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**Euro-Mediterranean supply chain developments and trends in trade structures, in the fresh fruit and vegetable sector.**

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**Abstract**

Supply chains for fresh fruit and vegetables, are going through considerable re-shaping phase worldwide. This study analyses the trends which impose those changes and focuses mainly at the wholesale and export trading of the Euro-Mediterranean supply chain (namely, on how fruit and vegetable producer, wholesale and export firms react to the market forces that direct them).

Producer organizations and wholesale firms on the one hand of The Netherlands, Germany and other EU member countries, and of Non- EU Member Mediterranean countries, on the other hand, are the subject of this study. Two graphical representation of the Dutch and the German supply chains respectively are presented here as the main instrument to demonstrate the dynamics of the sectors structure, by describing the position, function size and development for the main chain partner in each of the aforementioned markets. The Euro-Med dimension of the fruit and vegetable supply chain, is analyzed by attempting an impact assessment and an estimation of the potential development of further supply chain integration or collaboration between firms in EU member countries and Mediterranean partner countries.

The existing policy framework (the CMO for the fruit and vegetable sector of the CAP), is also taken into consideration as it particularly affects the relationships developed between producer organizations and wholesale firms and retail chains.

**Keywords:** Euro-Med Free Trade analysis, Supply chain restructure, supply chain efficiency, fresh fruit and vegetables trade, vertical coordination

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# 1 Introduction

This paper examines the supply chain structures and trends in the fresh fruit and vegetable markets of EU member countries and attempts to assess the impact of further Euro-Med trade liberalization

## Methodology

For this purpose we have developed a twofold approach, where we first present a description of the main trends affecting the supply chain structure of fresh fruit and vegetable firms in Europe (in particular The Netherlands and Germany), followed by a second part, where we present structural elements of the respective fresh fruit and vegetable supply chains in the main MPC's (Mediterranean Partner Countries), namely Morocco, Egypt, Israel and Turkey, in order to highlight the factors affecting their possible further integration in the European supply chain of fresh fruit and vegetables.

The first part (section 2) presents the main concerns of producer organizations and wholesale firms and their partners in the EU supply chain. Namely to improve their competitive position, by properly responding to: a) food safety and quality requirements through the imposition of the respective standards and systems (HACCP, EUREPGAP, tracking and tracing), b) the need to offer more added value in the form of more convenience (pre-packed, pre-cut products), wider assortment and year-round availability, c) the need to "shorten the length" of the supply chain, in order to improve the control exerted over the transactions within the chain, As a result, numerous takeovers, mergers and acquisitions but also firm redundancies are taking place, d) developments of the information technology, so as to take advantage of applications that will allow them to optimize the management of the operation within vertically coordinated (or vertically integrated) supply chains and finally e) the major shift of the supply chain towards the rapidly increasing foodservice segment of the market.

The second part focuses on the structural and operational elements of the fresh fruit and vegetable supply chain in MPC's, in order to attempt an initial impact assessment to the respective European supply chain (Fearne et al., 2001). In specific, the assessment examines the effects of:

- a) A continued process of domestic market liberalization and privatization, with the formation of competitive private enterprises (national and international investments).
- b) Institutional development to apply quality improvement measures, quality standards/assurance/ systems (national standards, legislation, inspection bodies)
- c) Advances in a network of soft and hard infrastructures, with professional and inter-professional organization and their respective competence and performance
- d) Application of modern marketing methods (product innovation, processing, packaging, promotion, continuous marketing support, category management)

By synthesizing the analysis of these two sections we conclude with an impact assessment at the end of the paper, focusing on possible CMO (common market organization) policy alternative options and effects to the European fresh fruit and vegetable supply chain.

## 2 Trends and structure of the fresh fruit and vegetable supply chain in Europe

**Supply trends.** While fruit and vegetable supply trends lead on the one hand to a more open and competitive market, due to further WTO free trade agreements, on the other hand exporters will have to deal with strict phyto-sanitary and health barriers. In a free trade environment imports will increase, sourcing where it is cheapest and counter seasonal is more important than origin. CAP is also imposing more requirements to comply with rules on Environmental protection but it is also co-financing measures to improve producer marketing efforts. EU enlargement reduces seasonality and the levels of protection, while production will tend to move where cost and labour conditions are favourable. CAP reform, gradually moves subsidies from production to the second pillar, for environmental and rural support programs (Leguen De Lacroix E., 2003).

**Consumer trends.** Consumers increasingly want good value fruits and vegetables all the year round without emphasis on origin. Regional and Seasonal is an added value luxury – no longer the cheap staple of everyday existence.

Consumer behaviour is *not homogenous* in the European market. Within a framework of cultural and lifestyle differences that characterise Europe we could describe a major trend in the North for fast food, supermarkets high concentration and vertical co-coordinated supply chains, while in the South, life evolves around the family and fruit and vegetable markets are still largely dominated from street markets and high level of dispersion of specialised grocery stores, with low level of super market concentration. Each country though, is different and deviations exist even at regional and local level.

### Retail distribution market shares of fresh fruit

	Germany	France	The Netherlands	Italy	UK
Hypermarkets	25%	33%		8%	
Discount stores	42%	13%		3%	
Super-markets	10%	27%	69%	23%	75%
Street stalls	3%				
Markets	7%	16%	15%	38%	
Growers	8%				1%
Other outlets	5%	2%	7%	5%	9%
Green-grocers		6%	9%	19%	10%
Mini-markets		3%		4%	
Independent stores					2%
Co-ops					3%

Source: CBI, 2004

Factors such as higher disposable income, more often leisure and travel, increasing multiculturalism due to immigration, higher education and more media influence, in combination to year round fruit and vegetable availability, offer opportunities for produce to be marketed for specific consumers groups as: food to entertain, or food that is more functional, convenient or faster to prepare and eat, according to the particular life style, health and variety needs of consumers in each market segment (Baourakis et al., 2004).

