

Lebanon Olive & Honey Value Chains Analysis Report

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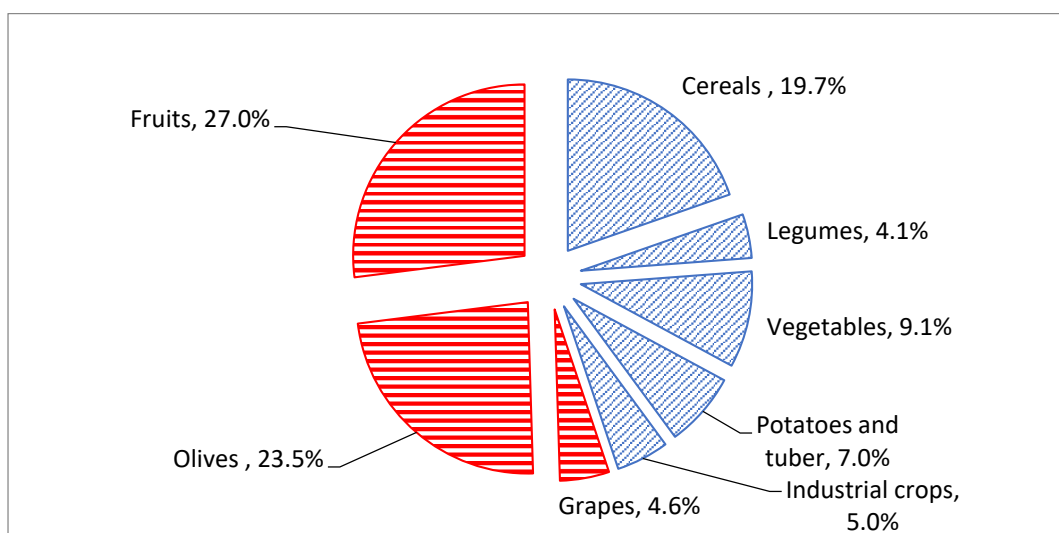
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1. Background and Objectives

Today, agriculture and agroindustry are important and competitive sectors in the Lebanese national economy. Together, they employ 11.5% of the labor force (6.5% and 5.0% for agriculture and agroindustry respectively¹) and represented 11.6% of Lebanese exports (3% and 8.5% for agriculture and agroindustry respectively²) in 2014. Overall, the Lebanese agricultural sector represents around 4.7% of the country's gross domestic product (GDP). This figure increases to 7.0% if agroindustry is added, rendering the Lebanese food production a sector as important as manufacturing in terms of wealth generation.

According to the Ministry of Agricultural (MoA) and the Food and Agriculture Organization of the United Nations (FAO) 2010 census, agricultural land in Lebanon covers approximately 0.24 million hectares (2.4 million dunum), 23.5% of which are covered by olive trees (see Figure 1 below). The number of agricultural holdings is estimated at 170,000, with an average of 1.4ha per holding. More than half of the registered agricultural holdings reported having at least 0.1ha of land planted with olive trees. Further, there are approximately 6,200 registered beekeepers in Lebanon, a number that is subject to high variability due to the low entry and exit cost out of the honey sub-sector. In Lebanon, there are two main types of honey. The first is forest and shrub land based honey including oak honey, cedars honey, and wild flowers honey, while the second is orange blossom honey. Orange blossom honey makes up around 30% of honey production in Lebanon [\[4\]](#).

Figure 1: Lebanon agricultural land use



Source: FAO and MOA agricultural census 2010

In terms of output value, the production of olives and olive oil represents approximately 10% of the total value of agricultural output (depending on the years, variation is due to high alternate bearing capacity of the olive tree). The total production of honey was estimated at 1,620 tons in 2013 with a value estimated at US\$ 32 million³, i.e. approximately 1.5% of total

¹Source: MOSA, UNDP and CAS Living households survey 2004. The figure refers to primary employment. It is estimated that agriculture alone offers either a primary or a secondary income for around 17% of Lebanese households (author estimate).

² Source: Office of the president of the council of ministers: Lebanese National Accounts 2013.

³ Hamade, K. (2016). Non-Wood Forest Products Value chains in Lebanon. FAO, Cairo Regional office.

agricultural output. In 2017, the FAO noted that the production of honey has been volatile. However, despite the decrease in production, there has been an increasing pattern in the last five years.

Several field experts and practitioners have identified the olive oil and honey sub-sectors as sectors with high opportunities and potential for value chain upgrade and improvement. However, olive oil and honey production face challenges common to the whole agricultural sector in Lebanon. As laid out in the MoA's strategy (2015-2019)⁴, these challenges revolve around the need to increase the competitiveness of agricultural production by increasing its productivity while ensuring conformity with international sanitary and phytosanitary requirements, and facilitating access to international markets. Furthermore, agriculture in Lebanon faces significant structural problem, starting from land fragmentation, to high cost of production for small and medium scale farmers, and lack of adequate and accessible post-harvest facilities and services. Moreover, the agricultural cooperative movement remains weak, with its inability to attract farmers⁵, organize, or manage its members. This situation has hampered the ability of the agricultural sector to overcome structural challenges and regional competition.

In recent years, there has been an emphasis on using the value-chain framework in agricultural organization to increase efficiency and expand the sector⁶. The value chain framework is characterized as "a range of activities that are required to bring a product from its conception, through its designing, sourcing of raw materials and intermediate inputs, marketing and distribution, to the final consumer." As such, the value chain creates linkages between the different phases in agriculture, enabling relevant stakeholders understand how best to deliver products efficiently and innovatively, how to reduce costs of production and increase financial gains, and how to ensure successful marketing, food safety, and widespread distribution.

Within that background and within the framework of ACTED's "Support to Olive and Bee Keeping Cooperatives in Lebanon" project (see textbox 1), this report seeks to provide a detailed analysis on the olive oil and honey value chains in Lebanon, with a specific focus on Akkar, Tyr, Hasbaya and Marjeyoun. The report presents a comprehensive analysis of the two sub-sectors by identifying the critical gaps, constraints, and potential opportunities in accessing local, national and international markets. In that regard, there will be an emphasis on local agricultural cooperatives and their capacity to integrate into competitive value chains. As such, this study will help with the planning of tailored interventions aimed at ensuring the sustainable development of agricultural cooperatives in rural areas, by improving quality and productivity, improving the ability to access to local and international markets, and enhancing their internal governance. The findings ultimately feed into improving olive oil and beekeeping sectors in Lebanon.

