centrifuged raw sugar. The distribution graph of Turkish sugar exports and imports can be seen in appendix. Sugar production has always been an important part of Turkish agriculture. The governments, by following the state policy of subsidizing “strategic” agricultural products, have supported sugar production. Sugar production was in fact made by state owned Şeker Fabrikaları A.Ş. until its privatization in early 1990s. The state owned factories was technologically very primordial that they did not have any chance to compete in the world market. This fact is reflected in low exports figures of 1990-1991 period. Turkey was a net importer of sugar in 1990-1991 period. France,

Netherlands and Belgium-Luxemburg were the most important sugar suppliers of Turkey. Turkish exports of sugar are mainly directed to MENA and non-EU member European countries in 2001-2002 period. Croatia, Syria and Macedonia are the most important sugar importers in 2001-2002 while

Sunflower Oil

Sunflower oil is included in our analysis since it is the main processed import item of Turkey. Turkey was exporting a significant amount of sunflower oil from EU-15 countries (especially from Spain) in 1990s. When we look at the figures of 2002 we see that this trade has vanished. Argentina, Romania and Ukraine became the main suppliers of sunflower oil to Turkey, in 2001-2002 period. Turkish exports of sunflower oil have decay in this period. In the period of 2001-2002, Turkey became a net importer of sunflower oil, while it was a net exporter in 1990-1991 period. In 1990-1991 period Yemen, Lebanon and Japan was the main exporters of sunflower oil from Turkey.

Prepared Nuts

Prepared nuts follow the general trend in processed exports. The imports are negligible compared to exports. However there has been a gradual increase in the imports from EU-15 and other countries group. The boost also exists in export figures. The EU-15 countries are the major buyers of prepared nuts from Turkey. Germany, France and United Kingdom are the main exporters of prepared nuts in 2001-2002 period. Germany, Austria and Sweden are the main suppliers of prepared nut in the same period.

Tomato Related Items:

This group includes tomato paste, peeled tomato and tomato juice. Exports of tomato related items are distributed among a wide range of countries. Exports to the other countries group has enhanced while there was a light increase in exports to new EU members and a gradual decline in the remaining groups. This is an interesting pattern because in general Turkish exports to EU-15 and MENA has increased over the period. In tomato related items we see an opposite situation. Japan, Slovenia and Saudi Arabia and Germany are the most important importers of Tomato related items from Turkey. Imports of tomato related items are insignificant.

Unprocessed Items:

Hazelnuts

Turkey is one of the major suppliers of hazelnuts of the world. Besides hazelnuts is the most important export item amongst all processed and unprocessed items. EU-15 has the largest share in Turkish exports of hazelnuts in both periods. Germany Italy and France are the top importers of hazelnuts from Turkey. The imports of hazelnuts are done mainly from France, Germany and USA. However imports of hazelnuts are very limited.

Dried Apricot

Dried apricot is also exported to a large scale of countries. As can be seen from the figure in annex, the exports of dried apricot is mainly made to the EU-15 countries. The exports have increased between 1990 and 2002. The growth of exports to EU-15 and the others groups is drastic, while the increase in MENA, non-EU member European and new EU members is only moderate. Turkey started exporting dried apricot to new EU members, only after mid-1990s. The major importers of dried apricot are USA, United Kingdom, France, Germany and Australia. Dried apricot import of Turkey is rather insignificant. United Kingdom, Germany, Iran and Lithuania are the main suppliers of dried apricot to Turkey.

Lentils

Exports of lentils to Europe (especially to EU-15) and MENA has decreased from 1990 to 2002. However imports to others group has increased. The most important lentil importing countries from Turkey are Egypt, Saudi Arabia and United Kingdom while the most important part of exports is made to “unspecified countries”, in 2001-2002 period. Turkey were not importing any lentils in 1990-1991 period but in 2001-2002, she had imported small amounts especially from Canada and Syria.

Dried Fig

Turkish exports of dried fig is concentrated to EU-15 and it has increased since 1990-1991 period. There is a slight decline in exports to non-EU member European countries. There is also an increase in the exports to remaining groups of countries. The most important importers of dried fig have been EU-15 countries such as Germany, France and Italy with Switzerland. The dried fig imports also remained moderate. Imports are made chiefly from EU-15 countries, especially from Portugal, Germany and Denmark.

Tomatoes

Turkish exports of tomatoes has enhanced considerably between 1990 and 2002. In 2002 the most important importers of Tomatoes from Turkey was from Europe with non-EU member European countries taking the lead. The exports to MENA have declined slightly but the decline can be attributed to the vanishing Iraq demand after the gulf war. The most important demanders of tomatoes was Slovenia, Saudi Arabia, Romania and Greece in 2001-2002 period. Although the Turkish imports of tomatoes is insignificant.

Raisins

The exports of dried apricot is mainly made to the EU-15 countries. Although there is a slight increase in exports to new EU members, exports to non-EU member European countries has receded. The top importers of raisins from Turkey are United Kingdom, Germany, Netherlands, Italy and France. In general, there is a slight decline in exports to the countries outside the EU-25. Although imports of raisins is very low in 1990-1991 period, there has been a rapid expansion until 2001-2002 period. The expansion has occurred mainly in imports from EU-15 and MENA region. Top exporters of raisins to Turkey are Iran, Greece and USA.

PART IV – Agricultural and Agro-industrial Policies

Instability of the macroeconomic environment has important consequences for the Turkish agriculture. Prices received by farmers in real terms (1994=100) declined sharply to half of what it was in 1997, after the recent crises. This indicates that macroeconomic fluctuations may have adverse effects on agricultural incomes, although agricultural sector is supported by various instruments throughout the years. Farm output therefore remains low in comparison to the country's enormous potential and farmers' average income is also low. Small farm size, dependency on rainfed agriculture combined with the inability of the policy makers to form and deliver proper policy measures prevent the movement towards the actual production possibility frontier.

I. Evolving Policy Environment

During the last decade agricultural sector in Turkey registered a very low growth rate (0.4%) with wide fluctuations. The historical development of real agricultural value added for the last half century suggests that, stagnation in agriculture is not a new phenomenon and appears to be a rule rather than an exception. Growth in real value added in the past has been in upward jumps in every 7-9 years. The magnitude of the jumps became smaller over time with fluctuations around the established levels due to weather conditions (Akder, Kasnakoglu and Cakmak, 2000).

The agricultural policies are becoming more market friendly in Turkey. The agricultural "reform" program in Turkey gained momentum in 2001. Producer price subsidies through state procurement are replaced with direct income transfer program within a limited time frame. The primary development objective of the Agricultural Reform Implementation Project (ARIP) is to help implement the Government's agricultural reform program, which is aimed at reducing artificial incentives and government subsidies. At the same time, the project is designed to mitigate potential short-term adverse impacts of subsidy removal, and facilitate the transition to efficient production patterns. Aside from promoting allocative efficiency, the reforms to be implemented were necessary for fiscal stabilization. Almost all input subsidies are removed and the state procurement activities are declining. The privatization of related state economic enterprises is lagging behind. The sales cooperatives are becoming more self-reliant through restructuring.

I.1. Agricultural Policy Reforms in 2000

Turkey has embarked on an ongoing structural adjustment and stabilization program towards the end of 1999. Agriculture has been selected to undergo heavy adjustment due to the ineffective set of policies and its increasing burden on government expenditures in the last decade.

Even without the macroeconomic stabilization program, several additional factors would have forced Turkey to enter into a phase of agricultural policy reform. New round of negotiations for WTO-Agreement on Agriculture is expected to be a challenging process and the issue of alternative policy tools in agriculture will remain as a major item in the agenda of multilateral trade negotiations and hence in the domestic policy debates in the coming years. Turkey's candidacy for membership to EU has also added a new dimension for the changes in agricultural policies.

Protective trade policies in major crops combined with government procurement, input subsidies, and heavy investment in irrigation infrastructure on a fully subsidized basis have created a net inflow of resources from the government to agriculture, but have had many negative effects on the sector and the economy at large. The benefits of the subsidies have

gone mainly to larger, wealthier farmers. In addition, the support system failed to enhance productivity growth despite its heavy burden on taxpayers and consumers.

The reform program targets to diminish drastically heavy involvement of the state in the agricultural sector. The major aims of the reform are to decrease the distortions and the financial burden of support. Removal of the input (especially fertilizer and credit) subsidies, decrease the state procurement activities together with the privatization of the related state economic enterprises and restructuring of the sales cooperatives summarize the major parts of the program. Major additional rather new tool is the direct income support determined depending on the cultivated area.

The direct income support (DIS) is intended to provide the farmers safety net as a result of the elimination of the current mechanisms of support. The DIS is not contingent on input use or output production decisions of the farmer, and hence it is decoupled. Currently, the payments are moderately targeted. The farmers are eligible to receive a fixed amount of payment up to 50 hectares of cultivated land. The government intends to make the DIS payments more targeted towards the poor in the future.

Removal of price support to fertilizer started before the reform program. The fertilizer subsidy has been held constant in nominal terms since 1997, resulting in a reduction of the unit subsidy from approximately 45 percent of the total price at the end of 1997 to approximately 15 percent in 2001. Gradual efforts to subsidize the credits to agriculture through the Agricultural Bank have been successful. Apart from extraordinarily high level of interest rates periods, the subsidy element has been removed.