Despite a negative trend in recent years in some countries (Italy) and the fact that the European market is at rather saturated stage currently, the long term trend, points to an *increase of consumption*, due to the association of fruit and vegetables with healthy attributes. Nevertheless, not all fruit and vegetables will gain from this. Fruits like nectarines, grapes strawberries, lemons and pineapples and some vegetables like paprika, onions, courgette and chicory will develop more dynamically, while on the contrary more “traditional” products will face a decreasing demand. Such fruits are mandarins and bananas and in the vegetable sector cabbages and lettuce. Two demographic trends (aging and the decrease in household size) are also expected to influence the demand for fresh fruit and vegetables (aged people are among the highest fruit and vegetable consumer segments). As it could be already observed in the last years, the share of processed or frozen fruit and vegetables will continue to rise and also out of home consumption will grow in importance.

*Eating out* will change and increase, especially in those counties in which it has not been a traditional way of life. In that context catering will increase and the fruit and vegetable supply chain participants will need to develop new ways of collaboration, responding to the needs of catering business.

Another demand driven change in the supply chain of fruit and vegetables is the increasing importance of *quality assurance systems* (certification) for all actors in the supply chain (Baourakis et al., 2005).

**Retail and catering.** Supermarkets will continue to grow in those markets in which they hold less than 75% of the retail food business. As they get more of any market they will find margins under pressure and will look to stream line their fruit and vegetable supply chain and squeeze suppliers, in order to get a larger share of the margin.

In all countries eating at home will reduce and change in a dual way with food items (including fruit and vegetables), purchased in order to be consumed in some occasions as “**fuel**” (low cost, easy and fast to prepare), while in others as “**food for entertainment**” (high quality, new variety, exotic, ethnic; Bijman J et al., 2003).

With the consolidation of retailers, even in catering, and the pressure on their suppliers, we begin to see more often application of new practices. More retailers are applying **Category Management** techniques and actually request for their preferred suppliers (wholesalers and logistical service providers) and wholesalers who wish to become partners in such big supply chains should develop skills to undertake and manage the fruit and vegetable product category, even at the stage when products are in the retailers warehouses and stores, by optimising effectiveness and efficiency through the alignment consumers’ interests, retailers and suppliers in a true partnership (Baourakis et al., 2007).

As for the **wholesale sector**, operating within a **consolidation** and vertical co-ordination environment, the challenge is to address the issue of effective and efficient service, as a link between retailers and producers through innovative e-commerce solutions and by taking advantage of the opportunity related to the preparation/ convenience needs of retailers and foodservice. Supermarkets develop **e-commerce** applications such as

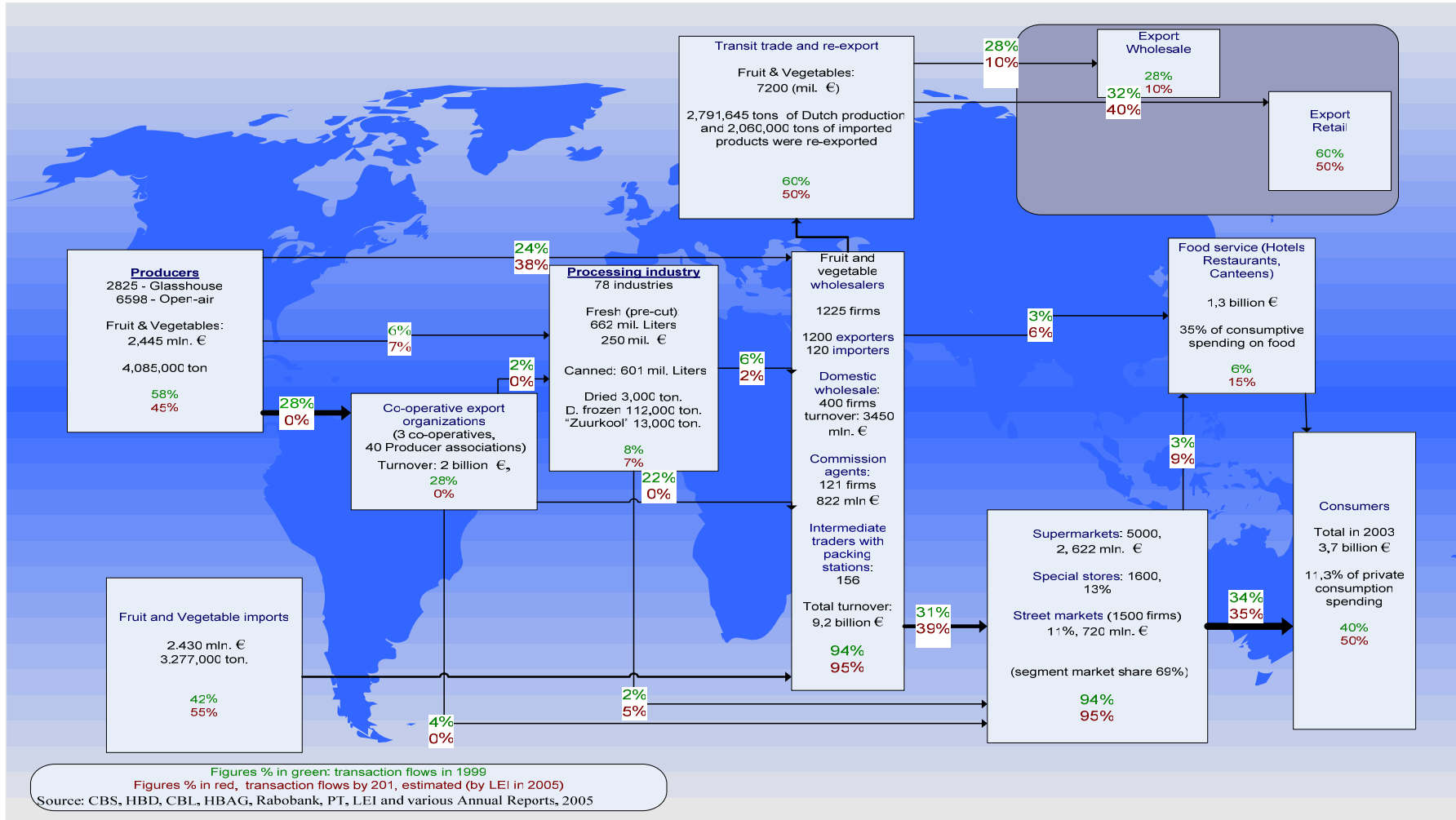
tendering systems (electronic real-time auctions) and also in collaboration with other partners in the supply chain (producers, wholesalers, exporters, logistics firms) they develop **traceability** techniques (Baourakis et al., 2002).

