

Export Value Chain Analysis Lebanon Fresh Fruit and Vegetables

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CBI
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1 Introduction

1.1 Background

Lebanon is located in a strategic location between Europe and the Middle East. The country has a good climate for agriculture and is a net exporter of fruit and vegetables. Lebanon's yearly imports of fresh fruit and vegetables amounts to approximately €185 million, while yearly exports are worth approximately €225 million, which is equivalent to approximately 500,000 tonnes in volume. Most Lebanese exports of fresh fruit and vegetables are destined to countries in the Middle East. Syria has always been a major market for Lebanese fresh fruit and vegetables.

Exports to Gulf states are substantial, but Lebanon faces serious challenges in these markets since the Gulf Cooperation Council market (GCC¹) gradually opened up for global suppliers. Other supplying countries appear to be very competitive, which has reduced Lebanon's competitiveness. Lebanese exporters have strong arguments to diversify their markets, targeting Europe and other markets, such as Russia, which could be interesting export destinations. However, compliance with strict market access requirements in the European market, such as food safety, is a challenge for many Lebanese exporters.

The Syrian crisis puts a burden on Lebanese society and its economy. The number of registered and unregistered Syrians in Lebanon makes up 25% of Lebanon's total population. Since the beginning of the crisis, traditional export routes within the region, especially through Syria and the Persian Gulf, have been less available and more expensive. In view of that, the Embassy of the Kingdom of the Netherlands (EKN) in Beirut has initiated an intervention by the Dutch government's Centre for the Promotion of Imports from Developing Countries (CBI) to increase Lebanese agricultural product exports to Europe and other markets. The idea is that export promotion, especially in the agricultural sector, will boost the local economy and create more opportunities for locals and newcomers.

The CBI intervention is aimed at the private sector and Lebanese institutions. The initial phase of the intervention in 2016 included:

- assisting the Federation of Chambers of Commerce, Industry and Agriculture of Lebanon (FCCIAL) and the Investment Development Authority of Lebanon (IDAL) in their mission and service delivery in export promotion;
- identifying agricultural subsectors with export potential and conducting an in-depth value chain analysis (VCA) for these subsectors;
- offering a training course on market access requirements (MAR) in the targeted sectors, aimed at entrepreneurs in this sector with export ambitions and potential to reach the EU market.

In 2018, the VCA was updated and broadened towards a projected multi-year intervention (2019–2023), through which CBI intends to:

- support Lebanese small and medium-sized enterprises (SMEs) in improving exports' volume and quality by penetrating high-end consumer markets;
- strengthen the export enabling environment by:
 - supporting business support organisations (BSOs), particularly the four regional chambers of commerce, in increasing and improving export-related services for SMEs;
 - assisting in the creation of a sector export marketing strategy and action plan, bringing sector stakeholders together to address sector-wide obstacles.

Studies in 2016 showed that, although the sector faces obstacles and risks, it has the potential to increase exports as well as a group of exporters with the willingness and capacity to invest in it. Lebanon can build competitive advantages with certain niche products in specific market windows,

¹ GCC is a regional intergovernmental political and economic union consisting of all Arab states of the Persian Gulf, except for Iraq. Its member states: Bahrain, Kuwait, Oman, Qatar, Saudi Arabia, United Arab Emirates.

namely table grapes, avocado, citrus fruits, potatoes and some other products of smaller significance.

- Table grapes are produced in the whole country, with an average yearly production of 120,000 tonnes, of which 20,000 tonnes are destined for export. Most grapes are exported to other Middle Eastern countries, while only 3 to 5% of the total production is exported to the EU.
- Avocado is mainly produced in coastal areas. Production capacity has substantially increased in the past few years and it will continue to grow in the coming years. Volumes are expected to reach 15,000 to 20,000 tonnes a year. Potential export opportunities for Lebanese avocados include the European, Russian and Middle Eastern markets.
- Production of citrus fruits totals up to 200,000 tonnes per year, mainly in coastal regions. However, citrus fruit production has declined 45% since 2007, replaced by banana and avocado. Lebanese citrus fruits are currently only exported to Middle Eastern markets, but there are export opportunities for the sector in the US, European and Russian markets.
- Lebanon has approximately 11,000 ha of potato plantations. Lebanese potatoes are mainly exported to the Arab world and Russia. There is an yearly quota of 50,000 tonnes available for the European market. In the spring of 2018, the first trial delivery to Europe was shipped for the retail market in the Netherlands.

Product definition

This study covers fresh fruit and vegetables, which are subdivided into product groups and products. We selected the product groups which are the most relevant in the Lebanese context. The product group Fruit (HS08) includes nuts.

Table 1: HS Classification		
Product (group)	Code	Full description
Fruit	08	Edible fruit and nuts; peel of citrus fruit or melons
amongst which:		
Grapes	080610	Fresh grapes
Avocados	080440	Fresh or dried avocados
Citrus fruit	0805	Citrus fruit, fresh or dried
Vegetables	07	Edible vegetables and certain roots and tubers
amongst which:		
Potatoes	0701	Potatoes, fresh or chilled

1.2 Objectives

The principal aim of this VCA update is to map the opportunities and challenges for the fresh fruit and vegetables (FFV) sector in Lebanon regarding export to Europe and regional markets. The VCA is first done for CBI to shape its projected multi-year export promotion intervention.

This VCA will serve to:

1. Provide insight for stakeholders into the opportunities and challenges regarding exporting to the markets of the European Union (EU), European Free Trade Association (EFTA) and other markets;
2. Help stakeholders develop interventions to tackle identified obstacles;
3. Make Lebanese exporters in the FFV sector aware of the export opportunities to the European market, to other markets and how to prepare for these markets.

The specific objectives of this VCA are to:

1. Investigate and map the value chain in terms of structure and governance, actors and their position in the value chain; more specifically, the position of SMEs in the value chain and the constraints which hinder their market access;
2. Make an in-depth analysis of constraints, opportunities, potential social responsibility risks and adverse impacts in the value chain which hamper sustainable exports;

3. Make an in-depth analysis of solutions that may remove constraints, mitigate risks and spur opportunities for sustainable exports.

1.3 Project team

This VCA update was carried out by a team of Dutch and Lebanese experts:

- Jos Leeters, from Bureau Leeters, is the lead consultant, responsible for the core aspects of the value chain study and for this integrated report; he also was the lead consultant in the initial 2016 value chain study;
- Hania Chahal conducted a series of pre-audits in Lebanon at SME level in 2018, helped with data collection and connecting with sector stakeholders;
- René de Baaij, from DBVP, did a survey in Lebanon in 2017 and 2018 to reveal the feasibility of CBI providing assistance to the four chambers of commerce with respect to their role in supporting the export of agricultural produce. The outcomes of the survey are integrated in this report;
- CSR LEBANON did a survey in Lebanon in 2018 to identify the status, risks and opportunities with respect to corporate social responsibility (CSR). The outcomes of the survey are integrated in this report

Throughout the project, Dirk-Jan Zegelaar, senior programme manager, was the contact person at CBI. Marc Zeenny, economic and commercial attaché in the embassy of the Kingdom of the Netherlands in Beirut provided valuable additional support.

1.4 Methodology

The study was conducted in phases through a combination of desk research and research in the Netherlands and Lebanon over the period 2016 to 2018. Activities in Lebanon included:

- field research in Lebanon by Jos Leeters in November 2016;
- validation workshop, combined with a training on EU MAR, in Beirut by Dirk-Jan Zegelaar and Jos Leeters in December 2016;
- field research with a focus on the role and future of the FCCIAL and its four chambers of commerce by René de Baaij in December 2017;
- field research in Lebanon by Jos Leeters and Hania Chahal in July 2018;
- field research in Lebanon with a focus on CSR by CSR LEBANON in July and August 2018;
- field research and validation workshop in Beirut by Dirk-Jan Zegelaar and Jos Leeters in September 2018.

Parallel to the field trips, a series of interviews was conducted in the EU market with:

- Importers: assessing their supply chains and sales channels, perceived risks and challenges in their supply chain, constraints that hinder their import activities;
- Other key actors in the value chain, such as agents, wholesalers, among others, in the Netherlands and in other end markets.

During the field trip itself, we interviewed and gathered information from:

- Target companies, that is SME exporters: assessing their organisation, supply chains, sales channels and business environment, as well as their demands and their attitude towards participation in a CBI intervention;
- Institutional stakeholders: key local and international influencers and supporters, such as FCCIAL and the four regional chambers of commerce and other relevant organisations, including donors and non-governmental organisations (NGOs);
- Technical input suppliers, such as seed companies, and commercial service providers.

Please refer to Annex 1.2, for a full list of interviewees in Lebanon and in the Netherlands.

The United States Agency for International Development (USAID), through its Lebanon Industry Value Chain Development Project (LIVCD), and the International Labour Organisation (ILO) have conducted several relevant value chain assessments in recent years (see reference in Annex 1.1). These studies can be viewed as an integral part of this underlying CBI analysis, which intends to build upon their work. Where applicable, results from those assessments have been included directly or by reference.

1.5 About CBI

The Centre for the Promotion of Imports from Developing Countries (CBI) contributes to sustainable and inclusive economic development in developing countries through the expansion of exports from these countries. It does so by offering an integrated approach which entails involving many different stakeholders in its work, from SMEs to business support organisations (BSOs), governments and international organisations. This way, CBI can tackle many different issues that impede exports. ① www.cbi.eu

CBI is part of the Netherlands Enterprise Agency (RVO, from the its Dutch name *Rijksdienst voor Ondernemend Nederland*). RVO enhances private sector development by offering different instruments and intervention types, targeting SMEs from developing countries and emerging markets. ① www.english.rvo.nl

1.6 Guide for the reader

The main report starts in Chapter 3, providing an overview of general features and trends of the fresh fruit and vegetables sector in Lebanon, including the main actors, supporters and influencers in the domestic value chain. Chapter 4 highlights the most significant characteristics and developments in the European market and other relevant markets (GCC countries and Russia) with special attention to the position of Lebanon and its main competitors in these markets. Chapter 5 recaps the two preceding chapters in graphics visualising the value chain and all of its stakeholders, from the production on the fields in Lebanon to the consumer in the end markets.

Chapter 6 describes the obstacles, risks and opportunities for the Lebanese fruit and vegetables sector as a whole. Chapter 7 analyses and describes the impact of these obstacles on the performance of the Lebanese fruit and vegetables sector. The following five chapters, chapters 8 to 12, focus on the initially identified products with export potential. These chapters describe in detail the market conditions, structure and governance of each product's value chain, followed by an overview of the specific obstacles, risks and opportunities for that product.

The report concludes with an overview of donor programmes that have been and still are active in the Lebanese fruit and vegetables sector (chapter 13). Finally, chapter 14 provides conclusions and charts a way forward through possible solutions and action recommendations.

1.7 List of abbreviations and acronyms

ARDP	Agriculture and Rural Development Programme
B2B	business-to-business
BEC	CBI's business export coaching programme
BRC	British Retail Consortium
BSCI	Business Social Compliance Initiative
BSO	business support organisation
CBI	Centre for the Promotion of Imports from Developing Countries
CSR	corporate social responsibility
dunam	1 dunam = 0.1 ha = 1,000 m ²
EF	Expertise France
EFTA	European Free Trade Association
EKN	Embassy of the Kingdom of the Netherlands
EU	European Union
EC	European Commission
ECR	efficient consumer response
ETI	Ethical Trade Initiative
FAO	Food and Agriculture Organization of the United Nations
FCCIAL	Federation of Chambers of Commerce, Industry and Agriculture of Lebanon
FFV	fresh fruit and vegetables
GAFTA	Greater Arab Free Trade Area
GAP	good agricultural practices
GCC	Gulf Cooperation Council
GNFF	Georges N. Frem Foundation
CCIABML	Chamber of Commerce, Industry and Agriculture of Beirut and Mount Lebanon
CCIAS	Chamber of Commerce, Industry & Agriculture in Saida and South Lebanon
CCIAT	Chamber of Commerce, Industry and Agriculture of Tripoli and North Lebanon
CCIAZ	Chamber of Commerce, Industry & Agriculture Zahle & Bekaa
GIS	geographic information system
GoL	Government of Lebanon
GMP	good manufacturing practices
GSCP	Global Social Compliance Programme
ha	1 hectare = 10,000 m ²
HACCP	hazard analysis and critical control points
ICM	integrated crop management
IDAL	Investment Development Authority of Lebanon
IFS	International Featured Standards
ILO	International Labour Organisation
IPM	integrated pest management
IRSHAD	Increased Revenue from Safe Healthy Agriculture Development programme implemented by the Georges N. Frem Foundation
KSA	Kingdom of Saudi Arabia
LARI	Lebanese Agricultural Research Institute
LBP	Lebanese pound
LIBNOR	Lebanese Standards Institution
LIVCD	Lebanon Industry Value Chain Development project by USAID

MAR	market access requirements
MENA	Middle East and North Africa
MoA	Ministry of Agriculture
MoE	Ministry of Environment
MoET	Ministry of Economy and Trade
MoH	Ministry of Health
Mol	Ministry of Industry
MRL	maximum residue level
NGO	non-governmental organisation
PUM	PUM Netherlands senior experts
RMF	René Moawad Foundation
RVO	Netherlands Enterprise Agency (<i>Rijksdienst voor Ondernemend Nederland</i>)
SME	small and medium-sized enterprise
SPS	sanitary and phytosanitary
UAE	United Arab Emirates
UK	United Kingdom
UNHCR	United Nations High Commissioner for Refugees
USAID	United States Agency for International Development
VCA	value chain analysis

2 Management summary

Lebanon is a net exporter of fresh fruit and vegetables. The value of yearly imports amounts to approximately €185 million, while yearly exports add up to approximately €225 million, which is equivalent to around 500,000 tonnes in volume. Most Lebanese exports of fresh fruit and vegetables are destined to the Middle East, in particular the Gulf states. Exports to this region face challenges since the Gulf markets gradually opened for global suppliers in recent years. Furthermore, competition in the Gulf increased since the start of the Russian boycott on fresh fruit and vegetables from the EU and other countries. Various global suppliers found a good alternative destination for their fresh produce in the Gulf. Lebanese exporters have strong arguments to diversify their markets and Europe is one of the potential export destinations. However, it is difficult for Lebanon to meet the strict requirements of high-end markets, such as Europe. The Syria crisis, resulting in a high influx of Syrians in Lebanon, puts an extra burden on the Lebanese society and its economy. Increase of exports of Lebanese agricultural products to new European and other markets, is expected to boost the Lebanese economy, creating more opportunities for locals and newcomers.

The European fresh fruit and vegetables market

The main characteristics and trends in the European markets for fruit and vegetables are:

- Volumes are big and the market still shows growth, but it is also highly competitive and tough to enter;
- Large supermarkets dominate sales and distribution and require high food safety and quality levels and strict logistical procedures. Three supermarket segments can be identified: premium, mid-range and low price. All of them work with high standards;
- Small retail formats and street markets are facing difficulties due to long lasting price competition and less favourable advantages of scale;
- Relevant consumer trends include 'healthy', 'pure and natural', 'convenience' and 'low price'. Influx of immigrants results in a growing demand for ethnic niche assortments;
- European consumers value social and environmental issues, so buyers favour suppliers that have corporate social responsibility (CSR) certifications;
- An ongoing tendency towards retail concentration in trade and logistics leads importers to consolidate and specialise to become preferred suppliers for retail chains. This translates into shorter supply lines and closer contact among producers, traders and retailers.

The Lebanese value chain of fresh fruit and vegetables and its readiness for Europe

Production and post-harvest practices in Lebanese agriculture generally have a small scale and lack the capacity to produce volumes and qualities for high-end markets. Cultivation and post-harvest practices are below international standards, quality is inconsistent, not much production is GlobalG.A.P. certified and the cold chain is broken, resulting in high post-harvest losses and pressure on competitiveness. Export management capacities and market intelligence at company level and sector level are weak and domestic market structures are immature and not transparent. Small farmers face difficulties to become involved in exports, partly because of the absence of effective cooperative models. People and organisations in Lebanon do not tend to work in cooperation.

The export enabling environment is not supportive. Lebanon is still in the recovery process from years of civil war, which includes a rather unstable political situation and an inefficient government. There is no clear national vision on agriculture and no national export marketing strategy. Policies, legislation and regulations have critical limitations, such as lack of quality frameworks, quality standards and accredited labs. Connections between the public sector and the private sector are weak. Applied research, education and extension are below the level required to support businesses. Business support organisations lack sufficient staffing and funds to develop and deliver valuable export-related services to the private sector. Since the border closures with Syria, traditional export routes within the region have become less available and more expensive.

Availability and distribution of high-quality inputs, equipment and technologies are limited and prices are high. Banks and microfinance institutions do not offer competitive finance schemes.

All these factors together limit opportunities for sustainable exports of large volumes to any market. It does not help that Lebanon does not have a positive image among European buyers, which are mostly unaware of which products the country offers for export. To the contrary, many buyers have the perception that Lebanon is a dangerous country and that doing business can be risky. However, high-end markets, Europe included, display an open-mind attitude for new suppliers with something special to offer. Lebanon may find intrinsic opportunities for certain narrow windows into the fruit and vegetables market. And it has a group of large producers and exporters with the motivation and capacity to make these exports happen.

Market opportunities in Europe

Lebanon has the best opportunities in niche markets, under the precondition that it improves efficiency in the supply chain, reaches better quality and reliability as well as compliance with all market access requirements, including CSR. Stronger marketing communication could help, including storytelling and more attention to the added value of taste and flavour of Lebanese produce. Specific opportunities in Europe for the value chains in this study are:

- **Table grapes:** a potential window is late in the European season, past October, and before the peak of South African supply in December. Europe prefers seedless grapes.
- **Avocados:** European demand is expected to show continuous growth in the coming years. There is a preference for Hass. Competitiveness is the highest in the first months of the year.
- **Citrus fruits:** there is an interesting window for Valencia oranges in the summer from June to September, after Spain leaves the market and in the start of the South African supply season.
- **Potatoes:** the European potato market is too competitive and too difficult for big expectations; only specialties, with high quality and marketed under premium branding, have a chance.
- **Other less significant products:** Lebanese traders exporting table grapes, avocados, citrus fruit or potatoes usually also export other products. Cherries, stone fruit, nuts and other upcoming vegetables and fruits, such as cherimoya, may find narrow windows in European market channels. The European market also has opportunities for a wider range of organic products.

Lebanon's main competitors on the European market are the Mediterranean countries Spain, Italy, Israel, Turkey, Morocco and Egypt, mainly because of rather similar climatic conditions and seasonality. In addition, South Africa and South American countries supply the European market with similar products.

Regional markets' suppliers and opportunities for Lebanon

Gulf countries are by far the largest markets for Lebanese fruit and vegetables and will maintain significant demand for Lebanese fresh produce. However, competition is strongly increasing and market access requirements are moving in the direction of high-end markets, such as Europe. Under the condition that Lebanon improves its supply chain performance, the Gulf can remain the major export destination not only for a limited number of niche products in small windows but for the full assortment of citrus, pome fruit, stone fruit, potatoes and other vegetables. In Russia, Lebanon still has a moderate position as supplier of fresh produce. There is growth potential for a wide assortment, again under the condition that scale and efficient distribution channels come in place. There is also potential for Lebanese fresh produce in some upcoming markets in East and West Africa.

Need for improvements in the value chain and the export enabling environment

There is a strong need to improve the organisation and quality all along the supply chain, especially in the farming and the post-harvest handling stages. Reaching larger scale and more professionalism is crucial. One way of achieving it would be through the establishment and facilitation of more and better cooperative models for smaller producers to join forces, aggregate product volumes and achieve higher levels of productivity and quality. This will also help them in gaining easier market access. Another approach is stimulating and supporting large enterprises to

guide the sector towards high-end markets by taking on the role of service companies providing technical services, certification support, knowledge, training, etc., to affiliated small farmers. Furthermore, it is necessary to improve the cold chain infrastructure by initiating investments in packing houses and cold storage.

There is also a strong need to strengthen BSOs in developing and offering export-related services for the private sector and to create more and deeper linkages between the public and private sector. The capacity of institutions in agricultural research and extension and agricultural and business education should be developed to better offer practical services for the sector. The development of a national export marketing strategy for fruit and vegetables would support these developments. We strongly recommend establishing an action plan or roadmap for the public and private sector, including a positioning and branding agenda to increase the name and recognition of Lebanon as a fruit and vegetables supplier. Elements for such a national strategy and action plan include:

- determine priority crops in the national product calendar for certain markets, e.g. table grapes and avocado as the leading crops ('flagships') for the European market;
- identify specialty segments in high-end markets and focus less on supplying to ethnic markets, which usually have a low-quality and low-price character;
- use the outstanding taste of Lebanese agricultural produce as an added-value factor;
- stimulate organic production and aim at adding organic as the other added-value factor;
- invest in Europe but at the same time work hard to improve the channels towards markets in the GCC, Russia and African markets;
- include the Lebanese diaspora all over the world in branding, marketing and distribution operations.

Last but not least, we recommend better structural coordination with all actors that have a development agenda in the Lebanese fruit and vegetables sector, including donors and implementing organisations.

Corporate social responsibility

There is a lack of awareness in the Lebanese agriculture sector regarding the importance of CSR in international trade and a lack of capacity to transform the existing obstacles and risks into opportunities. In the area of human rights, the main hurdles are the legal position of workers, especially refugees, their working conditions, child labour and lack of freedom of association. In relation to the environment, the main problems are the use and mishandling of agrochemicals and incorrect waste disposal, affecting people's health, causing soil pollution of soil and depleting water resources. Current agricultural practices in combination with climate change also affect biodiversity. Regarding value chain transparency and chain inclusiveness, the weak market position of small farmers is the main hurdle. Their loose and non-transparent arrangements with buyers do not allow them to benefit from periods of higher product demand. Finally, discrimination, low economic participation and fewer opportunities for women and youth also create obstacles and risks.

On the other hand, the sector and its actors can use CSR as an instrument to position themselves as serious suppliers, ready for all market types and levels. SMEs have opportunities by achieving compliance with international standards, such as GLOBALG.A.P. or other specific CSR standards attesting sufficient levels of attention to human rights, environmental aspects, value chain transparency and inclusiveness.

Existing interventions

Various donors conducted and currently conduct interventions to address obstacles and needs of the private sector and the export enabling environment in the fruit and vegetables sector. The most relevant donors are the European Commission, providing a private sector development programme through Expertise France, and USAID with two programmes, contracted by Chemonics (LED) and Land O'Lakes (LINQ). The embassy of the Kingdom of the Netherlands in Beirut also supports the sector in various fields. All these donors cover the entire agriculture sector in the main production regions in the Bekaa valley, the north (in Akkar Governorate) and the south. They all cooperate

with a large number of implementing organisations, being public institutions, international and local NGOs and foundations, such as the chambers of commerce, especially in the Bekaa, Emkan, Fair Trade Lebanon, FAO, Georges N. Frem Foundation, ILO, MADA Association, René Moawad Foundation and Safadi Foundation. This setting provides a good foundation for CBI to offer an export promotion programme, knowing that these other donors and organisations focus more on the pre- and post-harvest stages of the chain, while CBI can add to strengthening the marketing and export capacity.

Possible CBI interventions

Based on the results of the value chain analysis, we conclude that a CBI export promotion intervention has a good potential to support the Lebanese fruit and vegetables sector in strengthening its position in export markets, achieving more export volumes and value in European and other markets and improving employment and working conditions for locals and newcomers. Such an intervention can have various linkages with other donor interventions. The three components of a projected CBI intervention are:

- a business export coaching programme (BEC). Between 10 to 15 exporters of fruit and vegetables can be selected for a four to five-year CBI BEC. Projected modules include:
 - support in developing a marketing strategy and defining product market combinations, or in other words, assistance with drawing a bankable export marketing plan;
 - training and coaching in business development, market intelligence, costing and pricing, business-to-business (B2B) matchmaking with suppliers, obtaining certifications, implementing CSR, models to collaborate with farmers and farmer groups, vertical cooperation models in the chain;
 - coaching during the market entry and market consolidation phases;
- activities addressing issues in the export enabling environment beyond the control of SMEs:
 - support in developing a national vision on exports of fruit and vegetables, the development of a national export marketing action plan and a positioning and branding roadmap, plus guidance of the stakeholders in the implementation thereof;
 - training institutions to assist SMEs in complying with legislation in target markets;
 - support sector stakeholders (the government in the first place) in developing national quality standards;
 - support in more effective donor coordination;
 - support in developing a national CSR strategy and in preparing and conducting CSR awareness campaigns for SMEs, BSOs and the public sector;
- a multi-year support programme for the four regional chambers of commerce that further professionalises their operations, focusing on organisational strengthening, improving long-term financial sustainability, such as providing paid services and increasing staff competencies, as well as on the capacity of the organisations to support SMEs with, among others:
 - business development services;
 - export development and export promotion services;
 - market intelligence services;
 - CSR compliance.

Risks

An intervention in Lebanon involving both the public and private sectors, comes with uncertainties and risks. From a market point of view, there is a risk that Lebanon will not reach enough competitive power to achieve sustainable positions in Europe and other high-end markets. There is a specific risk that SMEs face too many obstacles in reaching compliance with high-end market standards, including CSR components. From an organisational point of view, potential risks that may negatively influence the impact of a CBI effort include: political instability, no government vision and not enough support and funds for the sector, little confidence of the private sector in the government, mistrust, corruption and difficulties to achieve effective collaboration with other donor interventions.

3 The fresh fruit and vegetables sector in Lebanon

3.1 General features and trends of the Lebanese fresh fruit and vegetables sector

The Mediterranean climate in Lebanon along with fertile soils and relatively good availability and quality of water are favourable for fruit and vegetables production. Lebanon has six main crop production regions :

1. Coastal strip: citrus fruits, avocado, banana, vegetables, grapes;
2. North, Akkar plain, upper Mount Lebanon: cereals, potatoes, grapes and vegetables;
3. Bekaa Valley: potatoes, grains, fruits and vegetables;
4. Mountainous regions: orchards and vegetables;
5. Western slope of Anti-Lebanon range: grapes, olives and cherries;
6. Southern hills: olives, tobacco, almonds and grains.

Fig 1: Administrative map of Lebanon



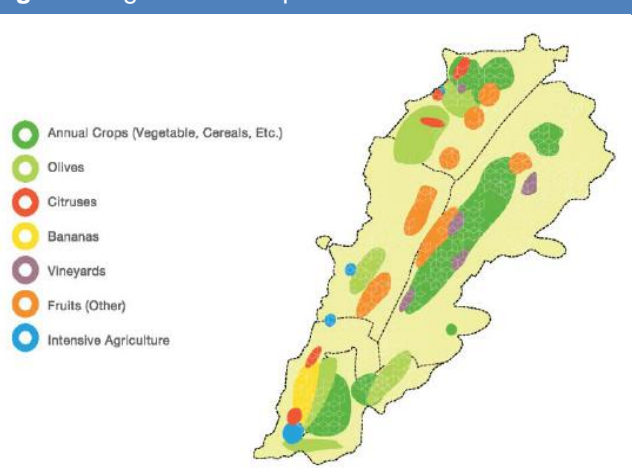
Source: Decanter.com

Fruit and vegetables constitute the widest agribusiness sub-sector of Lebanon, in terms of production area and volume, socio-economic inclusiveness, rural development and livelihood enhancement (European Commission 2016).

Benefitting from a Mediterranean climate, the country produces a wide assortment of fruit and vegetables. With a total production of 405,000 tonnes, potato ranked first in the top ten commodities produced in Lebanon in 2013. Tomato production ranked second with a volume of 320,000 tonnes in 2013 followed by cucumbers, apples, wheat, bananas, oranges, olives, onions, and grapes.

The Bekaa is the most productive agricultural area but other regions of the country contribute to the agricultural economy in a significant way.

Fig 2: Agricultural crops in Lebanon



Source: IDAL (2017), original source FAO 2010

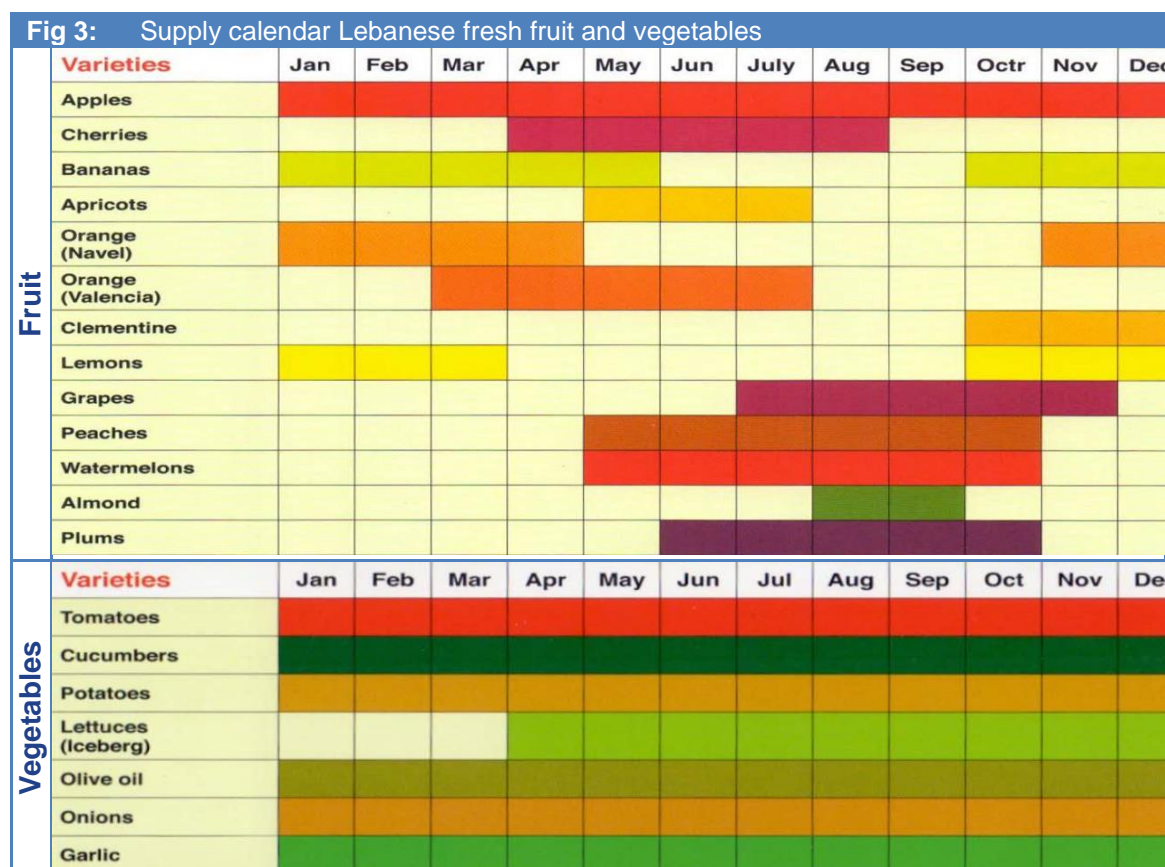
The multitude of micro climatic zones and the use of greenhouses allow for diversity in the production of fruit and vegetables. However due to low productivity and inefficiencies in the value chain, Lebanon is not meeting its potential for both responding to domestic demand and supplying the entire Middle East (FAO 2011).

The production and harvest cycles of fruit and vegetables are generally similar to Southern Europe. Various micro climates from north to south and from sea level to the mountain slopes, allow harvests over a long season, though not year-round.

In the winter season, production can only be done in greenhouses. Storage, especially for potatoes, cabbages and onions, makes it possible to offer year-round supply. Fruits are harvested in smaller windows, except for apples, which are stored for longer periods, allowing year-round supply.

Reliable statistics of production areas are not available. The total agriculture land area is estimated at 332,000 hectares, of which 231,000 hectares are cultivated and almost half are irrigated (census 2010), with an average land holding size of 1.36 ha (Ministry of Agriculture, 2014).

Below is a supply calendar of Lebanese key crops from a brochure of the Ministry of Agriculture:



Source: Ministry of Agriculture – Brochure Lebanese Fresh Fruit & Vegetables

Table 2 provides figures of production volumes from various sources up to 2013.

Table 2: Production volumes for main fruit and vegetables crops in 2013 In 1,000 tonnes			
Fruit		Vegetables	
Apple	155	Potato	405
Banana	125	Tomato	320
Orange	115	Cucumber and gherkin	175
Peach, apricot, plum, cherry	109	Onion, garlic and leek	100
Grape	92	Lettuce and chicory	58
Lemon and lime	82	Eggplant	44

Source: European Commission (2016)

3.2 Lebanese exports

According to ITC Trade Map figures, total Lebanese exports of fruit and vegetables (HS07+HS08) reached €102 million in 2017². After growing in the years before 2013, exports have been fluctuating since, reaching a peak of €117 million in 2016 and dropping to €102 million in 2017. The share between fruits and vegetables also fluctuates, but it is more or less at 50%.

Lebanon has signed bilateral and multiple trade agreements with many Arab and European countries as part of its trade liberalisation agenda. It is a signatory to 54 bilateral agreements for the promotion and protection of investments. Adoption of trade liberalisation policies is part of the Lebanese comprehensive economic strategy to integrate further into the global economy, including the following foreign trade efforts:

- Euro-Mediterranean Partnership Initiative, 2002; other countries involved: Algeria, Egypt, Israel, Jordan, Libya, Morocco, Palestinian Territories, Syria, Tunisia, Turkey. See also <http://ec.europa.eu/trade/policy/countries-and-regions/regions/euro-mediterranean-partnership/>;
- Lebanon signed its Association Agreement with the EU in 2002, entering into force in 2006;
- Free Trade Agreement with the European Free Trade Association (EFTA), 2004;
- Member of the Greater Arab Free Trade Area (GAFTA), 2005: as a GAFTA member, Lebanon receives full exemption of tariffs on all agricultural and industrial goods traded to the 17 Arab member countries, since January 2005;
- Lebanon is in the process of negotiations to join the WTO.

Though it is hard to quantify, trade agreements are considered to have a positive impact on export market access and actual trade (ILO 2015, IDAL 2016b). Lebanese industrial as well as most agricultural products benefit from free access to the EU market. However, there is not a positive sentiment with respect to this agreement. It is a common thought that the EU agreement benefits the EU more than Lebanon as the enormous gap between imports from the EU and exports to the EU has not been closed yet.

In general, GCC markets have significant demand for Lebanese fresh produce because of relative ease of access over land, lower quality requirements, historical presence of a large Lebanese community living and working in the GCC, greater name recognition, lack of domestic substitutes and lower cost of shipping (USAID 2014b).

The logistic infrastructure in Lebanon for exports over land, sea and by air is adequate:

- roads are reasonable and do not hinder basic transportation of agricultural goods to the market;
- normally the land borders with Syria give access not only to Syria itself but also to all countries in the Middle East; because of the border closures since 2013, alternative transportation routes have been found, mainly by ship;
- sea shipments leave the country through the ports of Tripoli and Beirut. Facilities are reasonable to good, especially in Beirut. Through Chinese support and involvement, the port of Beirut became a professional operation; reefer containers are shipped through the ports of Beirut and Tripoli (since 2017), reaching GCC markets in about 20 days, similar as shipments to Europe;
- trucks can use roll-on roll-off ships in Tripoli; the shipping time to Aqaba, Jordan, is three days;
- air shipments leave the country through the international airport in Beirut.

Fruit

- The leading fruit export product is apple, which showed stable exports until 2017. The main destination market for Lebanese apples is Egypt with about 70% of all Lebanese apple exports. The rest is mainly exported to the Gulf states.
- After bananas, the second most exported fruit, fresh grapes are Lebanon's third export fruit commodity. Exports of fresh grapes have been growing steadily, reaching approximately €6.5

² Various sources in Lebanon estimate actual trade figures at least twice as high as official statistics because it is common to declare just a third or half of the real volumes at customs.

million in 2017. Grapes are exported to a diverse portfolio of markets, with leading buyers in Saudi Arabia, Germany, Iraq and the UK. Chapter 8 provides more details about fresh grapes.

- Exports of oranges are fluctuating around €6.5 million (2017), primarily to the Gulf region. Chapter 10 discusses oranges and other citrus fruit in more detail.
- Other export fruits that have been growing strongly are apricots, plums, cherries, bananas and avocados, especially since 2015. Chapter 9 discusses avocados in more detail.