The procurement prices of grains (especially wheat) by Soil Products Office (TMO) have been linked to world prices. For instance, the procurement price of wheat in 2000 was 35 percent higher than the CBOT price. The sales price for grain of TMO will be set at no less than the lower of either the purchase price of TMO plus storage costs incurred up to the date of sale including imputed interest charges on stocks, or the tariff-inclusive import parity price for grain of equivalent quality. TMO's procurement quantity remained limited due to the financial restrictions. The output price support is mainly achieved through the import tariffs which remain at 45-55 percent.

Reduction in state involvement in tobacco, sugar and tea are closely linked with the privatization of the related agricultural state economic enterprises. Despite the fact that the legislation on tobacco and sugar was completed, there has not been any development in the privatization. The production of all three crops declined sharply since 2001.

The government had a dominant role in the agricultural sales cooperatives. The major sales co-ops are in the purchase and processing of cotton, hazelnuts, sunflower and olives. Until the enactment of the new Agricultural Sales Cooperative and Agricultural Sales Cooperative Union Law in mid-2000, cooperatives were mainly channels for implementation of government programs rather than member-owned cooperatives. Funded by government, the cooperatives were put under the supervision and direct control of the Ministry of Industry and Trade. Restructuring Board of co-ops is still trying to make them independent and responsible for their own finances, management and operations.

As it is apparent from the short description above, the principal aims of the Agricultural Reform Implementation Project (ARIP) are to diminish both the efficiency costs and the budgetary burden of support to agriculture. A brief overview of ARIP, together with the recent impact evaluation and future developments are provided in the Box below.

I.2. Agricultural Support Indicators

After the middle of 1980's, Turkey may be considered as a perfect example of mismanagement of agricultural policies. The governments were unable to develop any policy to improve the productivity in the agriculture and combined with frequent early elections, the only alternative they considered to implement was transfer policies. The transfers to producers mostly occurred from consumers through support purchases for major crops backed by high tariffs. The transfers to producers from the taxpayers did not reach relatively high levels, but were accompanied by huge financial costs. Most of the direct transfers from the state, i.e. deficiency payments, were not budgeted and the funds of the state banks were utilized without paying back in due time. Another channel increasing the financial costs of support purchases cropped up through the related state economic enterprises (SEEs) and Agricultural Sales Cooperatives Unions (ASCUs). SEEs responsible for implementing agricultural policies (TMO for grains, Tekel for tobacco, TurkSeker for sugar, Caykur for tea) had to borrow at market rates and eventually had to either write them off as 'duty losses' or receive capital injections. Although not officially considered to be state organizations, ASCUs were used as policy implementing agencies of the government with revolving credit lines from the state which are topped up when needed. These developments combined with over employment and inefficient management practices, all policy implementing agencies in the sector became almost fully dependent on the financial resources of the state.

Historically, different policy weights in agriculture contributed to the jumps in the agricultural output: Increase in area sown in early 60's; support to using chemical fertilizers in late 60's; increase in irrigated area and support to mechanization in 70's; support to use of high yielding seeds, fallow reduction programs and new crop rotations in 80's have been the major technological and input augmenting developments that contributed to jumps in agricultural output. No significant productive advance has been realized in the last decade which resulted in the continuation of the stagnation of the earlier period.

Stagnation of growth in agriculture is not valid for all sub-sectors. Cereals and pulses have a negative impact on the growth of output. Among cereals yield decline, especially of wheat is the major source of this negative contribution. The negative contribution of these major crops is offset by industrial crops, tuber crops, vegetable and fruits (Akder, Kasnakoglu and Cakmak, 2000).

Participation to alternative crop payments has been limited due to mixed signals the farmers get from the government. They are not convinced that the government will shift to regulatory position in hazelnuts, sugar and tobacco. Tobacco farmers have displayed highest participation due to the Tobacco Law which ceased TEKEL to be the price maker in the market, and the price formation has been left to bidding mechanism. Tobacco and Sugar Laws paved the way for the privatization of TEKEL and TURKSEKER. Cigarette and alcohol products companies of TEKEL were up for privatization. Alcohol Products Company was privatized, but the tender for cigarette company was canceled. Sugar Law puts strict quotas at the plant level. The quota classification follows the current EU structure with a slight difference in the is glucose quota which includes glucose in the Turkish case. In the grain sector, TMO reduced its volume of intervention purchases. Despite the delay, DIS payments were made to farmers amounting to a total of EUR 1.5 billion in 2004, as partial compensation for the removal of the old system and to form a dependable base for the national farmers' registry.

The government intends to restructure ARIP and to add new components. Starting from 2006, the weight of DIS payments in the total budgetary support to agriculture will be decreased. The payment per hectare will remain constant in nominal terms, but the payments will be more targeted. The share of crop specific deficiency payments, alternative

crop grants and support to livestock production will slightly increase. The new items in the short term are related to environmental protection schemes, crop insurance support, and a pilot project on participatory rural development.

Medium term policy agenda items of the government include promotion of a sustainable rural finance system; increased expenditures in rural infrastructure targeted to irrigation, storage and marketing facilities and expansion of agricultural extension activities. This rather dismal performance of the sector coincided with an increase in the transfers to producers. Prior to the start of structural adjustment program in 1999, total producers' subsidy in Turkey showed a significant increase. The contribution of agricultural policies to the farmers' revenue increased by 2.7 folds, from USD2.7 billion to USD7.6 billion from mid-80s till the end of 90s (Table 4.1). The general effects of ARIP are noticed with a significant decline in support to agriculture in 2001. The state intervention in the output markets was severely restricted in 2001, coupled with the delayed implementation of direct income support. The domestic market has been adjusting fast. The market price support provided by the border measures seems to be picking up again in 2002 and 2003.

Table 4.1. Producer Support and Transfer to Agriculture in Turkey (million USD)

	1986-88	1997-99	1999	2000	2001	2002	2003 ^e
Producer Support Estimate	2,670	9,285	7,636	6,766	1,043	5,577	9,479
Market Price Support	1,702	7,238	5,589	5,651	347	4,049	7,612
Total Support Estimate	2,983	12,939	12,087	10,491	4,202	8,103	10,542

Note: ^e provisional estimate.

Sources: OECD (2001) and (2004).

Another category in the total transfers is the General Services Support Estimate (GSSE) which consists of private or public general service provided to agriculture generally and not individually to farms. Simply put, it is just the difference between the total transfers and PSE. The most important item in this category is the financial cost of the intervention agencies. The burden of the mismanagement before 2000 is still playing important role in the total transfers. Historical costs of intervention agencies are close to the transfers individually received by the farmers.

The increase in the financial cost of the intervention can be easily seen in Table 3.2. The share of GSSE in total transfers increased from 11 percent in 1986-88 to almost 60 percent in 2001, mainly due to the decline in the other types of transfers.

Table 4.2. Indicators of Transfers to Agriculture (percent)

	1986-88	1997-99	1999	2000	2001	2002	2003 ^e
TSE/GDP	3.5	6.7	6.5	5.3	2.9	4.4	4.4
Percent PSE	13.9	26.3	22.8	21.0	5.0	20.0	26.0
GSSE/TSE	11.1	28.4	36.8	35.5	75.2	31.2	10.1
R and D/TSE	2.0	0.3	0.2	0.2	0.7	0.4	0.3
Percent CSE	-12.9	-25.8	-22.0	-22.0	-3.0	-17.0	-26.0

Note: ^e Provisional estimate

Sources: OECD (2001) and (2004).

The share of total support in GDP increased from 3.5 percent to almost 7 percent in the late 90's. It declined to 4.4 percent in 2003. Percent CSE indicates the major source of transfer to agriculture is consumers who are taxed through distorted domestic prices. The share of

market price support was up again in 2003 and 2003. More than three fourth of the supports to producers are achieved by market price support (Table 3.3). The remainder falls on the taxpayers with one fifth of the total as direct income payments.

Table 4.3. Types of Producers' Support (percent)

Type of Support	1986-88	1997-99	1999	2000	2001	2002	2003 ^e
Market Price	64	78	74	84	33	73	80
Payments based on output	0	2	4	5	44	3	2
Payments based on area	0	0	0	0	0	0	0
Payments on hist. entitlement	0	0	0	0	7	22	14
Payments based on input use	36	20	22	12	17	2	4
Others	0	0	0	0	0	0	0
Total	100	100	100	100	100	100	100

Note: ^e Provisional estimate.

Sources: OECD (2001) and (2004).

To sum up, the average total transfer to agriculture between 2001 and 2003 was about USD 8 billion, significantly lower than 1998-2000 period with USD 12 billion. Consumers' transfers through higher prices amounted to USD 4 billion, and the remaining USD 1 billion was paid to the farmers from the budget. General services' expenditures, USD 3 billion, made up the rest of the total transfers. Major item in the GSSE for Turkey reflects the costs of the state intervention agencies and cooperatives in the past. The only encouraging development in the support to agriculture is the weight given to decoupled payments. DIS payments made up 20 percent of PSE in 2002/03.

The agricultural subsidy reform program not only contributed significantly to fiscal stabilization but also started to benefit the consumers, and compensating almost half of the income loss imposed on Turkish farmers by the cuts in agricultural subsidies through the DIS payments (Mundell et al., 2004). DIS payments need further scrutiny, since it is the preferred type of support in the WTO-Agreement on Agriculture and in the simplified scheme for the direct payments to the recent member states of EU. The coverage and level of DIS payments are provided in Table 3.3.