The strong tendency in the horticultural trade towards concentration and towards “direct trading lines” is continuing (Bondt N. et al., 2005). This method of transaction between producers/exporters and a large retail chain is, in some European countries, partly eroding the function of the specialised importers (Kaufman et al., 2000). This leads to those same importers functioning to a certain extent as logistics service providers, quality controllers and coordinators of the stream of goods. (Richards T. et al., 2003).

**EU-expansion implications.** Within the EU expansion countries there are significant opportunities to increase consumption of fresh fruit and vegetables since in some countries such as Poland and the Czech Republic, it is still at a low level. If that is the case though, exporters who wish to expand in these markets will have to innovate in order to succeed and they will have to improve their marketing skill and learn what consumers want. To take advantage of those market opportunities, significant rearrangements take place at the distribution networks. The geographical centre of logistics has moved towards Germany and the Czech Republic, with infrastructure developing at a fast pace in the region. The quality of available products is quickly improving as well, and Polish tomato producers are now able to export to Germany Holland and France. Although a small fraction of producers are able to export nowadays (10%), these will definitely increase as they are investing in Eurep-Gap certification.

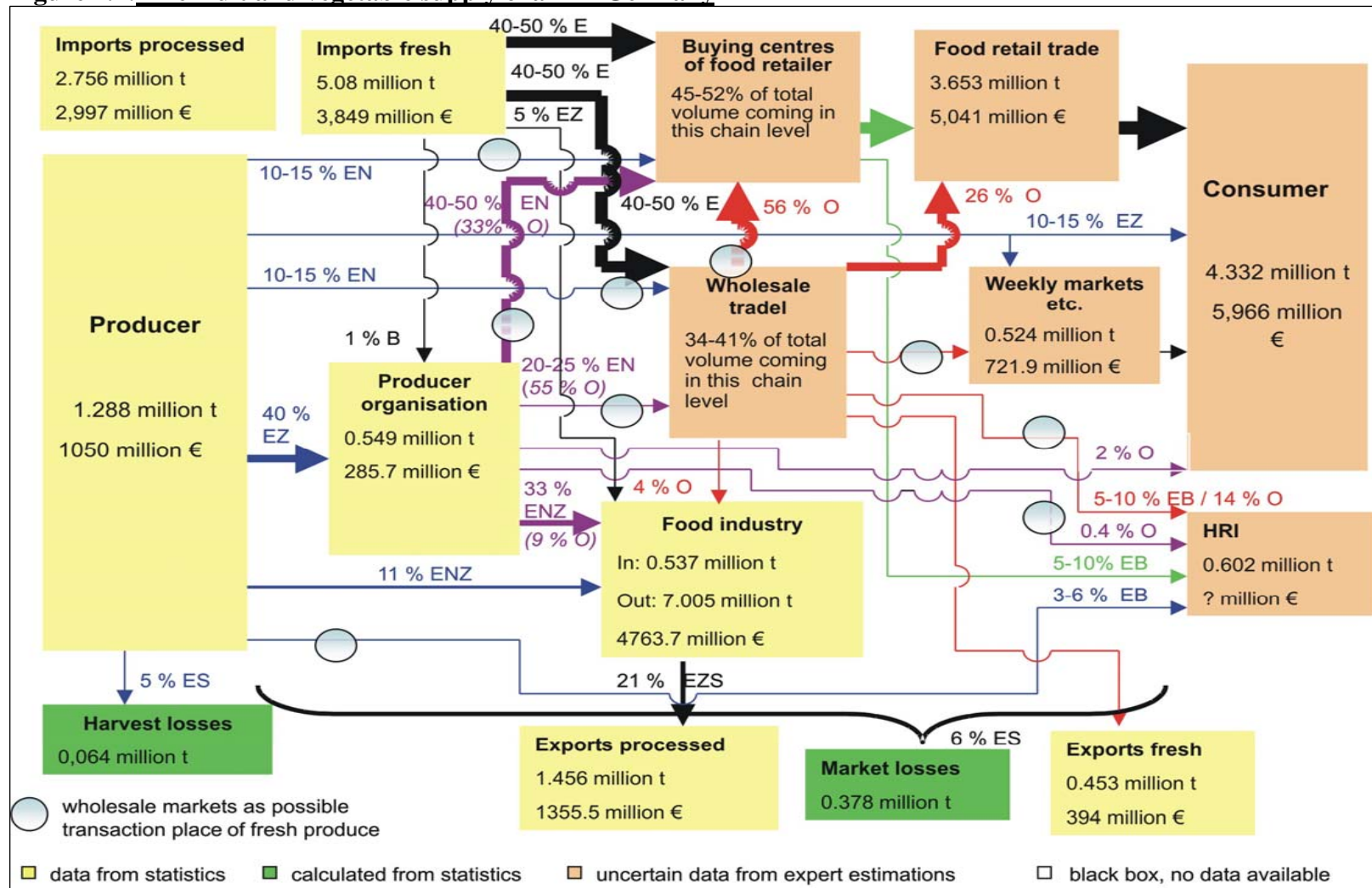
**The retail sector in Central Eastern Europe.** Modern supermarkets have quickly risen in some countries (The Czech Republic, Hungary, Slovenia and Poland are the so-called “first wave countries, with modern retail market shares between 44 and 55%, In “second wave” countries (Croatia, Romania and Bulgaria) modern supermarkets’ market shares range between 8 and 42 %, while the respective figure for “third wave” countries ranges at 1-2%. The increasing trend of modernisation appears with structural characteristics of: high level of concentration, foreign ownership of capital, “Greenfield” type of foreign market entry, high share of large multinationals and wide geographic coverage of the market (Kalaitzis et al., 2007). Procurement systems of this type of modern supermarkets are in turn characterised by six key shifts towards: a) centralised procurement systems, cross-border procurement, specialised dedicated wholesalers, preferred supplier systems, utilisation of multinational logistics firms to improve procurement systems quickly and finally, adding private standards (HACCP and other standards). The implications of those trends are important and far reaching. The main one is that, specialised wholesalers or preferred providers, in order to apply the necessary techniques and methods, tend to work with (relatively) large fruit and vegetable producers (or exporters). Irrespective of their relative size, either small or bigger Fruit and Vegetable producers or exporters have to be aware of the current requirements (quality standards, certification, logistical and managerial skills) of either specialised wholesalers or preferred suppliers for super market chains, if they want to maintain access on these supply chains. Inter-modal transport and short see shipping are those models of transport that will increasingly be import fro fresh fruit and vegetables.