⁴ Ministry of Agriculture Strategy 2015-2019. Ministry of Agriculture, Beirut.

⁵ Although there is a high number of agricultural cooperatives in Lebanon, only 4.5% of registered farmers are members of a cooperative. Source: MOA and FAO 2010 agricultural census.

⁶ <http://ageconsearch.umn.edu/bitstream/109516/2/18-Anjani-Kumar.pdf>

Textbox 1: ACTED “Support to Olive and Bee Keeping Cooperatives in Lebanon” project

ACTED started in January 2017 a 30-months project financed 75% by EuropeAid with an amount of 800,000 EUR, targeting 53 olive oil and beekeeping cooperatives in 4 areas of Lebanon: Akkar in the North, and Hasbaya, Tyr and Marjeyoun in South. The overall objective of the project is to empower cooperatives to make effective progress towards development of the agriculture sector in vulnerable regions of Lebanon, by enhancing the capacity of the cooperatives as key stakeholders in promoting inclusive and sustainable growth in the honey and olive production sectors through networking and multi-stakeholder engagement.

More specifically, the project aims at: i) Improving productivity and sustainability of honey and olive production in target districts; ii) Improving capacity of cooperatives to advocate, lobby and engage meaningfully with public and private sector actors through creation of mutually beneficial partnerships; and iii) Improving services available from cooperatives for beneficiaries, to increase their access to markets and create value-added goods (including provision of financial support through grants).

ACTED aimed at reaching these objectives through a three-steps implementation plan:

Inception step: This step consists of a capacity assessment to select target cooperatives. The benefiting cooperatives are pre-selected based on a set of criteria that define their willingness to commit to the overall length of the project (30 months) and their need of support for market access. The inception phase also includes a sectoral value chain and needs analysis in the target area and a review of available services for target sectors from chambers of commerce and Ministry of Agriculture, in order to identify intervention priorities.

Capacity building step: Through this step, cooperatives will be provided legal, managerial and institutional counseling and training, technical assistance for improving quality as well as development and implementation of branding and marketing strategies and action plans.

Networking and advocacy step: At this level, the project aims at creating communities of practice (COPs) through linking target cooperatives to share best practices. This step will also include a participatory identification of services needed by the cooperatives from relevant public-sector stakeholders for the development and implementation of shared advocacy plans. Cooperatives will also be allowed and facilitated their participation in existing fairs and events with regional chambers of commerce for engagement with private sector actors

2. Methodology

This research was implemented by the Consultation and Research Institute (CRI). The study team used a qualitative methodology, beginning with a desk review, following by a data collection composed of field interviews with key informants, heads of cooperatives, and farmers; and concluding with an analysis of the value chains.

2.1. Research design and data collection

Desk review

The research team collected and reviewed the most relevant projects and studies pertaining to cooperatives in Lebanon, olive oil and honey production sectors in the country (including studies conducted by Lebanon Industry Value Chain Development Project – LIVCD funded by USAID), and value chain analyses of these sectors abroad (see textbox 2). This has allowed the research team to gain background knowledge to support the topic, and identify the gaps, constraints and strengths in the targeted value chains.

Textbox 2: Important interventions in the olive oil and honey value chain in Lebanon

Various donor and NGO/IO projects have supported the development of the agricultural sector in Lebanon. Regarding the olive oil and/or the honey value chain, there are two critical interventions worth noting:

The Olio del Libano project, with funds worth 3.3 million euros by the Italian Cooperation, is part of the Poverty Alleviation Fund. It aims at supporting families working in the olive oil chain, located in marginalized areas, to increase their income and job opportunities. It also focuses on increasing the quantity and improving the quality of olives and oil, in addition to reducing their production cost. Further, it provides solutions to the environmental problems caused by the olive oil mills by-products, empowers youth and women in agriculture, strengthens the existing agricultural cooperatives, and finally assists with the marketing and promotion of the olive oil industry products and byproducts.

The Lebanon Industry Value Chain Development (LIVCD) project, a five-year, \$41.7 million USAID program aims at improving Lebanon's economic stability and providing income-generating opportunities for small businesses, while creating jobs for the rural population (in particular for women and youth). LIVCD's interventions tackle honey and olive value chains, with the objective of improving the competitiveness and value of products and services in both local and export markets by increasing the quality, quantity, and consistency of Lebanese products and companies. Targeted improvements and expansion of honey and olive quality testing are aimed to boost consumer confidence and increase access to powerful international markets. Moreover, strengthening vertical linkages between producers and commercial brands is tackled, in addition to improving technical and managerial practices that channel profits into rural communities and boost incomes of all stakeholders in the honey and olive value chains.

Selection of Stakeholders

Considering that the ACTED project focuses on cooperatives in Akkar, Marjeyoun, Tyre and Hasbaya, the field study targets olive oil and honey sectors in these four regions. The interviewed population were stakeholders from the different stages of the value chains. The following profiles were identified at each stage of the value chain and for each of the two studied sectors:

Table 1: Key value chain actors by type

Value Chain Segments	Suppliers	Producers	Processors	Wholesalers/ Distributors	Retailers
Key Actors: Honey	- Equipment suppliers - Hive owners - Owners of protective materials firms	- Farmers - Factory owners - Cooperatives	- Farmers - Factory owners	- Traders - National distributors - Exporters - Chamber of Commerce	- Supermarket owners - Store owners - Importers
Key Actors: Olive Oil	- Olive plantation owners - Olive growers	- Farmers - Factory owners - Cooperatives	- Farmers - Factory owners	- Traders - National distributors - Exporters - Chamber of Commerce	- Supermarket owners - Store owners - Importers

Covering all these profiles, the study team divided the stakeholders to be interviewed into three categories taking into consideration the targeted geographical areas: i) stakeholders that are common for both value chain, ii) stakeholders specific to the olive oil sector, ii) stakeholders specific to the honey sector.

Design of technical tools

After identifying the key stakeholders, the study team has developed two discussion guides, one at the level of the institutions and one at the level of value chain actors (Annex A for tools). Moreover, the tools are designed in a way to collect information on services provided to cooperatives, opportunities and challenges to the development of these value chains, and to generate data that will serve in:

- Constructing a value chain map;
- Analyzing market sub-systems;
- Assessing market access;
- Assessing quality management systems;
- Understanding cooperatives integration (or lack thereof) in agricultural and agro food value chains
- Evaluating external factors and to determine challenges and opportunities for olive and honey sectors;
- Concluding on recommendations and action plan.

