

Export Value Chain Analysis Fruit and Vegetables Jordan

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Management summary

The Jordanian production of fruit and vegetables is considerable and even has room for expansion. Exports to most of its traditional markets Syria, Iraq, Lebanon, Eastern Europe and Russia are under severe pressure because of closed borders, due to the Syrian crisis. Alternatives to reach the Eastern European and Russian markets, aren't competitive or couldn't be realised so far. Exports to Saudi Arabia and other Gulf countries are rising but cannot compensate all losses. For exports to high end markets, such as EU / EFTA, the sector doesn't have the capacity yet.

This report analyses the fruit and vegetables value chain in Jordan, emphasizes the bottlenecks in the chain that prevent exports along four themes and shows a set of interventions, aiming to rebuild and strengthen the export position of Jordan in fruit and vegetables.

Market & market access

- Jordan has and will continue to have competitive advantages as a supplier of fresh fruit and vegetables, in particular because of the unique production in the Jordan Valley in the (European and Central Asian) wintertime.
- Limitations in border crossings to the north with Syria and Iraq have a huge negative impact on actual realisation of exports; products cannot physically reach their normal markets.
- More structural problems are related to the absence of a national marketing strategy, which is the result of low priority for this with the government and a weak interaction between the public and private sector; any regulatory framework to support the export of fruit and vegetables is missing.
- Only few exporters are compliant with high-end market requirements and are able to access these directly themselves.
- Recommended interventions in this field are:
 - Development and implementation of a national food security strategy, including institutions and legislation;
 - Lobby (towards Israel) for direct access to the Mediterranean Sea;
 - Strengthening the export capacity of business support organisations and SMEs to EU / EFTA and Central Asia (including Russia);
 - Strengthening air transportation.

Technology & inputs

- In the field of technology & inputs, as well as infrastructure for cultivation and postharvest, entrepreneurs in the sector see much room for improvement.
- The main bottlenecks are availability, quality and costs of work force and water.
- Recommended interventions are
 - Training on farming practices that are up-to international standards
 - Introduction of advanced technologies and mechanization in farming practices and postharvest
- Introduction of technology and modern practices will increase productivity and quality and at the same time save labour costs and water. Technology will also be helpful in the transition process towards crops with the best possible water efficiency and diversification towards a more resilient product assortment in times of crisis; in the vegetables subsector there's much room for diversifying the assortment and becoming less dependent on tomato.

Human resources

- Entrepreneurs in the sector worry about the lack of competences and leadership as well as a low level of cooperation within the sector and between the private and public sector:
 - Associations and cooperatives in the sector play a marginal role;
 - Practical education is weak; graduates lack the necessary practical skills and the right attitude for agriculture and many agricultural engineers don't find jobs;

- The current situation in the fruit and vegetables sector is far from encouraging for the younger generation; they may get lost for the sector.
- Recommended interventions are in the field of capacity building and training, in which students and young entrepreneurs should have special attention:
 - Support and capacity building of key associations, in particular the Jordan Fruit and Vegetables Producers and Exporters Association (JEPA) and the Jordan Farmers Union (JFU);
 - Strengthening practical education, applied research and extension institutions.

Business environment

- There's no overall vision on agriculture and low priority in the public sector to revive the sector; against that background entrepreneurs in the fruit and vegetables sector face problems to (re)build and expand exports.
- It's recommended to encourage and help the government to come up with a national food security strategy and support the fruit and vegetables sector with legislation and facilitation on:
 - A more open labour market for foreign workers;
 - Better service delivery of applied research and extension institutions;
 - Better practical education;
 - Establishment of an ISTA certified lab (allowing businesses to get export licenses for seeds);
 - Donor coordination in the field of agriculture.

The current regional crisis, causing border closures and influx of high numbers of refugees, heavily affects the profitability of the sector and the available budgets of the government to facilitate the fruit and vegetables sector and its exports. This regional turbulence is a high risk; not only because of the physical border problems as such, but more because of the hesitant behaviour all over the sector and insufficient financial support to invest in technical innovations and new market developments.

Other risks that have to be faced while supporting the fruit and vegetables sector:

- Lack of political will and/or priority for the agricultural sector in Jordan;
- Lack of political will in neighbouring countries, especially in Israel, to support Jordan;
- Inability to meet (CSR) high-end market requirements, in particular related to labour rights, environment and fair business (corruption);
- Lack of support from financial institutions / banks;
- Lack of ability in the sector to cooperate (private-private and private-public).

Coordination with other donors, in particular with USAID which is conducting a multi-year program on hydroponic farming systems is indispensable.

Finally: it's recommended to look for cross-overs with projects that support education for and integration of refugees in the agricultural sector in Jordan.

1 Introduction

Background

The Jordanian production of fruit and vegetables is considerable and even has room for expansion. The country has traditionally been exporting large quantities to its neighbouring countries Syria, Iraq and Saudi Arabia, as well as to Lebanon, Eastern Europe (mainly Hungary and Bulgaria), Russia and the Gulf states. Since 2011, border crossings with Syria and Iraq are severely limited and since 2015 they are completely closed, causing highly negative impact on reaching its normal markets.

Exports of fresh fruit and vegetables to Western Europe have been there since years, but Jordan doesn't have a strong competitive power on these high-end markets. Because of the current regional situation the development of the EU market gains more strategic attention.

Objectives

This Value Chain Analysis (VCA) report offers an in-depth overview of the fruit and vegetables sector in Jordan. It describes the value chain in terms of structure, actors and their position in the value chain. More specifically, it shows the position of NEA's target group (SMEs) in the value chain and the constraints that withhold market access in general and to the EU/EFTA in particular.

More specific objectives are:

- identify sales markets, unmet demand and international competitors;
- identify primary actors in the value chain, their positions, roles and interrelationships (organisational structure and its governance), as well as key supporters and influencers surrounding the value chain (institutional environment);
- identify constraints, risks and opportunities that inhibit export growth and competitiveness;
- identify market based solutions to address the constraints and mitigate the risks in the value chain;
- assess whether a further NEA intervention will contribute significantly to export growth;
- identify potential Social Responsibility risks, opportunities or adverse impacts in the value chain, ways to prevent or mitigate these impacts and account for the proposed NEA interventions regarding these risks.

The higher purpose of the VCA is to prepare a business case (a detailed programme plan description of NEA's service delivery) with interventions to strengthen the fruit and vegetables sector in Jordan, taking into account the entire chain and with a special eye for exports to the EU/EFTA markets.

Project team

The VCA was carried out by a core team of 2 Dutch experts and support of 2 local experts in Jordan:

- Jos Leeters (Bureau Leeters) - lead consultant
- Milco Rikken (ProVerde) - desk research and backstopping
- Mohammed Majdalawi (University of Jordan, agricultural economy)
- Maher Dajani (entrepreneur and consultant in the fruit and vegetables sector)

Throughout the survey, the contact persons at NEA were Ms. Corine de Jongh and Mr. Arie Bijl; valuable additional support was received by Mr. Basem Naouri and Ms. Maartje Peters of the Netherlands Embassy in Amman.

Methodology

The study was conducted through a combination of desk research and field research in the Netherlands, Germany (Fruit Logistica) and a field trip in Jordan. That mission took place from April 21 to May 5, 2016 and was carried out by Jos Leeters.

About NEA

The Netherlands Enterprise Agency (NEA) contributes to sustainable economic development in developing countries through private sector development by offering different instruments and intervention types targeting SME's from developing countries and emerging markets.

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2 Sector overview

2.1 General features and trends of the Jordanian fruit and vegetables sector

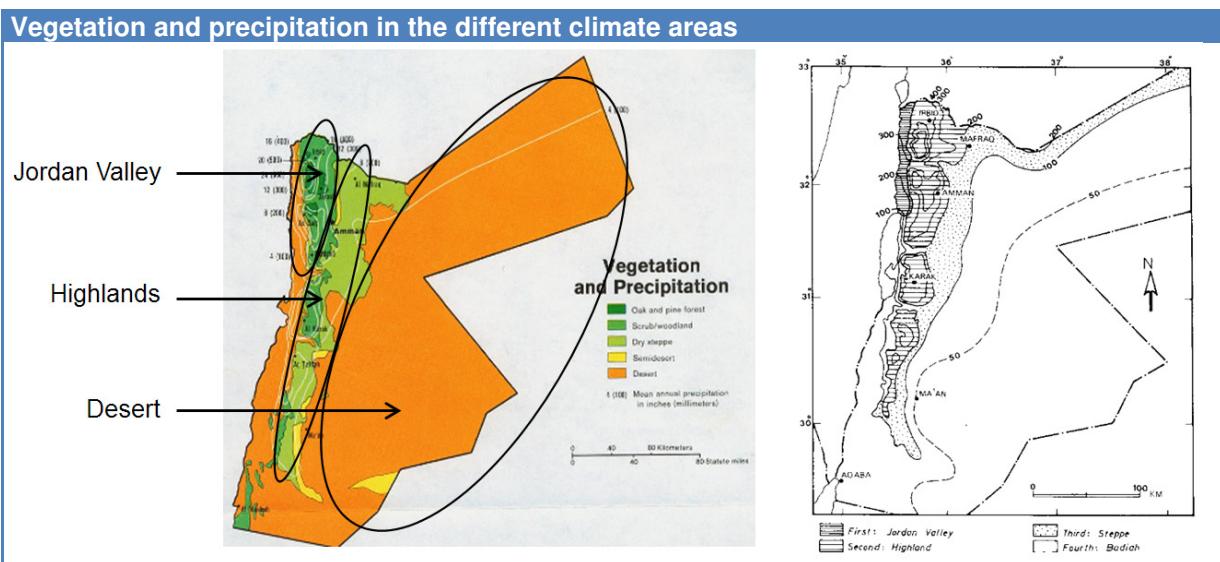
Jordan's gross domestic product (GDP) grew by 3.1% in 2014 (Central Bank of Jordan), is forecasted at 2.4% in 2015 (World Bank, April 2016). The World Bank projects 3% growth in 2016. Counting more than 9.5 million people (census 2015), the population of Jordan is predominately Arab and Muslim, with an influx of at least 3 million immigrants of which almost 2 million refugees from Syria in the last few years. Christians form the largest non-Muslim group, representing 3% of Jordan's population. Jordan is also host to large populations of registered Palestinian and Iraqi refugees and Egyptian immigrants. Its population is growing steadily at a rate of approximately 2.5% a year, becoming increasingly urbanised with more than 50% of the population living in the three main cities of Amman, Zarqa, and Irbid. The International Monetary Fund (IMF) states that Jordan's economy is stable in what is a very challenging region (USDA 2015).

Primary agriculture production counts for 3 to 4% of the GDP, whereas 40% of that agricultural GDP is generated by crop production. However, the additional (indirect) contribution of agriculture to the GDP is 26 to 28% when also taking into account all related chain activities. The total exports of agricultural products (value) count for 25% of the grand total of Jordan's exports.

Jordan has essentially a Mediterranean climate in the west with a hot, dry summer, a cool, wet winter and two short transitional seasons. However, about 75% of the country can be described as having a desert climate with less than 200 mm rain annually. Jordan can be divided into three main geographic and climatic areas: the Jordan Valley, the highlands (mountain heights plateau) and the eastern desert (Badia). More in detail Jordan has 5 climatic zones (JEPA 2015):

1. Jordan Rift Valley and Wadi Araba (0 to - 350m below sea level), divided into three areas Jordan Valley, Southern Ghor, Wadi Araba.
2. Semi Jordan Valley zone (200 - 500m above sea level).
3. Highlands (average altitude ranging from 600m in the north to 1,000m in the middle and 1,500m in the south). The highlands comprise a semi-arid zone (350-500 mm annual rainfall) and a small sub-humid zone (over 500 mm annual rainfall).
4. Arid zone (plains), comprising the plains between the Badia (semi desert) and the highlands.
5. Badia (eastern desert).

In the whole of Jordan, only 5 to 6% of the land is arable.



The two main agricultural production areas are the Jordan Valley and the highlands.

- The Jordan Valley is characterised by its fertile soil and unique climate with long day hours and high temperatures. The average temperature in this area is few degrees higher than that of the surrounding areas all year round. In the winter the Jordan Valley can produce fresh products, whereas not any other nearby region is on the market. Therefore the Jordan Valley is considered the food basket of Jordan where high quality and high return fruit and vegetables are being produced outside the season. Over half of its arable lands is used for vegetable production, while more than one-third is used for fruit crops.
Despite accounting for a limited 23% of the entire Jordanian fruit and vegetable land use, the Jordan Valley produced almost half of the national output of these crops. (FAO 2015, EU & GOPA 2014).
- The highlands receive the highest amount of rain fall and form the majority of the vegetation in the country. Part of the highlands receives enough water for rain-fed cropping systems; part of the highlands is depending on irrigation systems (wells, canals).

The Jordan Valley depends largely on irrigation. Farmers are using mostly drip irrigation systems to save the water as it is a scarce resource in Jordan. Greenhouse cultivation systems increase the productivity and allow for two or sometimes three seasons of vegetables production. Also the vegetables in the highlands are being produced in two seasons: winter and summer.

Eight broad, farm-type systems prevail in the Jordan Valley. Based on recent FAO study (FAO 2015), their distribution would appear to be as follows:

Major production systems in the Jordan Valley		Share
Vegetables - open field		31%
Vegetables - greenhouses		11%
Vegetables - open field and greenhouses		11%
Citrus farms - surface irrigation (partially localised)		9%
Citrus farms - drip irrigation		9%
Bananas		7%
Dates		3%
Mixed		19%

Source: FAO (2015)

Water is the most important resource for agriculture. Jordan is among the poorest countries in the world in terms of water resources, therefore, priority should be given to structural investments through eliminating water loss for household usage, expanding water harvesting projects, and the use of technology in enhancing irrigation systems. (EU & GOPA 2014)

2.2 Key fruit and vegetables crops

According to the most recent statistics of the Jordan Department of Statistics (DoS) the total area of crops is around 2.75 million dunums (275,000 ha), of which 1.35 million dunums (135,000 ha) fruit and vegetables.

The size of the Jordan Valley is about 760,000 dunums (equal to 76,000 ha), of which 430,000 dunums are in use for agriculture (around 15% of the total area in Jordan with crops). The main crops in the Jordan Valley are:

- 65,000 dunums citrus – mainly in the north
- 90,000 dunums vegetables greenhouses – mainly in the centre (mostly mono tunnels of 420 m²)
- 29,000 dunums palm trees = dates – mainly in the centre
- 13,000 dunums grapes (increasing) – mainly in the centre
- 6,000 dunums banana (decreasing) – mainly in the south

Areas Under Tree Crops, Field Crops and Vegetables							
	Total Area			Irrigated		Non-Irrigated	
	2010	2012	2014	2014		2014	
Tree Crops	827,128	858,647	845,258	457,631	54%	387,627	46%
Field Crops	1,285,568	1,155,232	1,385,500	114,405	8%	1,271,095	92%
Vegetables	480,806	449,051	508,687	478,436	94%	30,251	6%
Total	2,593,502	2,462,930	2,739,445	1,050,472	38%	1,688,973	62%

Source: Department of Statistics (2016)

Fruit

The main fruits produced in Jordan are citrus, olives, stone fruit (peach, nectarine, plum, apricot), dates, apples, grapes, figs and bananas. Fruit trees in the Jordan Valley are grown on 35% of the cropped land. Over the last few decades, the cropping dynamics show different trends:

Citrus

- Over the last years, citrus has maintained a stable area share.
- Trends in citrus production have reflected the farmers' strategies through changes in orchard specialisation (i.e. conversion from clementine and mandarin cultivars to lemon and oranges) with consequential low productivity periods during the plantation maturing time.

Olives

- Olives are the main fruit trees, representing about 74% of the total area of fruit trees.
- Although the area in the highlands is decreasing, it is still by far the leading production region.

Stone fruit (peach, nectarine, plum, apricot)

- The majority of the stone fruit is produced in Mafraq governorate. In the east of Mafraq, the crops are fully depending on irrigation (wells), and in the west part rainfall is supportive. Since the early years of this century, farmers have invested in irrigation infrastructure, modern cropping systems and are using high-yielding varieties (often from France, Italy, Spain). The production capacity in Mafraq still increases.
- In the south (Wadi Rum), a few big stone fruit plantations are established, making use of well water from the available (Disi) aquifer.

Dates

- Date palm is the only crop that has had a relatively remarkable area expansion, which is expected to continue in the near future. An important reason - apart from market potential - is its water efficiency ratio. (USAID Jordan, 2012)
- In 2014, the area has increased 206% compared to 2004. For the next few years the production capacity will double again. Nowadays, dates represent the largest fruit tree crop in the Jordan Valley.
- Dates have a short chain that is highly profitable along its segments. The Medjool variety (mainly planted in the Jordan Valley) has the best prospects but other varieties, e.g. Berhe (mainly planted in the southern highlands) are also promising. (FAO 2015)

Banana

- The banana area has remained stable, but production has overall increased as a result of improved productivity levels: around 2 to 2.5 times higher than in 2000.
- The crop holds a stable position, mainly concentrated in the South Shouna area of the Jordan Valley, in line with its (artificial) competitive advantage (via imposed tariffs on imported banana). (FAO 2015). However, during interviews various persons indicated to expect a decrease in the banana area because of replacing palm trees (dates) for banana, mainly driven by a much better water efficiency.

Vegetables

The main vegetables produced in Jordan are tomato, eggplant, cucumber, potato, cabbage, squash, cauliflower, hot pepper, sweet pepper, broad beans, string beans, peas, Jews mallow, water melon and onion. In terms of output, tomato is the leading crop, followed by cucumber and eggplant. While vegetables in the Jordan Valley are mainly produced in the winter, few farmers, with modern greenhouses (temperature controlled) and proper management systems, produce summer vegetables in a profitable way by exporting them as 'off-season' produce to the Gulf markets (which are much hotter and lack horticultural production systems that can produce in the summer).

See Annex 3 for more detailed production statistics.

Supply calendar

Due to the distinctive and diverse geographical climatic zones, Jordan produces vegetables throughout the year; stone fruit and pome fruit (apples, pears) from as early as April to late October, grapes from May and throughout the summer, bananas and citrus fruit in the winter season, dates from July to November, pomegranate from as early as July, rain-fed and irrigated olives in the season and medicinal herbs, both cultivated and wild, throughout the year. See the supply calendars below:

Jordan supply calendar												
Fruit calendar					Vegetables calendar							
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Fruit												
Apples												
Pears												
Apricots												
Peaches & Nectarines: (Flat Varieties)												
Plums												
Cherry												
Dates:												
Barhee												
Deglet nour												
Medjool												
Citrus:												
Grapefruit												
Lemons												
Oranges												
Pomelo												
Watermelon												
Muskmelon												
Olives												
Pomegranate												
Grapes												
Strawberry												
Vegetables												
Cucumber:												
Regular & European												
Thorny												
Beans:												
Cabbage:												
Cauliflower:												
Eggplant:												
Peppers:												
Hot Pepper												
Sweet Pepper												
Hungarian Pepper												
Lettuce												
Okra												
Peas												
Squash												
Tomato												
Onion												
Asparagus												

Source: JEPA (2015)

3 Market Analysis

3.1 The European fruit and vegetables market

3.1.1 Segmentation of EU/EFTA markets and product groups

Supermarkets dominate sales of fruit and vegetables in Europe

- About 60-90% of produce is sold through supermarkets, depending on the product and country. The market share of supermarkets tends to be higher in North-West Europe than in Southern Europe.
- Supermarkets are demanding customers, generally with more than minimal requirements on quality. Importer-wholesalers are the key to supplying them. Most of the large supermarkets have special service providers who – together with importers and local producers – attend to the smooth delivery and sourcing of good quality products.

Difficulties for traditional stores and food services

- Smaller retail formulas are facing difficulties due to long lasting price competition and less favourable advantages of scale.
- Street markets generally have a larger market share in Southern and Eastern Europe, but traditional ambulant sales are experiencing the same pressure from large retailers as smaller stores.
- The out-of-home market has experienced difficulties because of the economic crisis, especially restaurants. The market share of out-of-home varies from about 10 to 30% in the different European countries.

Segment	Description	Examples
1. Premium / convenience	Class I and additional quality standards, minimally processed for convenience, sustainability, fair-trade, organic. These products are generally more expensive, considered more luxurious, but also have higher marketing and distribution costs. Full service supermarkets and specialist stores.	e.g. ready to eat, mixed salads, sliced fruits, organic and fair trade, green baby asparagus, off-season, exotic
2. Mid-range	Class I and standard retail requirements. Consumers pay for good quality, although competition (especially in-season) is increasing. Supermarkets and specialist stores.	e.g. berries, in-season, sugar snaps, avocado
3. Low price	Class I and II, low price. Main bulk products are sold in large quantities; prices and margins are generally quite low. Discount supermarkets, street markets.	e.g. common citrus, banana, green beans, in-season

Source: CBI Market Channels and Segments (2015)

All EU imports of fresh fruit and vegetables have to adhere to minimum requirements on product quality and food safety. Additionally, the supermarkets – specifically in North-West and Southern Europe – demand almost exclusively class I produce. The quality requirements for Eastern Europe, some discount supermarkets and street markets may be lower. Most supermarkets demand consumer packaging for imported produce, including the retailer label. A country of origin labelling is required according to EU legislation.