**Figure 2.1: The fruit and vegetable supply chain in The Netherlands**



(Abbenhuijs R., 2004, "FrugiVenta" 2003, Wijnands J. et al., 2004)

**Figure 2.2: The fruit and vegetable supply chain in Germany**



(A.C. Nielsen, Waindlmaier, H. 2000)



### 3 Structures and trends in the fresh fruit and vegetable supply chain of MPC's

#### 3.1 Morocco

Citrus growers in Morocco are grouped in the *Association de Producteurs d'Agrumes au Maroc* (Moroccan citrus growers' association - ASPAM)

<http://users.casane.net.ma/aspem>, which comprises 7 sections, each representing a producing region. ASPAM growers plan to relaunch their sector and start a recovery in terms of production and export volumes. ASPAM represents 74 members, accounting for 80% of the production capacity, aims at a better plan which will be better adapted to the sector's existing production needs as well as the demands and developments of external markets.

A 12-year plan launched in 1998 is already running – the target was for exports of some 850,000 tonnes yet Morocco is exporting only some 450,000t in a good year. In fact, exports have been experiencing a chronic decline in the past five years as competition intensifies, especially from Spain, Egypt, Turkey and Greece. According to ASPAM “one of the biggest problems to tackle is that apart from a few groups that are well equipped in terms of both human and technical resources, the majority of citrus growers are under-resourced which helps neither product quality nor traceability”.

The priorities for the sector should be micro-irrigation, the use of certification systems, new plantings of export varieties and reduction in the burden of bureaucracy on producers. Irrigation is a major issue since the Souss region which accounts for half of all citrus production is suffering from a serious lack of water resources (Bergh S., 2006).

The citrus sector's new strategy will also look at integrating right through the chain, from producers to packers and exporters, and in partnership with the ministry of agriculture.

**Supply chain structure.** The prior OCE state controlled monopoly (since 1987 acts as an exporting group) has been replaced by some Exports' Groups, which have developed a commercial representation in their main markets, in order to: follow market trends, to follow consignments which have been sent and monitor quality on arrival and in order to promote direct marketing to large buying houses and supermarkets. 9 such exports' groups have formed the:

**Moroccan Association of Fruit and Vegetable Producers and Exporters (APEFEL)** [www.apefel.com/](http://www.apefel.com/). Recent decades witnessed substantial growth in the export of Moroccan fruits and vegetables, thanks to advances in production, packaging and export preparation, and marketing. A new organization became essential to promote professionalism and to utilize the skills of young, dynamic fruit and vegetable producers and exporters.

Consequently, APEFEL was established on February 24, 1994, to provide a wide range of assistance to Moroccan fruit and vegetable owing to the dynamism and services offered to its members, APEFEL currently represents 500 producers and exporters, mostly in the areas of Souss-Massa, Casablanca-El Jadida, Berkane, and Loukkos, who are responsible for 70% of fruit and vegetable exports. Members of this association are:

- 1) PRIM ATLAS Group (consisting of 3 co-ops and 1 private firm active in citrus, other fruits and vegetables),
- 2) AGRI SOUSS Group [www.agri-souss.com](http://www.agri-souss.com), consisting of 10 private firms active mainly in vegetable but also in citrus fruits),
- 3) G.P.A Group [www.gpamorocco.com](http://www.gpamorocco.com) (consisting of 11 private firms active mainly in various citrus fruits but also in other fruits and vegetables),
- 4) DELASSUS Group, [www.delassus.com](http://www.delassus.com), (consisting of 9 private packing stations active mainly in various vegetables but also in flowers and citrus fruits),
- 5) Soema AVRYL Group, of the Soema packing station, that specializes in various vegetables,
- 6) ROSAFLORE Group (IDYL), consisting of two private packing stations also specializing in various vegetables,
- 7) ARMONA Group, of the ARMONA packing station, that specializes in various vegetables,
- 8) MARAISSA Group, of the AZURA packing station, specializing in various vegetables and the
- 9) GEDA Group, (consisting of 9 private packing stations specializing mainly in citrus but is also active in some vegetables -1 station-).