Data collection

The data collection phase was implemented between March 6, and March 23, 2018 by CRI research team. A total of 32 key informant interviews were collected (see Annex B, for a full list of interviewed stakeholders).

It included a training of researchers on the research tools, as well as an introduction to the general guidelines of conducting a study in terms of partiality, neutrality, and politeness and question formulation. Subsequently, the definition of key concepts used in the questionnaire was explained, followed by a question by question discussion of each of the questionnaires (see Annex B for questionnaires).

2.2. Analysis of findings

After completion of the field work, CRI analyzed the data using developed frameworks to reach the following:

- Value chain map: An analysis of the different stages of the value chain was conducted for each sector. This allowed an identification of the challenges and bottleneck processes at each value chain level.
- An in-depth analysis of each value chain market sub-systems: An analysis of 3 types of markets were conducted for each sector including local, low-income markets; local middle/high income markets; and the export market. The first two were studied at both sub-national as well as national levels (where feasible), while the third included the most profitable export markets. The market sub-system analysis included:
 - An analysis of market access: The research team identified local constraints to market access in the two sectors, including technological capabilities of producers, available infrastructures, as well as bargaining power and market knowledge.
 - Quality management systems: This included an assessment of supply chain management with a focus on primary processes (transformation and creation of value added products), quality improvement and optimization of distribution processes. CRI benchmarked existing technology in Lebanon and identified critical gaps in technology in the country that currently constrain quality management systems.
- Business enabling environment: This consists of a legal review within the industry analysis for each sector and the impact of existing laws and regulations on the cooperatives/markets and industry attractiveness.
- A “challenges and opportunities analysis” summarizes finding and assesses the competitiveness of each of the stages of the value chain. Further, a political and economic analysis of the business enabling environment was carried out for both value chains.

Based on the above-mentioned analysis components, the research team developed recommendations to upgrade existing value chain, with a focus on improving the role and capacity of local cooperatives.

3. The Olive Oil Value Chain

3.1. Value chain map

The olive oil value chain in Lebanon is facing tremendous hardships in the form of high production costs, regional competition, sub-standard quality output that does not permit exports (specifically to Europe), and a lack of proper coordination and management between the main actors in the field. The private organizations could play a major part in achieving economies of scale, promoting fair competition (e.g. inputs, fertilizers), disseminating information and proposals, investing in newer technologies and production techniques, maintaining a competitive edge, coordinating with NGOs, and promoting public- private partnership.⁷

The problems farmers face in initial stages of the value chain (i.e., input provision, production, processing, and storage) require an approach that understands what each stage needs and how best to tackle these obstacles step by step. The following section look at the olive value chain following that approach.

3.1.1. Input and production base

Challenges

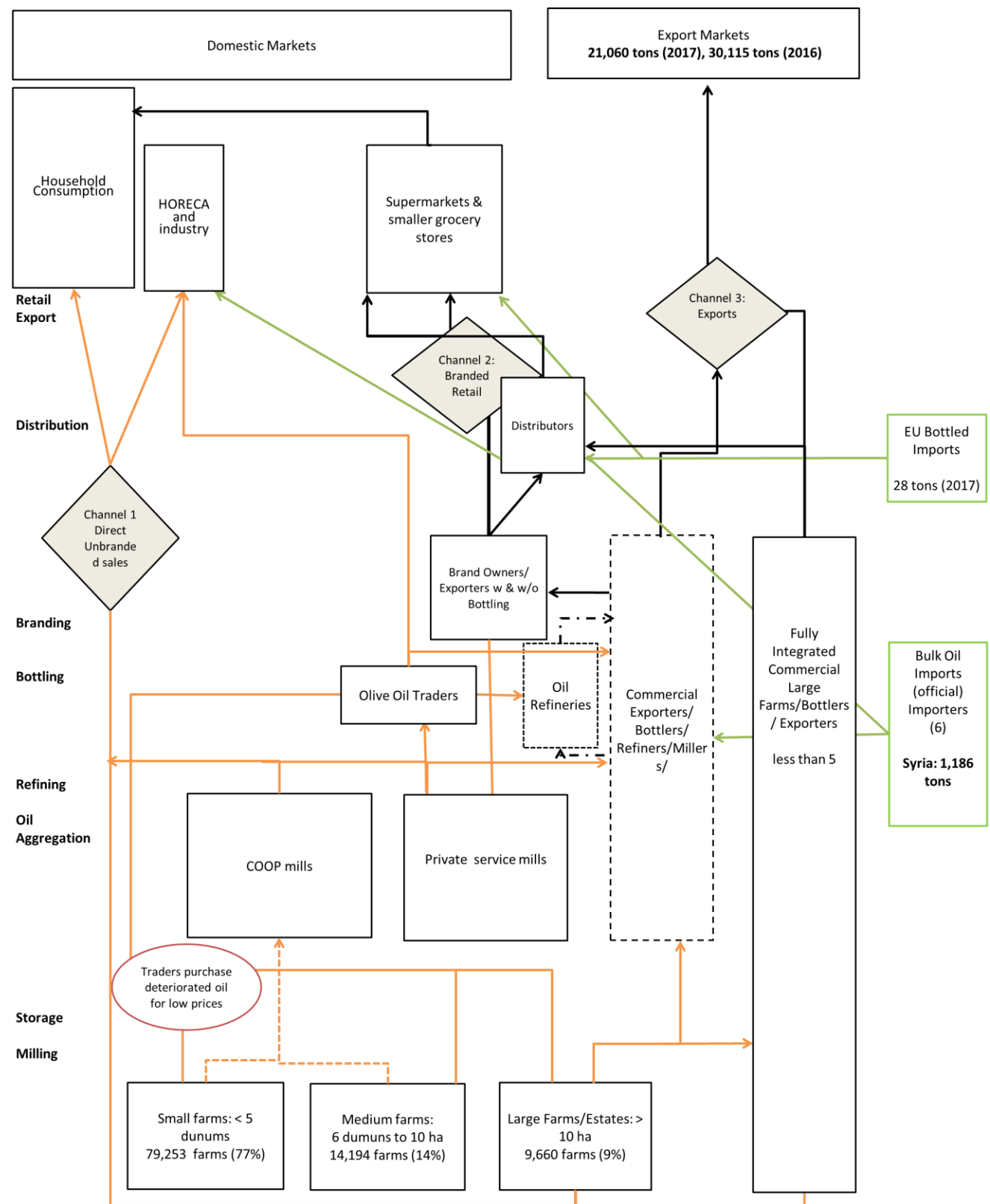
Land use and land fragmentation. Olive trees occupy more than a quarter of Lebanon's agricultural land. Cultivation of olive trees happens across all Lebanese regions, although it tends to be concentrated in North and South Lebanon; 41% and 26% of olive tree land area respectively), followed by the Beqaa 13% and Mount Lebanon 10%⁸.