Colour coding for all tables below:

Green = substantially increasing (at least +10% on average per year)

Black = relatively stable

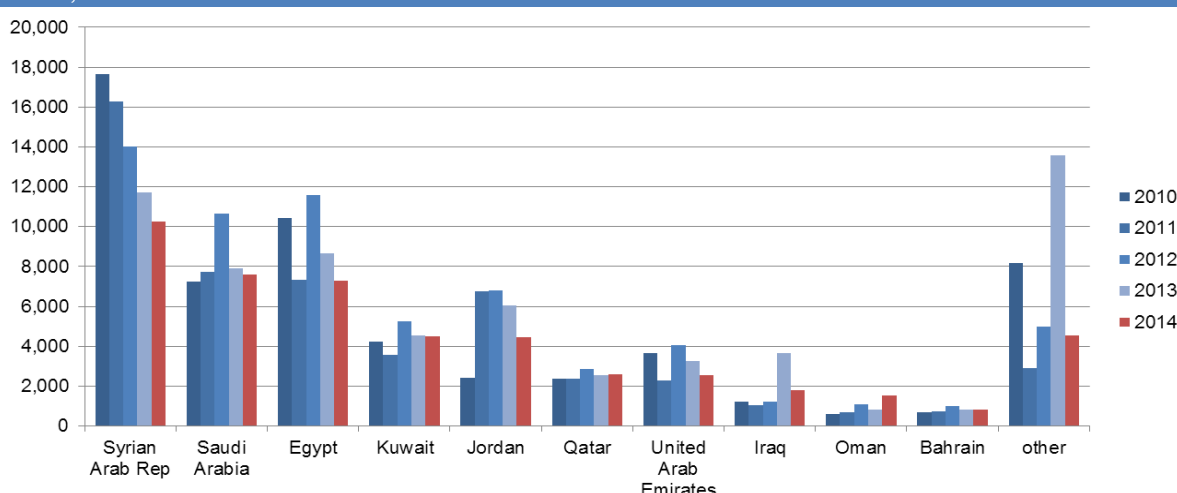
Red = substantially decreasing (at least -10% on average per year)

Table 3: Lebanese fresh fruit (and nuts) exports (HS08) 2013-2017: main products
In €1,000

Code	Product label	2013	2014	2015	2016	2017
	Total fresh fruit exports	63,640	47,873	54,143	66,383	52,666
'080810	Fresh apples	11,182	9,336	11,351	13,203	11,264
'080390	Fresh or dried bananas (excl. plantains)	11,058	6,846	7,251	14,763	10,980
'080610	Fresh grapes	5,381	5,508	5,054	6,130	6,482
'080510	Fresh or dried oranges	5,474	6,211	3,856	6,454	6,452
'080929	Fresh cherries (excluding sour cherries)	1,027	817	1,804	2,967	2,185
'081090	Fresh tamarinds, cashew apples, jackfruit, lychees, sapodilla plums, ...	1,544	1,618	2,197	2,168	2,051
'080930	Fresh peaches, incl. nectarines	2,754	1,381	2,120	1,775	2,030
'080940	Fresh plums and sloes	1,250	859	1,696	1,953	1,687
'080830	Fresh pears	1,389	735	1,083	1,358	1,597
'080590	Fresh or dried citrus fruit, excl. orange, lemon "Citrus limonum", limes ...	393	59	1,392	396	1,049
'080410	Fresh or dried dates	605	762	1,012	1,226	1,040
'080550	Fresh or dried lemons and limes	3,619	2,915	2,756	382	784
'080440	Fresh or dried avocados	443	339	579	507	643
'080910	Fresh apricots	718	284	720	664	636
'080540	Fresh or dried grapefruit	388	425	297	473	305
'080290	Nuts, fresh or dried (excl. coconuts, Brazil nuts, cashew, ...)	9,474	809	336	120	127
'080310	Fresh or dried plantains	1,866	2,507	4,579	4,431	6
'080520	Fresh or dried mandarins, incl. tangerines, satsumas, clementines ...	1,644	2,047	2,313	2,838	-

Note: see Annexes 3 for a full list of export products
Source: Trade Map (2018)

Fig 4: Lebanese fruit exports (HS08) 2010-2014: main markets
In €1,000



Source: Trade Map (2016)

Vegetables

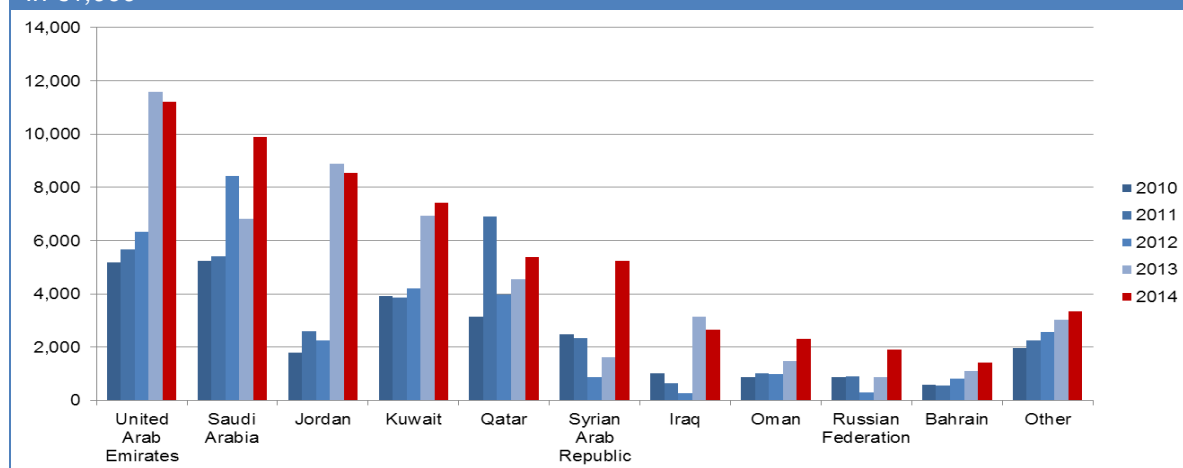
- The leading export vegetable is the potato, reaching €27 million in 2017, twice more than in 2011, but rather stable since 2013. Chapter 11 provides more details about potatoes.
- Exports of cabbage lettuce have also doubled since 2011, steadily increasing since then, reaching €9 million in 2017. Lettuce is almost exclusively exported to the Gulf region.
- Other vegetable export products showing strong growth include various types of leguminous vegetables, beans and cabbages, with the strongest growth in exports to the Gulf region.

Table 4: Lebanese fresh vegetables exports (HS07) 2013-2017: main products
In €1,000

Code	Product label	2013	2014	2015	2016	2017
	Total fresh vegetables exports	49,989	59,344	51,879	50,872	49,600
'070190	Fresh or chilled potatoes (excl. seed)	27,629	36,694	28,497	26,806	26,839
'070511	Fresh or chilled cabbage lettuce	8,857	2,538	9,673	8,738	9,166
'070999	Fresh or chilled vegetables n.e.s.	1,497	1,515	1,488	1,043	1,769
'071390	Dried, shelled leguminous vegetables, excluding peas, chickpeas, ...	967	915	1,735	1,713	1,723
'071350	Dried, shelled broad beans, horse bean	381	586	1,750	2,204	1,303
'071339	Dried, shelled beans "Vigna and Phaseolus"	506	807	1,046	953	1,169
'071333	Dried, shelled kidney beans "Phaseolus vulgaris"	136	123	137	1,290	1,077
'071320	Chickpeas	297	287	1,321	2,421	1,030
'070310	Onions and shallots	2,782	3,048	1,038	1,226	927
'070200	Tomatoes	1,126	1,085	817	292	631
'070890	Leguminous vegetables	193	331	320	520	501
'070993	Pumpkins, squash and gourds	286	302	256	151	479
'071340	Dried, shelled lentils	337	418	377	839	417
'070930	Aubergines "eggplants"	385	391	284	145	391
'071290	Dried vegetables and mixtures of vegetables	288	342	513	486	359
'070700	Cucumbers and gherkins	550	647	456	230	320
'070960	Capsicum or Pimenta	301	310	183	117	227
'070820	Beans	349	349	239	126	166
'070490	Cabbages, kohlrabi, kale and similar brassicas (excl. cauliflowers)	249	128	46	148	108

Note: see Annex 3 for a full list of export products
Source: Trade Map (2018)

Fig 5: Lebanese vegetables exports (HS08) 2010-2014: main markets
In €1,000



Source: Trade Map (2016)

3.3 Lebanese imports

Imports of fruit and vegetables amounted to €185 million in 2015. Fruit imports have been increasing over the past years, while Lebanese vegetables imports decreased slightly.

Table 5: Lebanese fruit and vegetables imports (HS07 and HS08)
In €1,000

Code	Product	2011	2013	2015*	Average annual growth
HS08	Total fruit and nuts imports	82,820	112,788	96,080	4.0%
HS07	Total vegetables imports	100,373	102,972	89,341	-2.7%
	Total FV	183,193	215,760	185,421	0.3%

* 2015 data based on partner reported data (mirror data)

Source: Trade Map (2016)

The bulk of Lebanese imports consist of nuts such as almonds, walnuts, chestnuts and cashew nuts. Important suppliers of nuts are Iran and the USA. Saudi Arabia is an important supplier of dates. Vietnam is the leading supplier of cashew nuts to Lebanon. Nut imports are growing steadily, except for cashew nuts.

Fresh fruit imports are actually quite small. Only mangos, guavas, kiwis and apples reach the top-10 imported products.

Potatoes, chickpeas, garlic and lentils are the main vegetable items imported into Lebanon. In the past, Saudi Arabia was the leading potato supplier, but lately this position has been taken over by Egypt. Potato imports are typically highest during the low local production season. Mexico and the USA are the leading suppliers of chickpeas. Garlic is imported primarily from China.

Table 6: Lebanese fresh fruit & nuts imports In €1,000					Table 7: Lebanese fresh vegetables imports In €1,000				
Code	Product label	2011	2013	2015	Code	Product label	2011	2013	2015
'080212	Almonds	16,675	18,911	35,396	'070190	Potatoes	18,999	19,110	14,223
'080232	Walnuts	4,212	7,401	9,267	'070110	Seed potatoes	17,754	13,501	14,007
'080410	Dates	6,513	9,140	6,791	'071320	Chickpeas	9,588	10,515	10,196
'080241	Chestnuts	-	3,551	6,316	'070320	Garlic	3,446	2,895	8,737
'080132	Cashew nuts	16,161	18,253	6,072	'071340	Lentils	8,586	7,384	7,429
'080450	Guavas, mangoes	2,043	3,469	5,305	'071080	Frozen vegetables	1,592	1,832	4,843
'080222	Hazelnuts	2,571	3,651	4,910	'071350	Broad beans	2,717	4,972	4,525
'081050	Kiwifruit	454	1,318	2,888	'071333	Kidney beans	3,012	3,791	4,131
'080810	Apples	673	634	1,807	'070310	Onions	4,639	5,049	3,320
'080231	Walnuts	795	547	1,502	'071290	Dried & mixtures of vegetables	1,597	2,264	2,481
	other	32,723	45,913	15,826		other	32,723	45,913	15,826
	Total	82,820	112,788	96,080		Total	100,373	102,972	89,341
Leading supplying countries: Iran, USA, Vietnam, Turkey, Saudi Arabia, Ukraine					Leading supplying countries: Egypt, Syria, Netherlands, China, Canada, Australia				

Note: 2015 data based on partner reported data (mirror data)
Source: Trade Map (2016)

3.4 Structure and governance in Lebanese fresh fruit and vegetables value chains

This section provides overall insights into the functioning of Lebanese value chains of fresh products and which parties are involved. Sub-sections deal with an overview of:

- the actors in the chain in Lebanon: private parties that have a subsequent position in the value adding process from seed to domestic shelf or to export destinations;
- the supporters in the chain: those parties that support the value chain in a commercial way (technical suppliers and service providers) or institutional way (BSOs, trade associations, education, etc.), as well as international donors;
- the influencers in the chain: institutional parties from local and national governments, international and multilateral organisations.

Chapters 8, 9, 10 and 11 discuss specific elements in the value chains for table grapes, avocado, citrus fruits and potato.

3.4.1 Chain actors

Producers

- Farm types range from hobby, small, medium to large. According to the 2010 agriculture census, the number of farm holders was approximately 170,000, 8.6% of whom were females, with an average age of 52 years (55 for females).
- The average farm size is 1.36 ha (Ministry of Agriculture, 2014). Approximately 70% of the farms are smaller than 1 ha, another 26% range from 1 to 6 ha and the remaining 4% have more than 6 ha (WUR, 2017).
- Depending on the scale of farming, location and farmers' preferences, production from small and medium-sized farms will often be aggregated by a *daman*, a typically large or medium scale farmer who purchases from other farmers in his or her area, though some work strictly as traders. Damans aggregate products and sell at wholesale markets to exporters, or act as distributors or exporters themselves. The daman system is common in fruit production. Damans buy the crop 'on the wood', usually at 15-25 per cent less than the farm gate price, covering the actual harvesting and packaging, which is usually done in the field (USAID 2014b).
- The production sector is in a process to become market oriented. Fruit and vegetables are self-sufficient on a seasonal basis. Producers work on expansion of the supply season through new varieties and better cultivation and post-harvest practices. Only in the off-season demand is larger than supply. Exported products are generally grown specifically for exports, targeting mostly certain, often short, seasonal windows in export markets.
- An estimated 3,800 to 3,900 ha are cultivated in greenhouses, which account for less than 2% of the cultivated land. Facilities mainly consist of plastic single tunnels. They are mostly located in the Akkar region (1,574 ha), the South (628 ha), Mount Lebanon (525 ha) and the North (477

ha). The Bekaa Valley does not have many greenhouses (86 ha) because of the hot summer. Almost all greenhouses in Lebanon are used for vegetable production: tomato, cucumber, pepper, eggplant, lettuce and iceberg (WUR, 2017).

- Only a small number of fruit and vegetable producers have a GLOBALG.A.P. certificate. As of September 2018, the GLOBALG.A.P. database showed, among others, the following number of certified farms in Lebanon: 4 apple farms, 10 potato farms and 6 table grapes farms. Interviews with exporters and farmers in 2018 make clear that there is a growing awareness and motivation to start certification processes, not only in good agricultural practices (GAP) but also in post-harvest, simply because of the changing requirements in the market, especially in the GCC markets. There are no structural limitations or barriers for producers in Lebanon to reach GLOBALG.A.P. compliance.
- The acreage of fruit and vegetables under organic certification is low. Accurate figures are not available. Biomass distributes certified organic products in the domestic market and is linked with 40 farmers in the north of Lebanon. Exports of organic products is not very common. Only a few exporters have organically certified products in their assortment. El Solh delivers products from its farm in the South to GCC markets, while Agro Cedrus aims to export products from its 90-hectare organic farm in the North. Although these exporters forecast more opportunities in export markets and a growing demand in the domestic market, several persons reported that organic products do not have a positive reputation among Lebanese consumers because of fraud and corruption in the sector. Consumers cannot rely on products offered as organic.

Producer groups

The landscape of smaller producers supplying high-end markets is not well developed. Given the scale and organisation of the supply chain in Lebanon, small and mid-sized farms are indispensable for the export sector. Actually, many ties between farmers and exporters are in place already, but there is much room for improvement in the quality of these relationships and the products. On one side, farmer cooperatives play a role in organising small farmers (see section 3.4.2), but there are alternative models with organised groups of former aimed at increasing their competitiveness in production, post-harvest and market access. Exporters, donors and NGOs support the development of these models. Annex 4 provides more background information and several new initiatives in this field.

Wholesale markets

- There are seven main wholesale markets in Lebanon and two smaller ones, covering all production regions from North to South. Their role and function is rather similar, although they show regional and seasonal differences. Wholesale markets in the production regions, such as in Akkar and the Bekaa, are typically consignment markets that connect local supply with domestic outlets and export markets. Outside the production season, these markets change into trade markets, supplying regional markets with mainly imported produce. This also applies to the Beirut market.
- All wholesale markets are run and managed as private businesses. The facilities are generally poor to moderate and the price-setting mechanism is far from professional and transparent. Most of the trade is done on consignment. The official commission fee for merchants is 7 to 10% on the sales value. There is no system of quality regulation at national level, nor at wholesale market level.

Domestic distributors

In fresh produce value chains, distributors buy from wholesale markets and importers, then distribute to local retail markets, restaurants and catering operations, usually on a regular schedule. Those that sell to FFV stores and small groceries, usually cover five to six of these stores. The distribution mark-up is 10–15% (USAID 2014b).

Packers and exporters

- About 40 to 50 exporters are registered in the Lebanese fruit and vegetables sector. They mostly source their products from wholesale markets or directly from farmers and possibly damans. Only a handful of large producers in the country have their own export capabilities.
- Most packers and exporters also supply the domestic market. There is only weak awareness and readiness to supply to high-end markets. Only few businesses have organised a proper supply chain and are able to meet export market requirements, such as operating according to GLOBALG.A.P., GMP and HACCP standards.
- Exporters are not used to cooperating in export marketing. They may come together in meetings with IDAL, their chamber of commerce or in their syndicate, but there is hardly any cooperation in the business as such.
- Syria has always been a big export market for Lebanon. Formal trade is blocked now because of the war, but informal trade continues. Figures are not available.
- Exports to GCC markets are substantial and mainly based on family dynasties with solid connections in the Gulf. However, they face serious competition from substantial supplies from other countries, especially since the Russian ban on imports of fresh produce. European supplies, as well as products from the Far East, India, Pakistan and North Africa appear to be very competitive, which diminished the competitiveness of Lebanon.
- Interviews in the summer of 2018 with 24 fruit and vegetables exporters which make up 80% of the active exporters in the country, revealed interesting information regarding developments in their businesses, as well what they need to increase export capacities to high-end markets. The outcomes of these interviews are in Annex 5.

Local value addition

- Processors play an important role in fresh fruit and vegetables value chains, as they purchase products that are not suitable for sale in the export and retail markets, processing or adding value.
- The USAID LIVCD project introduced an interesting new option: avocado processing. Avocado oil has been identified as a potential product, which is very suitable for cosmetics and cooking. Avocado oil is produced using the same cold-press equipment used by modern olive oil producers and is classified as extra virgin or virgin, using olive oil standards. One tonne of avocados yields up to 250 litres of oil depending on variety, climatic condition and harvest time. International wholesale prices of avocado oil were estimated by the LIVCD team between US\$8 and US\$12 per litre for industrial grade and US\$15–25 for food grade avocado oil (USAID 2018b).
- There are around 190 packaging houses for the handling of fresh products, concentrated in the Bekaa (42%), North Lebanon (25%), Beirut and Mount Lebanon (22%) and South Lebanon (11%). Only 14% of these houses had HACCP or ISO certifications in 2017 (IDAL, 2017).
- One of the trends in high-end markets is offering ready-to-eat products for consumers, which requires pre-ripening for some products, including avocado. However, distributors in high-end markets prefer to do and control the process close to the consumer markets, so pre-ripening in Lebanon before shipping to Europe or other markets is unlikely. Also for packing, the location is usually close to the consumer market for practical and economic reasons. However, because of the perishable character, table grapes and other soft fruit and berries are often shipped in retail packaging. Importers and distributors in high-end markets are open to new and innovative technologies in storage, cooling and packaging.

Domestic retailers

The domestic market showed a fast development during the last two decades with an increasing number of retail outlets, particularly super and hypermarkets. This growth is expected to continue. Nowadays, ten domestic and international supermarket chains have a position in the market: Admic, Bou Khalil, Carrefour, Fahed Supermarket, Goodies, Le Charcutier, Monoprix, O&C, Spinneys and The Sultan Center – TSC. Since approximately half of the Lebanese population lives in the Beirut and Mount Lebanon region, the density of supermarket outlets is relatively high in this part of the country.

3.4.2 Chain supporters

Farmers cooperatives

- Cooperatives can be established to assist with production at the farm and supply chain levels, to reduce costs and improve conditions for market access. According to the Ministry of Agriculture (MoA), there are currently around 1,350 registered cooperatives in the country, including farmers' cooperatives. They all have legal status and receive some tax exemptions or subsidies. During the last two decades there was intensive financial and technical support for such cooperatives from both national and international organisations. Still they face many problems, such as lack of know-how, technology and finance (European Commission, 2016). It seems only a few of them benefit from the fact that farmers join forces in a cooperative.
- Almost every village has a local agricultural cooperative, nevertheless functional cooperatives are rare. Most of the cooperatives are created to get better access to support from different organisations and institutes, rather than to have a development objective for a certain value chain or market. Many cooperatives are active in ensuring training for farmers in specific areas, such as pruning, pest control, etc., but rarely do they develop marketing activities or empower farmers to be competitive in the market or to get inputs at lower prices (ILO 2015).

Input suppliers

- Seeds, rootstock and other planting materials are available in the Lebanese market. Suppliers often have business connections with international breeders. In general, getting seeds and plant materials is not a problem for farmers.
- Agrochemical providers deal in fertilisers and pesticides and sell to farmers. These firms serve a variety of crops. In the Bekaa alone, over 75 suppliers are registered (USAID 2014b).
- Technical supplies, such as fertilisers, crop protection, irrigation, greenhouses and equipment, etc., are provided by various small and big enterprises, ranging from low prices and quality to high standards. Few of them have international connections, both in terms of supplying partners and in terms of sales, up-to-date technology and additional advisory services by a team of agronomists. The leading providers with international scope are Robinson Agri and Debbane.
- There are 45 commercially available cold storage facilities in Lebanon. Despite the availability of cold storage, the facilities are inadequate in terms of capacity and quality of refrigeration (USAID 2014b).
- More than 90% of input sales are made on credit, as farmers need supplies at the beginning of the season, but are unable to pay until harvest time. Thus, input suppliers provide farmers with loan facilities to cover the costs at the start of the season. Pesticides and liquid fertilisers amount to approximately 15 to 20% of the cost of production (USAID 2014b).

Certification bodies

- High-end markets require proof of proper production and processing. Especially food safety but also social and environmental factors are relevant. Certification bodies offer their services for advice, auditing and issuing of GAP certification such as GLOBALG.A.P. and GMP schemes such as BRC, IFS, HACCP. Producers, packers and exporter businesses normally hire these certifiers. However, in immature sectors, which is the case in Lebanon and many other developing countries, it is common for donors or governments to provide support to chain actors by directly hiring certifiers, covering most of the cost with certifications. That is usually done in the start-up phases, which means only for the initial certification. Renewal of certificates from the second year onwards, shifts to the responsibility of companies directly.
- The following certification bodies are approved to certify GLOBALG.A.P. schemes in Lebanon: Bureau Veritas, TUV, Acerta and Control Union. IMC offers services in organic certification and also promotes integrated pest management (IPM) methods. For various GMP schemes and quality management systems (including ISO), a larger group of Lebanese and foreign providers are on the market.

Banks, financing and insurance

- The commercial banking sector in Lebanon is one of the most advanced in the region, with 54 commercial banks, 10 specialised banks, 23 multiple finance companies and leasing offered through retailers and manufacturers. In spite of that, lending to agriculture is limited. Common problems include the mismatch between terms and conditions of available loan products and the needs and capacities of farmers and exporters, including high interest rates, high collateral requirements, and a lack of seasonal loans structured for agriculture (USAID 2014b).
- There is however a good alternative. According to several persons in the sector, financing is not even a problem in Lebanon. With a good business plan and access to the right people, loans are easy to arrange, especially through Kafalat. The central bank's Kafalat loan guarantee programme is the chief programme for promoting SME lending with a particular focus on agriculture. The programme has been operating since 2007 (USAID 2014b).
- IDAL distributes and promotes the following Kafalat programmes through its channel (IDAL, 2017):
 - Small Agriculture programme: provides guarantees for loans up to LBP65 million, granted by commercial banks to finance all types of farming and agricultural activities, including fixed assets and working capital needs;
 - Kafalat Trees programme: provides guarantees for loans up to LBP480 million, granted by commercial banks to finance purchase of trees, irrigation equipment, in addition to financing processing, marketing, packaging and exporting activities;
 - Kafalat Plus programme: provides guarantees for loans up to LBP 600 million, granted by commercial banks to SMEs operating in the agriculture sector.
- Wholesalers may act as lenders to small and medium farmers with loans covering up to 70% of the value of the crop. Farmers use the money to cover the costs of production and harvesting. In most cases, loans include a mutual agreement for the farmer to sell product to the wholesaler at market price (USAID 2014b).
- The research team of an ILO survey in the potato value chain noticed that farmers still prefer to borrow money from traders and not from Kafalat, mainly for two reasons:
 - Traders do not have a formal system of applying for a loan and do not require any legal documents from farmers. Their relationship is based mainly on trust;
 - In case of a farmer's inability to repay the debts due to a bad crop season, the trader postpones all unpaid debts to the next crop season and still provides the farmer with all their needs for input supplies (ILO 2015).
- The central bank paused its agricultural loans for a few months in 2018, to go through a process of changing procedures and loan conditions. Avocado producers were faced with an interest rate of 7% instead of the previous 2.5%, which led to a slowdown and delay in the new avocado plantations (Hussein Abu Yehia, 2018).

Business support organisations (BSOs)

Federation of Chambers of Commerce, Industry and Agriculture in Lebanon (FCCIAL)

FCCIAL was established in 1997 as the national umbrella organisation for the four regional chambers in Lebanon:

1. Beirut and Mount Lebanon (CCIABML): established in 1887, more than 15,000 members, most of which SMEs;
2. Saida and South Lebanon (CCIAS): established in 1933, 7,000 active members;
3. Tripoli and North Lebanon (CCIAZ): established in 1870, 6,000 members;
4. Zahle and the Bekaa (CCIAZ): established in 1939, 15,000 members.

FCCIAL offers limited export services. It offers an online public platform for international export requirements (TASDIER) which was established through a USAID-funded project. It includes information on technical requirements for export, assembled from online sources and links to international sites of destination countries, covering both fresh and processed food products.

The four regional chambers are regulated by Ministerial Decree No 36/67 enacted in 1967, awarding the chambers the exclusive rights to the provision of services to business enterprises. The chambers are active organisations, especially in agriculture and agro-processing and they provide various services for their members, including:

- Marketing of Lebanese produce by participating in international exhibitions, such as Fruit Logistica Berlin, WOP Dubai, Macfrut Italy. Organising national exhibitions, as well as B2B meetings with local and foreign producers and exporters and organising Lebanese business missions abroad to explore potential export markets;
- Issuing certificates of origin for exports;
- Approving bills and issuing necessary export prices certificates of authenticity;
- Issuing certificates of commercial, industrial or agricultural nature and degree;
- Verifying signatures of traders, industrialists and producers registered in the chamber;
- Informing foreign importers about the products of its affiliated members;
- Studying problems and obstacles to commerce, industry and agriculture, working on solutions and helping within its capacity;
- Providing information on dates and locations of international fairs for those interested in having commercial relations with foreign countries;
- Facilitating members' communication with local authorities and foreign embassies;
- Offering recommendations on behalf of members so they can obtain permits and visas more easily;
- Providing managerial and technical training programmes aimed at building capacities and developing competencies of employees and executives of Lebanese businesses;
- Participating in development projects financed by international organisations that favour the economic development of the private sector.

In addition, some services provided by the chambers are exclusive to only one or few locations:

- CCIABML offers arbitration and mediation services through the Lebanese Arbitration and Mediation Center (LAMC) established in 1995;
- CCIABML issues ATA and TIR carnets;
- CCIAS, CCIAS and CCIAT offer laboratory testing services; CCIAS and CCIAT are ISO 17025 certified.

Investment Development Authority of Lebanon (IDAL)

IDAL was established in 1994 as the national investment and export promotion agency to promote Lebanon as a key investment destination and strengthen export competitiveness of local companies. IDAL reports to the presidency of the Council of Ministers and has financial and administrative autonomy. It has the mandate to offer a range of incentives and business support services for investors, based on priority sectors that show the most promising opportunities in terms of investment potential and impact on socio-economic growth. The identified sectors include agriculture and agro-industry (ILO 2015).

Export promotion services of IDAL include:

- providing data on export markets and potential export opportunities;
- supporting companies in accessing external markets;
- providing technical assistance to exporters in selected fields;
- subsidising participation in foreign fairs.

Since 2011, IDAL has offered the AGRI PLUS programme for exporters and cooperatives working with fresh produce. The programme consists of four key components:

- production streamlining to provide exporters with adequate training to improve quality of production and foster the growth of new products that meet regional and international demand;
- packaging improvement to support exporters in improving packaging and cooling centres to meet international norms of quality;

- marketing and promotion to promote the sector regionally and internationally; a visit to the Berlin Fruit Logistica is on the agenda most years;
- financial support to provide a portion of the packaging costs of exporters.

A similar programme, AGRO MAP, is provided for exporters in the food industry, supporting them to market their products and introduce producers to the latest sector technology (IDAL 2016b).

Two specific IDAL financial services relevant for the FFV sector are:

- an additional 20% subsidy to encourage exporters to improve the quality of their produce and packaging; to receive the subsidy, exporters need to obtain an internationally recognised certificate of quality, such as GLOBALG.A.P., along with a certificate for the product's packing house, such as ISO 22000;
- a \$40 compensation per tonne of produce transported by truck to a Lebanese port, and a little more for sea transport, to help cover for the high costs exporters incur to reach export destinations since the Syrian border closure.

IDAL also offers tax breaks for up to 10 years, as well as other incentives to local and foreign companies operating in the agriculture sector and meeting specific requirements. More details on IDAL's website at www.investinlebanon.gov.lb/ (IDAL, 2017).

Syndicates

Most fresh fruit and vegetable exporters belong to the Fresh Fruit and Vegetables Export Syndicate and most potato exporters belong to the Potato Exporters Syndicate. The agricultural sector has another four workers and employees syndicates, a syndicate of trade unions and three syndicates for farmers and nurseries. Most of these have a regional scope. The mandate of the syndicates is in the field of lobby and advocacy. The two syndicates for FFV exporters do not offer services towards individual companies and do not show leadership in the sector.

Agricultural research, extension and education

- Extension, research and education are integrated in the agricultural development triangle of the MoA and its affiliated institutions.
- The Lebanese Agricultural Research Institute (LARI) is the organisation under the supervision of the MoA that conducts applied and scientific research for the development and advancement of the agricultural sector. LARI has experimental stations to conduct research projects aimed at solving problems facing the agricultural sector in the area. In addition to its key role of testing water, soil and fruit and vegetables for export, LARI also conducts some development activities, such as the production of quality seeds. LARI also sends free SMS messages containing weather and technical information to farmers (ILO 2015).
- Agricultural extension is considered to be one of the main functions of the MoA, especially for small farmers. The service has an important infrastructure and geographical coverage of Lebanese agricultural areas. It relies on 28 agricultural centres, seven agricultural technical schools and three agricultural service centres covering all districts. However, in practice it is a weak service. Most farmers do not receive adequate advice. Most of the support in cultivation and post-harvest practices is being delivered by input suppliers, which are thus in a position to control farmers and the whole value chain. Some large farmers hire commercial specialists from Lebanon or abroad for advice. Several international donors include extension services in their programmes.
- The weakness of the public extension system and its limited effectiveness is a key issue impeding the development of the different sectors. The many causes behind this problem include a shortage of human, financial resources and equipment at agricultural centres, staff responsibilities' overlapping, lack of specialisation and limited staff incentives (Ministry of Agriculture, 2014).
- Lebanon has a developed public and private university level education and a public agricultural technical education system. Moreover, Lebanon receives donor support, including from the EU. At the same time, the agricultural technical education suffers from several weaknesses that

include the lack of interest in this field of education, insufficient funds from the MoA, teaching staff underdeveloped capacities, inadequate facilities and poor curricula that do not comply with sector requirements and market demands in terms of new specialisations (Ministry of Agriculture, 2014).

International donors

Various donors are active in Lebanon, both in the humanitarian field related to the Syrian crisis and in private sector development, including in the fruit and vegetables sector. Chapter 13 provides more details about relevant actors for this sector and their programmes.

3.4.3 Chain influencers

Ministry of Agriculture (MoA)

- The MoA is responsible for developing a suitable legal and regulatory framework and enhancing infrastructure development to promote investment and improve agricultural production and marketing. The MoA contributes to rural development programmes and plays an important role in the management of natural resources of the country, including agricultural land, irrigation water, forests, fisheries, pasturelands (ILO 2015).
- In 2009, the MoA formulated a strategic framework for the period 2010–2014, built around eight areas for central and local interventions, aiming at reducing production cost and improving agricultural product quality (ILO 2015). In 2014–2015, the MoA formulated a strategy update for the years 2015–2019 under the framework of the EU-funded Agriculture and Rural Development Programme (ARDP).
- The main areas of the MoA strategic framework are:
 - updating and issuance of appropriate regulations;
 - improving the MoA's organisational structure and role and enhancing coordination among the public, private and civil society sectors;
 - modernising infrastructure and increasing efficiency of using natural resources;
 - improving agricultural extension;
 - enforcing control on agricultural products, inputs, forests, fisheries and hunting;
 - developing value chains and improving the quality, processing, marketing and exports of agricultural products;
 - establishing a credit scheme for small and medium-sized projects;
 - conserving natural resources, such as soil, forests, biodiversity, use of marginal lands and pasture lands, and fisheries.
- Beginning in 2012, the MoA started to encourage farmers to form cooperatives to access public subsidies for production and processing equipment. The cooperatives are also supposed to receive technical support from MoA agronomists (USAID 2014b).
- In recent years, the MoA introduced rules to improve product traceability and control pesticide residue levels. However, implementation of these regulations is difficult, particularly because damans mix the lots of various small farmers. The regulations should improve the ability to hold farmers accountable for pesticide residues, increase compliance with export maximum residue levels (MRLs) and improve domestic consumer confidence (USAID 2014b).

Apart from the MoA, the Ministry of Industry (MoI) and the Ministry of Economy and Trade (MoET) also have responsibilities in their mandates to improve the agricultural sector's performance, especially to promote the interests of SMEs. Within the MoI, the Lebanese Standards Institution (LIBNOR) has the authority to issue, publish and amend national standards. Trade policy is the responsibility of the MoET, which is supported by a Trade Agreement Committee at the FCCIAL. However, there is no national or sector export strategy. The MoET has a Trade Information Centre that provides trade statistics, import and export regulations, tariffs, trade partner search and outsourcing opportunities. In 2016, plans were announced for the establishment of a Lebanese Export Promotion Agency (LEBEX). The governance model would be a public-private partnership in which the government facilitates and the private sector executes export programmes (Rob van Eijbergen, 2016). However, the government did not approve the plan and LEBEX was never established. MoET is mandated by law to issue permissions for the organisation of local trade fairs.

However, beyond trade fair participation, there is no process to develop companies for market readiness (René de Baaij, 2018).

International politics

The political situation in the region, particularly the war in Syria, has a huge impact on the agricultural sector in Lebanon. Limitations at the Syrian border hinder not only the trade relations with Syria, but also disrupt the connection to all other export destinations in the Middle East, which would normally be reached by land through Syria. Another factor is the influx of refugees into Lebanon. In addition to the high number of Palestinians who have lived in Lebanon for years, now many Syrians live and work in Lebanon. Despite being the smallest neighbour of Syria, Lebanon hosts the largest population of displaced Syrians. Data suggest that many localities have more displaced Syrians than Lebanese host community members.

Labour market conditions in Lebanon were already unfavourable prior to the Syria crisis, due to high unemployment rates, mismatches between supply and demand, and a prevalence of low-quality and low-productivity jobs. The Syrian crisis exacerbated these problems (FAO, 2015).

4 The European and regional fruit and vegetables markets

4.1 European market

The European fresh fruit and vegetables sector offers opportunities for Lebanese exporters. This section provides information on key end-market and value chain trends, focusing on whether there is evidence of strong effective demand as well as unmet demand for products, and identifying important competitors.

The European Union (EU) is an economic and political union of 28 countries. The European Free Trade Association (EFTA), which operates separately from the EU, is an intergovernmental organisation of four non-EU member countries: Iceland, Liechtenstein, Norway, and Switzerland. Three EFTA countries, namely Iceland, Liechtenstein and Norway, are also part of the European Economic Area (EEA), which effectively extends the EU's single market to those three countries. Switzerland is not part of the EEA, but participates in the EU's single market by way of bilateral agreements with the EU. For the purposes of this report, European market and EU market shall include the EU-EEA extended single market and Switzerland. The UK has since 2016 initiated a process to withdraw from the EU, which has not been concluded yet, so it is naturally part of this report.

The information contained in this section is primarily based on CBI market reports and summarises the information most relevant for the Lebanese fruit and vegetables sector. More detailed, up-to-date and background information can be found on www.cbi.eu.

4.1.1 Segmentation in European markets

Supermarkets dominate fruit and vegetables sales in Europe

- Approximately 60–90% of produce is sold through supermarkets, depending on the product and country. The market share of supermarkets tends to be higher in Northwest Europe than in Southern Europe. The largest European food retailers are the Schwarz Group (including Lidl), Tesco, Carrefour, Metro Group, Auchan, REWE Group, Edeka, E.Leclerc, ITM (Intermarché) and Sainsbury's. These groups usually manage several different supermarket brands.
- Supermarkets generally demand more than minimal requirements on quality. Importer-wholesalers are key for supplying to these groups. Most of the large supermarkets have special service providers which work with importers and local producers to source and deliver good quality products.
- Most fresh produce from developing countries is traded via importers. Importers supplying large retailers are changing towards a "lean and mean" style of organisation. The now diverse market of European importers is consolidating. Supermarkets are increasingly organising integrated supply chains with a limited number of preferred suppliers and service providers. This enhances responsiveness and safeguards product quality and promotional planning. Larger importing wholesalers often act as service providers to supermarkets, investing in added-value services such as ripening, packaging and mixing.

Difficulties for traditional stores and food services

- Smaller retail formats 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 these traditional formats also experience the same pressure from large retailers as small stores.
- The food service or out-of-home market has experienced difficulties in the years since the 2008 economic crisis, especially restaurants. This segment is now recovering. The market share of food service varies between 10 to 30% in different European countries.

Segment quality and quantity requirements

All EU imports of fresh fruit and vegetables have to adhere to minimum requirements on product quality and food safety. Additionally, supermarkets demand almost exclusively class I produce,

especially those in Northwest and Southern Europe. The quality requirements for Eastern Europe, for some discount supermarkets and street markets all over Europe 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 wholesalers. 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.

Fig 6: Retail segmentation of the fresh fruit and vegetables sector

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.	ready-to-eat, mixed salads, sliced fruits, organic and fair-trade, green baby asparagus, off-season, exotic (on top of the complete assortment)
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.	berries, in-season, sugar snaps, avocado (on top of the complete assortment)
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.	common citrus fruits, banana, green beans, in-season

Source: CBI Market Channels and Segments (2015)

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 Northwest 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 product range. The role of supermarkets is set to further expand. Almost all of the produce sold is class I.
2. In Southern Europe, fruit and vegetables make up a higher share of the diet. Product quality requirements are mostly class I. Consumers have a preference for local traditional produce, although local supply is not sufficient to meet demand. The supermarket channel is gaining importance in these regions.
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 is expected to be substantial, including higher quality and sustainable produce. The increase in customer quality demands also increases the importance of a professional supply chain.

Ethnic markets

The market targeting so-called ethnic consumers, which includes immigrants, refugees and other newcomers, is growing all over Europe. As the world increasingly turns into a global village, culinary traditions from other continents tend to be more widely accepted by European consumers, increasing the demand for non-European fruit and vegetables, also referred to as ethnic or exotic. 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 supermarket. Products that are more exotic to

Europeans, such as okra, can be more easily found in specialist grocery shops, but sometimes also in high-end supermarkets, especially in big cities.

4.1.2 Market trends in Europe

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

Healthy living

- Health has always been a selling point for fresh fruit and vegetables. The importance of communication on health benefits will further increase.
- Products with specific healthful characteristics, such as superfoods, have become more popular. Leading retailers have started to embrace these products.
- Demand for pure organic products is increasing, especially in Northwest Europe.

Niches and consumer experience

- The market for niche products, with extra value compared to standard products, is growing. Examples include fruits from certain microclimates with more taste or vegetable varieties with specific colours, shapes, taste or nutritional value. Hass avocado from high altitudes can be considered as niche because of their better taste and creamier structure.
- Niche products will continue to emerge and be marketed to consumers as unique products, particularly in high-end markets. Certain consumer groups, such as elderly people or young children, can be specific target groups for niche products.
- 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, storytelling and branding are needed.

Convenience

- Convenience foods are becoming more popular. It includes smaller-portion packs, 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. Forerunners in Northwest Europe are the UK and the Netherlands.
- E-commerce and home delivery are also common practice in European markets.

Food safety

- Food safety continues to be a key issue, so tracking and tracing is becoming more and more essential. Strict compliance with MRLs (maximum residue levels) and microbial contamination are a precondition for entering the EU market. In the Northwest European market, product requirements are already higher than official EU requirements. Germany, the Netherlands and the UK apply the strictest MRLs at retail level in Europe. As a general rule, German retailers apply an MRL rule which is three or more times stricter than the EU legislation.
- Certifications such as GLOBALG.A.P. and post-harvest schemes such as IFS and BRC have become a minimum standard for most European supermarkets, especially in the Northwest European market.

Corporate social responsibility (CSR) is becoming mainstream

- The European market is increasingly focusing on more sustainable and responsible fruit and vegetables. CSR continues to gain importance. CSR relates to human rights, environment and transparency and inclusiveness of value chains. Consumers are concerned about where products come from and how they are produced. Industry sources mention the conservation of water resources as one of the main concerns in the production of fresh fruit and vegetables.
- Proof of social conduct includes a wide range of certification schemes. GRASP stands for GLOBALG.A.P. Risk Assessment on Social Practice and is a voluntary module in addition to the regular GLOBALG.A.P. scheme. GRASP addresses specific aspects of workers' health, safety and welfare, attesting the operators' social practices at the farm level. This module is

increasingly important to retailers particularly in Northwest Europe. However, for some retailers even GRASP is not sufficient. Ahold (Netherlands) requires Business Social Compliance Initiative (BSCI), EDEKA (Germany) requires Ethical Trade Initiative (ETI) and retailers in the UK market increasingly require Sedex Members Ethical Trade Audit (SEDEX/SMETA). Other schemes include Global Social Compliance Programme (GSCP), Fair Trade and Fair for Life. Dutch importers and supermarkets signed a commitment to have only products sourced from suppliers with at least one social or sustainability certificate by 2020. The recent 'Sustainability Initiative Fruit and Vegetables' SIFAV initiative, aims to make imports of fruit and vegetables from Africa, Asia and South America 100% sustainable by 2020. SIFAV clusters eight social certifications and five environmental certification schemes.