Table 4.4. Direct Income Support Payments, 2001-03.

for the year ^a	Registered Farmers (1000)	Registered Area (1000 ha)	DIS Payments	
			(NTL 1,000)	(EUR 1,000) ^b
2001	2,193	11,821	1,182,095	946,685
2002	2,593	16,080	2,170,831	1,279,994
2003	2,765	16,650	2,664,023	1,535,911

Notes: ^a The payments for the intended years were delayed and made in two installments.

^b The conversions to EURO are made according to the periods of actual payment at the banknote selling rates.

Source: UT (2004) and CB (2004).

As explained above, DIS is fixed per hectare payments independent of crop choice of the farmer. The ceiling level was 20 ha for the eligibility in 2001 which was expanded to 50 ha afterwards. Per hectare payment was the only feasible tool for the payments. DIS payments helped also to form a dependable national farmers' registry. The transferred amount was at least satisfactory under the tight budgetary measures. The average per registered farm increased from EUR 432 for the 2001 payments to EUR 555 for 2003.

The regional distribution of the agricultural subsidies depends on the regional distribution of agricultural production value, the commodity composition of regional agricultural production

value, subsidized input use intensity by regions, the composition of agricultural support by commodities, and input subsidies.

In summary, it can be concluded that the market price component of agricultural support policies did not significantly alter the relative regional distribution of income (in the Gini Coefficient sense) due to product differentials among regions. It is however clear that this component of agricultural support has contributed significantly to the widening of absolute income differential between the regions of Turkey, as most of the benefits went to the higher income regions. As far as the input cost reducing component is concerned we can conclude that agricultural policies have contributed to the widening of relative as well as absolute income inequality, as the higher income regions use subsidized inputs relatively more intensively than the lower income regions (Kasnakoglu and Cakmak, 2000). The DIS payments are not expected to have any significant effects on the distribution of income, but it relaxes the cash flow problem of the medium size farmers with limited access to the credit market.

II. Rural Development Policy

II.1. Current Regional Development Plans And Rural Development Projects

Current regional development projects prepared under the coordination of the SPO are as follows: (SPO, 2003)

Zonguldak-Bartın-Karabük Regional Development Project (ZBK)

With this project, it is aimed to analyze economic and social results of rehabilitation of Turkish Coal Authority (TTK) and privatization of Karabük and Ereğli Iron and Steel Works (Mining and industry companies in the region), in order to determine new investment alternatives for the private sector, to prepare a development plan to be implemented in the medium and long-term, and identify new investments that can be made in the region.

Eastern Anatolia Project (DAP) Master Plan studies initiated in 1998 by the SPO in order to accelerate the development of Eastern Anatolia Region are completed in 2000. The Project includes 14 provinces (Ağrı, Ardahan, Bingöl, Bitlis, Elazığ, Erzincan, Erzurum, Hakkari, Iğdır, Kars, Malatya Muş, Tunceli, Van) located in Eastern Anatolia Region, and Gümüşhane and Bayburt, which have the same characteristics with the region. With Eastern Anatolia Project, it is aimed to ensure the region's sustainable development, which constitutes an economic, social and cultural unity, especially by mobilizing the internal dynamics of the region. In this context, it is aimed to make the necessary planning to increase employment and income per capita in the region, to ensure the diversification of the economic structure in potential areas, to decrease income disparities within the region, to increase the level and quality of the urban infrastructure, education and health services, to increase the welfare and life quality in urban and rural areas, and to protect land and water resources.

Eastern Black Sea Regional Development Plan (DOKAP) is prepared as a grant by Japan International Cooperation Agency (JICA) under the coordination of the SPO for Eastern Black Sea Region comprising Artvin, Bayburt, Giresun, Gümüşhane, Ordu, Rize and Trabzon provinces. With DOKAP, taking 2020 the target year, it is determined as a main objective to prepare a medium and long-term integrated regional development master plan, and to define priority sectors and possible investment projects towards this plan. Detailed studies regarding priority programmes and project proposals contained in DOKAP Master Plan are being carried out. In this context, "Small-scale Development Study on the Improvement of Tourism in Eastern Black Sea Region" was started within the scope of technical cooperation with Japan.

Southeastern Anatolia Project (GAP) will play an important role in the economic development of Turkey. The project is a package of multi-dimensional projects including the building of dams on the rivers Dicle (Tigris) and Fırat (Euphrates), hydroelectric power plants and irrigation facilities as well as the improvement of infrastructure and services in agriculture, transportation, industry, education, health and other sectors.

Part V – International Trade Policies

The Undersecretariat of Foreign Trade prepared the "Decree on the Regime of Technical Regulations and Standardization for Foreign Trade" and its supplementary legislation with the aim of providing transparency in the implementations, assembling all the dispersed regulations regarding standardization policies in Turkey and establishing a legal base for the harmonization of Turkish legislation with the Community's. "Decree on the Regime of Technical Regulations and Standardization for Foreign Trade" is in conformity with the requirements laid down in the Agreement on Technical Barriers to Trade of the World Trade Organization. It prohibits discrimination among trading partners and it aims to ensure compliance with the requirements of protection of human health and safety, animal or plant life or health and the environment. However, it is a transitional regime in respect of harmonization with the Community system.

The Regime and its supplementary legislation were decided on 24/1/1995 by the Council of Ministers and published in the Official Journal on March 9, 1995. The Decree is amended by the Decree No. 96/7794 on the "The Regime for Technical Regulations and Standardization for Foreign Trade" which was put into force by the Council of Ministers on 8.1.1996, and has been promulgated in the Official Gazette dated 1.2.1996 No. 22541 bis.

As the Regulation and Communiqués are amended every year, the Regulation and Communiqués for the year 2004 have been promulgated in the Official Gazette dated 31.12.2003 No. 25333.

I. Regulation Regarding Technical Regulations and Standardization for Foreign Trade

The Regulation is related with the controls of the agricultural products to be exported within the scope of the standards mandated in exports. The Regulation also determines the framework of the import controls, which are regulated by communiqués in more detail.

According to the Regulation, agricultural products such as fresh fruits and vegetables, dry and dried fruits, legumes, edible vegetable oils, and cotton within the scope of approximately 70 standards are subject to standardization and commercial quality controls in exports. These controls are carried out by the inspection units called as "Inspectorates of Standardization for Foreign Trade", within the 8 Regional Directorates (Marmara, Western Anatolia, South Anatolia, Eastern Black Sea, Western Black Sea, South Eastern Anatolia, Central Anatolia and Eastern Anatolia) working under the UFT.

The standards which are mandatory in exports are parallel to the UN/ECE standards and the inspections are performed according to the OECD Scheme. Following the inspection carried out by the inspectors, a "Control Certificate" is given to the exporter if the product is found to be in conformity with the relevant standard. The exporter cannot export the product without a Control Certificate. The products shall be exempted from inspection if the exporter owns the Certificate of Competence on Commercial Quality Inspection. Certificate of Competence on Commercial Quality Inspection is a certificate issued by the UFT for the producers who are found to be competent to carry out the inspections by themselves. These firms are subject to periodic and random controls by the Inspectorates.

According to Communiqué of Standardization for Foreign Trade No. (2004/2), agricultural products such as fresh fruits and vegetables, dry and dried fruits, legumes, vegetable oils, and cotton within the scope of approximately 70 standards are subject to standardization controls in imports. These inspections are also carried out by the "Inspectorates of Standardization for Foreign Trade".

According to Communiqué of Standardization for Foreign Trade No. (2004/5), the importation of certain goods such as foodstuffs, agricultural and animal products, and veterinary products is subject to the control of Ministry of Agriculture and Rural Affairs.

Certain documents are submitted to the Ministry of Agriculture and Rural Affairs before the import stage. A Control Certificate is issued by the Ministry if the product to be imported is found to meet the criteria required by the Ministry. The products stated in the Control Certificate are inspected by the Ministry with regard to human health and safety, animal and plant life and health at the actual import stage. Validity of the Control Certificate changes from 4 to 12 months, depending on the product (UFT, 2004).

II. Customs Union

Customs union which creates close political and economic relations between the EU was established in January, 1st, 1996, following to the 1963 EU-Turkey Association Agreement. This was a big step towards trade liberalization between Turkey and the EU. Fundamentally, Turkey got to access to the group of countries which were known as the Common Market through the Customs Union. Customs duties and charges have been abolished and quantitative restrictions such as quotas are stopped. The Customs Union involves harmonization of Turkey's competition and commercial policies including intellectual property laws with those of the European Union. It extends most of the EU's trade and competition rules to the Turkish economy. The Customs Union is ambitious but does not cover essential economic areas, such as agriculture, to which bilateral trade grants apply, services or public procurement.

Goods will move freely between the EU and Turkey without being subject to customs duties or quantitative restrictions; it covers all aspects of trade and commercial policy to ensure there is a "level playing field" for Turkish and European firms according to Customs Union. The main features are as following:

1) The elimination of customs duties, quantitative restrictions and measures of equivalent effect on trade in industrial goods, including processed agricultural products, between Turkey and the EU.

2) The adoption by Turkey of the EU's Common External Tariff in its trade with third countries.

3) The adoption by Turkey of measures equivalent to the EU's common commercial policy.

progressive alignment of tariffs by Turkey in line with the EU's preferential trading arrangements with certain third countries.

4) The adoption by Turkey of customs provisions in line with those of the EC.

agreed competition rules and the alignment by Turkey of its legislation in this area with that of the EC.