**Maroc Fruit Board** ([www.marocfruitboard.com](http://www.marocfruitboard.com)) , is another large scale common marketing platform, with 8 of the largest fruit and vegetable growers as shareholders, namely the Groups: LES DOMAINES, DELASSUS [www.delassus.com](http://www.delassus.com), PRIM'ATLAS, SALAM, SOGECAP, O.C.E, SODEA [www.sodea.com](http://www.sodea.com) and KANTARI) which group together 25 packing stations and jointly supply international markets under the label “Morocco”, some 350,000 T citrus fruits and 150,000 T early produce.

SODEA (/SOGETA) is a previously 51558 hectares state managed land that was recently leased from the government to the private sector. About one fifth of this land has been devoted to citrus and accounted roughly for about 10 percent of Morocco’s fresh citrus production and exports.

**Other supply chain participants are:**

*Commissioners*, who work on the quay or at markets or through direct sales to buying houses and to supermarket chains. *Commissioners*, operate on a consignment basis and constitute the main route for the sale of Moroccan goods with a commission (8% to 5%)

*Buying houses*, which collaborate with large distribution systems applying modern techniques (zero level stock, tight flow, supply management carried out directly by the sales unit.)

They have developed two types of contracts for suppliers:

- (i) firm contracts, with a publicity campaign where costs are shared by both sides;
- (ii) supply to the wholesale fruit and vegetable market.

*Packing stations*, which also provide technical services and liaison with other chain participants.

*Foreign representatives*, which organize purchase and procurement on behalf of importing wholesalers or retail chains abroad.

**Other export related institutions are:**

- The Autonomous Establishment for the Control and Coordination of Exports (EACCE), [www.eacce.org.ma](http://www.eacce.org.ma), which is responsible of carrying out some important export related controls, inspections, certifications, registrations and other administrative processes, for all export commodities.
- Morocco Export Promotion Centre (“Centre Marocain de Promotion des Exportations” - CMPE), [www.cmpe.org.ma/](http://www.cmpe.org.ma/)
- Transporters (lorry, ship, plane), (TIR) is organised by French and Spanish transporters, COMANAV (<http://www.comanav.co.ma/> Moroccan Navigation Company) and some private shipping companies.

**Trends in Moroccan horticultural exports**

Nevertheless, at present there are still no signs that the Moroccan citrus production is going to increase significantly in the short and medium terms in spite of the government and producers’ organizations ambitious plans to expand planted area, convert to new varieties, and replace old orchards. Souss producers face serious water shortages that increase their cost of production considerably. In the Gharb area (vicinity of Kenitra), orchards are old with no significant replanting being carried out by farmers. Average yearly planting over a long period has been below a certain minimum, necessary to maintain adequate growth of citrus production. Thus low planting figures indicate that that Morocco might be unable to even fulfill the increasing local demand for some varieties of citrus in the long run. In fact, in recent years, clementine and orange prices increased significantly in the local market and caused the closing of the sole Moroccan citrus concentrate producer because of the lack of adequate fruit supply.

**Trade**

Moroccan citrus exports continue to be overwhelmingly concentrated on the EU and Russian market. Egypt is rapidly gaining ground as a major competitor to Morocco’s exports in the future especially to the EU. The Russian market tends to be less demanding on quality and thus competes directly with the local fresh market. EU countries will continue to be the main outlet for Morocco in spite of the downward trend over the past few years because of the emphasis on the Russian market. The proximity of the EU market, the high prices paid by European consumers, and more importantly, the preferential access given to Moroccan citrus under the Morocco-EU free trade agreement are appealing to Moroccan exporting groups. The non- EU markets, commonly known in

Morocco as "contract markets", including Russia, Saudi Arabia, and Canada account each year for over a third of Morocco's fresh citrus exports. For these markets, each year, arrangements are made between importers and Moroccan exporters to ship agreed-upon quantities and quality of fruit.

**Uncertain Long-term prospects for fresh citrus exports:** Local production can hardly keep up with the increasing demand from both export and local markets. In recent years, Morocco has not always been able to fill the duty-free quota granted by the EU for clementines and oranges. Prices in the local market have reached a level so that many farmers prefer selling to the local market and avoid delays and risks occurring in exports. Also, the decline in the EU share in Morocco's agricultural exports indicate that some exporting groups have more difficulties to comply with increasingly complex EU industry standards and requirements. This explains partly why more emphasis has been given in recent years to exporting to less stringent non-EU countries. The Eastern-European markets in particular (Russia) have been generally buying lower quality, cheaper fruit that would be less suitable for the EU market.

Today, there are no Moroccan standards for organic products and exports of organic citrus (as controlled and certified by European firms) did not exceed 1,000 MT last year.

### **3.2 Egypt**

Egypt, is making notable advances in terms of product quality and logistics services for its fruit and vegetable exports, in order to take advantage of its climate, lower costs and good production methods (Wijnands Jo, 2004).