- EU demand for organic is considerable and almost all supermarket chains have a respectable organic aisle. Although still considered a niche, the organic market is expected to grow in the next few years. Research company Technavio predicts organic food and drinks will grow by a combined yearly average of approximately 7% in Europe until the year 2020. The top organic vendors in Europe in 2015 were Tesco, Metro, Carrefour, Ahold and the REWE group (CBI 2016d).

Regional developments in the EU and EFTA market

The Eastern European market is expanding. The market for exotic fruit and vegetables in the Eastern EU is still relatively small, but emerging. Consumers in Eastern Europe are very price-conscious and exotic fruit and vegetables are relatively new for most consumers.

4.1.3 Trends in trade structure and logistics in the European market

Importers and wholesalers

Importing wholesale companies buy produce from abroad and resell to domestic retailers, or re-export to other countries. They take care of the necessary administrative formalities and often provide post-harvest services and logistics. These importing wholesalers are the best entry-points to European markets, as they have an extended network of customers, varying from large retailers, to domestic wholesalers, to food service companies. Importers usually have longstanding relationships with their customers and excellent knowledge of quality requirements, logistics and the formal administrative processes.

Post-harvest treatments include sorting, grading, cleaning or washing, cutting or slicing, ripening, re-packaging and labelling. The treatments depend heavily on the type of produce and the supply chain requirements. Sorting and cleaning of fruit and vegetables is always done in the country of origin, as well as packing in wholesale containers, boxes or crates. If applicable, such as the case for banana, avocado and mango, ripening is usually done in the destination country.

Retailers

Hyper and supermarkets

European hyper and supermarkets are divided into large supermarket chains, such as Carrefour, REWE, Aldi, Lidl, Ahold and smaller independent stores. The large supermarkets have by far the largest market shares and operate their own, sometimes combined, buying and distribution centres. Although supermarkets may be involved in sourcing their fresh produce, they usually rely on the services of importing wholesalers and service providers. Supermarket service providers are wholesalers and logistics service providers who take care of much of the sourcing and distribution process. They cooperate with importers and are responsible for contracting, importing and combining products from different countries. Directly dealing with supermarkets requires a high degree of business professionalism as well as access to logistic service providers. Usually, exporters from developing markets access the supermarket channels through such European importers.

Specialised shops

Specialised fruit and vegetables shops exist throughout the European market, although their market share has decreased to about 10%. Most of them are family owned, small, independent

shops that sell fresh fruit and vegetables as well as some related food items. They buy primarily from local wholesalers.

Street markets

Most European cities have regular, sometimes daily, fruit and vegetables markets for consumers. Traders rent stalls and sell fresh produce that they usually source from wholesalers or local producers. Open markets have a decreasing market share of only a few per cent in most countries.

Food service

The food service channel includes restaurants, hotels, business catering and hospitals. These organisations usually procure fresh fruit and vegetables from local wholesalers. The food service channel has an estimated market share of approximately 10-15% for fruit and 20% for vegetables.

Trends and developments

Strong buyer position for supermarkets

European supermarkets' purchasing power is increasing and is expected to increase even more in the future. This is evident in the requirements and conditions supermarkets set, in particular concerning food safety and sustainability. When a supplier does not adhere to these demands, supermarkets readily shift 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.

Specialising importers

Importers and wholesalers are becoming more specialised and are looking to establish unique market positions. Wholesalers supplying to large retailers are switching to lean and mean middlemen. They prefer to work with large producers and quantities. Smaller importers more and more search for niche channels, such as by specialising only in exotics or specific product types.

Vertical integration and efficient consumer response (ECR)

Supply lines are becoming shorter and more efficient. Contact among 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 logistical requirements to guarantee product quality is crucial. Exporters and growers must be able to meet these logistical requirements, reflecting 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. There is a tendency for long distance shipments shifting from air to sea. EU buyers are interested in suppliers who keep in step with these developments and are able to implement them.

E-commerce and online concepts

Especially in Western and Northern European markets, online shopping has become an integral part of society. Supermarkets are more and more familiar with home delivery of fresh products, and new independent concepts are emerging, for example, food boxes with recipes, such as Hello Fresh and Gousto.

4.1.4 EU imports from Lebanon

EU imports of Lebanese fruit and vegetables are fairly modest amounting to €3.2 million in 2014, representing merely 3% of total Lebanese exports that year (€107 million). In 2013, Lebanese exports of fruit and vegetables to the EU peaked at €10 million mainly thanks to a one-year export

boom of nuts to Italy. The reason for the 2013 high is unknown, but was possibly a one-time trade deal. Since then, exports have been showing steady but mostly moderate increases.

It must be noted that on more detailed product level, trade data from Eurostat (Table 8) and Trade Map tend to conflict. Comparing both sources, we note the products that have shown strong increases in exports to the EU were beans, oranges, chickpeas, aubergines and dried apricots.

4.1.5 Lebanon's main competitors in the EU market

Because of similar climatic conditions, most in-season fruit from Lebanon face strong competition from Southern European suppliers, particularly from Spain and Italy. 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 and tropical fruits.

Competition is still limited to prices 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.

Chapters 8 to 11 describe Lebanon's competitive position for key products.

Table 8: Leading Lebanese products imported into the EU (HS07+HS08): 2011-2015 <i>In €1,000</i>					
Product	2011	2012	2013	2014	2015
Fresh grapes	794	1,026	1,243	2,219*	863
Broad beans and horse beans	146	167	239	264	697
Oranges	8	2	3	3	470
Dates	192	200	146	268	299
Chickpeas	102	162	92	200	272
Dried vegetables and mixtures of vegetables	46	33	83	160	257
Tamarinds, cashew apples, jackfruit, lychees, sapodilla plums, passion fruit, carambola, pitahaya and other edible fruit	19	44	62	70	255
Nuts (excl. coconuts, brazil nuts, cashew nuts, almonds)	441	736	7,004	954	236
Dried, shelled lentils	118	139	123	206	234
Aubergines 'eggplants'	2	11	1	25	153
Dried apricots	42	55	55	78	139
Beans 'vigna spp., phaseolus spp.'	3	58	8	5	115
Kidney beans	18	42	29	81	82
Beans 'vigna and phaseolus'	72	19	49	103	82
Fresh or chilled vegetables n.e.s.		113	132	106	35
Cucumbers and gherkins	30	15	28	15	32
Dried, shelled leguminous vegetables	31	9	43	25	29
Cabbage lettuce	1				26
Mixtures of nuts or dried fruits	28	83	88	31	25
Pistachios		13	2	6	17
Pumpkins, squash and gourds		16	16	8	15
Vegetables, frozen (excl. potatoes, leguminous veg.)	11		5	6	15
Dried peaches, pears, papaws "papayas", tamarinds and other edible fruits (excl. Nuts, bananas, dates, figs, pineapples, ...)	3	37	15	62	14
Figs	10	5	0	1	13
Almonds in shell	4	9	2	7	13
Plums and sloes	1	0	6	2	12
Cashew nuts, shelled	1	17	10	6	10

* According to Trade Map, this figure is 1,135 (i.e. €1.1 million)
Source: Eurostat (2016)

Spain

- Spain is a European fruit and vegetables powerhouse. Its exports to the rest of the EU are still increasing by more than 10% annually, having reached an impressive €7.1 billion of fruit and €5.4 billion of vegetable exports to the rest of the EU in 2015.

Table 9: Spain's leading products on the EU market
EU import from Spain in million €

Fruit					Vegetables						
		2013	2014	2015			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: Trade Map (2016)

Italy

- One of the leading EU fresh fruit and vegetables suppliers, Italian exports of fruit reached €2.6 billion in 2015, while vegetables exports stabilised at €1.2 billion that same year. About 80% of Italian exports of fresh fruit and vegetables is exported to other countries in the EU.
- Italy is the leading supplier of fresh grapes to the EU market. It is also Italy's number one fruit export product. In 2015, Italy exported almost €600 million worth of fresh grapes to other EU countries. Italian grape exports have shown moderate growth in the past couple of years.

Table 10: Italy's leading products on the EU market
EU import from Italy in million €

EU Import from Italy in million €											
Fruit					Vegetables						
		2013	2014	2015			2013	2014	2015		
1	'080610	Grapes	570	532	589	1	'080610	Fresh or chilled vegetables n.e.s.	183	187	216
2	'080810	Apples	483	437	493	2	'080810	Tomatoes	173	172	160
3	'081050	Kiwifruit	239	259	257	3	'081050	Lettuce	126	124	140
4	'080930	Peaches, incl. nectarines	243	161	200	4	'080930	Cabbages	61	52	60
5	'080222	Hazelnuts	75	128	183	5	'080222	Salad beetroot, salsify, celeriac, etc.	56	50	55
6	'080830	Pears	118	129	135	6	'080830	Carrots	54	41	54
7	'080510	Oranges	70	60	68	7	'080510	Cabbage lettuce	46	41	50
8	'080212	Almonds	44	56	68	8	'080212	Pumpkins	36	36	42
9	'080711	Watermelons	62	58	64	9	'080711	Cauliflower	37	32	41
10	'080520	Mandarins	41	47	50	10	'080520	Vegetables, frozen	38	40	40

Source: Trade Map (2016)

Israel

- Israeli exports to the EU have shown steady growth, with fresh fruit exports growing to €313 million in 2015.
- After a few years of decline, fresh vegetable exports to the EU seem to have stabilised at €176 million in 2015.
- Israel is the second largest supplier of dates to the EU, after Tunisia, with a market share of about 21%.

Table 11: Israel's leading products on the EU market
EU import from Israel in million €

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: Trade Map (2016)

Turkey

Turkish fruit exports to the EU are considerable and have been growing strongly. Fruit exports reached €2.1 billion in 2015, growing 30% from 2013. Note that this figure (HS08) includes nuts, representing more than half of the exports. Still, export growth is broadly based. The main export product, grapes, has actually remained fairly stable recently. EU vegetable imports from Turkey are more modest, but have also shown steady growth figures, amounting to €268 million in 2015.

Table 12: Turkey's leading products on the EU market
EU import from Turkey in million €

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: Trade Map (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 €1 billion in 2017, 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.

Table 13: Morocco's leading products on the EU market
EU import from Morocco in million €

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 alliacious 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: Trade Map (2016)

Egypt

Egypt is still a relatively small supplier to the European market. Fruit and vegetables exports to the EU are rather stagnant, with fruit exports 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).

Table 14: Egypt's leading products on the EU market
EU import from Egypt in million €

Fruit				Vegetables			
	2013	2014	2015		2013	2014	2015
1 '080610 Grapes	99	106	137	1 '070190 Potatoes	98	61	63
2 '080510 Oranges	98	89	99	2 '070310 Onions	56	55	55
3 '081010 Strawberries	26	39	31	3 '070820 Beans	50	46	46
4 '081110 Strawberries, frozen	19	19	17	4 '071080 Vegetables, frozen nes	17	21	29
5 '081090 Fruits, fresh nes	5	6	6	5 '071220 Onions, dried	15	21	29
6 '080719 Melons	3	3	4	6 '071190 Vegetables presvd, not for immediate cons	13	13	20
7 '081340 Fruits, dried nes	1	0	3	7 '071333 Kidney beans & white pea beans	28	31	14
8 '080930 Peaches	2	2	2	8 '071290 Vegetables and mixtures dried	9	12	12
9 '080450 Guavas, mangoes	1	1	2	9 '071420 Sweet potatoes	3	7	8
10 '080520 Mandarins & clementines	0	1	2	10 '070810 Peas	4	5	6

Source: Trade Map (2016)

4.2 GCC and Russia markets

4.2.1 Segmentation and market trends in the GCC markets

The GCC market for fruit and vegetables was investigated in 2017 for identifying export potential of Jordanian fruit and vegetables, in a report commissioned by the World Bank. Jos Leeters was member of the expert team. This section and in Annex 6 list the relevant outcomes for Lebanon³.

In the GCC fruit and vegetables market, we distinguish three distribution channels:

- importers, traders or resellers at wholesale market level;
- hypermarkets and supermarkets, buying from importers, wholesale markets and importing directly;
- catering and food-service companies, contracting and importing themselves or buying from local importers and wholesale markets (Jos Leeters, 2017).

All GCC markets show a wide spectrum of demand and consumer behaviour at end-user level, based on the fact that the populations combine extremely rich people with poor working classes, the latter often formed by immigrants from Asian countries. Outlets vary from luxury, premium priced formats to low-end discount supermarkets and open street markets. However, within the GCC we see the following differences:

- the UAE, especially Dubai, and Qatar can be considered as most high-end and modern. The average consumer is less price sensitive than in other GCC countries and in these two markets there is much more demand for convenient and safe, certified food. Nevertheless, the UAE and Qatar have a substantial segment of people with low incomes and low purchasing power.
- The Kingdom of Saudi Arabia (KSA) and Oman are traditional markets: the average consumer is price conscious and pays less attention to high quality, convenience and food safety.
- Kuwait and Bahrein are considered somewhere between KSA and the UAE and Qatar.

Hypermarkets are increasing their market share all over the GCC region. They are willing to display all kinds of good quality products in their stores and they tend to satisfy the taste of all ethnic groups, meaning they display Lebanese produce for Lebanese, Jordanian produce for Jordanians, Indian produce for Indians, Pakistani produce for Pakistanis, and so on.

Local production

Food security and less dependency on imports are high on the agenda of the entire GCC region. Although climate conditions are very harsh, especially in the summer, many attempts are being made to establish sustainable local produce:

- Oman has pretty good regions for production, especially in the south, having developed a competitive sector with year-round production of some crops, particularly cucumbers, which it exports to its neighbours;
- The same is valid for KSA, which has diverse climate zones that have enabled the country to strategically produce various fruits and vegetables year-round.
- Other GCC countries are also heavily investing in domestic production, often with high-tech cultivation systems and backed by government support and subsidies.

GCC demand and imports

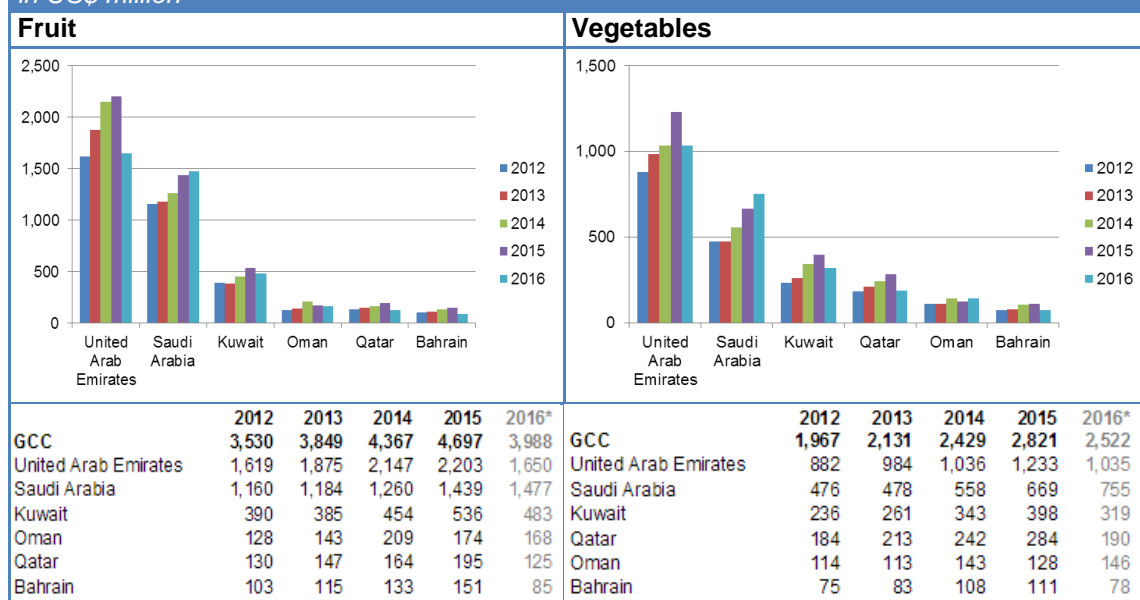
Total GCC fruit and vegetables imports amounted to about US\$6.5 billion in 2016. Fruit imports accounted for US\$4 billion and vegetable imports to US\$2.5 billion that year.

- Since 2012, fruit imports have increased by an annual average of 3.2%, while vegetables imports showed even bigger growth at an annual average of 7.1% over the 2012–2016 period.
- The two leading players among the GCC members states in terms of market size and trade figures are the UAE and KSA. The leading fruit and vegetables importing country is UAE with a share of 41% in total GCC imports. KSA follows closely with a share of 34%.

³ Please note: whereas all other trade data values in this report are in €, the GCC data are in US\$.

- Apples are the most important product imported into the GCC, fluctuating at approximately US\$0.5 billion annually. Other leading fresh products include oranges, almonds and bananas.
- Many products have shown strong import growth of more than 10% annually, especially bananas, pears, lentils, garlic, cucumbers and all kind of vegetables mixtures.

Table 15: GCC fruit and vegetables imports: 2012-2016
in US\$ million



* 2016 UAE, Qatar and Bahrain are mirror data
Source: Trade Map (2017)

Table 16: Leading fruit and vegetables products imported into the GCC: 2012-2016
in US\$ million

Fruit							Vegetables						
Code	Product	2012	2013	2014	2015	2016*	Code	Product	2012	2013	2014	2015	2016*
'080810	Apples	489	514	532	522	444	'070200	Tomatoes	221	213	273	316	341
'080510	Oranges	423	430	454	422	402	'070310	Onions	240	301	303	384	305
'080212	Almonds, shelled	250	285	364	406	318	'071340	Lentils (dried, shelled)	131	175	197	277	262
'080390	Bananas	161	317	354	391	275	'070320	Garlic	93	91	92	135	204
'080132	Cashew nuts	149	161	194	206	262	'070999	Fresh/chilled vegetables n.e.s.	83	166	177	201	192
'081090	Tamarinds	139	153	174	241	215	'071320	Chickpeas (dried, shelled)	123	128	109	129	169
'080550	Lemons	135	164	199	224	202	'070190	Potatoes	172	137	196	201	104
'080610	Grapes	152	184	192	229	195	'070610	Carrots	90	99	114	111	99
'080450	Guavas & mangoes	177	185	211	211	159	'070960	Capsicum	74	75	96	98	99
'080310	Plantains	77	116	138	171	134	'070511	Cabbage lettuce	56	64	81	97	87
'080520	Mandarins	79	114	136	131	115	'071080	Other vegetables, frozen	23	26	32	31	67
'081010	Strawberries	69	73	84	109	111	'071390	Other dried legum. vegetables	46	51	59	69	41
'080410	Dates	133	134	154	163	78	'071010	Potatoes, frozen	15	15	21	14	40
'080830	Pears	25	70	72	83	70	'071040	Sweetcorn	30	34	36	34	36
'080211	Almonds, in shell	44	54	56	51	65	'070410	Cauliflowers and broccoli	38	34	39	41	36
'080930	Peaches and nectarines	47	53	59	71	61	'071350	Broad beans and horse beans	34	38	44	38	32
'080711	Watermelons	59	57	76	86	52	'070700	Cucumbers and gherkins	10	13	13	16	27
'080940	Plums	35	46	47	61	51	'071090	Mixtures of vegetables, frozen	24	25	28	28	26
'080719	Melons	41	42	42	53	50	'070110	Seed potatoes	24	25	33	42	24
'081050	Kiwifruit	43	45	49	63	49	'070959	Mushrooms and truffles	20	37	6	36	23

* 2016 UAE, Qatar and Bahrain are mirror data
Source: Trade Map (2017)

Market access requirements in the GCC

The overall tendency is that the entire GCC region is following the global trend of stricter requirements, mainly driven by consumer protection through food safety. GAP and GMP certifications have become more common. Market access requirements and customs within the GCC have been harmonised. Governments set and enforce rules, while hypermarkets follow these rules without adding additional requirements. However, actors in the catering market have stricter specifications, including certifications such as GLOBALG.A.P., HACCP, BRC, IFS and others. The market for organic produce is small but growing, especially in the high-end markets in UAE and Qatar.

Additional information about market access requirements in GCC's largest market, UAE, include:

- Regulations on food safety and pesticides are set in the Food Safety Department of the Ministry of Climate Change and Environment. The law is based on benchmarks with other countries, following GCC guidelines. The two main requirements for imports into the UAE are:
 - a health certificate, i.e. phytosanitary certificate for fresh fruit and vegetables, based on WTO principles;
 - meeting pesticide MRL values, based on the Codex Alimentarius.
- Following these requirements, fruit and vegetables for the UAE market require the following documents:
 - packing list including product names, packaging methods, number of units and weight;
 - delivery order;
 - phytosanitary certificate: certain products require a special declaration, for example, tomatoes need to be free of *Tuta absoluta*;
 - pesticide analysis report on MRLs of a certified laboratory.
- Initial inspection is done by the Dubai Municipality Food Trade Control through document checks and physical inspection. In addition, the Ministry's Food Safety Department conducts random inspections on MRLs.
- For fresh fruit and vegetables from Lebanon, Jordan and Egypt, additional inspection by the Dubai Customs is required by default to check, for example, for metal and money.
- Products in transit to other countries undergo a document inspection only.

4.2.2 Segmentation and market trends in the Russian market

Russia is highly dependent on imported fruit and vegetables. Since the boycott on fresh fruit and vegetables from the EU and other countries in August 2014, the supplying landscape has changed drastically. In the year before the boycott (2013), Russia imported almost 8.5 million tonnes of fresh fruit and vegetables. After 2014, volumes dropped considerably, but since 2017 figures have been going up again, even for tomatoes and cucumbers, despite Russia's heavy investment in its own production capacity. For the time being, the boycott remains in full force, except for the 2017 lift for many Turkish products (www.freshplaza.com, 2018).

The 2017 import increase resulted in 7.1 million tonnes of imported fruit and vegetables, which is 17% more than in 2016. This partial recovery is firstly due to the return of Turkish products to the Russian market. A record volume of Ecuadorian bananas was also imported in 2017. Other relevant import countries for Russia include China, Egypt, Azerbaijan and Moldova. Russia also imported a record volume of mandarins, the second most popular import product — Russia is by far the most important destination country for mandarins. Russia's import volumes of all other regularly consumed products also rose in 2017. Import volumes of lesser-known products, such as kaki, garlic, watermelon, celery, avocado and mangoes, also reached record highs in 2017 (www.freshplaza.com, 2018).

Imports from Europe and the southern hemisphere peak in the period from October to May and are lowest in the summer when the market is full of cheap local fruits from Russia, Moldova, Ukraine and the Central Asian republics, as well as the Middle East. The largest Russian fruit suppliers are Ecuador (bananas), Poland (apples), Turkey (citrus fruits, grapes and stone fruits), China (apples, citrus fruits, stone fruits), Argentina (apples, pears and citrus fruits) and Chile (grapes) (IDAL, 2014).

Annex 7 shows import trade statistics for the Russian market over a nine-year period, by product and country of origin.

Strategic investments in local production

The most relevant strategic measure taken by Russia since the 2014 boycott is the increase of its own production of fruit and vegetables. With the help of foreign knowledge and technology, Russia is making huge investments in modern cultivation facilities, both in open fields and in greenhouses. An October 2017 article says, "Russia will eliminate the shortage of tomatoes on its domestic

markets within four to five years.’ The Minister of Agriculture, Alexander Tkachev, said in an interview. ‘We have laid the basis for 50 greenhouses with an investment programme. In four to five years, there will no longer be a shortage.’ The country is also working on having a complete domestic supply of apples, pears and grapes within the same time frame. The acreage used for these crops is steadily increasing.” (www.freshplaza.com, 2017).

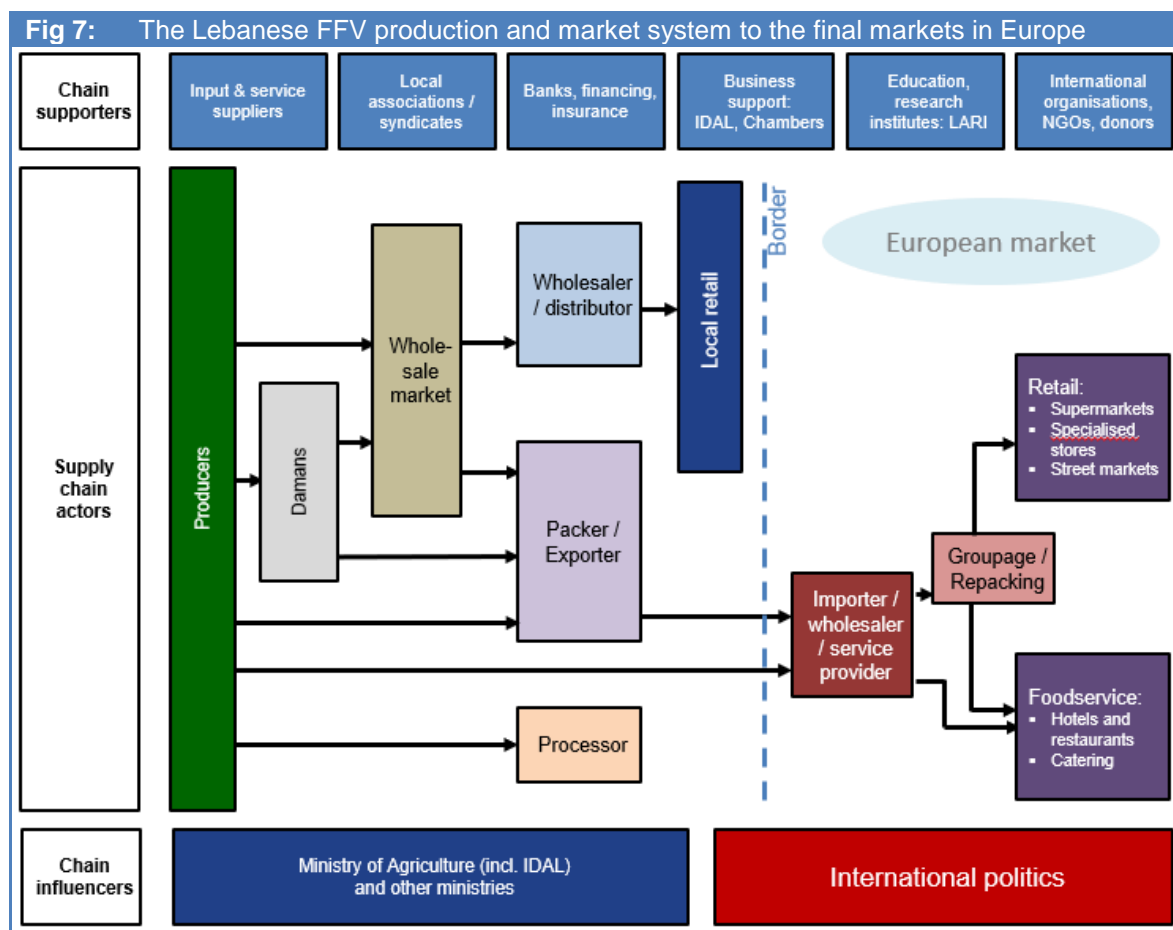
Russian company Growth Technology regularly publishes facts and trends in the Russian fruit and vegetables market. An April 2018 publication reported a strong increase in trade and consumption of greenhouse vegetables, namely tomatoes and cucumbers, in 2017: 13% more from domestic production and 11% more from imports. The interesting trend in these numbers is a division in the market between the traditional mass segment and the up-and-coming premium segment. In the mass segment, price remains the main buying proposition, but more and more consumers value taste, smell, colour, freshness and packing. Fancy products such as cherry tomatoes, cocktail cucumbers, peppers and even eggplants have been in the market for years, but their popularity has grown rapidly in recent years. Prices of these vegetable snacks are four to five times higher than mass products.

Market access requirements in Russia

According to *Fruit and Vegetables Market of Russia*, a 2014 publication by IDAL, an exporter looking at shipping to Russia should be included in the list of exporters approved by the Federal Service for Veterinary and Phytosanitary Control of Russia. The scheme of import and payment is sophisticated and requires indicative import prices, imposed by the Customs Office in Russia as well as a long chain of tax avoidance mechanisms. Exporters that do not comply with the formal and informal rules simply cannot deliver produce to Russia.

5 The Lebanese value chain to its end markets in a nutshell

This chapter provides a summarising, visual picture of the whole value chain of fresh fruit and vegetables, with all parties involved from the production in the fields in Lebanon to consumer level in the end markets in Europe and the Gulf region. Chapters 8, 9, 10 and 11 elaborate further on specific information for grapes, avocado, citrus and potato value chains.



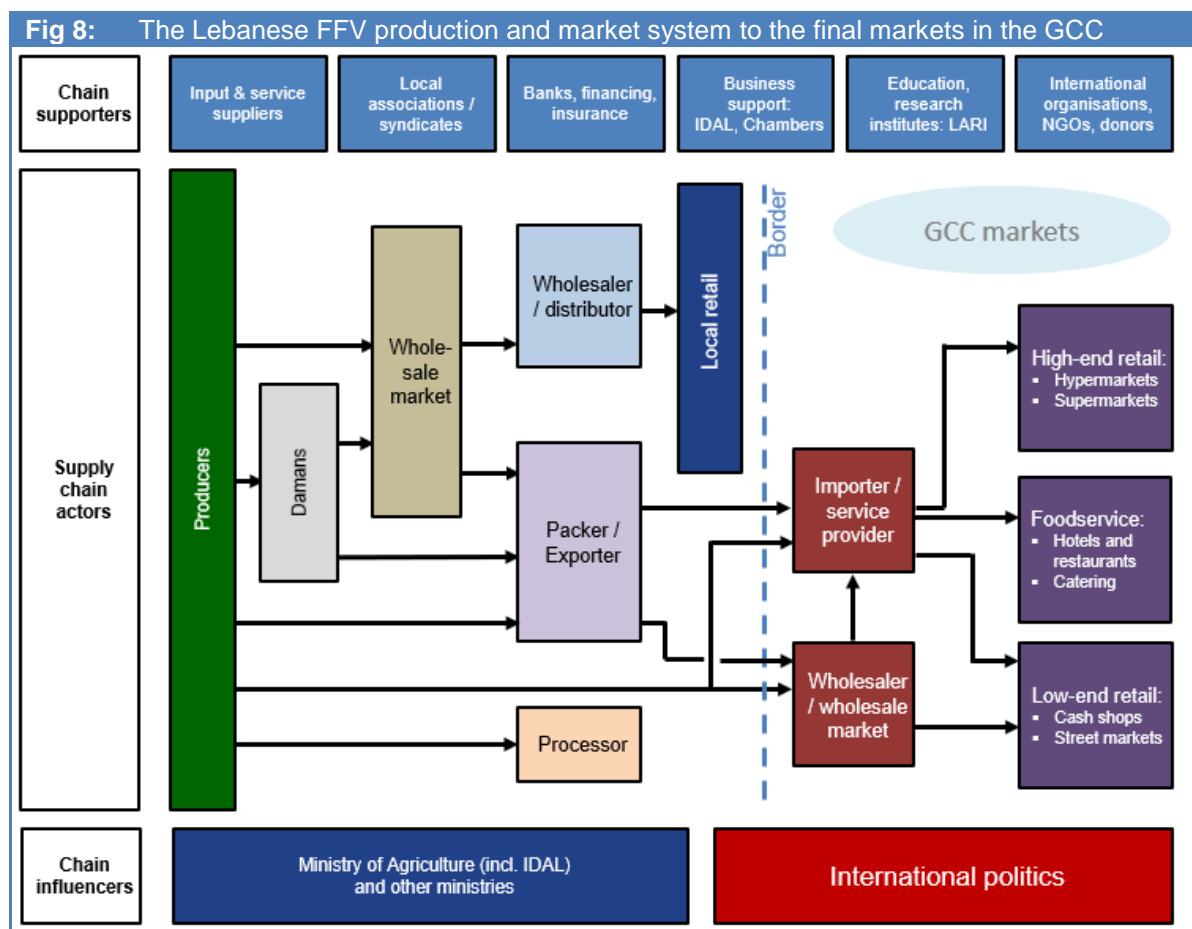
Bureau Leeters (2018)

There are not a lot of concrete figures about the importance of the various sales channels available and the importance of the channels also strongly differs per product:

- In the case of grapes, more than 80% of all grapes for the domestic market pass through the Ferzol market and go either to other urban wholesale markets, or directly to exporters and retail outlets. Production from small and medium-sized farms are often aggregated by a daman who sends the grapes to the wholesale market or directly to exporters.
- The Saida and Tyr wholesale markets are the main trading hubs for Lebanese avocado farmers and 'wood' damans. Few amounts are sold directly to other wholesale markets or exporters.
- In the case of citrus fruits, the vast majority is sold through wholesale markets in Saida, Beirut and Tripoli as well as other smaller wholesale markets.
- Potato farmers sell their products in wholesale 'spot' markets where farmers and traders converge to buy and sell products at a given period. Farmers do sell directly to buyers at their homes or farms. Farmers also sell through contracts to traders, exporters or processors.

In all end markets, importers are key partners. They are indispensable to gain and maintain access to retail channels. They often provide groupage and repacking services and act as exclusive service providers for retail chains and the emerging foodservice industry. In Europe, these importers also act as wholesalers, supplying the lower market segments, such as street markets, ethnic markets and lower-end supermarkets. (Fig. 7). In the GCC countries, central import markets

are an extra option for exporters to sell and distribute their produce. These wholesale markets focus on delivery of the low-end retail to small shops and street markets, but service providers for high-end retail and foodservice usually also buy in these markets (Fig. 8).



Bureau Leeters (2018)

6 Obstacles in the Lebanese fruit and vegetables sector

Various obstacles prevent sustainable exports of fruit and vegetables in general and exports to high-end markets in particular. Chapters 8 to 12 show product level obstacles in more detail. This chapter looks into general sector obstacles, clustered in the following four main themes:

1. **Pre and post-harvest practices:** operational practices and technologies in cultivation and post-harvest;
2. **Market and market access:** available market windows in the domestic and international markets as well as the capacity to access these markets;
3. **Export enabling environment:** the needs and demands of the private sector beyond the scope of individual companies. This section is divided in five sub-themes: institutional support structure and export-related services for SMEs, policies, laws and regulations for SMEs, availability of key inputs and technologies for SMEs, country and sector image and infrastructure;
4. **Corporate social responsibility:** transparent and ethical behaviour in the sector. This section is divided in three sub-themes: human rights with a special attention for immigrants and refugees, environment and transparency, and inclusiveness in value chains.

6.1 Pre and post-harvest practices

All along the supply chain, from planting and cultivation to product distribution and delivery, the sector shows the following obstacles:

- farming and post-harvest practices are small scale and below international standards:
 - varieties have a weak fit with high-end markets;
 - high-quality inputs are not widely available and have high prices;
 - the technology level and the sustainability level are low;
 - the overall productivity is low;
 - the end-quality is not consistent and the cost price is high;
- water availability, water quality and water efficiency are low;
- collection and price-setting mechanisms are inefficient and non-transparent, mostly because of the roles of damans and other middlemen, creating traceability challenges;
- harvesting (correct timing and handling), sorting, grading, packing and labelling are poor;
- small farmers have a weak position⁴; they often have limited access to technology, access to knowledge, access to finance and access to markets; several donor and NGO initiatives are organising small farmers in groups and aim to connect them with the market, but there are hardly any best practices yet;
- there is generally a weak culture for SMEs to cooperate and share information.

6.2 Markets and market access

The overall capacity to access and remain in high-end markets is weak:

- limited physical access to regional markets due to the Syria crisis border closures; alternatives have a higher cost price and take more time; some market windows in the GCC have been taken over by competing countries;
- pressure on the purchasing power in GCC markets due to the oil crisis, in combination with upcoming competitive power of other suppliers, especially since the Russia ban;
- same seasonality and production calendar of southern European countries for crops such as grapes, stone fruit, citrus fruits and potatoes, in combination with fierce competition in Europe, especially from Turkey, Syria, Egypt, Morocco and Southern Europe;

⁴ see in Annex 4 a further elaboration on this theme, including current practices and interventions.

- weak domestic market structures, no central national or regional crop and area planning mechanisms, leading to limited demand-oriented production schemes;
- SMEs have weak export management capacities and weak networks in high-end markets;
- weak market intelligence: exporters lack understanding of market needs, trends, requirements; there is also a mentality of 'we keep the best and export the rest';
- not much produce has the right certification to access high-end and niche markets; compliance with certification schemes is weak in all stages of the chain, including pre-harvest (e.g. GLOBALG.A.P., organic), post-harvest (e.g. ISO, HACCP, BRC) and CSR (various schemes);
- long shipping times to the EU, for example, no direct cargo flights to the Netherlands.

6.3 Export enabling environment

6.3.1 Institutional support structure and export-related services for SMEs

Many actors in Lebanon report that there are limited connections between the public sector and the private sector, also resulting in a lack of structural firm-to-firm linkages between the private sector and research and education. The quality and performance of practical research and extension are below the level required to support companies that have the willingness and drive to develop positions in high-end markets. Adequate practical education is missing, which results in lack of graduates with relevant skills and the right attitude. As a consequence, there are no mechanisms in place for joint policy development for improvements of all stages in the supply chain. There are no effective public-private partnerships that contribute to both improved infrastructure, such as investments in production technology and cold chain, and an improved knowledge infrastructure.

The four chambers of commerce under FCCIAL have the mandate to support the private sector towards more professionalism and international competitiveness. They have a strong commitment and willingness, as well as excellent relationships with the government and businesses, but they lack sufficient staffing and funds to offer all the required services.

The overall conclusion of the assessment is that the chambers do not have enough capacity yet to define and implement significant export development activities to support the private sector. This has to do with their position as an administrative service provider, mandated by law, rather than a commercial service company.

IDAL is more or less in a similar position. Based on its mandate, it has a role in strengthening export competitiveness of SMEs and therefore it provides various financial and fiscal services as well as export promotion support. Fruit and vegetables exporters are familiar with IDAL's financial incentives to compensate for the higher costs of maritime shipments due to the land border closures with Syria. However, IDAL lacks sufficient funds and staff and does not have a good reputation, due to its bureaucratic style. All exporters have complaints about late payments, some delayed for more than three years.

Various other sector organisations, such as syndicates, associations and cooperatives, play a role in fruit and vegetables value chains. Most exporters belong to the Fresh Fruit and Vegetables Export Syndicate or the Potato Exporters Syndicate. The mandate of these syndicates is in the field of lobby and advocacy before the government. They do not offer services to individual companies and do not show leadership in the sector. The same applies to the associations and cooperatives: most lack good governance and adequate service delivery and they do not contribute to integration of the public and private sectors.

6.3.2 Policies, laws and regulations for SMEs

Lebanon is still in the recovery process from years of civil war and still faces a rather unstable political situation, heavily influenced by regional developments. An open and transparent economy is not yet the case. In the years 2014–2016, Lebanon didn't even have a president. In late 2018, several months after general elections in May, the process to come to a new government was still not finished. The shift from military power to service in the public sector, goes together with political control of public institutions, mistrust and corruption. Many public institutions are still faced with

problems in budget approval. In various fields of the economy, legislation is in place, but there is no adequate enforcement capacity.

Against the background of the post-war recovery effort, characterised by mistrust, corruption and inefficiencies in government spending, the public sector does not have the vision, capacity and the funds to strongly support the sector in building and expanding its export performance. There is no clear national vision on agriculture and no national export marketing strategy. The regulatory frameworks to ensure compatibility with high-end market requirements are also limited due to:

- weak national legislation on product quality (classification, quality standards, minimum quality, packaging, labelling);
- weak framework for sanitary and phytosanitary (SPS) monitoring and control;
- no accredited lab for MRLs, recognised in high-end markets.