5) The adoption by Turkey of legislation in the field of intellectual property protection to secure a level of protection equivalent to that in the EC.

6) The abolition by the EC of Voluntary Restraint Arrangements in trade in textiles with Turkey.

7) The formation of an EC/Turkey Customs Union Joint Committee and the adoption of other institutional arrangements to enable Turkey to be properly informed of, and formally consulted about, policy formulation in the EC on matters which affect the Customs Union. (<http://www.mfa.gov.tr/grupa/ad/adc/customunion.htm>).

Along with a CU, agricultural price policies of Turkey and the EU would need to be harmonized because it would be impossible to maintain different levels of institutional prices which exceed transportation cost and quality differences. It should be harmonized because an intervention price in Turkey is far above that in EU, for example in the case of wheat. However, both support prices exceed the world market prices. Wheat produced in the EU would be exported to Turkey, to be sold into intervention at the higher price level of the Turkish intervention agency. This process would theoretically end if the EU market price, due to strong Turkish demand, reached the level of Turkey's intervention price. In practice, this process would stop much earlier, due to budget constraints for the Turkish intervention agency and limits to storage and subsidized exports (WTO).

Most of the currently applied political trade barriers like tariffs, export subsidies, or the entry price system of EU would no longer apply to trade between Turkey and the EU in the case of CU which includes agricultural products as well as industrial and processed agricultural products. Turkish and EU prices are to move closer due to these policy changes. Price differences, however, could remain because of quality differences, transportation costs, or nontariff barriers like varying product standards. As it is difficult to assess quantitatively which factors add how much to existing price differences between Turkey and the EU, an analysis of the effects of a CU should be based, wherever possible, on the effects of the abolition of market policies instead of assuming equal farmgate or wholesale prices in Turkey and the EU.

If Turkish institutional prices are above EU institutional prices it is assumed that Turkey has to adjust its institutional prices to the EU level. It is not very probable that the EU would adjust its CAP in case of a customs union in agriculture. Since the EU is a large country compared to Turkey for most agricultural markets, it is assumed that any changing export or import quantity from Turkey to EU would not have any effect on EU prices.

Agriculture operates in connection to the trade policies as well as the macroeconomic environment and domestic sector specific policies which affect historical trade flows and mutual competitiveness in the agricultural products. Fluctuations in trade volume reflect partly rather unstable macroeconomic conditions and the mismanagement of the agricultural policies of Turkey prior to stabilization program.

Differences in levels of other support policies like direct payments to producers and input subsidies, could, from purely technical point of view, continue. But the more these policies have an effect on production, the more they may be considered as problematic for competition reasons. (Grethe, H. 2004)

For example, the direct payments granted to EU beef producers are linked to actual production and therefore distort competition. The extent to which direct payments for cereals and oilseeds have an effect on production is difficult to assess. Clearly, production of these products and set aside is enhanced compared to nonpremium products like vegetables or potatoes. On the other hand, most alternative products, like vegetables and potatoes, are produced for relatively narrow, mainly domestic markets and it is questionable whether production of these products would increase much in the absence of premiums for cereals and oilseeds. Of course, premiums do also increase the relative advantage of cereals and oilseeds compared to set aside for those farms, which are at the 30 percent set aside limit. In most EU regions however, only few farms have reached this limit.

Due to distorting effects of EU direct payments, which are coupled to production, Turkey could of course grant its producers payments at the same level. This, however, would be an extreme burden for the Turkish budget. The cereal and oilseed premiums alone would account for almost €2billion, close to 7percent of the Turkish agricultural GDP. In addition, Turkey already applies an alternative system of direct payments which is focused more on

reduction of rural poverty. (Grethe, H., 2004) The problem of distortions of production due to unequal direct payments would be solved for a large part if the current proposals of the European Commission to decouple direct payments completely from actual production were realized (European Commission, 2003).

Another group of policies which distort competition are all kinds of input and credit subsidies which are still applied by Turkey and, in the case of credit subsidies, also by the EU. Input and credit subsidies in Turkey, however, are scheduled to be phased out under the current reform program by 2004. Credit subsidies in the EU are part of the rural development measures and their volume is very heterogeneous among EU member states and regions. Also, other rural development measures summarized as the second pillar of the CAP are applied heterogeneously in EU member states and regions. In case of a CU there would be no need to harmonize most of these policies between Turkey and the EU. On the contrary it has been argued that current degree of harmonization of the second pillar within the EU is neither desirable nor efficient. (Grethe, 2002a)

A last policy area in which a high degree of harmonization would be desirable but not necessary for a CU in agriculture, would be the harmonization of product and, in some cases, process standards. To allow a CU to fully deploy its potential welfare effects the harmonization or mutual recognition of product standards is essential in order to facilitate trade flows. Still, unequal process standards can be justified and efficient under certain conditions; for example, where local environmental goods or animal welfare standards, a high degree of harmonization would be desirable. If such a harmonization cannot be reached, border policies could be efficient under certain conditions. (Meinheit,1995; Grethe,2002b; Balkhausen, 2003)

However, trade policy environment between EU and Turkey bears a higher weight in determining the past flows. Preferential trade agreements are classified in two product groups: First is the agricultural products, and the second is highly processed agricultural products. EU definition of agricultural products (called Annex II products) comprises primary agricultural products and slightly processed agricultural products such as flour, olive oil, fruit juices. Preferences granted to Turkey comprise of reduced MFN tariff rate and zero tariff rate with no application of entry price for the products that EU applies MFN tariff and/or entry price. More than 60 percent of Turkey's agricultural exports to the EU faced no trade barrier, and another 36 percent were subject to reduced tariff rate in 2001. The main products are fruits and nuts, vegetable and fruits preps, vegetables and tobacco, and the total is about €2.0 billion (Grethe, 2004). High percentage of preferential exports of Turkey may be misleading for the future developments since the overall protection of the EU for the agricultural sector remains high, and for some major exports products of Turkey (fruits, vegetables and processed products) seasonal ad valorem tariffs and TRQ's are applied.

Preferential trade agreements on highly processed agricultural products (non-Annex I) did not expand the volume of mutual exports and imports. These agreements split the industrial and agricultural components of a product. The tariff on industrial component is zero by the CU, and the agricultural component is subject to tariff reflecting the preference granted for the basic product. The overlap of the highly processed products and agricultural products may be cited as the major reason for limited trade volume. The share of EU in the total processed agricultural exports of Turkey was only 14 percent in 2002 (UFT, 2004). Turkish preferences granted for agricultural products originating from the EU mainly consist of TRQs with no tariff. Import ban of Turkey on meat, and the requirement of obtaining control certificates for imports are the major factors which prohibits a reasonable impact assessment of the preferences.

There is a commitment between the EU & Turkey to include agriculture through ongoing negotiations on mutual concessions with a view to establishing a free trade area. Negotiations on the inclusion of services and public procurement are also ongoing. In addition to providing for a common external tariff for the products covered, the Customs Union foresees that Turkey is to align to the *acquis communautaire* in several essential internal market areas, notably with regard to industrial standards. Besides, Turkey is also member of the Euro-Mediterranean partnership and as such should conclude free trade agreements with all other Mediterranean partners, with a view to the creation (by 2010) of a Euro-Mediterranean free trade area.

III. Agricultural Trade preferences between EU and Turkey¹³

Trade preferences in agriculture have been granted by the EU to Turkey since the Association Agreement in 1963 and have been extended several times. Since 1998, Turkey has also established significant preferential market access for the EU. The analysis of current trade preferences is important for the assessment of an extension of the CU to cover agricultural products. This is because such an assessment will mainly be based on price differences between Turkey and the EU and on specific trade policies applied to trade between Turkey and the EU, and not based on most favored nation (MFN) market barriers. A CU in agriculture would have direct effects only on those products for which political trade barriers between Turkey and the EU are still in force. In case of products for which significant price differences between the EU and Turkey do exist, in the absence of any tariffs and/or export subsidies or other trade policies there is no reason to assume that these price differences would automatically disappear with a CU.

Agricultural products as defined by the EU are products covered by Annex II of the Treaty of Rome. These are farm products as well as most first stage processed products such as wheat flour, olive oil, and fruit juice. Thus most products in CN chapters 1-24 and some products in higher chapters are agricultural products. Since the Association Agreement, at various times tariff preferences have been granted by the EU for agricultural products originating from Turkey. Since 1987, almost all *ad valorem* tariffs have been abolished. In some cases reduced rates are also granted for specific duties. In order to analyze the extent of current preferences granted to Turkey, agricultural commodities are classified into four groups, depending on the

import regime applied by the EU to imports originating from Turkey:

1. Products for which no MFN import barriers exist (MFN tariff = 0, no entry price).
2. Products with a MFN tariff and/or an entry price and no preferential treatment for imports from Turkey.
3. Products with a MFN tariff and/or an entry price and a partial preference for imports from Turkey (for example, a reduced MFN tariff rate).
4. Products with a MFN tariff and/or an entry price and no import barrier for imports from Turkey (tariff = 0, no entry price applied).