Supermarkets demand much larger quantities (of uniform quality) than specialised stores and street vendors. The latter are however generally supplied by domestic wholesale. To become a regular supplier to the large retail chains, timely delivery and cooperation with special promotions, as well as flexibility with regard to seasonal or growing demand are vital. Supplying through an importing wholesaler is generally the only way to achieve this status.

Major regional differences in the European market

The European market can roughly be segmented into three geographical areas with different patterns of consumption and buying behaviour:

1. Consumers in North-West Europe have the highest average purchasing power. The market has the highest demand for tropical and exotic fruit and off-season vegetables. Northwest European consumers buy most of their shopping in supermarkets. Fruit and vegetables stores are slightly more expensive than supermarkets, but carry a more diverse range of products. The role of supermarkets is set to further expand. In this segment, almost all of the produce sold is class I (highest quality).
2. In Southern Europe, fruit and vegetables make up a higher share of the diet. Consumers have a higher preference for local traditional produce, although local supply is not sufficient to meet demand. The supermarket channel is gaining importance in these regions as well.
3. In Eastern Europe, product quality requirements are somewhat lower (class I and class II); supermarket market share is also lower but expanding. In the long run, market growth in Eastern Europe, including higher quality and sustainable produce, is expected to be substantial. With the increase in customer quality demands comes also the increase in the importance of a quality supply chain.

Ethnic markets

All over Europe the share of ethnic consumers (related to immigrants / refugees) is increasing. As the world is increasingly turning into a global village, culinary traditions from other continents tend to be more widely accepted by European consumers, increasing the demand for ethnic and exotic fruit and vegetables. This development is also stimulated by the steady population growth of ethnic minority groups, which have significantly increased their purchasing power over recent years. Dates, for example, can nowadays be found in almost every European supermarkets. More exotic products such as okra are particularly found in specialist grocery shops, but sometimes also in high-end supermarkets.

3.1.2 Market trends

Over the last five years, European consumption of fresh fruit and vegetables has been fairly stable. Also, major future changes in total market volumes are not anticipated. There are however a number of key trends that make this otherwise stable market very dynamic from the viewpoint of a supplier:

Healthy living

- Health has always been a selling point for fresh fruit and vegetables. Importance of communication on health benefits will further increase, as will organic products and the further introduction of 'super fruit and vegetables'.
- Products with specific healthful characteristics (superfoods) have become more popular. Leading retailers have started to embrace these products.
- Demand for pure organic products is increasing, especially in North-Western Europe. Organic and special products are usually traded by specialized import companies.

Niches and consumer experience

- The market for niche products is growing. Niche products will continue to emerge and be provided to consumers as unique products, particularly within the high-end market.
- In addition to new exotics, taste and experience are playing an increasingly important role.
- Consumers are willing to pay premium prices for products that have consistently good taste.
- Because product taste is an invisible quality element, story-telling and branding are needed.

Convenience

- Convenience, smaller portion-packs and e-commerce are becoming more popular. Forerunners in North-West Europe are the UK and the Netherlands.
- Convenience food includes seedless fruit, easy peelers, products with a longer shelf life, individually sized products and pre-cut mixes. Specific trends with growth potential include ready-to-eat and ripened fruit.

Food safety

- Food safety continues to be very important. Within the North-West European market, product requirements are already higher than the official EU requirements.
- Strict compliance with MRLs (maximum residue levels) and microbial contamination are a precondition for entering the EU market.
- Tracking and tracing is becoming more important.
- Certification such as GlobalGAP (and BRC) has become a minimum standard for most European supermarkets, especially in the North-West European market.

CSR is becoming mainstream

- Corporate Social Responsibility (CSR) and sustainability continue to gain importance. Consumers are more concerned about where products come from and how they are produced.
- Proof of social conduct includes BSCI, ETI, Fair for Life, GSCP, Fair Trade and other similar ethical certifications.
- Organic is difficult for retailers, but remains a good niche market. EU demand for organics is still considerable and almost all supermarket chains have a respectable organic aisle. In processed food organic is a growth segment, in fresh not anymore.

Regional developments in the EU and EFTA market

- The Eastern European market is expanding. The market for more exotic fruit and vegetables in the Eastern EU is still relatively small, but emerging fast. Consumers in Eastern Europe are very price-conscious and exotic fruit and vegetables are relatively new for most consumers.
- Russian ban on EU fruit and vegetables: in August 2014, Russia announced an import ban on fruit and vegetables from the EU. This import embargo has had consequences for both the internal EU market and European exports.

Other trends

- Influx of Muslims into the EU stimulates demand for dates. Not only directly, but also the rest of the European population becomes increasingly aware of dates and the various types.

3.1.3 Trends in trade structure and logistics

Strong buyer's position for supermarkets

- The European supermarket purchasing power is increasing and is expected to increase even more in the future. This is evident in the requirements and conditions supermarkets set. If one does not adhere to these demands, supermarkets shift readily to other suppliers. At the moment the European market for fresh fruit and vegetables is mainly a buyers' market characterised by oversupply. Competition is based mainly on price, which makes price sensitivity high for EU buyers. This then translates into greater pressure on other players closer to producer level, such as EU-import agents and exporters.
- Large retail organisations are increasing their requirements concerning food safety and sustainability. EU buyers put more pressure on suppliers in the entire chain to adhere to these requirements.
- Retail concentration will continue, further increasing the size of supermarket purchase centres.

Specialising importers

- Importers and wholesalers are becoming more specialised and are looking to establish a unique market position. Wholesalers that supply large retail formulas change to a lean and mean middle man. They prefer to work with large producers and quantities. Smaller importers more and more search for niche channels, e.g. by specialising only in exotics or a specific product type.

Vertical integration and Efficient Consumer Response (ECR)

- Supply lines are becoming shorter and more efficient. Contact between farmers, traders and retailers is becoming closer. Control throughout the entire value chain is essential in order to build expertise in specific products and to comply with the strict delivery terms of large retailers.

- Most retailers and their suppliers operate Efficient Consumer Response (ECR) systems to adjust flexibly and rapidly to changing demand. Timely delivery, flexibility of supply and adherence to all logistical requirements to guarantee product quality is crucial. Exporters and growers must be able to meet the logistical requirements of the supply chain. To ensure product quality and ECR, most supply chains are strictly organized under the direction of the importer/wholesaler or service provider in relation to adherence to the retailer's demands. It reflects the important trend towards vertical integration.

Buyers are keen on new cooling and packaging technologies

- New post-harvest, cooling and packaging techniques are opening up new opportunities for getting fresh products from farm to end market and EU retailers want to be at the forefront of these developments. A range of new films and plastics are having a huge impact on the preservability of fresh fruit. Also, constant progress is being made in the field of controlled atmosphere containers.
- Post-harvest treatment techniques are also shifting the boundaries for transport and logistics. EU buyers are interested in suppliers who keep in step with these developments and are able to implement them.

3.2 Regional markets

Syria, Iraq and Lebanon

- A total of 1,000 tonnes of fruit and vegetables, worth millions of Jordanian dinars, used to be exported every day to Syria and Lebanon, according to the Jordan Exporters and Producers Association for Fruit and Vegetables (Jordan Times, 8 May 2016). There're no direct trade data for Syria since 2011, but based on mirror data¹ we see that Syrian vegetables imports have fallen from € 158 million in 2011 to € 66 million in 2015. Throughout these years, Jordan has remained the leading supplier, but overall volumes have strongly declined. Syrian fruit imports show a similar drop from € 123 million in 2011 to € 22 million last year. Jordan's official fruit exports to Syria are close to a meagre € 1 million last year, coming from € 15 million five years ago.
- Traditionally, there was a strong mutual cross-border trade between Syria and Jordan. Syria also exported considerable volumes of fresh fruit and vegetables to Jordan. In 2013, Syria still exported € 51 million euro worth of fruit and € 10 million worth of vegetables to Jordan. Last year (2015), this was only half the value (€ 24 million and € 5.3 million respectively). Main products supplied by Syria to Jordan were nuts, apples, citrus fruit and onions.
- Iraqi fruit imports used to be considerable, with a total value of € 632 million in 2011, but it has decreased to € 332 million in 2015. The same for vegetables, with imports dropped from € 347 million in 2011 to € 115 million in 2015. Jordan is the third vegetable supplier, after Turkey and Kuwait. Jordan exports to Iraq have been hit hard, particularly in 2015.
- Over the past five years, Lebanese imports of fruit has steadily been increasing by about 12% per year and reaching € 120 million in 2014. Vegetable imports have been more stable at around € 100 to €110 million per year. Jordan's position as a supplier to Lebanon is relatively modest.

Saudi Arabia & Gulf

- The Gulf market is now seen as Jordan's prime importer of fruit and vegetables, consuming 83.2% of Jordan's produce in 2015, according to the Ministry of Agriculture. The majority of the agricultural exports were tomatoes.
- Looking at the entire Gulf region (GCC countries), imports of fruit and vegetables show a strong growth. In 2015, GCC fruit imports reached € 3.7 billion (€ 1.2 in 2011), with UAE and Saudi Arabia as the two biggest markets. In case of vegetables, we noticed a similar pattern with GCC imports reaching € 2.2 billion (€ 739 million in 2011). Again, the UAE and Saudi Arabia are the two biggest vegetable import markets.

¹ Yearly Trademap data are available not only for countries that report their own trade data, but also for the over 50 primarily low-income countries that do not report national trade statistics to COMTRADE. The trade of these countries has been reconstructed on the basis of data reported by partner countries and the statistics obtained are called mirror statistics.

- Jordan's exports to the GCC is booming (see Section 3.3.1 on Jordan exports). Fruit exports increased from € 15 million in 2011 to € 55 million in 2015, while vegetables increased € 78 million in 2011 to € 238 million last year, according to recent Trademap data. Jordan is the third most important vegetable supplier to the GCC, after Egypt and India.
- The Saudi import market is strongly growing. Total Saudi imports of fruit reached € 1.3 billion in 2015. Leading suppliers are Egypt, USA, South Africa, Philippines and India. Most imported fruits are apples, oranges and bananas but the assortment is quite diverse. In case of vegetables, imports show an even stronger growth to € 620 million in 2015, with Egypt, UAE, China and Jordan being the leading suppliers. Important vegetables are onions, tomatoes and lentils.

Eastern Europe and Russia

- Jordanian fruit exports to Eastern Europe and Russia have come almost to a halt since the border problems with Syria and Iraq in 2011: there were hardly any registered fresh exports to that region in 2015. Hungary, Bulgaria, Romania and Russia took lots of vegetables from the Jordan Valley in the wintertime, mostly produced on contract-basis and even based on special variety preferences for these countries, such as the Hungarian peppers or Russian gherkins. The products were all trucked from the Jordan Valley through Syria and Turkey. Most of these exports up to 2011 haven't been registered in trade statistics because of the fact that trade was mainly done by Turkish and Syrian businessmen, registered as Turkish or Syrian product. Therefore, the dramatic export drop from Jordan is not fully visible in trade statistics.
- The Russian fruit and vegetable market has been sluggish over the past couple of years. Fruit imports decreased to € 3.5 billion in 2015 (down from € 4.5 in 2011) and vegetable imports fell to € 1.7 billion (down from € 2.2 billion in 2011). The disappearance of the European suppliers from the Russian market because of the EU-ban is remarkable and, despite the declining overall Russian imports, some of the remaining suppliers have been able to show growth on this market. Jordan's position as a supplier to Russia is however very modest and not growing. Statistics show that exports of vegetables (cucumbers and peppers) have collapsed from € 14 million in 2011 to a meagre € 71 thousand last year.
- For vegetables from Jordan, statistics show that Slovenia is currently the largest market with € 1.6 million of imports (only peppers), followed at a distance by Romania with only € 705 thousand of imports last year (mainly peppers), which is in strong contrast with Romanian imports of € 12.4 million in 2011. By the way, a big share of the imports in Slovenia is distributed in the region (Hungary!) after arrival in the port of Koper.
- Jordanian fruit exports to Eastern Europe have come to a halt as well: there were hardly any fresh fruits exported to that region last year. In contrast, in 2011, Jordan still exported € 1.2 million of fruit to Bulgaria and € 1.7 million to Romania.

3.3 Trade flows

3.3.1 Jordan exports

Total Jordanian fruit and vegetable exports amounted to € 651 million in 2015 and have been growing annually by an average 11% per year since 2010. The year 2013, showed a small dip in vegetable exports due to the initial impact of the Syrian and Iraqi crisis. In 2014, fruit exports suffered considerable with a decline of 24%, particularly because of a drop of fruit exports to Iraq. In contrast, fruit exports performed well the following year, with increasing exports particularly to the Gulf region.

Please note that available statistics do not tell the whole story. From cross checking trade data with insights obtained through interviews, we have found some discrepancies, which are probably the result of Jordanian export products registered under the country of the (Turkish/Syrian) business men who traded the products.

Jordan fruit and vegetable exports (HS07 and HS08)									
In 1,000 euros									
	2011		2012		2013		2014		2015
fruit	90,903	32%	143,986	58%	149,472	4%	114,292	-24%	176,354
vegetables	344,082	4%	366,307	6%	358,406	-2%	457,083	28%	474,847
total	434,985	9%	510,293	17%	507,878	0%	571,375	13%	651,201

Source: Trademap (2016)

In a recent article in the Jordan Times, an Agriculture Ministry Spokesperson stated that the Kingdom exported 783,000 tonnes of fruit and vegetables in 2015, which generated JOD 520 million in revenues. Vegetables made up 82.4% of last year's agricultural exports, 65% of which were tomatoes.

With respect to the first third of 2016, agricultural exports is said to have dropped by 24% compared to the same period last year, according to an Agriculture Ministry Spokesperson in a recent article in the Jordan Times. Jordan exported 162,000 tonnes of fruit and vegetables during the first four months of this year, while the figure stood at 214,000 tonnes in the same period of last year. "The ongoing closure of the Kingdom's border with Iraq and Syria is the reason behind the drop." Jordan closed the Jaber border crossing with Syria in April 2015 for security reasons, while Ramtha, the other border crossing with the war-torn country, has been closed for nearly five years.

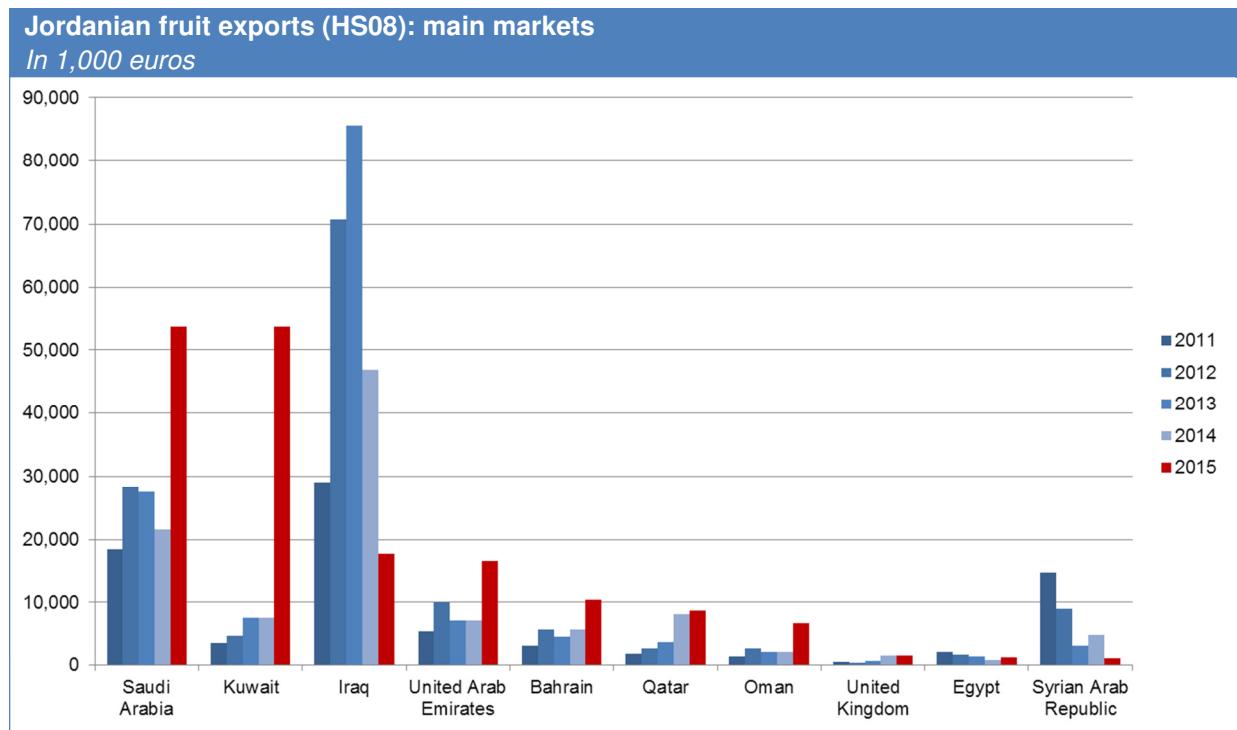
Fruit

Jordanian exports of fruit (HS08, including nuts) have been growing steadily until 2013, but dipped in 2014. Last year, exports strongly recovered again with an increase of 54% to reach € 176 million euro.

Jordan fruit exports (HS07): main products									
In 1,000 euros									
Code	Product label		2011	2012	2013	2014	2015		
80930	Peaches, including nectarines, fresh		53,119	74,344	72,266	47,231	106,099		
80910	Apricots, fresh		3,733	7,561	9,357	7,868	15,356		
80711	Watermelons, fresh		7,660	6,498	3,517	6,632	12,871		
80719	Melons, fresh, other than watermelons		2,770	2,766	2,671	4,627	10,860		
80410	Dates, fresh or dried		4,421	4,316	5,536	6,484	7,589		
81010	Strawberries, fresh		1,198	4,065	2,837	10,114	7,065		
80510	Oranges, fresh or dried		3,832	1,888	5,025	8,000	3,665		
80550	Fresh or dried lemons and limes		1,268	7,413	2,326	2,662	2,519		
80520	Mandarins, clementines & similar		5,002	17,175	32,915	9,227	1,990		
80610	Grapes, fresh		1,427	2,752	1,281	1,904	1,784		
80810	Apples, fresh		1,200	1,963	2,061	1,460	1,341		

Source: Trademap (2016)

- Until 2013, the leading destination markets for Jordanian fruit were surrounding countries, particularly Iraq. This has however dramatically changed (see figure below). Particularly in 2015, exports to the Gulf states grew strongly, markedly Saudi Arabia and Kuwait making them the two leading markets for Jordanian fresh fruit.
- Most important export product are peaches, which have shown strong growth particularly to Saudi Arabia and Kuwait.
- A number of products have shown strong increases until 2013/2014, but suffered last year. Examples are strawberries, oranges and mandarines. Particularly, exports of mandarins have been hit hard, falling from € 33 million in 2013 to a meagre € 2 million last year.
- The only EU destination of importance is UK, mainly importing 'fresh fruit nes' (nes = not elsewhere specified or included, i.e. those not already included in another category) and dates.



Source: Trademap (2016)

The case of Jordanian exports of dates

- Exports of dates have been growing steadily over the past years, reaching € 7.6 million in 2015.
- The main markets for dates are other Arab countries such as UAE, Morocco, and Lebanon.
- Date exports to the EU are becoming more important with the UK taking up the 6th position in terms of value with € 416 thousand in 2015, followed at a distance by France with € 190 thousand and Germany with € 142 thousand. It is noticeable that exports to EU countries tend to be quite unstable: there are quite strong shifts in performance per EU export market throughout the years.

Vegetables

According to Trademap, total Jordanian exports of vegetables (HS07) amounted to € 475 million in 2015. Exports have been gradually increasing over the past years coming from € 331 million in 2010.

