



Restructuring of agrifood chains in Turkey: regoverning markets agrifood sector studies (A)

A. Ali Koç, Jean Marie Codron, Yavuz Tekelioglu, Sylvaine Lemeilleur, Selma Tozanli, Safak Aksoy, Celine Bignebat, Rana Demirer, Nisa Mencet

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Turkey

Restructuring of agrifood chains in Turkey

Turkey national and local meso-study (Modules 1 and 2 of C1) Report

Module 1

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and

Module 2

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France and CIHEAM-IAMM, Montpellier, France**

2007

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Summary

This report examines the supply chain restructuring and trends in the food market in Turkey, in particular in the fresh produce sector, to reveal the driving factors behind this restructuring (demand side, supply side, policies, and institutions) and the threats (opportunities) to (for) the exclusion (inclusion) of small scale farmers in modern marketing channels. Using the tomato market as a case study, the report analyses the restructuring of the fresh produce markets from three dimensions. The drivers that cause the exclusion/inclusion of small farmers in the restructured fresh produce market are also explored. The actual inclusion/exclusion of small farmers in the restructured fresh produce market is also evaluated.

The restructuring began in Turkey's retail sector in the agro-food chains and then continued to the wholesale level and the manufacturing sector. It is documented that the food retailing restructuring process started with the foundation of Migros Türk in 1954 in Istanbul (as a joint venture between the Swiss Migros Cooperatives Union and the Municipality of Istanbul), Gima Department Stores in 1956 in Ankara (as a state parastatal), and Tansaş in 1973 in Izmir (a municipality-owned business in Izmir) respectively. Restructuring continued slowly until the 1990s, then gained momentum in the early 1990s and took off during the second half of 1990s and the early 2000s.

Increased consumer purchasing power and education levels, a family structure that has evolved into a nuclear family, and the increasing number of households who own more advanced consumer durables have been among the main drivers from the demand side. Foreign direct investment (FDI), privatisation (Gima, Tansaş, and Migros), tax policies, investment subsidies aimed at reducing unrecorded commerce, economic crises (1995 and 2001), and food-quality and safety-related laws have been the main supply-side drivers.

The Turkish food retail sector is still relatively fragmented. Traditional family-run outlets (*bakkals*), and open-air markets and bazaars are still widespread all over the country. These traditional retailers are especially important in rural areas and small towns where modern grocery formats do not yet exist. Hypermarket and supermarket food retail sales comprised about 40 per cent of total food retail sales in 2002 and currently approach 50 per cent, but this figure is higher in cities where per capita income is above the national average, especially cities with populations of more than 1 million. The number of active large food-retailer groups (local, national, regional, and global actors) is increasing, as are the number of stores, of new retail formats, and of department stores, as is national and local concentration. The top five food-retail chains have about 40 per cent share of fast-moving consumer goods.

Many big retail chains have recently said that they have an aggressive investment plans for the sector.

Concentration will increase rapidly during the next few years. It is recognized that this evolution has been at the expense of small local players. Even if foreign grocery retailers such as Metro, Tesco and CarrefourSA are increasing their presence, domestic chain Migros Türk remains the market leader (it was purchased in February 14, 2008 by Moonlight Capital owned by BC Partners in UK). There are other local successful retail chains, such as BIM and YIMPAS, that are effectively competing with global actors. During the severe economic crisis in 2001 the hard-discount stores became more attractive. The hard-discount format will be further encouraged by potential “chain markets and commercial centre” laws that aim to regulate opening times, locations, terms of payment, and private brands in food retailing. The eleventh version of draft law, sent to Prime Ministry by the Ministry of Industry and Commerce in February 2008, it is expected to send the parliament after approval of cabinet, aims to regulate retail business to create a favourable environment for small and medium-sized retailers.

In addition to convenient locations and new retail formats, the modern retail sector has focused on commodity differentiation and price-based marketing, since price is still an important element of competition in food marketing. But the demand for quality is increasing, partly because per capita income is increasing and education levels are rising, but also because of public authorities’ efforts to regulate food safety. Fresh produce (given its importance in household expenditure and its contribution to retail turnover and net profit), is seen as a key commodity by retailers. They have thus started to search for economies of scale, quality and safety guarantees, year-round supply, and reasonable prices for fresh produce.

According to the 2001 Agricultural Census, there are about 283,000 farms producing tomatoes. During the past three or four decades, the area planted to tomatoes (greenhouses or protected), covered areas, yields, and the use of new technology (such as ready-to-plant seedlings, bee pollination, and drip irrigation) have all increased. On the other hand, tomato production became very risky due to high price volatility in market.

At the retail level, in all but a few cities about 80 per cent of fresh fruits and vegetables (FFV) are marketed through open-air markets, according to interviews conducted with authorities. FFV represents about three to five per cent of hypermarkets’ total sales (10–15 per cent for supermarkets). Nationally about 15-20 per cent of the total volume of FFV marketed volume is through supermarkets, but this share is higher in large cities and is increasing rapidly.

The wholesale market *-(Toptancı hali)* play an important role in marketing FFV. The wholesale markets’ law obliges all FFV for wholesale or retail sale to pass through the *Toptancı hali* ~~wholesale market~~ *halis*, apart from a few exemptions (including sales that do not exceed 500kg of produce (the threshold depends on municipal rules), FFV for export, organic products, and producers unions’ sales, which are partly exempt). Farmers deliver their fresh produce to agents registered at the *Toptancı hali* ~~wholesale market~~ *halis*, who then sell it to wholesalers or retailers for a commission. According to the law, a hali agent’s fee

cannot exceed eight per cent of the selling price, which in practice means that the commission is usually eight per cent because of the lack of competition among hali agents, as it is now almost impossible for new agents to join. Including the agent's fee, the total deduction from the producer's price is up to 14.4 per cent (but on average is 13.5 per cent, which excludes a social security payment). The *Hhali* agents have a federation and lobby on the institutional framework issued by the Ministry of Industry and Commerce, Ministry of Finance and Ministry of Agriculture and Rural Affairs such as the draft chain markets and commercial centre law, draft wholesale market law, producers' association law, value added tax (rate and exemption), food law and regulation and other food-safety-related regulations.

Because most growers and holdings are small, buyers are pushed into dealing with the *Hhali* agents to get the quantity they need at the price they want to pay, even for export, where there is no restriction to do so. *The Hali* agents are also well connected in the rural areas (via dedicated collectors or through wholesale markets near the growers), so are able to provide the volumes required and to some extent the quality.

During the last decade some of the wholesale agents and wholesalers have become progressively more dedicated or specialised, servicing supermarket chains or food services (hotels, restaurants, fast food). They began to work in many different locations, and to invest in and improve their warehouse, storage, and transport, and to expand their capacity. In many places *Hhali* agents provide credit and transportation to the growers, but don't invest in quality and safety standards.

In this context, the entry and exit of *Hhali* agents tends to accelerate because it is a very risky activity, and because they need to pay growers in advance, even if prices are highly volatile.

The Wholesale Markets Law (that exempts some types of unions and growers from fees) is a step forward as it foresees alternative intermediaries to *hali-Hal* agents and encourages the creation of producers' cooperatives. Article 6 stipulates that when taxable retailers deal directly with cooperatives (certified as Producers' Unions by the Ministry of Industry and Commerce), the certified cooperatives must register the variety, quantity sold, and price of commodity at the nearest wholesale market no later than the following trading day. These producers' unions can also act as agents on the wholesale markets and can market their members' produce. If the system is organized well and becomes sustainable, the village cooperatives can be allotted post-harvest handling facilities and the problem of strong middlemen can be resolved somewhat.

In spite of the financial advantages that the new arrangement could spell for producers' unions, very few of them have managed to collect and sell their members' produce. Only agricultural credit cooperatives have started to take advantage of this new opportunity. Supermarkets with their own FFV purchasing unit within the wholesale market have started to buy directly from the cooperatives. The main type of intermediary used seems to depend on the proximity of the *Hal*, but during the last two decades the number of FFV wholesale markets has increased in many production regions. Furthermore, during the last decade some

of the middlemen and wholesalers have progressively moved from the consumption regions to the production regions where the new wholesale markets are being established.

The system has two major problems. The first is that the wholesale market system is considered by many large Turkish retailers to be too rigid and under excessive government control. While the level of unrecorded business is known to be very high, the big retailers are the only ones who need formal invoices in their operations, so they are really reined in by the law and have to pay high fees (15 per cent) to bypass the wholesale market and contract directly with producers. Recently some of them tried to buy directly from the cooperatives to reduce the fees that the producers have deducted from their selling price (which are 14.4 or 13.5 per cent). The second problem is that the public complains about the price mark-up from producer to consumer. Furthermore, implementing new standards is very complex and the intermediaries, such as the *Halhali* agents, have no incentives to promote quality. They do provide credit in the form of cash in advance to producers who have no access to the traditional banking system, so their role in tomato production is essential.

Large retailers have launched new strategies to compete with the traditional retailer system and to try to differentiate by promoting quality. With few exceptions supermarkets in Turkey focus on the physical attributes of the fresh produce that they market, mostly product diversity, appearance, size, and homogeneity. Most retailers have not yet included consumer packaging and safety issues when they define quality standards. Safety standards are not clearly defined or efficiently enforced by the public authorities, perhaps because the great majority of Turkish consumers are not yet sensitive to food safety concerns and do not demand high sanitary quality in the food that they buy.

The international retailer Kipa–Tesco, started as a regional chain in Izmir then recently widespread in Egean, Marmara, Western Mediterranean and Central Anatolia regions, recently began to sell organic food and plans to source produce from growers certified in integrated pest management (IPM) or EurepGAP, and the Metro Group began to improve safety in FFV using ‘controlled greenhouse production’ or Good Agricultural Practice (GAP) in 2006.

Open-air market sellers (in cities or districts) play an important role in FFV marketing, and sell 60 to 65 per cent of produce. These traditional FFV retailers have begun to work together to compete with the new chains. They have converted open-air markets into permanent markets with modern infrastructure and facilities (as of May 2006, there were 16 permanent covered markets, four permanent open-air markets, and 30 non-permanent open-air markets in and around the city of Antalya). Vendors now wear an agreed uniform and so can be easily recognised by clients. Members were trained in marketing, consumer demand (behaviour), and new food retailing legislation (including food quality and safety). They are now having standardised and well-equipped small and medium-sized caravans. The markets are providing clients with free transportation by bus, and have launched an advertising campaign on a local TV channel. The advertising focused on how shopping is enjoyable at open-air markets, and convenient in their new permanent market buildings.

At the export and processing levels the market has also been restructured. During the last two decades both fresh and processed tomato exports significantly increased and the export destinations diversified. At the export level, quality and safety standards are in place and comply with EU standards. Eastern European countries and the Russian Federation have also raised their requirements in terms of quality and safety. Exporters have been forced to organize the supply at the farm level and provide safety test results issued by an accredited laboratory for each lot to the importing country authorities.

Finally, the tomato-processing sector is highly concentrated and has its own association. Supply is managed through contract farming and high-level international quality standards are followed. The small, highly fragmented, and unorganized growers find it hard to comply with the quality and safety standards, although those who do get involved in contract farming are more likely to adopt traceability. Because of their financial and size constraints many small and medium-sized enterprises do not comply with the quality and safety standards set by national government, retailers, and foreign importing companies.

Small scale fresh vegetable and fruits growers, along with wholesalers and traditional retailers, are at great risk of being excluded from the market because of their lack of properly designed policies, collective action, and marketing strategies. The producers' main constraints include their small size, access to credit, and lack of advisory services, and their inability to ensure input quality, manage highly volatile price risks, and act collectively. The challenges include their inability to supply the large volumes of quality-assured product that is demanded by modern retailers. In the light of our observation and findings, they will have to overcome all of these constraints in order to survive in the sector.

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1 Introduction

0.1 The role of agriculture in the national economy

Agriculture still plays an important role in Turkey's economy, even though its share of the economy has decreased significantly during the last few decades. The agricultural sector made up about 22 per cent of GDP at the beginning of the 1980s, but that has declined to around ten per cent in recent years. It is still an important buffer against urban unemployment. —However, nearly 40 per cent of the economically active population lives in rural area (SPO, 2008), while agricultural employment accounted for 25 per cent of all employment in November 2007, according to the participation of the workforce as of November 2007 (TUIK, February 2008). Agricultural and food products made up around ten and six per cent of Turkey's export earnings in 2005 and 2006 respectively, when total export value was US\$73.5 billion (2005) and \$85 billion dollars (2006) (SPO, 2007).

0.2 The role of horticulture (FFV)

Turkey can produce a great variety of fruits, vegetables, and nuts. The production of fruits and vegetables has grown and surpassed 36 billion tonnes in 2003 (Tuik, 2006). Fresh vegetables production has doubled, from 11.7 billion tonnes in 1984 to 23 billion tonnes in 2003. Tomatoes are an important part of that total volume, and production grew from four billion to 9.8 billion tonnes between 1984 and 2003, or 33.9 per cent of total fresh vegetables production in 1984 and 42 per cent in 2003. Tomatoes are produced all over the country but the particularly important production areas include Bursa–Balıkesir on the Marmara coast; İzmir–Manisa–Aydın in Western Anatolia; Antalya–Mersin–Muğla–Hatay on the Mediterranean coast; Sanliurfa in south-eastern Anatolia, and Tokat in central-eastern Anatolia. Greenhouses have become particularly important since the beginning of the 1980s, mostly encouraged by government measures such as subsidized credit or repayment of part of the investment. Some production zones that were already using greenhouses, such as Antalya and Mersin provinces and the hinterland of İzmir, have become real off-season producers.

Table 1: Tomato production by major producing provinces ('000 metric tonnes)

Province	'000 tonnes	%	
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Antalya	1,712	18.1	West Mediterranean
Bursa	1,011	10.7	Marmara
Manisa	715	7.6	Aegean
Mersin	656	6.9	East Mediterranean
İzmir	586	6.2	Aegean
Çanakkale	501	5.3	Marmara
Sub-total	5,180	54.9	
Total (2004)	9,440	100	

Source: TUIK (Agricultural Summary Statistics, 2005) and (Agricultural Structure: Product Value and Prices, 2004)

0.3 Objectives and key research questions

The main objectives of this research are (1) to evaluate the supply chain restructuring and trends in the agrifood sector in Turkey, particularly the fresh produce sector; (2) to determine the driving forces behind these changes (demand side, supply side, policies, and institutions); and (3) to identify threats and opportunities for the inclusion/exclusion of small-scale farmers (producers) in the restructuring of the fresh produce market using tomato as a representative case. The main research questions are ‘Which are the drivers that cause the exclusion/inclusion of small farmers in the restructuring of the fresh produce market in Turkey?’ and ‘How do we characterize the inclusion/exclusion of small farmers in restructuring the fresh produce market?’.

0.4 Organization of the report

This report describes how the national food system in Turkey has changed. It is based partly on desk studies carried out by the research team (collecting secondary data and literature review on FFV production design and retail sector structure; and reviewing existing policies and legislation). These data are enriched with primary information and data collected through personal interviews conducted with wholesalers, supermarket chains, traditional retailers, and farmers’ unions. The study then focuses on recent trends in FFV markets; the supply chain and changes in its structure are described based on the outcomes of a workshop organized at Akdeniz University that assembled the sector’s main public and private players. The third part of the report is dedicated to a meso-analysis drawn from the participatory rural appraisals (PRAs). The last part summarises the main findings and proposes options for the micro-study.