Traditionally, Turkey has only granted preferences of minor significance for agricultural imports from the EU. After establishment of the CU, however, negotiations of extension of Turkish preferences to cover EU agricultural products were intensified and 39 TRQs for a high variety of products entered into force in January 1998. For many products (butter, other

¹³ This part borrows heavily from Grethe, 2004.

live plants, seed potatoes, rye, cotton seed, animal fats, soya and rapeseed oil, and animal feed) the EU was fully utilizing its zero-tariff TRQ (tariff rate quotas), even exceeding them in 1998-2000, indicating that above quota tariffs are restricting actual trade. For all other products, EU exports stayed below the TRQ level. Reasons for this are manifold. In the case of meat, the reason simply is the Turkish import ban which also applies to imports from the EU. For some products, like prepared tomatoes, the reason may be a sufficient Turkish domestic supply at competitive prices.

Some highly processed products, not covered by Annex II of the Treaty of Rome, are covered by a special import regime for processed agricultural products. Previously these products were widely known as "non-Annex II products." With the adoption of the Treaty of Amsterdam in May 1999, and the resulting changes in some of the EU legal texts, these products are now officially "non-Annex I products." Import tariffs for these products reflect, in addition to the protection granted to the processing industry, protection for the incorporated raw agricultural products. Non-Annex I products are protected by a fixed industrial component of the tariff, and an agricultural component that is charged based on the agricultural tariffs charged on certain basic products. For this purpose, basic products are dairy products, cereals, and sugar. There are some problems, however, with this approach. In the case of cereal products, the agricultural component no longer reflects the protection granted for the basic product properly since the implementation of the Uruguay Round Agreement.

IV. Multilateral Agreements

Turkey consolidated all of the agricultural products to GATT with respect to reduction of tariffs and export subsidies. Commodity based tariffs will be decreased by a minimum of 10percent, and the average decline in the agricultural commodities will be 24percent by 2004. The reduction in tariffs will be implemented in equal installments starting from 1995. The tariff rates in September 1986 are taken as the basis of reduction (Table below).

The outlays for export subsidies and the quantities benefiting from such subsidies will be reduced by 24percent and 14percent respectively over ten year implementation period. The base period for the reduction commitment was 1986-90 for almost all commodity groups, for a few the base period was 1991-92 marketing year.

Turkey benefited from the exemptions and special and differential treatment of the developing countries in domestic support reduction commitments. Total non-product specific support or product specific domestic support was below the "de minimis" level of support which is 10percent of the value for the individual products, or 10percent of the total value of agricultural production for non-product specific support, and Turkey was not required to make any reduction commitment in domestic support.

More detailed analysis of the tariff reduction commitments of Turkey reveals that for the commodities which are considered to be important for domestic producers, the tariff reduction commitments are at the minimum level and there are high import taxes on these commodities, i.e. Livestock products, tea, cereals, wheat flour, sugar, tomatoes, manufactured tobacco. The achievement of self-sufficiency for some products (especially in wheat) seems to be the major reason for this structure of tariffs and reductions. The other extreme is valid for the products for which Turkey is usually a net importer, and for the intermediate inputs of export oriented industries. Vegetable oils, silk, cotton have relatively low levels of tariffs and higher rates of reduction. The general tendency for the tariff reductions is that high tariffs are matched with low reductions. The opposite is true for the products with low levels of import duty. Turkey retained the right to take steps for the formation of a customs union during the reduction period in compliance with the Association Agreement between Turkey and EU. Therefore, Turkey reserves the right to maintain the

Common Customs Tariff of the EU as the lowest level of any binding at any time, consistent with its rights and obligations under Article XXIV of GATT.

Table 5.1 Tariff Commitments of Turkey

HS.		Base Rate of	Bound Rate of	Tariff Reduction	
		Duty	Duty	Average	Range
01	Live animals	43.5	37.6	12.9	10-33
02	Meat and edible meat offals	195.1	175.3	10.2	10-22
04	Dairy products etc.	131.5	117.2	10.8	10-23
05	Product of animal origin, not else.	21.0	10.6	49.5	22-72
06		33.0	28.8	12.6	10-27
07	Live trees, cut flowers, etc.	35.6	30.0	15.8	10-23
08	Edible vegs, roots and tubers	64.1	53.4	16.7	10-60
09	Edible fruits and nuts	85.3	56.8	33.7	22-50
10	Coffee,tea,mates and spices	161.1	145.0	10.0	10
11	Cereals	50.4	43.3	14.1	10-23
12	Products of milling industry	41.3	22.1	35.2	14-67
15	Oil seeds, oleaginous frts, etc.	40.6	29.4	27.5	22-50
16	Animal or vegetable fats and oils	90.3	82.1	10.0	10
17	Prep. of meat fish	113.1	90.7	19.8	10-39
18	Sugar and sugar confectionery	69.2	51.0	26.2	10-38
19	Cocoa and cocoa preps.	64.1	55.4	13.6	10-22
20	Preps of cereals, flour, milk	73.8	59.6	19.3	10-22
21	Preps of vegs, frts, and nuts	70.5	51.4	27.0	20-34
22	Misc. edible preps	87.6	70.7	19.2	15-37
24	Beverages, sprits and vinegar	150.0	113.1	24.6	10-28
52.01	Tobacco and manif. tob.	10.0	6.0		
	Cotton, not carded or combed			40.0	40.0

Source: GATT Schedule XXXVII-Turkey

Table 5.2. Turkey's Commitments Regarding Export Subsidies, Selected Products

		Outlay Commitments (\$ 1000)			Quantity Commitments (1000 tons)		
		Base	1995	2004	Base	1995	2004
10.01	Wheat	36,077.0	640,424.3	27,418.5	574.2	2,126.8	493.8
10.03.00	Barley	6,233.8	123,259.9	4,737.7	131.5	747.5	113.1
11.01.00	Wheat flour	1,894.4	9,542.7	1,438.7	65.3	475.4	56.2
11.03.11	Semolina	2,032.4	1,983.6	1,544.6	67.7	66.8	58.3
11.07	Malt	2,208.0	2,155.0	1,678.1	39.0	38.5	33.6
15.09	Olive oil	2,340.5	2,284.3	1,778.8	23.4	23.1	20.1
15.12	Sunflower seed oil (ref.)	3,126.3	2,866.5	2,377.5	72.2	94.5	62.1
15.16.29	Maize oil (ref.)	787.6	768.7	598.6	13.1	12.9	11.3
15.17.10	Margarine	3,660.5	4,915.4	2,781.9	73.2	98.1	63.0
07.01.90	Potatoes	718.0	700.8	545.7	32.8	32.2	28.1
07.02.00	Tomatoes	2,271.3	2,216.8	1,726.2	119.5	117.9	102.8
08.05	Citrus	9,713.4	9,480.3	7,382.2	277.5	273.6	238.7
18.06	Chocolate, other cont.						
19.05	choc.	2,778.2	2,551.1	2,111.4	19.4	25.1	16.7
19.02	Biscuits, pastry, Macaroni	1,238.9	3,341.4	941.5	16.5	44.6	14.2

Source: GATT Schedule XXXVII-Turkey

Budgetary outlay and quantity reduction commitments of export subsidies for selected commodities are presented in Table 2. The total export subsidy for the agricultural products amounted to \$ 140 million in the base period. The only important feature in the export subsidy commitments is related to wheat, barley, and wheat flour. Turkey preferred frontloading, and used rather high levels of outlay commitments for these products in the starting year of reduction. The government is involved in support purchases in wheat and barley and hence this situation will give Soil Products Office the opportunity to export the surplus at subsidized prices for at least next five years.

Domestic subsidies in agriculture showed cyclical fluctuations during the last 15 years. Total budgetary transfer range was between 1.3-5.3 billion dollars per year which corresponds to 11-18% share in agricultural GDP during the 1979-1994 period (OECD, 1994). The base period for the calculation of AMS in the GATT agreement (1986-88) coincided with the of the low periods of agricultural support in Turkey.

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Annexes

STRUCTURE ANNEX

Table-.1: Distribution of agricultural employment according to age and sex

Region	Age Groups																			
	Toplam		9-12		13-15		16-19		20-24		25-34		35-44		45-54		54+			
	E	K	E	K	E	K	E	K	E	K	E	K	E	K	E	K	E	K		
Central North	11%	11%	9%	6%	8%	8%	9%	10%	9%	9%	10%	11%	11%	11%	11%	11%	11%	14%	14%	
Agean	15%	16%	10%	14%	10%	11%	12%	13%	11%	13%	14%	14%	17%	17%	17%	18%	17%	18%		
Marmara	8%	7%	3%	3%	4%	4%	7%	6%	6%	8%	8%	8%	8%	9%	9%	9%	9%	9%	8%	
Mediterranean	11%	11%	9%	7%	10%	12%	11%	11%	12%	13%	11%	12%	13%	11%	13%	11%	13%	11%	10%	9%
North East	8%	7%	8%	7%	11%	9%	10%	9%	11%	7%	9%	7%	7%	7%	7%	6%	6%	5%	6%	
South East	13%	10%	26%	24%	23%	18%	18%	13%	16%	13%	14%	12%	13%	10%	10%	8%	7%	5%		
Blacksea	16%	21%	19%	20%	18%	21%	16%	20%	15%	19%	14%	20%	14%	20%	17%	21%	18%	23%		
Central East	10%	10%	12%	12%	10%	11%	9%	11%	11%	10%	11%	9%	9%	8%	9%	10%	11%	10%		
Central South	8%	7%	5%	5%	6%	6%	7%	7%	9%	7%	8%	8%	8%	7%	8%	7%	9%	8%		

Figure 1: Distribution of Land owned by Firms according to size of firms (interms of decare).