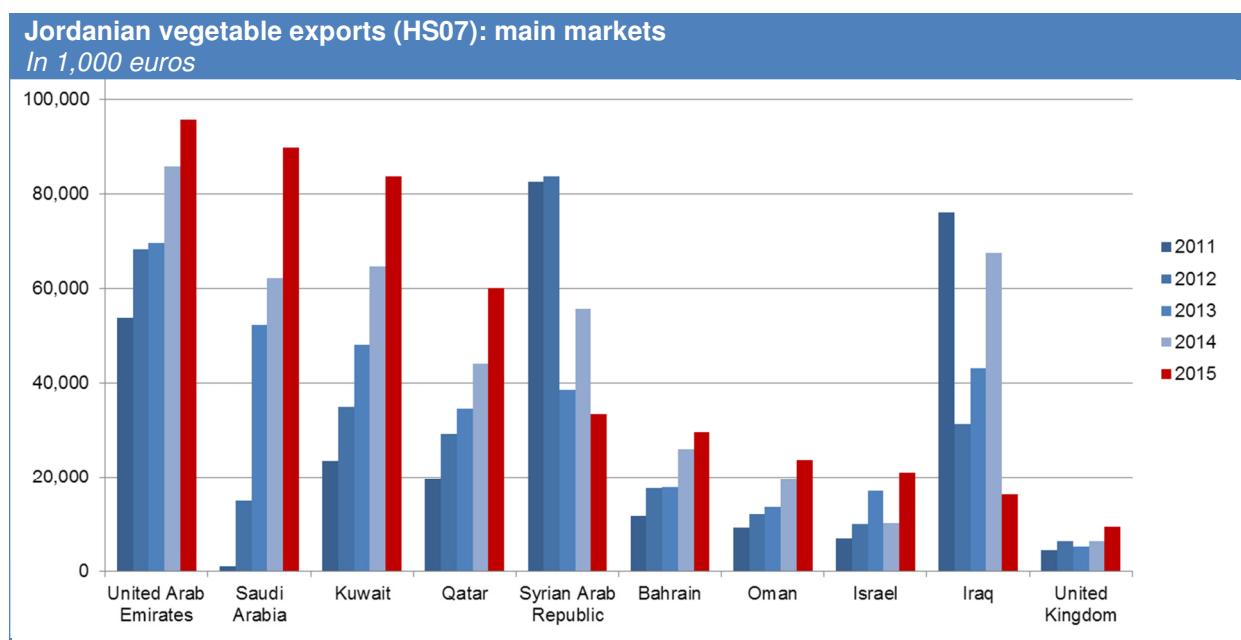
Jordanian vegetable exports (HS07): main products
In 1,000 euros

Code	Product label	2011	2012	2013	2014	2015
70200	Tomatoes, fresh or chilled	161,430	194,547	238,146	300,173	299,161
70960	Peppers (genus Capsicum or Pimenta)	23,945	27,896	27,523	34,340	50,498
70700	Cucumbers & gherkins, fresh or chilled	87,171	64,682	27,041	41,618	40,880
70519	Lettuce, fresh or chilled nes	5,136	6,437	8,618	9,854	17,404
70930	Eggplants, fresh or chilled	25,953	21,602	10,549	18,097	16,879
70410	Cauliflowers and headed broccoli	12,136	12,976	9,908	13,360	16,215
70999	Fresh or chilled vegetables n.e.s.	-	22,602	9,915	10,028	14,176
70190	Potatoes, fresh or chilled nes	2,543	4,867	6,768	15,987	4,563
70992	Olives, fresh or chilled	-	1,082	11,322	2,801	4,359
70820	Beans, fresh or chilled	5,515	4,183	4,784	5,556	3,958
70490	Cabbages, kohlrabi, kale and similar	880	2,095	1,083	2,521	2,846

Source: Trademap (2016)

- The top export markets for Jordanian vegetables are traditionally regional markets (Syria and Iraq). However, since the start of the crisis, exports have shifted towards Gulf markets (see figure).
- Tomatoes are by far the main vegetable exported. Other important products are sweet pepper, cucumber, eggplant, potato and cauliflower.

- The export assortment is quite similar for all regional countries, with a bit more potatoes going to neighbouring countries Iraq and Syria.
- The main destination nowadays of Jordan's vegetable exports are the Gulf countries. By and large, such markets require lower standards than the EU market, which also yield inferior prices. Despite the fact that the Gulf market is of lower value compared with the EU, due to proximity and consequently lower transportation costs and due to better market accessibility in this region, Gulf countries remain important trade partners for Jordanian vegetable exporters.
- Non-Gulf Countries (mainly high-value European markets) have until now played a marginal role. The first EU market in terms of Jordanian exports is the UK with € 9.5 million worth of vegetable imports from Jordan, almost exclusively 'fresh or chilled vegetables nes'. Other EU countries importing modest amounts of vegetables from Jordan are Germany (€ 1.6 million), Slovenia (€ 1.6 million), followed by countries such as Sweden, Romania, France, Denmark and the Netherlands.



3.3.2 Jordan imports

Jordanian imports of fruit and vegetables amounted to € 330 million in 2015 and has been strongly increasing by an average of 15% per year over the past couple of years. Imports are about half of Jordanian exports. Particularly import of fruits has shown strong growth (see table below).

- Since 2014, Italy has been the leading apple supplier (€ 50 million in 2015), after a strong drop in supply from Syria.
- Jordan hardly imports any fruit and vegetables from Iraq.
- Remarkably, while being a considerable producer, Jordan's date imports have also been growing steadily (mainly from Saudi Arabia and the Emirates).

Jordan fresh fruit imports			Jordan fresh vegetables imports				
	<i>In mln euros</i>			<i>In mln euros</i>			
	2011	2013	2015		2011	2013	2015
1 Apples, fresh	20,602	29,898	50,291	1 Chickpeas, dried, shelled	22,957	20,931	21,982
2 Plantains	-	17,147	30,533	2 Lentils dried, shelled	7,685	6,500	15,742
3 Dates	8,870	14,339	18,803	3 Potatoes	12,072	25,100	15,488
4 Oranges	11,148	16,215	16,114	4 Broad & horse beans, dried,shelled	5,647	5,874	7,925
5 Lemons	6,355	9,570	14,378	5 Garlic, fresh or chilled	3,918	4,005	4,949
6 Pears	-	5,543	7,533	6 Vegetables, frozen nes	2,445	3,755	4,450
7 Fruits, fresh nes	2,109	3,697	5,489	7 Carrots	2,959	4,443	3,880
8 Kiwifruit, fresh	1,856	2,061	5,169	8 Beans dried, shelled	1,666	2,253	2,580
9 Coconuts, dessicated	2,365	1,439	4,678	9 Onions and shallots	11,599	9,570	2,186
10 Bananas	-	6,825	4,091	10 Potatoes, frozen	257	426	2,113
Rest	67,182	66,223	76,177	Rest	11,561	12,970	15,291
Total	120,487	172,957	233,256	Total	82,766	95,827	96,586

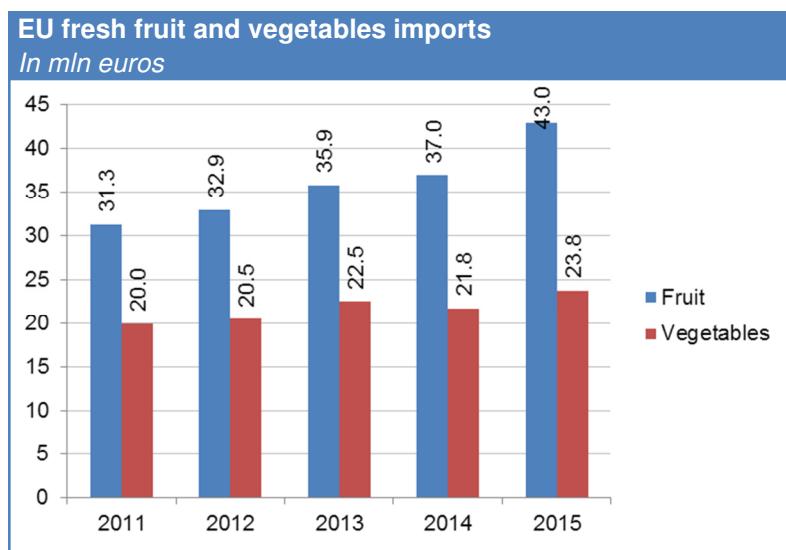
Leading supplying countries:
Italy, USA, Syria, Egypt, Sudan, Saudi Arabia, Greece, Lebanon, Spain, Turkey and South Africa.

Leading supplying countries:
Lebanon, Egypt, Canada, Australia, Turkey, Russia, China, Syria, Hungary, India and the Netherlands.

Source: Trademap (2016)

3.3.3 EU imports, main markets and suppliers

The total EU import volume of fresh fruit and fresh vegetables continues to grow, reaching € 43 billion and € 24 billion respectively in 2015. The import market has been growing almost continuously in the past couple of years, with 2014 showing a small dip in vegetable imports.



Source: Trademap (2016)

The Netherlands, the United Kingdom and Belgium are the leading direct importers of fresh fruit and vegetables from developing countries, followed at a distance by Italy, Germany, France and Spain. The Netherlands and Belgium are also major trade hubs for fresh produce destined for other European markets.

The EU is more dependent on external supply for fresh fruit than it is for fresh vegetables. Leading developing country suppliers therefore are Costa Rica, Ecuador, Colombia and South Africa that supply vast quantities of bulk products such as bananas, citrus fruit, fresh grapes and apples. Nevertheless, import growth is most clearly seen in the increasing popularity of tropical products (e.g. avocados and mangos), as well as for niche products (e.g. berries and exotic fruit and vegetables). Imports have remained stable for some of the largest commodities (e.g. tomatoes and oranges). The EU imports a gradually increasing amount of dates, reaching 118 thousand tonnes or € 273 million in 2015. France, UK and Germany are the main import markets for dates.

For vegetables, the main imported products from outside the EU are tomato (23%), potato (13%), onion (13%), sweet pepper (capsicum) (9%) and beans (9%). Europe provides a significant share of its own fresh vegetables. Still, countries such as Morocco, Egypt and Turkey are well positioned to supplement the supply of fresh vegetables. For example, Morocco has benefitted from significant growth in the trade of tomatoes.

3.3.4 EU imports from Jordan

Jordanian exports of vegetables to the EU have been a bit fluctuating, but increased in 2015 to € 15,3 million. Fruit exports are still very modest, and also fluctuating, decreasing slightly last year to € 2.2 million.

The main export products are products falling under the header “Fresh and chilled vegetables, not elsewhere specified”. Exports in this product group actually show a clear upward trend, increasing already for a few years (€ 11.8 million in 2015).

Sweet peppers have shown poor performance, with exports falling to € 2.2 million. Strawberries are more stable with exports of € 2.3 million, almost exclusively to the UK.

An attractive products in terms of export performance to the EU are dates, both fresh and dried. Dates are mainly exported to the UK, France and Germany.

Okra exports to the EU amounted to 300 to 400 thousand in 2013 and 2015, but no exports in 2014 according to Trademap statistics. The UK is the only EU country importing okra from Jordan.

Poorly performing were tomatoes, watermelons and cucumbers, all showing considerable lower or diminished exports to the EU.

Leading Jordanian export products to the EU (HS07+HS08)
In 1,000 euros

Code	Product label	2013	2014	2015
'070999900	Other vegetables, fresh or chilled, n.e.s.	6,633	8,749	11,800
'070960000	Peppers (Capsicum or Pimenta)	6,336	3,965	2,273
'081010000	Strawberries	626	1,407	1,267
'070410000	Cauliflowers and broccoli	133	26	932
'080410900	Dried dates in packing > 1 kg	276	842	673
'070890200	Okra	386	-	314
'080410100	Dates, fresh	69	54	77
'080410300	Dried dates in packing < 1 kg	-	-	61
'080810000	Appels	-	-	37
'070200000	Tomatoes	209	64	18
'070110000	Seed potatoes	-	65	8
'070992000	Green olives	5	-	6
'070890100	Broad beans	-	-	2
'080711000	Watermelons	32	64	-
'070700100	Cucumbers	200	10	-
'080540000	Grapefruit, fresh or dried	-	2	-
'070190000	Potatoes	50	-	-
'070930000	Eggplants	6	-	-

Source: Trademap (2016)

3.4 Main competitors and seasonal patterns

The intensity of competition depends on the product, geographical market, sales channel and segment. Competition between suppliers of commodity products such as tomatoes and sweet peppers is high. In general, for almost every product, buyers have many suppliers to choose from.

Exporting to the European market principally involves competing on price, volume and adherence to strict rules and regulations. Setting a product apart from the rest by differentiating on added value, quality, taste and sustainability may decrease competition at least temporarily. For smaller niche markets in Europe, competition can be less intense, since those products are not widely available or grown in Europe.

3.4.1 Jordan's main competitors

For in-season fruit, Southern Europe is a strong competitor, particularly Spain. European competitors are well organised, and they have optimised their marketing tools, including social media and online presentation. Supply from Eastern Europe is also increasing, with the exception of exotic/tropical fruits.

At the moment, competition still takes place at the price level but this will change in the future, especially for niche markets. It is expected that quality and sustainability will become more prominent values in the EU market.

The table below summarizes the competing suppliers of Jordanian key export products (see Section 2.3.1) in the EU market.

Main competitors for Jordanian key export products in the EU market					
In 1,000 euros					
Fruit			Vegetables		
Code	Product	Leading suppliers to EU market	Code	Product	Leading suppliers to EU market
80930	Peaches	Spain, Italy	70200	Tomatoes	Netherlands, Spain, Morocco
81010	Strawberries	Spain, Netherlands, Belgium	70700	Cucumbers	Spain, Netherlands
80520	Mandarins	Spain, Morocco, South Africa	70960	Peppers	Spain, Netherlands, Morocco
80510	Oranges	Spain, South Africa	70930	Eggplants	Spain, Netherlands
80910	Apricots	Spain, France, Italy	70190	Potatoes	France, Germany, Netherlands
80711	Watermelons	Spain, Italy, Netherlands	70410	Cauliflowers	Spain, France
80410	Dates	Tunisia, Israel, Algeria	70519	Lettuce	Spain, Italy
80719	Melons	Spain, Brazil, Netherlands	70820	Beans	Morocco, Kenya
80550	Lemons	Spain, Netherlands, Argentina	70992	Olives	Spain, Greece
80610	Grapes	Italy, South Africa, Netherlands	70490	Cabbages	Spain, Netherlands, Italy
80810	Apples	Italy, France, Netherlands	70310	Onions	Netherlands, Spain

Source: Trademap (2016)

Spain

- Spain is one of the European fruit and vegetable powerhouses. Its exports to the rest of the EU is still increasing by more than 10% annually and reached an impressive € 7.1 billion of fruit and € 5.4 billion of vegetable exports to the rest of the EU28 in 2015.

Spain's leading products on the EU market								
EU import from Spain in million euros								
Fruit			Vegetables					
		2013	2014	2015				
1 '080520	Mandarins	1,153	1,134	1,195	1 '070200 Tomatoes	1,007	950	1,018
2 '080510	Oranges	968	776	940	2 '070960 Peppers	776	801	888
3 '080930	Peaches	716	651	765	3 '070700 Cucumbers	475	469	492
4 '080550	Lemons	445	494	593	4 '070993 Pumpkins, squash and gourds	267	214	326
5 '081010	Strawberries	524	446	493	5 '070519 Lettuce	273	262	305
6 '080719	Melons	306	269	286	6 '070410 Cauliflowers and broccoli	224	229	262
7 '080711	Watermelons	233	228	274	7 '070511 Cabbage lettuce	225	204	240
8 '080610	Grapes, fresh	214	237	269	8 '071080 Vegetables, frozen nes.	179	199	218
9 '081020	Raspberries, blackberries, etc	151	177	228	9 '070999 Fresh or chilled vegetables n.e.s.	158	163	189
10 '080440	Avocados	115	137	185	10 '070320 Garlic, fresh or chilled	141	139	172

Source: Trademap (2016)

Israel

- Israeli exports to the EU has shown steady growth, with fresh fruit exports moderately growing to € 313 million in 2015.
- After a few years of decrease, fresh vegetable exports seem to have stabilised at € 176 million in 2015.

- Israel is the second largest supplier of dates (after Tunisia) to the EU with a market share of about 21%.
- During interviews with European importers it was mentioned a couple of times that importers are interested in alternatives to their Israeli date suppliers. Some of the importer's customers don't want Israeli products.

Israel's leading products on the EU market

EU import from Israel in million euros

Fruit	Vegetables			2013	2014	2015	
	2013	2014	2015				
1 '080440 Avocados	66	74	77	1 '070960 Sweet peppers	111	63	64
2 '080520 Mandarins, clementines	52	53	69	2 '070190 Potatoes	95	62	59
3 '080410 Dates	38	49	47	3 '070610 Carrots	39	18	26
4 '080540 Grapefruit	39	43	36	4 '071420 Sweet potatoes	4	7	9
5 '081090 Fruits, fresh nes	23	23	28	5 '070999 Fresh or chilled vegetables nes	14	12	6
6 '080450 Guavas, mangoes, mangosteens	21	28	25	6 '070200 Tomatoes	10	5	4
7 '081190 Fruits & nuts frozen, nes	8	9	11	7 '071290 Vegetables and mixtures dried	2	2	3
8 '080420 Figs	2	4	3	8 '070390 Leeks	4	3	2
9 '080510 Oranges	5	5	3	9 '070690 Salad beetroot, celeriac, radish	1.6	2.0	0.9
10 '080590 Citrus fruits, nes	3	2	3	10 '070993 Pumpkins	1.1	1.0	0.9

Source: Trademap (2016)

Turkey

- Turkish fruit exports to the EU are considerable and have been growing strongly. Fruit exports reached € 2.1 billion in 2015 (30% up from 2013). Note that this figure includes nuts that represents more than half of the exports. Still, export growth is broadly based. The main export product grapes has actually remained fairly stable recently. See below the list of export products excluding nuts.
- EU vegetable imports from Turkey are more modest, amounting to € 268 million in 2015. Still, vegetable exports have also shown steady growth figures.

Turkey's leading products on the EU market

EU import from Turkey in million euros

Fruit	Vegetables			2013	2014	2015	
	2013	2014	2015				
1 '080620 Grapes, dried	353	328	351	1 '070960 Sweet peppers	44	44	60
2 '080420 Figs	115	135	141	2 '070200 Tomatoes	28	48	39
3 '081310 Apricots, dried	110	135	133	3 '071080 Vegetables, frozen nes	27	33	35
4 '080550 Lemons	70	69	95	4 '071340 Lentils dried, shelled	23	22	32
5 '080929 Cherries	90	82	83	5 '071290 Vegetables and mixtures, dried	26	29	30
6 '080540 Grapefruit	30	51	43	6 '070993 Pumpkins, squash and gourds	7	7	11
7 '081090 Fruits, fresh nes	22	30	34	7 '070700 Cucumbers and gherkins	8	9	10
8 '080520 Mandarins, clementines, etc.	25	35	27	8 '071190 Vegetables nes & mixtures	9	10	9
9 '080610 Grapes, fresh	22	29	24	9 '071320 Chickpeas	8	8	7
10 '081110 Strawberries	12	12	11	10 '070959 Mushrooms	3	2	5

Source: Trademap (2016)

Morocco

- Morocco is strengthening its position as an important upcoming fruit and vegetables supplier to the European market. Moroccan vegetable exports to the EU reached almost one billion euro last year, showing strong growth figures of 13% per year for 2014 and 2015. Fruit exports are a bit smaller, but still considerable at € 541 million in 2015, with similar growth figures as vegetables.

Morocco's leading products on the EU market

EU import from Morocco in million euros

Fruit	Vegetables			2013	2014	2015	
	2013	2014	2015				
1 '080520 Mandarins & clementines	71	90	116	1 '070200 Tomatoes	367	425	472
2 '081110 Strawberries, frozen	67	70	68	2 '070820 Beans	190	233	245
3 '080510 Oranges	31	39	53	3 '070960 Peppers	80	100	125
4 '081020 Raspberries, blackberries, etc	16	31	51	4 '070993 Pumpkins, squash	46	30	49
5 '081040 Cranberries, bilberries, etc	21	31	49	5 '071190 Vegetables, not for immediate cons	20	24	22
6 '080719 Melons	51	59	48	6 '070999 Fresh or chilled vegetables n.e.s.	12	12	18
7 '081010 Strawberries, fresh	37	41	42	7 '070700 Cucumbers and gherkins	5	9	9
8 '080711 Watermelons	5	15	38	8 '070390 Leeks and other alliaceous vegetables	4	5	6
9 '080610 Grapes	15	15	22	9 '070310 Onions	4	4	6
10 '080440 Avocados	2	11	15	10 '070890 Leguminous vegetables, nes	1	0	4

Source: Trademap (2016)

Egypt

- Egypt is still a relatively small supplier to the European market. Egyptian fruit and vegetable exports to the EU28 are rather stagnant, with fruit exports still slightly growing to € 304 million in 2015 (€ 257 million in 2013). Vegetables show a stagnant development at € 309 million in 2015 (€ 323 million in 2013).