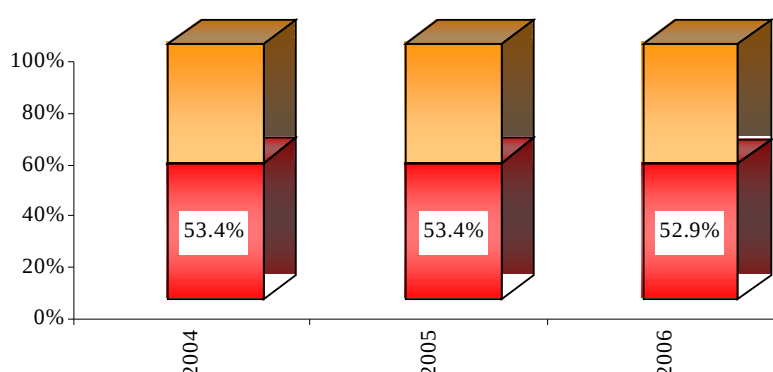
1 Changes in the national food system: restructuring food retailing

1.1 Major changes in the food retailing system and drivers of change

1.1.1 Size of the food retailing market

Food remains an important component of retail sales, and during recent years has accounted for more than half of total sales (see Figure 1). However, as in other emerging economies, the proportion of retail sales occupied by food is declining annually, as the share of other non-food spending gradually increases in household consumption budgets. Not surprisingly, the proportion of retail sales spent on non-food items is highest in urban areas.

Figure 1: Percentage share of grocery sales in total retail sales (2004–2006)



Source: Authors' work based on the data extracted from Table 2

Table 2: Total and grocery retail sales (2004 and 2006)

	2004		2005		2006*	
	Total	Grocery	Total	Grocery	Total	Grocery
Total sales (US\$ million)						
Total retail sector	106,339	56,797	129,242	69,029	143,045	75,643
Modern retail sector	38,427	32,875	41,185	35,234	45,668	38,646
Per capita sales (US\$)						
Total retail sector	1,544	824	1,855	991	2,031	1,074
Modern retail sector	558	477	591	506	649	549

Note: Grocery sales includes food, beverages, tobacco products and drugstore items

* Estimate

Source: Planet Retail, March 2006

1.1.2 Evolution of the retail sector in favour of large retailers

The structure of the food retailing sector in Turkey is largely based on micro-grocers (*bakkal*, *manav*, etc.) that were established as family businesses. This started to change during the 1950s with state initiatives to create ‘self-service’ retail chains, first under the Sümerbank brand (which was a state-owned company that included a commercial bank, textile manufacturing plants and consumer textile product stores], 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, particularly in Istanbul where the cooperative had its headquarters. The country’s largest conglomerate, Koç Holdings, bought the capital of the Turkish affiliate of Migros from the Swiss cooperative in 1975, keeping the right to use the name ‘Migros’, but only in Turkey. In 1956 the supermarket (including a textile department, a food department and an electro-domestic department) Gima A.S. was established in Ankara as a state owned initiative, and sold textiles, electro-domestic and food products. However the true take-off of supermarkets in Turkey took place in the early 1990s with the arrival of Carrefour in 1991 and which established a joint venture with the second-largest Turkish conglomerate Sabancı Holdings in 1996 and its name become CarrefourSA in 1997 (Ozcan, 1997 and www.carrefour.com.tr).

Hypermarkets (supermarkets of more than 3,500m²) have recently emerged as key players in Turkey’s retail sector. There were 41 in 1995, which grew to 151 in 2002 and 160 in 2005. The first discount stores appeared in the mid-1990s and have spread throughout Turkey (see Table 3).

Table 3: Evolution of the number of food retail outlets in Turkey (1996–2006)¹

¹ According to the definition of A.C. Nielsen, Turkey’s retailing sector can be categorized into six main outlet types based on sales area: Hypermarkets (above 2,500m²); big supermarkets (between 1,500 and 2,000m²);

	1996	1998	1999	2000	2001	2002	2003	2004	2005	2006
Hypermarket (>2,500m ²)	37	91	110	129	149	151	143	152	160	164
Big supermarket (1,500–2,000m ²)		210	251	306	357	368	367	396	454	504
Supermarket (400–1,000m ²)		464	567	726	835	909	968	1082	1258	1567
Micro supermarket* (<400m ²)	1279	1370	1493	818	2299	2577	2764	3179	3673	4239
Mid-size market (50–100m ²)	10750	12192	13247	13232	13210	13555	14537	15197	15076	14774
Grocery (<50m ²)	164366	155420	148925	136763	128580	122342	124283	122781	129397	116857
Total organized firms	176432	169747	164593	152974	145430	139902	143062	141705	150018	138106

* 1996 figure represents the total number of all markets with a surface over 99 m²

Source: A.C. Nielsen, 2006.

Although the share of *bakkals* (small grocers of less than 50m²) in the total number of food retail outlets decreased from 93.2 to 86.3 per cent between 1996 and 2005, this segment still boasts more than \$12 billion in sales. The growth in larger outlets has had an impact on *bakkals*, with increasing numbers having closed. It is expected that the market share of *bakkals* will fall below 35 per cent by 2008. The discount store format has been one of the most attractive investments in the retail sector in the last few years, as shown by the rapid rise of BIM, a Turkish company founded in 1995 with US and Saudi banks as the other main shareholders. BIM focuses on discount stores and has grown into one of the largest retailers in Turkey, with more than 1,200 stores (as of 2005) scattered throughout the country. BIM is sometimes called the ‘Turkish Aldi’.

1.1.3 Consolidation of large supermarket chains in large cities

In Turkey, supermarkets first developed in the cities with more than three million people: Istanbul, Izmir, and Ankara. Recent investments have targeted medium-sized cities such as Adana, Gaziantep, Bursa, Kocaeli, Konya, Mersin, and Antalya, where the population is more than 600,000 or where the commerce, manufacturing, and tourism sector is intensive (Planet Retail, March 2006). Traditional local grocery stores, because they are convenient, will continue to play a major role in most large cities, but especially in rural areas, where 35 per cent of the population still live. The modern retail sector has not yet developed in all parts of the country because income is very unevenly distributed among the regions and provinces.

supermarkets (between 400 and 1,000m²); microsupermarkets (between 100 and 400m²); mid-size markets (between 50 and 100m²); and traditional groceries (*bakkals*) (less than 50m²).

For instance, in many parts of south-eastern and eastern Anatolia, where some provinces produce less than 0.1 per cent of gross domestic product (GDP), supermarkets are still the exception (Codron et al., 2003).

There are about 50 chains operating in the Turkish retail business (USDA, 2004). An important concentration process during summer 2005 deeply restructured Turkish retailing: Carrefour, who entered the Turkish market in 1991 and formed a joint venture with Sabancı in 1996, bought the Gima supermarket chain and Migros acquired Tansaş supermarkets. At the same time, local players like Kiler, an Istanbul-based supermarket chain, bought 51 per cent of the capital of Canerler, the largest supermarket chain in Ankara region (Kobifinans, 2005). In 2003 the British leader Tesco also entered the Turkish retail sector by buying the Izmir-based medium-sized regional chain Kipa. So by fall 2005 Migros remained the leader in the Turkish retailing sector, with an estimated turnover of more than \$2 billion, while Carrefour, with a cumulative turnover of \$1.5 billion (including former Gima see Table 4) became the challenger. Turkish supermarket chains are at present sufficiently developed to be interested in moving into neighbouring countries and investing abroad. Migros started expanding in 1997 under the name Ramstore, first in Azerbaijan, and then in Kazakhstan, Russia, and Bulgaria, while Gima opened its first store in Romania in 1998 (www.fibaholding.com.tr, 02.17.2008) and later in Russia.

Table 4: Profile of the major large retailers in Turkey (2007)

Company name	Type of outlet	Ownership	Turnover (US\$ million)	Number of outlets (2007)	Location
Migros ŞOK	Hyper and supermarkets, discount stores (ŞOK) and e- trading	Turkish	1,420 (domestic sales 2004) ¹	676	Nationwide and international (20)
BİM	Discount stores	Turkish, US, and Saudi Arabian	1,073 (2004) ³	1707	Nationwide
Metro	Cash and carry / club centres	German	1,064 (2004) ³	10	Istanbul (3) Izmir, Bursa, Ankara, Adana, Bodrum, Alanya, and G.Antep
Real	Hypermarkets	German	n.a.	11	Ankara, Gaziantep, Bursa, İzmit, İstanbul, Adana, Antalya, and Konya
CarrefourSA CarrefourSA express(former Gima) DiaSA	Hyper and supermarkets, and discount stores	Turkish and French	1,430 (2005) ³	19 100 450	Nationwide
Tansaş Macro (acquired by Tansas in 2005)	Hyper and supermarkets	Turkish	801 (2004) ¹	253	Nationwide
Yimpaş	Hyper and supermarkets	Turkish	350 (2003)	42	Nationwide and international (2)
Tesco-Kipa Kipa-express	Hyper and supermarkets	UK–Turkish	303 (2004) ³	25 31	Nationwide
Pehlivanoğlu	Supermarkets	Turkish	120 (2001)	89	Aegean region
Maxi	Hypermarkets	Turkish	150	8	Istanbul and Tekirdag
Afra	Hyper and supermarkets	Turkish	150 ²	29	Konya, Antalya, Karaman, Malatya, Samsun and international (1)
Beğendik	Hyper and supermarkets	Turkish	70 (2003)	12	Kayseri (7), Ankara (3), Nevşehir, and Kırşehir
Özdilek	Hyper and supermarkets	Turkish	62 (2003)	8	Bursa, İzmir, Izmit, and Afyon
Kiler	Supermarkets	Turkish	n.a.	126	Istanbul, and Ankara
Marketim Bin&Bir	Small supermarkets	Turkish	60	92 150	Marmara Region
Contour	Hypermarkets	Turkish	40 ⁴	4*	Istanbul (3), and Ankara

Booker (JV)	Cash and carry	Turkish and UK	n.a. ⁴	12*	Istanbul, Izmir, and Kocaeli
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Source: Authors, obtained from the firms' website and Tozanli et al., 2006

1. Acquired by Migros in 2006

2. Acquired by Makromarket in October 2007

33. Birsen Altayli, Reuters 16 August, 2005 <http://yatirimci.akbank.com>

4. Firm's annual financial reports (*2004 data)

1.1.4 Still a weak concentration ratio in the modern food retailing sector

The Turkish retail food sector is still relatively fragmented. Traditional family-run outlets (*bakkals*), open-air markets, and bazaars are still widespread all over the country. These traditional retailers are especially important in rural areas and small towns where modern grocery formats do not yet exist. The top five players' market share is about 40 per cent in fast-moving consumer goods,² and their market share of all supermarkets plus hypermarkets is approaching 50 per cent (USDA, 2004). During our interviews most of the leading companies outlined their aggressive expansion plans, aiming to capture, in the very near future, an increasing share of the retail food market. During Carrefour's 10th anniversary celebrations in March 2006 the president of Sabanci Holdings, (one of the largest business groups and the main Turkish shareholder of CarrefourSA in Turkey), said that the number of CarrefourSA stores will double during the next three years. Tesco-Kipa opened three additional hypermarkets in 2006 (Antalya, Denizli, Çanakkale, and Konya). The group has aggressively invested new stores during 2007 and as of February 2008, there are 25 hypermarkets and 31 discount stores called Express belongs to the Kipa-Tesco (<http://tesco.kipa.com.tr/Kurumsal.aspx?Cat=Cat0>., 02.17.2008). It is obvious that consolidation in food retailing will continue very aggressively and traditional players will be forced to stay out of the food retailing business.

In June 2007 the CEO of the largest conglomerate, Koç Holdings, declared to the press that the group had decided to give up the food retailing business and that JP Morgan would be negotiating to sell the group's holdings. They expect to sell Migros at the beginning of 2008. Carrefour (with its partner the Sabancı Group), Kiler (regional domestic player), BIM, the Russian Retail group (Alfa), and the Agrokor retail chain from Croatia have all expressed interest in Migros (Sabah, no date).

Finally, the domestic regional supermarket chain AFRA, based in Konya and with 35 outlets, is being bought by an Ankara-based domestic regional supermarket chain called Makromarket. The agreement between two chains surfaced in October 2007. Before the acquisition Makromarket had 66 outlets. In September 2007 Makromarket also purchased the Uyum supermarket chain (based in Istanbul). After these acquisitions, Makromarket will have 130 outlets (Makromarket Website, September 2007).

² It is estimated by A.C. Nielsen Turkey that the market share of modern retail in the fast-moving consumer goods market was about 35 per cent in 2005 (remaining is traditional retailers), and will be 55 per cent in 2010.

Further consolidation is expected and the market is likely to become increasingly more concentrated.

Table 5: Main features of the top five retailers in Turkey in 2005

Company	No. of stores	Selling area (m ²)	Retail banner sales 2005 (US \$million)	Market share (%)
Migros Türk*	1,122	517,783	2,004	5.0
CarrefourSA*	454	319,358	1,430	4.1
BİM*	1,200	420,000	1,248	3.1
Metro Group*	25	250,000	1,100**	2.7
Yimpaş*	55	294,272	930**	2.3
Top 5 retailers total	2,856	801,413	6,709	16.2
Other retailers			34,146	82.9
Organized retail sector			41,185	100

*Company sales are gathered from the companies' websites.

**Estimate

Source: Planet Retail Website, March 2006

Even if foreign grocery retailers such as Metro, Tesco, and CarrefourSA are increasing their presence, Migros Türk still remains the market leader thanks to the continued expansion of its *Şok* discount stores, which have been one of the few formats that benefited from the economic downturn (Planet Retail, March 2006).

Migros is coming under greater pressure from fast-growing BIM, with their network of 1,200 stores. The third-largest local player is the hypermarket operator Yimpaş, incorporated in Yozgat, a medium-sized Central Anatolian city. It showed tremendous development during the last few years and left Tesco/Kipa quite behind US\$340 million turnover for 2005, becoming the fifth-largest retailer during second half of 2000s. Opportunities for hypermarket development are becoming increasingly limited in Turkey, however, and the group is now placing a greater emphasis on expansion outside its domestic borders. Within Turkey, Yimpaş is likely to look at opening smaller stores (personal communication, interview with Yimpas CEO).

1.1.5 Increasing pressure from discounters

Although hyper- and supermarkets have shown spectacular growth during the last few decades, they somehow lost their momentum due to the economic downturn provoked mainly by the rise of discount stores, which are increasingly popular and widespread across the country. Discount retailing has only existed in Turkey since 1995, when BIM and *Şok* were launched. Nonetheless, both of the sector's leading companies have been able to build up large outlet networks, and discount stores are now the major growth format in the country.

The economic recovery during the last two years did not stop either the popularity or the rapid proliferation of the discounters. The market leader in Turkish discount retailing is BIM, a discount chain very much in the mould of Aldi – not surprising since the chain was set up by a former Aldi manager and some of the management staff were trained in Germany (Planet Retail, March 2006). As with the efficiency-oriented model Aldi, BIM sells only a limited product range, and sells the goods in cardboard boxes. The number of stores has expanded rapidly since the first one opened in 1995, and the company is now aiming to have 1,200 stores by 2005. Geographically, the network is concentrated in north-western Turkey. In order to counter further development of the discounters, most of the leading domestic and foreign grocers in Turkey have launched their own discount store chains and they are all pursuing ambitious expansion policies.

Global retailers such as CarrefourSA, Tesco, and Metro, for example, are opening new stores in relatively rich provinces and sub-provinces in Anatolia. Under growing pressure from the rising popularity of the discount stores, price-cutting strategies are increasingly adopted by global retailers. Most of the retail leaders now focus on expanding their discount store chains rather than their hypermarkets.

1.2 Drivers for retail restructuring

Urbanisation and closeness to the urban marketplaces: Turkey has a very fast-growing urban population, mainly due to rural–urban migration in the 1950s and 1980s. Only 29 per cent of the total population in 1970 was urban, while in 2007 it is 70 per cent (TUIK, ADNKS, 2008b). There are ten metropolises (with more than one million inhabitants) and more than 100 cities with a population of more than 100,000. Urbanisation brings deep socio-economic and cultural changes; more women are economically active, there are more nuclear families, and greater distances between housing and workplaces. These developments greatly influence the demand for individual cars,³ deep-freezers, refrigerators, microwave ovens, and other user-friendly cooking and stocking devices, ready-to-eat or user-friendly processed food and drinks, and large retail outlets where consumers can do all their shopping to save time.