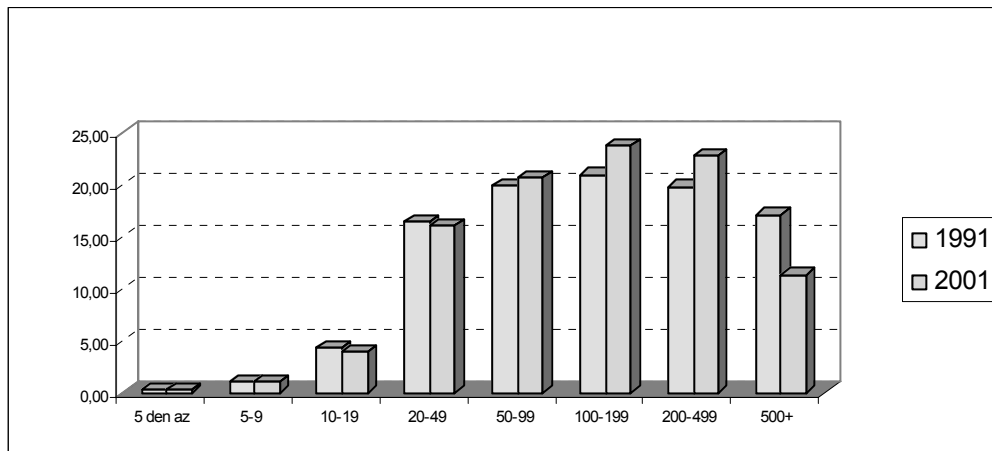


Figure-2: Distribution of Greenhouses among geographic regions

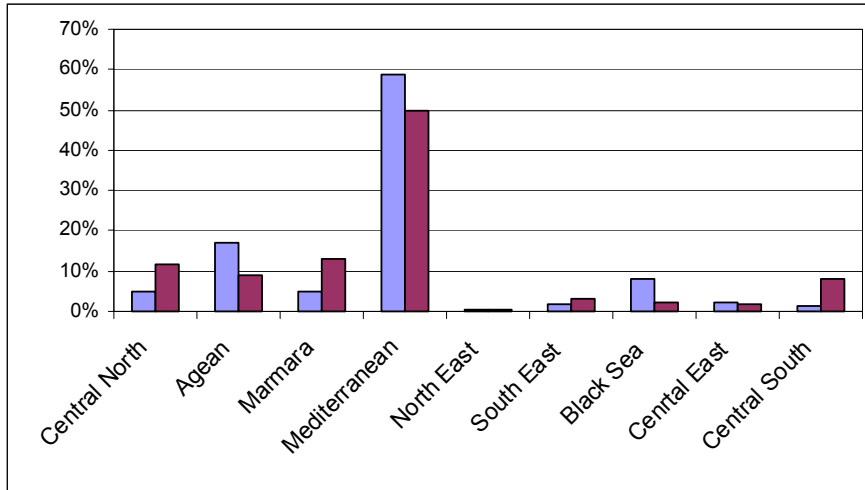


Figure-3: Regional distribution of male and female agricultural labor

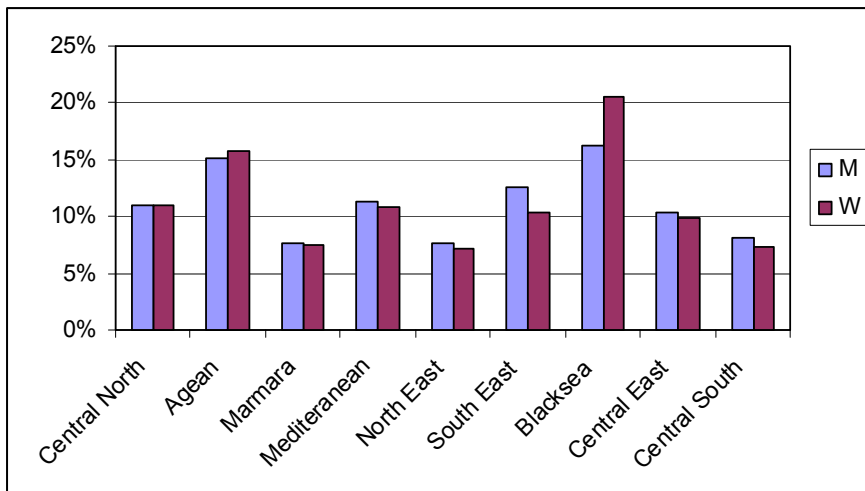
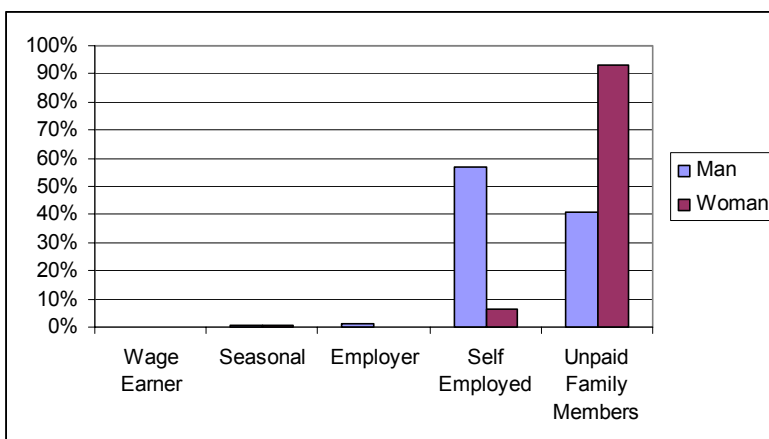
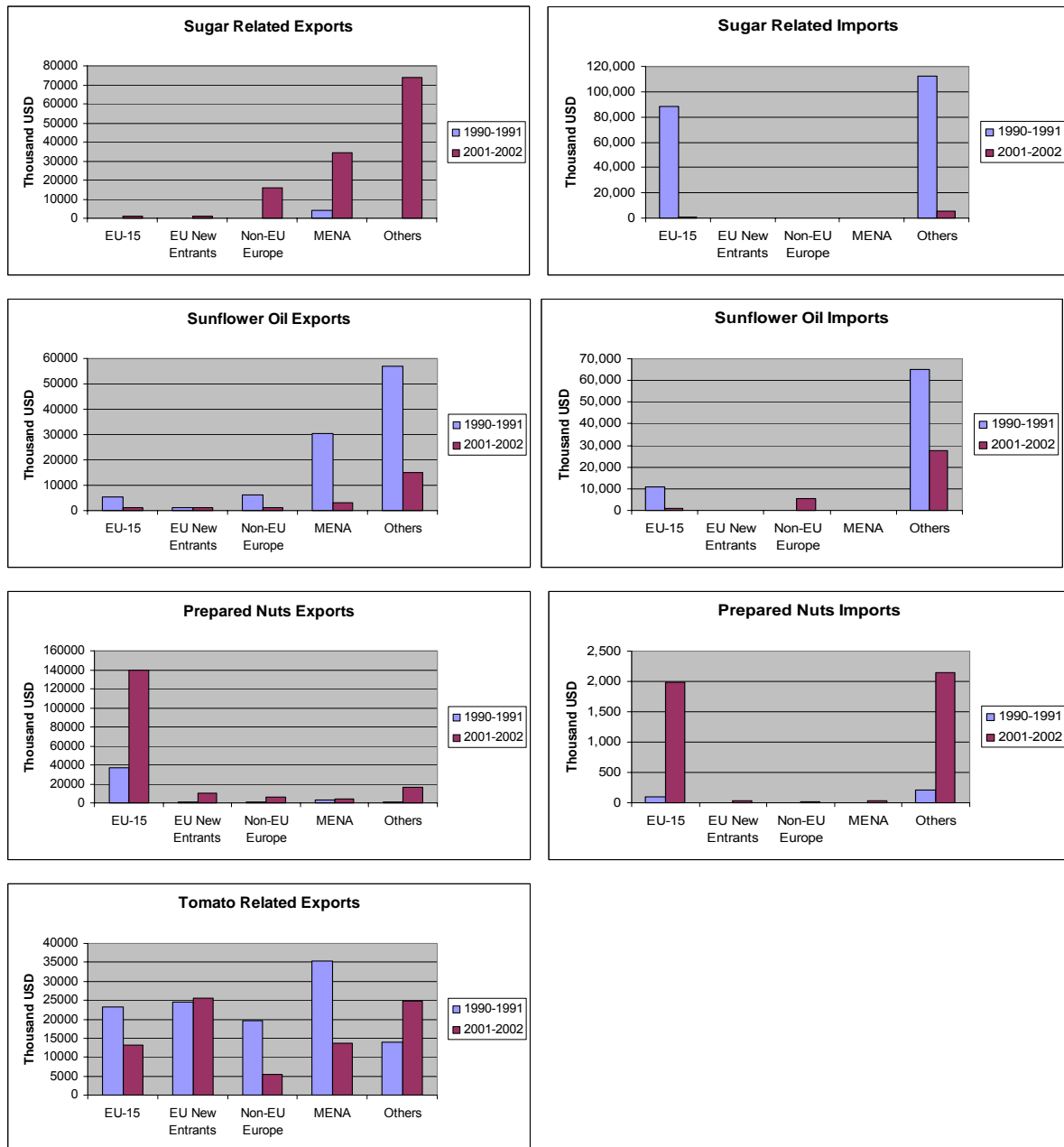