Egypt's leading products on the EU market

EU import from Egypt in million euros

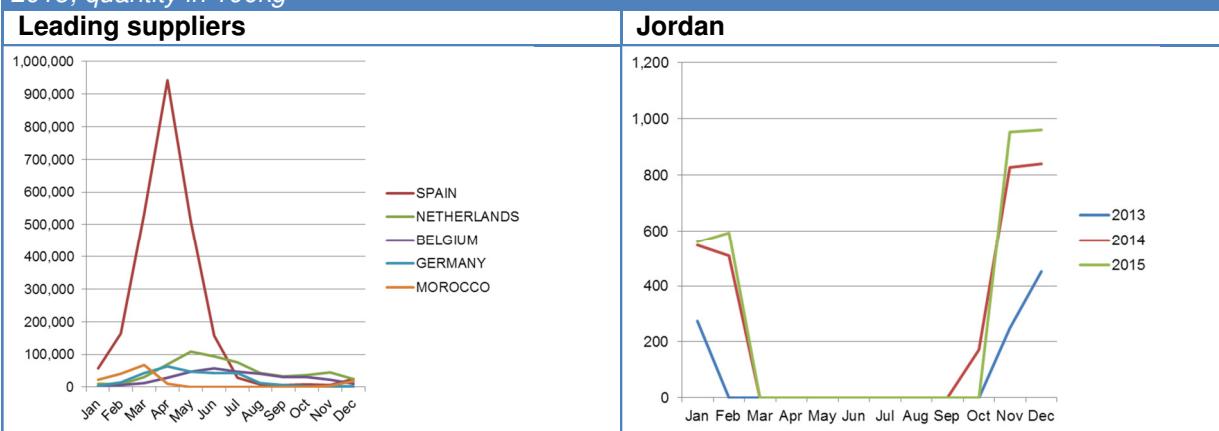
Fruit				Vegetables		
	2013	2014	2015	2013	2014	2015
1 '080610 Grapes	99	106	137	1 '070190 Potatoes	98	61
2 '080510 Oranges	98	89	99	2 '070310 Onions	56	55
3 '081010 Strawberries	26	39	31	3 '070820 Beans	50	46
4 '081110 Strawberries, frozen	19	19	17	4 '071080 Vegetables, frozen nes	17	21
5 '081090 Fruits, fresh nes	5	6	6	5 '071220 Onions, dried	15	21
6 '080719 Melons	3	3	4	6 '071190 Vegetables presvd, not for immediate cons	13	13
7 '081340 Fruits, dried nes	1	0	3	7 '071333 Kidney beans & white pea beans	28	31
8 '080930 Peaches	2	2	2	8 '071290 Vegetables and mixtures dried	9	12
9 '080450 Guavas, mangoes	1	1	2	9 '071420 Sweet potatoes	3	7
10 '080520 Mandarins & clementines	0	1	2	10 '070810 Peas	4	5

Source: Trademap (2016)

3.4.2 Jordan's competitive position in selected products

EU monthly imports of strawberries

2015, quantity in 100kg

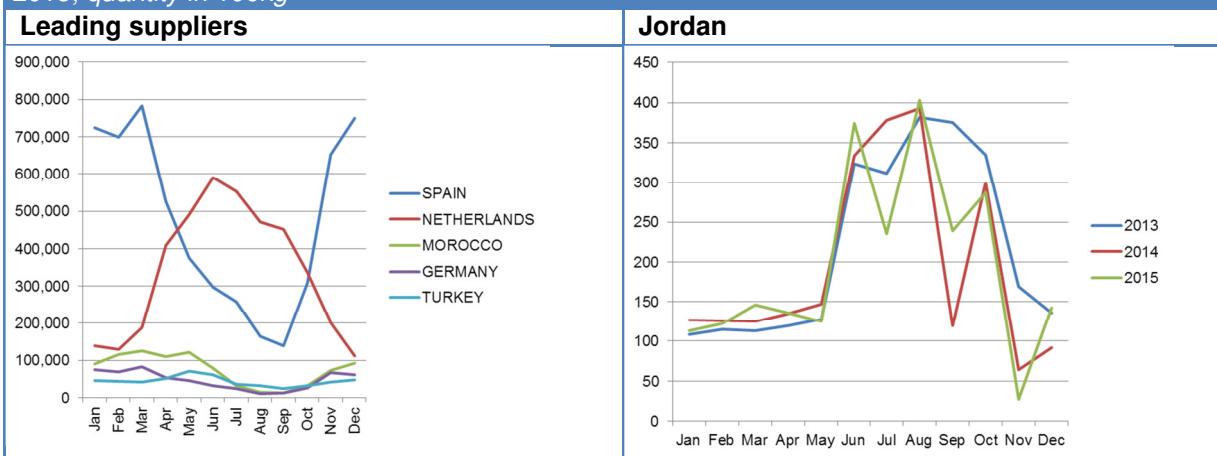


- The EU imports about € 1.9 billion, with leading supplying countries Spain, the Netherlands and Belgium. The market shares of the leading suppliers have been quite stable over the past years.
- The European strawberries market is nowadays completely dominated by Spain. The main markets for Spanish strawberries are Germany and France. Spain has gradually extended its supply season. Nowadays, Spanish strawberries are on the market as early as February/March.
- The Netherlands is another important strawberry supplier, focusing more on Germany and the UK.
- There are about ten other countries that annually export more than € 10 million worth of strawberries to the EU market. A relatively small but growing share is coming from Arab countries like Egypt and Morocco.
- After a few strong growth years, Jordan's current market share of less than 0.2% in the EU imports of strawberries is still modest.
- Jordan mainly supplies during the off-season, when the Spanish strawberries are not yet available.

Source: Eurostat (2015)

EU monthly imports of peppers

2015, quantity in 100kg

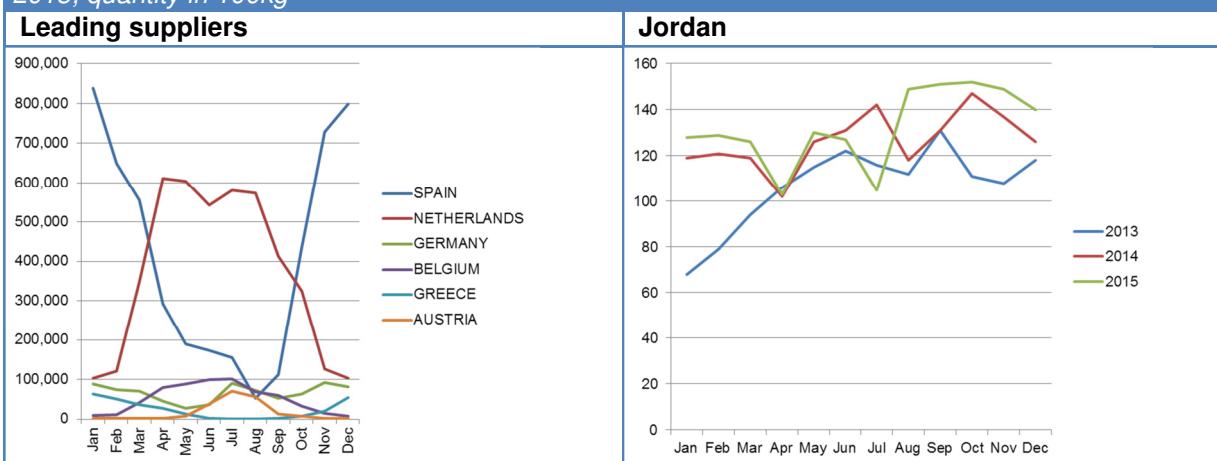


- EU imports of sweet peppers amounted to € 2 billion in 2014, with Spain and the Netherlands supplying respectively € 835 million and € 678 million worth of sweet peppers. Other big suppliers are Morocco, Germany and Israel.
- A considerable part of Dutch exports comprises produce from other countries. So, the Netherlands is a significant transit country, particularly in the winter. The Netherlands play an important role in the supply of sweet peppers to Germany and the UK in the summer months.
- Israel, the number five supplier to the EU, exports particularly to the Netherlands. Israeli sweet peppers are widely regarded as top quality. The quality of Spanish peppers has been suffering from the fact that producer associations use different quality standards. Still, there are real top-brands.
- From traders we heard that Israeli produce competes with Spanish peppers in the off season. In practice, importers who want the best quality choose for Israeli peppers. Importers who are satisfied with average quality stick with Spanish suppliers. Green peppers are the cheapest and are mainly supplied by Spanish producers.
- Jordan's market share has been fairly stable at a very modest 0.1% in the EU imports of peppers.
- Jordan's peppers are exported year-round, but with a peak during the European summer season when production in Spain is lower.
- Breeders and farmers have developed contract deals with specific varieties for Hungary, especially in the winter months. However, trade statistics don't show all these exports, probably because they were registered under the country of the (Turkish/Syrian) businessmen who traded the products.

Source: Eurostat (2015)

EU monthly imports of cucumbers

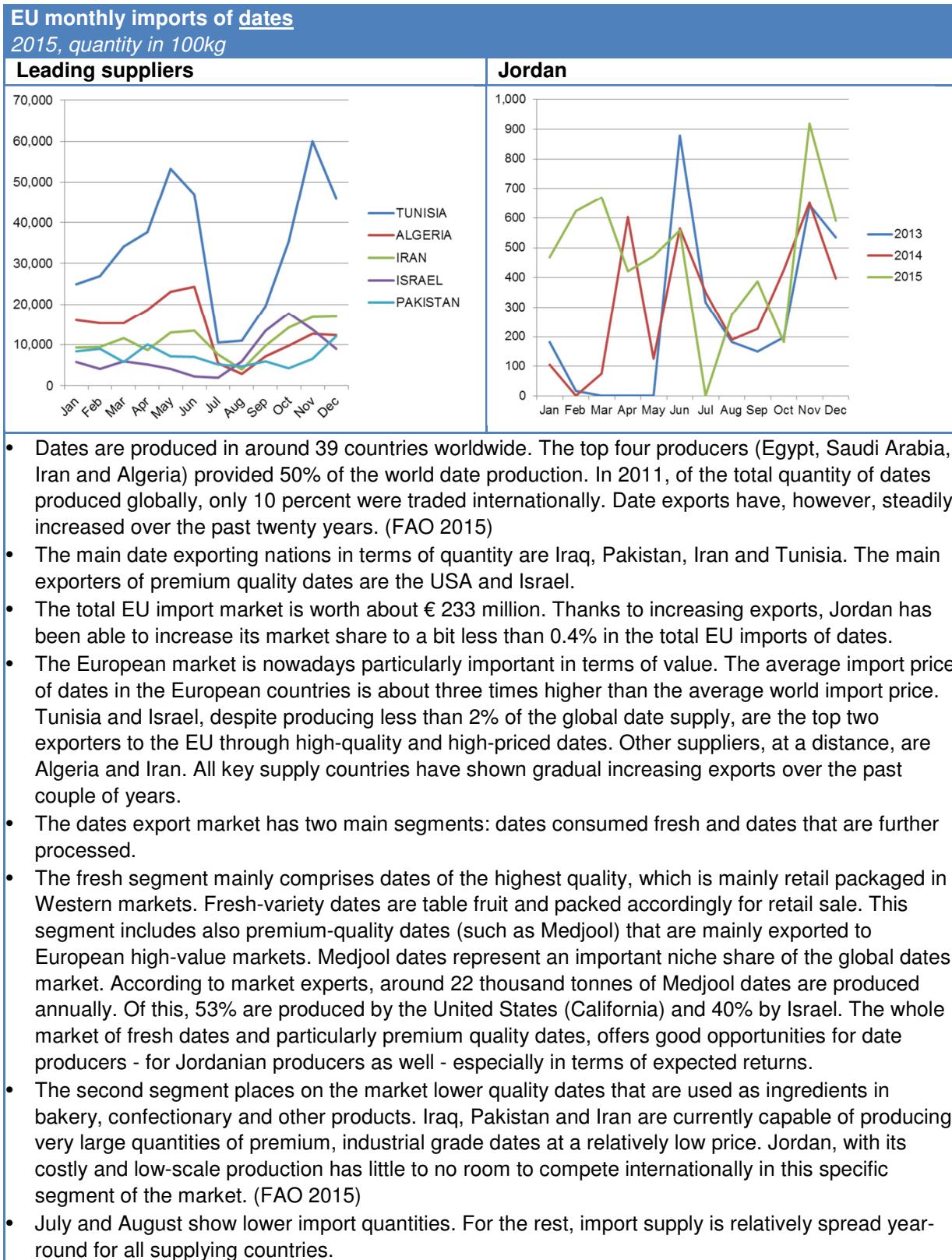
2015, quantity in 100kg



- The European market for cucumbers is dominated by the Netherlands in summer and Spain in the winter season. Supply from other countries is complementary to the supply by these two.

- Jordan exports cucumbers to Europe all year round, although in very small quantities compared to the market leaders (ranked 23th supplier).

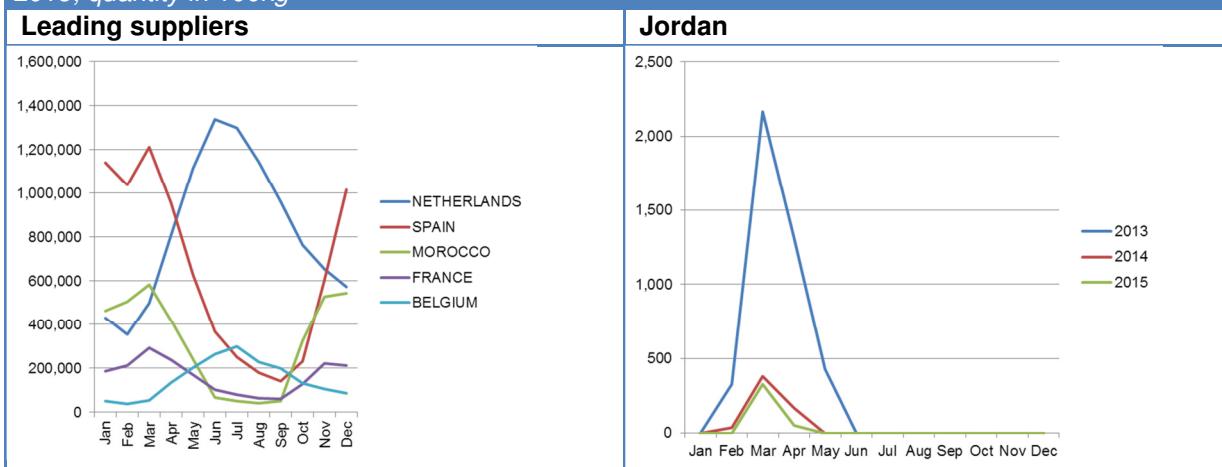
Source: Eurostat (2015)



Source: Eurostat (2015)

EU monthly imports of tomatoes

2015, quantity in 100kg

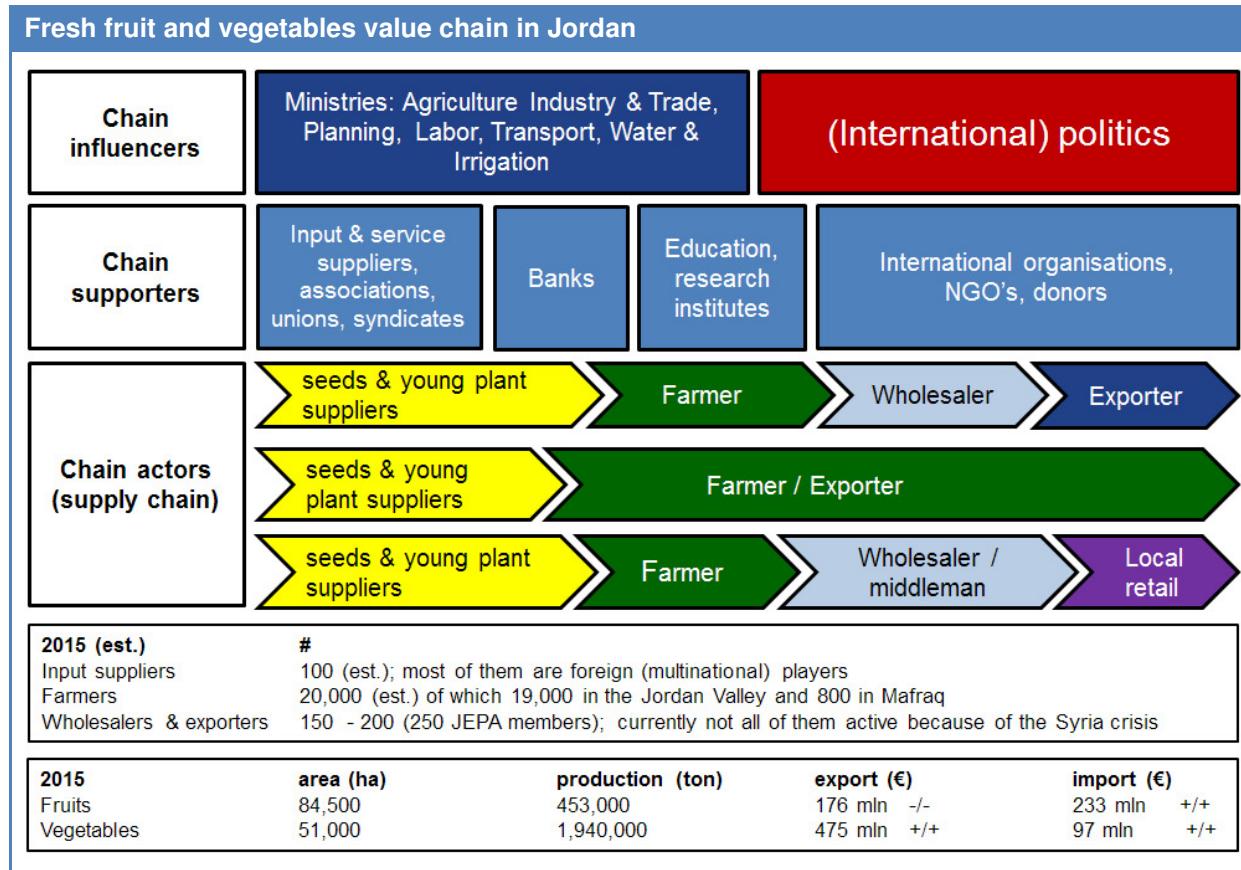


- Regular tomatoes, as well as cherry tomatoes, are produced all year round in the EU. Lead by the Netherlands in the summer and by Spain in the winter season. Consequently, internal supply is high.
- The two leading supplying countries of tomatoes are the Netherlands and Spain, followed at a bit of a distance by Morocco.
- Note that the supply seasons of producers in the Netherlands are becoming longer and longer. As a result, the need for off-season imports is gradually decreasing. Tomatoes from countries like Egypt and Morocco, increasingly feel the pressure from European production. The further away from the Netherlands, the more important imports are.
- Highest prices for fresh tomatoes (all types together) are reported between July and November, during the European summer period. Note that these for a large part are Dutch tomatoes. From November to July (winter period) the market is dominated by tomatoes from Spain and Morocco, which fetch a lower average price per kilogram.
- Last years, Jordan primarily exported tomatoes during the February to May window when supply of Spanish tomatoes is decreasing and the Dutch tomatoes start entering the market.

Source: Eurostat (2015)

4 Mapping the value chain

This chapter visualises and explains the position of and relations between all actors and stakeholders in the value chain in Jordan and quantifies the number of actors and stakeholders.



Source: Bureau Leeters & ProVerde (2016)

4.1 Chain stakeholders

4.1.1 Chain actors and their functions

The main types of enterprises in the direct supply chain are:

- Suppliers of seeds and young plants
- Producers
 - Small farmers (in average around 3 hectares)
 - Big farmers (up to 500 hectares)
- Producers with a trade / export role as well
- Specialised traders / exporters

Seeds and young plants suppliers

- Regulations for seed imports in Jordan are considered the best in the region. Imported seed is regulated by the MoA and requires phytochemical certification and quality certification prior to importation. Quite some foreign seed companies maintain offices in Jordan: all main global players in vegetables seeds (mainly Dutch breeders or related to Dutch breeders, such as Seminis, Bayer, Syngenta, Rijk Zwaan, Bakker Brothers) are present since years and use Jordan as the regional hub. All of them have developed varieties with characteristics for the climate in Jordan (Jordan Valley and highlands) and they have had a major role in the development of specific crops in the Jordan Valley for Eastern European markets (such as Hungarian peppers) and Russia (gherkins).

- Jordan doesn't have a well-developed propagation subsector; many vegetables farmers have their own nursery to raise young plants from seeds.
- Seed production isn't well-developed either. Domestic seed production once covered all of the domestic needs, but many Jordanian seed producers have now moved their production overseas in search of cheaper labour costs. For grains such as wheat, barley, and other cereals stakeholders estimate that only 1 to 10 percent of the seed requirements are met by domestic production today. For vegetables, stakeholders state that the absence of an ISTA certified laboratory (www.seedtest.org) withholds them from seed production for exports, although Jordan seems to have very good climate conditions for larger scale seed production.
- Young plants for fruit tree crops are available from domestic suppliers but for the modern varieties farmers tend to get them from Italy, France and Spain.

Producers

The vast majority of the fruit and vegetables farms are small and not always registered; this category forms around 99.5% of the total number of farms in the country. An estimated average size of a small farm is 3 ha. However, there is a small number of big farms, located in different parts of the country: mainly in Mafraq, the Jordan Valley, Shobak and Wadi Rum. According to figures of the Ministry of Agriculture and the Department of Statistics (not accurate) the number of farmers in the central part of the Jordan Valley (Deir Allah) is about 17,000 and in the south of the Jordan Valley (South Shouna) around 2,000. In Mafraq, there are about 760 farmers. Altogether, the number of crop farmers in Jordan is estimated to be around 20,000.