#### **The Egyptian Exporters Association-“Expolink”**

Egyptian Exporters Association - EEA is a nonprofit organization founded by the Egyptian private sector exporters in 1997 with a common belief in the potential of Egyptian exports.

EEA primary goal is to develop Egyptian non-traditional exports and increase Egyptian exporters' competitive advantage, helping them reach, and compete, in targeted markets with sophisticated and enhanced products or services matching international market demands. EEA offers a comprehensive service package from information, market research, technology transfer, export promotion, to market entry. EEA provides exporters with the necessary exposure in targeted market by participating in the international specialized trade fairs worldwide, and by providing a qualified presence for Egypt and Egyptian products that would otherwise be beyond their reach. In addition, EEA plays an effective role in export policy reform providing decision makers with researches alternatives and solutions to remove export barriers and enhance export incentives.

Orange production accounts for half the total fruit production in Egypt. About 80 percent of Egypt's total orange production is on large farms (of 4.2-42 hectares); 20 percent of production is on small farms (0.42 -4.2) hectares. Navel oranges are the predominant

variety. Smaller amounts of local (baladi), sweet, valencia, and other varieties are also produced.

### **Trade**

With expectations for increased domestic availability, orange exports are forecast to grow moderately in 2006/07. Although Egypt has excellent opportunities for expanding its orange exports due to its favorable climate and strategic geographic location, exports to the European market continue to be limited by the uneven quality of Egyptian oranges, as well as by competition from other suppliers such as Spain, Israel, and Morocco. However, in 2005/06 Egypt's total orange exports increased to non-tradition markets such as Croatia, Russia and Norway. Orange exports to Saudi Arabia and other Arab countries decreased in 2005/06.

The EU-Egyptian Partnership Agreement offers several tariff concessions for Egyptian orange exporters.

Egyptian exporters prefer to sell their production for cash on an FOB basis in order to avoid the risk of being rejected due to sanitary- phytosanitary (SPS) reasons or being in a position to face adjusted prices due to quality factors. At the present time, there are about 20 private sector, small to medium size exporters and four large orange exporters in Egypt. Reportedly, three major companies control about 80 percent of the export market, while one public sector company sector controls about 20 percent of the export market. Egyptian strategy has shifted its focus to Upper Egypt in an effort to include smaller farmer associations within the overall benefits of exporting higher value horticultural products. The Egyptian Government applies a strategy to actively support promotion policies followed by private grower associations.

During the past five years HEIA has made significant accomplishments in expanding its membership, in staff development, in technical support, training and other services provided to its members. It also succeeded in establishing the Refrigerated Perishables Terminal (RPT) at the Cairo Airport. The combination of all of these factors has contributed to the significant expansion of Egypt's horticultural exports (Hofer J., 2006).

HEIA expanded its membership by 76 percent between 2002 and 2004 and now has about 380 members. Most of the growth has been in the associate member category. HEIA organized a large number of seminars and workshops and provided training on technical production and post harvest handling practices over the past five years. Training to attain compliance with international standards, particularly EUREPGAP and BRC, has been an important part of the training program. HEIA's system of arranging technical assistance visits by international horticultural specialists is widely credited for enabling members to implement the production and post harvest practices that are required for export. Few of the most prominent horticultural export firms (some are also supported by HEIA), are: "[elwadi](#)", "[gadcoexport](#)", "[al-dhabi](#)", "[sonac](#)", "[belco](#)", "[wal-shams-group](#)", and "[herrawigroup](#)".

The recent *Green Corridor agreement*, helped Egyptian Container Line set up a new venture offering transportation services to exporters shipping produce to Europe, also through the port of Koper in Slovenia. The project aims also at developing Egypt's ports and improving production methods on small and medium-sized farms have been initiated with the support of the Italian authorities and the country's fresh produce industry. Several new shipping services are now being chartered in order to cope with the increased traffic coming out of Alexandria, Damietta and Port Said.

### 3.3 Israel

Full liberalisation of the export started in the 1990s, emphasising on growing and exporting High-Value Products (HVP); establishing niche marketing strategies, all having the potential for fetching high prices on foreign markets.

The liberalisation of export structure left three major companies which export fresh produce: Agrexco, with its prestigious brand "Carmel," with nearly 85% of the total export volume; Mehadrin-Tnuport, noted for their TOP brand citrus and avocado export, and the Arava Growers. Besides these 3 leading exporters however, another 25 small and medium fruit and vegetable exporters are also active in Israel.

Agrexco, the country's leading agricultural exporter, exports over 100 products, some 330,000 tons of fresh produce per year, with some 4 000 farmers supplying products under contract. Agrexco is a partnership between the Israeli government (50%), Israeli growers represented by the country's production and marketing boards (25%), and the Tnuva cooperative (25%). It has a global network of marketing and distribution services for overseas suppliers. Agrxco operates at the state of the art logistics and distribution network with own cargo vessels- Carmel EcoFresh and Carmel BioTop.

Agrexco's produce is marketed through a board known as the Panel, which is comprised of selected category managers, distributors and wholesalers, who either handle a wide range of produce or specialize in single varieties. High-Tech Agriculture is based on the application of advanced post-harvest packing procedures to ensure a longer product shelf-life. Advanced packing facilities allow using tailor-made packing design and specific design of the large multiples.

Environment-Friendly Produce with a privately developed, all-encompassing Ecofresh system that meets EurepGAP certification as well as other stringent international or privately owned standards.

Mehadrin-Tnuport, Israel's second largest agricultural export company, is the country's leading grower and exporter of citrus.