However, one of the main challenges in olive oil production begins with the small sizes of farmland plots, which results in excessive land fragmentation. Around 77% of olive oil producers in Lebanon are small growers, managing olive orchards of 5 dunums or less, meanwhile large growers (fields greater than 10 dunums) represent 9% of the Lebanese olive oil farms and are owned by large families, religious institutions or major oil bottlers and traders. In many cases, olive farms are not managed by the land owners themselves, as they live in urban areas, but by specialists in olive production called "wood damans" who manage olive production and harvesting in return for payments in processed oil or cash to the landowners.

⁷ Integrated Assessment of the Lebanon-EU Association Agreement: A Pilot Study on the Lebanese Olive Oil Sector - February 2006

⁸ MOA and FAO agricultural census (2010)

Figure 2: Olive oil value chain map



Source: adapted and updated from USAID (2013)

Farming practices and high cost of production. In addition to the high costs associated with land fragmentation, traditional production technics and high cost of labor, fertilizers and pesticides inputs have further increased cost of production and reduced the competitiveness of Lebanon olive oil production. According to interviewed olive oil expert, the overall production of Lebanese olive oil orchards is low, i.e. lower than the average of Italy 2.7 tons, Spain 2.4 and Greece 2.1 tons per hectare⁹. Also, Lebanon olive oil orchards are characterized by a heavy alternate bearing. productivity between orchards is primarily related to farming practices rather than geographical location (see section on agricultural practices below).

Around 70% of olive trees are destined to the production of olive oil, and the remaining ones are destined to the production of table olives. The oil productivity of olives ranges between 18 and 25%.¹⁰ The donor community has invested substantially in upgrading technical capacity within the olive value chain (notably milling equipment), and more recently, the MoA has been developing programs to improve technical extension and farmer registration. Despite these efforts, many farmers remain reluctant about engaging with new production techniques and methods.

This is particularly true for farmers in peripheral rural areas, such as Hasbaya and Akkar, where there was an observed tendency amongst farmers to refrain from investing in mechanical harvesting¹¹. Instead, they rely on hard (usually Syrian) labor to beat the trees, plough the land, and pick the olives. The over-reliance on labor contributes to the high cost of production. This is where the importance of mechanical harvesting is: it reduces in more than half the number of workers needed. Indeed, olive harvesting, and land ploughing alone contribute to approximately 60% of the total cost of production^{12, 13}.

Moreover, the price of pesticides and the lack of governmental support for input provision has been mentioned by most interviewed olive oil producers. According to an interviewee, the monopolization of large input suppliers' companies on pesticides in Lebanon also manipulates farmers into buying larger amounts of pesticides than needed.

Heads of cooperatives also noted that many new and emerging cooperatives lack the necessary equipment, such as tractors, pick-ups for the production process. The scarcity of essential equipment means that heads of cooperatives tend to mediate competition between farmers over resources. Indeed, the high cost of olive oil farming has been validated by a

⁹ Eurostat database. <http://ec.europa.eu/eurostat/web/main/home>

¹⁰ IDAL Olive Oil Factsheet 2017

¹¹ Key informant interviews

¹² Key informant interviews

¹³ An evaluation of international projects aimed at improving the olive oil value chain commissioned by the Italian Cooperation, showed that in two third of the cases farmers reported a decrease in cost thanks to the use of mechanical harvesters. This decrease in cost also compensated for the increase in cost due to the implementation of Good Agricultural Practices (such as treatment, fertilization, and pruning). Farmers reported a cost decrease of approximatively 30%.

Italian Cooperation (2017). Evaluation of three agricultural projects. Available online:

https://www.esteri.it/mae/resource/doc/2018/03/2017lebanon_evaluation_report3agricultural_projects.pdf

recent UNEP study which juxtaposes the US\$520 spent per ton of production in Lebanon to the US\$230 in Syria and US\$270 in Jordan per ton of production¹⁴.

Also, pruning, even though practiced by the vast majority of farmers, remains a poorly established technique in terms of correct application. According to a recent Italian cooperation report, 50% of surveyed farmers point to pruning operations as still problematic from the point of view of knowledge and access to appropriate equipment. The use of electrical pruning shear is still not widespread, and skilled pruners are rare. Lastly, producers still strongly resist the necessary quality analysis of their oils. As mentioned above, only 16% of producers directly perform quality analyses, while 76% do not know clearly the quality standards of the oil grades that they claim to produce.^{15, 16}

Prospects

In this initial phase, the role of cooperatives is critical to tackle challenges related to land fragmentation and high cost of production. For example, several cooperatives have had successful experience in introducing mechanical harvesters. As reported by key informant interviewees, cooperatives and peers buy-in are important factors that can facilitate adoption of innovation by farmers. Furthermore, cooperatives can play a significant role in reducing cost of production by creating both common buying schemes and production gathering schemes. However, until today, most olive oil cooperatives activities remain centered around milling services. Hence, there is a scope for intervention to increase cooperatives capacities to provide pre-milling services to farmers, e.g. in terms of pest management, technical support in pruning, fertilization practices using olive oil milling by-products.

Textbox 3: International olive oil council quality standards

Extra Virgin: Zero defects. Acidity range less than 0.8g per 100g. Peroxide content less than 20.

Virgin: Acidity range between 0.8 and 2g per 100g, Peroxide content less than 20.

Pure Olive Oil: Blended, virgin and refined olive oil. Acidity range between 2 and 3.3g per 100g. Peroxide content less than 15*.

Refined Oil: Acidity range between 0.3 and 2g per 100g. Peroxide content less than 5*.

Pomace Oil: Extracted from olive husk after milling. Acidity range, up to 1g per 100g. Peroxide content less than 15. Inedible oil.

*Refined oils and oils blended with refined oil have a lower peroxide content due to the refining process.

Furthermore, the Italian cooperation evaluation of project targeting the olive oil value chain in Lebanon showed that intervention have been successful in increasing farmers awareness for the importance of the implementation of Good Agricultural and Manufacturing Practices (GAP and GMP). The report

¹⁴ UNEP report. Lebanon: integrated assessment of the Association agreement with the EU. With a focus on the olive oil sector. Report available online: <https://unep.ch/etb/areas/pdf/Lebanon%20ReportFINAL.pdf>

¹⁵ Italian Cooperation (2017).