Big farms use high-tech techniques in their operations, specifically fruit farms in the up land and vegetables and palm farms in the Jordan Valley. Small farms, however, cannot afford to adopt such techniques, which in turn affect their productivity and quality of products. (EU & GOPA 2014).

Small farmers usually don't have any fixed connection with the market. Typically, they entrust their production directly to dealers (middlemen) at the farm-gate (FAO 2015). In the vegetables subsector, it used to be a normal procedure in the Jordan Valley that farmers produced on contract for designated markets in Eastern Europe. However, the border issues that close the market with Eastern Europe since 2011 have hindered this contract production since then:

- According to the Ministry of Agriculture in the Jordan Valley: "before 2010, 50% of the fruit and vegetables in Jordan had an export destination; in the Jordan Valley we grow tomato under plastic on 3,500 ha, of which 2,500 was contracted for export to East-Europe before 2010".
- According to the Farmers Union in the Jordan Valley: "23,000 greenhouses (1 equals 420 m²) were on contract for the markets in Eastern Europe and Russia before 2010; that's all back to zero now; we lost US\$ 5 billion in 5 years".

Bigger farms usually follow one out of two strategies: they either sell their produce themselves (domestically and export) and even source additional production from small farmers. Or, they work with local traders and leave the actual sales to others. In recent years, because of the border issues with Iraq and Syria, this landscape of farmers and traders, as well as their relationships, has changed dramatically.

Traders and central markets

Over 90 percent of farmers sell directly to a wholesaler, sometimes through a middleman / agent / dealer. The work of the wholesalers concentrates at the central wholesale market in Amman or any of the seven municipality wholesale markets (of which the ones in Irbid and Zarqa are the most important). The production of fruit and vegetables by Jordanian farmers and a significant part of imported vegetables transit through one of these markets, mainly sold in auctions. However, this price-setting mechanism is far from professional and transparent. Various stakeholders consider it as 'a dirty game'. The trader obtains 5 to 7% commission on the sales value. Central markets in Jordan do not have a system of quality regulations and do not impose restrictions of minimum quantity to be purchased. This makes them accessible also to final consumers of fruit and vegetables. Despite this

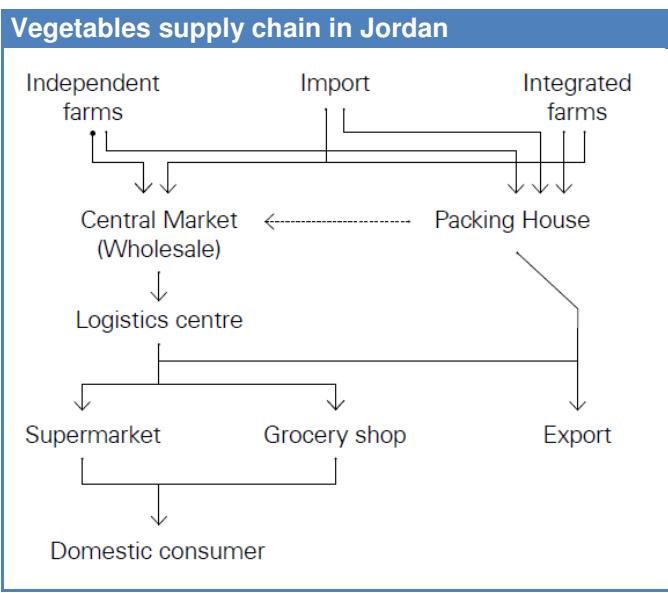
fact, the main clients at central markets are wholesalers, retailers (supermarket and grocery shops) and exporters. (USAID 2012 and FAO 2015)

Most of Jordan's traders have their working base in one of the market places; some are located in the Jordan Valley. They're divided in the ones that target the domestic market only and the ones with export positions. Both types source (import) additional fruit and vegetables from various locations over the world. Although the domestic market in Jordan, especially for high-quality products, is expected to grow in terms of quantity and quality, driven by the increasing population and per capita incomes, there's a clear difference in the level of professionalism: basic level for targeting local markets (no or simple packaging, no cold chain, no certifications, etc.) and more professional for targeting export markets (adequate packaging, better cold chain conditions, market-related certifications in place, adequate skilled sales staff, etc.).

Vegetables supply chain

In a 2015 report FAO shows a typical vegetables supply chain:

- the farmer sells his production directly at the farm-gate to a middleman;
- the transaction takes place through a commission agreement; in fact, the dealer generally does not buy the produce from the farmer, he receives and markets the produce on behalf of the producer;
- the intermediation fee is on average 30 percent the value of the produce;
- retailers buy the vegetables at the central markets at DAP (Delivered at Place) conditions;
- the delivery (transportation) is handled mainly by the middlemen or third service providers.



Source: FAO (2015)

4.1.2 Chain supporters and their functions

Associations

Various associations (or unions or syndicates) act as umbrella organisations for farmers and/or traders. Some of them were established with support of international donors. Generally speaking, it can be said that these associations don't perform as strong voices (lobbyists) of their members and neither as strong service providers for their members. Joining forces and collaboration aren't in the genes of Arabs! One stakeholders stated that "successful farmers isolate themselves from the system".

The most relevant associations in the fruit and vegetables sector are:

- Jordan Farmers Union (JFU); 19 branches in different governorates
- Jordan Exporters and Producers Association for Fruit and Vegetables (JEPA)
- Jordan Dates Association (JODA)

- Merchants Union of Vegetables and Fruit Traders (Syndicate)
- Agriculture Materials Traders and Producers Association (Syndicate)

Jordan Farmers Union (also called Jordan Farmers Association)

- Established in the 1980's; all farmers are member; for instance, in the Jordan Valley the local branch has 15,800 members;
- Its role (and mandate) for the farmers: work for the farmers, find solutions, find markets;
- Not a good name in the sector, they're not considered to be effective as a voice of the farmers and have the name not to cooperate; what remains for many is their 'complaints and shouting';
- They used to receive government subsidy in the past (till 1997 up to JOD 500,000 / year); now it has come to zero; the association doesn't have other sources of income;
- There's no effective dialogue with the exporters association JEPA (only 1:1 contacts farmer-exporter).

① <http://www.jfu.org.jo>

Jordan Exporters and Producers Association for Fruit and Vegetables (JEPA)

- Established in 1994 with support of USAID;
- JEPA's members constitute a diverse range of businesses and interests, including growers, importers, exporters, packers, input supply companies, nurseries and other related businesses.
- It's an effective business association; its 250-300 members contribute to the majority of all exports from Jordan and even 95% of exports from Jordan to Europe;
- Activities:
 - pure association tasks: representing, defending, lobbying for the position of its members;
 - promotion;
 - training;
 - consultancy (BRC, GlobalGAP, ISO, value chain analysis);
- Although there's room for improvement in JEPA's performance (and result orientation), JEPA takes its duties very serious, has adequate lines with the governments and has 'improving production & exports' high on its agenda.

① <http://www.jepa.org.jo>

Jordan Dates Association (JODA)

- 50 members (out of >100 farmers), covering about 70% of all dates production in Jordan (32,000 dunums of dates, equal to 400,000 trees);
- JODA's mandate is advocacy, lobby and extension; looking for more roles in postharvest and marketing , such as developing marketing intelligence and transfer market access information to farmers;
- There are no direct or clear relationships with JEPA and with the Jordan Farmers Union.

Input and service suppliers

Chemicals and fertilizers

- Regulations for chemicals appear very good. Multinational suppliers are present all over the country throughout the farming regions and agents sell directly to farmers, often accompanied by training programs. Agribusinesses report that 15 years ago, fertilizers and pesticides were mainly imported but today are mostly produced domestically, including some for export. The registration process for imported agrochemicals is considered by importers to be very flexible, with a reported timeframe of six months for registration of new products. Unlike many other countries, the government has not directly subsidized fertilizers for the agricultural sector and does not presently provide subsidised chemicals. (USAID 2012)

Other inputs

- Any other utilities, equipment and even machinery for cultivation and postharvest is available in the main production areas and/or in the central markets, offered by local and international suppliers.

Availability and price levels are not a hindering factor in the sector. However, one can hardly buy high tech level, which is logic under the current market circumstances. Companies try to save costs as much as possible and cannot afford now to invest in high tech, unless the market gives more perspectives again.

- An illustrative example is the Dutch supplier Koppert Biological Systems (active in pest and disease management with natural enemies), which has a local distributor in Jordan for years. According to this distributor he cannot sell a single item, so it doesn't bring any business or profit yet. But the distributor likes to have Koppert on the list just for the name and reputation and thus waits for better years to come!

Packaging

- Postharvest handling in general and packaging in particular is considered to be very weak according to many stakeholders.
- Packaging is a value addition which is provided almost exclusively to products for export markets. Fruit and vegetables that are marketed locally are handled through retail outlets (grocery shops and open street markets) in bulk or in basic polystyrene trays. Only a small amount (including cherry tomatoes) is packaged in protective and good-looking packaging materials and sold through the (few) elite supermarkets. (FAO 2015)
- Few companies in Jordan are equipped with proper materials and sorting and packaging equipment. All of them are traders; though a small number has its own production sources and none are capable to fully load existing packaging capacity with their own production. More than 50 percent of the produce handled by the packing houses is procured - mainly from farmer contractors. (FAO 2015)
- The Jordanian packing segment lacks competitiveness in EU markets for many reasons that may include but are not limited to the availability of proper packing and packaging systems and materials, the quality of labour and access to proper transportation services and routes. Until recently, a portion of Jordanian produce was first exported in bulk to neighbouring countries, such as Turkey and Syria, where it was graded, repackaged, labelled and exported to the European Union and the Gulf at higher prices. In some cases, Turkish traders owned and managed packing houses in Jordan where they packed right after harvest, before being trucked to the north. The enduring Syrian crisis since 2010 has de facto interrupted this window. (FAO 2015) Nowadays several packing houses in the Jordan Valley are abandoned or run far below capacity.

Post-harvest storage facilities

- On-farm storage is largely unavailable. There are centralized cold storage units in the country, some of which are located in central wholesale markets and rent space to merchants on a monthly or per pallet basis. (USAID 2012)
- Near the Amman central market, a newly-built, modern cold storage (even with freezing capacity) in a tax-free zone serves the export-oriented storage needs.
- Larger agribusinesses and merchants note that storage is readily available at a reasonable price. Smallholders, however, generally do not utilise storage. Fruit and vegetables are harvested and packed into polystyrene trays without sorting, grading or weighing. These containers are transported using small unrefrigerated, open-bed pick-up trucks to wholesale markets or exporters' packing facilities. Increased use of on-farm or public storage would allow farmers to avoid market gluts by storing apples and bananas until market prices increase, as occurs in Egypt. (USAID 2012)

Consultancy and certification services

- Certification bodies for various certification schemes (GAP, GMP, organic etc.), such as SGS, IMO, Bureau Veritas, Control Union are all available in Jordan with an office or in a nearby country. Some of them serve the wider region from their Amman office. However, the small size of the sector in Jordan itself results in relatively high prices for these services.

Transportation

- Jordan has a fleet of around 600 refrigerated trucks, mainly used for the export of fruit and vegetables to neighbouring Arab markets. Most of these trucks are old and less than 5 percent meet European specifications. (USAID 2012)
- Before 2010 a large fleet of trucks exported Jordanian fruit and vegetables across the Syrian and Iraqi borders to the north; most of these trucks were not Jordanian trucks; they were sent from Syria, Lebanon and Turkey.
- The Jordanian Ministry of Transport is in charge to provide licenses for trucks to cross borders for exports and imports and to arrange agreements with other countries regarding costs for customs. Various stakeholders mentioned that the Ministry fails in establishing competitive arrangements in comparison with neighbouring countries, which harms the competitive strength of Jordan.

Banks / financing / insurance

- Finance for farmers in Jordan is mainly provided by the Agricultural Credit Corporation (ACC), a semi-autonomous government agency charged with contributing to the promotion, support and development of the agricultural sector in Jordan. Banks and microfinance institutions provide very limited finance to agricultural producers, who rely almost exclusively on the state-owned Agricultural Credit Corporation.
- According to the majority of agribusiness firms, commercial banks and (micro)finance institutions in Jordan do not support the agricultural sector. They don't seem to believe in its reliability and capacity to be profitable. An exporter: "banks ask interest for loans of more than 7%, whereas normal loans are 1.5 %".
- There is no credit bureau to provide reliable borrower information to lenders.
- A technical supplier and trader: "the chain is heavily disturbed because of the export limitations; there's no money flow anymore from the market to the farmer, so input suppliers have to wait for their money and farmers can hardly pay their workers; this requires a financial solution, for which the government and/or the banks should take an active role; a national insurance policy and a national finance/insurance vehicle would work: insurance for suppliers and (credit) insurance for exporters".

Agricultural research and extension

- The National Center for Agricultural Research and Extension (NCARE) under the MoA was created in 2007 through the merger of agricultural research staff at the National Center for Agricultural Research and Technology Transfer and the MoA Department of Extension Agents. NCARE is attempting to improve the quality of extension through establishing joint research and extension teams within the institute and improving outreach through field visits and farm schools.
- It is widely known that agricultural extension services are insufficient. Input suppliers usually have staff that's more knowledgeable than the extension agents.. Furthermore the extension service lacks the budgets for any serious operational activity, including travel for conducting regular field visits. Extension agents lack a financial or professional incentive to do a better job.
- Because of the absence of an effective extension service from the MoA, input suppliers have stepped in to fill the void. While the trainings conducted by sales agents of private input companies are reported to be highly sophisticated and very informative for farmers, they are also reportedly subject to bias and lack any comparative information to allow farmers to make educated decisions. Moreover, input companies admit that large farms that spend the most money naturally receive the bulk of the information and support. Poorer smallholders and women do not have similar levels of access. Training and consultancy is also provided to a small degree by commercial consultants, the Jordan Exporters and Producers Association (JEPA) and sometimes within donor funded projects. (USAID 2012)

Education

- The general opinion in the sector is that the education system doesn't deliver graduates with adequate competences and the schools and universities don't have strong enough ties with the private sector to expose their students to the day to day issues in the sector:
 - A dates producer and exporter: "part of the solution is more practical education and technology transfer; now we cannot find engineers for our farms in Jordan; thus we hire Iraqi engineers";
 - A producer and trader in the Jordan Valley: "I have no trust in the government (no willingness, no capacity) and no trust in the education system (not updated)"
 - A consultant: "the education system requires a reform; we don't deliver skilled staff and workers; we see almost 100% unemployment of agricultural engineers; they should not study agriculture; the system should work with quota and the programs should be improved"
- Five Jordanian (state) universities offer agriculture programmes, of which the University of Jordan is the biggest; in total they graduate around 1,000 agricultural engineers annually. (EU & GOPA 2014)
- Al Balqa Applied University (main campus in Salt) operates in the scope of Bachelor and associate degree (college level) and runs a faculty of technological agriculture.
- The Agricultural Engineering Association trains around 400 male and female engineers every year and helps them to find employment opportunities. It also helps engineers establish their own businesses. (EU & GOPA 2014)

International donors

Various donors are active in Jordan and a big effort goes to the humanitarian field, related to the Syrian (refugee) crisis. In the fruit and vegetables sector the most active and relevant donor is USAID, working on the Hydroponic Green Farming Initiative through its implementer Eco Consult. During the field trip meetings were held with USAID / Eco Consult, CARDNE and FAO. Other donors couldn't give priority to align with our study or believe their field of work doesn't come close enough.

USAID / Eco Consult

- In the period 2013-2016, Eco Consult has implemented phase 1 of the USAID funded Hydroponic Green Farming Initiative (HGFI) program (http://ecoconsult.jo/project/hydroponic-green-farming-initiative-program?sector_id=114). The program introduced an integrated model of hydroponic farming tied with renewable energy generation in large-commercial farms and small rural households. Based on the positive results, the program will probably have a second phase. In that phase, the program will build further on the achievements so far. Potential crops and hydroponic systems (cultivation on water and cultivation on solid substrates) have been implemented successfully and profitable / sustainable business models have been developed. Now, they are ready for wide-scaling and up-scaling. Eco Consult already worked with Wageningen University and wishes to continue with them in phase 2. The theme of this project - aiming for higher productivity, higher quality, less labor dependency and less water use through (simple) technology – perfectly fits with what the Dutch public and private sector have to offer; alignment with this USAID / Eco Consult project would be logic.
- The hydroponic project is part of USAID's Jordan Country Development Cooperation Strategy (CDCS) 2013 – 2017 with 4 development objectives:
 - Broad-based, inclusive economic development accelerated (DO1)
 - Democratic accountability strengthened (DO2)
 - Social sector quality improved (DO3)
 - Gender equality and female empowerment enhanced (SDO4)

Under the first objective fall amongst others private sector competitiveness and workforce development. Although agriculture is not a USAID top priority and although the current refugee crisis asks more efforts and budgets than originally planned, the 1st phase of the hydroponic has achieved such good results that phase 2 seems to be safeguarded.

- ① USAID Jordan knowledge management portal: <https://usaidjordankmportal.com>

FAO

- FAO has its Regional Office for the Near East and North Africa in Amman (<http://www.fao.org/neareast/programmes-and-projects/projects/en/>) and also runs its representative office for Iraq from Amman. Only 1 year ago a representative office for Jordan was established, with full staff and operational programs. These are still in the start-up phase. FAO works in animal husbandry and in crops and prefers to follow value chain approaches. The FAO leadership is convinced that Jordan should make steps into export driven production (instead of production driven export). FAO works with JEPA on the theme 'food losses in the chain'.
- FAO is afraid that agriculture doesn't receive enough attention in the current crisis; "the results of the London conference (on integration of refugees in the society / economy) don't say anything about agriculture in Jordan; it's only about textile and electronics".
- Apart from being a donor as such, FAO rather plays the role of mediator between donors and the government.
- A list of operationally active projects for all FAO organizational units in Jordan:

Symbol	Title	From	To	Total Budget	Available Budget
<i>Technical Cooperation Programme (TCP)</i>					
TCP/JOR/3401	TCP Facility	2012	2013	17,400	0
TCP/JOR/3501	TCP Facility	2014	2016	181,954	32,097
TCP/RAB/3502	Strengthening of Food Security Information and Early Warning Systems for Effective Resilience-based Response in Countries Affected by the Protracted Syrian Crisis.	2015	2017	500,000	394,214
TCP/SNO/3501	Capacity Building for Food Loss Reduction in Middle East	2014	2016	422,000	382,336
<i>Other Trust Funds (TF)</i>					
GCP /JOR/017/EC	Improving rural livelihoods, environment & green jobs opportunities in Mafraq Governorate in Jordan	2016	2018	3,296,708	0
OSRO/GLO/404/SWE	Capacity building activities on cash transfer programming and implementation	2014	2016	217,549	18,185
OSRO/JOR/502/BEL	Enhance food security and nutrition of vulnerable Jordanians and Syrian refugee households	2016	2016	300,000	0
OSRO/RAB/401/USA	Establishment of an inclusive food security information network to support emergency food security and livelihood support interventions in countries affected by the Syria Crisis	2014	2016	1,650,000	1,059,592
SFER/GLO/101/MUL	SFERA Revolving Fund Component - Needs Assessment and Programme Development window	2015	2025	2,407,070	1,226,473
UNFA/REM/073/WHO	Demonstration of Sustainable Alternatives to DDT and Strengthening of National Vector Control Capabilities in Middle East and North Africa - (Component #3: Collection, repackaging and disposal of obsolete public health and agricultural POPs)	2010	2015	736,000	25,784
<i>Trust Fund/FAO-Government Cooperative Programme (TF/GCP)</i>					
GCP /INT/124/ITA	Coping with Water Scarcity (The Role of Agriculture): Phase III - Strengthening national capacities	2011	2016	2,373,000	93,078
GCP /INT/165/UK	Strengthening biosecurity in selected MENA and Horn of Africa States (Phase 1) needs assessment and capacity development - (directly linked to PGM/MUL/2012-2017)	2014	2016	296,667	28,702
GCP /JOR/018/SWI	Reduce vulnerability in Jordan in the context of water scarcity and increasing food/energy demand	2015	2018	2,216,267	0

Source: <https://extranet.fao.org/fpmis/FPMISReportServlet.jsp?div=&type=countryprofileopen&language=EN&countryId=JO>

CARDNE

- CARDNE (<http://www.cardne.org>) is the Regional Center on Agrarian Reform and Rural Development for the Near East, an intergovernmental organisation, hosted by Jordan, active in 10 countries in the region. It's an organisation with a widespread network of national centres in the

member states, promoting and stimulating regional cooperation related to agrarian reform and rural development.

- CARDNE doesn't have budgets itself. In programs CARDNE can offer consultative services and technical support and it can act as an independent project coordinator (diplomatic role!).