Arava Export Growers is a private company exporting fresh produce from Israel. Its two subsidiaries, Arava USA and Arava Holland, and has a sales office recently established in the UK.

Citrus exports from Israel decreased 20.5 percent during 2005 compared to previous year levels (from 177,765 tons to 141,237 tons). The decrease was due to a decrease in local

citrus production, combined with manpower shortage. During the picking period there was a shortage of available workers. White grapefruit and sweetie exports decreased by 25 and 16 percent, respectively. The decrease was due to the high prices paid by the processing industry and decrease in local harvest.

In 2005, exports of the sweetie variety to Japan decreased by 35 percent compared to the previous year (from 10,190 tons to 6,580 tons). Of total sweetie exports in 2005, 53 percent were delivered to Japan and the remainder was exported to the EU and Russia.

Due to the continued shortage of grapefruit from Florida, it was the second consecutive year that there was an export of white grapefruit to Japan (2,300 tons). The sweetie exports to Japan in the forthcoming years are expected to stand at 4,000-5,000 tons per year.

Of the total citrus exports, 68 percent were exported to Western Europe, mainly England, but demand in Eastern Europe, especially in Russia, is increasing, and approximately 19 percent of the total citrus exports were exported to Russia (exports to Russia are mainly easy peelers and red grapefruit). Italy captures 9 percent of the total citrus exports, mostly red and white grapefruit varieties. Japan capture 6 percent of the total citrus exports and the market share for the U.S. and South Africa is approximately 5 percent.

### **3.4 Turkey**

Antalya Fresh Fruit and Vegetable Exporters' Union leads the export activity for Turkish enterprises in the fresh fruits and vegetables sector. Products are purchased directly from supermarkets, rather than the groceries or greengrocers, resulting to increased public health and product safety requirements. Spot markets (wholesale markets), where products are sold according to the prevailing market prices that very day of trade.

The second marketing channel concerns large supply chains of retailers, food service providers. Here sales are made on the basis of costs plus margin and final (selling) price is agreed afterwards. In this case, a profit margin of 5-10% is agreed.

Exports to the German market stopped as a result of excessive chemical residues on 2004 and were directed to Russia. As grape exports dropped severely and of the 3% of fresh grapes exported, 2% goes to Russia, where no analyses are applied and 1% goes to the EU member countries. The remaining 97% concerns domestic consumption.

Turkey sees a bright future for exports of fresh fruits and vegetables to the EU countries, mostly by setting up similar vertically integrated supply chains as some Dutch companies have established joint ventures with producers from Spain and Morocco. They produce in greenhouses of 100-200 acres of land within fully controlled conditions, while also inspect and supervise the use of all the chemicals, fertilizers and hormones.

## **Fruit & vegetable exports of Turkey**

The volume of fresh fruit exports amounted 1.240.500 tons in 2005. Citrus led the list with a significant share of 72 %. Soft Citrus ranks first in total citrus fruit export in terms of value. In general, a quarter of the production is exported. Turkish Lemons are available throughout the year due to natural and modern cold storage facilities. Tomatoes have a significant place in total exports with a share of 45%. Turkish products are exported to more than 50 countries throughout the world. Turkey has begun to enhance her market share in the CIS countries. Turkish exporters are well aware of the international health and environmental considerations and offer their customers products complying with both legislative and market requirements. Instruments such as ISO 9001:2000, HACCP, GAP and the Eurepgap are positive arguments for quality. Turkish exporters have successfully followed these developments which effect world trade.

Nearly half of Turkey's citrus crop is selected, graded, and packed for upscale domestic and export markets. About a dozen large scales packing companies (with annual production of at least 15,000 MT) dominate the market. The packing business is very risky since packers pay firm prices to growers against uncertain export receipts. There has been a great deal of turnover in the business during the last twenty years. Several packers have maintained their position by relying on production primarily from their own orchards. The remaining half of citrus production does not receive any selection and grading and is sold through wholesalers and retailers with only minimal or no packing.

Private packers handle marketing of all citrus crops. Packers used to begin contracting in August and purchase the crop-on-the tree. Due to uncertainties in the market, packers have started contracting later and buying as much as they think they will sell. They estimate that about one half of the crop will be first or second grade destined for the upscale local market and/or export market. The remainder will be sold to regional wholesalers or supermarket chains.

## **Production Policy**

The Turkish government does not support the price of citrus and does not provide any other direct government assistance to citrus growers. Buyer cooperatives play a smaller role in the marketing of citrus. The government sponsored Exporters' Union is playing a more active role in market promotional activities, which still appears to be largely restricted to market research and information.

## **Aegean exporters' associations –Mediterranean exporter unions**

The Exporter Unions, founded in the 1930's to put together the interests of the exporters as well as to organize their members' business activities, relationship and to solve the problems they met and to increase the exportation of our country, are the sole Professional Organizations only dealing with export and working under the umbrella of The Prime Ministry Undersecretariat For Foreign Trade.



There are 13 Exporter Unions which are settled all over the country in the regions where an economical and export potential exists (Istanbul, Izmir, Bursa, Ankara, Mersin, Antalya, Gaziantep, Erzurum, Giresun, Trabzon, Denizli) and carry out their activities in Turkey and abroad for 20 sectors. Considering the Fruit and Vegetable sector, there are six Fresh & Vegetable Exporter Unions throughout Turkey, namely: “MEDITERRANEAN” ([www.akib.org.tr](http://www.akib.org.tr)), “ANTALYA” ([www.aib.org.tr](http://www.aib.org.tr)), “AEGEAN” ([www.egebirluk.org.tr](http://www.egebirluk.org.tr)), “ISTANBUL” ([www.iib.org.tr](http://www.iib.org.tr)), “BLACK SEA” ([www.blackseaexpunion.org](http://www.blackseaexpunion.org)), and “ULUDAG” EXPORTERS’ UNION ([www.uib.org.tr](http://www.uib.org.tr)).