¹⁶ This producer behavior is primarily due to the lack of awareness of Lebanese consumer on olive oil attribute and their preferences for "sweet oil". i.e. Producer do not see an added value in testing their products, because consumers do not require quality standards as understood and laid out in the international olive oil council.

shows that the projects have led to a considerable increase in demand by members for both technical assistance and the services required to adopt GAPs (mainly all mechanization services). 71% of the members feel that they have insufficient access to the mechanization of harvesting operations and 74% are interested in more specific technical assistance interventions on one or more GAPs. It also seems that the major management activities, resulting from equipment received from projects and other later cooperation initiatives have led to the need to improve management capacity and market information in 57% of olive grower cooperatives. In this context, the financing of equipment capable of enhancing the capacity to offer services could have been the opportunity to introduce or strengthen the conceptual bases of modern cooperative organizations, namely the approach to services, and on this basis, formulate a business plan.

3.1.2. Olive oil milling

Lebanese preferences in terms of olive oil quality has highly influenced the development of the milling process. Lebanese consumers do not have a high awareness of the main international olive oil quality standards or product origins, which minimizes the incentives for farmers and processors to improve their practices (see textbox 3, on the international olive oil council quality standards).

Challenges

Post-harvest handling. After harvesting, there are several missteps by many Lebanese farmers that compromise the quality of the final product but also reduce overall orchard productivity (see textbox 3 for olive post-harvest best practices). According to interviewees, it is still common amongst farmers to beat the trees for olives to fall, which is very detrimental to the trees' ability to bear fruits in the ensuing season. Moreover, there is a tendency to combine harvested fruits with olives that have fallen out before taking them to the mill.

Further, many farmers are still transporting olive fruits in plastic bags

and taking them to the mills where, if the mill is working above capacity, the olives may be stored for up to 48 hours before they are pressed. This has negative effects on the oil's quality because the lack of air circulation leads to a gradual hike in temperature and humidity and thus a deterioration in the quality of the olive fruits.

Traditional mills and the lack of good manufacturing practices. A high percentage of the approximately 500 mills in Lebanon¹⁷ still operate traditionally, using stone mills crushing and pressing mechanisms to extricate the oil; thus, exposing olives to high levels of oxygen,

Textbox 4: Olives post-harvest best practices

To ensure high quality olive oil, farmers should give specific care to post-harvest practices. This includes:

- Avoiding physical damage to trees during harvesting.
- Ensuring picked olives are not mixed with olives that have been falling from the tree prior to harvest.
- Transporting olives in crates to ensure there is proper air circulation.
- Pressing the olive as soon as possible, preferably less than 24 hours after harvest.

¹⁷ Source: Key informant interview

thereby raising the level of peroxide. Mills also do not abide by rigid models of cleanliness, and this is visible at first glance by the improper sanitary conditions and inappropriate outfits worn in the mills. Indeed, in 2015 MoA recently closed fifteen mills in Akkar alone because of misconduct¹⁸. Nonetheless, oil produced by traditional mills remain in high demand in Lebanon, as a significant segment of Lebanese consumers tend to prefer opaque oil produced by traditional mills, despite its lower conventional quality, i.e. as determined by international olive oil quality standards.

Waste and by-products management. In most of the cases, there are no alternative plans for wastewater coming from olive mills, other than dumping them into rivers or lands. This increases the pesticide levels and pollution in the water, according to a study conducted by the Beirut Arab University¹⁹. Although this wastewater is rich in polyphenols that can be reused as fertilizers for the olive trees (or reduced by a two-phase separating decanter like those used in modern mills), it is toxic to plants and microorganisms and has posed huge problems in various villages in Lebanon²⁰. Wastewater from mills leads to detrimental levels of pollution in the surrounding area, and, as such, it should become the responsibility of olive mills and local authorities to ensure that they are reused carefully to ensure pollution is limited. It is important to note that modern and competitive mills create minimum waste residues, as water is stored and reused for irrigation/fertilization and remaining solid waste are stored in the form of briquette to be used for winter home heating.

Storage. After the olive oil is extracted from mills, storing them is the next step in the value chain. Many Lebanese farmers do not store the olive oil in stainless steel containers and continue using plastic, which has long been acknowledged as a dangerous alternative by the MoA. Following up with storage is particularly challenging because since most sales are on a house-to-house basis, inspecting the olive oil would require house visits that may impede privacy.

Prospects

Donors funded investment in modern mills for cooperative. The olive oil value chain has witnessed significant private investment in modern mills, there are approximatively 20 privately owned modern mills operating in Lebanon, with most of them operating in North Lebanon²¹. Also, there has been a significant donor funded investments in cooperative modern mills across Lebanon. These cooperatives have played a key role in improving the quality of olive oil production and milling services, including proper practices for storage as well as waste and by-product management.

Nonetheless, most olive cooperatives could increase the volume of services provided to their members especially in term of technical assistance for improved agricultural practices as well as the development of value chain and marketing strategies (refer to section 4. On cooperatives).

¹⁸ Source: key informant interview

¹⁹ <http://www.dailystar.com.lb/News/Lebanon-News/2017/Nov-13/426168-olive-oil-production-method-generates-pollution-damages-river.ashx>

²⁰ idem

²¹ Source: Semi-structured interview.

3.1.3. Marketing and market sub-systems

Consumption of olive oil in Lebanon is relatively low compared to other countries in the region that produce olives. While consumption of olive oil per capita is about 4.3 liters in Lebanon, it is double and quadruple that in Greece and Syria, where consumption is 10 and 20 liters per capita respectively²². Lebanese consumers have a distinct preference for locally produced oil and tend to buy olive oil in bulk from trusted family or neighbors with whom they have an established relationship. A majority of Lebanese consumers care little about formal standards and do not distinguish between extra virgin, virgin, and pure olive oil. Rather, the key factor most consumers look for is a “trusted” and “authentic” rural connection, which is most often guaranteed by family or a personal relationship with the farmer or, failing that, with a particular olive mill.

Recently, there have been active efforts to enhance the packaging and marketing of olive oil. LIVCD officials, for instance, noted that they were aware that marketing is one of the biggest challenges in the olive oil sector and, as such, have made active efforts to fund national and international exhibitions that may help farmers and producers connect with businesses.

As was noted during interviews with small private olive oil shops during the HORECA event, packaging has been key to successful sales and export markets. However, even with new olive oil ventures such as Ultra-Premium Oil and Boustan Olive Oil, there are challenges. The owner behind the award-winning Boustan Olive Oil, for instance, noted that “marketing is a huge problem even in the private sector” and further added that his market is largely dependent on word of mouth, exhibitions, and to a certain extent, social media.