JICA

- The Japan International Cooperation Agency JICA (<http://www.jica.go.jp/english/index.html>) cooperates with the Israeli government (Mashav and CINADCO) and supports NCARE with a project since 2008: "Introduction of Advanced Agricultural Technology for Dryland Area in Jordan under the trilateral cooperation, Jordan-Japan-Israel". Now the project is in the 2nd phase which will end in November 2016. The project gives support in the fields of water saving, tropical and subtropical fruit cultivation technology and aquaculture cultivation technology. But JICA adds that it doesn't deal with the fruit and vegetables export value chain.
- Besides this project, for many years JICA has been supporting NCARE to conduct training programmes for neighbouring countries such as Iraq and Palestine respectively and when the peace accord is signed, JICA will re-start cooperation to the Faculty of Agriculture in the University of Jordan to conduct an irrigation training course for Yemen.
- Despite the aforementioned information given by JICA, it also states that "support to the Jordanian agriculture sector is not in the priority area of the cooperation policy by the Japanese Ministry of Foreign Affairs (and thus JICA); agriculture is a very "down to earth" communication tool for peace consolidation among the Jordan-Japan-Israel partnership".

GIZ (Germany)

- The effort of GIZ Jordan (<http://www.giz.de/en/worldwide/360.html>) is greatly influenced by the Syrian refugee crisis. The current Jordanian - German cooperation is focusing on 2 issues:
 1. water (provide an adequate and stable water and wastewater management system through various measures);
 2. employment and education (create economic and vocational prospects for Jordanians and the Palestinians and Syrians living in Jordan); a new priority area since 2015 has been to promote measures in education, vocational training and job creation.
- During the field trip, the GIZ office couldn't give priority to meet and mentioned that "GIZ Jordan is only extending services in Jordan based on German - Jordanian government agreements".

USDA

- In 2015, Jordan was a recipient of USDA's Food For Progress (FFPr) program. Through this program USDA's Foreign Agricultural Service provided the government of Jordan with 100,000 metric tons of U.S. wheat, valued at approximately \$ 25 million. The Jordanian government agreed to use proceeds from the sale of the commodities to implement projects aimed at improving agricultural productivity and stimulating economic growth.

① <http://www.fas.usda.gov/regions/jordan>

IFAD

- IFAD's activities in Jordan have focused mainly on rain-fed agriculture and livestock, small farm credit, income diversification and natural resources management. The most recent IFAD-supported projects have emphasized better use of soil and water resources, introducing improved management practices and focusing particularly on environmental conservation.
- IFAD has currently one ongoing operation in Jordan: the Rural Economic Growth and Employment Project 2014-2020 (REGEP). The project targets rural households below the poverty line, and vulnerable rural households above the poverty who are at high risk of falling into poverty. The project is national in scope but focuses on rural areas of the Governorates of Ajloun, Jerash, Balqa, Madaba and Mafraq. The project budget is US\$ 15.2 million, of which US\$ 11.3 million IFAD funding (US\$ 10.8 loan and US\$ 0.5 grant). The project consists of two components:
 1. Value Chain and Enterprise Development, managed by JEDCO in close partnership with NCARE, JEPA, JSMO, a national NGO and other service providers;

2. Rural finance, implemented entirely by DEF.

① <http://operations.ifad.org/web/ifad/operations/country/home/tags/jordan>

ICARDA

- The International Center for Agricultural Research in the Dry Areas (ICARDA) <http://www.icarda.org> promotes agricultural development in the dry areas of developing countries. That's highly relevant for Jordan. ICARDA could be a partner, although there's not a highly relevant agenda in the Jordan fruit and vegetables value chain at this moment. Whereas ICARDA has done various projects in surrounding countries (Palestine, Egypt) and some work on value-chain analysis on medicinal plants and fruit trees in Egypt, Jordan and Morocco as well as projects on vegetables under protected agriculture conditions in different countries (other than Jordan), there's no ongoing project in Jordan in the field of the (export oriented) fruit and vegetables value chain.

UNDP

- UNDP's projects in Jordan are focusing on 4 themes: 1st poverty reduction; 2nd democratic governance; 3rd crisis prevention & recovery and 4th environment & energy. In none of these themes a close connection with the (export oriented) fruit and vegetables value chain is evident.

① <http://www.jo.undp.org>

4.1.3 Chain influencers and their functions

Government

The key organisation for agriculture is the Ministry of Agriculture (MoA). Two of its units directly work with the farmers 'on the ground':

- the National Center for Agricultural Research and Extension NCARE (see paragraph 4.1.2) deals with (applied) research and extension;
- the Department of Agricultural Marketing deals with monitoring & sharing data (information) and with licensing;

In addition several other Ministries have a stake in the performance of the agricultural sector:

- Ministry of Planning (because of the channelling of –international- funds)
- Ministry of Labour (because of the permits to hire international employees)
- Ministry of Water & Irrigation (because of access to water)
- Ministry of Industry & Trade (because of trade facilitation and - licencing)
- Ministry of Transport (because of transport licenses and customs)

Furthermore, agribusiness firms may have to deal with the Ministry of Health, the Jordan Food and Drug Organization and the Jordan Standards and Metrology Organization.

According to the government, the agricultural sector in Jordan benefits from favourable government policies and faces few legal and regulatory constraints to growth. Registration and licensing are reported to be straightforward and efficient, labour is readily available, most inputs other than water are easily accessible, and agriculture receives very favourable tax treatments, with many producers paying little to no taxes. (USAID 2012)

The government supports farmers through the following measures (EU & GOPA 2014):

- Most of the production and production inputs are waivered from tariff and sales tax.
- Income of farmers is waivered from income tax; agriculture companies are waivered from income tax for the first JOD 100,000.
- As per WTO regulations and the "Agreement on Agriculture", and specifically policies of the "Green Box", subsidy for agriculture is given in the areas of infrastructure projects and research, extension and related projects.

Much of the domestic agricultural policy is focused on the management of its scarce and rapidly depleting water resources in an effort to support its traditional livestock owners and develop an export-oriented horticultural sector (USDA 2015).

Several initiatives are published by the Jordan government to boost exports:

- Jordan's trade regime went through significant reforms since it joined the WTO in 2000.
- Jordan has entered into several bilateral and multilateral trade agreements that include a regional Greater Arab Free Trade Agreement (GAFTA), EU Mediterranean Partnership, FTA's with the USA, Canada and various other countries.
- An April 2011 deal with Saudi Arabia ended a 20-year ban on imports of Jordanian vegetables.
- At the end of 2014, Jordan's Agriculture Minister noted that exports to Iraq had improved following negotiations with the Iraqi government, which agreed to reduce the fees collected from each Jordanian truck entering Iraq from US\$ 2,200 to US\$ 700.
- Since 2014, Jordan has targeted Russia as a potential market by seeking an exemption from high import tariffs. Negotiations came to fruition in November 2014, when the two countries inked a deal that Russia reduced its import duties on produce from Jordan by 25% in the summer of 2015 and to exempt it entirely from such duties in the winter.
- Agricultural companies can also benefit from a World Bank-funded programme implemented by the Central Bank of Jordan (CBJ) at a cost of US\$ 900 million. Under the programme, the central bank will cooperate with commercial banks in providing loans to small and medium sized companies at preferential interest rates and payback periods. Agricultural companies were previously excluded from the programme.

Source: <http://www.oxfordbusinessgroup.com/news/jordan-agriculture-exports-rise>

The private sector is very critical on the role and attitude of the government towards the sector. There's an awareness and some acceptance that the government faces difficulties with respect to the Syrian crisis and lacks resources to seriously support agriculture. But the private sector feels that there's not any political will and not any vision on the sector. That's very disappointing and discouraging for the ones that still see a future in agriculture. The private sector needs a political will and a vision on the role of agriculture in the Jordan economy and society. Following this, the position of the MoA is hardly visible and there's hardly any coordination between the Ministries. A coordination between MoA and the Ministry of Water & Irrigation would be indispensable but is not seen in practice.

Some opinions and statements to illustrate the negative feelings:

- An association: "the government allows imports (f.i. Egyptian beans and onions) whereas local produces faces price drops"
- A (large scale) farmer: "we started to produce garlic because there's a big demand but at a sudden the government arranged imports (they say because of WTO arrangements), which caused a price drop; now we cannot sell anymore"

In general, agribusiness firms do have major concerns with import and export licensing or customs administration. Importers must obtain an annual import license from the Ministry of Trade & Industry as well as a permit from the Ministry of Agriculture (MoA) for each shipment. Some merchants maintain an agent at the MoA to handle paperwork for shipments on a daily basis. (USAID 2012)

International politics

Although not always being supportive, the political situation in the region has huge impact on the horticultural sector in Jordan. One of the stakeholders stated: "we're surrounded by fire" referring to Syria and Iraq to the north and east, Palestine and Israel to the west and Saudi Arabia to the south. In chapter 5 more information is provided regarding the 2 dominating consequences of the Syria conflict: the border closures with Syria and Iraq as well as the influx of refugees in Jordan.

4.2 CSR risks in the value chain

Corporate Social Responsibility (CSR, also known as SR) refers to the responsibility of a community or organisation for the impacts of its decisions and activities on society and the environment, through transparent and ethical behaviour that:

- contributes to sustainable development, including (human and plant) health, environment and the welfare of society

- takes into account the expectations of stakeholders
 - is in compliance with applicable law and consistent with international norms of behaviour
 - is integrated throughout the organisation and practised in its relationships
- (Source: ISO 26000, 2010)

MVO Nederland is the Dutch national knowledge centre and network organisation for corporate social responsibility (CSR). Its tool -the CSR Risk Check- (www.mvorisicochecker.nl/en) gives an actual overview what CSR opportunities and risks exist in all countries of the world, based on public information. For Jordan, the Risk Check shows a total number of 26 risks, divided into 4 themes: 1st labour rights; 2nd human rights and ethics; 3rd environment and 4th fair business practices. In below list, 9 typical risks that also relate to the fruit and vegetables value chain are listed.

Labour rights (in total 18 risks)

1. Gender discrimination (both in law and in practice)
2. Economic participation, access to education and political empowerment
3. Restricted freedom of expression and freedom of association
4. Safety and health condition for workers
5. Labour conditions (contracts, working hours, payments for overtime)
6. Child labour

Human rights and ethics (in total 3 risks)

Environment (in total 3 risks)

7. Water scarcity
8. Air pollution

Fair business practices (in total 2 risks)

9. Corruption (very weak anti-corruption and good governance mechanisms)

For some of these risks, there's some elaboration in the table below, based on observations during the field trip:

(4) Safety and health condition for workers

During the field trip, there was no sign that employees aren't treated well.

The usual risk with respect to worker safety and health in crop production has to do with spraying and working with chemicals. For those farms with international certifications (such as GlobalGAP) this risk is excluded, but in Jordan most of the farms don't follow these good agricultural practices (GAP).

(5) Labour conditions (contracts, working hours, payments for overtime)

Employers in agriculture such as producers and traders are allowed to hire Syrian refugees. Employers are happy with this regulation (since 2011) because it breaks the monopoly of Egyptian workers. Before 2011, only Egyptians were allowed to work in agriculture. Egyptians usually have seasonal contracts on a farm and they live in basic accommodation. Syrian refugees / employees mainly live in UNHCR tents, even more basic.

An FAO report (FAO 2015) mentions a lack of a legislative framework that protects agricultural workers and says that most of the agricultural workers are not covered in the social security scheme. But during the field trip there was no sign that employees aren't treated well with respect to salaries and working hours.

(6) Child labour

It's common for Syrian refugee families to bring their whole family, including their children. They 'force' employers to let them work as a whole family. Although it may embarrass employers or even bring them into troubles because of international certifications (ILO requirements), it happens in the main production areas (Jordan Valley, Mafraq) that Syrian children as a matter of fact work in farms and

packing houses.

(7) Water scarcity

Water scarcity is a serious problem in the whole of Jordan, affecting available water for human consumption and for crop production. See paragraph 5.3.

(9) Corruption (very weak anti-corruption and good governance mechanisms)

Various businessmen reported clear cases of corruption at government level, for instance in the field of licenses for foreign labour, import and export licenses and border crossing fees.

5 Bottlenecks along the value chain

5.1 Introduction

The FAO concluded that overall, Jordanian fruit and vegetables produce, except for out-of-season production, has been difficult to sell in new markets, especially in Europe (FAO 2015). There's a clear comparative advantage, in particular for production in the winter months in the Jordan Valley. However, this advantage is not exploited. In this chapter, a wide overview of the bottlenecks preventing exports are given, being clustered in 4 main themes:

1. **Market & market access:** related to available market windows in the international and domestic markets as well as the capacity to access these markets;
2. **Technology & inputs:** related to the conditions for the private sector to operate in the fruit and vegetables sector, such as availability and use of technology and inputs and the infrastructure therefore;
3. **Human resources:** related to the presence of sufficient entrepreneurial capacity in the sector;
4. **Business environment:** related to the business environment in general (ease of doing business) and the relationship between the private and public sector in particular.

These (4) themes have a clear relation with the value chain map in chapter 4.

The fruit and vegetables sector cannot be a sustainable and profitable sector without a certain threshold level in each of these four themes. In other words each theme is a knock-out factor that prevents the sector to develop and to perform well in exports.

Because of the current impact of refugees on the society of Jordan and on the agricultural sector in particular, an extra paragraph 5. Refugees is added to this chapter.



5.2 Market & market access

Jordan has and will continue to have evident windows with comparative advantages for fruit and vegetables in international markets. However, various bottlenecks prevent these exports:

- There's no national marketing strategy:
 - no central planning mechanisms towards demand-oriented production
 - no transparent price-setting mechanisms
 - no regulations on quality
 - no coordinated export efforts, based on a national branding strategy
 - no sufficient and up-to-date market intelligence
- Infrastructure for air transport at the Amman airport and for sea transport in the Aqaba port is available but poor; logistics are complicated and prices are not competitive (no economy of scale).
- Since 2011 there's limited or no access to the main markets by truck (through Syria and Iraq); in fact, the markets in Syria and Lebanon, Eastern Europe and Russia are closed. There are alternatives (by air, through the port of Haifa in Israel, by truck through Saudi Arabia and Kuwait), but they all have a higher cost price and longer travel times (quality loss). During the field trip, a long list of observations has been collected on this matter, some of them:

- An association: "in the Jordan Valley 23,000 greenhouses (1 equals 420 m²) were on contract for the markets in Eastern Europe and Russia; that's all back to zero > US\$ 5 billion loss in 5 years".
- An association: "there're alternative logistics through Haifa: some produce is being re-labelled into Israeli product, some remains the Jordan label, which means 3 times higher costs".
- An association: "since the crisis the sector lost its social security; many farmers and their sons are in big trouble because of unemployment; it creates problems with drugs and even dangers that they're attracted by IS".
- An association: "the main problem is the Syria crisis; in 2010 we sent 400,000 tons to Syria, now almost zero and 50,000 tons vegetables to Russia, now only 500-700. We only send 100 trucks a day to Saudi Arabia".
- A packer / exporter: "sharp drops after closure of the Syrian border: from 500 trucks to 40 trucks per year; now through Haifa and Turkey to Russia, though too complicated and more expensive: from US \$5,000 per container to US \$7,000 per container; alternative markets in the Gulf don't bring profit".
- A technical supplier / trader: "the chain is heavily disturbed; no money flow anymore from the market to the farmer, so input suppliers have to wait for their money and farmers can hardly pay their workers".
- An association: "the crisis causes 30 to 40% higher costs by vessel (Aqaba) and 200 to 300% higher costs by air".
- A trader: "in the previous 15 years much expansion in fruits; Jordan took over positions from Syria and Lebanon and became their supplier; only since 2013 (big) problems because exports are closed; in fruits less problems than in vegetables: larger scale production, more professionally organized at farm level by investors or farmers with longer term views than in vegetables".
- A government officer: "all products still reach the market, although the share of export is about 10% (estimation); 30% price drop for farmers in the recent years because of border closures + higher productivity (new technology) + new area".

- Jordan still concentrates its exports in traditional markets (neighbouring countries, Gulf); only few businesses are compliant with high-end market access requirements; many Jordanian suppliers deliver insufficient quality, lack adequate certifications (especially with respect to CSR) and do not have well-established relationships with potential buyers.
- In existing trade-channels to the markets in Syria, Lebanon, Eastern-Europe and Russia, Jordan actors often are in an underdog position. Businessmen in the target markets or in Turkey are in the lead by initiating and managing the whole export process from farm gate till point of sale. In other words: Jordan farmers often supply the raw materials whereas foreigners add the value.
- The fierce competition and high requirements in high-end markets, such as Europe, resulting from increased market openness and new market entrants from all continents, doesn't stimulate business in Jordan to invest in new export markets.

5.3 Technology & inputs

In the field of technology & inputs, as well as infrastructure for cultivation and postharvest, entrepreneurs in the sector face much room for improvement.

- Availability and quality of workforce is headache factor #1 for many entrepreneurs:
 - Agriculture is not a preferred sector for the Jordanian workforce; less than 10 percent of the labour requirements is provided for by Jordanians, so immigrant workers dominate the sector; there's no open labour market; only Egyptians and recently Syrians are allowed to work in agriculture
 - There are no major wage differentials between Jordanian and migrant workers, but recently migrant workers have been increasingly (although illegally) moving to other sectors (civil works) that offer better salaries. The situation is perceived as critical by almost all farmers, and the labour crunch is a reality in many areas of the Valley. (World Bank 2016)
 - The cost of labour is reported to be rising significantly.
 - The transient nature of the workforce is a limiting incentive for private sector investments in skill development. Only a few large producers provide in-house training on produce handling and packing so as to meet export standards because they understand that skill development is needed, according to global marketing standards, during harvesting and along produce preparation and packing. Producers are furthermore requesting higher political attention from the government on two issues in particular: an increased liberalisation of migration quotas, asking that it be extended to countries which can supply cheaper labour - e.g. India - and for legal enforcement capacity towards workers who break their contractual obligations). (FAO 2015)
 - Some opinions and statements of stakeholders regarding workforce during the fieldtrip:

- An exporter: "Egyptians aren't responsible (3 times switch of the work force in 1 season); no flexibility to hire Indians, Pakistani etc.; we need an emergency solution: regulate the labour market; break the monopoly and allow other foreigners (not only Egyptians and Syrians) to work in agriculture".
- An association: "labour availability and price is obstacle #1 (corrupted; government makes money out of Egyptians)".
- A farmer: "labour: not enough, not skilled, high price".
- A farmer: "the crises partly solved our labour problems because now we can also hire Syrians".
- A consultant: "to solve the labour problems: let licensed companies deal with foreign labourers for agriculture: hiring and contracting, same as for the hospitality sector".

- Water availability & water quality aren't ensured; it prevents the sector to develop well. About 42% of the farmers interviewed for a recent World Bank study (World Bank 2016) reported access to water for crops as the most important issue to tackle.
 - Jordan is one of the most water-stressed countries in the world. Its annual renewable resources of 145 cubic meters per capita are far below the threshold of severe water scarcity of 500 cubic meters. The competition among water needs for irrigation, industrial and domestic uses, wetland protection and in-stream habitat needs continues to pose serious challenges in Jordan. As a result of this competition, the available fresh water for farmers in Jordan, and more specifically farmers in the Jordan Valley, has declined. (World Bank 2016)
 - Only few places in Jordan have enough rainwater for crop cultivation. Water for farmers in the Jordan Valley is regulated through canal systems. The quality of this water is problematic. Water for farming in the highlands is mainly gathered through wells, up to 400 – 500 m deep in Mafraq. The Ministry of Water & Irrigation is rather restrictive in providing licenses for (new) wells. The quality of this aquifer and well water is reasonable to good.
 - Still, compared to many other countries in the region, Jordan has made progress in water sector reform. For example, the government is paying attention to sector policies and is trying to address water scarcity. The government has a system of quotas and tariffs in place for irrigation water. Favourable institutional arrangements exist, with a regulatory authority, the Ministry of Water and Irrigation, and two providers for irrigation and water supply and sanitation services, the Jordan Valley Authority (JVA) and the Water Authority of Jordan. Furthermore, the government has embarked on the establishment of water user associations

(WUAs) to deliver retail irrigation services to farmers. Farmers in about 40 percent of the Jordan Valley are in various stages of establishing WUAs. Although the JVA has increased industrial tariffs, it has left irrigation tariffs untouched (which are extremely low at JOD 0.011 per m³ and have not been adjusted since 1994). The proposed irrigation water tariffs are much higher than the rates currently in place. Still, the impact of tariff increases on farmers' incomes is in general moderate, because water costs make up only a small part of the total cost of farming. Yet, as can be expected, certain cropping patterns will be much more affected by the tariff increases than others. Especially crops that consume large volumes of water (especially citrus) will feel the impact of the irrigation water tariffs. (World Bank 2016)

- Especially bigger farmers have made huge investments over the years to improve water efficiency (with localized irrigation) and to increase the competitiveness of their products (with greenhouses and crop substitution with high-value produce). (FAO 2015)
- Some opinions and statements of stakeholders regarding water during the fieldtrip:

- A public officer: "the main concerns of farmers are in the field of marketing and water (shortage and quality)".
- Two farmers in the Jordan Valley: "bad water quality; too saline for cultivation: we had to invest in desalination (through reversed osmosis) and bring back salinity from 2,300 to 60 ppm".
- A farmer: "one of the main obstacles is water, in combination with high costs for electricity for pumping it".