Increasing per capita income: There has been an eight-fold increase in per capita income since the beginning of the 1970s (see Table 6). Even if there is a skewed distribution of income among the different socio-economic classes, this increase has a very positive impact on global consumption patterns of urban households.

Table 6: Per capita income in Turkey (\$)*

³ Even if there is an important increase in the number of individual cars, overall car ownership is still very low in comparison with Greece and Portugal (78 cars per 1,000 people in Turkey, versus 394 in Greece and 398 in Portugal).

Year	Per capita income** (GNP)	Per capita income GDP	Purchasing power parity (PPP) GDP
1970	519		938
1980	1,570		2,319
1990	2,684	2,686	4,628
2000	2,963	2,963	6,814
2001	2,134	2,134	6,153
2002	2,662	2,662	6,550
2003	3,425	3,425	6,808
2004	4,256	4,256	7,629
2005	5,042	5,042	8,141
2006		5,526	

Source: State Planning Organization (SPO) Economic and Social Indicator 1950-2006. **at current price GNP.

*Current GDP in New Turkish Lira converted to US dollars using the exchange rate in that year and divided by population in the same year.

Higher education level and demand for quality: The general level of schooling changed during the second half of the last century. The percentage of the population who had graduated from secondary school, high school, and university increased from 4.8 per cent, 5.2 per cent and 1.3 per cent in 1950/1951 to 64.3per cent, 54.7 per cent, and 14.5 per cent in 1996/1997, and to 96.4 per cent for secondary school and 36.8 per cent for universities in 2003/2004.⁴ Simultaneously, in 2000 41 per cent of all students were female (SPO, 2008). The changing shopping behaviour of consumers and their increasing demand for high-quality products stem directly from rapid urbanization, increasing education levels, per capita income growth, increasing numbers of wage-earning women, and changes in the family structure towards a nuclear family. Consumers are gaining quality awareness, and those with high purchasing power do not hesitate to pay higher prices for good quality. Organic and pesticide-free food is gaining popularity in both supermarkets and open-air markets. Şişli Municipality in Istanbul pioneered the allocation of a market for organic farm produce in 2006. Price-sensitiveness remains one of the main drivers of food demand in Turkey, however, and pushes retailers towards price-based competition.

⁴ The last reform in the Turkish education system, in 1997, combined elementary with secondary school education, so primary education was expanded from five to eight years and this changed the statistical data for the 2003/2004 period.

1.3 Supply-side drivers

Strategy of international players and foreign direct investment: Important changes occurred at macro-economic level and in government policies when structural adjustment policies were applied and the Turkish economy was opened in 1980. In the agrifood sector, the food processing and retailing sub-sectors changed greatly with the arrival of large foreign companies from France, Germany, Holland, Belgium, and the USA. The first foreign investment in food retailing was made by the French company Prisunic who collaborated with the Municipality of Istanbul to open the BELPA hypermarket in the Merter district of Istanbul in 1990. Carrefour started its joint venture with Sabanci Holdings in 1993, while the Dutch hypermarket chain Spar arrived in 1994. Kipa hypermarkets, a Belgian–Turkish joint venture, opened its first hypermarket in Izmir in 1995, followed by Metro Group, who arrived in 1998. In 2003, the British company Tesco entered the Turkish retail market by buying the Kipa supermarket chain.

Table 7: Investments made by foreign firms in the food-retailing sector in Turkey between 1993–2004 ('000 US\$)

Years	Carrefour SA (shopping centre)	Real hypermarket	DiaSA supermarket	Metro Grosmarket (shopping centre)*
1993	33,032			
1995	33,318			
1996	55,676			
1997	27,295			
1998	60,455	29,500		
1999	39,187	29,500		
2000	29,850	29,500		
2001	109,767	29,500		
2002	24,866	29,500		
2003	95,154	29,500	4,039	
2004	43,281	29,500	5,440	3,500
Total	551,881	236,000	9,479	3,500

*Istanbul (Bakırköy)

Note: This data was obtained from the Undersecretary of the Treasury, General Directorate of Foreign Investment, and concerns solely the retail companies that had government aid for their investments.

Table 8: Recent investments made by foreign companies in the food-retailing sector in Turkey in 2005

Country	Company	(%) *	US\$ ('000)
The Netherlands	Metro Grosmarket shopping centre (Istanbul)	100	3,077
England	TESCO-Kipa	81.5	7,878
Germany	REAL hypermarket	100	94,788
Spain	DiaSA supermarket	60	24,727
	Metro Grosmarket shopping centre (Ankara)	10	559
	CarrefourSA shopping centre	60	81,509
Total			212,538

* Share of foreign company

Note: This data was obtained from the Undersecretary of the Treasury, General Directorate of Foreign Investment and concerns solely the retail companies that had government aid for their investments.

Strategy of Turkish private players: The modern retailing sector in Turkey is dynamic, and has been driven by local players since the 1950s. This dynamism is one of the major ‘pull factors’ that attracted FDI in the 1990s, combined with improvements in demand-side drivers, so it is worth mentioning the development of some of the domestic players during the last few years. The leading Turkish food retailer is Migros Türk, founded in 1954 as a joint venture between the Swiss Migros Cooperatives Union and the Municipality of Istanbul. In 1960 the large Turkish industrial conglomerate Koç Holdings bought the municipality’s shares, and the majority shares were transferred to the Koç Group in 1975.

From then on Migros began to work differently and rapidly increased its outlets in Istanbul. Very active nationwide, it established the necessary infrastructure in 1980 to procure fresh produce directly from producers and farmers thanks to its network of Fruits and Vegetable Purchasing Offices. ~~(Migros, no date)~~.

During the 1990s the Koç Group, with an aggressive growth strategy in international markets, expanded beyond national boundaries toward the Black Sea countries and to Russia with the Ramstore name, as it could not use the Migros name outside of Turkey (part of the contract that it signed with Swiss Migros Cooperative). Domestically was unable to buy out the Gima supermarket chains, so it acquired a regional supermarket chain instead, Tansaş, a valuable brand from Izmir province. Being very sensitive to market signals, Migros Türk was the first hypermarket chain in Turkey to enter the discount sector to compete with the very popular BIM outlets in the mid-1990s.

Table 9: Evolution of Migros outlet network in Turkey and abroad (1998–2005)

Outlet category	1998	1999	2000	2001	2002	2003	2004	2005
Hypers	1	2	2	3	3	3	3	3
Super (MMM)	21	24	26	29	30	33	33	33
Super (MM)	38	47	51	55	58	68	72	79

Super (M)	49	53	63	66	65	73	72	79
Discount (Şok)	107	187	291	292	273	273	283	311
Ramstore**	7	12	17	16	23	34	44	61
Total	223	325	450	461	452	484	507	566
Super (Tansaş)	96	108	195	189	185	184	199	210
Discount (Makro)		6	6	6	6	7	7	7
Grand total	319	439	651	656	643	675	713	783
Net selling area (1,000m²)								
Migros	180.7	236.3	270.3	294.0	299.2	324.3	330.5	343.0
Tansaş								134.2

**Hypermarkets in shopping centres. ** The share of Koç Holding in Ramstore (50 %) was purchased by Enka group in September 2007 then Enka sold Ramstore to France Auchan group (Hurriyet Gazetesi, December, 2007).*

Source: Authors' work based on information obtained from company's headquarters.

In 2006, Migros opened 61 new stores: 6 Migros supermarkets, 12 Tansaş, 1 Makro, 34 Şok outlets in Turkey, and 8 Ramstore outlets abroad (Radikal Newspaper, July 25, 2006). This brought the number of Ramstore supermarkets to 68, mainly in Russia, Bulgaria, Azerbaijan, Kazakhstan, and Macedonia.

Gima was the first multi-store to open in Ankara, in 1956, and was founded as a partnership of the Agricultural Bank, Turkish Grain Board, and Güneş Insurance Company. This chain, which was one of the most common department stores with a grocery department in Turkey, was privatized in 1993. It had 57 stores in 22 provinces. It was purchased jointly by Bilfer Mining Company and Dedeman Tourism in 1993, and then sold in 1997, to Fiba Company. CarrefourSA acquired the Gima Retailing Group from Fiba Co. in July 2005 for \$132.5 million, together with its Endi discount stores network. This acquisition pushed CarrefourSA to challenge for the top position in the 2005 national ranking of retailing companies in Turkey, up from fourth place.

Tansaş was established in 1973 by the Municipality of Izmir. It became the leading retail chain of the Aegean Region and the second-largest chain in Turkey after Migros by the late 1990s. The company was sold to Doguş Group in 1999, one of the leading conglomerates in Turkey. Under Doguş Group management, Tansaş gained a foothold in Istanbul in September 1999 by acquiring the Bonus chain of four stores, and opened four more in the city by the end of that year. In January 2000, Tansaş acquired the Macro supermarket chain, which had 15 stores in Istanbul. In 2003, the company operated in three regions with 220 stores, equating to 125,155m² of sales area and 4,067 employees in the Aegean, Marmara, and Central Anatolia regions, and with three types of store: hypermarket, supermarket and discount. The success of the company was one of the main reasons for its acquisition by Migros in 2005.

Table 10: Tansa~~ss~~ outlet network in Turkey

	2001	2002	2003
Number of outlets	195	191	191
Total sales area (million m²)	136.0	125.2	120.2
<i>Market share of Tansas (in terms of value)</i>			
Hypermarkets		3.0	3.0
Supermarkets		10.2	9.8
Discounters		3.3	2.8

Source: Euromonitor, 2004

Government policies supporting the retail sector: Since 1985 successive governments have supported the modern retail sector, but mainly those with a certain format and size. The government's aim was to increase tax revenues thanks to greater sales while reducing the level of unrecorded commerce.

In the mid-1980s government support was granted to business centres, entertainment centres that host social events, and to the construction of two shopping centres through investment subsidies, credits, and tax reductions. Among the different retailer categories, hypermarkets have been the major beneficiaries of increasing government support since 1992. In 1994, almost all government support was captured by the hypermarkets being established in large cities, mainly in Istanbul. Over time, retailers from other regions also benefited from government support, which was oriented mostly toward importing the technology used by hyper and supermarkets (Ozcan, 1997).

2 Changes in the national food system: restructuring the tomato sub-sector (fresh and processed)

2.1 Main features of the FFV and tomato sub-sectors

2.1.1 Evolution of the overall FV sub-sector

According to the 2001 General Agricultural Census carried out by the State Institute of Statistics, there were about 736,5000 vegetable-producing agricultural holdings (open field and under cover). Of these about 40,300 grew vegetables under cover (Census of Agriculture, 2001 and TUIK, 2004). These growers were in Antalya (43 per cent), Mersin (21 per cent), Mugla (8.7 per cent), Izmir (3.6 per cent), Isparta (2.8 per cent), Adana (2.4 per cent), and Yalova (2.2 per cent). The Mediterranean region (with Antalya, Mersin, Mugla, Adana, Isparta, and Adana provinces) is the most important area for under-cover vegetable production, followed by the Aegean (İzmir) and Marmara (Yalova) regions. The 2001 Agricultural Census shows a total of about 1,986,000 vegetable (including under cover) and 1,249,000 fruit growers, and that the area allocated to these products is about 2.1 million hectares (371,500 hectares for vegetables) in 2001. Tomato growers, like most of the vegetable and fruit growers, are situated in the Mediterranean region (59 per cent), the Aegean region (17 per cent), and the Marmara-Central North central and northern Marmara regions no] regions (ten per cent). According to same census, there were 282,700 tomato growers in 2001.

3.1.2. Evolution of the tomato sub-sector

Tomatoes are an important part of the total volume of fresh vegetables produced in Turkey. They accounted for 26 per cent (9.8 million tonnes) of total production, and the value of the crop was 16 per cent of total production of fresh fruits and vegetables (or 38 per cent for vegetables only). Today, Turkey produces tomatoes year-round, thanks to their climate and micro-ecology. While off-season tomato production has traditionally taken place in the coastal Mediterranean region of the country, new types of off-season production take place during late spring in plateau areas and early fall in coastal areas. Seedlings are produced in the high plateau area during late summer in a controlled atmosphere, and planted out in the coastal region during early fall, enabling early fall harvesting. Open-field production is only practised during late spring and summer to meet the demands of both domestic fresh consumption and processing plants.

According to the latest data from the Ministry of Agriculture and Rural Affairs (MARA), 17,500 hectares of tomatoes were grown under cover in 2004, producing about 1,960,000 tonnes. This covered area (mainly greenhouses) constituted 8.5 per cent of the total tomato production area and 20.7 per cent of total national tomato production in 2004 (Keskin et al., 2006). A few years ago greenhouse tomatoes made up about 15 per cent of the total fresh tomato volume in Turkey (Sevgican et al., 2001). According to the ‘Tomato and Tomato

Paste Situation and Outlook: 2005/2006' report released by the Agricultural Economics Research Institute (Keskin et al., 2006), under-cover tomato production in 2002 was 94 per cent greenhouse (31 per cent glasshouse and 63 per cent poly tunnel (covered by plastic instead of glass) and 6 per cent plastic tunnels (Keskin et al., 2004). Tomato production makes up about 40 per cent of all horticultural production that is grown under cover.

2.2 Changes and drivers in the fresh tomato sub-sector

2.2.1 Major changes in the fresh tomato sub-sector

a. Alternatives uses

The production data, based on a consensus estimate of government institutions (area multiplied by yields) and published by TUIK, is for gross production. Of this gross total, 15 per cent of production is presumed lost during harvesting and marketing. About 20 per cent is processed into tomato paste/sauce, dried tomatoes, preserved/canned tomatoes, and other forms, while almost 62 per cent remains for fresh domestic supply. Turkish tomato imports are very low, not even 0.5 per cent of total supply. Finally, less than four per cent of the total supply is exported, but that can rise to around 12 to 15 per cent in the off-season, showing that the domestic consumption is high enough to absorb the formidable production of tomatoes.

b. Exports

In terms of value, fresh tomatoes made up 50.3 per cent of fresh vegetable exports and 13.8 per cent of FFV exports (FFV Annual Report of AKIB, 2006). There was a lot of diversification in tomato exports: Turkey exported 235,400 tonnes of fresh tomatoes (about 12–13 per cent of the greenhouse production), 183,000 tonnes of tomato paste, 8,300 tonnes of frozen tomatoes, 37,100 tonnes of peeled, preserved or canned tomatoes, 12,700 tonnes of ketchup, and finally 10,400 tonnes of dried tomatoes in 2004 (Keskin et al., 2004).

c. FFV local retail

In local fresh fruits and vegetables retailing, open-air street markets are powerful challengers to supermarket chains. The open-air markets' share is estimated to be around 20–22 per cent of the national food retail market. According to the authorities that we interviewed, at the retail level in all but a few cities about 80 per cent of fresh fruits and vegetables are sold through open-air street markets. Greengrocers (*manavs*) also have an important share resulting from the privileged trust-based relationship that they have with their consumers, even if their prices are high. The FFV share of modern retailers is estimated to be between three to five per cent of total hypermarket sales, (Coudel, 2003), but this share varies with the size of the store. This share was reconfirmed by interviews that the research team carried out in Carrefour, Migros, Kipa-Tesco, Metro, and Özdilek. The total volume of FFV that is sold through supermarket chains is estimated to be about ten per cent of the total FFV volume sold (Coudel, 2003). Based on information gathered by the research team, the supermarket's share

is currently around 15 per cent and higher in high-income cities. There is still a large potential to increase FFV sales in supermarkets, since their current market share is still low.

d. Tomato consumer demand: High level and diversification

Current per capita fresh and processed tomato consumption is relatively high in Turkey. On average Turkish consumers spend 20 per cent of their food budget on FFV, eating 230kg of vegetables and 100kg of fruit per person per year (Saunier-Nebioglu, 2000). From the 2002 Household Consumption Expenditure Survey (an electronic data file obtained from TUIK) we calculated that fruits and vegetables' share of food and non-alcoholic beverage expenditure is 23.6 per cent (8.8 per cent fruits and 14.8 per cent vegetables). It is also estimated from the same survey that households spend about 2.32 per cent of their budget on tomatoes and per person annual fresh tomato consumption is about 31 kg (TUIK, 2004). Consumers have very strong consumption habits for FFV, in particular for fresh tomatoes (in a variety of tomato-rich salads), a very rich variety of vegetable-based meal (prepared with fresh tomatoes), dried foods (dried beans, lentils, and a tomato soup that includes dried tomatoes or tomato paste or sauce⁵) and they also eat tomatoes for breakfast. In addition, demand is growing from the fast-food sector.