In summary, the degree of export-friendliness is low, affecting the efficiency and the costs of companies in their export business.

6.3.3 Availability of key inputs and technologies for SMEs

Although inputs for cultivation of crops and packaging of harvested products are available, there are some missing links that inhibit the sector to modernise:

- due to the small scale of the sector, the availability and distribution of high-quality inputs, equipment and technologies are limited and the prices are high, namely for high-quality fertilisers, pesticides, plastics, other staples and machines;
- availability and quality of equipment for refrigeration during the storage and transportation phase in the supply chain are low and prices are high;
- certifications for GAP and GMP schemes are costly due to the small Lebanese market;
- banks and microfinance institutions are not supportive in access to high-quality inputs and technology because they do not offer competitive finance schemes.

6.3.4 Country and sector image

Many actors in the Lebanese agricultural sector consider the climate and soil in their country as major assets, resulting in agricultural products with a splendid taste and aroma. Together with a rich cultural history in food, the Lebanese cuisine and its fruit and vegetables have a good reputation all over the Middle East and beyond. However, these positive aspects are not at all a guarantee that Lebanese fruit and vegetables are well-known and highly demanded in international trade. Due to its small scale and little presence in the European market, Lebanon does not have an image at all amongst European buyers, many of which are unaware of the country's export products. To the contrary, many Europeans have the perception that Lebanon is a dangerous country and that doing business with Lebanon can be risky. In all export destinations, this image could be much stronger if there were a vision and an action plan on positioning and branding.

6.3.5 Infrastructure

The state of the physical infrastructure in Lebanon (roads, ports and airport) is reasonable, not negatively affecting the costs of transport and the competitiveness and capacity to export. The same counts for the IT infrastructure. However, the border closures with Syria has had a huge impact, heavily lowering the country's competitiveness, due to inefficiency and increased costs.

Almost all Lebanese fruit and vegetables have a perishable character. The weak cold chain infrastructure in the country causes many post-harvest losses and pressure on competitiveness. The main room for improvement is in storage and handling facilities in the ports and in the level of cold chain management in the sector.

6.4 Corporate social responsibility

CSR, also known as social responsibility (SR), refers to corporate responsibility toward 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, animal and plant health, the environment and the welfare of society.

6.4.1 Human rights

A major factor affecting activities in the Lebanese fresh fruit and vegetables sector is the huge number of immigrants in the country. Lebanon currently hosts one million refugees, mainly Syrian but also Palestinian refugees, among a general population of about four million.

- FAO (2015) reports that one of the main consequences of the Syrian crisis on the Lebanese labour market is the increase in labour supply leading to more competition for jobs and a rise in unemployment in Lebanon. As a result, according to qualitative data, many people are choosing to relocate to urban areas or, in some cases, foreign countries in search of job opportunities. This is confirmed by CSR LEBANON (2018): the excess in the labour force directly impacts job opportunities which, in turn, decreases income and salary margins.
- FAO (2015) also reports cases of Lebanese employers hiring Syrians over other groups, as they are willing to accept lower standards of working conditions and benefits. "Syrian labour costs less than Lebanese or Palestinian labour. Lebanese and Palestinians demand 30,000 LBP per day, while Syrians ask for 25,000 LBP per day for any agriculture activity." Actually cheap Syrian labour helps farmers and traders. From a rational viewpoint, this situation creates opportunities for the agricultural export sector, because growth of export volumes will create employment for both Lebanese labour as well as Syrians.
- The European Commission (2016b) reports that the high level of informality in the Lebanese economy does not facilitate the integration of Syrian refugees into formal labour markets. Conversely, the refugees' prevalent skills profile, in combination with policy choices, favours a further expansion of the informal sector. Around half of the Lebanese economy operates on an informal basis. The reasons behind this high degree of informality are related to significant bureaucratic hurdles and the excessive costs that local businesses face to formalise their activities, as well as limits to the reach of the state in general, which implies low risks to informal businesses of being caught. While informal work may provide a living for people who might otherwise be shut out of the productive process, the negative consequences are manifold: fiscal evasion, lack of enforceability of basic health and safety standards, as well other working conditions. The Syrian refugee population of working age, who have a low average level of educational attainment and skills, naturally ends up in informal employment. Policies restricting their access to formal employment reinforce this trend.
- The majority of work is seasonal, commonly from spring to the end of the autumn. More than 80% of the refugees report that they receive no compensation before the season ends. It is common for them not to have written contracts, to work more than 12 hours per day, 6–7 days per week, without paid sick-leave and maternity leave. Not being registered and being illegally employed, they are not provided with social security, having to pay for their medical treatment even when they experienced work-related injuries. Refugees are also at risk of paying a fine of LBP100,000 to the local municipality if they are caught working with an unwritten contract. Having no contract removes the employer's responsibility over their employees, who are usually 'contracted' through a middleman (*shawish*). Hence, there is little traceability to fine employers, especially when they have close ties with municipal officers turning a blind eye (CSR LEBANON, 2018).
- Unions, syndicates and other interest and pressure worker groups are weak in Lebanon. Workers have a clear misunderstanding of Lebanese law and the protection it may bring them. Most of the syndicates and unions are influenced by political parties. The weak influence of syndicates on working conditions is one of the factors contributing to discrimination, child labour, corruption and unethical conditions (CSR LEBANON, 2018).
- Child labour happens commonly. In compliance with Lebanese national law (decree 8987) and ILO, entering the job market is limited to individuals above 14 years for soft labour and 18 years

for hazardous work. Due to poverty and the war in Syria, education is sometimes almost absent. Many children enter the field of agriculture at a very young age, sometimes as young as five years old (FAO and ILO, 2017; CSR LEBANON, 2018). Another reason behind child labour, which also falls under corruptive practices, is the middleman (*shawish*), who provides employers with workers on commission-based agreements, where he or she recruits mostly refugee children and women as cheap labour for financial benefit. This middleman is often politically affiliated with a party which is dominant in the area, further exposing the extent of corruption and abuse.

- Even though forced labour is not present in this sector, unethical and corrupt practices are highly prevalent. Refugee labour is over-exploited with a predominant gender wage gap. Vulnerable groups, including children and women, are prone to verbal and physical harassment by employers. These individuals fall under a dilemma of either being discriminated against or getting kicked out if they file a complaint (CSR LEBANON, 2018).
- MVO Nederland, the Dutch national knowledge centre and network organisation for CSR, lists under its CSR Risk Check tool nine risks under the labour rights theme and four risks under the human rights and ethics theme. Most of the following risks are present in the fruit and vegetables sector:
 - Unethical and corrupt practices are not acceptable in formal, high-end markets, such as Europe. The weak legal position of workers, especially refugees, their unsatisfactory working conditions and lack of social security make it difficult for Lebanese exporters to reach compliance with certification schemes attesting absence of those factors;
 - The same applies for discrimination and gender aspects, since women have less economic participation and opportunities;
 - The lack of freedom of association and to an even greater extent, the fact that markets do not accept child labour, is a major obstacle for Lebanon;
 - In the government influence category, referring to political rights and civil liberties, Lebanon is ranked as a “severe risk” country on the Aon political risk map, at risk level 5 on a 1-to-6 scale (MVO Nederland, 2018).

6.4.2 Environment

CSR LEBANON (2018) uncovered various obstacles in the sector related to the environment:

- There is misuse and mishandling of agrochemicals (e.g. Aldrin, Chlordane, DDT, Dieldrin, Endrin, Heptachlor, Hexachlorobenzene (HCB), Mirex, and Toxaphene), affecting farmers, their workers and children, consumers and the land itself. It is worth noting that there is a conflict between the Ministry of Agriculture and the Ministry of Health (MoH) on the type of pesticides used.
- Biodiversity is under pressure, resulting from climate change, new types of pests and diseases, fire, urbanisation and intensive agriculture. The fast-changing market demands for different crops cause farmers to encroach on variables impacting biodiversity. Due to poverty in rural areas, communities are forced to cut down trees to use them as raw material for heat.
- Climate change affects water resources. For the past few years, rain water has dramatically decreased, subsequently lowering the amount of water accumulated in wells. Resources are also affected by poor irrigation systems and residues of chemicals leaking into groundwater, due to lack of knowledge and technology regarding cleaning and recirculation. Water resources, instead of being recycled and reused are evaporated and wasted.
- Waste products take their toll on the environment. Pesticides and fertilisers can potentially kill animals if left untreated. Moreover, plastic causes pollution and threats. Recycled plastic used in packing houses is not appreciated since it affects the quality of the products.
- MVO Nederland's tool CSR Risk Check lists seven environmental risks, which are relevant for the fruit and vegetables sector:
 - The use and mishandling of agrochemicals affects human health (farmers, workers, children, consumers) and the land itself through soil and groundwater contamination. The risk of freshwater scarcity increases.
 - Biodiversity is under pressure, resulting from climate change, new types of diseases, fire, urbanisation and insensitive agriculture systems.

- Hazardous waste products such as pesticides, fertilizers and plastic, take their toll on the environment and become an increasing risk factor for the sector.

6.4.3 Value chain transparency and inclusiveness

- Farmers have a weak market position. Their arrangements with exporters are commonly based on loose conditions, often not even on commission-based terms. They will not experience an exponential growth income when the demand for their product rises. When it comes to export, some exporters have full control over farmers and their production.
- Women have proven (CSR LEBANON, 2018) less economic participation and fewer opportunities in the agricultural sector than men.
- The agricultural sector is not very attractive for the new generation, so we see an unequal participation of youth in the sector.
- MVO Nederland's tool CSR Risk Check lists two risks under the theme fair business practices:
 - The weak market position of small farmers, their dependency on middlemen, traders, and exporters, the loose and not transparent arrangements with buyers, will not allow them to benefit when the demand for their product rises;
 - The unequal position of women in the sector and, to a lesser extent, the low participation of youth in the sector, also form risk factors for the credibility and sustainability of the sector.

7 Impact analysis

This chapter analyses and describes the impact of the various obstacles to the performance of the Lebanese fruit and vegetables sector, according to the same themes from chapter 6. Note that this chapter refers to the entire fruit and vegetables sector. Chapters 8 to 12 provide product specific impacts in more detail.

7.1 Pre and post-harvest practices

The obstacles and weaknesses along the whole supply chain, from planting and cultivation to product distribution and delivery, affect the competitive power of the Lebanese fruit and vegetables sector enormously. Not many farmers and exporters are able to produce adequate volumes and qualities at available windows for high-end markets at competitive prices. Moreover, hardly any produce is yet compliant with international standards, such as GAP and GMP. Without these certifications, it is virtually impossible to export fresh produce to the EU. The weak position of small farmers, the absence of a culture to cooperate and the lack of capacity and means of exporters to manage the production chain according to high market standards, makes it difficult to find ways up and to compete with other supplying countries. International buyers, especially in the high-end markets such as Europe, have sufficient alternatives to purchase their fruit and vegetables and do not take Lebanon serious enough before they live up to the required international standards.

7.2 Market and market access

The overall weak capacity of the Lebanese fruit and vegetables sector to access and remain in high-end markets is partly caused by unchangeable limitations — same seasonality as Southern Europe — logistical factors too difficult to change — long shipping times to the EU — and by the political situation in the region, resulting in physical border closures and pressure on buying power in regional markets. Apart from these external factors, the weak capacity to market has mainly internal causes, including weak domestic market structures, absence of demand-oriented production schemes through vertical cooperation, weak market intelligence and weak export management capacities at SME level. Against the background that international competition is fierce, the impact of all these negative factors is that Lebanon does not fully use its potential resources. Exports did not develop well in the previous years and some market windows in the GCC have been taken over by competing countries. International buyers assess Lebanon on the capacity to deliver products that meet or exceed the quality of produce of competitors at preferably similar or lower prices. That is not yet the reality.

7.3 Export enabling environment

7.3.1 Institutional support structure and export-related services for SMEs

Limited connections between the public and private sector, weak participation of research and knowledge institutions in value chains, an overall insufficient level of practical education and a weak coordination of international interventions, result in the absence of a common private-public agenda to improve the physical infrastructure (production technology and cold chain) and the supportive knowledge infrastructure. Government institutions and BSOs, such as the chambers of commerce, IDAL and syndicates, do not have the right governance and capacity to define and implement significant export development activities and they are not offering useful export-related services for SMEs. All these factors negatively influence the performance of the sector, simply because the private sector does not have access to adequate services. At the same time, this situation does not contribute to the trust and confidence of private stakeholders in the public sector.

7.3.2 Policies, laws and regulations for SMEs

SMEs in the fruit and vegetables export business suffer from the still unstable political situation, the lack of transparency, focus and funds in economic development, the high bureaucratic hurdles and the inefficiencies in government spending. All of this result in export unfriendliness. The absence of a clear national vision on agriculture, the lack of a national export marketing strategy and the weak

national legislation on product quality and SPS heavily affect SMEs, leading to low efficiency and high costs in their operations. They do not get actual support, contributing to their impression and attitude that they are on their own to move forward. Lebanese SMEs tend to ignore the public sector, which contributes to the growth of the informal economy.

7.3.3 Availability of key inputs and technologies for SMEs

There are some missing links in the availability of high-quality inputs and services for competitive prices, mainly due to the small scale of the sector. This factor inhibits modernisation of the sector. However, it does not have a dominant negative impact on the sector's development. The fact that the overall access to competitive financial services is limited plays a more crucial role, as it prevents companies from modernising or expanding. More importantly, various donor interventions in the fruit and vegetables sector offer the introduction of new technologies, inputs, knowledge and the financing thereof as part of their support packages.

7.3.4 Country and sector image abroad

Many actors in the European market and even in regional markets are unaware of Lebanon's potential and its actual export assortment. Regional conflicts in the past few decades even result in the perception in Europe that Lebanon is a dangerous country and that doing business with Lebanon can be risky. The current image of the country is not a knockout factor preventing business, but it is enough to provide reasons to invest in the image, positioning and branding of Lebanon as a competitive fruit and vegetables supplier of certain niche products. Any positive attention for Lebanon's assortment will contribute to ease the country's business image and distract from the negativity of the conflicts in the region. Strong country branding also supports the marketing activities of individual entrepreneurs and makes it easier for exporters to sell their products.

7.3.5 Infrastructure

Two infrastructural aspects heavily affect the export performance and competitiveness of the fruit and vegetables sector. First, the regional conflict and the border closures with Syria result in inefficient, extended delivery times and increased costs. Second, the weak cold chain infrastructure causes a low level of cold chain management capacity. Whereas the first aspect is influenced by external, international and political factors, the second aspect (cold chain) inevitably requires attention as it causes a negative impact on the Lebanese competitive position in the long term. The absence of a closed cold chain from harvest until exportation with adequate storage facilities reduces the time exporters have to deliver their products and increases post-harvest losses. All these factors have direct impacts on the economic results of all the actors in the value chain.

7.4 Corporate Social Responsibility

7.4.1 Human rights

The high number of immigrants in Lebanon causes an increase in labour supply which is leading to more competition for jobs and a pressure on labour conditions. On the one hand, employers in the fruit and vegetables industry are able to find cheap employees and have no problems filling seasonal labour peak needs. On the other hand, pressure on employment causes a number of negative issues, such as a deterioration of working conditions, limited social security, severely low wages and the use of child labour and unethical practices. In fact, the impact of human rights issues on the fruit and vegetables sector is twofold. First, it inhibits healthy development of the sector. The existing political and economic scenario favours the informal sector, which tends to become more important than the formal sector. Second, these practices are unacceptable in the export business, as CSR compliance is typically part of the standard access requirements to many markets. Without CSR compliance, international importers and retailers will simply move to other suppliers.

7.4.2 Environment

Against the background of climate change and pressure on the economy, care for the environment is not high enough on the agenda, resulting in incorrect practices involving agrochemicals and waste, as well as pressure on water resources and biodiversity. Just as it is the case with the human rights and CSR themes, the impact is twofold. First, these factors inhibit the healthy and sustainable development of the agricultural sector and even the entire Lebanese society in the long term. The most evident issue is the occurrence of a range of human illnesses and diseases, from respiratory problems to cancer, even if some of the worst chemicals are banned, at least on paper. The misuse of chemicals affects farmers, workers, children, consumers and the land itself. Second, care for the environment is a growing item among the list of market access requirements. In some markets, it is practically a license for doing business in fruit and vegetables. Without more attention to the environment, compliance with international standards will be impossible.

7.4.3 Value chain transparency and inclusiveness

The weak market position of small farmers, evidenced by their dependency on middlemen, traders and exporters, as well as the unequal position of women in the sector and, to a lesser extent, the low participation of youth in the sector, are risk factors for the economic sustainability of the sector. There is no immediate, short-term negative impact on the performance of fruit and vegetables value chains. Nevertheless, a more balanced participation of stakeholders in value chains should be higher up on the agenda. These points have a clear relation with CSR market standards, but they are not the most crucial issues in the eyes of international traders and retailers, compared for instance with working conditions and the environment. In other words, they cause only a moderate impact on the export capacity of fruit and vegetables in the short term, but it is important to address the theme in the long term.

8 Table grapes

Lebanese table grapes are already available in various export markets and are among the products with the highest potential to reach a strong name and a sustainable position. This chapter elaborates on the characteristics of the table grapes market in the EU market, the obstacles in the sector and the opportunities for Lebanon to develop sustainable trade to Europe and other markets. This chapter builds further on sections 3.4 (Structure and governance in the Lebanese fruit and vegetables value chains), 6 (Obstacles in the sector) and 7 (Impact analysis).

8.1 End markets and competitiveness

According to USAID (2014), grape exporters and importers frequently under-report quantity and value of grapes in trade. Comtrade and Trade Map data show unreasonably low volumes, values and average prices. Still, the figures can be used to infer ideas of trends and relative importance.

Lebanese table grapes are known worldwide for their quality, flavour and superior taste. According to 2014 statistics, Lebanon ranks 52nd worldwide, producing 80,588 tonnes annually and exporting at least 24% of it (USAID 2018d). Exports have been growing steadily to more than €5 million per year. Saudi Arabia is the traditional leading destination, taking up about one fifth of Lebanese table grape exports. Exports to Germany and the UK have been increasing steadily in recent years.

Lebanese main table grapes varieties are Baytamouni, Tfeifihi, Maghdushi, Jbaai, Globe seedless, Early Superior seedless, Black Pearl, Red Globe.

Lebanon is in the centre of the area where grapes first originated. Table grape is planted nationwide between the coastal area and 1,600 m altitude. The most important areas of production are the Bekaa and Akkar. Cultivation is facilitated by the local climate, including a long period of sunny days over the year, fertile soil and adequate averages of rainfall, which ensure the appropriate Brix degree.

Seasonal availability: from June to February.

Source: Ministry of Agriculture – Brochure ‘Lebanese Fresh Fruit and Vegetables’ (2016)

The main varieties of Lebanese grapes in the GCC are traditional Arab ones, including: Vitamouni and Halawani (also known as Baytamouni and Tfeifihi), in addition to a growing volume of the relatively new variety Red Globe. High-quality exporters also sell new varieties such as Black Pearl, Thompson Seedless, Crimson, Diamante, Early, Flame and Big Muscat seedless. In GCC markets, these grapes are sold at a price premium compared to grapes from Italy, Brazil and other countries (USAID 2014b). Lebanese grape exports to GCC countries are not typically branded, except for the highest quality grape exports from the few most advanced integrated exporters (USAID 2014b).

Table 17: Lebanese exports of fresh grapes: top-10 export destinations
In €1,000

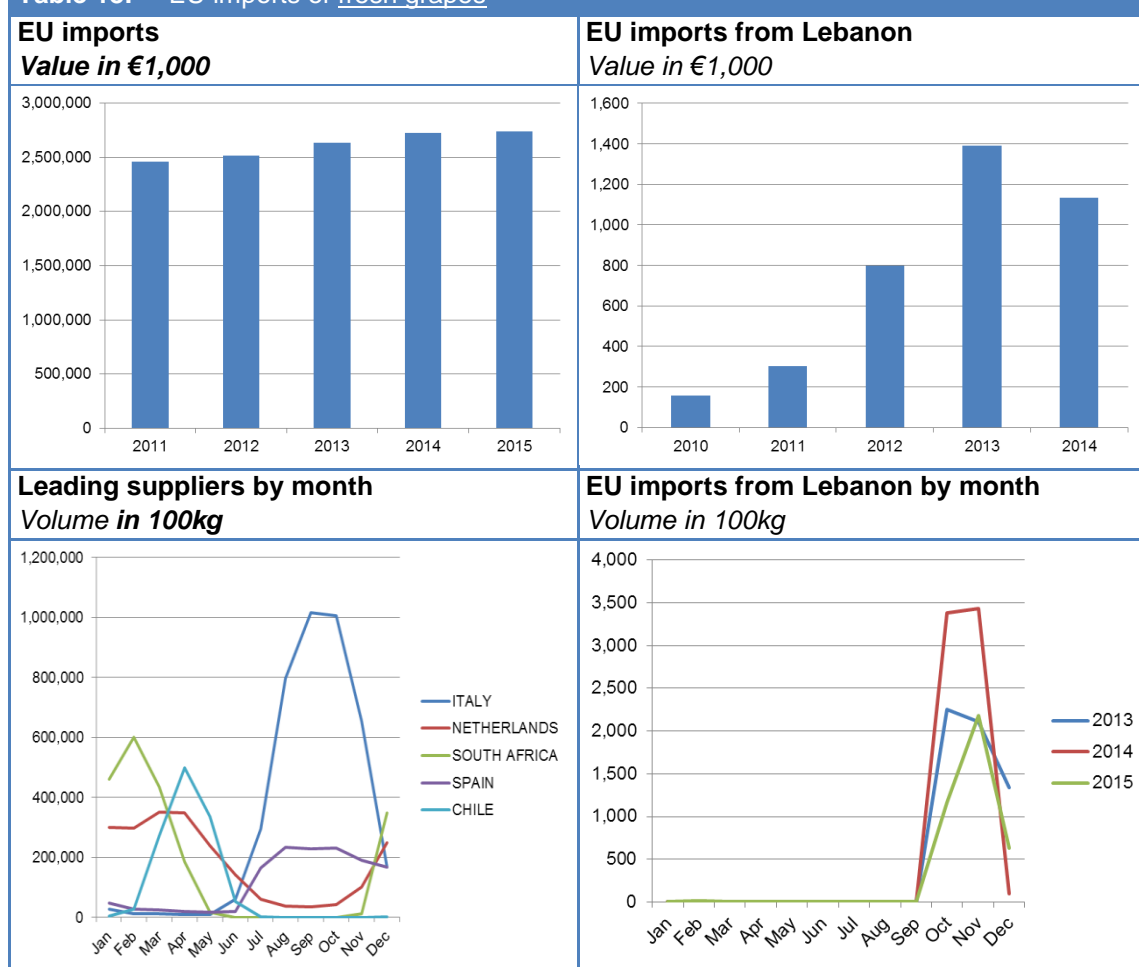
	2010	2011	2012	2013	2014
World	3,465	3,248	5,219	5,381	5,508
1. Saudi Arabia	1,005	864	1,481	1,465	1,331
2. Germany	-	-	592	1,166	591
3. Iraq	13	25	19	289	543
4. United Kingdom	93	185	164	226	509
5. Sudan (North + South)	675	452	484	418	460
6. Oman	135	170	292	261	396
7. Kuwait	183	209	294	250	334
8. United Arab Emirates	169	212	605	387	268
9. Egypt	295	108	305	200	257
10. Qatar	201	284	315	245	206

Source: Trade Map (2016)

The EU grapes market

- In 2015, the EU imported 1.6 million tonnes of fresh grapes at a value of almost €3 billion, of which €863 thousand from Lebanon.
- The leading suppliers of fresh grapes to the EU markets are Italy, South Africa, Spain and Chile.
- Fresh grapes are available year-round with imports fluctuating between €150 and €300 million per month throughout the year. The year typically starts with South African grapes in the winter, followed by Chilean in spring and Italian and Spanish at the end of the European summer.
- The Netherlands is an important importer and re-exporter of fresh grapes.
- The Lebanese export season to the EU, mainly to Germany and the UK, coincides with the Italian and Spanish supply season. The grape varieties planted in Lebanon ripen between July and November, and the peak harvest period is in September and October. The ripening schedule varies by production region and variety.

Table 18: EU imports of fresh grapes



Source: Eurostat, Trade Map (2016)

Lebanese grapes in the EU

Seedless grapes by far have the highest preference in the European market. Seedless grapes from Lebanon have been available in the market for several years, imported by Dole Europe GMBH in Germany and by others. Supply fluctuates and depends on the European season. For instance, the main reason for having many grapes from Lebanon in October 2016 was due to the early ending of the European season as a result of the heavy rains in October in Greece and Italy. Importers consider that the Lebanese Crimson seedless in October comes too early, coinciding with the still abundantly available European produce. Crimson seedless is one of the later harvested varieties in the production regions. Good quality, adequate packaging in punnets as needed for supermarkets and compliance with various certifications, are preconditions for market entry of Lebanese grapes. Still, competition from European suppliers remains fierce.

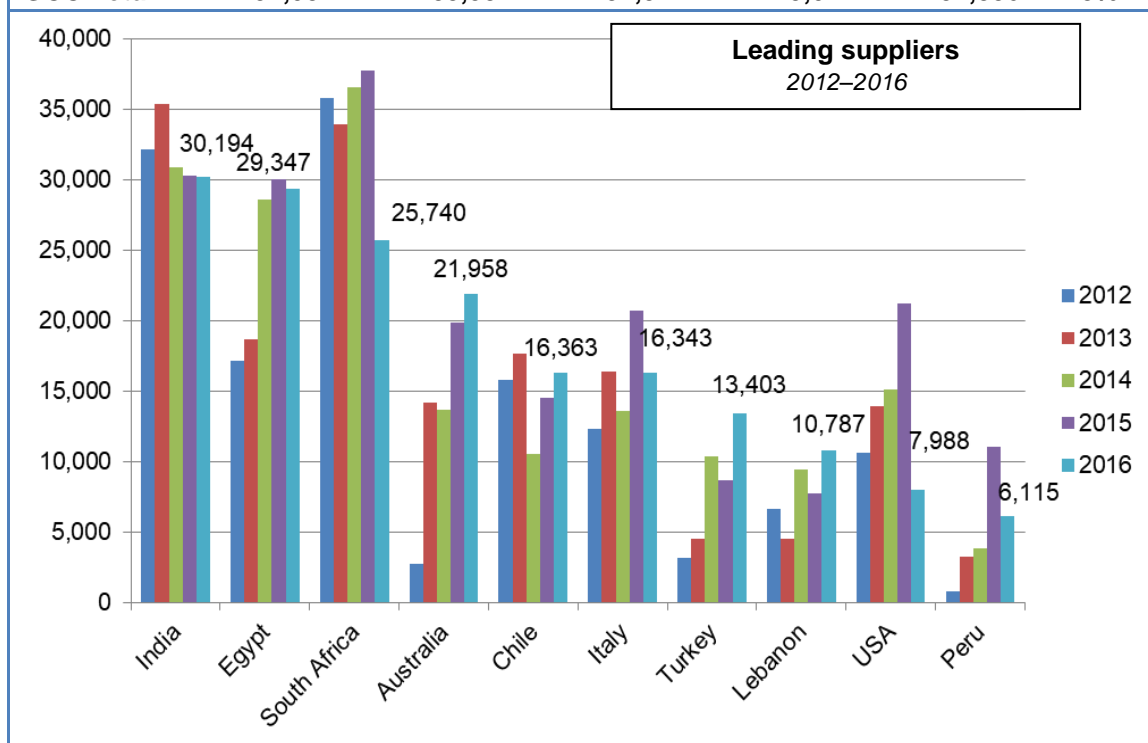
Only one Lebanese exporter currently meets all of the access requirements, having full control of production and post-harvest practices and thereby guaranteeing quality. This is the one exporter in Lebanon that has the capacity to send grapes to Europe. Two other promising, market-oriented initiatives are expected to come on the market with suitable volumes and the right varieties in the coming years.

The GCC grapes market

The demand of grapes in all GCC markets is typically year-round. GCC consumers appreciate the varieties by their sweetness and consumers are willing to pay more for bigger berry sizes and sweeter grapes. American grapes meet these exact requirements and fetch high prices. The leading suppliers are India (November–May), Egypt (May–October) and South Africa (late October–April). Turkey (June–December) exports rather high volumes, but for low prices. The position of Lebanon is modest, though it is growing.

Table 19: Grape imports into the GCC
In US\$1,000

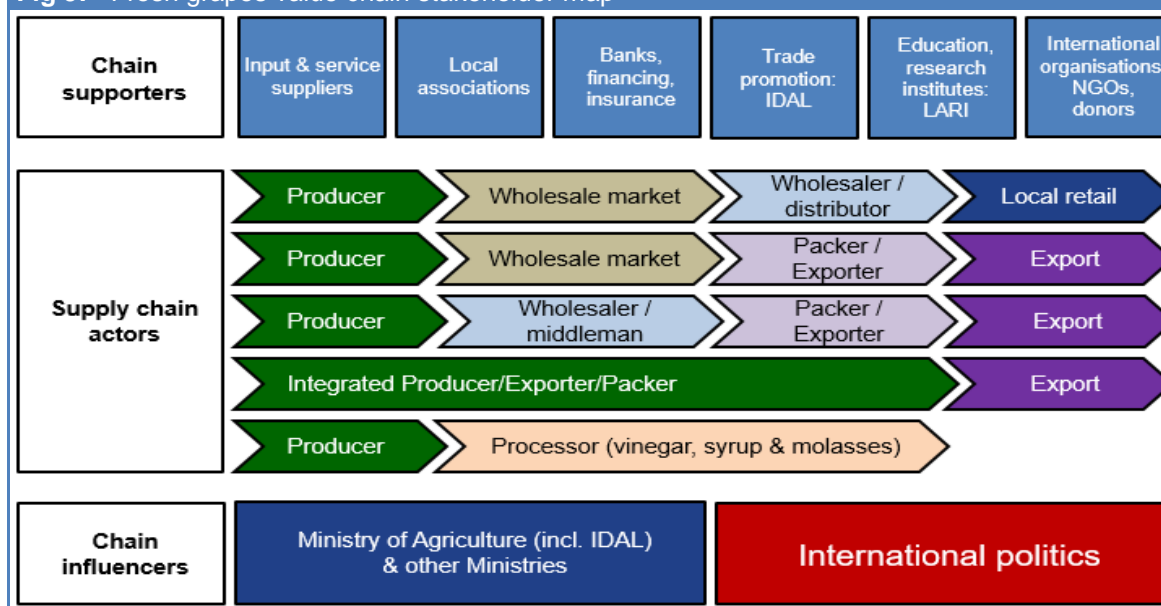
	2012	2013	2014	2015	2016	Average annual change
UAE	78,352	95,563	97,654	111,818	84,833	2%
Saudi Arabia	43,897	54,509	50,991	67,894	68,708	14%
Kuwait	12,238	11,764	15,534	18,886	19,718	15%
Oman	8,854	10,717	17,527	16,018	11,747	8%
Bahrain	3,355	5,374	6,278	7,701	6,908	26%
Qatar	5,391	5,657	4,328	6,725	5,972	3%
GCC Total	152,087	183,584	192,312	229,042	197,886	8%



Source: Trade Map (2017)

8.2 Value chain structure and governance

Fig 9: Fresh grapes value chain stakeholder map



Source: Bureau Leeters & ProVerde (2016)

8.2.1 Chain actors

Producers

- Grape production in Lebanon has averaged around 120,000 tonnes annually since 1997. Grapes are grown in all regions, with larger grape farms concentrated in the Bekaa. The main areas of commercial grape production in the Bekaa are Qaa, Zahle, Ferzol, Baalbek, Niha and Kfarmishki. Average commercial yields are 16 tonnes per ha for table grapes and 6.8 tonnes per ha for processing grapes (USAID 2014b). Modern practices recently introduced by a few producers in the Bekaa reach higher yields of up to 35 tonnes per ha.
- In recent years, there has been a growing trend to plant varieties that are in high demand in local and export markets. Grape production is expanding into new non-traditional areas such as the extreme north of the Bekaa valley and deep in the South. The expansion into the South is important in lengthening the export window of Lebanese grapes (USAID 2014b).
- USAID classifies commercial farmers based on farm size. Small-scale farmers cultivate between three and 15 dunams, medium-scale farmers between 16 and 70 dunams and large-scale farmers over 70 dunams. Just over 80% of farmers are small-scale, 17.3% of farmers are medium-scale and 2.3% are large scale farms or mega-farms of over 250 dunams. Although there are only 11 mega farms, these farms claim over 50% of all grape land. Large-scale operations serve export markets, whereas the domestic market is served predominantly by small and medium-scale farmers (USAID 2014b).

Wholesale markets

- The most important market for grapes is Ferzol in the Bekaa, which specialises in grapes and cherries. Over 80% of all grapes for the domestic market pass through Ferzol and go either to other Lebanese wholesale markets or directly to exporters and domestic retail (USAID 2014b).

Wholesalers and distributors

- Wholesalers and distributors buy from wholesale markets and from importers, then distribute to the retail market, restaurants and catering operations on a regular schedule. Those who sell to fresh fruit and vegetables stores and small groceries, usually cover five to six of these stores. The distribution mark-up is 10%-15% (USAID 2014b).

Packers and exporters

- There are 12 major table grapes packers and exporters in Lebanon. These actors are divided into two categories: those that have their own in-house production of grapes and those that only pack and export the production of others (USAID 2014b).
- Sales to the GCC and other Arab countries are for the most part made through wholesale markets. GCC importers typically work for major retail chains and purchase at firm fixed price orders. They have a strong preference for exporters that have an established track record and with whom they have built a relationship of trust (USAID 2014b).
- In volume, the majority of grape exports flow to GCC countries. Only one company has gained consistent access to European markets (USAID 2014b). Most other connections with EU importers have merely resulted in ad hoc trade.

Processors

- Processors play an important role in the value chain, as they purchase table grapes that are not suitable for sale and process them into vinegar and grape molasses. Grape vinegar is a low-value product, whereas grape molasses, which was traditionally used as a natural sweetener, can claim relatively high prices. It is estimated that 1,200 tonnes of grapes are used to produce grape molasses, producing 200 tonnes of molasses annually (USAID 2014b).

8.2.2 Chain supporters

Input and service suppliers

- Rootstock and planting material: nurseries provide grape rootstock and planting material. The genetic material for grapes is usually imported by large grape farmers and specialized nurseries from the EU and USA. Getting plant materials is not a problem for farmers (USAID 2014b).
- Chemicals and fertilisers: there are many suppliers of fertilisers and pesticides for grape production in Lebanon, with over 75 registered in the Bekaa alone (USAID 2014b).
- Cold storage providers: there are 13 major cold storage facilities located in the Bekaa that cater to the grape industry. The majority of the facilities is inadequate in terms of capacity and quality of refrigeration (USAID 2014b).

IDAL's AGRI PLUS programme

- In contrast to grape farmers, grape packers and exporters are eligible for export subsidies under IDAL's AGRI PLUS programme, which subsidises packaging and transportation to help exporters to be more competitive against other grape exporting countries in the region that enjoy considerably lower transportation costs due to subsidised fuel. The programme also encourages farmers to upgrade agricultural practices and improve packaging and transportation with subsidies that are conditional on product quality product and packaging type. The programme provides an additional 30% over base level subsidies to products that are organic or have other international certification. To encourage introduction of new products, AGRI PLUS adds an additional 10% for exports of products not previously exported (USAID 2014b).
- The USAID LIVCD project is ending in the second half of 2018. This five-year value chain project had a relatively small size of cultivated area at 1,374 ha compared to the total cultivated area of 9,146 ha. In spite of that, the intervention had a positive economic impact according to USAID's economic assessment publication of May 2018 (USAID 2018c):
 - The project directly and indirectly targeted 860 farmers and resulted in the improvement of the quality and quantity of table grapes, whose selling price increased at a reduced production cost. Direct technical support and training to 416 farmers created 508.2 ha new plantations with an estimated annual increase in gross margin of US\$1,600 per ha;
 - Table grapes value chain operators benefitted indirectly from the connections created by the project to increase their income and grow their businesses. Input suppliers and services providers' income increased by US\$3.5 million in the LIVCD intervention period;
 - LIVCD identified 32 new investments in table grapes for a total value of US\$4.3 million without direct support from LIVCD. These 32 investments consisted of the establishment of new table grapes orchards planted with new varieties, mainly for export.

8.3 Specific obstacles and opportunities in the table grapes value chain

8.3.1 Obstacles

- In general, most grapes grown in Lebanon, whether for local consumption or for export are not produced or packed according to the standards required either by European buyers or high-quality produce buyers in the region (USAID 2014b). There is also a limited ability to meet local and foreign market requirements due to poor post-harvest practices required to prolong the shelf life of grapes (USAID 2018d).
- The technical capacity of farmers tends to decline in relation to farm size. Small farmers do not follow proper production, harvest and post-harvest practices. A common problem is that farmers have no access to pre-cooling and modern cold storage. During the peak season grapes sit out under the hot sun where they rapidly lose quality and storage potential (USAID 2014b).
- Inadequate cold storage negatively impacts shelf life, which is critical due to the relatively long transport time to Europe. Almost all storage facilities do not have humidity control and they use old cooling technologies that use Freon, a banned refrigerant (USAID 2014b).
- The domestic market is already saturated and any measurable increase in volumes sold causes prices to fall below the costs of production. During the peak production period of August and September, prices are often lower than production costs (USAID 2014b). This has been the case in the last few years as well. The saturation of the Lebanese table grapes market poses a special challenge to the smaller, less efficient farmers who are now exclusively dependent on the local wholesale markets (USAID 2014b).
- Local microclimates require different production practices among regions and between traditional and new varieties. Extreme variations in weather conditions, including frost damage, drought and heat waves, have affected orchard productivity. In addition, snow, hail and sand storms have reduced productivity in recent years (USAID 2018d).

8.3.2 Opportunities

- Given the available suppliers on European markets, Lebanese table grapes will not be able to compete with bulk suppliers. The best possible window to enter the market is late in the European season for Italy, Spain and Greece, that is, after October and before the peak of South-African supply in December. In the late part of the European season, Italy and Spain are not considered to have the best quality. If Lebanese suppliers can guarantee good quality and meet packaging and other requirements, buyers will have a good argument to wait longer and switch over to grapes from Lebanon. Seedless is preferred in all European markets.
- A way to strengthen competitiveness in the European market is strong marketing communication through storytelling with attention for the added value of Lebanese produce, such as its taste and flavour. Organic certification would add value as well.
- Although it has proven to be difficult in the Lebanese circumstances, vertical integration in the domestic value chain under guidance of a large farmer or exporter and the use of modern pre- and post-harvest methods may increase the participation of small and medium-scale farmers in export market channels.
- In Middle Eastern countries there is still room for growth. If Lebanon can continue to expand its volumes and qualities and improve its post-harvest and distribution practices, the GCC can easily remain the biggest market for Lebanese table grapes. The Russian market also has plenty of room for imported grapes. However, Lebanese grapes face tougher competition from global bulk suppliers in Russia and Europe, which is not the case in Middle Eastern markets. In GCC countries and Russia, consumers prefer sweet grapes.