- Farmers and traders in Jordan are able to buy various inputs (seeds, young plants, fertilizers, chemicals, plastics etc. etc.). Domestic and international input suppliers are present in the country. But the low economy of scales and the current pressure on the market, due to the Syria crisis, puts them all under pressure. Most of them cannot provide goods and services for competitive prices.
- In farming practices the sector performs below standards for being competitive in international markets; the sector is ready for next technology and mechanization steps, in particular related to irrigation, fertigation, vegetables growing in substrates and IPM. However, the current market circumstances hinder the implementation of any innovations.
- The cold chain infrastructure is weak or absent and many actors in the chain aren't aware of the need for proper post-harvest treatments throughout the chain (including cleaning and decontamination of equipment, containers, pallets, crates and vehicles).
- The supply chain is not efficient and transparent due to a dominant role of middlemen and brokers.
- The sector lacks capacity to add value (processing); it's only available for dates and olives.

5.4 Human Resources

Many entrepreneurs in the sector worry about the lack of competences and leadership as well as a low level of cooperation within the sector and with the public sector. These HR aspects seriously contribute to the lack of overall capacity of the sector in being competitive on international markets.

- Associations and cooperatives in the sector play a marginal role; they're non-existing or not mature in their governance and service delivery. It's related to the mentality in the country (and the whole region) not to cooperate; successful companies rather isolate themselves than collaborate with others. Many attempts from the side of entrepreneurs and (international) donors failed to strengthen forces. Three associations play a more or less relevant role in export oriented chains:
 1. the Jordan Farmers Union (very weak; bad reputation);
 2. the Jordan Dates Association (rather invisible);
 3. the Jordan Exporters and Producers Association for Fruit and Vegetables (JEPA).

The latter is the best example of a vital sector association, although it's not performing well in the current circumstances, mainly due to lack of staff capacity.

- Practical education, delivering graduates with practical skills and the right attitude for agriculture, is insufficient. There is an oversupply in the number of agricultural engineers who enter the labour market annually.
- Altogether the current situation in the fruit and vegetables sector is far from encouraging for the younger generation and there's a serious risk that sons and daughters of current entrepreneurs get lost for the sector.

5.5 Business environment

In the 'Ease of Doing Business' ranking of the World bank Jordan scores reasonable, though in the lower part of the list and the trend is downwards. Regarding 'getting credits' Jordan is in the bottom:

2016 Ease of Doing Business ranking				
 Ease of Doing Business in Jordan				
This page summarizes <i>Doing Business 2016</i> data for Jordan. The first section presents the Ease of Doing Business rank (out of 189 economies) and the distance to frontier (DfT)** measure, overall and by topic. The second section summarizes the key indicators for each topic benchmarked against regional averages.				
ECONOMY OVERVIEW PRINT EXCEL				
REGION	Middle East & North Africa	DOING BUSINESS 2016 RANK	DOING BUSINESS 2015 RANK (i)	CHANGE IN RANK
INCOME CATEGORY	Upper middle income	113	107	↓ -6
POPULATION	6,607,000			
GNI PER CAPITA (US\$)	5,160	DOING BUSINESS 2016 DTF (% POINTS) (i)	DOING BUSINESS 2015 DTF (% POINTS) (i)	CHANGE IN DTF (% POINTS) (i)
CITY COVERED	Amman	57.84	57.81	↑ 0.03
Rankings Distance to Frontier				
Topics	DB 2016 Rank	DB 2015 Rank	Change in Rank	
Starting a Business	88	83	* -5	
Dealing with Construction Permits	103	103	No change	
Getting Electricity	56	55	* -1	
Registering Property	98	96	* -2	
Getting Credit	185	185	No change	
Protecting Minority Investors	163	162	* -1	
Paying Taxes	52	46	* -6	
Trading Across Borders	50	49	* -1	
Enforcing Contracts	126	122	* -4	
Resolving Insolvency	146	146	No change	

Source: World Bank Group:<http://www.doingbusiness.org> (2016)

The absence of a national vision on agriculture, the absence of a political will to revive the sector, limited connections between the public sector and the private sector and weak regulatory frameworks prevent the sector to (re)build and expand its export performances in fruit and vegetables.

- In the perception of the private sector the government doesn't give any priority to the agricultural sector. They feel there's no political will to maintain and develop the sector. The government doesn't have a national strategy (neither institutions) on food security or marketing & sales of fruit and vegetables.
- Government institutions aren't streamlined and don't show effectiveness and efficiency towards the agricultural sector.
- There's no legislation on product quality (classification, quality standards, minimum quality, packing, labelling etc.), resulting in bad quality reaching export markets, affecting trust and reliability of Jordan.
- There's hardly any applied research on a central level (mainly due to the absence of budgets) and the central extension services of the MoA is not visible.
- There're no structural linkages between the private sector and research & education.
- There's an evident mismatch: "the private sector has (too) high expectations and (too) high demands, whereas the government has little resources, no priority and no strategy".
- Banks don't recognize agriculture as a vital sector and don't offer competitive services.
- Though Jordan signed various international trade agreements, they're not supportive for the agricultural sector.
- Available labs for soil, plant (parts) and water analysis as well as heavy metals, microbial and residue detection are available and they offer sufficient quality to serve the export industry; however a certified laboratory that provides licenses for export of seeds (ISTA) is not available.

5.6 Refugees

The Syrian refugee influx into Jordan has been massive. As of April 2016, more than 630,000 Syrians were registered with the United Nations Refugee Agency in Jordan (UNHCR Jordan). 19% of these Syrians live in refugee camps, as opposed to host communities. Most refugees live in Amman, followed by Mafraq, Irbid and Zarqa (see table). Apart from these official figures many more foreigners live in Jordan. The total influx of immigrants in the last years is about 3 million, of which almost 2 million refugees from Syria. The borderline between refugee and immigrant is not always evident!

(Syrian) refugees have stressed the economy and resource infrastructure in Jordan, which was already suffering from structural issues before the refugee crisis. Some of the main challenges for Jordan are in the field of labour participation and access to education.

Registered Refugees by Region

As of 11-04-2016

Governorate	Refugees	Share
Amman	171,680	27%
Mafraq	156,763	25%
Irbid	136,711	21%
Zarqa	90,586	14%
Balqa	19,904	3%
Dispersed in Jordan	13,072	2%
Madaba	10,735	2%
Jarash	9,983	2%
Karak Govenorate	8,669	1%
Ajlun	8,511	1%
Maan	7,224	1%
Aqaba	3,294	1%
Tafilah Govenorate	1,501	0%
	638,633	100%

Source: UNHCR (2016)

- ① Syria Regional Refugee Response, Inter-agency Information Sharing Portal:
<http://data.unhcr.org/syrianrefugees/country.php?id=107>

5.7 Summary of bottlenecks along the value chain

The main bottlenecks that prevent the Jordan fruit and vegetables sector to export are summarised in the below graph, clustered in the four themes:



Furthermore, it should be noted that the regional crisis, causing border closures and influx of refugees, heavily affects the profitability of the sector and the available budgets of the government to facilitate the sector. In the current market circumstances and at current price levels, only very few production systems generate positive net returns, which creates hesitant behaviour all over the sector to invest in technical innovations and new market developments.

6 Recommendations for interventions

6.1 Introduction

Given the bottlenecks in chapter 5, this chapter shows which of these bottlenecks are critical and solvable. Taking into consideration what the Dutch private and public sector have to offer in the fruit and vegetables value chain, in particular the services of the NEA, and also taking into consideration the involved risks as well as activities of other donors, we'll show realistic interventions to enhance exports, preferably with improved Social Responsibility performance.

6.2 Market & market access

Intervention	Remarks and conditions
6.2.1 Convince the Jordan government that the sector requires a national food security strategy and support the development and implementation process of such a national strategy.	<ul style="list-style-type: none"> Requires a diplomatic approach towards the Jordan government (various Ministries) In the development and implementation process the public and private sector have to go hand in hand By encouraging the government to address the food security theme from different angles, it will make the position of the various Ministries (such as MoA) more clear NL can provide consultancy and project management Coordination with other donors (at least FAO) Takes at least a few years
6.2.2 Lobby and diplomatic efforts to open the channel from Jordan to the Mediterranean Sea through Israel (sea ports of Haifa and/or Ashdod)	<ul style="list-style-type: none"> Challenging lobby / diplomacy trajectory towards Israel It's recommended to align this process with (the Dutch representative Office in) Palestine
6.2.3 Develop / strengthen the export capacity of the sector to EU / EFTA and Central Asia (including Russia)	<ul style="list-style-type: none"> Two parallel lines: <ul style="list-style-type: none"> institutional capacity building, JEPA being the main counterpart export coaching on SME level in order to empower and guide companies It's recommended to include other countries in the region with similar obstacles and opportunities: Lebanon and Palestine Takes at least 3 to 4 years
6.2.4 Strengthen the capacity and competitiveness of air transport	<ul style="list-style-type: none"> Requires lobby / diplomacy towards the government as well as alignment with possible roles of other donors Dutch support in the field of hardware investments may be considered, as well as training of airport personnel in proper cold chain practices.

6.3 Technology & inputs

Intervention	Remarks and conditions
6.3.1 Introduction of advanced technologies / mechanization in <u>cultivation</u> , aiming at higher productivity and quality, cost price reduction and water saving	<ul style="list-style-type: none"> A program with involvement of Dutch suppliers to introduce technology (focus on soilless cultivation) with knowledge transfer / training is feasible

	<ul style="list-style-type: none"> • Alignment / partner shipping with the USAID HGFI project • Possible connections with projects that address integration of and employment for refugees • Takes at least 3 to 4 years
6.3.2 Introduction of advanced technologies / mechanization in <u>post-harvest</u> , aiming at higher productivity and quality and cost price reduction	<ul style="list-style-type: none"> • A program with involvement of Dutch suppliers to introduce technology with knowledge transfer / training is feasible • Alignment with other donors • Possible connections with projects that address integration of and employment for refugees • Takes at least 3 to 4 years

6.4 Human Resources

Intervention	Remarks and conditions
6.4.1 Strengthen (and possibly establish) associations	<ul style="list-style-type: none"> • JEPA, JFU and JODA are the three priority associations that need strengthening • Core themes in their capacity building are leadership, service delivery, lobby / advocacy (voice of the members), sector cooperation and financial sustainability • Takes at least 2 years
6.4.2 Strengthen (practical) education institutions	<ul style="list-style-type: none"> • Education institutes need strengthening • Core themes are connecting with the private sector and alignment of actual curricula and training programs with the demands of the sector (and society) • Possible connections with projects that address education for and integration of refugees • Takes at least 3 to 4 years • See 6.5.3 as well
6.4.3 Strengthen applied research and extension	<ul style="list-style-type: none"> • NCARE is the organisation with the mandate to conduct applied research and to offer extension service. However, a close project relationship with NCARE is considered as risks; therefore it's recommended to involve NCARE staff in projects that focus on technology and mechanization indirectly • See 6.5.2 as well
6.4.4 Involve the young generation (don't forget international exposure)	<ul style="list-style-type: none"> • It's recommended to select a high share of young entrepreneurs and students in all interventions

6.5 Business environment

Intervention	Remarks and conditions
6.5.1 Convince and support the government on opening the labour market for foreign workers from more countries than only Egypt and Syria	<ul style="list-style-type: none"> • Requires a diplomatic approach towards the government • NL can provide consultancy and project management

6.5.2 Build better capacities in applied research and extension services	<ul style="list-style-type: none"> NCARE is the organisation with the mandate to conduct applied research and to offer extension service. However, a close project relationship with NCARE is considered as risks; therefore it's recommended to involve NCARE staff in projects that focus on technology and mechanization indirectly See 6.4.3 as well
6.5.3 Create linkages between the educational sector and the private sector (including international exchange / relationships)	<ul style="list-style-type: none"> Education institutes need strengthening in getting and maintaining structural linkages with the private sector Possible connections with projects that address education for and employment & integration of refugees See 6.4.2 as well
6.5.4 Stimulate the establishment of an ISTA certified lab (allowing businesses to get export licenses for seeds)	<ul style="list-style-type: none"> Although it's not a major issue that prevents the export of fruit and vegetables, an ISTA certified laboratory would strengthen the sector Requires lobby towards the Jordan government and/or towards other donors and may require some hardware investments
6.5.5 Donor coordination in agriculture	<ul style="list-style-type: none"> Requires a diplomatic approach towards the government and to other international donors NL can take the lead and can possibly provide project management

6.6 Refugees

A cluster of Dutch suppliers early 2016 submitted a proposal to the Dutch Ministry of Foreign Affairs to establish production sites in greenhouses in or nearby refugee camps in order to produce vegetables and at the same time create employment and participation in the economy. The cluster includes (private) companies with a strong reputation and a wide international scope:

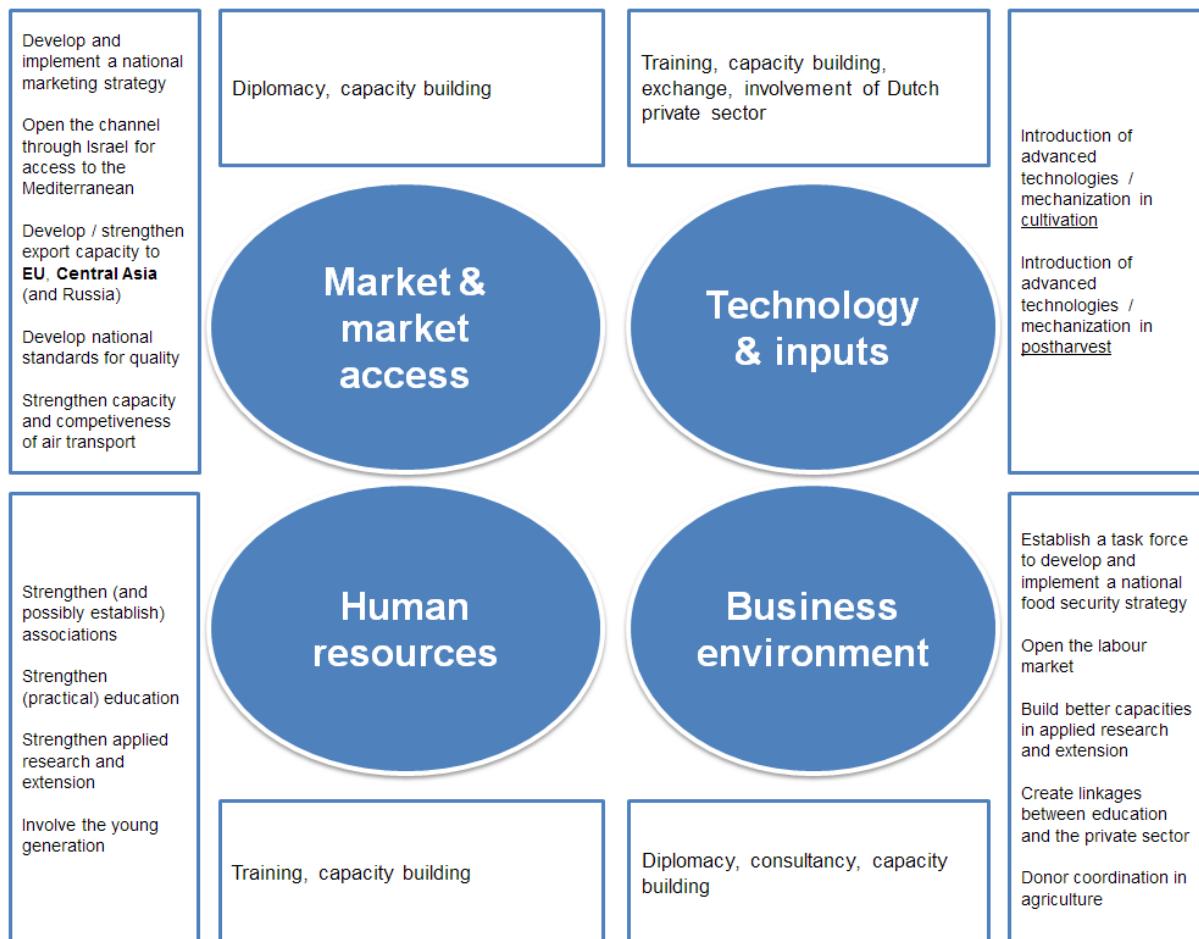
- VDH Foliage Greenhouses
- Priva - water management, automation
- HortiMaX - water management, automation
- HollandDoor - study tours, training and matchmaking
- Kenlog - consultancy and training

The proposal can be relevant for production regions in Jordan (Jordan Valley and/or Mafraq) as well of areas with large refugee camps (north of Jordan, in particular Irbid).

Although the proposal raises various practical questions, for instance in the field of water availability, project ownership, project management and financial resources, we appreciate and support the product idea as such and we see evident opportunities to create employment and economic participation through the proposed approach. Therefore, it may be considered to conduct a feasibility scan on site.

6.7 Summary of recommended interventions

All recommended interventions to enhance exports of fruit and vegetables with foreseen impact on the short and the long run, are summarized in the below table:



6.8 Risks

#	Proposed intervention	Possible risks
6.2.1	National food security strategy	<ul style="list-style-type: none"> No political will and/or priority No effective collaboration between the public and private sector
6.2.2	Lobby for access to the Mediterranean Sea	<ul style="list-style-type: none"> No political will and/or priority in Jordan No support from the Israeli side
6.2.3	Strengthen export capacity to EU / EFTA and Central Asia (including Russia)	<ul style="list-style-type: none"> The sector and its companies aren't able to meet CSR market requirements
6.2.4	Strengthen air transport	<ul style="list-style-type: none"> No political will and/or priority No financial resources
6.3.1	Advanced technologies / mechanization in cultivation	<ul style="list-style-type: none"> Insufficient motivation to invest Resistance to change current practices Insufficient financial resources to invest No support from financial institutions / banks
6.3.2	Advanced technologies / mechanization in postharvest	<ul style="list-style-type: none"> Insufficient motivation to invest Insufficient financial resources to invest No support from financial institutions / banks
6.4.1	Strengthen associations	<ul style="list-style-type: none"> No financial resources Low involvement of private sector (cooperation)
6.4.2	Strengthen (practical) education	<ul style="list-style-type: none"> No financial resources
6.4.3	Strengthen applied research and extension	<ul style="list-style-type: none"> No financial resources Lack of coordination among national institutes

6.4.4	Involve the young generation	<ul style="list-style-type: none"> • No political will and/or priority • No party (government?) taking the lead
6.5.1	Open the labour market	<ul style="list-style-type: none"> • No political will and/or priority
6.5.2	Build better capacities in applied research and extension services	<ul style="list-style-type: none"> • No financial resources • Lack of coordination among relevant institutes
6.5.3	Create linkages between the educational sector and the private sector	<ul style="list-style-type: none"> • Lack of commitment from parties involved
6.5.4	Stimulate an ISTA certified lab	<ul style="list-style-type: none"> • No political will and/or priority
6.5.5	Donor coordination in agriculture	<ul style="list-style-type: none"> • No effective collaboration between agencies • Conflicting agendas of involved parties

6.9 CBI

CBI (www.cbi.eu) is part of the NEA and is the effort of the Dutch government to increase exports from developing countries to the EU/EFTA markets. In below table those existing obstacles in the fruit and vegetables value chain in Jordan are listed with a relation to the typical interventions / instruments of CBI:

Obstacles	CBI interventions
There's no national export marketing strategy	CBI is able to provide inputs (content) and guidance (process) in the development and implementation of an export oriented strategy.
Market intelligence regarding EU/EFTA and other markets is weak	CBI's Market Intelligence services are up to date with the latest trends and demands in the EU market, thus able to advise business support organisations and SMEs in capturing unreachd export opportunities.
No compliance with high-end market requirements, such as certifications needed in order to access the EU market	CBI is able to provide guidance in meeting market access requirements and obtaining (EU) certifications.
Insufficient focus on CSR business activities	CBI focusses on sustainable business operations and is motivated to guide and train sector organisations and companies in working sustainably and efficiently.
Lack of collaboration between business actors within the sector	Participation in a CBI programme will encourage business support organisations and companies to network and collaborate by introducing each other at network events, workshops and trade fairs.
Weak institutional environment and thus weak support for companies	One of CBI's pillars is institutional development: strengthening associations, focusing on leadership and export oriented service delivery, which can further support companies in their attempts to capture new markets.