2.2.2 Drivers of major changes in the fresh tomato sub-sector

a. Production level

Tomato production in Turkey has increased tremendously during the last few decades, by nearly 2.5 times between 1984 and 2003 and 5.3 times since 1970. In addition, seasonality in production has disappeared during last decade. It is clear that this increase in tomato production has been possible in part because of improvements in the technology and production methods, but most of all it can be attributed to the expansion of the area under cultivation. The overall increase in tomato yield was 184 per cent for the period from 1960 to 2004, and the increase in the area sown for the same period was 378 per cent.

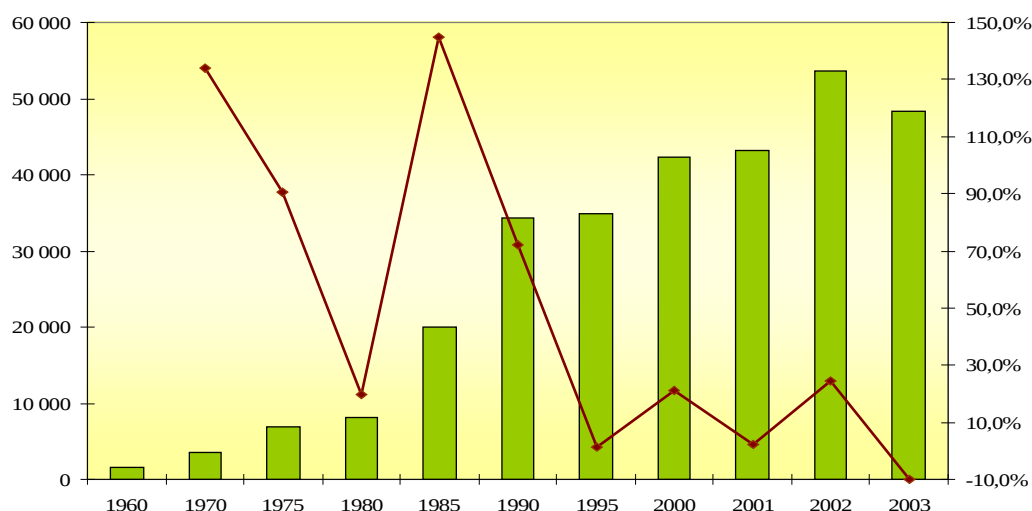
Yield: Hybrid seeds, seedlings, and an expansion in the growing area of both greenhouse and open-field tomatoes have been the main factors that have contributed to the growth in yield. Per hectare yield in Turkey (42.7 tonne/ha) was 55 per cent higher than the world average in 2003. Higher productivity ratios and increased yields can also be expected with the increase in greenhouse production, along with other types of protected cover production of fresh vegetables.

Greenhouse: Greenhouse tomato production started in the Antalya region in the 1940s, but the sector really took off in the mid-1970s, with the introduction of plastic covers in greenhouse construction (Aktas Cimen, Z., 2001). During the 1980s and 1990s growing fruits and vegetables under cover became particularly important as governments heavily encouraged this kind of production. Some production zones, such as Antalya, Mersin, and

⁵ According to expert estimates, the share of home-produced tomato paste consumption decreased from 60 per cent in 1985 to 29 per cent in 2003. This is an indicator that packaged and branded tomato paste is also used in rural areas (Yeni Para, 2005).

Muğla provinces and the hinterland of Izmir, which were already using greenhouses to grow fruits and vegetables, became real off-season production pools.

Figure 2: Evolution of the area under greenhouse production (1960–2003)



Source: Tozanli et al., 2006

In addition to the increase in yield and area, pest management, improved irrigation techniques, and the use of ready-to-plant seedlings are the other factors that contributed to production growth during the period.

Technology: A new variety of tomato was introduced, with a longer shelf life, which has reduced seasonality.

Organic agriculture: Organic agriculture gained importance during the 1990s, and there was a tremendous increase in the number of varieties, the area sown, and the quantity produced. While at the beginning of the 1990s only eight agricultural products were grown organically, by 2006 there were 210 (IGEME, 2004). First practiced in the Aegean region in the mid-1980s through contract farming, the area under organic agriculture expanded from 1,037 hectares in 1990 to 103,190 hectares in 2003.

The quantity of organically grown tomatoes is very likely to increase in the years to come. According to IGEME sources (2007), most of the current crop is processed into tomato paste for export. Overall about 80–90 per cent of organic produce is exported. Domestic consumers show little interest in these products because they are between 50 and 300 per cent more expensive than conventional products (IGEME, 2004). A comprehensive Organic Farming Law (No.5262) came into force from 1 December, 2004 in line with EU Regulation (Principals and Application of Organic Farming, EU Regulation 2092/91, 2092/91, 2005).

As was mentioned earlier, support and incentives for organic agriculture include an exemption from the wholesale market law (almost 134.5 per cent price advantage compared to conventional products), an investment credit subsidy (an interest rate of 7 per cent interest

versus 17.5 per cent) and higher rate of decoupling payment. —There is much evidence that larger firms outside the farm sector are investing in organic production. These investments will have significant implications for small-scale traditional producers in many sectors.

Policies and the tomato industry: The tomato production sector benefits from subsidized credit and rural development measures such as rural investment credits for organic farming, controlled greenhouse growing (Controlled Greenhouse Growers Regulations: Issued in the Official Gazette (December 27), 2003, No. 25329) production under GAP regulation, and drip irrigation. Chamber of Agricultural Engineers tries to carry out training, extension, and consultancies. Other important policies include border measures such as an export subsidy within WTO commitments and relatively high import tariffs.

Policies and collective action at the production level: The government tries to disseminate information through the producers' organizations. In 2004 a new law created the Agricultural Producers Unions (APU) (Issued by the Official Gazette (No. 5200), June 19, 2004). Their aim is to promote quality and sales for all agricultural products, and their regulations include: they must have at least 16 members; there can be only one APU for each commodity or commodity group at sub-provincial level; it must comprise ten per cent of sub-provincial level production by volume; and it must comprise five per cent of sub-district level production volume if the sub-province's share of total provincial production for that commodity or commodity group is 50 per cent or higher. Organic agriculture is exempt from the volume requirements. The APU's priority is to get support payments from government and also acting as a lobbying group].

2.2.3 Standards

Marketing standards: There are few current marketing standards in Turkey. The only commercial standards that have been developed and implemented by a few private large-scale retailers are size, colour, ripeness, and appearance (Codron et al., 2004).⁶

GAP standards: A new regulation covering the *Application of Good Practices in Agriculture*⁷ was prepared by MARA and became effective in September 2004, and Turkish GAP Standards became mandatory 1 January, 2005. A new Committee for the Application of Good Practices in Agriculture (ITUK) will take charge of the coordination and application of sanitary quality controls for produce and of certification activities (Good Agricultural Practices Regulation, 2004).

ITUK will also be in charge of coordination and enforcing regulation of agricultural holdings that are covered by 'Good Practices in Agriculture'. Those farmers who commit to using good practices have to keep a checklist and report on the fertilizers, pesticides, and insecticides that they use, and in return they will be kept informed about new methods and techniques in their area.

⁶ This was further confirmed during a personal interview with the FFV marketing manager of a big retail chain in 2006.

⁷ In accordance with Eurep GAP.

Besides agricultural production, companies and shops that supply modern agricultural inputs to farmers (seed, plants, breeds animals, bulbs, pesticides, insecticides, hormones, fertilizers, and veterinary medicine) are also regulated. They are obliged to keep notes on the quantity of inputs they sell, as well as the name and address of the buyer. Producers' associations, farmers, and merchants are all responsible for the application of these food safety rules.

2.2.4 Wholesale

The wholesale markets – called *Hhatal* (*Toptancı Hali*) – have a considerable role to play in the marketing of FFV. The 1995 Law No. 552 on wholesale markets obliges all FFV, (except where the volume does not exceed 500kg of produce (and according to the municipality's rules), and except for exports, organic products, and producers' unions, which are all exempt), to pass through the wholesale market. Farmers deliver their fresh produce to wholesale market agents registered at the *Halhathi*, who then sell it for a commission to wholesalers, retailers, food services buyers, and exporters after the price is recorded by the *Halhathi* directorate. The *Halhathi* directorate sets the minimum and maximum prices for each variety at 10_{am} every day except Sunday. The set price is normally determined by supply and demand conditions. Legally, the *Halhathi* agent's fee cannot exceed eight per cent of the selling price in the wholesale market. In practice the commission is usually eight per cent because there is a lack of competition among the *Halhathi* agents, since it is almost impossible for new agents to join unless existing one has to exit to the markets due to bankruptcy or other reasons. Including the agent's fee, the total deduction from the price is 14.4 per cent (but on average is more like 13.5 per cent, as most do not have to make the social security payment, see appendix Table A2). The *Halhathi* agents have their own federation which lobbies on a number of issues including wholesale market law, food law and regulation, other food safety regulation, VAT and Draft Supermarket Law.

Thus, the role of *Halhathi* agents dominates the commercialization of fresh tomatoes in Turkey.

Because most growers and holdings are small, buyers are pushed into dealing with the *Halhathi* agents to get the quantity they need at the price they want to pay, even for export, where there is no restriction to do so. The *Halhathi* agents are also well connected in the rural areas (via dedicated collectors or through wholesale markets near the growers), so are able to provide the volumes required and to some extent the quality.

In November 2006 the Ministry of Industry and Commerce prepared a draft law and invited all stakeholders and the public to comment on it. This law proposes to accept other producer organizations (whether agricultural cooperatives certified as a producer's union or producer's unions established through the producers' union law) as eligible to act as an agent in the wholesale market and to sell directly to registered retailers. It further proposes to allow retailers (registered as taxpayers) to buy FFV directly from either the producer's unions (established by the producer's unions law) or cooperatives (certified as producer's union by the Ministry of Industry and Trade). In these cases, the producer organization will invoice the buyer VAT at one per cent instead of the eight per cent currently in place, and the retailer will

not pay the 15 per cent of invoice value to the municipality where the transaction is carried out that they currently pay if they buy directly from producers outside the wholesale market.

In May 2007 some of the articles and clauses of the existing wholesale market law (Law No. 552) were changed by Law No. 5652. The amended law says that all types of producer organization are eligible to act as an agent in the wholesale market and that ten per cent of the 'stands' in the wholesale market will be allocated to producer unions. Municipalities gained the option to either rent or sell stands in the wholesale market, and are also authorized to either establish or give licences to third parties to establish wholesale markets. Other people and judicial entities cannot open wholesale markets without permission from the municipality. The amended law also includes another important article that orders that all fresh fruits and vegetables (except organic and other existing exemptions) offered for sale at a retail market have to have been bought from a wholesale market established in that place. Retailers are complaining about the amended law since they now have to pay an additional two per cent of the invoice value to the wholesale market (*Halhathi*) where the product is offered to retail selling although it is already paid where the product is bought. This article will considerably reduce the number of wholesale markets through consolidation, and will encourage producer's unions (certified cooperatives) to work together with retailers directly or enter into contracts with them, since the producers' unions can only sell their products to retailers registered as income tax payers within the municipality responsibility areas (Regulation 22878/ 15 January, 1997. Retailers and/or dedicated/specialised wholesalers also prefer to sign contracts with producer's unions since they can ship the product and retail it in other cities and escape paying a double tax to the municipalities if they have agreed with the producer unions to charge significantly lower commission fees (instead of the eight per cent agent fee in the wholesale market). In this case the retailers' procurement unit or dedicated/specialized wholesaler only need to inform *the HalToptanci Hati* and pay two per cent of the invoice value to the wholesale market where the product is offered to retail sellers.

In the domestic market, as large producers turn to export markets small landholders (around 0.2–0.3 ha for greenhouses and around three ha for open field production) become the food retailers' main suppliers. Most of the holdings are scattered, however, so to achieve economies of scale most of the large retailers contract *Halhathi* agents for their fresh produce procurement, through either the retailers' own FFV procurement office or a specialised wholesaler. The government established the *Halhathi* agents to fulfil this necessary intermediary function. Some of them became progressively more specialised wholesalers for supermarket chains or food services (hotels, restaurants, fast food). They started to work in many locations, to invest and improve their warehouse, storage, and transport facilities, and to expand their capacity. Sometimes they get involved in production or provide services at farm level (offering credit, consulting services for cultivation advice, and undertaking transportation to satisfy buyers' quality and safety demands). They have started to get involved in quality and safety standards since the food law and regulation came into force and loaded responsibility onto all the players in the marketing chain together (Food Law: 5179/2004, Regulation: 25771/2005).

In the past decade the turnover of *Halhali* agents has accelerated because it is a risky activity, with large amounts of money paid out before or during production and highly volatile market prices.

There are also new stakeholders in the channel. Important middlemen have progressively moved from the consumption regions (that is, Ankara and Istanbul) to the production regions' wholesale markets (Antalya and Mersin on the Mediterranean Coast).

There is also evidence that farmers sometimes have trouble getting paid by the *Halhali* agents,⁸ and as they need cash they sell instead to middlemen who pay cash but also low prices. The producers can also sell some of their produce directly (the amount is defined by the municipality) in an open-air market. The Wholesale Markets Law (that exempted some types of unions and growers from fees) is a step forward as it foresees alternative intermediaries to *the Halhali* agents and encourages the creation of producers' cooperatives. Article 6 stipulates that when taxable retailers deal directly with cooperatives (certified as Producers' Unions by the Ministry of Industry and Commerce), the certified cooperatives must register the variety, quantity sold, and price of commodity at the nearest wholesale market no later than the following trading day. These producers' unions can also act as agents on the wholesale markets and can market their members' produce. In this case VAT is one per cent instead of the eight per cent that applies if the transaction occurs outside of the wholesale market. The VAT is one per cent in practice even if the transaction occurs outside the *Halhali* since the unions usually own a place in the wholesale market and coordinate the transaction. If the system is organized well and becomes sustainable, the village cooperatives can be allotted post-harvest handling facilities, and the problem of strong middlemen can be resolved somewhat.

In spite of the financial advantages that the new arrangement could hold for producers' unions, very few of them have managed to collect and sell their members' produce. Only agricultural credit cooperatives have started to take advantage of this new opportunity. Supermarkets with their own FFV purchasing unit within the wholesale market have started to buy directly from the cooperatives.

The main type of intermediary chosen seems to depend on the proximity of the wholesale market *Halhali*, but during the last two decades the number of FFV wholesale markets has increased in many production regions.

The system has two major problems. The first is that the wholesale market system is considered by many large Turkish retailers to be too rigid and under excessive government control (Coudel, 2003). While the level of unrecorded business is known to be very high, the big retailers are the only ones who need formal invoices in their operations, so they are really reined in by the law as they have to pay high fees (15 per cent) to bypass the wholesale market and contract directly with producers. The second problem is that the public complains about the price mark-up from producer to consumer.

⁸ The expression *teneşir vade* (fatal delay) describes the difficulty landholders have getting their money from *Halhali* agents.

2.2.5 Retail level

Modern retailers place a high priority on selling FFV, but consumers in both large cities and small towns still prefer open-air street markets, driven by the belief that the produce comes directly from farms, so is fresher and cheaper. The large retailers are trying to challenge the open-air market sellers and greengrocers on these two main factors: they are lowering their prices and focusing their advertising on the freshness and the high quality of their products, while expanding their range by importing fruits and vegetables or by supplying produce earlier in the season (Coudel, 2003). The size of the FFV departments within supermarkets have been growing.