Yet, small niche olive oil shops have potential, particularly once they gain the trust of their customers. Zejd, an organic oil brand by OliveTrade launched in 2006, has tapped into markets in France, Hong Kong, Germany, Japan, Switzerland, and the United States.

Home consumption and direct sales.

Home consumption. As per the 2010 MAO and FAO agricultural census, approximately half of the registered farmers and land owners had at least one dunum of olive trees. This represent approximately 80,000 households, i.e. 8.4% of the total number of Lebanese households²³. As a matter of fact, a significant number of people have access to a direct supply of olive oil at production cost, and more importantly a large part of the production of olive oil is not intended for market use. The MOA and FAO census estimates that approximately 15% of the total land planted with olives is intended for home consumption only and is therefore not marketed. A majority of households that produce olive oil (and table olives) for home consumption tend to prefer traditional millings practices and what Lebanese tend to refer to as “sweet oil” (زيت حلو).

Direct sales. Usually, households’ production surplus is either distributed to extended family or sold directly to network of family and friends. However, direct sales to consumers is not limited to small households-based production. Lebanese farmers, including interviewed

²² FAO statistical data base. <http://www.fao.org/statistics/en/>.

²³ There are approximately 950,000 households in Lebanon. Source: Central administration for statistics (2012). Population and housing in Lebanon. http://www.cas.gov.lb/images/PDFs/SIF/CAS_Population_and_housing_In_Lebano

farmers in Akkar and Beqaa, have long relied on a traditional distribution channels to sell olive oil.

According to USAID (LIVCD, 2013 olive oil value chain analysis). 27% of total olive oil production is estimated to be sold through direct sales to households. In this part of the market, very little consideration is given to the label and formal quality specifications of the oil. Consumers rely mostly on interpersonally relationship and trust, and/or on the geographic location of the oil. Intermediation in this market segment is minimal to none, as farmers and mills who supply most of this oil use family connections and personal

Textbox 5: Hospitality and restaurants market segment

According to the USAID (2013) LIVCD led value chain analysis, hotels, restaurants, and catering businesses provide a major outlet for olive oil sales. Restaurants have different factors for selecting olive oil sources; some prefer to build long-term relationship with high to good quality producers and are generally willing to pay a premium price of standardized and consistent quality USD\$80-100 per tin). This section of the HORECA market is usually supplied by competitive cooperatives or quality olive oil aggregators (see section on high quality market segment).

Other restaurants are exclusively price-driven and have very limited budget for olive oil purchases (\$50 per tin) which implies that they have high incentives to buy Syrian oil, blended and/or refined oils. This HORECA market segment is supplied both through local direct sales channels and/or through traders that specializes in the sales of lower quality oil.

networks to sell it. Prices are quite high, with households willing to pay between \$80 to \$120 per 16.5 kg tin or between \$4.80 and \$8.00 per kg.

This market choice is often also the choice of cooperative members. Interviewed key informants highlighted that marketing remains the weakest stage across the value chains and the one where cooperatives are least incorporated and knowledgeable. They are still resistant or unable to access the help needed to package and brand their olive oils, mostly because they cannot tap into the demands of the local markets. Details such as access to graphic designers and local markets are still not available to many traditional farmers. Moreover, there is a lack of knowledge on how to price products, how to deal with customers outside of the surrounding area, and what competitive edge to leverage on.

Syrian imports. This segment of the market tends to be the one that is the most affected by the competition coming from Syria. Key informant interviewees, reported that imported Syrian oil is either: i) directly sold through interpersonal direct sales channels, or through short value chain linked to local small retails and petty trade shops, ii) or integrated directly to the large mainstream retails and distribution channel with the intermediary of influent olive oil traders and aggregators. Interviewed producers do not often accept, what looks to them as a market paradox, i.e. the reliance of restaurants (see textbox 5) and supermarkets on imported olive oil while they are piling up inventory. Interviewed farmers often re-iterate the importance of state support and subsidies for inputs. The competition from import from Syria, as well as the absorption limits of the interpersonal sales channels have led significant piling up of unsold olive oil, often stored in conditions that lead to a fast deterioration of its quality. The remaining oil is then sold at low prices for soap production and/or refined into lower quality oil.

State support and subsidies. For many interviewees the solution is for the state to undertake the direct responsibility of selling their production of olive oil, either through large procurement – from cooperatives and small producers – schemes, such as the one implemented by the Lebanese army on ad-hoc basis, or the one-time export of olive oil to China²⁴.

Key interviewed experts argue that small producers and cooperatives rely on state support and subsidies. There has been some financial support to the sector through IDAL, which aims to provide local and international olive oil investors with financial incentives that may exempt them from corporate tax if the set criteria are met. Moreover, KAFALAT, an institution providing loans, has implemented a scheme under the Agriculture and Rural Development Programme framework that provides funds to agro-business activities. However, most of the interviewed farmers and heads of cooperatives were not aware of these two support systems, highlighting the need for better dissemination of these initiatives.

Further, the clientelism and over-controlling approach adopted by politicians and public institutions have hampered cooperatives capacities to build and engage in endogenous initiatives which would lead to increased competitiveness of olive oil production and strict implementation of market rules and regulation. As a matter of fact, this remains a major challenge for development in the olive value chain²⁵.

Lower end local distribution and retail market

The Lebanese local distribution and retail market is dominated by low cost low quality bottle olive oil. The market is dominated by private actors that usually commercialize branded olive oil. Most of them use their own bottling and storage facilities, in which both Lebanese and imported olive oil are mixed and blended. Some large branded companies act as virtual companies and subcontract to existing bottle facilities all required operations. Most of them work with intermediaries to ensure required supplies. Large companies also use the services of oil refineries to produce “pure olive oil”. According to interviewed expert, the refining processed allow the recycling (i.e. refining) of old olive oil with high level of acidity into refine olive oil with zero acidity and neutral taste. This oil is then blended with virgin olive oil, produced locally and/or imported, to create pure olive oil (refer to textbox 3 on international council olive oil quality standards). This process allows large companies to manage inventory (as acidity level tend to increase with age) and significantly reduce costs through the refining process itself but also by buying lower quality and one-year old olive oil from farmers and cooperatives at low cost.