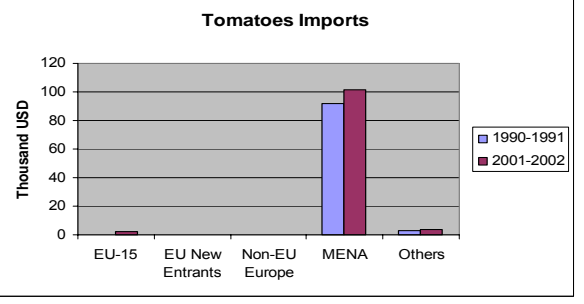
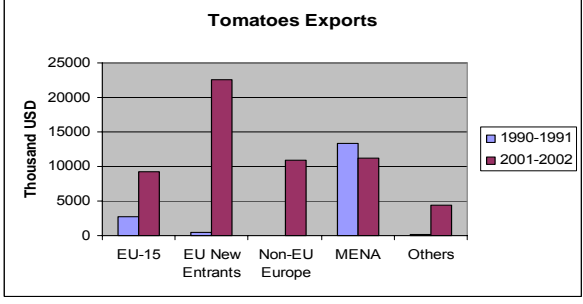
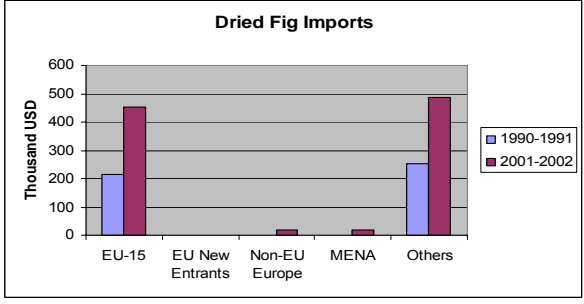
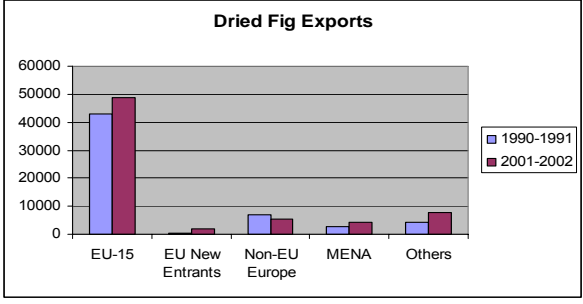
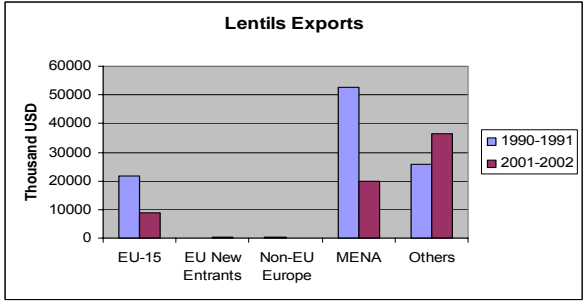
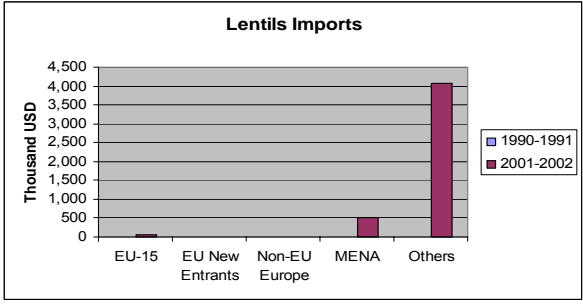
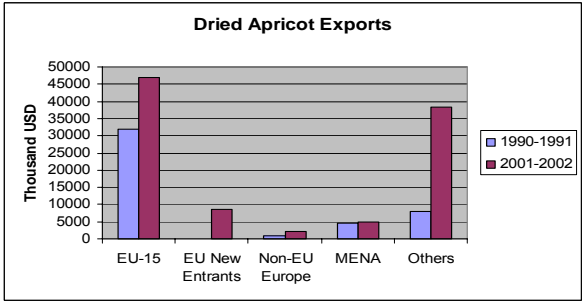
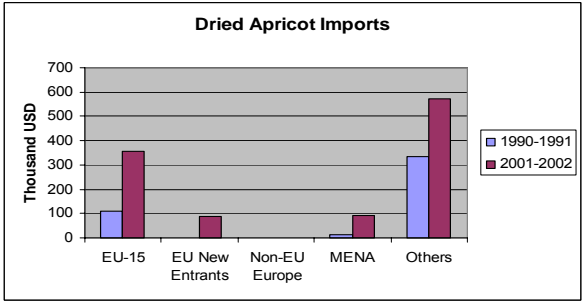
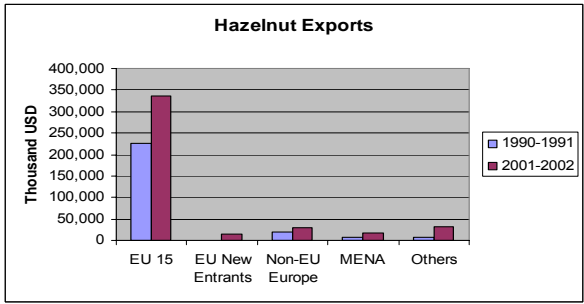
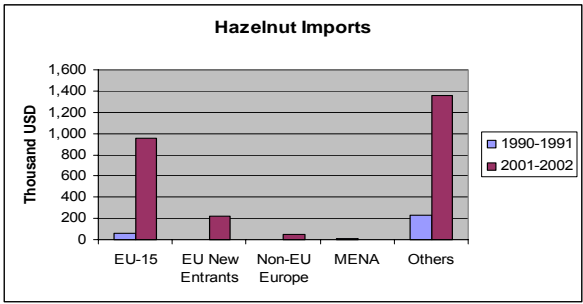
Figure-4: Employment status of agricultural labor

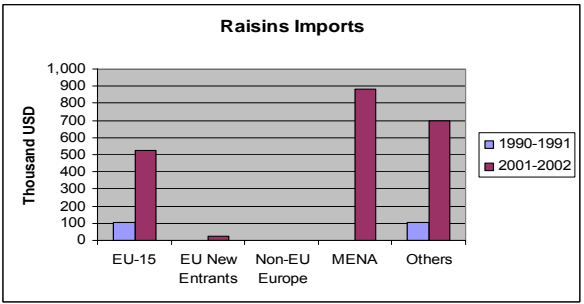
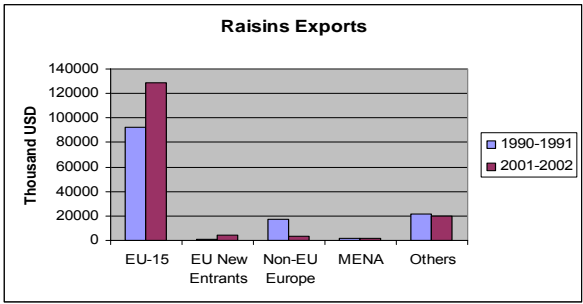


TRADE DESTINATION ANNEX

Figure-1: Distribution of exports and imports of selected items according to destination







PRICE ANNEX

Figure-1: Comparison of prices of selected items in different stages



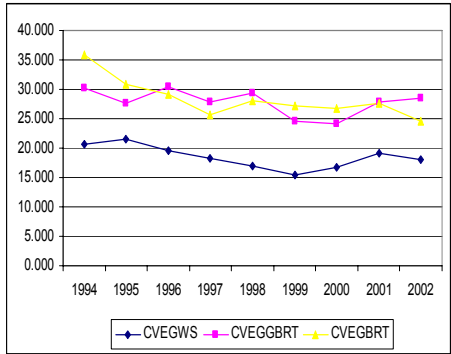
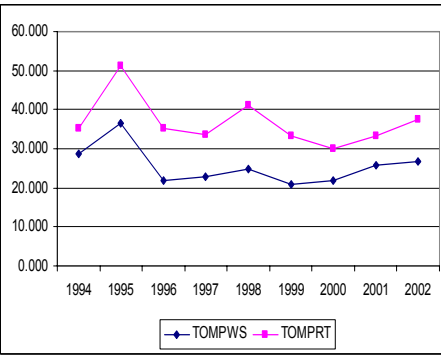
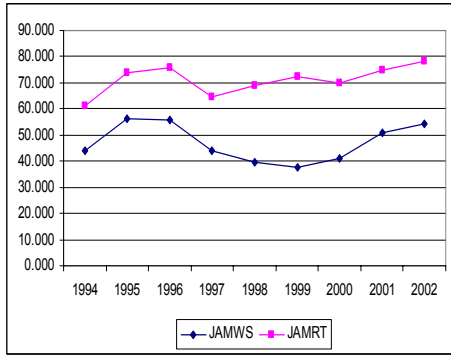
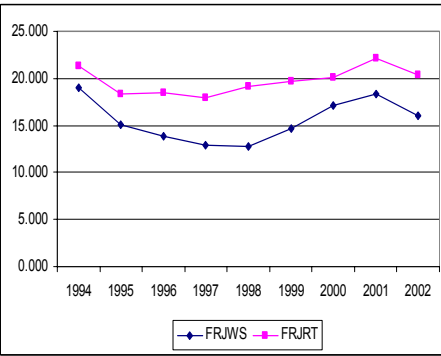
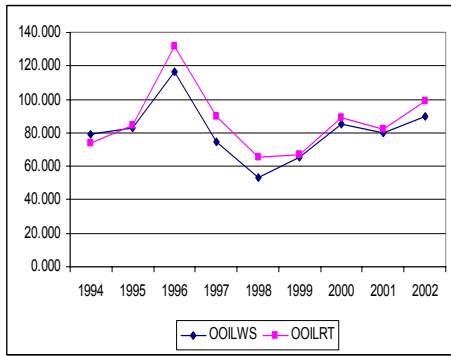
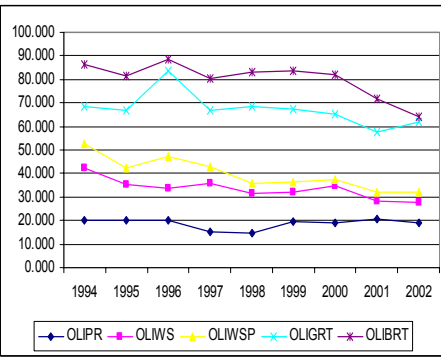
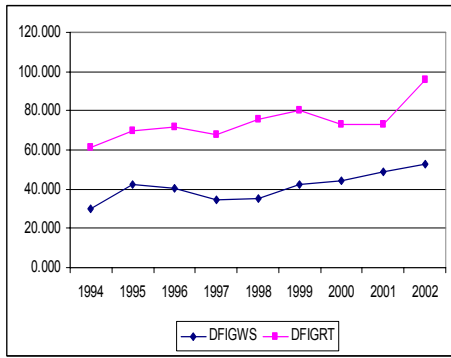