National production has grown into a highly specialised FFV industry with Antalya, Izmir, Mersin, and Bursa as the main producing areas. The concentration of most FFV growers in these specialised areas is a considerable constraint in the organization of procurement for large Turkish retailers (Codron et al., 2004). This constraint influences some of the large retailers to organize longer but less risky supply chains using a number of middlemen who procure the fresh produce and ship it to the retailers.

Supermarkets in Turkey focus on the physical attributes of their fresh produce, in particular the diversity, appearance, and size or homogeneity. Marketing strategies do vary depending on the customer being targeted (income level, and production or consumption area). Few retailers emphasise packaging and safety issues when they define quality standards because the FFV vary widely in size and freshness and consumers like to inspect the items individually. Despite the food legislation of the mid-1990s and the legislative infrastructure to control food quality, the general feeling in Turkey is that there is no official or serious control of the safety of fresh produce sold in the domestic market. Turkish consumers are not yet sensitive to food safety concerns and few demand high sanitary quality. Given this overall consumer reluctance, administrative staff takes no serious initiative to establish a regular monitoring system. Controls are carried out as a result of scarce consumer complaints, but they mainly cover post-harvest produce and concern the different stages of the marketing chain. Samples are taken from trucks transporting fresh produce, or when they arrival at the wholesale market, or at retail shops (personal communication, interview with M. Muharrem, OZDESTAN, October 2003). The 2005 food law puts quality and safety controls in place and is regularly enforced by legal authorities who sample at the retail level, including in the modern retailers. Co-responsibility for food safety throughout the chain is forcing all the players in the marketing chain to work together to implement GAP and traceability, particularly in the FFV sector.

The exception is Kipa-Tesco, a regional chain in Izmir that recently started to sell organic food and plans to source produce from IPM- or Eurep-GAP-certified growers (Coudel, 2003) and Metro Group, which started to improve the safety of FFV by using controlled greenhouse production (Metro Group launched in 2006).

Many stakeholders believe that the wholesale market law is a major constraint to the proper implementation of traceability, since all of the FFV must go through the wholesale market to

the retail outlet. Otherwise (except for producers' unions) producers must pay a 15 per cent tax if they want to contract directly with the retailer.⁹ Thus implementation of the standard is very complex and takes place through an intermediary such as a *Halhali* agent. Recently, some agents have tried to buy directly from cooperatives in order to reduce these taxes.

Traditional retailers and municipality's regulation of open-air markets include, for example, the Antalya City Municipality regulation decision number 391 of June 13, 2005. According to this regulation:

- An invoice given by brokers within the FFV wholesale market established by Antalya City Municipality (and belonging to the municipality) is valid or acceptable for selling FFV.
- Open-air markets in a district or city quarter must comply with Food Law No. 5179.
- Municipalities are the competent organization or authority for (Law No. 4367);
 - o inspection and enforcing of the FFV–WM
 - o establishing and managing FFV–WM;
 - o establishing and inspecting open-air district markets, and being responsible for food law and regulation; and
 - o determining the quantity of produce that is sold by producers at open-air district markets.

Open-air markets in cities or districts play an important role in FFV retail marketing. Almost 60–65 per cent of their sales are FFV. In recent years these traditional FFV retailers have responded to the new competition in a number of ways, such as this case from Antalya¹⁰:

- 1) Open-air markets were converted into permanent markets with modern infrastructure and facilities (as of May 2006, there are 16 permanent, covered markets, four permanent open-air markets, and 30 temporary seasonal open-air market in or near Antalya);
- 2) Sellers wear standard uniforms so that they can be easily recognized by clients.
- 3) Training courses were organized for members about customised marketing, consumer demand (behaviour), and new legislation on food retailing (including food quality and safety).
- 4) Standard and well-equipped small and medium-sized caravans were provided with long-term payment],
- 5) A free bus service was launched for shoppers.

⁹ The 1995 Law No. 552 on wholesale markets permits only retailers that are registered as income tax payers and producer cooperatives that are certified as producer unions.

¹⁰ There are 2,500 members of District Markets Tradesmen Chambers in Antalya (established in 1984). By the legislation governing these markets, 25 per cent of the marketplace has to be allocated to producers who are members of Chambers of Farmers and bring less than 100kg of produce. This information is based on personal interviews by the research team with the president of the Chamber.

- 6) An advertising campaign was run on local TV channels which focused on how shopping is enjoyable at open-air markets.
- 7) New permanent marketplaces were built in convenient locations.

2.2.6 Export level

Until the mid-1980s, exports were a function of production surpluses. Most production was for the domestic market. Since the mid-1980s successive governments have boosted export produce, although recent data show that for 2000–2003 only two to three per cent of the total tomato production (or 12–13 per cent of greenhouse production) is exported. Turkey appears to have the greatest increase among the top ten exporting countries since the 1960s.

Exporters' Unions: These unions are a lobby group and carry out export formalities on behalf of the Under Secretariat of Foreign Trade, carry out foreign market research and gather foreign market information, and are one of the primary sources of export and import statistics.

Compliance with international food safety standards

The first comprehensive food law in Turkey was the Food Act (Decree No. KHK/560 of 1995) which covers the production, consumption, and inspection of foodstuffs and aims to protect public health against all food-related illnesses by ensuring that all stages of food production are subject to inspection (Alpay et al., 2001). The Food Act gives MARA and the Ministry of Health joint responsibility for implementing food safety legislation. In 1996 a new framework regulation to harmonise national food legislation with EU food laws – the '560th Law' – was prepared and published in the official gazette. This document made the authorities and responsibilities of the two administrative bodies clearer, and replaced the rather old General Code of Health Protection (UHK and Food Commodities Regulation (GMN) articles. It also envisaged the preparation of eight more documents to cover all aspects of food that either did not exist in the old legislation or needed to be harmonised with respective EU legislation. The pioneering regulations described in detail the good manufacturing practices (GMPs) in food-producing plants in 1996, and the 1997 Turkish Food Codex (Turk Gıda Kodeksi Yönetmeliği – TGKY) which contains chapters similar to the horizontal EU legislation with specific chapters on food additives, food contaminants, food packaging, food labelling, and food hygiene. The TGKY had foreseen the preparation of vertical codex documents covering individual commodity types, and as of today, many of these (including flour and bread, infant formula, fruit juices and nectars, alcoholic beverages, meat products) have already been prepared and replaced the previously mandated Turkish standards and GMN articles on these subjects.

One part of the Food Law lists the maximum allowable level of pesticides residues and growth hormones. MARA is responsible for controlling the use of pesticides and registers all pesticides that are allowed to be sold in the market. Along with MARA, the Ministry of Health is responsible for controlling the hygienic conditions prevailing in the processing

plants and, together with local municipalities, for monitoring food products at the retailing stage (IGEME, 2003).

Recently, the food decree 1995–KHK/560 was modified and converted into ‘food law’ on 27 May, 2004 (it became Law No. 5179 and was published in the official gazette on 5 June, 2004, No. 25483). This new food law makes MARA the competent authority for inspecting all stages of the food chain, from production to consumption, and gives it responsibility for all food safety inspection. Law No. 5179 came into effect on 5 June, 2004, and includes and broadens the contents of the previous decrees, regulations, and directives. It regulates food safety, quality, and traceability of food stuffs; controls and coordinates food processing and marketing units; and accredits private laboratories to carry out tests and controls concerning the sanitary quality of food. It has specific clauses concerning the regulation and control of organic agriculture (www.tarim.gov.tr).

The Turkish Standards Organization (TSE), established in 1960, adopted ISO guidelines for its certifications in 1994. Within the framework of harmonization procedures, TSE adopted about 90 per cent of EU standards as Turkish standards. Export produce must conform with TSE standards as well as EU standards. TSE, via its own laboratories, certifies the sanitary quality of food produce. The TSE used to play a very important role in food controls; as described earlier they prepared the Turkish standards, conducted conformity assessment tests, and issued certificates for food products. But with the new legislation, their official role is reduced to issuing Conformity Certificates to food importers and conducting accreditation activities for the quality assurance systems (ISO 9000s) used by food-processing plants. This latter function is also being carried out by a few European firms with regional offices in Turkey, such as Bureau Veritas.

In 1999 Turkey radically reformed the institutional framework for accreditation through a law on the ‘Organization and Functions of the Turkish Accreditation Council’. The Accreditation Council has been in operation since 2001. It assesses and audits laboratories and certification and inspection bodies, and certifies the competence of conformity assessment bodies.

Hazard Analysis of Critical Control Points (HACCP). The HACCP concept was first introduced in Turkey through articles 16 and 17 of the TGKY (Turkish Food Codex Regulation) in 1997. They are included in the specific chapter on food hygiene, which quite clearly describes the principles and application steps of HACCP that should be incorporated into food-processing plants to achieve the hygienic conditions required. These should cover all food sectors, but the food industry has been given a period in which to adapt before the conditions become law and the plants are officially inspected. Many food manufacturing and/or retailing companies in different food sectors have already started to employ HACCP or TS 13001 HACCP since 1997, particularly manufacturers exporting to the EU, since it is compulsory with the Custom Union. The HACCP is becoming compulsory for both the domestic market and all export destinations, according to the 30 March, 2005 regulation ‘Regulation on Market Surveillance and Control of Food and Food Contact Materials and

Responsibility of Food Business Operators (Official Gazette 30th March 2005/ 25771). According to this regulation, all manufacturers and businesses producing or dealing with meats, milk, seafood, ready-to-eat meals and canned products and who have ten or more employees (or have engines of 60hp or more) must put into place the HACCP quality assurance system no later than 31 March, 2006. Similar but smaller manufacturers and businesses have until 31 March, 2007. Food manufacturers and businesses who deal with any other products must put into place the HACCP quality assurance system no later than 31 March, 2007 if they have ten or more employees (or engines with 60hp or more) and no later than 31 March, 2008 if they have nine employees or fewer (or engines of less than 60hp). Thus by 31 March, 2008, all food manufacturers and businesses must have put in place the HACCP quality assurance system.

The establishment and duties of the Provincial Control Laboratories were revised in early 2001 and its technical and institutional capacity has improved since then. Accreditation has been initiated for some of the laboratories involved in tests organized by the Food Analyses Performance Assessment Scheme (FASAS) and the Turkish Scientific and Technical Research Council (TUBITAK). The General Directorate of Protection and Control within MARA administers 81 Provincial Directorates, 39 Provincial Control Laboratories, and one Food Control and Research Institute. Food control inspection services were being carried out by around 1,400 food inspectors as of the end of 2003. Food analysis services were carried out by about 1,000 food analysis experts. Food control systems were improved through a three-year EU-funded project called 'Support to food inspection services in Turkey'. That project ended on 20 October, 2005. The project, which began in August 2002 in collaboration with MARA, aimed to increase food production and trade in Turkey by improving the methods and procedures for food safety and quality control and conformity testing. The project's overall budget was €14.139 million, with €10.123 million provided by the EU. The project's main output was to increase the analytical capability of the MARA laboratories in terms of food safety and quality, in line with EU requirements. Fifteen of MARA's provincial control laboratories were involved in the project, enabling them to work according to EU standards. Equipment totalling €9 million was provided and laboratory staff received comprehensive training through technical assistance in areas such as method validation and standardisation, quality management, the use of equipment and analysis methods, as well as the implementation and inspection of the HACCP system. The project enabled 15 MARA laboratories to carry out more analyses including for GMOs (genetically modified organisms) and dioxin, which they were not able to perform before the project. In addition the Ankara, Istanbul, İzmir, Bursa, and Mersin provincial control laboratories were accredited by TURKAK in different methods and the laboratory in Samsun is about to be accredited. This improvement in analytical capability will increase the quality and reliability of Turkey's laboratory analyses and bring them into line with other EU member states.

This will also eliminate delays before marketing, import, or export authorisations are issued (and abolish a technical barrier to trade), and reduce the risk of different results being

produced from analyses undertaken by different laboratories, the rejection of samples, and the destruction of products (EU, 2005).

EurepGAP: With the 'Regulation for Controlled Covered Area Production' (27 December, 2003 Official Gazette No. 25329), Turkey has also started adapting the EurepGAP standards relating to important Turkish export products such as off-season greenhouse vegetables. The ALARA company in Turkey is already using the EurepGAP system (www.alaragri.com). Recently, the Metro supermarket chain has started to offer fresh vegetables that comply with EurepGAP and GAP, and have full traceability. The General Manager of Turkey's Metro Group Buying, said that the group will offer around 3,000 tonnes of fresh vegetables produced under controlled covered areas in 2006, and 10,000 tonnes in 2007 (Hurriyet Gazetesi, April 2006). The group initiated a controlled vegetable production with 27 growers and 24 hectare area based on contract farming. The project will be extended up to 200 thousand tons production under 20 thousand hectares area within 2 years if the initial project succeeds. The group employed two agronomists educated on GAP and providing consulting services to contracted growers (<http://www.gidasanayii.com>, 8.11.2005).

Organic farming: The first by-law covering organic farming was issued in 1994, adopting the EU definition of organic agriculture following the entry into force of EC Council Regulation No. 2092/91 in 1991. A comprehensive Organic Farming Law (No.5262) has been in force since 1 December, 2004. The legislation assigned to MARA the responsibility of overseeing the cultivation of organic crops. According to data obtained from MARA in 2006, about 162,131 hectares are used by 8,854 farmers for organic agriculture. The majority of organic production is sold in foreign markets, primarily in Europe, and exports have been growing steadily, according to the Turkish Export Promotion Centre (IGEME, 2007b).

Export standards' impact on national production

Turkey is a member of GATT and the WTO, and so has signed and conforms to the SPS and the 'technical barriers to trade' agreements. In 1995, Turkey also signed an agreement to join the customs union with the European Community. The Undersecretariat for Foreign Trade issued the 'Decree on the Regime of Technical Regulations and Standardization for Foreign Trade' and its supplementary legislation with the aim of providing transparency in implementation, assembling all the dispersed regulations regarding standardization policies in Turkey, and establishing a legal basis for the harmonization of Turkish legislation with the Community's. Now there are 52 inspection units, the 'Inspectorates for the Standardization of Foreign Trade', within the eight Regional Directorates (Marmara, Western Anatolia, South Anatolia, Eastern Black Sea, Western Black Sea, South Eastern Anatolia, Central Anatolia, and Eastern Anatolia) under The Undersecretariat for Foreign Trade (UFT), General Directorate for Standardisation for Foreign Trade. These inspection units issue the 'Inspection Certificate(s)' only for some of the agricultural products that are exported /imported within the scope of the standards mandated in export/import regulation. In exports, the agricultural products within the scope of the 66 standards are all subject to this

conformity inspection. While this inspection only used to take place in the export phase, now it also applies to the import phase. The actual inspection prior to export and import will be performed by the Inspectors for the Standardization of Foreign Trade.

Industrial (processed or manufactured) products within the scope of approximately 850 standards, which are obligatory in the domestic market, are subject to inspection by the Turkish Standards Institution (TSE). Importers should also obtain Conformity Certificates from the TSE (similar to a CE mark in the EC) before importing anything, since the products should conform with the relevant standards, regulations or technical documents in respect of minimum requirements of human health and safety, animal or plant life, or health and protection of environment, thus providing adequate information to consumers at the actual import stage.

Export standards still have little influence on national production. This situation is directly linked to an overall export strategy that most exporting firms have adopted since the mid-1980s: they target the emerging economies of Eastern and Central Europe, the Balkans, and Arabic countries. These countries are more concerned with the physical attributes of export produce (colour, size, maturity) than its sanitary quality, a fact that still encourages Turkish exporters to not bother to trace their product along the supply chains. Thus they avoid making most of the investments necessary to establish the international standards demanded by the European Union (Germany, UK, and France). On the other hand, they can diversify their markets where they have leading positions or due to proximity and less competition such as Russian Federation and Ukraine.