²⁴ The Lebanese government have at several instances implemented schemes in which it would buy a large part of the olive oil production from small cooperatives and farmers. For example, a procurement schemes for the army was implemented in 2012, and an export to china scheme. However, these initiatives remain ad-hoc initiatives and procurement to the army is currently undertaken by an intermediary how procure a significant amount of its oil from imports (source: Key informant interview), also export channel to china have not been exploited further.

²⁵ See section 5 on cooperative.

High quality olive oil

Several olive oil actors have recently engaged in the production and aggregation of high quality olive oil. These new actors range from local cooperatives, to private medium and large producers as well as high quality olive oil aggregator.

These actors have capitalized on their ability to produce extra virgin olive oil, as well as high quality olive (high density, handpicked and organic oil). These actors have relied on the limited but growing consumer demand for high quality products. Strategies within that segment rely on bottled branding as well as on bulk quantity, with respect to good storage and transportation practices. High quality olive oil actors have been able to secure both a local and an export market share.

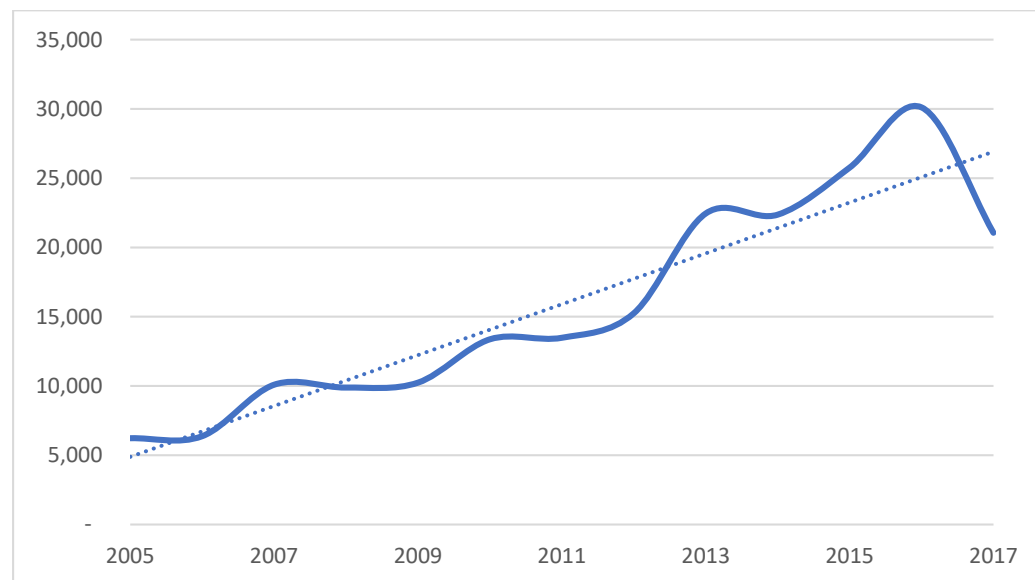
Several cooperatives have engaged in the production of high quality olive oil, nonetheless, many have limited capacities in terms of volume and the market remain dominated by larger private aggregators that procure part of their supply from cooperatives. As a matter of fact, the development of this market sub-system would not have been possible without donors' supported efforts to improve field agricultural as well as milling and manufacturing best practices. Although some cooperatives were able to integrate high quality olive oil value chains, they remain a weak actor because of their lack of investment and growth capabilities (see section 4).

Export and import of olive oil

Exports of olive oil from Lebanon have grown considerably since 2006, increasing on average 15% in value each year²⁶ (See figure below) Lebanese olive oil exports are mainly destined to the Gulf and North America. More specifically, in 2016, approximately 18.3% of total exports or the equivalent of 5,512 tons are exported to the Saudi Arabia, and a similar quantity (5,460 tons) to the United States. Exports to Arab countries are expanding with more oil flowing through formal trade channels, while informal channels (selling to neighbors, friends and acquaintances) are diminishing. For example, in 2005 Lebanon exported 904 tons of olive oil to GCC market, in 2016 this value amounted to 13,587 tons; in fact, Lebanese and other Arab expatriates in the GCC are willing to pay higher prices to get "authentic" Lebanese product through informal channels. Although there was a significant reduction in export in 2017, the overall trend is a clear increase in Lebanon olive oil producers ability to penetrate export market.

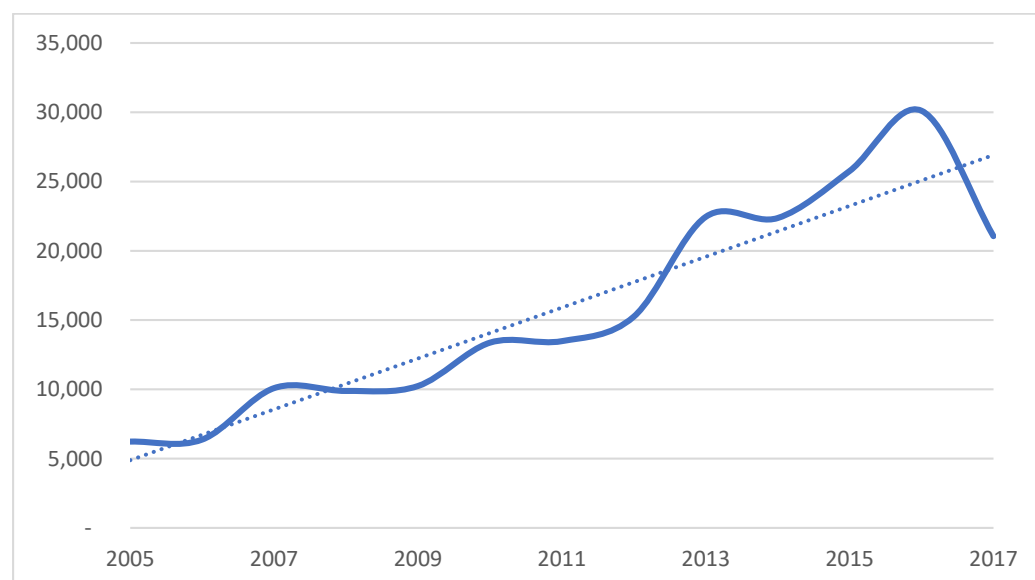
²⁶ IDAL Olive Oil Factsheet 2017

Figure 3: Lebanon export value of olive oil in thousands of USD, 2005 -2017



Source: Trade map. www.trademap.org

Figure 4: Value of Lebanese export of olive oil to main export markets in thousands of USD



Source: Trade map. www.trademap.org

Despite the export orientation of olive oil, Lebanon remains import dependent, mainly for high value-added olive oil as well as standard or lower quality olive oil from Syria. Lebanon imports large quantities of oil from Syria through formal and informal channels. According to interview stakeholders, since the onset of the crisis in Syria, exceptionally high volumes of Syrian oil have been coming through unofficial channels into the Lebanese market.