ANNEXES

Annex 1 References

A1.1 Reports

- Carnegie (2015). Jordan's Refugee Crisis.
- CBI (2015). Exporting fresh fruit and vegetables to Europe.
- EU & GOPA (2014) - Strategic plan of the Agriculture Sector in Jordan 2014. Technical Assistance of the Programme in Support to the Employment and TVET Reforms.
- FAO (2014). Plan of Action. Resilient Livelihoods for Agriculture and Food and Nutrition Security in Areas of Jordan Affected by the Syria Crisis.
- FAO (2015). Jordan. Water along the food chain. An analytical brief of selected food chains from a water perspective.
- IFAD (2014a). Country program evaluation Jordan.
- IFAD (2014b). Rural Economic Growth and Employment Project. Final project design report.
- ITC (2015). Spotting products with export potential. An ITC Assessment to Support Export Promotion Activities in 64 Developing Countries.
- ITC (2015). Country Factsheet Jordan.
- JEPA (2015). Presentation at WOP Dubai 2015 congress.
- ProVerde (2008). Final evaluation of CBI's Export Coaching Programme Fresh Fruit and Vegetables.
- Transtec (2012) - Pre-identification mission: support to agricultural development in Jordan. Draft Final Report.
- Tuffaha, G. (2014) - Final Report Value Chain Project. European Neighbourhood Programme for Agriculture and Rural Development (ENPARD). Cardne, Ciheam.
- USAID (2012). AgBEE Snapshot Jordan. Snapshot of the Business Enabling Environment for Agriculture.
- USAID (2015) - Jordan Country Development Cooperation Strategy 2013–2017. Amendment March 2015.
- USDA (2015). Exporter Guide Jordan.
- WFP (2015). CFSME Syrian Refugees in Jordan
- World Bank (2016). The Cost of Irrigation Water in the Jordan Valley.

A1.2 Websites

- Ministry of Industry and Trade www.mit.gov.jo
- Ministry of Agriculture: www.moa.gov.jo
- Jordan Food and Drug Administration: www.jfda.jo
- Department of Statistics: <http://web.dos.gov.jo>
- CARDNE, Regional Centre on Agrarian Reform and Rural Development for the Near East: <http://www.cardne.org>

A1.3 Interviews in Germany (Fruit Logistica) and the Netherlands

Organisation	Country	Person(s)	Type
Dates of Jordan	Jordan	Mr. Ra'ed Al Basha (Marketing Manager)	Producer/exporter (dates)
Good Food Mood Company / BioJordan	Jordan/UK	Mr. Iyad Abu Awad (General Manager)	Producer/exporter (dates)
De Groot International	Netherlands	Mr. Wim Valke (Commercial Department)	Wholesale
Nature's Pride	Netherlands	Mr. Tom van Hees (Sr. Account Manager)	Wholesale
Hadiklaim	Israel	Mr. Yaniv Cohen (Marketing Director)	Producer/exporter
Bud Holland	Netherlands	Mr. Stefan Warbout	Wholesale
Bakker Brothers	Netherlands/Jordan	Mr. Kamal Joudeh (Area Manager Middle East)	Seed company
Staay Food Group	Netherlands	Mr. Rogier van der Linden (Account Manager)	Wholesale
OrganicUK	UK	Mr. Ahmed Nazzal (Director)	Wholesale/import
Eosta	Netherlands	Mr. Sander Dijkslag (Team Manager Fruits)	Wholesale

Annex 2 Field trip program

A2.1 Program

			MM	MD
Thursday 21-04-16	Flights: departure Amsterdam 10:40 AM; arrival Amman 20:25 PM		Hotel Amman	
Friday 22-04-16	Amman (weekend)		Hotel Amman	
	10:00 Kick-off meeting with Maher Dajani and Mohammad Majdalawi in the hotel		X	X
Saturday 23-04-16	Amman (weekend)		Hotel Amman	
	20:00 Business dinner with 2 exporters: Walid Awwad and Fuad Salameh		X	X
Sunday 24-04-16	Amman		Hotel Amman	
	09:00 CARDNE (Dr. Ghaleb Tuffaha)			
	11:00 NL Embassy (Maartje Peters, Basem Naouri, Daan Elders)		X	X
	14:00 USAID / Eco Consult (Scott Christiansen, Ra'ed Daoud)			
	16:00 JEPA (Zuhair Arif Jweihan, Abd-El-Rahman Ghaith)		X	X
Monday 25-04-16	Amman – whole day with Maher Dajani		Hotel Amman	
	07:30 Central wholesale market Amman: 2 wholesalers & cold storage			X
	12:00 Bakker Brothers (Kamal Joudeh)		X	X
	14:00 Al Barakat date farmer & exporter (produce in the south)		X	X
	20:00 Joint dinner in Amman (incl. Fuad Salalemh		X	X
Tuesday 26-04-16	Jordan Valley – whole day with Mohammad Majdalawi		Hotel Dead Sea	
	11:00 University of Jordan – regional station Jordan Valley		X	
	12:00 Ministry of Agriculture – regional branch Jordan Valley		X	
	13:30 Qana Agric. Establishment (Sami Al Shoubaki)		X	
	14:30 Abu Sido Farms – vegetables (Hassan Abu Sido + partners)		X	
	16:00 Starfruit – packing, export		X	
Wednesday 27-04-16	Jordan Valley – whole day with Abdullah Sa'sa		Hotel Dead sea	
	08:30 Khalil Abu Ghannam producer/exporter strawberries (with Abdullah Sa'sa - Rijk Zwaan)			
	11:00 Joint session in trial location Rijk Zwaan with Al Huda - Rijk Zwaan distributor / exporter and Mr. Saeed Al Masri (former Minister)		X	
Thursday 28-04-16	Jordan Valley		Hotel Amman	
	09:30 Meeting with Maher Dajani in Jordan Valley			X
	12:00 Group meeting with palm tree farmers (dates)		X	
Friday 29-04-16	Amman (weekend)		Hotel Amman	
	Desk work / reporting			
Saturday 30-04-16	Travel to the south (weekend)		Hotel Wadi Rum	
	07:30 Visit Petra		X	
	15:00 Visit RUM Farms in Wadi Rum		X	
Sunday 01-05-16	South (1 st may = public holiday)		Hotel Amman	
	07:00 Visit Wadi Rum desert and Aqaba		X	
	14:00 Visit Al Ha'aq Farms (nearby Aqaba)		X	
Monday 02-05-16	Amman		Hotel Amman	
	09:30 University of Jordan		X	
	11:00 NCARE Amman		X	
	12:30 MoA Marketing Unit		X	
	14:00 NL Embassy (Maartje Peters)			
Tuesday 03-05-16	Mafraq		Hotel Amman	
	09:30 Al Zaben Farms (Abdallah Zaben)			X
	13:00 NCARE Mafraq (Gerias Kawalit)		X	
	15:00 Barakat Modern farms (organic olives)		X	
	16:00 Raj'a farms (Yahya Al Megerbi)		X	
Wednesday 04-05-16	Amman		Hotel Amman	
	10:00 NL Embassy - preparation meeting			X
	11:00 NL Embassy round table		X	X
	15:00 NL Embassy (Basem Naouri wrap up)			
Thursday 05-05-16	Amman		-	
	09:00 Rum Agricultural Company (Lara Zayadin)			
	14:00 FAO Jordan (Nasredin Hag Elamin, Wafa'a Alramadneh)			
	16:00 Eco Consult / USAID (Ra'ed Daoud, Laith Waked, Scott Christiansen)			
	20:00 Wrap up with Mohammad Majdalawi		X	
Friday 06-05-16	Flights; departure Amman 01:25 AM; arrival Amsterdam 09:00 AM			

A2.2 Round table invitation

How to sustainably improve the export position of Jordan fruits and vegetables?

Invitation to a Round Table meeting

On

4 May 2016 at 11:00 AM

At

The Embassy of the Kingdom of the Netherlands

In the framework of the continuous support of the Government of the Netherlands to the development of the agricultural sector in Jordan, I am pleased to announce a Round Table meeting regarding the opportunities to sustainably improve the export position of Jordan fruits and vegetables. The expert meeting will take place **on the 4th of May 2016 at 11:00 AM at the Embassy of the Kingdom of the Netherlands**. I am pleased to invite you to this meeting, to which all main (private and public) stakeholders in the Jordan fruits and vegetables sector will be invited.

In this Round Table meeting we will present and discuss the preliminary findings of a desk and field survey regarding the current situation in the Jordan fruits and vegetables industry, which is being undertaken by the Netherlands Enterprise Agency. The overall goal of this study is to identify in which way the Dutch government can contribute to a sustainable improvement of the Jordan export performance in fruits and vegetables. It's evident that the regional situation with its border closures is an important reason for this survey.

Part of the survey is a field study, now being undertaken by Mr. Jos Leeters, in collaboration with the Netherlands Embassy, Mr. Mohammad Majdalawi (University of Jordan) and Mr. Maher Dajani (Dajani Agribusiness). On the agenda in this field trip, in which several direct actors in the chain will be visited, are:

- updating knowledge and views regarding the current situation and current developments in the Jordan horticulture, including policies and plans of the government;
- finding out the current and future activities of other donors;
- identification of constraints, risks and opportunities that inhibit export growth and competitiveness;
- identification of sales markets, unmet demand and international competitors.

The information gathered in the survey so far, will be presented during the Round Table meeting **on the 4th of May**. We believe that an open discussion with all stakeholders in the industry will contribute to better insights and will give us a better grounds for decisions how to support the Jordan fruits and vegetables sector. So the meeting is meant to validate our preliminary findings and foreseen intervention; therefore your presence and your active feedback will be highly appreciated.

I look forward to your attendance.

Yours sincerely,

Paul van den IJssel
Ambassador

Annex 3 Statistics

A3.1 Production statistics

Production from fruit trees, 2014		
	Area	Production
	Dunum *)	In MT
Total	845.258	-
Olives	626.558	155.764
Apples	23.895	39.902
Bananas	8.702	37.489
Grapes	38.055	34.571
Peaches	19.205	32.012
Lemons	15.761	26.050
Oranges, navel	11.600	18.188
Clementines	10.344	13.286
Dates	22.220	9.764
Mandarins	5.387	9.138
Apricots	9.158	8.112
Oranges, shamouti	5.263	6.977
Oranges, red	4.216	5.125
Plums, prunes	5.581	4.495
Pomegranates	2.474	4.413
Oranges, valencia	2.740	4.206
Pummelors	2.671	4.177
Pears	3.346	2.736
Oranges, french	1.756	2.614
Grapefruits	1.674	2.594
Almonds	3.094	2.143
Oranges, local	915	1.814
Guava	2.385	1.105
Figs	1.929	927
Medn. mandarins	26	34
Sour oranges	19	-
Others	15.464	25.577

*) 1 dunum = 0.1 ha

Source: Department of Statistics (2016)

Production of vegetables, 2014				
	Area	Total Production	Winter Production	Summer Production
		In Dunum *)	In MT	In MT
Total	508,687	-	-	-
Tomatoes	145,641	744.602	420.631	323.971
Cucumber	23,427	279.017	155.739	123.278
Potato	63,893	204.084	100.985	103.099
Water melon	34,238	127.910	-	127.910
Eggplants	25,573	80.680	50.290	30.391
Cauliflower	25,065	78.506	49.145	29.360
Sweet pepper	13,730	63.004	46.605	16.399
Squash	26,827	60.002	31.973	28.029
Lettuce	13,225	50.835	31.577	19.258
Sweet melon	14,190	41.762	634	41.127
Onion dry	12,509	36.885	29.976	6.909
Jew's mallow	9,924	25.736	710	25.027
Cabbage	4,936	20.362	12.288	8.074
Carrot	4,429	19.305	13.392	5.913
Radish	10,853	15.953	2.155	13.798
Broad beans	19,573	10.274	9.719	555

Parsley	3,736	10.236	3.843	6.393
Onion green	6,079	5.090	4.284	806
String beans	6,382	4.682	985	3.697
Okra	11,685	4.224	100	4.123
Peas	6,209	3.570	3.317	253
Hot pepper	5,470	3.098	1.512	1.587
Turnip	714	2.801	1.672	1.129
Spinach	361	1.216	1.065	151
Snake cucumber	1,720	593	58	534
Cow-peas	298	173	3	170
Others	18,003	35.478	18.001	17.477

*) 1 dunum = 0.1 ha

Source: Department of Statistics (2016)

A3.2 Prices

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Average	
Onion dry	*	*	*	287.5	*	297.6	227.5	196.4	92.8	*	*	*	209.4	
Potato	313.8	159.5	140.5	84.5	125.3	107.6	89.5	*	*	*	174.8	153.8	129.1	
Squash	193.7	138.3	125.5	169.8	74.3	77.9	179.1	128.9	137.8	145.2	118	153.9	132.9	
Eggplants	247.5	247.4	106.2	176.7	127.3	127.3	87.2	132	315.3	307.3	314.7	234.1	213.6	
Cucumber	90.7	159	122.8	161.1	140	92.6	117.8	137.9	128.8	103.5	75.2	119.1	115.6	
Cabbage	60.6	*	*	*	*	*	*	*	*	*	*	95.2	328.1	100.5
Hot pepper	115.9	158.1	191.8	266.2	124.2	85.8	124.1	158.8	138.9	150.7	45.9	121.1	136.7	
Sweet pepper	148.7	128.5	111.6	251	204.5	131.9	116	153.6	160.8	202.4	229.2	89.1	162.1	
String beans	132	139.5	206.7	231.6	191.9	130.4	108.8	221.2	200.2	210.5	214	146.3	178.2	
Okra	*	*	*	*	159.8	147.7	123.7	180.8	457.4	*	*	*	225.8	
Bananas	120.2	129.4	135.9	135.3	121.4	113.3	110.8	106.7	106.6	106.1	109.4	99.8	116.7	
Lemons	353.6	319.1	273.2	*	*	*	*	*	131.4	145.7	111.2	126.6	170	
Clementines	*	*	*	*	*	*	*	*	*	207.6	200.8	147.7	186.5	
Grapes	*	*	*	*	*	*	238.3	326.8	216.8	*	*	*	248.9	
Apples	*	*	*	*	*	*	209.9	185.6	243.6	174	*	*	189.7	
Strawberries	*	*	*	261.2	132.1	46.3	*	*	*	*	*	*	143.1	
Nectarines	*	*	*	*	*	*	135.8	158.9	*	*	*	*	142.8	
Water melon	*	*	*	*	145.8	130.6	*	*	*	*	*	*	131.7	
Sweet melon	*	*	*	*	52.6	49.9	98.4	89.2	*	*	*	*	70.6	
Mandarins	177.1	234.9	*	*	*	*	*	*	*	*	*	*	187.4	
Pummelors	*	237.5	*	*	*	*	*	*	*	230.5	*	187.4	211.5	
Peaches	*	*	*	*	*	142.9	181.2	209.7	279.2	*	*	*	173.6	
Tomatoes	152.7	176.2	108.3	134.1	224.4	191.7	156.5	129.9	188.3	306.6	282.3	150.9	168.7	
Cauliflower	226.3	135.8	77.6	201.2	141	144.4	59.4	147.2	98.4	139.1	187.8	68.5	134.4	
Broad beans	165.9	319.7	299.5	287.6	374.5	*	*	*	*	*	*	*	321	
All Crops	155.8	170.7	134.4	141.6	138.7	122.3	127.9	159.6	175.8	178.1	157.3	132	146.9	
Oranges	101.3	167.9	*	*	*	*	*	*	*	96.7	93.9	87.1	105.9	

Source: Department of Statistics (2016)

A3.3 Jordan exports of fresh fruit per destination

Jordan exports of fresh fruit (HS07) per destination					
	In € 1,000				
Importing countries	2011	2012	2013	2014	2015
World	90,903	143,986	149,472	114,292	176,354
Saudi Arabia	18,406	28,412	27,501	21,609	53,691
Kuwait	3,662	4,684	7,596	7,501	53,658
Iraq	29,042	70,811	85,558	46,836	17,796
United Arab Emirates	5,448	9,996	7,139	7,176	16,551
Bahrain	3,160	5,710	4,595	5,733	10,445
Qatar	1,828	2,681	3,734	8,135	8,703
Oman	1,326	2,759	2,016	2,082	6,733
United Kingdom	432	296	699	1,414	1,498
Egypt	2,030	1,673	1,376	765	1,197
Syria	14,586	8,940	3,142	4,865	1,095
Lebanon	3,071	2,959	1,597	3,381	1,006
Morocco	392	572	818	667	1,006
Free Zones	485	973	1,293	682	811
Palestine	266	320	259	367	360
Turkey	1,040	1,011	870	383	340
Netherlands	334	16	-	99	282
France	258	59	207	455	190
Viet Nam	-	107	51	-	151
Germany	39	3	19	83	142
USA	2	1	50	30	117
Malaysia	3	-	-	3	113
Sudan (North+South)	22	13	5	-	111
Greece	-	-	-	-	80
India	32	21	5	4	49
Maldives	41	27	8	11	37
Iran	-	-	-	-	34
Mauritania	-	-	-	8	33
Israel	64	143	211	126	29
Hong Kong, China	-	-	-	-	28
Kenya	19	7	5	3	23
Sweden	-	-	-	-	22
Italy	18	9	17	246	7
Bangladesh	17	5	1	97	5
Canada	-	-	152	12	3
Libya	45	11	-	185	3
Norway	-	-	-	2	3
Thailand	-	-	5	-	3
Mali	4	-	2	8	2
Algeria	69	-	-	64	-
Australia	8	12	6	34	-
Austria	14	3	3	-	-
Belgium	-	45	366	836	-
Bulgaria	1,244	413	32	11	-
Chile	1	-	-	-	-
Czech Republic	523	4	-	2	-
Denmark	-	22	2	-	-
Hungary	505	253	-	-	-
Indonesia	25	-	-	-	-
Ireland	-	5	-	-	-
Côte d'Ivoire	-	-	31	-	-
Kazakhstan	27	-	-	-	-

Lithuania	21	46	-	23	-
Moldova	9	14	11	3	-
Poland	340	-	-	-	-
Romania	1,725	801	75	120	-
Russia	275	51	1	41	-
Serbia	22	-	-	-	-
Singapore	3	2	1	-	-
South Africa	-	-	12	-	-
Switzerland	-	-	-	1	-
Tunisia	-	76	-	178	-
Ukraine	21	-	-	4	-
Tanzania	6	-	-	-	-
Burkina Faso	-	20	-	-	-
Yemen	-	-	2	5	-

A3.4 Jordan exports of fresh vegetables per destination

Jordan exports of fresh vegetables (HS08) per destination					
In € 1,000					
Importing countries	2011	2012	2013	2014	2015
World	344,082	366,307	358,406	457,083	474,847
United Arab Emirates	53,889	68,088	69,493	85,650	95,730
Saudi Arabia	941	14,921	52,070	62,189	89,775
Kuwait	23,375	34,824	47,876	64,626	83,542
Qatar	19,765	29,204	34,383	44,087	59,956
Syria	82,433	83,556	38,549	55,767	33,192
Bahrain	11,680	17,680	17,799	25,850	29,442
Oman	9,348	12,128	13,697	19,528	23,705
Israel	6,994	10,067	17,137	10,293	21,000
Iraq	76,122	31,192	43,139	67,422	16,371
United Kingdom	4,591	6,423	5,287	6,552	9,505
Lebanon	9,501	9,253	6,804	6,880	3,869
Free Zones	164	362	364	77	1,729
Germany	1,066	550	303	664	1,654
Slovenia	-	-	-	402	1,575
Sweden	233	481	430	381	805
Romania	12,437	8,871	2,307	1,006	705
Canada	484	1,108	776	443	695
France	419	1,541	707	785	555
Denmark	330	230	82	208	259
Netherlands	219	229	417	87	155
Turkey	3,239	11,296	-	315	92
China	-	-	-	-	79
Russia	13,901	14,061	1,953	589	71
Liberia	-	-	-	-	69
Italy	168	218	67	48	68
Norway	-	9	5	29	64
USA	6	-	-	56	62
Austria	254	65	39	32	32
Palestine	31	70	53	81	30
Belgium	108	98	19	34	17
Switzerland	239	61	12	115	13
Hungary	4,186	4,103	3,739	1,986	12
Spain	33	7	36	437	9
Mali	-	-	-	1	8

	-	-	-	1	2
Maldives	-	-	-	1	2
Sudan (North+South)	19	53	7	11	1
Albania	42	-	-	-	-
Algeria	-	-	-	1	-
Azerbaijan	544	295	7	-	-
Australia	-	-	7	11	-
Bosnia and Herzegovina	146	384	8	-	-
Bulgaria	2,715	1,577	27	-	-
Sri Lanka	-	-	3	-	-
Croatia	88	70	62	-	-
Czech Republic	20	26	-	-	-
Georgia	-	121	17	-	-
Greece	174	-	-	-	-
Indonesia	83	-	-	-	-
Ireland	3	-	-	8	-
Libya	237	115	22	-	-
Malaysia	-	-	25	-	-
Moldova	21	-	-	-	-
Aruba	-	-	-	3	-
Poland	154	64	72	-	-
Serbia	85	23	-	-	-
India	-	6	-	-	-
Slovakia	32	607	288	232	-
Ukraine	885	1,632	267	175	-
Macedonia	20	-	-	-	-
Egypt	2,661	638	52	21	-

Source: Trademap (2016)