This trend has been changing since the beginning of the 2000s, as exports to Western Europe as a share of Turkey's total tomato exports have grown. The high value of exports to Western Europe and the extension of the application of sanitary and phytosanitary measures (SPS) are good reasons for Turkish producers to change their attitude with regard to the investments necessary to improve the quality of their export tomatoes. Besides the need to conform to SPS standards, there is another constraint linked to the private standards imposed by large European food retailers: EUREP GAP for a number of European countries and British supermarkets' own standards. The leading exporters are trying to work in line with these constraints. Changes and drivers in the tomato-processing sub-sector

2.2.7 Major changes in the tomato-processing sub-sector

The processing and preserving of fruits and vegetables, including tomato processing, is encouraged by the state as it increases its export potential and improves its competitiveness in international markets. According to the latest statistics for tomato-processing plants released by MARA, there are 38 processing plants and on average they work at 42 per cent of their capacity. During the last decade, however, Turkey diversified its processed tomato production according to the demands of different markets. For example, dried tomatoes are a very dynamic segment that has attracted new investments since the beginning of the 2000s

(Keskin et al., 2006).¹¹ Turkey is competitive worldwide in the production of tomato paste and has successfully developed other products such as ketchup, tomato juice and dried tomatoes, all of which are produced mainly for export. In tomato paste Turkey was behind only Italy and Spain as the third largest producer in the world during the 2001/2002 season, and made up 14 per cent of the volume produced by the top ten countries. In terms of export data for the same year, Turkey was in fourth place, behind Italy, Greece, and Portugal but ahead of Spain.¹² It has a 36 per cent share of the total exports of the world's top ten exporting countries, and nearly two-thirds of national production is exported. Turkey's main importers of tomato paste are Japan, Russia, Saudi Arabia, Italy, and Germany.

The tomato paste producers are large private companies, affiliates of giant Turkish industrial conglomerates, and have a long-established, efficient, and profitable industrial management system. About 30 per cent of their raw material (industrial tomatoes) is guaranteed by contract farming, which softens seasonal fluctuations in raw material procurement and goes some way to resolving overcapacity problems. Penguen Gıda Sanayii A.Ş., for example, 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 per cent of their full production capacity. Today 63 processing plants in the Marmara region (especially near to Bursa) produce 610,000 tonnes per year. The total sales of the main large-scale processing plants are given in the table below. The two largest companies in the sector, TAT and TUKAŞ, had 33 and 22 per cent of the tomato-paste market respectively, while the concentration ratio for the top five was 80 per cent in 2003, indicating a quasi-oligopolistic market structure (Turkishtime, 2003 and Yeni Para, 2005).

Drivers of major changes in the tomato-processing subsector

Export level

According to the Customs Union Agreement between Turkey and the EU, the tariff applied by the EU for tomato paste originating from Turkey is 14.4 per cent of value or ad-valorem, and this is another constraint for the tomato-processing sector. This tariff is so high partly because Turkey applies a high import tariff to beef from EU countries – a situation that the EU protests as not conforming to the Customs Agreement. Nevertheless, during the last decade European countries' demand for packaged and branded tomato paste has grown at an average annual rate of four to six per cent. Turkish companies, however, prefer to diversify their markets geographically by exporting to Japan, other Asian countries, and Africa.

Industry level: contract farming as a fresh tomato procurement system by the processing industry

Both leading companies (TAT and TUKAŞ) practice contract farming, working with around 5,000 farmers and aiming for high-quality tomato procurement in appropriate quantities and

¹¹ Statistical data includes only processing plants with more than 10 workers. In 2002, 2003, and 2004 there were 12, 13, and 11 such tomato-paste processing plants and 5, 6 and 7 ketchup plants.

¹² Intra-EU trade is included in these figures.

at the right time (Yeni Para, 2005). But procurement emerged as one of the most important and unsolved problems during the participative sequences of the workshop and during interviews with sector representatives. Research conducted in Manisa province (in the Aegean region and one of the most important tomato producing areas) on tomato production costs and farm structure found that the average farm size in terms of land is six hectares and tomato plots are two hectares (AERI, 2001). Another study conducted by Tanrıvermiş (2000) in the Marmara region (Sakarya Province) found that average farm size is 1.7 hectare and the land devoted to tomatoes is 0.47 hectare (productivity is 6.9 tonnes per hectare). Quality and safety standards in tomato growing seem to be important constraints, but are also a promising opportunity for the processing companies. Highly fragmented, small and unorganized growers cannot easily comply with quality and safety standards (such as traceability, EurepGAP, and GAP), but contract farmers are more likely to adopt traceability (Keskin et al., 2006). Many small and medium-sized enterprises (SMEs) do not comply with quality and safety standards dictated by national government, retailers, and foreign importing companies because of their financial and scale constraints. The SMEs need to consolidate through mergers and partnerships in order to reach the critical size to be competitive in the market. Tomato processors have an association called the Tomato Paste Producer and Exporters Association (SIID). This association negotiates with growers' cooperatives on contract prices and conditions.

3 Market meso-analysis based on participatory rural appraisals (PRAs)

3.1 Methodology

3.1.1 Selection of study sites

In the selection of study sites, 2004 data from the Farmer Registry System was used as the sampling frame. According to the data, tomatoes were being grown in 78 out of 81 provinces in Turkey. The tomato production levels of the 78 provinces in the database were reviewed, and the leading producer provinces ranked. Of these provinces, the first 12 accounted for 73.16 per cent of total national tomato production (see Table 14). Then 17 villages in these 12 provinces were selected for further empirical studies (see Table 15). The selection process was generally random, but a few villages were added subjectively as they were known to have active agricultural cooperatives. The villages' share of total provincial tomato production ranged between 1.40 and 20.59 per cent.

In Figure 3, the 12 provinces and 17 villages selected for PRA were marked on the map of Turkey. The map (and Table 1) show how the study sites were scattered over five different geographical regions. The regions have different social, economic, and climatic conditions, which enabled the researchers to see different dimensions of tomato production and factors that affect production.

The Mediterranean region marks the southern border of Turkey and is famous for the Toros Mountains that lie along the coast. These mountains separate the inland from the coastal areas, with links between the two via passes. The climate is characterized by warm and rainy winters and hot, sunny, and humid summers on the coast. The inland areas have a typical continental climate. The population density is lower than in the Aegean and Marmara regions because the region is mountainous and not industrialized.

The Marmara region is geographically small but strategically very important. It contains two important straits separating Europe from Asia. It is flat and rich in vegetation. There are three different climates (Mediterranean, Black Sea, and continental) and therefore many agricultural crops are grown. It is the most densely populated and industrialized part of Turkey, with important industrial, agricultural, and tourism sectors.

The Aegean region makes up the western part of Turkey, and is bordered by Marmara to the north, the Mediterranean to the south, and the Central Anatolia regions to the East. It has the second highest population density after Marmara, since the climate is warm and the land is fertile. Industry, transportation, agriculture, tourism, and commerce are the most developed sectors.

The Black Sea Region is a narrow strip of land along the northern border of Turkey. It is the rainiest part of the country. Maize, sugar beet, tea, hazelnuts, and tobacco are the most important agricultural crops of the region, and fishing and livestock are also common.

Central Anatolia is in the middle of Turkey. It is less densely populated than the coastal regions. Winters are long and cold and precipitation is low. The most important agricultural crops of the region are wheat, barley, sugar beet, poppy seed, potatoes, and various fruit and vegetables.

Table 14: Tomato production by major producing provinces ('000 metric tonnes)

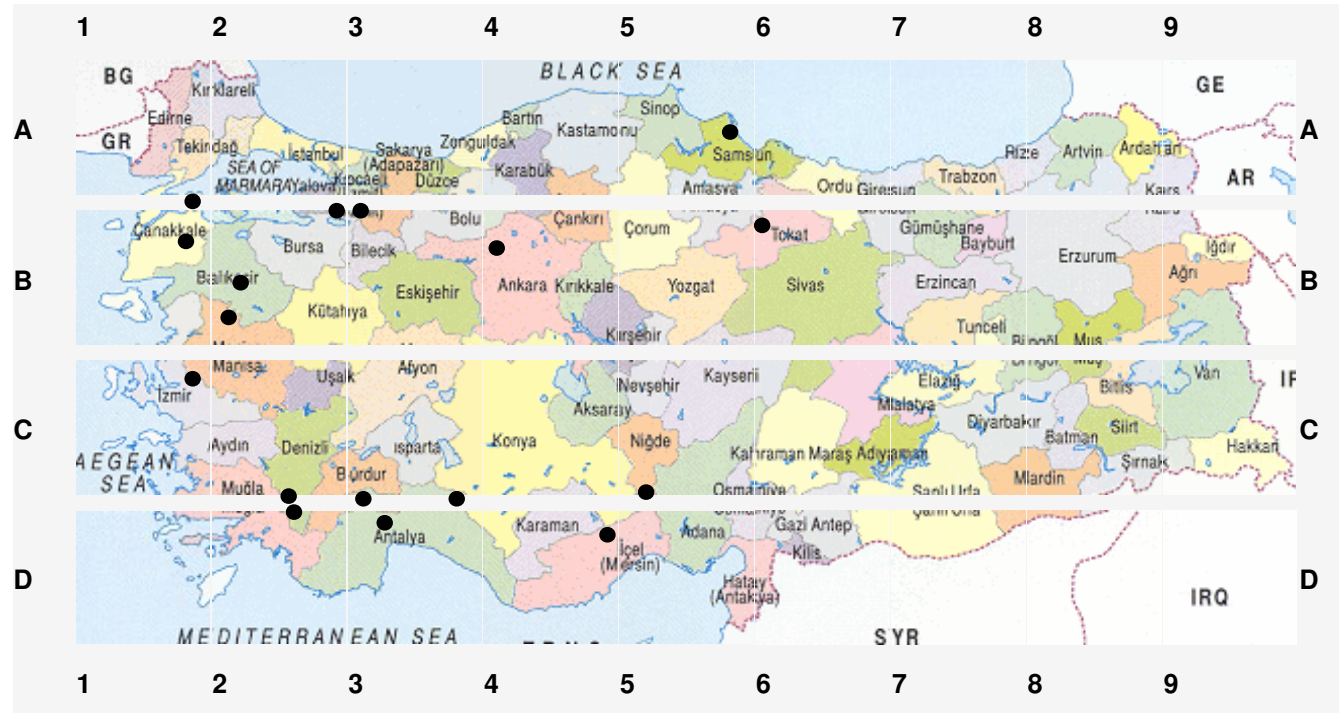
Province	Production	Share (%)	Geographical region
Antalya	1,471.3	16.50	West Mediterranean
Bursa	1,136.2	12.74	Marmara
İzmir	580.9	6.52	Aegean
Balıkesir	564.8	6.33	Marmara
Mersin	541.8	6.08	East Mediterranean
Manisa	490.9	5.51	Aegean
Çanakkale	394.1	4.42	Marmara
Samsun	368.4	4.13	Black Sea
Tokat	351.7	3.94	Black Sea
Muğla	294.5	3.30	Aegean
Ankara	174.2	1.95	Central Anatolia
Bilecik	153.9	1.73	Marmara
Total for above provinces	6,522.7	73.16	
Total	8,915.8	100	

Note: Average during 1999–2003

4.1.2. Survey methods

Each village was visited by at least two researchers in between May and July 2006. Before visiting the researcher called the local (provincial or town) directorate of MARA and explained the objectives of the project. They asked for an interview and asked to inform the villagers about the project. At the time of the interviews, the farmers and other important actors in the village (such as the director of the cooperative; village leader, etc.) were ready at the central coffee house. The villagers were told about the objectives and sponsors of the project, and about the researchers. The whole group was interviewed, so depending on the particular village the number of participants varied between ten and 30. The interviews lasted between one and four hours. The researcher visited important places in the village, such as the packing houses, agricultural cooperatives, and traditional and modern greenhouses.

Figure 3. Locations of the selected provinces and villages for PRA



Antalya: D3 Bursa: B2 İzmir: C1 Balıkesir: B2 Mersin: D4-5 Manisa: BC2 Çanakkale: B1 Samsun: A5
 Tokat: B6 Muğla: CD2 Ankara: B4 Bilecik: B3

Researchers recorded the total number of households and total cultivated land. Additional information from the villagers that was not already on the forms was also recorded. Any rankings were carried out by the farmers themselves.

Table 15: Tomato cultivation in selected provinces and sampled villages

Province and town	Total area (ha) (number of households growing tomatoes)	Sampled villages	Area (hectares)	Share in province (%)
ANTALYA – Merkez – Manavgat – Kumluca	2,204 (5,898)	Hacısekiler	0.8	2.83
		Çakış	35.8	
		Beykonak	25.8	
BURSA – Yenişehir	5,976 (4,892)	Çeltikçi	83.6	1.40
İZMİR – Torbalı	4,731 (3,743)	Özbey	126.6	2.68
BALIKESİR – Bigadiç	5,807 (8,266)	Işıklar	128.1	2.21
MERSİN – Merkez – Erdemli	1,527 (2,786)	Kazanlı	28.6	2.61
		Kocahasanlı	11.3	
MANİSA – Akhisar	3,559 (4,438)	Akselendi	381.6	10.72
ÇANAKKALE – Yenice – Biga	2,221 (2,475)	Davutköy	14.7	8.33
		Gümüşçay	170.4	
SAMSUN – Bafra	365 (765)	Karpuzlu	35.7	9.78
TOKAT – Pazar	1,105 (2,145)	Pazar	82.4	7.46
MUĞLA – Fethiye – Fethiye	777 (2,177)	Kumluova	57.1	20.59
		Karaçulha	102.9	
ANKARA – Ayaş	643 (657)	Akkaya	102.7	15.97
BİLECİK – Osmaneli	617 (1,330)	Soğucakpınar	63.2	10.24

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Note: Data do not include greenhouse farmers with very small plots who are not counted in the Direct Income Support System.

Source: Farmer Record System, 2004. Numbers of households growing tomatoes are in parentheses.

Other actors in the production and marketing system were identified and interviewed, including wholesale market agents, dedicated suppliers to supermarkets, and wholesale market directors. Overall findings from the interviews with 130 wholesale market agents were reported under the ‘Marketing Channels’ heading.

3.2 Results of the PRAs

3.2.1 Study sites

The 17 study sites constituted a rich portfolio of villages in terms of a variety of climatic and geographic conditions, production methods, and marketing channels, which together help to draw a complete picture of the tomato sector in Turkey.

Total agricultural land in the study sites varied between 50 hectares and 4,500 hectares (see Table 17), with an average per village of 1,750 hectares. The total number of households in the study sites ranged from 130 to 7,000, with an average number of 1,392. The average amount of agricultural land per household was 3.8 hectares (median 1.6 hectares).

Table 16: Total agricultural land and total number of households in the study sites

	Özbey	Akse	Soğu	Akka	Davut	Gümü	Işık	Pazar	Karp
Total agricultural land (hectares)	400	2,600	600	3,000	550	3,000	400	4,500	1,500
Total number of households	400	800	150	130	220	650	250	1,300	202

	Çelti	Hacı	Çakış	Beyko	Kazan	Koca	Kumlu	Karaç
Total agricultural land (hectares)	1,350	50	4,500	750	1,350	2,000	700	2,500
Total number of households	135	130	3,000	1,300	1,500	7,000	3,000	3,500

4.2.2. Production

In the study sites the amount of cultivated land allocated to different crops varied greatly (see Appendix 2 for precise results according to villages). Relatively small amounts of land were allocated to vegetables compared with field crops. Tomato cultivation in the study sites ranged

from 7 to 1,800 hectares. The average amount of land dedicated to tomato cultivation per village was 326.9 hectares, while the median was 100 hectares.

The number of households engaged in tomato farming ranged from 30 to 3,000, with 870 per village on average and a median of 240. The diversity of production in the study sites was also measured using a simple index (see Table 16). The average amount of land used for tomato cultivation per household was 0.68 hectares, with a median of 0.45 hectares.