The Mediterranean Exporter Unions, settled in Mersin-in South Turkey at the Mediterranean coast, is leading the function of Turkish Coordinator for Fresh Fruit and Vegetables. It has currently about 1.138 members exporting fresh fruit & vegetables out of 6.299 members overall.

The Aegean Exporters' Associations execute research, coordination, promotion of export and provides the smooth and functional running of the relationships between the exporters with government . AEA’s 4 000 members at 12 Associations realizes 10% of Turkey’s total exports.

### **The Exporter Unions**

The functions of the Exporter Unions can be divided in three main parts : a) To conduct a range of work processes with the aim of protecting the members’ benefits and increase their export capacity, b) To organize and control the export activities within the framework of the current export regulations (by following up the products exported under a quota, by making the registrations of the products to be exported in special conditions and by keeping the export statistics of all the items entering in the field of our sector activity) and c) to coordinate the work relations between the exporter members and the Under secretariat for Foreign Trade by handling the necessary procedures in order to ensure the well running of the above cited functions (namely to: -organize and control the members’ export activities, -follow up the foreign trade legislation of the import countries and the international arbitration rules, -set up laboratories, firms, establishments, foundations enabling the realization of the members’ export common activities, -follow up statistics, price fluctuations, supply and demand movements; to investigate the foreign and domestic markets of the items related to the activity field of the Union ; to prepare various publications on these matters and -organize meetings, seminars and panels, to participate in fairs and exhibitions

### **Trade flows**

In 2005 Turkish fresh tomato mainly directed to Russia, Romania and Saudi Arabia, as combined exports there, constitute about 61 percent of the annual total exports.

## 4 Conclusions

**Euro-Mediterranean supply chain linkages.** Despite a slight decreasing trend in the last three years in exports, Mediterranean countries, constitute a significant trading partner of the European Union in the fruit and vegetables sector with a 9% share of imports to EU.

In most countries of the region supply chain structures in the fruit and vegetable sector are in a stage of shifting from government controlled institutions towards increased participation of private structures. Exports are handled mainly through independent commissioners who work on the basis of consignments and operate on spot markets (central wholesale markets), or through larger buying/packing houses, which are focusing on supplying either wholesalers in importing countries or buying centres of retail chains and other large institutional buyers, that apply modern supply chain management methods. A higher percentage of exports is handled by specialized (mostly private and co-operative owned) buying/packing business in the most important export trading countries (Turkey, Morocco, Israel and Egypt). Those firms are more suitable to integrate in large European supply chain, and to fulfill their high food safety standards, marketing and logistical needs. Requirements concerning certification and application of tracking and tracing techniques, could be thus met by the largest and best organized of those exporting firms, while those operating in a consignment basis will face increased difficulties to have access to the European retailer chains which actually impose such requirements. While new investments in meeting EU standards have been made in most Mediterranean countries (with EU assistance mainly through MEDA funds), it is unknown to what extent adequate additional investments will follow, due to structural implications (small scale farming, low education and domestic market orientation).

**Food safety.** Investment in food safety standards has become of critical importance in order to meet high market demands of the European Union and participate in modern supply chains (Cook R., 2001; Huang S., 2004). Throughout countries in the Mediterranean region, efforts have been made or are underway to reform and improve food control systems. For instance, activities have been carried out to develop a national strategy for food control (Morocco, Tunisia), draft new food legislation according to international requirements (Cyprus, Egypt, Jordan, Lebanon, Morocco), review and update food standards and regulations (Syria). Most countries use Codex as a base to develop their food standards, concerning good manufacturing and quality assurance systems (Tunisia), and risk management systems (Egypt, Jordan, Morocco).

There is growing acceptance and increasing use of Good Manufacturing Practices (GMP), good agricultural practices (GAP) and Hazard Analysis Critical Control Point (HACCP) throughout the Region. In a number of countries, many industries apply HACCP on a voluntary basis in order to improve food safety domestically as well as increase their share of export markets. Some countries, such as Lebanon, Morocco, already have or are developing legislation and guidelines on GMP and the HACCP system. These efforts though are sometimes hindered by limited availability of scientific, technical and financial resources.

As far **policy** in the agricultural sector is concerned, in combination with the Barcelona agreement framework for Euro-Mediterranean relations, we will have take into account the fruit and vegetable market regime in the EU. In the fruit an vegetable sector, due to the existing orientation of the CMO towards building up producer organisations with strong market orientation and marketing competence, measures concerning the Mediterranean countries, should co-ordinate with the need to stimulate and support the creations of either producer organisations or other suitable institutions (of the Mediterranean countries) that could link up and participate to the vertically co-ordinated supply chains with wholesale and retail organisation in Europe (Duponcel M., 2004) . Thus, MEDA, or other funds aim to support agricultural development in Mediterranean countries should streamline instruments and measures with the EU CMO for fruit and vegetables. Policy could stimulate collaboration between producer groups in the fruit and vegetable sector, from EU and non-EU member Mediterranean countries, encouraging them to jointly submit operational plans that include actions on issues of quality and food safety management, but also on other marketing fields, as logistics, packaging and labeling, among others. Such a policy could contribute in the formation of Euro-Mediterranean producer organizations with strong supply chain integration which will be in position to offer high quality produce, with a more competitive cost structure and year round availability, in the most important product segments, such as citrus fruits, tomatoes and/or other vegetable products.

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