8.3.3 Impact analysis

Due to international competition and high buyer requirements, the increasing demand for specific seedless varieties and the narrow market windows, especially in Europe, participation in export value chains is only feasible for large businesses with good capacity in cultivation and post-harvest technology and knowledge, including packaging methods and materials, as well as a solid financial capacity and buffer. These businesses also require an excellent business and sales capacity and up-to-date networks in international markets. It is not possible for individual small farmers to take

part in such export value chains. Practice has shown that cooperative models with a large business that helps small farmers with training, certification, post-harvest practices, etc., does not function well in the Lebanese grapes sector. This is to a large extent caused by the perishable character of the product. For a less vulnerable commodity like potato, it works better.

9 Avocados

Area and production volumes of avocado were traditionally small and Lebanese exports were negligible before the last decade. However, in the past few years many trees have been planted and substantial volumes will be available for export in the coming years. Avocados are among the products in Lebanon with a high potential to reach a name and a sustainable position in high-end export markets. This chapter elaborates on the characteristics of the market in Europe, the obstacles in the sector, as well as the opportunities for Lebanon to develop sustainable trade to Europe and other markets. This chapter builds further on sections 3.4 (Structure and governance in the Lebanese fruit and vegetables value chains), 6 (Obstacles in the sector) and 7 (Impact analysis).

9.1 End markets and competitiveness

Global avocado trade is growing steadily. Two high-income, high-consumption markets which are both strong exporters and importers drive the world avocado trade: Europe and the United States. Large, well-established producers, aggregators and exporters including Mexico, Chile, Peru, Israel, Netherlands and Kenya supply to these markets (USAID 2014a).

The success of avocado worldwide is related to the nutritional benefits of avocado, which make it a superfood: high content of unsaturated fatty acids, potassium, protein and vitamins E and B6, plus positive effects on cholesterol levels, the skin and the immune system (MacFrut, 2018).

By far, the largest producer and exporter of avocado globally is Mexico, with triple the production and exports of its closest rival, Chile. The top six producers, namely Mexico, Chile, Dominican Republic, Indonesia, Colombia and Peru, account for 50% of global production volumes (USAID 2014a).

Avocados are classified into four main types: Guatemalan, Mexican, West Indian and hybrids. Commercial varieties include Hass (Guatemalan), Fuerte (hybrid), Ettinger (hybrid), Pinkerton (hybrid), and Reed (Guatemalan). Hass (pebbled black skin) is the main variety planted today. New Hass sub-varieties, such as Lavi Hass, Lamb Hass and Gem Hass, help extend the supply season.

Table 20: Lebanese exports of avocados: top-10 export destinations
In €1,000

	2010	2011	2012	2013	2014
World	223	251	414	443	339
1. Qatar	63	56	128	142	105
2. Jordan	66	65	46	87	71
3. Saudi Arabia	26	56	110	99	70
4. Kuwait	47	49	62	62	43
5. United Arab Emirates	13	18	44	32	26
6. Bahrain	4	6	12	17	14
7. Iraq	0	0	1	0	4
8. Oman	4	1	2	2	4
9. Egypt	2	0	10	3	2
10. Côte d'Ivoire	0	0	0	1	0

Source: Trade Map (2016)

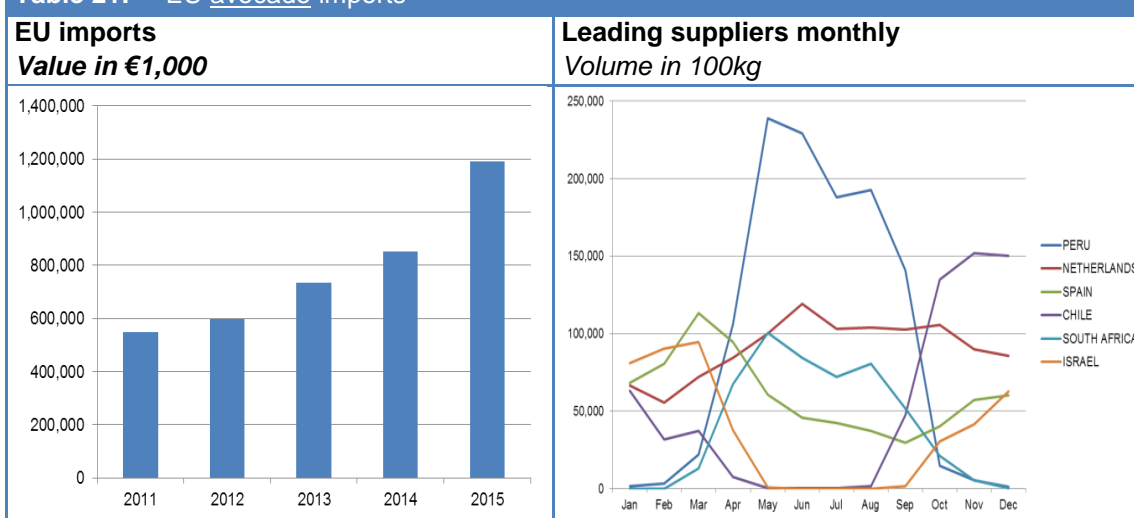
The three largest avocado producers in the Middle East region are Israel (approximately 75,000 tonnes), Morocco (approximately 20,000 tonnes) and Lebanon (approximately 8,000 tonnes⁵). Turkey, the top regional producer for most fruit crops, has limited avocado production (approximately 1,000 tonnes) due to its climate conditions (USAID 2014a).

Lebanese exports of avocados are modest but have been increasing since 2010, reaching €339,000 in 2015. Almost all Lebanese avocados are exported to Middle Eastern countries. Lebanon holds considerable market share in low consumption countries like Qatar and Kuwait. Market shares in Saudi Arabia and United Arab Emirates (UAE) are smaller. Note that the GCC region is currently a low-price importer, taking avocado from Kenya, which holds over 90% market share in the UAE and 80% market share in Saudi Arabia (USAID 2014a).

Avocados in the EU market

- Europe is a fast growing avocado market, where consumption increased significantly in the last years.
- The EU imported 600,000 tonnes of avocados in 2015 at almost €1.2 billion in value. Imports in 2017 went up to more than 750,000 tonnes. Peru, Chile, Israel, South Africa and Spain are the top-5 exporters to the EU (MacFrut, 2018).
- Spain is the only significant producer of avocados in Europe, but also an important importer and processor.
- The European market is expected to grow further in the coming years. Nevertheless, the market will remain competitive and importers favour large producers because of supply certainty.
- Consumer demand is particularly strong in Western and Nordic countries. The best opportunities are in large consumer markets, such as France, Germany, Spain and the UK, which are often supplied through the Netherlands. The Netherlands and France are the main entry ports. Dutch wholesale exporters deliver avocados to many buyers throughout Europe.
- The green varieties are losing market share to Hass quickly. Green varieties are still sold because they have a different harvest period, but Western European countries mainly favour the taste and ease of the ready-to-eat Hass.
- Ongoing changes in production planning and climate result in variation of supply and therefore also prices. In 2014, prices dropped due to an oversupply, while in 2015 and 2016 they started at a higher level because of poor or postponed harvests in Peru and Chile.

Table 21: EU avocado imports



* Lebanon had no significant avocado exports to the EU in the reviewed period
Source: Eurostat, Trade Map (2016)

⁵ In 2015 yields increased to 11,000 tonnes. Projected growth for the coming years points to 15,000 to 20,000 tonnes per year.

The European avocado calendar

EU imports are year-round with different countries filling in different seasons. See Figure 10 below. Peru is the main supplier between May and September. Chile, Spain and Israel fill in the remainder of the year.

Fig 10: EU supply calendar for avocados

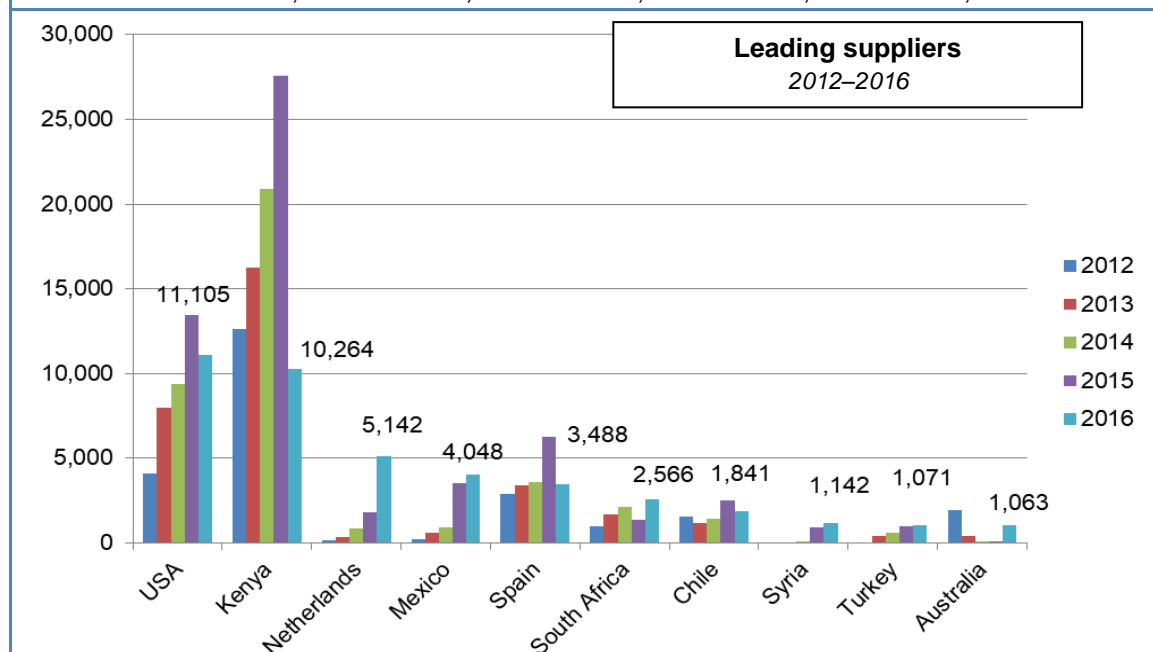
	J	F	M	A	M	J	J	A	S	O	N	D
Peru												
Chile												
S. Africa												
Israel												
Mexico												
Kenya												
Colombia												
Morocco												
Spain												

Source: CBI (2016)

Avocados in the GCC market

Table 22: Avocado imports into the GCC
In US\$1,000

	2012	2013	2014	2015	2016	Average annual change
Saudi Arabia	9,819	12,078	13,069	21,328	22,404	32%
Kuwait	2,820	3,669	4,368	7,862	8,730	52%
UAE	12,148	17,058	22,131	29,306	8,011	-9%
Bahrain	1,359	1,318	2,239	2,974	4,400	56%
Oman	154	157	238	628	1,072	149%
Qatar	573	776	1,330	1,966	897	14%
GCC Total	26,873	35,056	43,375	64,064	45,514	17%

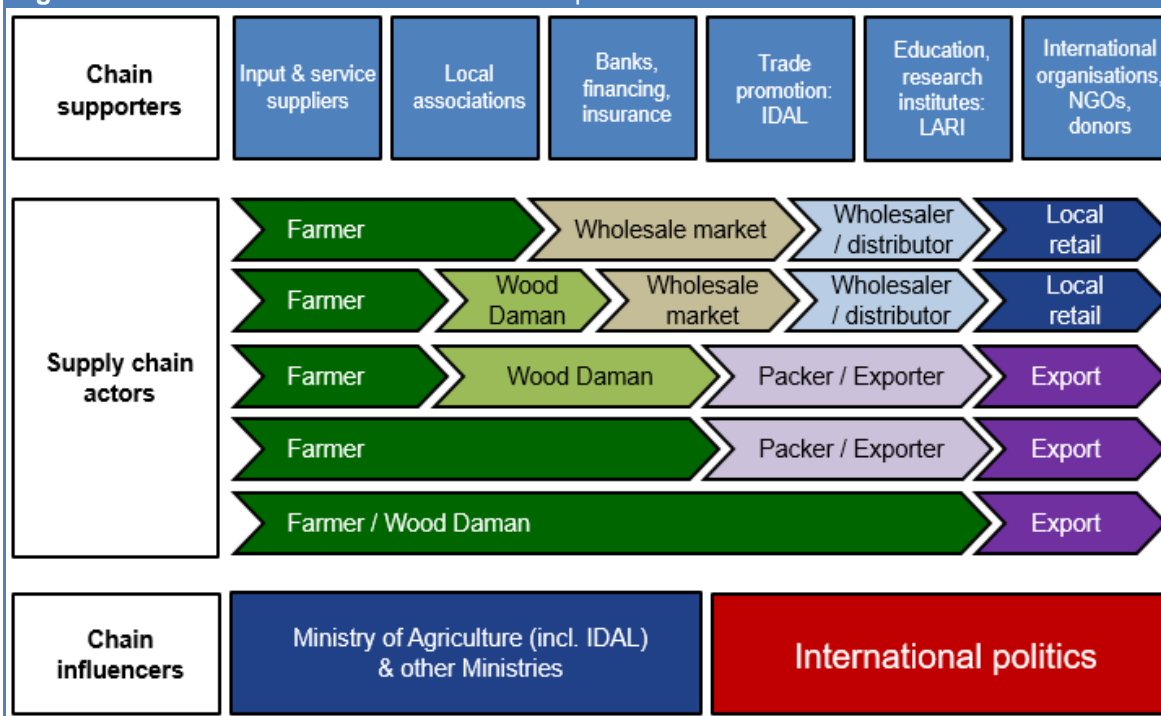


Source: Trade Map (2017)

GCC avocado imports have been increasing strongly (+17% on average per year). In particular, Saudi Arabia, which is the largest importer, Bahrain and Oman are importing more and more avocados. Important suppliers are the USA, Kenya, Netherlands, Mexico and Spain. Supplies from the USA and Kenya are practically year-round. Supplies from smaller supplying countries tend to be fluctuate more. Lebanon did not appear in the avocado trade statistics until 2016.

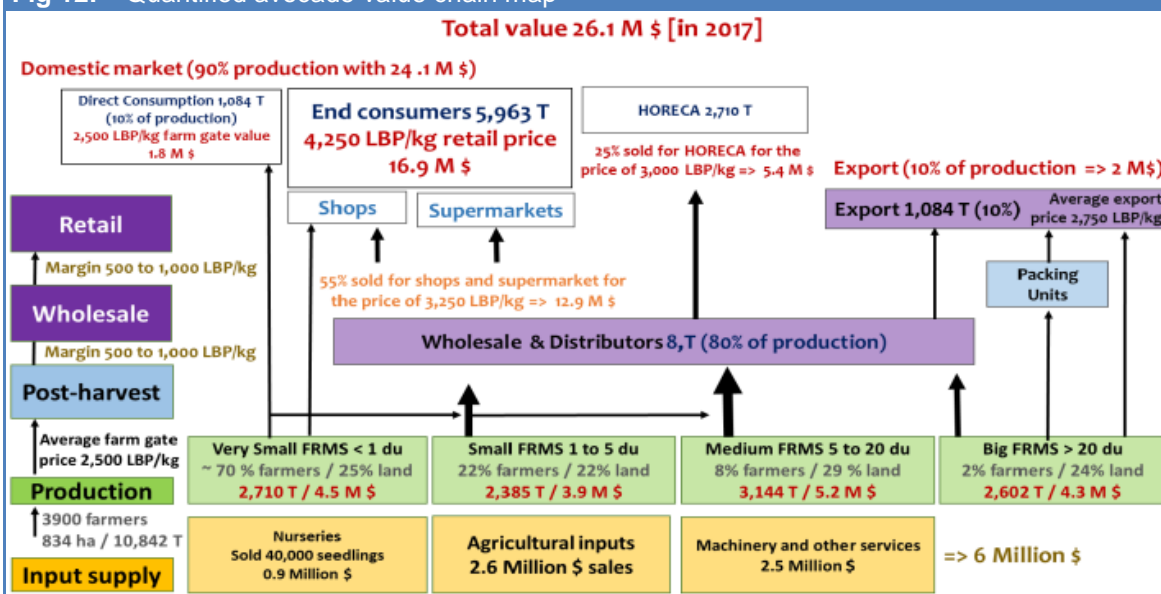
9.2 Value chain structure and governance

Fig 11: Avocado stakeholders value chain map



Source: Bureau Leetters & ProVerde (2016)

Fig 12: Quantified avocado value chain map



Source: USAID, LIVCD project – Avocado Value Chain Economic Impact Analysis (2018)

Most avocados in Lebanon are sold by small and large farmers through a network of traders, wholesalers and wholesale markets. Export is a relatively small but growing sales channel,

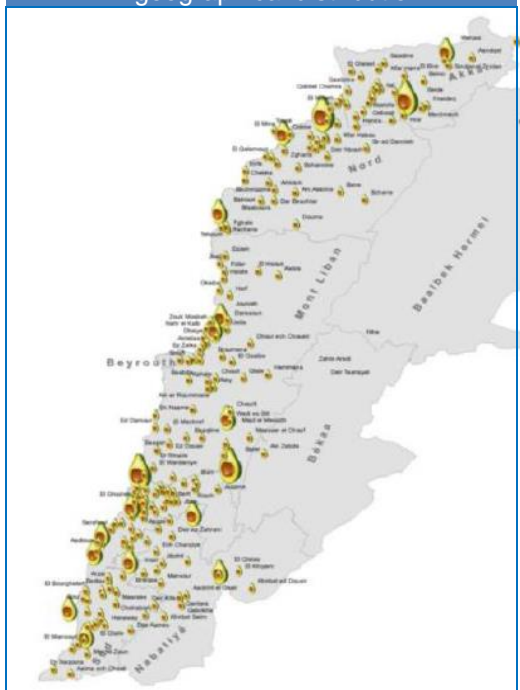
currently estimated at 10%. Traders set the price, but producers have relatively more control of supply, therefore price as well, due to the ability of storing avocado on the tree and its rather long shelf life once harvested (USAID 2014a). USAID's LIVCD project (2014–2018) produced a precise value chain map, which is shown in Figure 12.

9.2.1 Chain actors

Producers

- Avocado is not a traditional crop, but one adopted by producers in the late 1960s. Since 1980, some larger landowners began to import seedlings from California and to invest in the commercial potential they saw in avocados. It is still common to intercrop avocado with banana, citrus fruits, custard apple and loquat trees. There are about 3,900 avocado farmers in Lebanon (USAID 2014a and USAID 2018b). The planted area in 2017 was about 870 ha (Hussein Abou Yehia, 2016 and 2018).

Fig 13: Avocado cultivation geographical distribution



Source: USAID, LIVCD project - Avocado Value Chain Economic Impact Analysis (2018)

- Avocado production in Lebanon enjoys a wide geographic distribution along the coastal strip, especially in the south. Avocados also have been planted with success in Lebanon's interior. Growers have recently started to plant avocados in the Akkar plain (USAID 2014a).
- Production yields in Lebanon are among the highest in the region at approximately 12.6 tonnes/ha. Modern varieties and farming practices can bring higher yields, up to 20 tonnes/ha. Total yields in 2015 were approximately 11,000 tonnes and are expected to increase to 20,000 tonnes yearly in the coming years. Harvest takes place between September and early June, depending on variety (USAID 2014a; Hussein Abu Yehia, 2018).
- Pinkerton, Fuerte, Reed and Hass varieties account for the majority of all production. Hass is the most popular due to its high value and popularity among consumers. Ettinger, referred to as Atunga by growers and traders, is gaining popularity due to its large fruit size, up to 0.5 kg per fruit, and high oil content (USAID 2014a).

- Farm types range from hobby, small, medium to large and 'wood' daman. Many large orchards are owned by landowners who have income from non-agricultural sources. They tend to be environmentally conscious or interested in agriculture and take pride in having trees, as opposed to buildings. The farms are managed by professional orchardists who serve as 'wood' damans, providing the orchard owner with a fixed annual rental price, in exchange for complete control over production and sales.
- The market potential and the low maintenance cost of avocado trees have encouraged farmers to shift towards this crop and away from citrus fruits and banana. Avocado orchard expansion continues today. Nurseries report farmers' recent demand for more than 100,000 seedlings (50% imported from Spain), which will cover more than 150 ha in new areas in the coming few years. However, a temporary slowdown and delay was reported in establishing new plantations in 2018, due to changes in the loan conditions and rising central bank interest rates (Hussein Abou Yehia, 2018).
- Growers rely on trial and error and advice from more experienced growers or nursery owners to determine best practices to maintain their avocado orchards. There is little consistency between

production practices in different orchards, with growers using different spacing, fertilisation, irrigation and pest control practices (USAID 2014a).

Wholesale markets

- The Beirut wholesale market serves as the main conduit to domestic consumers. Approximately 80% of avocados produced in the South and delivered to the Saida wholesale market are resold to the Beirut wholesale market (70%) and the Tripoli wholesale market (10%). The remaining 20% of deliveries to Saida are sold to local juice stands, restaurants, retailers and hotels or to the other wholesale markets in Lebanon. (USAID 2018b).
- Around 60% of the total production passes through the wholesale market and fruit and vegetables distributors. The wholesale market does not perform any type of added value. No pre-packing happens at the wholesale market as the farmers typically sort product in the field (USAID 2014a).

Domestic retail

- Lebanon's per capita consumption of avocado was approximately 2 kg in 2014, which is relatively high compared to the MENA region (Middle East and North Africa) and Europe. Avocado consumption is becoming more popular at households, as well as in hotels, restaurants and catering. Restaurants and juice stands have the potential to generate the greatest value addition. See <https://www.beirut.com/l/56072>.
- Middlemen channels used by some small farmers and most of the medium and big farmers (with land size exceeding 0.5 ha) are characterised by three routes:
 - Short route: farmers sell directly to a wholesaler, mostly in Saida, which sells to the retailer;
 - Medium route with three to four transactions: medium and large farmers sell to the Saida market or other wholesale markets. Wholesalers sell to distributors, which then sell to retailers;
 - Long route with more than four transactions: same as medium route, but small and medium farmers first sell to larger farmers or a daman (USAID 2018b).
- Domestic avocado sales account for approximately 90% of the entire production, fetching wholesale prices between US\$1.60 and US\$3.50 per kg. In the June–August months, prices reach the highest levels at an average of US\$3.50 in July, peaking at US\$8.00 kg for Lamb Hass, the preferred variety for the domestic market (USAID 2018b).

Specialised packers, traders and exporters

- Exporters buy product either directly from the grower or the wholesale market. It is then sorted and packed in single layer boxes and exported (USAID 2014a).
- The number of packers has increased enormously over the past 10 years, as even small-scale traders have entered the export market and set up packing operations. Full-time traders have established links with buyers in high-end retail markets and pursue opportunistic deals as well as long-term purchase agreements. These diversified exporters typically send mixed loads to their destinations (USAID 2014a).
- The quality of the majority of packing facilities is below standard. Most of the packing is done by hand either at the farm or at the premises of traders and exporters. One fully automated, HACCP-certified packing house with modern sorting machines, wax equipment and cold storage for fruit was reported in the South (Hussein Abu Yehia, 2016 and 2018).

9.2.2 Chain supporters

Seeds and young plants suppliers

Avocado seedlings are available in abundance in the nurseries in the south region of Lebanon. Imported rootstocks from Europe, especially Spain, and the USA are grafted with local scions, both virus-free certified and uncertified are available (USAID 2014a).

Banks, financing and insurance

Most avocado producers are self-financed or work on credit obtained from input suppliers or wholesale traders. In some cases, landowners who rent to wood damans are financing the establishment of orchards on their properties (USAID 2014a).

Donors, NGOs, agricultural research and extension

- Avocado farmers used to receive little to no extension support. Large-scale farmers may hire specialists for advice and have the means to self-finance study tours to Europe or North America. Small-scale farmers have virtually no source of advice on improved techniques and often rely on neighbours or the local nursery for advice, or in some cases input suppliers (USAID 2014a). However, in recent years, a number of donors and NGOs intensively focused on the avocado value chain and provided valuable support. This includes the LIVCD project, funded by USAID and implemented by DAI in the 2012–2018 period, and the PSD programme, funded by the EU and implemented by Expertise France. Under these programmes Emkan (Hariri Foundation) and the René Moawad Foundation (RMF) provide on-the-ground technical assistance and extension training to avocado farmers. See chapter 13 (Other donor programmes) for more details.
- The aforementioned USAID LIVCD project is ending in the second half of 2018. The intervention had a positive economic impact according to USAID's economic assessment publication in February 2018 (USAID 2018b):
 - The project offered training and consultancy services to 594 farmers and supported 426 farmers with establishing new orchards. The project also renovated one nursery and established 13 new nurseries;
 - Avocado value chain operators benefitted indirectly from the connections created by the project to increase their income and grow their businesses. Input suppliers and service providers' incomes increased by US\$2.5 million during the LIVCD intervention period.

9.3 Specific obstacles and opportunities in the avocado value chain

9.3.1 Obstacles

- Though the quality of seedlings has improved and modern farming practices have been introduced in recent years, for instance with support of the USAID-funded LIVCD project, still today some orchards are suffering from poor tree growth and inconsistent production.
- The major constraint facing orchard expansion and conversion is the high cost of land and competition from real estate developers, as well as high investment costs because of the high prices of imported seedlings (USAID 2014a).
- Newly planted seedlings require five to seven years to reach commercial scale production levels. A commonly used option is to graft known varieties onto trees that have been grown from seed. Growers then can attain commercial production within two years (USAID 2014a).
- Harvest and post-harvest methods and technology are generally below international standards.
- Other observations (USAID 2018b):
 - Avocado fruits are handpicked by labourers climbing trees as opposed to the hydraulic ladders widely used in other countries. This practice often results in tree limb breakage. 70% of avocado fruits are sorted in the field into grade I, grade II (25%) and grade III (5%).
 - Fruits are usually stored in an enclosed space or delivered directly to the wholesale market, which does not provide any type of value addition other than facilitating commercial distribution to the end market;
 - There are no special packing units for avocado, except in the case of some exporters which pack avocado fruits on their premises in different package specifications as required by the export market destination.
- Most growers and exporters do not use international grading classifications (Extra, Class I and Class II).

9.3.2 Opportunities

- Lebanon has a great opportunity to increase its market share in Europe. Europe is a large and growing market for avocados, which is expected to show further growth in the coming years, particularly in Nordic countries, France, Germany, Spain and the UK, which are often supplied through the Netherlands. Finding importers in the Netherlands for re-export across Europe, is a recommended distribution strategy.
- In terms of varieties, there is a clear trend towards Hass varieties.
- Whereas Lebanese avocados can be on the market from September to May, the indication is that competitiveness in terms of quality and prices compared to other suppliers, is the best in the first months of the year. Normally the demand is high in those months and the supply from Israel, Spain, Chile and Colombia is limited.
- A way to strengthen competitiveness in the European market is strong marketing communication through storytelling, with attention for the added value of Lebanese produce, such as its taste and flavour. Organic certification would add value as well.
- In addition to European markets, Lebanon has the potential to enlarge its market shares in the Middle East and to gain a position in the Russian market.
- The Middle East region significantly underperforms the European market in consumption, except for the two major producing countries, Israel and Lebanon. The GCC, especially KSA and UAE, is a growing market where Lebanon still has limited market share. Low-priced, non-commercial 'green' Kenyan avocados dominate these markets. For Lebanon to capture market share from Kenya, it would have to take advantage of Kenyan supply shortfalls between October and February, or increase demand for the higher quality avocados from Lebanon (USAID 2014a).
- Avocado is still a relatively small product in the Russian market. Consumption is behind the levels in Europe and high-end markets in the Middle East. However, it is expected that the market size will grow, so Lebanon has a chance to take a position.
- Great potential exists for avocado oil for cosmetics and cooking. Lebanon's existing olive oil pressing infrastructure can support the establishment of an avocado oil industry, which will open new markets internationally as well as in Lebanon's vibrant health food and cosmetics sectors (USAID 2014a). In addition to oil, there is also a good international market for frozen pulp and chunks.

9.3.3 Impact analysis

The high costs of land and planting material and the long time from planting to commercial production require a strong financial buffer of investors in new plantations. Almost none of the smaller farmers has such a financial capacity. Although the LIVCD project had a huge positive impact on the entire avocado sector in Lebanon during the years 2012–2018, resulting in the establishment of hundreds of new orchards, many of these do not have the capacity to export by themselves due to the small scale. Without business initiatives to cooperate and to establish consolidation centres with a joint post-harvest and marketing function and with support and services for smaller farmers, the growing avocado production will have difficulties to achieve a competitive export position. Then Lebanon will remain a second choice or a niche supplier. On the other hand, Lebanon has the potential to become a strong player and its avocado sector has a bright future if:

- the large businesses cooperate with each other in a joint approach;
- these large businesses develop a joint sales and export strategy, for example by using the Netherlands as a hub to reach other European markets;
- they are able to stimulate and engage a large group of small farmers.

10 Citrus

The citrus fruit subsector traditionally is an important factor in the Lebanese fruit and vegetables sector, producing for the domestic market and GCC channels. Oranges, lemons, clementines and mandarins make up most of the assortment. Lebanese citrus fruits are not a factor in the EU market. This chapter elaborates on the characteristics of the citrus fruit market in Europe, the obstacles in the sector and the opportunities for Lebanon to develop sustainable trade towards Europe and the region. This chapter builds further on sections 3.4 (Structure and governance in the Lebanese fruit and vegetables value chains), 6 (Obstacles in the sector) and 7 (Impact analysis).

10.1 End markets and competitiveness

Citrus fruits are grown all over the world. Brazil, China and the USA are the leading global producers, but Spain is the largest exporter with a market share of 24% of total exported value, followed by Turkey and South Africa, each with a 10% share, and the USA with 8% (Blominvest Bank 2016).

Lebanese production of citrus fruits varied significantly throughout the years, triggered by local and regional political upheavals. Citrus production started increasing in 2001, mainly after the withdrawal of Israeli troops from the South, peaked in 2004, reaching almost 400,000 tonnes. This number decreased to 374,000 tonnes due to the July War of 2006, recuperated in the years to follow, then plunged significantly in 2008 as a result of the replacement of citrus in the South with banana and avocado. According to FAOSTAT figures, yearly yields in the period 2008-2018 varied between 200 and 280 tonnes per year.

Still, Lebanon exported a considerable €11.5 million in citrus fruit in 2014, mainly to the Gulf region. Exports have been following a declining trend since 2007, except for a one-time spike in price, in 2010 and 2011. This substantial hike was triggered by the period of instability in Egypt, normally one of the largest citrus exporters in the Middle East (Blominvest Bank 2016).

Fresh oranges are the leading product making up approximately half of all citrus fruit exports, followed at a distance by mandarins, lemons and limes. All products show more or less the same stagnating export development. Exports of grapefruit, pomelos and other citrus fruits are small, but have drawn attention in the sector because of international demand.

Oranges

Main varieties: Navels, Shamouti, Blood oranges and Valencia

Oranges are produced on the coastal plains of the South and North, as well as on the slopes and valleys of Mount Lebanon up to 600 m altitude.

Seasonal availability: from October until July.

Lemon

Lemon is the most popular citrus in Lebanon since its juice is appreciated and used in most famous Lebanese dishes. Lemon is cultivated along with other citrus crops on the coastal plains up to 600 m altitude.

Seasonal availability: almost all year round.

Mandarin and clementine

From the old Yusuf effendi mandarin, originally cultivated in Tripoli and surroundings, to the most known Clementine varieties, these fruits are popular and produced all over the coastal plains from North to South.

Seasonal availability: from September to February.

Source: Ministry of Agriculture – Brochure ‘Lebanese Fresh Fruit and Vegetables’

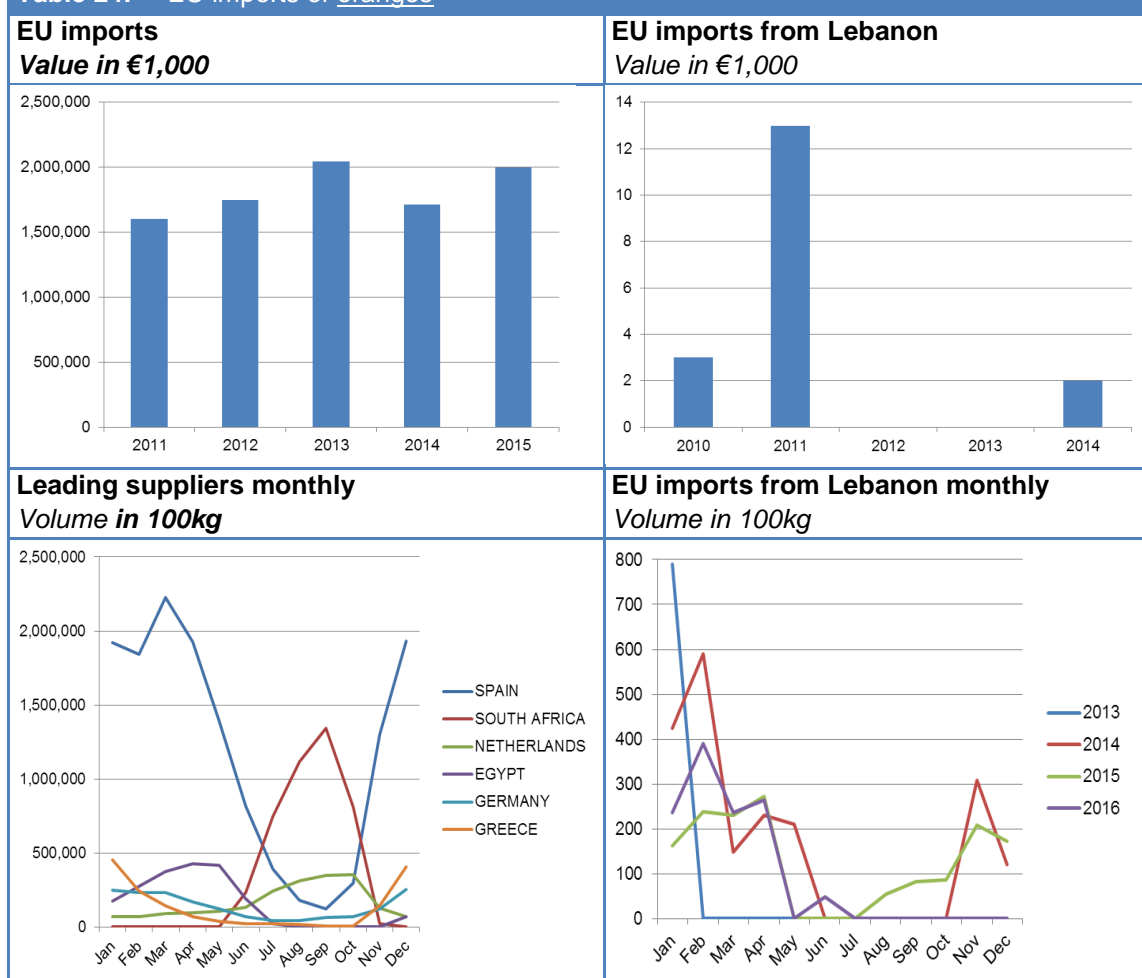
Arab markets are highly suitable for the current state of the Lebanese citrus sector, for various reasons, among others: the cost competitiveness, still low-quality requirements, relative ease of market access and existing market linkages with these countries.

Table 23: Lebanese exports of citrus: top-10 export destinations
In €1,000

	2010	2011	2012	2013	2014
World	12,754	19,341	14,583	11,496	11,555
1. Saudi Arabia	3,419	4,220	5,059	3,160	3,635
2. Kuwait	2,474	2,104	3,190	2,462	2,233
3. Syrian Arab Republic	2,382	5,556	2,681	2,035	1,977
4. Qatar	765	788	911	702	948
5. United Arab Emirates	2,429	1,038	1,393	797	825
6. Oman	252	279	348	136	503
7. Bahrain	353	386	539	366	481
8. Jordan	221	4,521	183	398	460
9. Iraq	376	401	205	1,354	451
10. Côte d'Ivoire	19	15	25	17	15

Source: Trade Map (2016)

Table 24: EU imports of oranges



Source: Trade Map, Eurostat (2016)

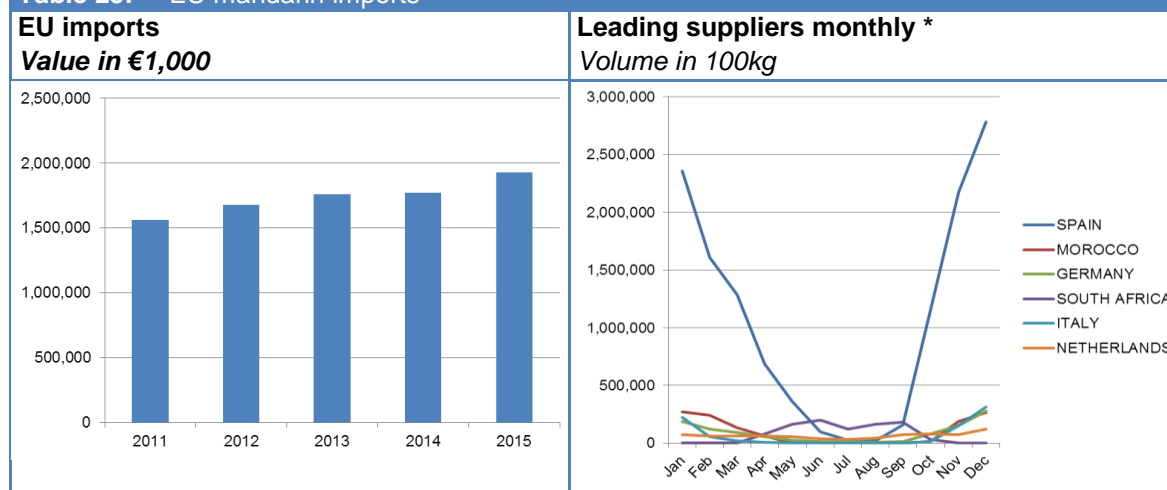
Oranges in the EU market

The EU imports more than 300 million tonnes of oranges annually at an approximate €2 billion in value, including internal and external supplies. Spain is the leading supplier between October and June. During the European summer, South Africa takes over the lead role. Egypt supplies in the European late winter and spring time.

Mandarins in the EU market

EU countries imported a total of 206 million tonnes of mandarins in 2015, representing almost €2 billion. The lion's share of such mandarins is European produce. Spain dominates as supplier of mandarins. Spanish supply starts in October and continues until April-May. Other minor supplying countries are Morocco, South Africa and Italy. South Africa fills in the summer season when Spanish supply is low. Supplies from Peru, Argentina and Uruguay come in the May–September period.