Table A1. Prices of Selected Vegetables, fruits and processed products, 1994-2002 (NTL/MT in 1994 prices)

		1994	1995	1996	1997	1998	1999	2000	2001	2002
Melon	Producer	5.252	4.768	5.460	5.044	5.049	5.049	5.929	5.886	5.120
	Wholesale	11.573	5.821	4.275	4.685	5.244	4.787	4.411	5.590	3.489
	Retail	9.661	9.376	9.940	10.388	9.517	9.255	8.690	9.005	7.147
Watermelon	Producer	4.319	3.899	4.023	4.007	4.097	3.565	4.102	4.656	3.788
	Wholesale	3.797	2.936	2.423	2.876	3.625	3.092	2.769	3.302	1.843
	Retail	6.389	5.715	5.997	5.762	6.311	4.842	5.622	6.278	4.079
Cucumber	Producer	7.206	6.189	5.992	6.758	7.125	6.619	6.360	7.116	5.810
	Wholesale	8.754	5.290	6.070	6.471	6.518	5.617	6.151	5.546	4.960
	Retail	12.780	12.357	12.059	13.174	11.638	10.322	10.528	9.920	9.579
Eggplant	Producer	6.964	7.026	6.587	7.308	8.174	6.729	7.245	6.677	5.795
	Wholesale	11.990	11.016	10.580	9.744	8.606	7.165	8.223	6.714	8.431
	Retail	18.065	22.416	20.259	20.420	18.160	13.996	14.319	11.830	13.942
Tomatoes	Producer	7.541	4.945	6.996	5.965	5.215	4.606	5.490	5.880	4.842
	Wholesale	14.338	7.414	7.253	7.242	9.122	7.539	7.951	7.692	7.074
	Retail	15.264	14.885	13.927	13.736	15.003	10.667	12.741	11.560	11.687
Apples	Producer	8.231	8.487	6.946	6.167	6.703	7.274	8.376	7.959	8.644
	Wholesale	8.123	8.885	7.944	8.509	6.841	10.308	9.295	8.741	12.032
	Retail	15.046	16.957	15.605	15.284	12.996	16.816	15.141	14.978	20.625
Apricots	Producer	13.585	13.027	13.595	11.696	12.286	12.258	12.243	11.436	12.570
	Wholesale	15.342	18.907	13.770	21.284	16.776	16.660	12.184	11.556	14.894
	Retail	23.785	29.517	20.468	41.951	29.047	27.858	20.771	24.007	23.380
Peaches	Producer	12.993	16.483	12.213	10.227	11.825	12.797	11.232	11.291	11.470
	Wholesale	13.117	13.544	10.153	14.454	11.237	14.095	9.058	10.198	12.264
	Retail	20.175	27.478	21.309	27.569	21.322	23.730	16.879	18.544	19.102
Lemons	Producer	9.686	10.186	10.945	8.814	9.836	9.153	10.162	9.754	9.107
	Wholesale	10.148	9.720	15.370	13.968	12.903	9.879	10.549	8.123	9.234
	Retail	21.703	22.814	33.979	31.166	25.429	23.808	23.192	19.955	21.880
Oranges	Producer	6.823	7.410	7.325	5.570	4.764	5.567	5.844	5.029	4.568
	Wholesale	6.764	7.360	8.637	7.266	6.658	7.121	6.061	8.132	6.443
	Retail	13.226	14.360	15.739	14.865	13.550	13.648	11.491	13.320	13.111
Mandarins	Producer	7.800	7.515	7.017	5.953	5.951	5.950	6.098	6.040	5.801
	Wholesale	7.751	6.950	8.219	9.557	7.416	6.318	6.437	6.446	6.385
	Retail	14.447	14.444	16.788	17.209	14.750	13.072	12.823	12.672	12.965
Grape fruits	Producer	6.418	6.951	6.568	4.875	4.322	5.148	4.748	5.469	4.292
	Wholesale	7.098	7.576	8.636	6.909	5.096	4.793	4.770	5.916	5.727
	Retail	12.152	13.062	13.567	13.650	11.465	9.570	9.244	9.747	10.468

Table A1. Prices of Selected Vegetables, fruits and processed products, 1994-2002 (NTL/MT in 1994 prices) (continued)

		1994	1995	1996	1997	1998	1999	2000	2001	2002
Pistachios	Producer	73.376	82.141	70.403	54.419	56.231	70.129	86.722	75.402	68.778
	Wholesale	55.960	58.065	78.583	46.951	47.658	58.340	127.162	78.195	67.794
	Retail	161.007	181.562	212.620	156.568	200.395	194.203	267.300	178.181	152.955
Hazelnuts	Producer (in shell)	46.136	29.882	30.082	33.693	36.341	37.895	38.057	35.124	25.899
	Wholesale (in shell)	48.971	34.838	25.665	37.532	35.285	38.740	35.416	38.525	23.705
	Wholesale (unshelled)	114.793	64.328	62.539	75.328	70.472	85.727	82.997	96.381	58.454
	Retail (unshelled)	208.013	149.611	143.739	199.764	194.362	193.414	177.941	194.362	153.904
Fresh Grapes	Producer	15.583	9.646	8.694	6.963	8.881	9.160	9.479	9.901	10.983
	Wholesale	12.913	9.665	7.799	9.145	10.184	9.462	8.582	9.582	13.591
	Retail	16.376	17.240	16.941	18.753	17.229	16.275	14.540	16.652	18.578
Raisins (packaged)	Wholesale	26.490	23.608	18.245	15.086	12.701	20.195	20.933	17.333	19.297
	Retail	47.897	52.840	53.302	50.636	47.917	48.365	51.799	44.344	46.280
Dry figs (packaged)	Wholesale	30.231	42.205	40.288	34.754	34.925	42.534	44.403	48.681	52.858
	Retail	61.613	69.880	71.442	68.131	75.449	79.921	73.024	73.348	95.678
Olives	Producer	19.989	20.084	20.100	15.350	14.653	19.316	19.006	20.390	18.837
	Wholesale	42.589	35.358	33.761	36.095	31.687	32.267	35.017	28.280	27.746
	Wholesale (pickled)	52.882	42.475	47.029	42.853	35.704	36.300	37.687	32.018	32.202
	Retail (Green)	68.230	67.074	83.691	66.938	68.273	67.531	65.370	57.785	61.899
	Retail (Black)	86.295	81.541	88.745	80.375	83.333	83.907	82.108	71.913	64.380
Olive oil (refined)	Wholesale	79.242	83.181	116.700	74.586	53.517	65.186	84.865	79.540	89.475
	Retail	73.704	84.734	131.536	89.657	65.116	67.319	88.947	82.044	98.637
Fruit juices (packaged)	Wholesale (1lt.)	19.038	15.103	13.804	12.890	12.767	14.688	17.086	18.311	16.010
	Retail (1lt.)	21.270	18.348	18.432	17.992	19.147	19.677	20.053	22.184	20.405
Jams etc.	Wholesale	43.790	56.239	55.692	43.910	39.586	37.725	41.189	51.008	54.463
	Retail	61.164	73.784	75.628	64.743	68.751	72.319	70.153	74.757	78.287
Tomato paste	Wholesale	28.555	36.398	22.007	22.847	24.844	20.939	21.814	25.743	26.770
	Retail	35.316	51.167	35.081	33.750	41.238	33.208	30.009	33.249	37.395
Canned vegetables	Wholesale	20.683	21.609	19.665	18.340	16.866	15.529	16.665	19.114	18.005
	Retail (green beans)	30.288	27.684	30.412	27.745	29.359	24.646	24.126	27.817	28.417
	Retail (peas)	35.777	30.886	29.167	25.653	27.937	27.153	26.704	27.672	24.598
Wine	Wholesale (70cc)	24.243	19.557	22.669	24.609	21.458	27.738	36.616	38.181	40.604