Table 17: Diversity of production in the study sites

	Özbey	Akse	Soğu	Akka	Davut	Gümü	Işık	Pazar	Karp
Diversification index*	1.67	4.00	1.50	1.00	7.33	2.60	1.25	3.25	1.35

	Çelti	Hacı	Çakiş	Beyko	Kazan	Koca	Kumlu	Karaç
Diversification index*	1.35	1.44	6.00	1.00	3.75	1.40	1.11	1.17

* Total number of households (engaged in any production) / Number of households growing tomatoes

Different production methods were used for different crops. Most field crops and vegetables were grown in open fields, with fruit generally grown mostly in orchards and sometimes covered orchards. Tomatoes were in general grown in open fields. In the Mediterranean region and in the southern parts of the Aegean region plastic polytunnels and glass greenhouses were more common. As the study sites were scattered over different geographical locations, various advantages and disadvantages were observed in the production of crops for each site. These are shown in Table 19.

Table 18: Advantages and disadvantages of production in the study sites

PRA was conducted in very heterogeneous locations in terms of infrastructure, land, production systems, market proximity etc. Therefore, contradictory statements (findings) may appear in the box. We wanted to highlight very frequently mentioned advantages and disadvantages in several locations.

Advantages	Disadvantages
- For all vegetables, the harvest season is earlier than other places. - The climate is suitable, so less heating is required. - The frost risk is low in winter. - The local climate is excellent for industrial (drying and paste) tomatoes. - Water is abundant and irrigation is available. - Soil is permeable and therefore can be	- Agricultural land is scarce. - Agricultural land is converted from forest land and therefore not very suitable for tomato production. - Land is scarce and greenhouse establishment is expensive (rocks have to be broken and soil has to be carried). - Farms consist of several plots, which raises costs and consumes more time. - There is not enough sunlight, particularly in winter.

prepared quite quickly. • Soil quality produces a longer shelf life. • Farmers are experienced. • The quality of the produce is good and has a good reputation. • The market conditions have settled and attracted buyers to the villages. • There are a large number of buyers as some villages are well-known as vegetable production areas. • Some villages have their own cooperatives and nearby packaging facilities. • Some villages are very close to the main cities and consumption centres. • Processing facilities are nearby. • Transportation costs are low.	• Water quality is poor and causes disease. • There is a high risk of hail. • Viruses and weeds negatively affect pepper and tomato production. • New varieties that are particularly suitable for particular locations have not been developed yet. • Vegetable production is labour intensive. • Out-migration from the region creates labour shortages. • There is a lack of cooperation among farmers. • Farmers are unaware of new methods and technology • There is little production planning. Prices drop too much when production grows. • Farmers produce high-quality produce, but prices are still low. • Prices are very volatile. • Tomatoes and peppers cannot be sold when production is booming. • There is a lack of buyers for many of the products. • Buyers violate their contracts when production is booming. • Farmers are finding it increasingly difficult to collect payments from buyers. • The produce is sold without any official documents, and payments are made too late. Sometimes no payment is made. • The Wholesale Market Law is violated by marketing channel actors. • Some villages lack cooling, storage, and packaging facilities.
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a. Production trends

Following extensive interviews with farmers throughout the study sites, the following major trends explain the changes that have taken place in the last ten years.

- Production technology improvements

There is increased use of hybrid seed and ready-to-plant seedlings; adoption of pressurized and drip-irrigation systems; greater assortment of seeds; investments in better heating systems; conversion from poor-quality plastic tunnels to high-quality plastic greenhouses and from plastic to glass; soil disinfection by farmers; investment in hydroponics (production without soil); and an increasing use of bees for pollination instead of hormones.

- Larger production scale

The average size of greenhouses is growing.

- Shifts in production patterns

The shifts depend on the location, prices, and production quotas; decreasing vegetable production against cereals and sunflower; disappearance of cotton and tobacco; decreases in citrus relative to pomegranate; and increases in peppers, tomatoes, broccoli, and cauliflower. There is also a shift from open fields to greenhouses in vegetable production.

- Increasing land rental

- Intermediaries' entrance into production

Agents have started to buy land and grow vegetables themselves.

- Yield and quality improvement

Average yield and quality levels have increased.

- Increasing discrepancy between input and crop prices

Despite the continuous increase in the price of inputs such as diesel and fertilizers, the selling price for crops are dropping.

- Declining producer profitability

- Declining popularity of farming in general

- Shortened distribution channels and increasing marketing opportunities

Supermarkets, open-air market traders, and exporters have started to buy produce directly from villages. The number of merchants has increased. More farmers consign their produce directly to city wholesale markets. Nearby processing firms have fuelled tomato and pepper production.

- Decreasing trust among farmers and towards external buyers

- Increasing awareness about agrochemicals and produce quality

Growing number of deaths and illnesses among greenhouse producers has made farmers more aware of agrochemicals. Merchants have started to pay more for better quality produce.

- Multiple production cycles

Second- and third-crop production in a year has started to happen.

b. Production services

There are several actors providing production-related services to farmers. These include agricultural credit cooperatives (farm inputs and credit), agricultural development cooperatives (farm inputs and credit), the Agricultural Bank of Turkey (credit), provincial and local directorates of the Ministry of Agriculture and Rural Affairs (technical know-how and consultancy), irrigation unions (irrigation), independent agricultural consultants (technical know-how and consultancy), independent input dealers (farm inputs and technical know-how), and wholesale market agents (credit and arrangements for farm inputs).

The various investments made by farmers and seen at the study sites include:

- | | |
|-------------------------------|-------------------------|
| • Modern mechanical equipment | • Seedling beds |
| • Wells | • Covered production |
| • Drip irrigation | • New orchard |
| • Post and wire | • Glass greenhouse |
| • Heating systems | • Plastic polytunnel |
| • Land purchase | • Renovated greenhouse |
| • Laser-levelling equipment | • Hydroponic production |
| • Water pump | • Controlled production |
| • Drainage | |

These investments are funded largely from farmers' own resources and to a smaller extent through loans received from the Agricultural Bank of Turkey and the agricultural credit cooperatives.

c. Production constraints

The main production constraints for farmers are summarized in Table 20 for each study site. Input procurement is the most important problem. The high costs of inputs relative to crop prices, the residue problems of low-cost inputs, and farmers' confusion and lack of awareness about good practice using inputs are other problems. The price of agricultural land is rising as there is a growing demand for land from the tourism sector. Greenhouse production also involves health risks for farmers.

Table 19: Production constraints in tomato and pepper production

	1 st	2 nd	3 rd	4 th	5 th
Input procurement	XXXXXXX	XX	XXXX	X	XX
Skilled labour*	X	XX	XXXXXX	XXXX	XX
Marketing	XXXXXX	XXXXXXXXX	XX	X	
Lack of knowledge	XX	XXX	XXXX	XXXXXXXXX	
Other	X****	XX***	X*****	X**	

X denotes frequency

*The low wages set by the chamber of agriculture limits the skilled labour supply; subsidies given by the government to farmers for diesel are insufficient.

**Insufficient heating for tomatoes and peppers in winter

***Input quality problems and lack of soil analysis

****Storm damage

*****Poor quality of fertilizers

4.2.3 Marketing

Through interviews with the major marketing actors the following trends were captured specifically about marketing:

- Consumers' demand for quality has been increasing at a rapid rate.
- Small greengrocers are disappearing in some cities.
- Traditional wholesale market actors have shifted their base of operation from consumption centres to production areas.
- Private specialized suppliers have emerged, and they have large packing houses and cold storage facilities in the production locations.
- Increasing globalization has strengthened competition between supermarkets.
- Increasing threats to traditional wholesale market agents have been caused by developments in the marketing channels.
- Organized retailing is capturing an increasing share of the market relative to traditional marketing channels.
- The demand for quality reinforces changes in market procurement to supply safe and quality assured produce (i.e. EurepGAP, controlled, covered area, and protected production).
- There is an increasing demand for quality by exporters.
- Supermarket procurement units and hotels and restaurants will expect their specialized/dedicated wholesalers to meet new legislation aiming to harmonize the food and safety

standards in the domestic market with that of the EU (i.e. HACCP and ISO-22000 safety and quality assurance management systems).

- General food laws and regulations, product origin certification, EurepGAP, and organic farming certifications will be needed to get subsidized low-interest financing and subsequently will play an important role in marketing channel design.
- Consumers' increasing preference is for one-stop shopping.

a. Marketing channels

Farmers' produce is sold through different actors and intermediaries along the distribution channel. Through the empirical studies, nine different actors were identified. These were: large city wholesale markets, nearby city wholesale markets, processing firms, local agents working in the nearby villages and towns, merchants, exporters, various cooperatives (development, credit, marketing), open-air markets, and supermarkets. The relative importance of these actors for each village is summarized in Table 21.

Among these actors, local agents (based in villages), agents operating in nearby cities or town wholesale markets, merchants, processors, and exporters were observed to be the most important ones for the farmers. As supermarkets mostly procure their produce directly from selected suppliers, farmers' knowledge about this channel was limited. Cooperative activities to market farmers' produce was also rare.

Table 20: Marketing channels for tomatoes and peppers

	1 st	2 nd	3 rd	4 th	5 th
Ankara CWM	X				
İstanbul CWM	XX				
İzmir CWM		X			
Local CWM	XXXX	X			
Processing firms	XX	X	XXX		
Local agents	XXX	XX	X		
Merchants	XX	XXXXXX	XX		
Exporters	XX	XXXX			
Cooperatives	X	X			
Open-air markets		XX	XXX	X	X
Supermarkets				XXXX	

X denotes frequency

CWM = City wholesale market

Of the 130 wholesale market agents interviewed, 32 (24.5 per cent) sold only into the traditional marketing channel and 98 (75.5 per cent) to the modern one. Among the latter, 24 sold only to supermarkets (18.4 per cent of the entire data set), 33 (25.3 per cent of the whole data set) to

exporters (or were exported themselves), and 41 (31.5 per cent) were selling to both marketing channels. Selling to supermarkets and to exporters was highly correlated: 77 per cent of those who were selling to supermarkets were also exporting.

The results show that agents behaved differently according to the location of the wholesale market where they worked. The small or local wholesale markets were located in the production areas, and the bigger ones in the consumption centres.

The wholesale markets established in the production areas mainly aim to collect highly dispersed production: a large number of small producers come to the local wholesale markets in Antalya, whereas in Izmir the produce was first bought in by local merchants or larger producers who gathered the village's production. This latter fact seems to be due to the small number of rural wholesale markets in Izmir region relative to Antalya. The distance between a village and the nearest wholesale market was greater in Izmir, so the cost borne by an individual producer who sold his produce directly to a wholesale market agent was higher. This leads to the emergence of numerous intermediaries. In the large wholesale markets in cities, wholesale market agents provide their customers with services such as packing or sorting. They direct their supply to different customers: the less demanding are the traditional street or open-air markets. When we asked about supply to the industry, exporters, supermarkets, and hotels and restaurants we found that in Izmir industry was the most important sector, whereas in Antalya it was the export and tourism sectors.

We conclude that supermarkets are mainly supplied by wholesale market agents, even though they try to develop relationships with local producer organizations. Moreover, they sorted and packed the produce themselves, apparently because they could do it more cheaply than the packing houses (in Antalya). This created no incentive for wholesale market agents to start packing and sorting activities: they often worked merely buying in the produce.

The quality requirements for export and supermarkets were not easy to differentiate, but most of the wholesale market agents considered the supermarkets to be more demanding than the exporters. In particular, they distinguished between export destinations, saying that the Russian Federation, for example, required a lower quality level (although requirements increased considerably within the last year).

Dedicated supermarket suppliers drew attention to the increasing market power of supermarkets, who sometimes created monopoly situations. They also felt that the share of unofficial (unrecorded) trade was growing. Examples included merchants trading outside the wholesale markets and the practice of retail buying/selling without receipts. The increasing use of credit cards among consumers in supermarkets was seen as a positive development in reducing the share of unrecorded trade. Supermarkets were also criticized for not pricing differently controlled (i.e. EurepGAP) and conventional (traditional) production. The main reason for this, it was pointed out, is that store managers need to maximise turnover to earn praise from their top management.

b. Marketing incentives

Those farmers who have their own land so do not pay rent and who produce on a large scale have enough capital to buy inputs, have machinery and equipment, have sufficient family labour, act as agents, and are better able to make a good profit from vegetable production.

In some villages, the reliability and brand of well-known processing firms creates trust in the eyes of farmers. Farmers believe it is an advantage to supply their produce to such large firms.

The availability of capital is also an incentive for farmers. Some farmers felt that they would buy more land and set up their own processing units if they had enough funds. Farmers hope for cash payment, payment guarantees, and quality premiums from buyers when selling their produce. Market conditions that would absorb all of farmers' produce are also a factor. Farmers said that they would increase their land and production if they saw at the beginning of the production season that the market was ready to consume all their produce.

Other marketing incentives include buyers' demand for high-quality produce, contract farming for processors, higher prices from exporters, low-cost loans for production, government subsidies for producer unions, and input support by processors. Supplying produce to open-air-market traders is preferable as they also accept low-quality produce.

c. Market institutions

As described in the 'Marketing channels' section earlier, the main actors in the fresh fruit and vegetable markets are city wholesale market brokers or agents, local agents, merchants, exporters, producer's unions, various cooperatives (fruit and vegetable marketing cooperatives, agricultural credit cooperatives, agricultural development cooperatives), processing firms, open-air-market retailers, and supermarkets. These actors have formal and informal links with the producers. For example, at the beginning of the production season, producers may sign contracts with processing firms to guarantee the sale of their produce (as in Akselendi and Davutköy). Alternatively, some producers maintain long-term relationships with wholesale market agents who may also provide short-term credit and arrange the procurement of farm inputs (Hacısekiler, Karpuzlu). Supermarkets appoint their own suppliers among the merchants/agents in city wholesale markets, who in turn buy selected farmers' produce to grade, package, and re-sell to the supermarkets. Some villages (Özbey, Çeltikçi) have their own marketing cooperatives or producer's unions, but they are inactive or inefficient and far from accomplishing marketing goals. In some study sites, however, there are successful examples of cooperative marketing (agricultural credit cooperative in Çakış and GÜRPA marketing cooperative in Gümüşçay).

d. Marketing infrastructure

In the villages we visited there is no large scale marketing infrastructure apart from the tomato and pepper drying grounds. Physical facilities for cooling, storing, grading, packaging, and industrial processing are located either in wholesale markets or certain rural areas and are owned by merchants/agents, exporters, and large-scale processing firms.

e. Marketing constraints

One of the most important constraints in fruit and vegetable marketing is farmers' dispersed, weak position and low bargaining power against various buyers. Several farmers complained that intermediaries always earn more money than the producers. The lack of farmers' trust in buyers and even among themselves is another problem. This problem stems from the corruption of the commercial actors. Lack of trust retards cooperative action and development. Farmers also note

that buyers' price-fixing practices create unfair trade conditions, and they delay payments and extend payment periods up to 60 days. Farmers also do not trust the buyers' weighing practices or interest charge calculations for loans. Exporters and processing firms are usually regarded as safer in terms of commercial transactions. Small scale production is also a very important barrier for individual farmers in marketing their produce. Several farmers felt that their lack of storage, grading, and packaging facilities in the village reduces their bargaining power in the market. The lack of nationwide or local production planning is also an important barrier which makes the market prices and conditions very volatile and makes farmers' income fluctuate greatly. Contract farming for processing firms is usually considered to be a safe outlet for marketing produce, but farmers complain that they are not fully aware of the contents of the contracts and that the contracts are always one-sided (favouring the processor). When there is a strong demand for vegetables and many buyers, the farmers avoid contractual arrangements. In villages that are close to the city centres the farmers transport their own produce to the wholesale markets. Sometime, however, municipality inspectors ask for a 'transport license' and the wholesale market authority forces farmers to donate to municipal sport clubs. Farmers also complain about the number and amount of the various deductions (commission fee, transportation, portage, etc.) which may be as much as 20 per cent of the selling price.