Table 25: EU mandarin imports

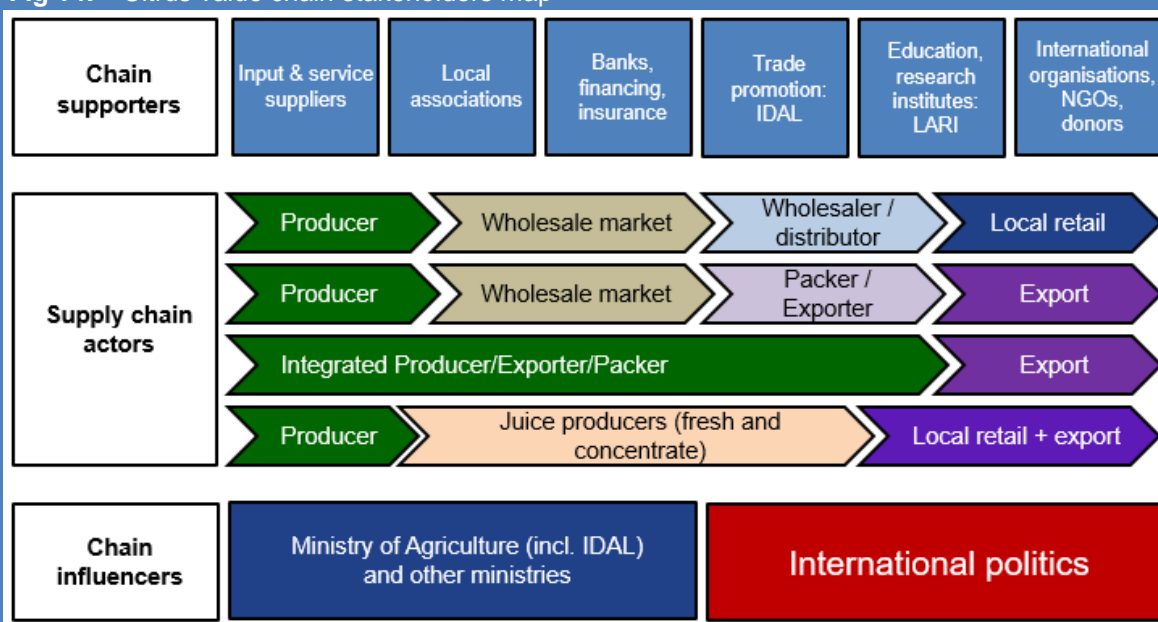


* Lebanon had no significant exports of mandarins in the reviewed period
Source: Trade Map, Eurostat (2016)

10.2 Value chain structure and governance

Most Lebanese citrus fruit is produced at small scale farms and finds its way to the domestic market, processing industry and export destinations through various, not always transparent channels.

Fig 14: Citrus value chain stakeholders map



Source: Bureau Leetens & ProVerde (2016)

10.2.1 Chain actors

Producers

- Small-scale farmers, in addition to cultivating citrus fruit, typically engage in other forms of agriculture or have part-time jobs in other sectors. Lebanese citrus producers grow popular varieties of citrus fruits such as Shamouti and Navel oranges, but often traditional production practices reduce the quality of these fruits and overall yields.
- Most citrus fruit varieties in Lebanon were introduced in the 1960s and have been cultivated in Lebanon for such a long time that they are now considered local varieties. Shamouti, branded as Jaffa, is the most commonly cultivated orange variety, accounting for at least 65% of all citrus production in Lebanon. Other important citrus fruit in Lebanon are lemons, mandarins and clementines and tangerines. Production of grapefruit and pomelo are low, as there is limited domestic demand for these fruits. A few Lebanese producers have started producing kumquats (USAID 2013a).
- The cropping system for citrus production reflects mostly older, traditional practices that are no longer considered best practices. All citrus plantations in Lebanon are irrigated, mostly using traditional furrow or flood systems, and a smaller portion using drip irrigation systems. Typical citrus farming practices support average annual yields of three tonnes per dunam, compared to annual yields using best practices which can be as high as five tonnes per dunam (USAID 2013a). According to Hussein Abou Yehia (2016), the lack of integrated pest management practices (IPM) and certifications, in particular GLOBALG.A.P., are the main obstacles hindering the citrus subsector.
- Harvesting practices utilised by Lebanese producers are adequate, although there is room for improvement in harvesting infrastructure, including using ladders. Currently, harvesting is done by hand-picking only. No machinery is used, except for transportation from the field to the collection point, then to the packing house (USAID 2013a).
- In recent years, farmers have faced far too low prices in their domestic market during the peak season: \$3 to \$7 for 25-kilo boxes.

Table 26: Most important citrus species and varieties in Lebanon

Type or Species	Specific varieties
Oranges:	
Navel	Washington Navel, Navel Late, Navalina, Thompson Navel, Lane Late, New Hall
Common	Jaffa Shamounti, Hamlin, Valencia Late, Valencia Late Olindia
Blood	Cara, Washington Sanguine, Rub, Tarocco, Double Fine, Sanguinelle
Succari	Succari Maghrabi, Tangelo Minneola, Fortune
Other citrus:	
Mandarin	Satsuma Owari, Satsuma mandarin, Temple, Avana
Clementine	Nour, Fina, Fedele, Common, Hernandina
Tangerine	Mediterranean Mandarin, Ortanique Tangor, Commune
Grapefruit	March Seedless, Thompson Pink Marsh, Star Ruby, Red Blush, Ruby Red
Pomelo	Shaddock

Source: LARI, Lebanon (2010)

Wholesale markets

- The vast majority of citrus production is sold through the wholesale markets in Saida, Beirut and Tripoli as well as other smaller wholesale markets. As there is only one wholesale market in each major city, farmers do not have many sales options and negotiation power is skewed towards wholesale traders (USAID 2013a).

Specialised traders and exporters

- Exporters buy product either directly from growers or the wholesale market. Most exporters include citrus fruits in their assortments.
- Wholesale traders, who routinely pressure farmers to accept low prices and slim margins, charge an average 12% margin on sales (USAID 2013a).

- The average quality of packing facilities is below standard. Most of the packing is done by hand at the farm or at the premises of traders and exporters. One fully automated, HACCP-certified, packing house for fruit with modern sorting machines, wax equipment and cold storage was reported in the South (Hussein Abu Yehia, 2016 and 2018).

Juice producers

- Juice production in Lebanon can be divided in two main types (Blominvest Bank 2016):
 - Fresh juice: this market is dominated by Balkis, which produces bottled fresh juice that is pasteurised to preserve flavour and vitamins. Other fresh juice producers include Juice-up, Antabli and Tam tam, which have small shops and produce on demand.
 - Juice made from concentrate, which can be further divided into two sub categories: natural concentrate juice, with only water added to the concentrate, and concentrate juice with additives. The former is dominated by Maccaw, Libby's and Tropicana Premium, while X-tra, Tropicana Slice and Pampa are the main players in the latter.
- Only fresh juice producers use fruits produced in Lebanon. Meanwhile producers of juice made from concentrate import concentrate from abroad and reconstitute it in Lebanon. No concentrate is made in Lebanon, since it requires many fruits like mangoes and pineapple which are not grown in the country (Blominvest Bank 2016).

10.2.2 Chain supporters

Seeds and young plants suppliers

- Citrus nurseries are unregulated and have limited standards regarding quality and growing standards for tree seedlings and grafting materials. Many nurseries do not specialise in citrus seedling production. They produce multiple plant species without specialised treatments to improve the quality of seedlings, without certificate of variety and without quality control, leading to low-quality seedlings (USAID 2013a).

10.3 Specific obstacles and opportunities in the citrus value chain

10.3.1 Obstacles

- The citrus subsector has low profitability caused in part by the relatively high costs of production. The small plot size of many farms, especially those in the South, limits the potential for economies of scale. Farmers are not organised in any kind of cooperative that could enable bulk purchasing to save on key agricultural inputs such as fertilisers and pesticides. Low profitability is also caused by low yields, which have been declining for multiple reasons: traditional production practices, low plant density, widespread disease and pests without using IPM practices and poor post-harvest practices. Farmers have very limited access to technical extension services that could increase knowledge (USAID 2013a).
- Poor storage after harvest causes high losses of produce. Only about half of the Lebanese citrus production — the portion destined to international markets — passes through cold storage. The lack of access to cold storage is the main driver of post-harvest losses as high as 15%, for products that have a potentially long shelf life (USAID 2013a).
- The legal and institutional environment for citrus fruit in Lebanon is largely under-developed. For example, Lebanon currently does not have citrus pest and disease quarantine to control imported fruits and plants coming into Lebanon to ensure that they are not contaminated or threatening to domestic crops. The citrus industry does not have any regulation over pesticide use or pest management beyond a list of banned pesticides established by the Ministry of Agriculture in 2010 (USAID 2013a).
- Export actors in the Lebanese citrus chain lost their marketing intelligence in the European channels and never developed warm linkages with European importers.

10.3.2 Opportunities

- Opportunities for Lebanese citrus fruit in the European market are limited. The various weaknesses in the chain and the overall sentiment in Lebanon have been causing the replacement of citrus fruit trees for other crops, such as avocado. However, the biggest problem is that Lebanon's export season fully overlaps with Spain, which is the leading supplier between October and June. During the European summer season, South Africa takes over the lead role.
- Having said that, there seems to be a small but interesting window for Valencia oranges in the summer (June–September), after Spain leaves the market and in the start of the South African supply season. Lebanese Valencia oranges may be able to compete in terms of quality and price, both for fresh use as for processing.
- The new rules mandating quarantine measures on South African oranges issued late 2016 generated a big interest for new orange suppliers in the period June–October, which may create extra opportunities.
- A way to strengthen competitiveness in the European market and support market exposure for speciality products, is to use strong marketing communication and storytelling highlighting the added value of Lebanese produce, such as its taste and flavour. Against that background, other citrus fruits may have opportunities in the European market, for instance lemon, pomelo and even mandarins and clementines.
- Besides looking for opportunities in the European market, re-entering and maintaining in the Gulf market, where the Lebanese citrus is still known and desired, is a recommended strategy.

10.3.3 Impact analysis

The small-scale production and the overall poor storage and post-harvest capacity in the citrus value chain are the main causes of the relatively high costs of production and downward profitability. Although Lebanon still plays a role in exports and export volumes have been rather stable in the previous years, all over the value chain the actors and stakeholders lost confidence and do not put many new efforts in citrus. The popularity of avocado as a new and more profitable crop in the southern part of the country has partly contributed to the pressure on the citrus value chain. However, the potential is still there. Businesses with the vision and capacity to improve the scale of production and the scale and quality of post-harvest facilities, have a fair chance to increase their export positions in the long term, especially in oranges.

11 Potatoes

Since the 1960s, Lebanon has been an important regional producer of potatoes using imports of quality seeds from western countries, such as the Netherlands, exporting to markets mainly in Arab countries. Since the civil war in the 1970s, the sector faced a drop in yields and exports. Lebanese potatoes have not been on the European market since then. This chapter elaborates on the characteristics of the potato market in the EU and EFTA, the obstacles in the sector and the opportunities for Lebanon to develop sustainable trade to Europe and other markets. This chapter builds further on sections 3.4 (Structure and governance in the Lebanese fruit and vegetables value chains), 6 (Obstacles in the sector) and 7 (Impact analysis).

11.1 End markets and competitiveness

In the early 1970s, Lebanon produced an annual volume of about 100,000 tonnes, of which approximately 60% was exported. Production was severely disrupted by the civil war in the 1970s, dropping to 30,000 tonnes in 1976. The Bekaa Valley is traditionally the major producing area of potatoes, accounting for about 80% of the country's production. Lebanese consumers favour potatoes from Akkar for their taste. Around 111,311 dunams are used to grow potatoes in Lebanon (ILO 2015). Potato production in the last decade averaged around 400.000 tonnes annually.

Lebanese potatoes: the main varieties are Spunta and Agria.

Potato is one of the major exportable products of the country. The different climatic zones ensure diversity in harvesting periods. Akkar and Bekaa are the major production areas. Current efforts underway include improving cultivation and introducing many improved varieties.

Seasonal availability: all year round.

Source: Ministry of Agriculture – Brochure 'Lebanese Fresh Fruit and Vegetables'

Lebanon is well supplied with seed potatoes: 23 European exporters, among which Dutch suppliers Agrico, Stet and HZPC, deliver their seeds to 37 importers in Lebanon. Spunta, which is a variety free of breeders rights, is dominant, but there seems to be more and more demand for specialities, such as HZPC's varieties Innovator, Annabelle and Colomba (Jan Prins, 2016).

Potatoes in the north of Lebanon (Akkar) give the earliest harvest season: planting from early December to the end of January results in harvest from early April to the middle of June. Then, after a one month gap, harvest starts in the Bekaa valley.

In the past couple of years, Lebanese exports of potatoes have been growing, reaching an annual value of €37 million in 2014. These are mostly fresh potatoes. Exports of seed potatoes are negligible.

Table 27: Lebanese potato exports: top-10 export destinations
In €1,000

	2010	2011	2012	2013	2014
World	10,407	14,994	12,118	27,629	36,695
1. United Arab Emirates	1,880	3,062	3,391	7,154	8,435
2. Jordan	702	1,014	1,306	6,776	5,763
3. Kuwait	1,978	1,953	2,293	4,844	5,445
4. Syrian Arab Republic	1,522	1,644	162	992	4,363
5. Saudi Arabia	2,213	1,944	3,109	1,022	3,363
6. Qatar	409	3,324	647	1,487	2,275
7. Oman	566	700	592	1,235	2,109
8. Iraq	46	211	7	2,647	2,093
9. Russian Federation	885	913	313	870	1,900
10. Bahrain	180	169	249	586	895

Source: Trade Map (2016)

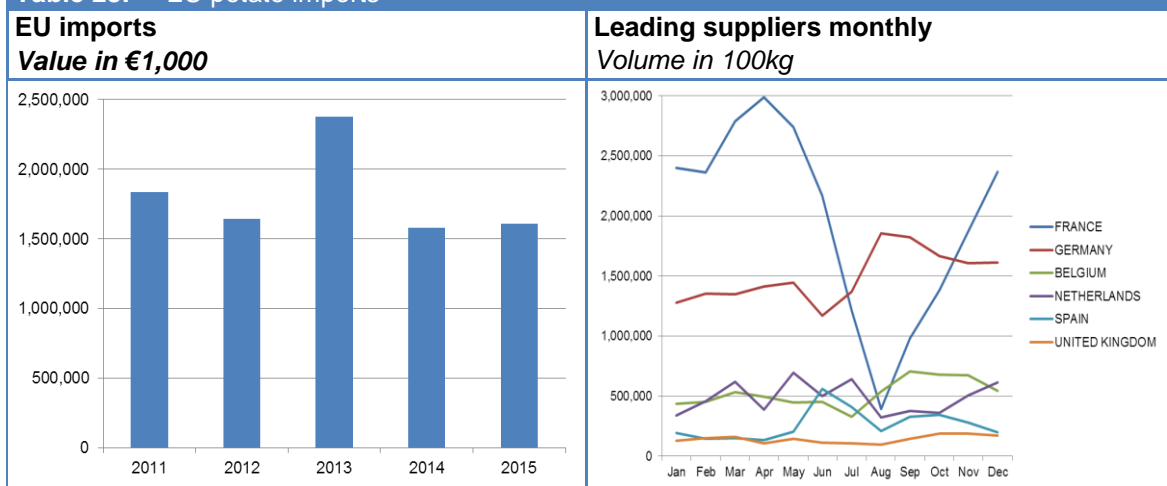
Lebanese potatoes are exported to other Middle Eastern countries and to Russia. Most export markets show growing imports of Lebanese potatoes, but the strongest growth in value has been to the United Arab Emirates.

Despite the growing export numbers, potatoes are not yet important for the government budget in the same way that citrus or some other cash crops are. Potatoes are no longer a strategic product for exports, mainly because of the high need for water and because of stronger competition in GCC markets from Turkey, Pakistan and even France. At farm level, government policies are not visible and potato farmers do not experience their effects in their everyday life (ILO, 2015 and various persons during the field trip in Bekaa).

EU quota

In 1998 Lebanon agreed with the EU on a yearly free quota of 50,000 tonnes. It took until 2013 to overcome obstacles with residues and phytosanitary problems related to Phytophthora. On 1 August 2013, the EC published decision 2013/413/EU, which paved the way Lebanese potato exports to the EU. The decision allows EU imports of 50,000 tonnes of potatoes not intended for planting. The possibility to export into the EU was expected to provide substantial economic opportunities. However, the prices of potatoes in the local market rose almost to the same level of export prices, which led to a huge decrease of potatoes available for export to the EU (ILO 2015). In 2018, a donor project resulted in the first potato shipment to a European market in the Netherlands.

Table 28: EU potato imports



* Lebanon had no significant exports of potatoes in the reviewed period
Source: Trade Map, Eurostat (2016)

Potatoes in the EU market

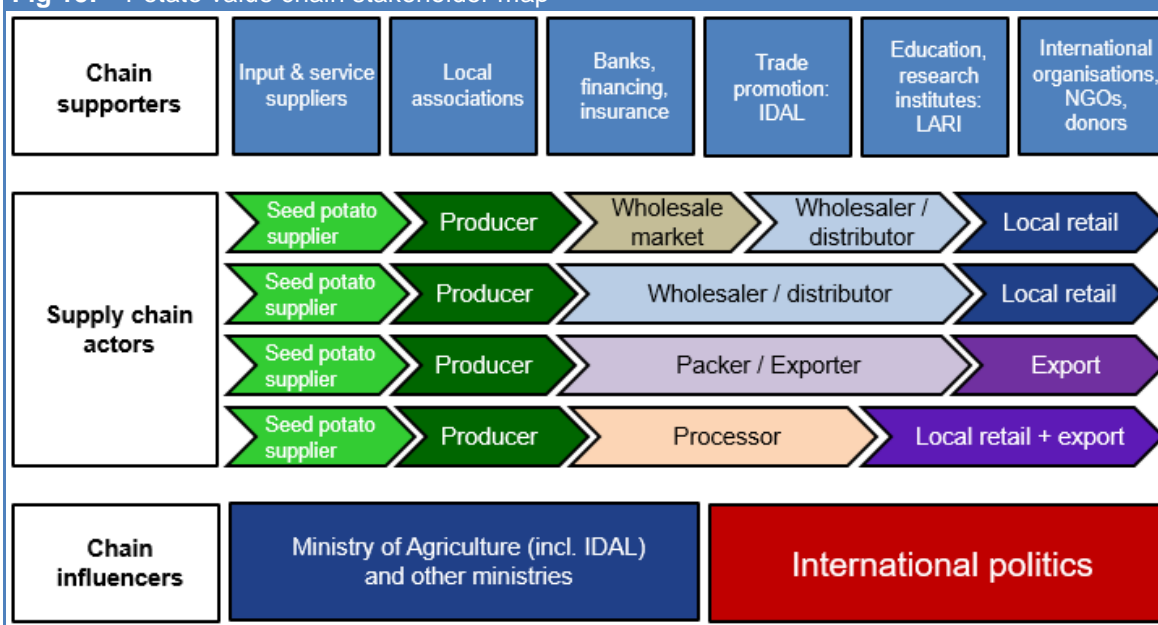
- European countries imported about 6.6 million tonnes of potatoes in 2015 at €1.6 billion in value. Leading supplying countries are France (2.4 million tonnes) and Germany (1.8 million tonnes). Potatoes are traded year-round. There is a dip in the French supply in July–September, which is filled in partly by German supply.
- Markets in Europe show a wide diversity. The UK, Scandinavia and France are considered high end, offering good prices. The German market is a bulk and discount market (Jan Prins, 2016).

11.2 Value chain structure and governance

Lebanon's potato value chain is rather complex. It is common to find many actors playing more than one role. For instance, one person can be a farmer, trader, owner of a shop at the wholesale market, exporter, chairman of a cooperative and vice chairman of a syndicate. Some traders, exporters and processors reach back to the beginning of the chain and play the role of input supplier by providing farmers with seeds, fertilisers and pesticides (ILO 2015).

Farmers sell their products at wholesale markets, which actually are spot markets. Farmers do also sell directly to buyers at their homes or farms. They get less income but do not need to pay for transport. Farmers also sell through contracts to traders, exporters or factory owners (ILO 2015).

Fig 15: Potato value chain stakeholder map



Source: Bureau Leetters & ProVerde (2016)

11.2.1 Chain actors

Producers

Only 2% of farmers grow potatoes in areas larger than 20 hectares, but these farms account for 32% of the total potato production. These are the producers interested in exporting to the EU market and they are mainly organised as family companies. Having strong cooperatives helps gather small farmers and empowers them to collectively and efficiently buy input supplies, produce and sell their crops (ILO 2015). However, in practice not many cooperatives have such strong organisation and governance.

Wholesalers, distributors and packers and exporters

Traders control the market by fixing the purchase price, buying from farmers in different ways and delivering through domestic or export channels. They may hire daily workers for harvesting, sorting and packing, pay for transporting the packed produce to the export market and arrange trade deals in the export market (ILO 2015).

Processors

All over Lebanon various processing options for potatoes are available. In the North, there are two French fry factories: Famous Frites and Super Frites. The first buys Agria from the field. Previously, Famous Frites used to buy from 50 farmers using the contract system, which did not work due to lack of commitment from farmers. Currently, Famous Frites buys potatoes from ten big farmers who accept their terms and conditions and do not get involved in the production phase. They import also from Egypt, due to cheaper prices compared with Lebanese potatoes and use four cold storage rooms, with a capacity of each between 1,000 and 1,500 tonnes (ILO 2015).

11.2.2 Chain supporters

Cooperatives and farmers groups

Cooperatives play an important role in the potato subsector, mainly because of the small scale of most producers. Almost every village has an agricultural cooperative. However, functional cooperatives hardly exist. They rarely develop marketing activities or empower farmers to be competitive in the market or to get inputs at lower prices (ILO 2015).

Seed potato suppliers

- Lebanon does not produce certified seeds. There are no gene banks or potato breeders in Lebanon either. The total amount of certified seed potatoes imported is mainly from EU member states. Around 70% of the potato seeds come from the Netherlands. Other source countries are Belgium, France, Germany and Denmark (ILO 2015).
- Generally speaking, farmers are hesitant to buy high quality seeds because they're not familiar with the relatively high costs of these imported seeds.
- Importers of seed potatoes are registered with the MoA and must submit details regarding the exporting company, quantity, variety and the registration number of the producer (ILO 2015).

Input and service suppliers

The cost of some agricultural inputs, such as chemicals and fertilisers, has increased since the Syrian crisis began, particularly in border areas where these inputs were imported from Syria. This has compounded the already rising input costs due to government restrictions on some pesticides (ILO 2015).

International donors

Various international donors include the potato sector in their programmes, especially in the north of Lebanon because of the impact of the Syria crisis. Chapter 13 provides more details on this. One specific project is funded by the Dutch government, EKN and RVO being the initiators. The project is being implemented in cooperation with the René Moawad Foundation, the Dutch seed supplier HZPC and aims to develop an export flow to the European market using the available 50,000-tonne EU quota. The project is based on controlled production and marketing of the HZPC specialty variety Annabelle. The programme established an agreement for the 2015–2016 season with Dutch packer Joh. van Kampen (Lisse), while HZPC was tasked with the actual import. The market entry and distribution to retail outlets were well prepared with dedicated packaging and a special label. In the end, the Lebanese cluster formed by the importer plus a cooperative farm did not manage to ship the potatoes after harvest in 2016. Apparently, the whole process was too risky or complicated for them, so they decide to supply to the local market. However, new attempts in 2018 were successful, resulting in a 20-tonne shipment that was sold through Dutch retailer Jumbo, raising high expectations for 2019 and the following years.

11.3 Specific obstacles and opportunities in the potato value chain

11.3.1 Obstacles

- The potato subsector is characterised by small scale operations, meaning high costs of production and low profitability. Farming practices are primitive. Despite the existence of many cooperatives, the use of machinery for soil preparation and crop maintenance, such as ploughs, hilling machines and spraying equipment, is not common practice.
- Most of the potato varieties are not suitable for high-end markets and only a small number of the potato fields are GLOBALG.A.P. certified.
- Lebanon faces strong competition in neighbouring countries and GCC states, its traditional export markets, as well as in the European market, where Lebanese suppliers have no networks.
- ILO conducted a deep value chain analysis (VCA) of potatoes in Akkar in 2015 and came up with a long list of weaknesses. In January 2015, stakeholders in an ILO meeting validated the findings, agreeing on most but not all of the following identified constraints (the underlined ones were not unanimous) (ILO 2015):
 - oligopoly of seeds and fertiliser prices by input suppliers;
 - improper use of pesticides and fertilisers under proposed standards and guidelines;
 - excessive consumption of agricultural land and non-adoption of crop rotation;
 - difficulties with introducing new varieties of potato seeds;
 - lack of appropriate machines to clean potato tubers from soil residue;
 - large area of small-scale cultivated lands;
 - inaccuracy of agricultural information provided via text messages and not offered regularly;
 - lack of follow-up on the correct application of agricultural information provided during trainings;
 - lack of adequate information and statistical data for the sector (import, export, prices in the domestic and overseas market);
 - lack of coordination among stakeholders;
 - lack of coordination between projects funded by foreign and Arab countries;
 - control of the final product prices in the markets;
 - weaknesses in the role of cooperatives;
 - lack of experience in export and shipping procedures to Europe;
 - low wages for workers and unequal pay and working conditions between women and men;
 - unfamiliarity with the minimum standards for the quality of the product for export to Europe.
- Other relevant constraints identified by the aforementioned ILO VCA (ILO 2015):
 - The farm gate price of potatoes is often based on limited negotiation. Smallholders do not have the market savviness nor access to necessary market information;
 - Public and private support is lagging. Agriculture policies and resources have traditionally focused on cash crops for export, leaving potatoes at the periphery;
 - Farmers are using surface water contaminated with sewage for irrigation;
 - Food traceability is not ensured;
 - Cheap potato imports, notably from Egypt, makes it more difficult for Akkar farmers to sell their potatoes at a fair price. Some traders buy large quantities of Egyptian potatoes before the MoA agricultural calendar year deadline around the end of March and early April, which is shortly before the potatoes from Akkar come on the market.

11.3.2 Opportunities

- Opportunities for Lebanese potatoes in the European bulk segment are limited, unless the potatoes come on the market as early as March, which is not feasible with the current varieties and practices. However, the current project with RMF and HZPC proves that controlled production and marketing of specialty varieties has opportunities, even in the late season of the more or less saturated European market. Given European market preferences and demand, only high-quality specialties marketed under premium branding have a chance. Partnerships between Lebanese growers and packers on one side and a Dutch seed supplier and a Dutch

packer on the other side have the potential to develop more effective value chains and achieve a sustainable market position in Europe.

- Most actors in the Lebanese potato value chain are far from delivering the required quality and service, but a few exporters and packers in Lebanon already have that capacity.
- A way to strengthen competitiveness in the European market and support market exposure for specialty products, is strong marketing communication through storytelling highlighting the added value of Lebanese produce, such as its taste and flavour. That is a feasible option for potatoes, which requires close cooperation among seed suppliers, producers, exporters and European packers.

11.3.3 Impact analysis

Lebanon has a rather mature potato sector with substantial and increasing exports in the region. But supplying to high-end markets requires modern cultivation practices, large-scale and specialised operations and certified production, which the sector does not have. Export opportunities to high-end markets, such as Europe, are limited. However, the non-perishable nature of the product and the ease of shipping potatoes by container show that there are options. The successful 2018 project proved it is possible to have a controlled production of a specialty variety by a group of small farmers and controlled marketing in the Netherlands. The project, under professional guidance of local NGOs and Dutch private sector participants, has shown that even in difficult production and market circumstances, potatoes can be sold in high-end markets. It has encouraged a group of farmers to build further on this effective cooperative model.

12 Other products with export potential to high-end markets

In addition to the four crops analysed in chapters 8, 9, 10 and 11, Lebanon has a wide assortment of other fruits, nuts and vegetables with potential for high-end markets, either in the region or in Europe. Lebanese traders exporting table grapes, avocados, citrus fruit or potatoes, usually also export other products. Taking into consideration the obstacles in the value chains that have to be solved (see chapter 6) and the impact thereof on the sector (chapter 7), the following products described in this chapter have opportunities:

- Cherries
- Stone fruit (peaches, nectarines, plums, apricots)
- Cherimoya
- Apples and pears
- Nuts
- Vegetables
- Other fruits

Table 29 below shows previous years' export statistics for these and other products

Table 29: Other Lebanese fruit export products, excl. grapes, avocado, citrus and potatoes <i>In €1,000</i>						
Fruit (and nuts)						
Code	Product label	2011	2012	2013	2014	2015*
'080810	Apples	9,708	14,926	11,182	9,336	44,495
'081090	Tamarinds, cashew apples, jackfruit, lychees, sapodilla plums, passion fruit,...	2,008	2,008	1,544	1,618	8,823
'080930	Peaches, incl. nectarines	2,603	2,420	2,754	1,381	8,571
'080910	Apricots	452	800	718	284	7,632
'080940	Plums and sloes	845	1,331	1,250	859	6,772
'080921	Sour cherries "Prunus cerasus"	-	1,222	451	1,199	4,559
'080929	Cherries (excluding sour cherries)	-	920	1,027	817	4,489
'080390	Fresh or dried bananas (excl. plantains)	-	8,769	11,058	6,846	4,081
'080830	Pears	-	1,763	1,389	735	2,186
'080251	Fresh or dried pistachios, in shell	-	301	231	39	153
'081340	Dried peaches, pears, papaws "papayas", tamarinds and other edible fruits (excl. nuts)	129	200	217	139	147
'081070	Persimmons	-	465	379	311	93
'081030	Fresh black-, white- or redcurrants and gooseberries	-	2	-	-	74
'081010	Strawberries	102	58	48	23	52
'080450	Fresh or dried guavas, mangoes and mangosteens	94	128	75	86	41
Fresh vegetables						
Code	Product label	2011	2012	2013	2014	2015*
'070390	Leeks and other alliaceous vegetables (excl. onions, shallots and garlic)	3	2	-	1	6,908
'070310	Onions and shallots	2,113	1,355	2,782	3,048	1,792
'070490	Cabbages, kohlrabi, kale and similar edible brassicas (excluding cauliflowers, ...	113	103	249	128	1,240
'070890	Fresh or chilled leguminous vegetables, (excl. peas ...	108	264	193	331	265
'070519	Lettuce (excluding cabbage lettuce)	2,363	2,251	1,255	6,773	112

* 2015 data based on partner reported data (mirror data)
Source: Trade Map (2016)

12.1 Products with potential

Cherries

On a global scale, the US, Chile, Turkey and Spain are large producers and exporters of cherries. Spain and Turkey dominate the European market, which shows a growing demand for high-value cherries in recent years. In Europe, the season starts early May with premium prices, peaking in June and July at 25% to 35% lower prices. Volumes go down and prices go up in August. In the last few years, there have been indications of supply from Greece and Turkey falling back, while Spain and Italy have been getting stronger. Consumers in Europe generally prefer dark and big cherries. There is room for loose cherries in cartons, although retail packing in punnets is favourable.

Lebanon has a good name and reputation in the region as a producer of sweet cherries, mainly cultivated between 900 and 2,000 m altitude, resulting in good flavour, colour, texture and taste. The supply season is between April and August. Lebanese cherries have strong domestic demand and have been exported for years to regional markets, where they still have growth potential. There is also an opportunity for high quality cherries in Europe, especially in the early season in May.

Stone fruit

Peaches and nectarines (white and yellow) are available in the May to October period. Apricots, produced in the northern Bekaa and on the slopes of Mount Lebanon, reach the market from May to early July. Plums have the same production regions as apricots, reaching the market from June to October. In the last few years, producers have paid more attention to increasing the production area and the quality of farming and post-harvest practices. Stone fruit 2015 export figures show strong growth. There are few opportunities for exports to Europe because of the parallel seasonality with European countries, but there is growth potential in regional markets and Russia.

Cherimoya and atemoya

Cherimoya (*Annona cherimola*) is native in tropical America and is one of the interesting exotic fruits that has growth potential in high-end markets such as Europe. Containing a large quantity of vitamin C and dietary fibres, cherimoya fits the growing interest in healthy and exotic fruit in Europe. European demand is still small and easily oversupplied, nonetheless. Spain is an important producer (45,000 tonnes in 2014), supplying the market from October to January. Commercial plantations are coming up in Peru, Chile, Brazil, Central America, New Zealand and the United States. Portugal, Germany, France and the United Kingdom are the main European importers of cherimoya, importing a combined 10–15% of the Spanish production (CBI 2016e). Post-harvest is crucial for the delicate cherimoya fruits. Long-distance transport only works by air.

Atemoya is a hybrid of cherimoya with the sugar apple (*Annona squamosa*). In Lebanon, the fruit is known as *Achta* and is used in many Lebanese desserts, including ice cream. Cultivation of atemoya for fresh fruit markets, including exports is increasing. Although there is no accurate data, Lebanon has at least 70 ha with a yearly yield of about 2,000 tonnes (Hussein Abu Yehia, 2018).

Apples and pears (pome fruit)

Apples and pears are the most commonly grown pome fruits in Lebanon, where an estimated 13,500 ha yield 140,000 tonnes annually, half of which is exported. The pear industry is smaller with an annual estimated production of 33,000 tonnes. Roughly 75% of the apple production is produced by small farmers on less than one hectare of land; the remaining 25% is grown by larger farmers. Export destinations include all countries in the region, with Egypt as the main market (USAID 2018e).

Regional demand for high-quality apples and pears is growing, creating opportunities for more exports. However, the following obstacles have to be tackled (USAID 2018e):

- old orchards producing low-quality fruits and reduced yields;
- farmers lacking capacity in the correct and safe use of pesticides and herbicides, leaving high residue levels in their fruits;
- little collaboration among producers, traders and exporters;
- limited capacity to meet market demands as a result of poor quality of fruit and old packaging and sorting technology.

Although Europe is a huge consumer market for apples, year-round local supply and additional off-season imports have created a full market saturation. There are no opportunities for Lebanese exports in the EU market.

Nuts, vegetables and other fruits

Lebanon is a serious player as a producer, importer and exporter of a wide nuts assortment including pine nuts, walnuts, chestnuts and almonds. Even though the EU market consumption for edible nuts is a mature market, it still may have windows for imports from Lebanon. More European consumers also recognise the health value of luxury nuts. Their high nutritious and protein levels is a factor expected to help increase the demand for luxury nuts. Production of organic nuts is still not enough to meet the needs of the growing EU market. The same applies to some vegetables crops such as fresh herbs, spring onion, shallot and some fruit such as mangosteen, kiwi, pomegranate and kaki.

12.2 Value chain structure and governance

Similar to the value chains of more important crops, the structure and governance of other chains is rather weak: production and post-harvest practices have a small scale and the channels towards the domestic market, processing industry and export destinations are not efficient and transparent. Consolidation through vertical integration in the domestic value chain under guidance of large farmers or exporters and the use of modern pre and post-harvest methods, may strengthen the competitiveness in export markets and at the same time increase participation of small and medium scale farmers in export market channels.

12.3 Specific obstacles and opportunities in the value chain

- There are no specific obstacles in the value chains for these products, apart from the general obstacles and risks which have been mentioned in chapter 6.
- None of the aforementioned products have a strong uniqueness in the European bulk market. Other suppliers have taken position. On the other side, specialty segments have opportunities, especially if exporters are able to organise the production and post-harvest activities in a proper way, reach a certain economy of scale, ensure quality and continuity even in small volumes and come up with added value. Then, on the marketing approach, the challenge is to allocate niche market segments in partnership with a European importer.
- An opportunity to strengthen competitiveness in the European market, is strong marketing communication through storytelling, highlighting the added value of Lebanese produce, such as its taste and flavour. Organic certification would add value as well.

13 Other donor programmes

Several donors, in cooperation with local NGOs and other organisations, offer or schedule programmes in agricultural value chains in Lebanon and in the fruit and vegetables sector in particular. This chapter lists these donors and NGOs and their programmes in alphabetical order. They are all open for collaboration with CBI and have the potential to reach synergy. The starting point for all possible linkages are the crucial constraints that all value chains of fresh products have in the pre-harvest and post-harvest stages. Without addressing and reducing these constraints, export promotion efforts will not be effective.

EKN (Embassy of the Kingdom of the Netherlands in Lebanon)

- The EKN has a long tradition in humanitarian projects and education in Lebanon, moving towards economic development in the last few years.
- Interesting fields worth mentioning here included:
 - a 2016–2018 private sector development package for education at all levels on agriculture, water, employment and infrastructure with a total value of €86 million. Part of this package was a project to improve market access for potato farmers in Akkar and the North, ending up with an export shipment to the EU. The project will have a large follow-up from 2019 onwards, focusing on the potato, grape, avocado and cherry value chains;
 - the arrival of PUM Netherlands senior experts in Lebanon since July 2016;
 - the Dutch-Lebanese Agro food tech hub, in cooperation with USAID funds, implemented by Berytech. This programme aims to assist youth and start-ups in turning agri-food challenges into solutions in the MENA region in general and in Lebanon in particular. The programme offers seed money and Dutch knowledge for the top start-ups with disruptive innovations in the agri-food sector.
- Annex 8 provides more details on EKN's programmes since 2016.

Emkan

- Emkan for Sustainable Microfinance & Community Development is an NGO that was initially established in 2008 by the Hariri Group. Emkan deals with economic development microfinance. It aims to improve the income level of marginalised low-wage earners, stimulate economic activities and create job opportunities for low-income groups in urban and rural communities, including youth and women.
- Emkan initiated a cold storage facility for apple farmers in the mountainous region of Akkar, in the town of Fneideq at 1,300 m altitude in 2011. The facility and additional agronomy services in cultivation and post-harvest benefit farmers in the region.
- Emkan initiated the construction and management of the Souk Akkar fruit and vegetables wholesale market in Akkar in 2014. The market, located 20 minutes from Tripoli, runs well and involves approximately 60 wholesalers and traders. With support of the Kuwaiti Fund for Arab Economic Development (KFD), Emkan initiated an agricultural centre with cold storage facilities within the Souk Akkar premises in 2015.
- Emkan's team of agronomists has been involved in various donor projects, among others in the LIVCD project focusing on avocado demo plots in the North.
- Emkan is preparing a intervention (not yet funded) to form a professional farmer group with the vision and skills to cooperate better. The plans for this intervention include building capacity for 60–100 farmers to comply with international standards.

EU delegation

- The EU conducted the 2011–2017 Agriculture and Rural Development Programme (ARDP) with the MoA, related institutions (LARI), farmers, municipalities, NGOs and universities. The overall objective of ARDP was to improve the economic performance of the agricultural sector and to improve the livelihoods of rural and farming communities to achieve sustainable agricultural and rural development. Specific objectives included strengthening the capacity of national institutions to develop a coherent agricultural and rural development vision and to support and

empower local rural actors (farmers, cooperatives and municipalities) by increasing access to credit and by supporting rural development initiatives. ARDP consisted of three components:

- capacity development of the MoA;
- support of rural development through increased access to credit and improved extension;
- support of agriculture infrastructure to improve sustainable water and land management.
- The EU has run the Rural Development Agriculture project (IRDP) since 2010, which consists of three pillars:
 - capacity building with FAO, providing, for example, SPS infrastructure;
 - access to finance with Kafelat (€35 million loan capacity);
 - infrastructure, such as forestry and irrigation;
- The EU has appointed Expertise France to implement its 2016–2019 Private Sector Development Programme in Lebanon (PSD). The PSD programme focuses on socio-economic impact through value chain development in fruit and vegetables in Akkar and Bekaa.

Expertise France

- Expertise France (EF) is a French public agency created in 2015 after the merger of several public agencies under the French ministries of foreign affairs and for the economy and finance. EF offers project engineering and technical assistance by developing and implementing international cooperation actions worldwide.
- EF has been entrusted by the EU delegation in Lebanon with the three-year private sector development programme PSD, covering the agribusiness and wood processing sector. The overall objective of the PSD is to contribute to Lebanon's economic development and job creation with a focus on vulnerable groups. The programme aims to enhance the productivity and competitiveness of Lebanon's private sector through integrated non-financial and financial services to groups of SMEs active in both sectors and through the establishment, management and operation of market-oriented value chains and clusters.
- PSD consists of 3 components:
 - Component 1: agribusiness in the Bekaa — support for table grapes and cherry farmers, partnering with CCIAZ;
 - Component 1: agribusiness in the Akkar region — support for producers of avocado and vegetables, partnering with René Moawad Foundation on avocado and Fair Trade Lebanon and MADA Association on vegetables;
 - Component 2: wood processing sector in Tripoli, focusing on furniture producers;
 - Component 3: access to finance, partnering with Kafelat and other microfinance institutions.
- Components 1 and 3 have clear linkages with the proposed CBI interventions. The programme conducts useful interventions in the pre-harvest and post-harvest stages, such as integrated crop management (ICM) certifications and establishing post-harvest units. These interventions are in addition to typical market-related activities also in CBI's area, such as market research, surveys in the field of improved packaging and logistics, developing marketing and sales strategies for the chosen value chains and setting up a value chain information system under CCIAZ.