4 Implications for the microstudy

4.1 Conclusions

The empirical investigations undertaken in 17 different study sites with several actors in the fresh fruit and vegetable production and marketing system have so far generated rich information about the internal and external conditions surrounding tomato production. Some clear trends and developments were identified which have implications for farmers, commercial actors, and policymakers. The most visible trend is that tomato farmers are in an increasingly disadvantaged position with respect to the discrepancy between input prices and crop prices. Any moves towards cheaper inputs, however, result in quality and residue problems. This dilemma requires careful attention by policymakers, practitioners, and regulators. Although the tomato producers' gross profits are still positive, net returns are negative, which shows that they are unable to cover their fixed costs. Their bargaining power is also very weak compared to other actors in the marketing channel. Corruption among intermediaries in some places and the erosion of trust in the whole system requires tighter control. Organized buyers such as exporters, processors, and supermarkets are regarded as safer business partners, but the farmers find them distant compared to other intermediaries such as local agents or wholesale market agents and merchants. Legal and financial measures that will be introduced to encourage the direct support of growers by organized buyers may be a useful way to relieve some of the marketing problems. The weak financial position of many farmers retards new investments, improvements, and the adoption of more sophisticated technology. Farmers usually rely on their own limited resources and sometimes borrow from credit institutions and agents. Policies that aim to relieve the formal and financial burden (i.e. interest rates) of the borrowing system would be useful. The decreasing fertility of soils and the hazardous effects on farmers' health of greenhouse production are other problems that need to be tackled.

Increasing the variety of products, improving overall quality and yield, increasing awareness among farmers about correct use of inputs, and the growing number of greenhouses are positive developments. Developments in the markets in line with global trends are bringing new challenges to small farmers and traditional wholesale market agents. Increasing consumer demand for high-quality and safer produce, the growing share and bargaining power of large scale organized retailers, and the introduction of new regulations that aim to produce higher quality and safer produce are the most prominent developments on the marketing side.

4.2 Implications for further studies

The first part of the analysis underlined some Turkish specificities that will be included in the further steps:

- A high potential for retailers to increase their market share [of direct sales of] fresh fruits and vegetable to consumers. As consumers' requirements grow in terms of quality and safety the supermarkets will try to differentiate their products from the standard sold in street markets.

- Traditional agents are still the predominant stakeholders in Turkish marketing channels. Open-air-air markets are the most important final retailers, and the flows of FFV overwhelmingly pass through traditional wholesale markets, (notwithstanding the grey market).
- Turkish agents work in a highly regulated environment. The Wholesale Market Law established strong rules with respect to the way transactions of FFV should be done. It should be noted, however, that traditional producers' agents and traditional retailers (bazaars) are organizing in order to maintain their position (for instance, by acting as dedicated wholesalers, or promoting safety and quality).
- Finally, the study pointed out the importance of exports. Some agents need to comply with the requirements of the EU (food safety, volumes, standards) and adapt their production and production process to them. Eastern European countries and Russia are aligning their own requirements to the EU ones, thereby increasing the pressure on producers.

The following hypotheses from the research questions are proposed based on these conclusions:

H1. The supermarkets' restructuring has had few impacts at the producer level; *Halhali* agents are the main intermediary in the FFV supply chain and it has important role in produce segment.

H2. Because of the easy access to the wholesale market, *Halhali* agents play an important role in small farmers' market access.

H3. Because of the easy access to the wholesale market, the informal sector does not play an important role in small farmers' market access.

H4. (a) size difference among farms is not an important factor in access to the domestic market. Restructuring happens at the wholesale level.

H4. (b) The main factors that exclude small growers are the increasing price of inputs and the declining and highly volatile output price.

Improved food-quality and safety standards have triggered the exclusion of small farmers.

The evolution of supermarket procurement policies (such as minimum quantities, consistency of supply, minimum quality standards, and procurement practices) are increasingly excluding small farmers from these market outlets.

A farm's size and location (in particular distance from possible market channels) critically affect the farmer's inclusion in restructured chains.

Small farmers' access to credit is an important factor for their inclusion in restructured chains.

Non-compliance with export standards (such as pesticide residue limits) and overvalued exchange rates indirectly result in exclusion because the level of export demand has an important impact on the domestic price.

H5. (a) The recent availability of low-interest credit or subsidized credit for organic and controlled farming will lead to the exclusion of small scale farmers because it is the large farmers and investors outside the farm sector who have been benefiting and investing.

H5. (b) Cooperatives (both credit and development) that act as producer's unions should provide substitute marketing channels, but their development is still in its infancy and too recent for the results to be clearly observable.

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Appendix 1. The relative cost of the commissioners (agents) and cooperatives

Table A1: Deduction to producer prices at FFV wholesale market (*Toptancı Hali*):

the agent's case		%
Agent fee or <i>HalHati</i> agent commissioner fee	Maximum limit	8.00
Value added tax (VAT)	18 per cent of agent fee (8 per cent)	1.44
Excise tax (stoppage tax)		2.00
Municipality tax		2.00
Civilian Defence Fund		0.01
Social Insurance Deduction (<i>Bag-Kur</i>) *		1.00
Total		14.45

* Except if the producer is already a member of *Bag-Kur* him/herself and has already paid their contribution. In this case, the total deduction from the producer selling price is 13.45 per cent.

Note 1: If the agent (commissioner) sells the product to a buyer (*retailer*) who is a real-income tax payer then they have to issue a bill for VAT at one per cent. The VAT is eight per cent for all other types of buyers (defined non-real-income tax payer or the lump-sum tax payer). All agents must give the buyer a waybill (dispatch list) and invoice. They also have to pay 0.01 per cent of the value of the invoiced product to the Chamber of Commerce. This VAT is not deducted from the producer's selling price, it is paid by agent.

Note 2: According to Law 552 the municipality has to use the ten per cent municipality tax to maintain and modernise the wholesale market (where municipality tax is collected).

Note 3: If a retailer or wholesaler buys products directly from the producer and so receives a receipt or invoice from the producer, they have to inform the Wholesale Market Directorate (within *HalHati*) by the following day and pay a tax to the *HalHati* Directorate that amounts to 15 per cent of the invoice value.

Note 4: Certified cooperatives (producer unions) have the option to sell members' products directly to retailers (real-income tax payers) outside *HalHati* (if they provide a waybill and invoice to the buyer), but in this case VAT is eight per cent instead of the one per cent that it would be if the transaction is made within the *HalHati* between coops and a buyer who is a real-income tax payer.

Table A2: Deduction to producer's selling prices at fresh fruit and vegetable wholesale markets (*Toptancı hali*): Case of a producer union (cooperative) within the *Hal*

		%
Cooperative service fee*	If we use the minimum value found in the survey	3.00
Excise tax (stoppage tax)		2.00
Municipal tax**	If the coop has a stand in the <i>Hal</i>	2.00
Civilian Defence Fund		0.01
Social Insurance deduction (<i>Bag-Kur</i>) *		1.00
Total		8.10
Total without <i>Bag-Kur</i>		7.10
Total without municipal tax	If coop does not have a stand in the <i>Hal</i>	5.10

*Each cooperative is free to set this commission fee, which helps the cooperative to cover its running costs, but they do have to pay a 1 per cent VAT too (if the transaction is made within the *Hal*). According to our survey, it is generally fixed at between 3 and 6 per of the total value of the marketed produce.

**For agricultural cooperatives, there is no legal obligation to pay this tax, but they do pay it anyway if they rent an office within the Wholesale Market *Hal*.

*** Except if the producer is already a member of *Bag-Kur* him/herself and has already paid their contribution. In this case, the total deduction from the producer selling price is 13.45 per cent.

Note: According to Law 522, certified cooperatives are not required to have a place (stand) within the *Hal*, but if they want one they have priority when the stands are allocated. In practice, there are no empty spaces and most coops do not have a slot within the *Hal*.

Appendix 2: Physical and market advantages and disadvantages (by village)

Region	Department	Village	Advantages					Disadvantages					
			Good climate, good soil, advantages linked to early harvesting possibility	Irrigation is available	Farmers are experienced, village has a coop	Good geographic location, easy access to markets	Village &/or produce has good reputation	Land scarcity	Problems related to climate, water, insects, diseases	Problems related to human factors, production techniques	Problems related to contracts, organization, lack of cooperation	Lack of marketing facilities	Problems related to prices, lack of production planning
Southern Anatolia	Mersin	Kazanli	X			X		X			X		
		Kocahasanli	X		X	X							
		Hacisekiler	XX					X	XX	X			
	Antalya	Beykonak	X		X			X	X	X			
		Cakis	XX			X	X						
South-West & West Anatolia	Mugla	Kumluova	XXX			X					X		
		Karaculha	XXX		X			X			XX		X
	Izmir	Ozbey	X				X		XX				
	Manisa	Akselendi	X			X					X		X
Marmara region	Bilecik	Sogucakpinar				X	XX			X		X	X
	Bursa	Celtikci			X	X	XX			X	X	X	X
	Balik.	Isiklar	X	X		XX				X	XX		

Central & North Anatolia	Canak.	Davutkoy	X		X	X					X		
		Gumusday	X	X		XX	X					X	X
	Ankara	Akkaya	X			X	XX					X	X
	Tokat	Pazar				X	XX				X	X	X
	Samsun	Karpuzlu	XX		X		XX		X		X		X

Production advantages

	Southern Anatolia					South-West and West Anatolia				Marmara region					Central and Northern Anatolia		
	Mersin			Antalya		Mugla		Izmir	Manisa	Bilecik	Bursa	Balikesir	Canakkale		Ankara	Tokat	Samsun
	Kazanli	Kocah.i	Hacis.	Beyko.	Cakis	Kumlu.	Karac.	Ozbey	Aksel.	Soguca.	Celtikci	Isiklar	Davut.	Gumus.	Akkaya	Pazar	Karpuzlu
Good climate, good soil, advantages linked to early harvesting possibility	X	X	XX	X	XX	XXX	XXX	X	X			X	X	X	X		XX
Irrigation is available												X		X			
Geographical location, easy access to markets	X	X			X	X			X	X	X	XX	X	XX	X	X	
Village has good reputation								X		X	X					X	X
Produce has good quality					X					X	X			X	XX	X	X
Farmers are experienced, village has a cooperative		X		X			X				X		X				

Production disadvantages

	South Anatolia					South-West and West Anatolia				Marmara region					Central & Northern Anato.		
	Mersin			Antalya		Mugla		Izmir	Manisa	Bilecik	Bursa	Balik.	Canakkale		Ankara	Tokat	Samsun
	Kazanli	Kocah.	Hacis.	Beyko.	Cakis	Kumlu.	Karacu.	Ozbey	Akselen.	Sogucak.	Celtikci	Isiklar	Davutk.	Gumu.	Akkaya	Pazar	Karpuzlu
Problems related to land	X		X	X			X										
Problems related to labour				X													X
Problems related to climate, water, insects, diseases			XX	X				XX									
Problems related to human factors, production techniques			X							X	X	X					X
Problems related to contracts, organizations, lack of cooperation	X					X	XX		X		X	XX	X			X	
Lack of marketing facilities										X	X			X	X	X	X
Problems related to prices, lack of production planning							X		X	X	X			X	X	X	

Production advantages

	Southern Anatolia					South-West and West Anatolia				Marmara region					Central and Northern Anatolia		
	Mersin			Antalya		Mugla		Izmir	Manisa	Bilecik	Bursa	Balikesir	Canakkale		Ankara	Tokat	Samsun
	Kazanli	Kocah.i	Hacis.	Beyko.	Cakis	Kumlu.	Karac.	Ozbey	Aksel.	Soguca.	Celtikci	Isiklar	Davut.	Gumus.	Akkaya	Pazar	Karpuzlu
Natural endowments																	
	X	X	XX	X	XX	XXX	XXX	X	X			X	X	X	X		X
For all vegetables, harvest season is earlier than other places								X									
Soil is permeable and therefore can be prepared quite quickly																	
The local climate is excellent for tomatoes															X		
Climate and soil is very suitable	X	X		X	X	X	X					X	X	X			X
Abundance of water			X			X	X										
Frost risk is low in winter			X														
The soil is young and rich in minerals						X											
Soil quality gives longer shelf life							X										
The local climate is excellent for industrial (drying & paste) tomatoes									X								
There is enough agricultural land with sufficient high quality water for irrigation					X												
Advantages linked to physical location of the village																	
The village is far from Istanbul compared with some competing towns like Bursa									X								
The village is very close to the main cities like Istanbul and Bursa										X	X						

The village is very close to Ankara City Wholesale Market															X		
Processing facilities are nearby												X	X	X			
Closeness to large consumption centers	X	X			X											X	
Closeness to the local wholesale market						X											
Closeness to the market												X		X			

	Southern Anatolia					South-West and West Anatolia				Marmara region					Central and Northern Anatolia		
	Mersin			Antalya		Mugla		Izmir	Manisa	Bilecik	Bursa	Balikesir	Canakkale		Ankara	Tokat	Samsun
	Kazanli	Kocah.i	Hacis.	Beyko.	Cakis	Kumlu.	Karac.	Ozbey	Aksel.	Soguca.	Celtikci	Isiklar	Davut.	Gumus.	Akkaya	Pazar	Karpuzlu
Good reputation of the village/marketing advantages																	
The market conditions have settled and attracted biuyers to the village								X									
Village is a well-known vegetable production area										X	X					X	X
Production techniques, irrigation facilities																	
Irrigation is available												X		X			
Quality of the produce																	
Produce quality is good										X	X			X	X	X	X
High quality tomatoes from suitable soil					X												
The local tomato has a good reputation															X		
Advantages linked to human capital and social organization																	
Farmers are experienced		X		X			X						X				
They have their own cooperative											X						

Production disadvantages

	South Anatolia					South-West and West Anatolia				Marmara region					Central & Northern Anat.		
	Mersin			Antalya		Mugla		Izmir	Manisa	Bilecik	Bursa	Balik.	Canakkale		Ankara	Tokat	Samsun
	Kazanli	Kocah.i	Hacis.r	Beyko.	Caki s	Kumlu.	Karac.	Ozbey	Aksel.	Soguca.	Celtik.	Isiklar	Davut.	Gumus.	Akkaya	Paza r	Karpuzlu
Problems related to land and labour																	
Agricultural land is scarce			X														
Land is scarce and greenhouse establishment is expensive (rocks have to be broken and soil has to be carried)	X																
Agricultural land is converted and therefore not very suitable for tomato production				X													
Farms consist of several plots which raise costs and consume more time							X										
Outgoing migration from the region creates labour shortage																	X
Vegetable production is labour intensive				X													
Problems related to climate, water, diseases, insects																	
A virus has been affecting peppers								X									
A weed has been affecting tomatoes and there is no chemical against it								X									
Sunlight is not sufficient particularly in winter			X														
Water quality is poor and causes diseases			X														
High risk of hail				X													
Problems related to human factors, production techniques																	
New varieties which are particularly suitable for this location have not been developed yet										X	X						X
Lack of knowledge in pepper production			X														
Unconscious farmers												X					
Problems related to contracts, organizations, lack of cooperation																	
Buying firms violate the contracts when the production is boomed									X								
Increasing difficulties in collecting payments from buyers by farmers												X	X				

[illegible]

	South Anatolia					South-West and West Anatolia				Marmara region					Central & Northern Anat.		
	Mersin			Antalya		Mugla		Izmir	Manisa	Bilecik	Bursa	Balik.	Canakkale		Ankara	Tokat	Samsun
	Kazanli	Kocah.i	Hacis.r	Beyko.	Caki s	Kumlu.	Karac.	Ozbey	Aksel.	Soguca.	Celtik.	Isiklar	Davut.	Gumus.	Akkaya	Paza r	Karpuzlu
Lack of marketing facilities																	
The village lacks cooling, storage & packaging facilities										X	X				X	X	X
Marketing problems														X			
Problems related to prices and to lack of production planning																	
Production planning is missing. Prices drop too much when the production is boomed										X							
Tomatoes and peppers can't be sold when production is boomed									X								
Prices are low as a result of large production											X					X	
Lack of buyers for rich assortment of products							X										
Despite high quality, prices are low															X		
Prices are very volatile														X			