Fair Trade Lebanon

Fair Trade is a movement that promotes local economic development through offering local authentic products through fair trade channels. Fair Trade Lebanon is an NGO established in 2006. It is one of the sub-contractors in EF's private sector development project, funded by the EU. On 22 March 2018, Fair Trade Lebanon, together with MADA Association and the René Moawad Foundation launched the Agriculture Rural Development Initiative (ARDI) for the Akkar region. This project aims to increase the competitiveness of five selected vegetables value chains (tomatoes, peppers, lettuce, pumpkin and jute or *mouloukhiya*), to generate jobs and improve income opportunities in the region. The value chains were chosen according to two main criteria: products that can be processed and products that have a market potential in the local or export markets.

FAO

- FAO is not a donor as such but plays a crucial role in the agricultural sector development in Lebanon acting in various projects as expert or implementer. See also <http://www.fao.org/lebanon/programmes-and-projects/en/>.
 - Capacity building for the MoA, including strategy development with a focus on regulatory aspects (2009–2015);
 - Because of the Syria crisis: re-focus of strategy towards host communities for refugees and small farm development, providing direct and indirect support for refugees;
 - One land reclamation project with Dutch funds working with mainly fruit trees;
 - SPS, among other projects on fruit trees, diseases in olive trees, diseases in pines;
 - Introduction of quinoa, focusing on farming and post-harvest in the scaling-up phase in 2016.
- FAO is traditionally engaged in the CSR agenda. It aims at eliminating unfair and unethical practices in agriculture:
 - FAO collaborated with organisations including the ILO, to provide technical assistance in categorising child labour and showing the type of work that is considered hazardous, while the ILO provided legal advice and assistance;
 - FAO developed the Farmer's Registry system in cooperation with the National Social Security Fund (NSSF) to record farmers' assets with GIS (geographic information system), facilitating legal recognition and social protection for farmers and workers;
 - FAO works on supporting women cooperatives through advocacy, protection and providing free consultation, including training sessions, workshops and capacity building;
 - FAO is implementing a large integrated pest management (IPM) in the Middle East, especially in Lebanon, to strengthen the framework and practices for sound pest and crop management.

Georges N. Frem Foundation

- The Georges N. Frem Foundation (GNFF) has been implementing programmes in agriculture since 1997. Its mission is to improve livelihoods and create more economic opportunities for Lebanon's agricultural sector stakeholders. GNFF works closely with growers and other stakeholders in the sector through programmes of orchard modernisation and extension.
- GNFF supports the modernisation of orchards by providing high quality rootstocks. Since 1997, it has provided approximately 500,000 fruit trees to around 1,500 growers all over Lebanon. GNFF's team of agriculture engineers provides technical assistance for growers, aiming to improve agricultural inputs and practices in line with integrated crop management (ICM) techniques and good agricultural practices (GAP).
- GNFF's IRSHAD (Increased Revenue from Safe Healthy Agriculture Development) programme functions as a hub offering an array of agricultural advisory services customised to its customers' needs. IRSHAD works across the fresh fruit and vegetables sector, from providing personalised training and consultancy to farmers on input purchase and usage, good agricultural practices and post-harvest practices, linkages to outputs and markets, to forging relationships with the private, public, non-profit sectors and academia, including certification bodies, cooperatives, labs, microcredits, start-ups, and incubators.
- GNFF aims to put more efforts into organising farmers in groups to reach better cultivation and post-harvest practices, partly through joint facilities, more bargaining power and better market connections.

ILO

- The ILO is a UN agency established in 1919, aiming to set labour standards, establish policies and develop programmes promoting decent and ethical work.
- In response to the Syrian crisis, the ILO initiated a project in Akkar in June 2014 focusing on employment and livelihood issues. The aim of the project is to enhance the resilience of entrepreneurs, including farmers and workers in rural areas, affected by the Syrian refugee crisis. The project chose the potato and leafy greens value chains based on the 'Making

markets work for the poor' (M4P) criteria, as well as on ILO criteria including labour intensive, large-scale impact, potential for systematic change in the short to medium term and for improving growth and access. (ILO 2015). After selecting the two value chains, a research team was formed to conduct primary and secondary market research and a complete value chain analysis to identify the constraints and strengths in each value chain. The initiative was taken over by other donors through different programmes, such as the Dutch project for export-oriented potato cultivation in cooperation with seed supplier HZPC, which actually resulted in a first potato shipment to the European market in 2018.

Italian cooperation

- Since 2010, Italy spent €20 million on agricultural projects, including infrastructure, mostly in the potato and olive oil subsectors.
- The potato project (2011–2013) was successfully implemented in cooperation with the MoA, LARI and the private sector, resulting in improved phytosanitary procedures and a voluntary traceability system in the potato value chain. The achievements of the project, especially harmonisation of national regulations with EU quality standards, allow Lebanon to export to the EU and make use of its 50,000 tonnes quota.
- Current focus projects relevant for fruit and vegetables include:
 - Boutique and creative industry (with UNIDO), including crossovers with agriculture;
 - Education: €1.6 million aimed at remodelling school curricula;
 - Olive oil: €1.0 million;
 - Honey and other value chains: €0.5 million.
- Italy is also preparing a programme of soft loan systems based on a grace period of six to seven years and a payback period of more than 10 years.

Land O'Lakes

Land O'Lakes is a non-profit organisation, helping communities around the world by strengthening agriculture from farm to fork, helping businesses grow and linking farmers to markets. In the past five years, Land O'Lakes ran the Farmer-to-Farmer programme in the MENA region, a global USAID-funded volunteer programme by US professors, government officers and retired businessmen. As a spin-off, USAID in September 2018 allowed Land O'Lakes to start the three-year LINQ programme (Lebanon Investment in Quality). LINQ has three components: technical assistance, a US\$1.5 million grant scheme and M&E. LINQ's main objective is to increase competitiveness in selected agricultural value chains by assisting agri-businesses with accessing new markets, including export markets, by means of technical assistance and direct grants if needed. Fresh fruit and vegetables are likely included and also a focus on small farmers cooperatives is high on the agenda. A sector assessment, expected to be finalised in November 2018, will disclose the final choices of value chains and activities.

MADA Association

- MADA is an NGO which aims to reinforce the relationship between local communities and their natural environment. The association targets small-scale farmers and gives them training on efficient and sustainable agriculture practices. MADA introduced the drip irrigation system to preserve water to approximately 100 farmers, trained them on water management and fertigation and subsidised up to 10,000 certified rootstocks to small-scale farmers. Two hundred farmers reportedly benefited from training on sustainable agriculture; 100 farmers benefited from drip-irrigation systems; 300 farmers received SMS alerts on weather forecast; 300 farmers, extension agents, and practitioners used extension tools on sustainable agriculture practices; 30 farmers and 15 market stakeholders improved knowledge of the farmer-buyer relationship.
- MADA is one of the sub-contractors in EF's private sector development project, funded by the EU, in cooperation with the René Moawad Foundation and Fair Trade Lebanon. MADA aims at increasing the competitiveness of selected vegetables value chains to:
 - generate jobs and improve income opportunities in the Akkar region;
 - improve vegetable production, profitability and increase market potential;

- to strengthen the linkages among value chain actors (farmers, input suppliers, wholesalers and traders, agro-processing cooperatives and consumers) and help them getting involved in the vegetables value chains.

PUM Netherlands senior experts

- PUM offers volunteer expertise to SMEs in various countries, using a network of 3,000 senior experts who share their knowledge on a one-on-one basis, either through short-term and repetitive advisory missions on the ground or through online coaching activities.
- PUM started in Lebanon on 1 July 2016, having already conducted ten missions in the agricultural sector. PUM's local representative, Marwan Nasr, is eager to expand the agricultural sector in the scope of PUM's activities.

René Moawad Foundation

- The René Moawad Foundation (RMF) is a non-profit, non-political, non-sectarian organisation, promoting sustainable human development in Lebanon. It was established in the US in 1993, with headquarters in Washington D.C., to advance the mission and goals of its counterpart in Lebanon and to diversify its sources of funding and support. This is achieved through numerous fundraising events that support projects in the fields of agricultural and social development, education and health care. RMF's ultimate objective is promoting peace and stability in Lebanon through development (ILO 2015).
- Rural and agricultural development has been a cornerstone of RMF's activities from the very start. RMF helped create the Agricultural Center of the North (CAN) in 1996, offering services to farmers (ILO 2015). RMF is involved in several ongoing projects and it is a natural partner for the Dutch Embassy in the agricultural sector in the north of Lebanon.
- RMF is involved in the project that encourages potato farmers and cooperatives to enter the European market. RMF helped in the export of the first 20 tonnes of Lebanese potatoes from the Akkar region to the Netherlands' retail market in May 2018.
- RMF commonly includes CSR components in its projects, including women empowerment, tackling child labour and creating jobs for Syrian refugees working in the agricultural sector.
- As a sub-contractor to EF's private sector development project, RMF targets the avocado value chain which has recently grown significantly, especially in the South. RMF aims to empower farmers in this value chain in the Akkar region, as well as to:
 - improve livelihood and better income for avocado farmers through establishing new avocado orchards;
 - provide technical assistance to 250 farmers to improve agricultural practices and irrigation skills;
 - contribute to avocado value chain development and improved livelihood through development of an enabling environment;
 - establish vertical linkages among producers, aggregators, traders and input suppliers;
 - empower women through technical assistance and support their household at local level;
 - provide integrated production (IP) certificates to 20 farmers.

Safadi Foundation

- The Safadi Foundation provides a number of public services in Tripoli. The Foundation has four sectors of intervention to implement donor-funded projects and self-funded grassroots activities, involving:
 - rural development and sustainable agriculture;
 - social development;
 - education;
 - culture.
- One of the Safadi Foundation's projects was Developing Horticulture to Access International Markets (DHAIM) with the implementing partner ACDI-VOCA, funded by USAID (2011–2015), in partnership with the Hariri Foundation and the René Moawad Foundation, Arc En Ciel and the chambers of commerce in Tripoli, Zahle and Saida (CCAIT, CCIAZ and CCIAS) (ILO 2015).

- The Safadi Foundation implemented a project called Al-Abda in partnership with the Lebanese Agricultural Research Institute (LARI), focusing on value chain development and GAP for potato and leafy greens, funded by the ILO. The project targeted almost 60 farmers from four agricultural cooperatives across various areas from Akkar. Farmers from all Akkar regions generally benefited from the project.

USAID

USAID has been running and financing interventions based on value chain development in the Lebanese agribusiness for years. Education and economic growth are the bases of the USAID interventions in Lebanon.

- USAID has run the Lebanon Industry Value Chain Development Project (LIVCD) since 2012, implemented by DAI. The project was in its closing phase in the fall of 2018. It had an available total budget of US\$46.2 million and leveraged over US\$27.2 million in private sector investments. The project dealt with seven main value chains: grapes, cherries, avocado, apple, honey, olive oil and a 'rural basket' composed of herbs, pine nuts and honey. During implementation, the project was heavily influenced by the Syria crisis. According to the project team, the most positive results achieved in four value chains were:
 - grapes: strong competitive advantage);
 - honey: branding;
 - olive oil: improved sector organisation and cooperation;
 - avocado.

Part of the project deliverables are a set of value chain analysis studies and value chain assessment studies, which have been used as a valuable source for this CBI report.

- USAID started the Lebanese Enterprise Development (LED) project in 2017, implemented by Chemonics. LED will have a 3–5 years life span, with a wide and flexible scope in terms of sectors, intervention types and methods. Its aim is to provide job opportunities for 9,800 non-immigrant and non-refugee people in all possible sectors, including agribusiness. LED has engaged two local partners: the Business Incubation Association of Tripoli linked with CCIAT and Berytech. Business advisors identify SMEs with viable business models through the local partners, providing support based on 'short-term high-impact' principles. The approach is mainly sales and market oriented, but also addresses general management skills of entrepreneurs. Apart from direct interactions with SMEs, LED has space for interventions in the business enabling environment.
- In September 2018, USAID started LINQ, the Lebanon Investment in Quality project, implemented by Land O'Lakes, aiming at increasing competitiveness of Lebanon's agri-food businesses.

World Bank

The World Bank has offered various programmes in the field of education, health care, water supply and poverty alleviation. In June 2016, the World Bank started the Emergency National Poverty Targeting Programme (NPTP), providing a social assistance package for the Lebanese affected by the Syrian crisis and for all Lebanese households under the extreme poverty line.

14 Conclusions, possible solutions and recommendations

This chapter starts with a concluding overview of the obstacles and opportunities for exports to the EU and EFTA and other markets. These conclusions are the starting point for the final section 'solutions and recommendations', providing recommended interventions and pathways to reach sustainable exports.

14.1 Conclusions

General conclusions

Notwithstanding the fierce competition, buyers in Europe and in regional markets have an open mind for new suppliers of special products. Lebanon has intrinsic opportunities for certain small windows in the European fruit and vegetables market, although the number of potential crops is limited because the regular bulk markets are too competitive and large for the volumes that Lebanon can deliver. In regional markets, Lebanon has the potential to strengthen its export position in a wider range of products if it can ensure quality and reliability. There is in fact a group of large producers and exporters with the motivation and capacity to achieve these exports. In some product groups, in particular table grapes, entrepreneurs already developed the capacity and methods to prepare produce that meets all European market requirements. Not only in table grapes, but also in avocado, citrus and some other less relevant product groups, large-scale production above 25 ha exists.

Production and post-harvest practices in Lebanon have a small scale and lack the capacity and quality to produce volumes and qualities for high-end markets. Quality is inconsistent, not much production has the right certifications and the cold chain is deficient, resulting in high post-harvest losses. Furthermore, the domestic market structures are not transparent, immature and the export enabling environment is unsupportive. From a market point of view, the Lebanese production calendar is more or less similar to Southern European countries, which not only affects the competitiveness of Lebanese fruit and vegetables in Europe, but also in the Middle East, African and Russian markets.

Market intelligence with respect to trends and buyer requirements in the target markets is weak across the entire sector. Lebanese traders have experience and networks in the GCC markets and to a lesser extent in Africa and Russia, but most of them do not closely follow the latest trends and developments in these markets. These regional markets, and especially Europe, increasingly require tailor-made and strict approaches because of:

- the dominance and strict requirements of large buyer clusters serving hyper and supermarket chains and food services;
- the importance of seasonality providing rather narrow market windows;
- the fierce competition from suppliers from other countries, especially Mediterranean countries.

Lebanon barely produces any fresh fruit and vegetables under organic production methods. Implementing organic production is not feasible for all crops, especially because farmers are not that familiar yet with IPM, ICM and GLOBALG.A.P. However, organic is a realistic short-term option specifically for avocados. Limited attention to organic produce is mainly caused by unawareness of the market potential. The organic market is an ongoing growth market, especially in Northwest Europe. Increasing organic production can easily open doors for Lebanese exporters on the European organic market, as well as in the Middle East and Russia.

Cooperation in the domestic supply chain is not easy to reach and can be considered as one of the main obstacles in developing the sector. Horizontal cooperation and aggregation models as well as vertical integration in the chain are rarely seen. Such approaches would greatly help overcoming the many obstacles to reach export competitiveness and increase the participation of small and medium scale farmers in export market channels.

While investing to export to the European market is a feasible strategic option for Lebanon, the main export options will remain in other markets such as countries in the Middle East, Africa, as well as Russian and other Asian markets. There is an obvious tendency for market requirements all over the world to become stricter. Consumer preferences in the national market and in regional markets follow the same trends as in European high-end markets. There is a need in any case to improve working methods all over the value chain and prepare for this new reality.

A number of CSR obstacles and risks have been identified in the Lebanese agricultural sector. However, CSR is not high on the agenda. The majority of the stakeholders are not aware of what CSR means, its role and importance in the societies and the business environment in export destinations. On the other side, pressure on economic performance does not give many options for SMEs to improve. A national vision on sustainable agriculture, awareness campaigns and incentives for SMEs to address CSR issues would help the sector forward.

The huge number of immigrants in the country puts a burden on the Lebanese society and economy and takes much time, energy and finance that cannot flow to the agricultural sector. Growth of export volumes will create employment for both Lebanese and Syrians in the pre-harvest and post-harvest stages in agriculture. In other words, enhancing agricultural production and actual exports will boost the economy and create more opportunity for all.

Table grapes

- Lebanon produces around 120,000 tonnes of table grapes every year. In 2015, the export value was about €10 million, the overwhelming majority of it flowing to GCC countries. Only one company has gained a position in the EU market. Few other large producers are preparing to enter the European market.
- Competition will remain fierce during the season when European suppliers are in the market, although Italy and Spain are not considered to have the best quality in the late part of their season. The best possible window to enter the market is after October and before the peak of South-African supply in December.
- European importers have an open mind for grapes from Lebanon, if suppliers bring the right quality, varieties (seedless preferred), packaging and at competitive price levels.
- Middle Eastern countries still have room for export growth. If Lebanon can continue to expand its volumes and qualities and improve its post-harvest and distribution practices, the GCC can easily remain the biggest market for Lebanese table grapes. The Russian market also has plenty of room for grapes import. However, Lebanese grapes face tougher competition from global bulk suppliers in Russia than in Middle Eastern markets.

Avocados

- Avocado production in Lebanon shows strong growth in planted area and farming practices. Total yields in 2015 were approximately 11,000 tonnes and are expected to increase to 20,000 tonnes annually in the coming years. Harvest takes place between September and early June.
- The avocado sector has a good potential to export to Europe, where demand is expected to show continuous growth in the coming years, particularly in the Nordic countries, France, Germany, Spain and the UK, which are often supplied through the Netherlands. In terms of varieties, there is a clear trend towards Hass.
- Competitiveness in Europe is highest in the first months of the year. Although produce from Israel, Spain, Chile and Colombia is on the market in that period, the European market can take more volumes especially in these months.
- Lebanon has potential to enlarge its position in the Middle East and to gain a position in the Russian market. Especially KSA and UAE are growing markets where Lebanon still has limited market shares. Consumption in Russia is below the levels in Europe and high-end markets in the Middle East, but the Russian market is expected to grow.
- Avocado processing has high potential: there is a growing international market for avocado oil for cosmetics and cooking as well as frozen pulp and chunks.

Citrus

- The citrus subsector has a low profitability, being caused by the small scale, low yields, poor post-harvest performance and lack of suitable market linkages in export markets.
- Opportunities for Lebanese citrus in the European market are limited, mainly because of the dominant position of Spain and South Africa. However, there is an interesting window for Valencia oranges in the summer months from June to September, after Spain leaves the market and in the start of the South Africa supply season. Lebanese Valencia oranges may be able to compete in terms of quality and price, both for fresh use as for processing. The new 2016 rules for quarantine measures on South African oranges strengthened the opportunity for Lebanese citrus in Europe, although it is still difficult to provide a long-term outlook since importers are still evaluating the consequences of these rules.

Potatoes

- The potato sector is characterised by small scale operations, high costs of production and low profitability. Most of the potato varieties are not suitable for high-end markets and only a small number of the potato fields has GLOBALG.A.P. certification. Nevertheless, Lebanon exports substantial volumes to GCC countries. Lebanon has a free quota of 50,000 tonnes of potatoes in the EU market since 2013. The first actual exports reached Europe in 2018. Although opportunities for Lebanese potatoes in the European bulk segment are limited, high-quality specialties, marketed under premium branding have a chance.
- Exploring and developing the European market can be an option, but the market is too competitive and too difficult for big expectations. Exports to Eastern European countries such as Poland, Hungary, Romania and Bulgaria, are not easier and can be even more difficult because of unpredictable and less reliable market behaviour in these countries, as well as to changing import requirements. It is better to focus on alternative high-end markets in the region.

Other less relevant products

Lebanon has a wide assortment of other fruits, nuts and vegetables with potential for high-end markets in Europe or in other markets. Cherries, stone fruit, pome fruit, cherimoya, nuts as well as some other small vegetables and fruits may find narrow windows in European market channels and regional markets.

14.2 Solutions and recommendations

This section provides possible solutions for the value chain challenges and recommendations for developing sustainable exports to Europe and expand exports to regional markets. These solutions can be considered as recommendations for specific interventions. They are clustered in four categories:

1. Value chain structure and functioning in the pre and post-harvest phases;
2. Market and market access;
3. Export enabling environment;
4. Improved CSR performance.

14.2.1 Value chain structure and functioning in the pre and post-harvest phases

- The sector requires technical assistance, training and coaching, covering all stages of the chain:
 - farming (cultivation practices, technology certifications, etc.) and promotion of organic cultivation methods;
 - post-harvest (storage and packaging technology and practices, certifications, etc.);
 - CSR as a crosscutting theme.
- Establishment and facilitation of more and better models for smaller producers to join forces and aggregate product volumes, achieving more productivity and quality and easier market access. We propose the following solution paths:

- Small farmers build horizontal structures (cooperatives, associations or any suitable legal entity) and build their own capacity to market their produce. Many stakeholders, however, believe that the existing culture of individualism is opposed to such approaches;
- Large enterprises with entrepreneurial management and investment or loaning capacity organise the value chain and facilitate small farmers' participation in high-quality channels by providing them with technical services, IPM, GAP certification, knowledge, training, etc.;
- Both of the above options — strong cooperatives models and large enterprises with direct export channels — will finally break the currently primitive and uncontrollable market structure where too many middlemen play a dominant role.
- More and better facilitation of access to finance is required to facilitate the necessary investments for improved productivity and quality and at the same time to break the vulnerable position of producers in relation to their input suppliers and buyers.

14.2.2 Market and market access

- The capacity of exporters has to be strengthened through technical assistance, training and coaching, as much as possible in one-on-one settings, favouring coaching over training; the major fields to address are export marketing planning, business development, export management, marketing intelligence. CSR should be considered as a crosscutting theme.
- We also advise encouragement and stimulation of exporters to create vertical cooperation in the chain to form win-win relationships between small farmers and large enterprises. Exporters require coaching to create awareness, build examples and create best practices.

14.2.3 Export enabling environment

Institutional support structure and export-related services for SMEs

- The sector requires more and deeper linkages between the public and private sector and at the same time stronger institutions in research, education and extension, with a more practical approach. Elements of such private-public cooperation include:
 - enhancing public-private partnerships that contribute to improved physical infrastructure, such as investments in production technology and the cold chain, as well as knowledge infrastructure;
 - improving the effectiveness of agricultural research, agricultural extension and practical agricultural education;
 - creating showcases and best practices in cooperation with the supply industry.
- It is important to strengthen the capacity of BSOs, such as chambers of commerce, IDAL and syndicates to develop and offer export-related services and for lobbying the government. From that point of view, we recommend supporting the four chambers of commerce and, to a lesser extent, IDAL in playing a more initiating and leading role in export development. Key characteristics of the future position and functions of the chambers of commerce include:
 - an initiating and leading role in the definition, implementation and evaluation of export development processes;
 - being the number one service provider to the business community and the number one knowledge centre on export development related issues, activities and programmes;
 - having an initiating and leading role in the collection, processing and dissemination of relevant export related market information for the business community.
- To streamline the many international interventions in the Lebanese agriculture and coordinate all public and private initiatives, we recommend scheduling a more intensive and structural coordination among international donors, NGOs, BSOs and the relevant public institutions involved in the fruit and vegetables sector. FAO would have the profile to take this lead on.

Policies, laws and regulations for SMEs

- We recommend developing a national vision on sustainable agriculture with the involvement and leadership from both the private and the public sectors. Such a vision should address the crucial sector weaknesses, such as scale, product quality, consistency, legislation, SPS, etc., and it should encourage all stakeholders to take responsibility to act and allocate time and money to support sector development.

- The entire sector, private actors in particular, should develop a national export marketing action plan for fruit and vegetables addressing, among others, the following aspects:
 - measures to increase quality and reliability of fresh produce;
 - measures to lower costs and increase efficiency of exporting;
 - focus on target markets and their segments; consider investing in the European market but at the same time improve the channels towards Middle East, African, Russian and other Asian markets;
 - focus on the Lebanese product calendar and measures to reach demand-based production, building on the Lebanese fruit and vegetables' unique selling points:
 - choosing table grapes and avocado as flagships and leading crops for the export strategy, while other crops follow in their wake;
 - using the outstanding taste and flavour of Lebanese agricultural produce as added-value factors;
 - pointing the role and importance of organic production and adding organic as another added-value factor;
 - investing in branding and positioning of Lebanese fruit and vegetables;
 - including the large Lebanese diaspora all over the world in the marketing and distribution operations.
- The chambers of commerce, in particular the agricultural committee under FCCIAL, have a good position and mandate to take the lead in developing such an action plan.

Availability of key inputs and technologies for SMEs

The lack of high-quality inputs at competitive prices, combined with the lack of competitive finance schemes through banks and microfinance institutions, can be addressed and tackled by:

- supporting the private sector actors by increasing local availability through identifying new international sourcing options and strengthening business matchmaking and B2B relations with identified foreign suppliers;
- strengthening the R&D capacity of Lebanese institutions to make improvements in cultivation, post-harvest and local value addition;
- supporting financial institutions in developing new and strengthening existing financial services for SMEs in the agricultural sector, possibly through revolving funds and together with donors and NGOs.

Country and sector image

An eventual national export marketing action plan should include a strategy and an action plan for the coming five years, related to positioning and branding of Lebanese fruit and vegetables in the target markets, including task division and budget allocation.

Infrastructure

The eventual national export marketing action plan should also address the necessary increase in infrastructure and functioning of the cold chain, which requires a high-level approach.

14.2.4 Improved CSR performance

We recommend integrating CSR as a theme in all ongoing and future interventions at sector level, such as in the national export marketing action plan, and at SME level. We also recommended supporting exporters with CSR certification because it creates more market opportunities. The GLOBALG.A.P. standard includes various CSR-related aspects, attesting that a producer is compliant with basic market requirements on environmental and social aspects. However, a GLOBALG.A.P. certificate does not distinguish Lebanese produce from many other global suppliers. Even CSR certification schemes⁶ tend to become must-haves instead of something special in high-end markets such as Europe. Nevertheless, Lebanese exporters can use CSR as

⁶ GRASP (a GLOBALG.A.P. add-on), Business Social Compliance Initiative (BSCI), Ethical Trade Initiative (ETI), Sedex Members Ethical Trade Audit (SEDEX/SMETA), Global Social Compliance Programme (GSCP), Fair Trade, Fair for Life.

an instrument to position themselves as serious suppliers, ready for all market types and levels. In practice, this means that exporters, in collaboration with their farmers, should address:

- **Human rights:** avoid child labour and improve care for workers;
- **Environment:** use efficient irrigation methods, save water and prevent waste water, consider heat-resistant species and rootstocks, adapt crop patterns, reduce greenhouse gas emissions by conservation and improved management of lands, recycle plastics and implement biological crop protection;
- **Value chain transparency and inclusiveness:** form win-win relationships with supplying farmers under transparent and fair conditions and give special attention to women and youth.

In addition, we recommended conducting dedicated CSR interventions along three lines:

- developing a national CSR strategy;
- training and awareness campaigns;
- monitoring.

A national CSR strategy should be part of the national vision on sustainable agriculture. A national CSR strategy would stimulate the private and the public sector to commit to good governance, including transparency, accountability, access to information, participation and efforts to eliminate corruption. Apart from being a guideline for public and private priorities, a national CSR strategy is also a tool to streamline efforts and funds from the international donor community and NGOs.

Training and awareness campaigns for SMEs, cooperatives, unions, syndicates, NGOs and the public sector should focus on master classes and awareness and demonstration programmes to help further spread the business advantage of CSR. The agenda should address the three CSR themes:

- Human rights, including working conditions, gender equality, child labour, etc.
 - Training in safety standards for workers. Some exporters already pay attention to this theme, so promoting their success can positively influence other exporters' standards;
 - Training and demonstration on how to use agrochemicals with minimal damage and contamination;
 - Raising awareness about legal responsibilities of employers and rights of workers;
 - Raising awareness about child labour. Exporters may change their attitude towards child labour at the risk of being shut out of markets because consumers and retailers in these markets do not accept child labour, requiring certification to attest the absence of child labour in the value chain;
- Environment: improving agrochemical handling, tackling pollution and waste, water use, etc.
 - There are significant opportunities to employ techniques using efficient irrigation methods, save water and prevent waste water, such as using treated greywater.
 - Farmers also can implement measures such as using more heat resistant species and rootstocks, changing planting dates and adapted crop patterns.
 - Other opportunities published by FAO, the Lebanese Agricultural Research Institute (LARI) and the MoA include:
 - reduction of greenhouse gas emissions by conservation and improved land management;
 - plastic recycling;
 - biological crop protection with natural enemies instead of agrochemicals;
 - sharing and promoting knowledge through the education system and engaging new generations;
- Value chain transparency and inclusiveness: involvement of small farmers in export value chains, in certification schemes and in models to build vertical integration with win-wins for all actors in the chain, etc.;
 - Providing incentives for IDAL to stimulate exporters and farmers to improve practices and obtain certifications, such as GLOBALG.A.P., HACCP and ISO, not only for larger operations, but also for cooperatives. The sector has a significant resistance to change, but

donors and NGOs can use certified farmers and cooperatives as starting points for cooperation as they could be more knowledgeable and open-minded about improving working conditions;

- Promotion and establishment of ethical cooperatives will stimulate exporters to work with and buy products from farmers and cooperatives that embrace human rights and environmental stewardship;
- Direct impact on the families' and communities' income will be noticeable;
- Increasing the role of women in agriculture should be more present in policymaking. Including women in leading positions in cooperatives, ministries and government to advocate for change and reform, for example, would contribute to female empowerment and fair representation in the sector;
- Youth-led start-ups can contribute to highlighting the positive effect of opportunity identification, motivation and resources on entrepreneurship and entrepreneurship training.

Monitoring and evaluation are critical to ensure sustainability of all these efforts, building on the experience of many completed and ongoing efforts from national and international organisations to strengthen the sector. Two possible approaches to monitor and evaluate include:

- Enforcement of laws and policies: Decree 8987, which protects children from hazardous labour, should be made a priority for public sector agents (General Security) monitoring the number of refugees working in this sector, and categorising them into age groups to ensure that minors are not working in hazardous working conditions;
- Many donors and NGOs focus on supporting rural communities, but projects often end without completion for lack of funding. Monitoring provides insights into achievements and errors, providing valuable inputs for donors, planners, implementers and policy makers.

14.3 Interventions

14.3.1 Existing interventions by various donors and organisations

Various donors have conducted and currently conduct interventions trying to address the obstacles and needs of the private sector and the export enabling environment. Tables 30 and 31 below link the existing obstacles in the sector with the proposed solutions and with the capacity or programmes of various donors and local organisations. The overviews show which donor or local organisation could be in charge of each specific obstacle or need and on which areas CBI can take a role. Table 30 focuses on obstacles, needs and interventions that directly target and influence SMEs. Table 31 focuses on the export enabling environment.

Table 30: Obstacles, solutions and interventions targeting SMEs

Identified obstacle	Proposed solution	Organisations*	CBI mandate
Related to the pre and post-harvest stages in the supply chain			
Quality and consistency issues, no GAP compliance	TA, training, coaching on farming practices	EC, USAID, EKN, MoA, LARI, PUM	Partly (coach certification)
	Stimulate organic production		Partly
Weak post-harvest practices, no GMP compliance	TA, training, coaching in post-harvest practices	EC, USAID, MoA, LARI, PUM	Partly (coach certification)
Water availability and quality	Identify solutions for water saving techniques	Lebanon Water Programme, MoA, LARI, PUM	No
	TA, training, coaching in farming practices	EC, USAID, MoA, LARI	No
Small-scale production	Encourage and stimulate cooperative models for the benefit of small farmers	EC, USAID, EKN	Yes, plus other RVO instruments
High cost price	Encourage and stimulate cooperative models for the benefit of small farmers	EC, USAID, EKN	Yes, plus other RVO instruments
	Provide training on costing & pricing		Yes
Many small farmers are not involved in export value chains	Encourage and stimulate cooperative models for the benefit of small farmers	EC, USAID, EKN	Yes, plus other RVO instruments
	Encourage vertical cooperation in the chain	EC, USAID, EKN	Yes
Weak access to finance	Improve financial management and assist in creating bankable export marketing plans	EC, USAID, PUM	Yes
Weak culture and mechanisms to cooperate and share	Encourage vertical cooperation in the chain	EC, USAID	Yes
Related to market and market access			
Border closures limiting physical market access and high associated costs	Assistance with developing export marketing plans, including product market combinations, marketing strategy and marketing planning	EC, USAID, MoA, MoET, IDAL	Yes
Competitor pressure on GCC markets			
Long shipping lines and high costs to Europe			
Similar seasonality to Southern European suppliers			
Weak export management skills at SME level			
Weak market intelligence (MI) capacity at SME level	Assisting in using MI and developing tailored MI for target markets	EC, USAID, MoET	Yes
Not enough compliance with market standards, including CSR (human rights, environment and value chain transparency and inclusiveness)	TA, training, coaching in farming and post-harvest practices	EC, USAID, MoA, LARI, PUM	Partly (coach certification)
	Awareness raising, TA and coaching to improve CSR practices	ILO, CSR LEBANON, PUM	Yes
Weak linkages and networks in high-end markets	Assistance in market entry and market consolidation through coaching, trade fairs, B2B missions	EC, USAID	Yes
<p>* The most relevant donors are the European Commission (PSD by Expertise France), USAID (LED by Chemonics and LINQ by Land O'Lakes) and the EKN. They all work with local NGOs and organisations in various settings, such as Emkan, chambers of commerce (esp. CCIAZ), Fair Trade Lebanon, FAO, Georges N. Frem Foundation, ILO, MADA Association, René Moawad Foundation, Safadi Foundation.</p>			

Table 31: Obstacles, solutions and interventions targeting the export enabling environment

Identified obstacle	Proposed solution	Organisations*	CBI mandate
Related to the institutional support structure and export related services for SMEs			
Limited connections between the private and public sector	Create examples and best practices, based on a national vision on sustainable agriculture	FAO, EC	Yes, facilitating development of a vision
	Improve the effectiveness of donor coordination	FAO	Partly
Research, education and practical extension are weak	International cooperation	MoA, LARI, EKN	No
BSOs support the sector but do not offer commercial export-related services	Strengthen BSO capacity in developing and offering export-related services and lobbying <ul style="list-style-type: none"> ▪ export development and promotion ▪ business development ▪ marketing intelligence ▪ establishing CSR standards ▪ organisation and staff capacity 		Yes, CBI intends to support the chambers
Related to policies, laws and regulations for SMEs			
No clear vision, capacity and funds in the public sector and no export marketing strategy	Develop a national vision and develop a sector export marketing action plan with involvement of all stakeholders		Yes
Lebanon does not have a stable, transparent, export-friendly economy	Include export friendliness in the export marketing action plan	Various ministries, IDAL, Chambers of Commerce	Partly (most issues beyond CBI's scope)
Weak regulatory framework on product quality, SPS	Assist authorities with improving laws, monitoring and enforcement	FAO	No
	Training institutions to assist SMEs in complying with legislation in target markets		Yes
	Support in developing national quality standards	Various ministries, LIBNOR, FAO	Partly
	Establish public-private partnerships for investments in laboratory infrastructure		No
Related to the availability of key inputs and technologies for SMEs			
Limited availability and high costs of high-quality inputs	Assist SMEs to find the right supplier (B2B matchmaking)		Yes
	Strengthen the R&D capacity of institutions to achieve improvements in pre and post-harvest and in value addition		No
Certification for GAP and GMP schemes are costly	Coordinate and align certification activities of suppliers and donors		Yes
Banks and microfinance institutions do not offer competitive finance schemes	Strengthen the service delivery of financial institutions to SMEs by awareness raising, knowledge transfer and involvement in the sector export marketing action plan	EC, USAID (partly)	Partly

Related to the country and sector image			
No strong overall image and brand name in target markets	Develop a national positioning and branding strategy and action plan built into the export marketing action plan, including, for example, social media Provide training for Lebanese embassy staff abroad	MoET, MoA, Ministry of Exterior, embassies, chambers of commerce, IDAL	Yes
Related to infrastructure			
Weak cold chain	Increase the infrastructure and functioning of the cold chain	EC, USAID (partly), banks and microfinance institutions	No
	Establish public-private partnerships for investments in cold chain infrastructure	Banks and microfinance institutions	No
Related to CSR			
No national vision on sustainable agriculture	Develop a national vision on sustainable agriculture and a national CSR strategy	CSR Lebanon	Yes
	Integrate CSR as a theme in ongoing and future interventions	EC, USAID, EKN	Yes
No incentives for SMEs to address CSR issues	Provide awareness campaigns for SMEs, BSOs and the public sector	CSR Lebanon	Yes
	Improve enforcement of laws and policies	Various ministries	No
* The most relevant donors are the European Commission (PSD by Expertise France), USAID (LED by Chemonics and LINQ by Land O'Lakes) and the EKN. They all work with local NGOs and organisations in various settings, such as Emkan, chambers of commerce (esp. CCIAB), Fair Trade Lebanon, FAO, Georges N. Frem Foundation, ILO, MADA Association, René Moawad Foundation, Safadi Foundation.			

14.3.2 Proposed CBI intervention

Based on interviews with exporters and other stakeholders as well as the validation workshop on 12 September 2018 in Beirut, we estimate that 10 to 15 exporters of fruit and vegetables can be selected for a four-to-five-year CBI business export coaching programme (BEC) to help them achieve their export ambitions. Proposed modules of such a BEC are:

- Support in developing a marketing strategy and defining product market combinations by drafting a bankable export marketing plan (EMP);
- Training and coaching in business development;
- Training and coaching in market intelligence;
- Training and coaching in costing and pricing;
- Assistance with finding the right suppliers (B2B matchmaking) to gain access to high-quality inputs and technologies;
- Coaching on obtaining certifications;
- Assistance with CSR implementation;
- Awareness training and coaching on models to collaborate with farmers and farmer groups;
- Awareness training and coaching on establishing vertical cooperation models in the chain;
- Coaching during the market entry phase, such as participating in trade fairs, export marketing missions to target markets and participation in incoming buyer missions;
- Coaching during the market consolidation phase.

A second component of a CBI intervention will be to address issues in the export enabling environment that go beyond the scope of SMEs. Relevant proposed elements included:

- Support in developing a national vision on exports of fruit and vegetables, primary meant for the private sector, to be led by the agricultural committee under FCCIAL;

- Facilitation for the development of a national export marketing action plan and stakeholder guidance during its implementation, also led by FFCIAL. Proposed initiatives include:
 - Training institutions to assist SMEs in complying with legislation in target markets;
 - Support sector stakeholders, primarily the government, in developing national quality standards;
 - Support with improving donor coordination;
 - Coordination of certification activities of suppliers and donors;
- Support in creating a national positioning and branding strategy and action plan;
- Support in developing a national CSR strategy, preparing and conducting CSR awareness campaigns for SMEs, BSOs and the public sector.

A third component of a CBI intervention can be a multi-year support programme to further professionalise the operation of the four regional chambers of commerce. Such a BSO programme should focus on organisational strengthening by improving long-term financial sustainability, such as providing paid services and increasing staff competencies, and on the capacity of the organisations to support SMEs with:

- business development services;
- export development and export promotion services;
- market intelligence services;
- implementing CSR.

14.3.3 Risks

A CBI intervention in Lebanon entails certain risks. The table below presents the expected risks, their probability, acceptability and ways to prevent or mitigate such risks.

Proposed intervention	Risk	Probability, acceptability, prevention or mitigation
Offering a CBI intervention in general	Political instability, mistrust, corruption, lack of support and money for the sector	It is a fact of life and expected to continue in the coming years. Private stakeholders strongly recommend not to rely on the government. Strong presence of serious international donors and committed local BSOs and NGOs are positive and encouraging signs.
	Not enough impact from a CBI intervention due to lack of coordination with other interventions in fields where CBI is not active	The landscape of various projects in agriculture is complicated and may require more local presence and coordination from CBI than usual in CBI interventions.
	Too low competitiveness in the European market	Although Lebanon also targets other markets, the absence of substantial options in Europe, would mean that an important cornerstone for a CBI intervention would disappear. We recommend focusing on the flagship products, table grapes and avocado. The 2018 potato shipment to the Netherlands is an encouraging development.
Offering a BEC for 10–15 exporters (component 1)	Technical assistance, training and coaching SMEs on various business competencies and guiding them towards market entry and market consolidation.	
	Not enough eligible, committed participants	If CBI only accepts exporters that aim for the European market, only a handful or fewer will be eligible. If other markets can be included, 10 to 15 exporters are expected to be eligible.
	The majority of exporters are traders in the first place, not primarily working with produce cultivated on their own land	Although many exporters source from farmers and are used to have loose, often unwritten agreements, there are enough exporters with full control over production with owning land or through fixed relationships, or able to further develop such working methods.
	Not possible to overcome the CSR risks and reach compliance with CSR requirements in high-end markets	Issues related to human rights are difficult for SMEs resolve. Issues related to the environment and value chain transparency and inclusiveness are more easily solvable.

	The low capacity to cooperate within the supply chain in Lebanon, inhibits the chances to build efficient market channels	The culture of individualism is a fact and is not easy to change. However, it is worthwhile to invest in building examples and best practices.
	Lack of access to finance inhibits value chain stakeholders from investing in necessary improvements to their operations	Signals are mixed. Some actors complain about the absence of competitive financial schemes, others note that good business plans can obtain good loan conditions. Support for SMEs to prepare bankable plans is part of the solution.
Supporting the export enabling environment (component 2)	Support with developing a national vision for the exports of fruit and vegetables, primary meant for the private sector, to be led by the agricultural committee under FCCIA. Facilitation of the development of a national export marketing action plan and stakeholder guidance for its implementation. Support with creating a national positioning and branding strategy and action plan.	
	Lack of interest and priorities from the public sector	This is a probable situation. We recommend to let the private sector, led by FCCIAL, take the lead in action planning, but involving the government from the start of the process.
	Mismatch between mentality, capacity and expectations of SMEs on one side and CBI objectives on the other side	Private actors have training fatigue, impatience and often wish to proceed to action right away. The challenge for CBI is to offer hands-on support.
	No effective collaboration or conflicting agendas among value chain actors	Donor organisations, BSOs and local NGOs may indeed have conflicting or disparate interests. The challenge is to bring them all together in an effective process. This may require more local presence and coordination from CBI than usual in CBI interventions.
	Support with developing a national CSR strategy and with preparing and conducting CSR awareness campaigns for SMEs, BSOs and the public sector.	
	CSR is not high enough on the agenda, due to lack of awareness and lack of willingness and capacity to change	There are many and deep CSR obstacles and risks. Although human rights issues are likely to be hard to solve, environmental issues and value chain transparency and inclusiveness issues are more easily solvable, especially with arguments that relate to market requirements.
Offering a BSO programme to build capacity in the four chambers of commerce (component 3)	Technical assistance, training and coaching staff at the chambers of commerce for developing and offering export-related services to SMEs.	
	Difficulties with finding and handling the right persons in charge at the each chambers of commerce during the start and implementation phases of the programme	The organisation of the four regional chambers and their federation, FCCIAL, is complicated and processes have a highly bureaucratic character. It is important to give ample attention in the start-up phase to dealing with the right persons and agreeing on clear working arrangements and deliverables.
	Lack of priority, own budgets and available staff time to participate in the programme	In previous surveys and meetings it became clear that interventions should have a highly practical character. Not too much vision and strategy, but simple hands-on initiatives on the ground, aiming at small steps and quick wins.

Annex 1 References

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Annex 2 Field research activities in Lebanon (2016 and 2018)

Lebanon field research 11–14 July 2016 Jos Leeters

Monday 11 July	Stakeholders meeting at the Chamber of Commerce of Industry and Agriculture Beirut & Mt. Lebanon (CCIAB) with IDAL and active exporters of fruit and vegetables
Tuesday 12 July	Field day to the Bekaa valley, prepared and supported by the head of the agricultural department of the Chamber of Commerce Zahle and Bekaa (CCIAZ)
Wednesday 13 July	Field day to the South, prepared and supported by the Chamber of Commerce of Industry and Agriculture Sidon and South Lebanon
Thursday 14 July	Donor coordination meeting, headed by EKN, with participation of the World Bank, EU delegation, FAO, USAID and the Italian Development Cooperation

Lebanon field research 15–17 November 2016 Jos Leeters

Tuesday 15 November

Whole day Beirut	
09:00	Visit input supplier, researcher, expert
10:30	Visit Beirut wholesale market
14:30	Meeting with USAID
18:30	Meeting with agriculture engineer and expert

Wednesday 16 November

Whole day Akkar	
09:30	Meeting with potato farmer
11:00	Meeting with citrus farmers
12:30	Meeting with avocado farmers
13:30	Meeting with regional exporters
14:15	Visit the facilities of a trade company
15:00	Visit the facilities of a trade company

Thursday 17 November

Whole day Bekaa Valley	
09:00	Meeting with farmer
10:30	Meeting with a potato farmer, grape farmer and exporter
11:30	Visit of the Kab Elias wholesale market and meeting with one of the traders
12:30	Visit of the handling facilities
14:00	Visiting grape plantation
18:00	Visiting the food fair in Beirut

Beirut training EU Market Access Requirements and validation workshop 15–16 December 2016 Dirk-Jan Zegelaar, Eric Bentil Quaye (GLOBALG.A.P. trainer), Jos Leeters Location: Beirut, premises of CCIAB

Thursday 15 December whole day and Friday 16 December morning	1.5 day workshop 'Market Access Requirements for exporting agricultural products to the EU' with participation of Lebanese exporters and representatives of BSOs and donors
Friday 16 December afternoon	Validation workshop with presentation of the preliminary findings of the VCA to get feedback and additional information. Same audience as in the Thursday and Friday morning training

Lebanon field research 9–13 July 2018
Jos Leeters in cooperation with Hania Chahal

Monday 9 July

Whole day Beirut	
09:00	Meeting with consultant
10:00	Meeting with consultant
12:00	Visit CCIABML and meeting
15:00	Interview with exporter

Tuesday 10 July

Whole day in the Bekaa	
09:30	Visit CCIAZ
10:30	Interview with exporter
14:00	Interview with exporter

Wednesday 11 July

Whole day in the south and Beirut	
09:00	Visit CCIAS
10:00	Interview with exporter
14:00	Interview with exporter

Thursday 12 July

Whole day in the north	
09:30	Visit CCIAT
12:00	Interview with exporter
14:00	Interview with exporter

Friday 13 July

Whole day Beirut	
09:30	Visit USAID
11:00	Ministry of Agriculture
12:30	Visit CCIABML
14:00	Visit EKN
15:30	Visit FAO

Lebanon additional field research and validation workshop 10–13 September 2018
Dirk-Jan Zegelaar, Jos Leeters

Monday 10 September

Whole day Beirut	
10:00	Meeting with consultant
12:00	Visit Land O'Lakes
12:00	Visit Georges N. Frem Foundation

Tuesday 11 September

Whole day Beirut	
11:00	Visit Expertise France
14:00	Meeting with NGO Emkan

Wednesday 12 September

Location: Beirut, Smallville Hotel	Validation workshop for private and public sector stakeholders with presentation of the preliminary findings of the VCA to get feedback and additional information.
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Thursday 13 September

10:30	Wrap-up meeting with the chambers of commerce
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Annex 3 Statistics

A3.1 Lebanon fresh fruit exports 2011–2015

Table 32: Lebanon fresh fruit exports (HS08): main products
In €1,000

Code	Product label	2011	2012	2013	2014	2015*
	Total fresh fruit exports	51,711	63,469	63,640	47,873	129,158
'080810	Fresh apples	9,708	14,926	11,182	9,336	44,495
'080510	Fresh or dried oranges	9,328	9,607	5,474	6,211	13,447
'080610	Fresh grapes	3,248	5,219	5,381	5,508	10,133
'081090	Fresh tamarinds, cashew apples, jackfruit, lychees, sapodilla plums, passion fruit,...	2,008	2,008	1,544	1,618	8,823
'080930	Fresh peaches, incl. nectarines	2,603	2,420	2,754	1,381	8,571
'080910	Fresh apricots	452	800	718	284	7,632
'080940	Fresh plums and sloes	845	1,331	1,250	859	6,772
'080921	Fresh sour cherries "Prunus cerasus"	-	1,222	451	1,199	4,559
'080929	Fresh cherries (excluding sour cherries)	-	920	1,027	817	4,489
'080520	Fresh or dried mandarins incl. tangerines and satsumas, clementines, and similar)	1,865	2,125	1,644	2,047	4,364
'080390	Fresh or dried bananas (excl. plantains)	-	8,769	11,058	6,846	4,081
'080830	Fresh pears	-	1,763	1,389	735	2,186
'080440	Fresh or dried avocados	251	414	443	339	1,505
'080310	Fresh or dried plantains	-	4,500	1,866	2,507	1,496
'080211	Fresh or dried almonds in shell	140	167	291	207	1,299
'080550	Fresh or dried lemons "Citrus limon, Citrus limonum" and limes "Citrus aurantifolia,..."	7,693	2,351	3,619	2,915	981
'080410	Fresh or dried dates	847	548	605	762	854
'081350	Mixtures of nuts or dried fruits	78	42	109	367	664
'080290	Nuts, fresh or dried (excl. coconuts, Brazil nuts, cashew ...	429	1,010	9,474	809	659
'080540	Fresh or dried grapefruit	388	425	365	323	623
'080711	Fresh watermelons	161	307	582	371	209
'081310	Dried apricots	47	30	22	80	190
'080590	Fresh or dried citrus fruit (excl. oranges, lemons "Citrus limon, Citrus limonum", ...	67	77	393	59	156
'080251	Fresh or dried pistachios, in shell	-	301	231	39	153
'081340	Dried peaches, pears, papaws "papayas", tamarinds and other edible fruits (excl. nuts)	129	200	217	139	147
'081070	Fresh persimmons	-	465	379	311	93
'080420	Fresh or dried figs	55	68	93	74	75
'081030	Fresh black-, white- or redcurrants and gooseberries	-	2	-	-	74
'080212	Fresh or dried almonds, shelled	45	161	41	322	63
'081010	Fresh strawberries	102	58	48	23	52
'080450	Fresh or dried guavas, mangoes and mangosteens	94	128	75	86	41
'081040	Fresh cranberries, bilberries and other fruits of the genus Vaccinium	-	-	-	1	39
'080252	Fresh or dried pistachios, shelled	-	23	37	71	22
'080131	Fresh or dried cashew nuts, in shell	-	-	6	9	19

'080132	Fresh or dried cashew nuts, shelled	78	93	114	465	19
'080112	Fresh coconuts in the inner shell "endocarp"	-	-	-	-	19
'081320	Dried prunes	6	9	11	11	18
'080620	Dried grapes	25	26	30	28	18
'080719	Fresh melons (excluding watermelons)	80	123	84	110	14
'080280	Fresh or dried areca nuts	-	-	-	-	12
'080222	Fresh or dried hazelnuts or filberts "Corylus spp.", shelled	200	7	45	145	11
'080111	Desiccated coconuts	6	5	6	11	10
'081190	Frozen fruit and nuts, uncooked or cooked by steaming or boiling in water, whether or not sweetened ...	2	-	24	38	10

*2015 data based on partner reported data (mirror data).

Source: Trade Map (2016)

A3.2 Lebanon fresh vegetable exports 2011–2015

Table 33: Lebanon fresh vegetable exports (HS08): main products
In €1,000

Code	Product label	2011	2012	2013	2014	2015*
	Total fresh vegetables exports	32,144	31,008	49,989	59,344	95,398
'070190	Fresh or chilled potatoes (excl. seed)	14,837	12,118	27,629	36,694	56,278
'070511	Fresh or chilled cabbage lettuce	4,887	6,402	8,857	2,538	12,396
'070390	Leeks and other alliaceous vegetables, fresh or chilled (excluding onions, shallots and garlic)	3	2	-	1	6,908
'071350	Dried, shelled broad beans "Vicia faba var. major" and horse beans "Vicia faba var. equina ...	683	252	381	586	2,941
'070999	Fresh or chilled vegetables n.e.s.	-	1,858	1,497	1,515	2,784
'070110	Seed potatoes	157	-	-	1	2,776
'070310	Fresh or chilled onions and shallots	2,113	1,355	2,782	3,048	1,792
'070820	Fresh or chilled beans "Vigna spp., Phaseolus spp.", shelled or unshelled	230	307	349	349	1,587
'070200	Tomatoes, fresh or chilled	546	811	1,126	1,085	1,504
'070490	Fresh or chilled cabbages, kohlrabi, kale and similar edible brassicas (excluding cauliflowers, ...	113	103	249	128	1,240
'070700	Cucumbers and gherkins, fresh or chilled	337	532	550	647	680
'070930	Fresh or chilled aubergines "eggplants"	322	430	385	391	538
'071320	Dried, shelled chickpeas "garbanzos", whether or not skinned or split	571	352	297	287	524
'071420	Sweet potatoes, fresh, chilled, frozen or dried, whether or not sliced or in the form of pellets	-	1	11	2	505
'071340	Dried, shelled lentils, whether or not skinned or split	429	414	337	418	490
'071290	Dried vegetables and mixtures of vegetables, whole, cut, sliced, broken or in powder, but not ...	95	142	288	342	310
'070810	Fresh or chilled peas "Pisum sativum", shelled or unshelled	57	98	111	286	300
'070890	Fresh or chilled leguminous vegetables, shelled or unshelled (excluding peas "Pisum sativum" ...	108	264	193	331	265

'070960	Fresh or chilled fruits of the genus Capsicum or Pimenta	296	282	301	310	258
'070993	Fresh or chilled pumpkins, squash and gourds "Cucurbita spp."	-	289	286	302	135
'071339	Dried, shelled beans "Vigna and Phaseolus", whether or not skinned or split (excluding beans ...	276	520	506	807	132
'070519	Fresh or chilled lettuce (excluding cabbage lettuce)	2,363	2,251	1,255	6,773	112
'071010	Potatoes, uncooked or cooked by steaming or by boiling in water, frozen	217	219	253	137	100
'070690	Fresh or chilled salad beetroot, salsify, celeriac, radishes and similar edible roots (excluding ...	67	74	86	159	99
'071120	Olives, provisionally preserved, e.g. by sulphur dioxide gas, in brine, in sulphur water or ...	57	55	48	33	96
'070951	Fresh or chilled mushrooms of the genus "Agaricus"	1	4	2	11	91
'071333	Dried, shelled kidney beans "Phaseolus vulgaris", whether or not skinned or split	73	79	136	123	90
'071490	Arrowroot, salep, Jerusalem artichokes and similar roots and tubers with high starch or inulin ...	1	2	-	-	77
'070992	Fresh or chilled olives	-	49	84	7	58
'071390	Dried, shelled leguminous vegetables, whether or not skinned or split (excluding peas, chickpeas, ...	337	679	967	915	35
'071029	Leguminous vegetables, shelled or unshelled, uncooked or cooked by steaming or by boiling in ...	230	215	127	167	35
'070410	Fresh or chilled cauliflowers and headed broccoli	279	291	306	369	31
'071140	Cucumbers and gherkins provisionally preserved, e.g. by sulphur dioxide gas, in brine, in sulphur ...	52	5	31	14	29
'071310	Dried, shelled peas "Pisum sativum", whether or not skinned or split	11	4	-	38	25
'070610	Fresh or chilled carrots and turnips	55	48	53	116	25
'071080	Vegetables, uncooked or cooked by steaming or by boiling in water, frozen (excluding potatoes, ...	6	42	25	23	24
'070991	Fresh or chilled globe artichokes	-	23	26	21	15
'070420	Brussels sprouts, fresh or chilled	-	1	36	12	14
'070959	Fresh or chilled edible mushrooms and truffles (excluding mushrooms of the genus "Agaricus")	9	15	7	11	14
'071159	Mushrooms and truffles, provisionally preserved, e.g., by sulphur dioxide gas,...	3	5	2	2	12
'071190	Vegetables and mixtures of vegetables provisionally preserved, e.g. by sulphur dioxide gas, ...	27	89	55	24	12

*2015 data based on partner reported data (mirror data).
Source: Trade Map (2016)

Annex 4 Small farmers cooperative models

Current situation and solution pathways

- Although there are many farmers cooperatives in Lebanon, they are commonly not built on business principles and they rarely develop marketing activities or empower farmers to be more competitive in export markets.
- The majority of active exporters of fruit and vegetables in Lebanon do not have sufficient produce from their own cultivation in terms of volume or in terms of diversity in crops and varieties. Even they do own the production land, they usually source produce from small farmers. Based on our 24 interviews with exporters in 2018, more than 90% of the exporters do so. Although figures are not available, more than 50% of all exported fruit and vegetables are estimated to come from small farmers to be consolidated and distributed by a relatively small number of exporters.
- There is a wide diversity in the arrangements between exporters and farmers, namely:
 - some work with a small number of 10–20 farmers, others with large numbers up to 700, but the estimated average is more than 100;
 - some have clear contracts, some only have very loose ties based on oral arrangements and often with the involvement of a middleman or daman;
 - some provide support by training, providing inputs, etc., while others only source the product and consider the farmer as the only responsible actor for the product.
- Increasing market access requirements in existing export channels are creating more difficulties for exporters to source sufficient and reliable products, so they are starting to show the intention and willingness to invest in their relationships with farmers.
- The main constraints for exporters and farmers to develop effective cooperation models lie in:
 - quality, consistence and uniformity of the products, including compliance with GAP, GLOBALG.A.P. and traceability systems;
 - post-harvest methods and facilities, including compliance with GMP schemes;
 - efficiency and costs of the entire operation;
 - governance of the relationship between the exporter and the farmers (communication, contracting, financial arrangements, etc.).
- These constraints are all closely related with a lack of knowledge and skills, a lack of available technology and a lack of finance, both at the level of the exporters and of small farmers. Tackling these obstacles requires vision and a long-term approach, which are typically the work of donors and NGOs. Several donor initiatives address these themes and can be considered as potential partners in the proposed CBI programme.

Options to link with other donor and NGO interventions

- Georges N. Frem Foundation: provides ongoing support for apple growers to modernise their orchards and to bridge existing gaps between farm practices and market requirements, especially in Russia and Europe. The foundation aims to organise farmers in groups to reach better cultivation and post-harvest practices, partly through joint facilities, more bargaining power and better market connections.
- Emkan: This NGO has a serious plan to develop a professional farmer group of 60–100 farmers and build their capacity to comply with international standards. This is in addition to its various other interventions in the fruit and vegetables value chain in the North, focusing on apples, table grapes and avocado, which include setting up and running cold storage, packaging and even wholesale operations.
- Expertise France: Runs the Private Sector Development Programme (PSD), whose component 1 has a focus on farmer support in the Bekaa, prioritising table grapes and cherry farmers, and Akkar, prioritising avocado and vegetables. The PSD addresses horizontal cooperation.
- Avocado farmers in Lebanon understand that they are at the start of a promising development phase of their value chain and that a sustainable export position is crucial, so they already discuss ways of uniting avocado farmers in some kind of collective system.

Annex 5 Interviews with Lebanese exporters 2018

In July and August 2018, we interviewed 24 fruit and vegetables exporters to assess their export business practices, to identify their needs and challenges and to assess their willingness and motivation to step in a multi-year CBI export promotion intervention. These are the outcomes:

What are the competitive advantages of Lebanese fresh fruit and vegetables for foreign markets?	n =
• Taste	14
• Good control of production and post-harvest	14
• Aroma	8
• High quality in general	8
• There is no competitive advantage against other suppliers	4
• Seasonality	2
Which export markets for Lebanese fresh fruit and vegetables have the most potential?	n =
• GCC markets	21
- However, competition is growing, especially from Turkey, Egypt, Iran	
• Africa	8
- Mainly because of counter-seasonality, especially Egypt, East-Africa, Ghana	
• Europe, including Scandinavia	5
• Russia	3
• India	1
What are the main challenges to exporting fresh fruit and vegetables to foreign high-end markets?	n =
• GAP compliance, MRLs, quality, having a solid farmers base	16
• Costs of production (due to scale and costs of land, energy, labour)	13
• Post-harvest (methods, facilities, infrastructure)	12
• Transport (costs and duration)	9
• Market intelligence	6
• Political uncertainty and corruption	4
• Lack of government support	4
• Water availability and quality	4
• Climate change	3
• No adequate facilities for MRL tests	2
• Cooperation between the actors in the value chain	1
• More organic production	1
• Fraud in the organic sector	1
• Bureaucracy / paperwork	1
• Maintaining the market position in the GCC	3
• Modernisation of production and post-harvest methods	1
Which organisation provides support in your export business?	n =
• IDAL	15
• USAID (in particular the LIVCD project)	5
• René Moawad Foundation	2
• Robinson Agro (paid services)	1
• Safadi Foundation	1

What are your main needs to support your export business?	n =
<ul style="list-style-type: none"> Export facilitation TA in market intelligence Networks / linkages in export markets (including Africa) Trade fairs TA in cultivation / GAP, varieties and in organising better supply by farmers TA in harvest and post-harvest Insurances Marketing of organic products 	19 9 7 1 1
Do you work with a business plan?	n =
<ul style="list-style-type: none"> Yes No 	8 16
Do you work with an export plan or a sales plan?	n =
<ul style="list-style-type: none"> Yes No 	8 16
Do you have GLOBALG.A.P. compliance?	n =
<ul style="list-style-type: none"> Yes No Partially or in progress 	5 15 4
Do you have GMP compliance (HACCP, BRC, ISO22000 etc.)?	n =
<ul style="list-style-type: none"> Yes No Partially or in progress 	6 16 2
Do you have organic production methods compliance?	n =
<ul style="list-style-type: none"> Yes No 	2 22
Do you have CSR compliance?	n =
<ul style="list-style-type: none"> Yes No 	0 24
Do you have a membership of any business support organisation?	n =
<ul style="list-style-type: none"> Chamber of Commerce Syndicate of Fruit and Vegetables Exporters 	19 9
Are you willing to participate in a multi-year CBI export promotion intervention?	n =
<ul style="list-style-type: none"> Yes No 	24 0

Annex 6 Market information and trade statistics GCC countries

Annex 6 shows imports in GCC markets for various crops in which Lebanon has a position or can reach a potential position, namely oranges, mandarins, apples, peaches and nectarines, apricots, cabbage lettuce, onions and shallots.

Table 34: GCC imports of 080510 Fresh or dried oranges and its main suppliers					2016		
Exporter	weight in tons	value in 1,000 US\$	US\$ / kg	%			Supply season
Egypt	451.266	173.254	0,384	54%	1 st supplier	Egypt	November to August
South Africa	245.510	173.808	0,708	29%			
Lebanon	31.118	14.212	0,457	4%			
Spain	25.803	22.585	0,875		2 nd supplier	South Africa	May to November
Turkey	14.657	6.297	0,430				
Australia	13.837	11.396	0,824				
Uruguay	5.035	3.327	0,661				
USA	4.515	4.816	1,067				
Brazil	2.224	1.224	0,550		3 rd supplier	Lebanon	Year-round
Greece	1.533	949	0,619				
Subtotal top-10	795.498	411.868	0,518				
Other (incl. inter-GCC)	39.013	22.324	0,572				
Total	834.511	434.192	0,520				

Source: Trade Map (2017)

Table 35: GCC imports of 080520 Fresh or dried mandarins and its main suppliers					2016		
Exporter	weight in tons	value in 1,000 US\$	US\$ / kg	%			Supply season
Pakistan	89.563	40.275	0,450	38%	1 st supplier	Pakistan	December to April
Turkey	42.579	17.295	0,406	18%			
Egypt	24.684	12.108	0,491	10%			
Morocco	14.755	17.032	1,154		2 nd supplier	Turkey	October to April
South Africa	12.988	13.057	1,005				
Spain	12.776	15.195	1,189				
Lebanon	10.994	7.052	0,641				
Australia	6.714	8.965	1,335		3 rd supplier	Egypt	November to April
Argentina	3.265	3.195	0,979				
Uruguay	3.234	3.304	1,022				
China	2.532	2.033	0,803				
Jordan	1.636	707	0,432	0,7%			
Subtotal top-12	225.720	140.218	0,621				
Other (incl. inter-GCC)	10.857	6.427	0,592				
Total	236.577	146.645	0,620				

Source: Trade Map (2017)

Mandarins: the supply of mandarins shows two quality and price levels. Pakistan, Turkey, Egypt, Jordan and Lebanon usually sell in the range of US\$500 per tonne, whereas Morocco, South Africa, Spain, Argentina and Australia have prices in the range of US\$1,000 per tonne.

Apples: European suppliers tend to store apples for long times, a full year in fact, hoping for high prices. In many cases, these stored apples are not sold internally and instead are exported at prices as low as US\$1 per kg to other markets such as the Middle East, negatively affecting the local production's market prices. It is difficult for Lebanon to compete with these prices.

Table 36: GCC imports of 080810 Fresh apples and its main suppliers

2016

Exporter	weight in tons	value in 1,000 US\$	US\$ / kg	%	Supply season		
Italy	91.869	96.760	1,053	18%	1 st supplier	Italy	Year-round; focus August to May
France	73.488	76.728	1,044	15%			
Chile	71.974	72.845	1,012	14%			
USA	50.283	60.048	1,194				
China	42.751	38.962	0,911		2 nd supplier	France	Year-round, focus August to April
Iran	38.398	26.056	0,679				
South Africa	35.400	32.396	0,915				
New Zealand	24.151	32.553	1,348				
Lebanon	15.529	7.940	0,511		3 rd supplier	Chile	Year-round; focus April to September
Turkey	9.293	4.588	0,494				
Poland	6.100	5.063	0,830				
Spain	5.952	6.026	1,012				
Subtotal top-12	465.188	459.965	0,989				
Other (incl. inter-GCC)	38.046	31.941	0,840				
Total	503.234	491.906	0,977				

Source: Trade Map (2017)

Table 37: GCC imports of 080930 Fresh peaches and nectarines and its main suppliers

2016

Exporter	weight in tons	value in 1,000 US\$	US\$ / kg	%	Supply season		
Jordan	33.131	15.233	0,460	46%	1 st supplier	Jordan	May to October
South Africa	7.318	11.066	1,512	10%			
Turkey	5.828	3.162	0,543	8%			
Spain	5.624	7.425	1,320				
Lebanon	4.972	3.132	0,630		2 nd supplier	South Africa	October to March
Australia	3.531	9.713	2,751				
Syria	1.606	915	0,570				
Egypt	1.323	1.921	1,452				
USA	1.255	3.923	3,126		3 rd supplier	Turkey	May to August
Tunisia	784	1.972	2,515				
Italy	757	1.180	1,559				
Chile	699	1.005	1,438				
Subtotal top-12	66.828	60.647	0,908		4 th supplier	Spain	May to October
Other (incl. inter-GCC)	5.288	5.187	0,981				
Total	72.116	65.834	0,913				

Source: Trade Map (2017)

Table 38: GCC imports of 080910 Fresh apricots

2016

Exporter	weight in tons	value in 1,000 US\$	US\$ / kg	%	Supply season		
Turkey	6.006	4.305	0,717	36%	1 st supplier	Turkey	April to September
Jordan	4.491	2.474	0,551	27%			
South Africa	2.279	3.840	1,685	14%			
Lebanon	840	1.210	1,440				
Syria	723	517	0,715		3 rd supplier	South Africa	October to January
Saudi Arabia	513	400	0,780				
Australia	328	1.367	4,168				
Iran	252	367	1,456				
Spain	180	489	2,717		4 th supplier	Lebanon	May to August
Tunisia	112	318	2,839				
USA	104	473	4,548				
New Zealand	97	511	5,268				
Subtotal top-12	15.925	16.271	1,022				
Other (incl. inter-GCC)	951	1.205	1,267				
Total	16.876	17.476	1,036				

Source: Trade Map (2017)

Table 39: GCC imports of 070511 Fresh or chilled cabbage lettuce and its main suppliers

2016

Exporter	weight in tons	value in 1,000 US\$	US\$ / kg	%			
Jordan	41.328	22.142	0,536	42%	1 st supplier	Jordan	Supply season Year-round
Spain	14.589	18.083	1,239	15%			
Lebanon	9.652	15.532	1,609	10%	2 nd supplier	Spain	Year-round
Egypt	7.472	6.937	0,928				
Iran	4.477	1.737	0,388				
USA	3.963	14.235	3,592				
Netherlands	2.801	11.451	4,088		3 rd supplier	Lebanon	April to November
Oman	352	199	0,565				
Subtotal top-8	84.634	90.316	1,067		4 th supplier	Egypt	November to July
Other (incl. inter-GCC)	12.628	12.052	0,954				
Total	97.262	102.368	1,052				

Source: Trade Map (2017)

Table 40: GCC imports of 070310 Fresh or chilled onions, shallots and its main suppliers

2016

Exporter	weight in tons	value in 1,000 US\$	US\$ / kg	%			
India	534.791	130.409	0,244	53%	1 st supplier	India	Supply season Year-round
Egypt	322.901	151.259	0,468	32%			
Pakistan	46.333	9.352	0,202	5%	2 nd supplier	Egypt	Year-round
Yemen	30.560	5.281	0,173				
Spain	19.491	10.385	0,533				
Iran	18.259	3.824	0,209				
China	5.360	1.688	0,315		3 rd supplier	Pakistan	May to December
Australia	3.173	2.265	0,714				
USA	2.879	3.886	1,350				
Lebanon	2.482	799	0,322				
Netherlands	2.308	1.220	0,529				
Oman	903	451	0,499				
Subtotal top-12	989.440	320.819	0,324				
Other (incl. inter-GCC	25.989	13.914	0,535				
Total	1.015.429	334.733	0,330				

Source: Trade Map (2017)

Annex 7 Russia imports of fruit and vegetables 2009–2017

This Annex shows Russian import trade statistics over a nine-year period, by product and by country of origin.

Table 41: Russia fresh fruit and vegetable imports by product
In 1,000 tonnes

Source: Russian customs	2009	2010	2011	2012	2013	2014	2015	2016	2017	+/- in %
Totaal	7.010	7.841	8.346	8.013	8.453	7.945	6.860	6.114	7.148	17%
Bananas	981	1.069	1.308	1.256	1.339	1.275	1.227	1.356	1.544	14%
Other	6.029	6.773	7.038	6.758	7.114	6.671	5.634	4.758	5.604	18%
Soft citrus	533	660	739	763	839	847	783	764	811	6%
Apples	1.108	1.204	1.158	1.279	1.352	1.053	896	679	706	4%
Tomatoes	694	698	730	799	856	849	671	465	516	11%
Oranges	444	499	568	489	504	469	469	452	428	-5%
Grapes	375	409	400	379	359	329	257	194	382	97%
Onions (incl.	377	501	454	230	244	362	264	138	314	127%
Pears	313	403	423	410	383	369	267	248	271	9%
Peaches/Nect	163	226	251	266	231	225	200	197	250	26%
Lemons	209	215	227	203	210	209	202	192	214	11%
Carrots	160	227	266	198	258	245	182	154	186	21%
Persimmons	-	-	-	142	115	94	114	113	146	29%
Peppers	104	103	115	143	166	160	129	113	139	24%
Cucumbers	165	201	184	214	215	231	149	116	134	16%
Red/White cabbage	165	213	306	153	179	229	169	79	124	56%
Grapefruit	91	113	122	121	148	125	103	115	108	-7%
Plums	69	79	70	78	79	46	61	59	78	33%
Kiwifruit	65	79	85	103	110	70	57	65	69	7%
Other fresh fruit	219	250	218	74	90	79	73	50	67	35%
Cherries not sour	-	-	-	68	73	57	62	59	62	4%
Garlic	46	45	58	44	52	52	53	51	54	5%
Apricots	58	55	62	67	68	37	43	33	52	57%
Strawberries	32	36	41	52	57	54	48	31	48	55%
Pineapples	35	48	46	49	50	47	32	33	46	37%
Beetroot, salsify, ect.	52	57	87	52	75	65	50	36	41	15%
Watermelons	77	10	9	9	10	15	16	14	28	96%
Head lettuce	10	13	17	21	28	27	18	20	26	34%
Cauliflowers/Broc	13	16	21	26	30	24	17	19	25	29%
Raisens	69	67	45	46	43	34	22	33	24	-28%
Melons	139	71	49	25	9	9	7	8	23	205%
Champignons	47	50	48	59	62	44	48	30	22	-25%
Dates	16	21	20	20	21	18	15	17	21	24%
Aubergines	19	21	22	25	29	26	20	19	21	7%
Courgettes	-	-	-	30	40	45	36	34	20	-41%
Celery	8	10	13	15	18	19	17	17	19	11%
Avocados	6	8	9	11	14	14	12	12	19	56%
Mangoes ect	4	7	7	8	9	9	6	6	12	94%
Other lettuce	1	3	5	5	6	5	5	8	10	24%
Sour cherries	-	-	-	8	10	12	12	11	8	-31%
Other	143	157	163	70	74	67	49	74	81	10%

Source: Factsheet Russia Imports fruit and vegetables 2017, Jan Kees Boon (2017)

Table 42: Russian fresh fruit and vegetable imports by country
In 1,000 tonnes

Source: Russian customs	2009	2010	2011	2012	2013	2014	2015	2016	2017	+/- in %
World	7.010	7.841	8.346	8.013	8.453	7.945	6.860	6.114	7.148	17%
Ecuador	917	986	1.205	1.126	1.282	1.240	1.210	1.333	1.487	12%
Turkey	983	1.134	1.245	1.157	1.157	1.381	1.307	548	1.014	85%
Boycot countr.	1.621	2.004	2.030	2.328	2.329	1.608	19	16	17	5%
Rest	3.489	3.718	3.866	3.403	3.685	3.716	4.324	4.216	4.631	10%
China	668	680	718	632	655	707	672	650	747	15%
Belarus	-	-	-	75	262	503	1.141	633	541	-15%
Egypt	174	248	340	258	303	297	365	403	418	4%
Azerbaijan	268	220	216	246	207	213	234	300	410	37%
Moldova	170	193	225	188	240	67	82	187	346	85%
Morocco	249	257	316	312	326	343	296	353	335	-5%
Serbia	59	124	148	96	114	171	210	265	251	-5%
Israel	183	228	295	267	309	309	243	207	219	6%
South Africa	171	224	215	210	245	226	196	157	208	33%
Iran	105	140	166	156	184	168	174	172	188	9%
Uzbekistan	335	395	305	126	50	17	44	114	156	37%
Argentina	260	257	284	225	226	184	149	147	151	3%
Kazakhstan	256	-	-	8	12	28	26	67	106	59%
Chile	98	116	124	106	115	69	73	63	81	28%
Pakistan	43	83	80	91	80	74	101	98	66	-33%
Costa Rica	49	77	72	116	58	55	38	44	62	40%
Armenia	13	11	15	25	33	17	29	93	53	-43%
India	0	5	6	11	21	26	14	27	36	34%
Georgia	11	21	-	29	50	20	25	30	34	16%
Macedonia	5	8	27	17	11	29	48	51	34	-33%
Peru	8	16	25	27	30	35	23	22	29	35%
Mexico	5	5	6	7	11	7	6	9	27	200%
Bosnia	3	4	4	1	1	6	19	21	25	21%
Brazil	13	14	13	14	14	12	33	10	14	31%
Abhazia	-	-	-	-	-	31	22	16	10	-37%
Kyrgyzstan	168	124	38	6	3	2	3	5	10	109%
New Zealand	5	5	7	6	8	12	9	7	9	42%
Other	169	261	222	145	117	88	50	71	65	-7%
Boycot countr.	1.621	2.004	2.030	2.328	2.329	1.608	19	16	17	5%
Netherlands	226	351	290	237	255	270	19	16	17	4%
Poland	503	488	461	844	977	562	-	-	-	
Spain	207	273	378	415	412	275	0	-	-	
Belgium	141	224	234	182	155	121	-	-	-	
Ukraine	179	187	147	135	117	99	0	-	-	
Greece	61	95	111	158	140	93	-	-	-	
Italy	133	169	179	173	119	73	-	-	-	
France	66	73	78	66	48	43	0	0	-	
Germany	24	54	50	32	27	21	-	-	0	
USA	29	33	28	17	24	15	-	-	-	
Other boycott	52	58	74	69	55	36	0	0	0	

Source: Factsheet Russia Imports fruit and vegetables 2017, Jan Kees Boon (2017)

Annex 8 EKN Beirut's programmes since 2016

Title / description	Partners	Beneficiaries	Implementer	Budget
Vocational and agricultural education Revision of curricula for Agricultural Technical Vocational Education and Training (A-TVET) and rehabilitation of 7 A-TVET schools.	MEHE Ministry of Agriculture UNICEF FAO ILO AERES group	Every year 315 students aged 14–18 benefit from a three-year programme 2,500 students in short courses 100 teachers trained	FAO	€5 million
Promotion of livelihood and employment through investing in land reclamation and water reservoirs	MOA Farmers private sector FAO	3,150 Lebanese farm household individuals 1,500 beneficiaries of temporary jobs created	FAO	US\$8.25 million
Water Hub Support to Bekaa Water Establishment in their capacity to manage resources, donate water sensors to measure water quality and underground levels both with the Litani River Authority and the Bekaa Water Establishment. The hub will also implement an agriculture demo plot at the LARI or Arc en Ciel in the Bekaa to showcase best water practices in agriculture and finally will do a complete mapping of the water situation in Lebanon	Dutch Water Consortium (Acacia Water B.V., Waternet, WUR)		Dutch Water Consortium	€5 million
Improved access to market opportunities for livelihoods in rural areas Supporting cooperatives of farmers in Akkar and the North to produce potato crops that are up to EU standards and varieties that can be exported to the EU.	René Moawad Foundation & Safadi Foundation	60 farmers through cooperatives and 100 individual farmers 640 Syrian workers	René Moawad Foundation	€1 million
Dutch Lebanese Agro food tech hub This programme will support young fresh graduates and engineers to find technology solutions to problems in agriculture. Of the 30 entrepreneurs selected, five will be shortlisted. The five finalists will benefit from seed funding to validate their products and benefit from Dutch expertise by connecting them to StartLife and Food Valley in Wageningen	Berytech	1,500 youth	Berytech	€2.89 million

Source: EKN (September 2018)