Lebanon's high cost as well as low yield of olive production has negative consequences for its competitiveness in international markets. Therefore, Lebanese olive oil is exported predominantly for sale in ethnic markets, where consumers, especially the Lebanese diaspora, will support a price premium for oil that is (or is perceived to be) from Lebanon. To

compensate for this constraint, Lebanon imports inexpensive oil from Syria, where the cost of production is much lower. According to the LIVCD assessment (2013), since the onset of the Syrian crisis in 2011, producers have reported an unprecedented volume of Syrian oil imports flowing into the Lebanese market that is reducing the demand for Lebanese oil and placing downward pressure on prices in some market channels. This trend has profited bottlers, who mix lower priced Syrian oil with Lebanese oil to reduce costs and sell into both domestic and international markets. Lebanon does not impose any traceability or labeling requirements with regards to origin, making it easier to blend oil imported from abroad that may be lower quality.²⁷

Prospects

Market regulation. There is a need for the implementation of clear marketing regulation especially in terms of olive oil denomination, according to the international olive oil council standards. Furthermore, regulations regarding import from Syria and geographical denomination of olive oil product are a must to level the group for all market players.

Wider market strategies. Donors supported projects have worked on the development of marketing strategies based on the production of high quality olive oil. These strategies have benefited several olive oil cooperatives that were able to create linkages with traders and aggregators of high quality olive oil. However, and because of regulation and structural problems hampering the capacity of cooperatives to grow and expand supply (see section 4), market bargaining power remain within the hand of traders and aggregators.

Donor interventions have ignored the potential for cooperative to work in the lower quality olive oil segment that also offer several opportunities for cooperatives to aggregate production and increase sales. They have encouraged cooperatives to rely on direct sales channels, through the support of production of high value-added olive oil. This may be starting to show its limits, as local market for such products is starting to show signs of saturation²⁸. Furthermore, a more diversified market strategy could allow better integration to more complex and diversified value chain.

Export opportunities. There are significant export opportunities for high quality olive oil. Lebanese olive oil exports are mainly destined to the Gulf and North America. More specifically, 26.3% of total exports or the equivalent of 2,635 tons are exported to the Saudi Arabia, and 1,351tons to the United States or 13.5% of the total.²⁹ A significant share of high quality olive oil being exported could allow a de-saturation of the local market, and thus a significant return to both exporting and non-exporting farmers and cooperative. Nonetheless, in order to penetrate such market in a significant manner a significant effort to improve competitiveness need to be made at all level of the value chain.

²⁷ LIVCD Olive Value Chain Assessment – March 2013

²⁸ Source: Key informant interviews

²⁹ IDAL olive oil fact sheet 2017

3.2. Challenges and opportunities analysis

The following table presents a strengths, weaknesses, opportunities and threats SWOT analysis of the olive oil value chain. Then the main challenges (mainly weaknesses) and the main opportunities are further analysis in Table 3.

Table 2: Olive oil value chain SWOT analysis

Strengths	Weaknesses
<ul style="list-style-type: none"> • Crop adapted to the local conditions • Rain fall crop in most of Lebanon, with the exception of low input irrigation in Northern Beqaa, • High international and local demand for olive oil as well as table olives. • Increased investments in modern mills • Low input agriculture, and relative profitability of small scale production, including small scale production intended for home consumption 	<ul style="list-style-type: none"> • Land fragmentation and small production plot • Low productivity of olive orchards and lack of farmers' knowledge and/or willingness to implement Good Agricultural Practices • High cost of production • Reliance on traditional mills still present. • Inadequate storage practices and non-implementation of Good Manufacturing Practices at the mills • Lack of customer awareness about olive oil quality standards and specification • Lack of enforcement of olive oil denomination regulations, in terms of both quality and origin
Opportunities	Threats
<ul style="list-style-type: none"> • Recent investments in production and distribution of high quality olive oil • Diversification of cooperative market strategies by targeting both higher and lower end olive oil markets • Increased demand for olive oil in export market in which Lebanese olive oil can receive a premium price, e.g. Arab Gulf countries, and Lebanese diaspora niche markets • Increased and sustained interest from the Ministry of Agriculture (as well as in the international donors' community) in the development of the olive oil sector • Link the olive oil value chain to rural and agro-tourism activities, to diversify and increase farmers income 	<ul style="list-style-type: none"> • Unregulated imports from Syria • Unregulated trade and implementation of standards • Trade fraud on quality and olive oil quality standards denomination

Table 3: Challenges and opportunities in the olive oil value chain

Challenges and opportunities analysis – Olive oil value chain		
<i>Inputs and orchard management</i>		
Challenges	Potential solutions	Potential interventions
Land fragmentation and small production plot	This is a chronic problem of Lebanon's agriculture. There is no current short-term solution. There is an urgent for the formalization of the agricultural sector through the development of a legal framework. This framework should define a legal status for "the farm" as a legal business entity with a minimum require of indivisible farming land. Furthermore, a reform of the cooperative legal framework is needed to allow cooperative structure to grow and ensure viable economic return to small farming units.	There is scope for work with cooperatives to: <ul style="list-style-type: none"> - Increase awareness of farmers (and cooperative leaders alike) on the potential of cooperative structures to create economy of scale in support of small size farmers - Increase services provision in terms of the ability to aggregate production from small farmers - Advocate for a reform of the cooperative law and governance framework
Low productivity of olive orchards and lack of farmers knowledge and/or willingness to implement Good Agricultural Practices	Several donor-supported projects as well as efforts from the Ministry of agriculture have started to yield results. Increasingly olive farmers are adapting improved agricultural practices. Nonetheless, there is still scope for additional efforts, as farmers in distant rural area (such as Hasbaya) do not have proper access to technical assistance and extension services. Furthermore, public institutions need also to undertake significant effort to improve the formation of technician within the agricultural sector, through agricultural vocational school. These technicians would support farmers in undertaking and learning specific tasks such as pruning, and biological pest control.	There is scope to work with local cooperatives on the improvement of technical assistance services to farmers. Activities may include: <ul style="list-style-type: none"> - The implementation of training of trainers to build capacity of cooperatives leaders to act as actors influencing farmers' assimilation and adoption of good agricultural practices - The creation of field learning schools and/or peer to peer schemes

High cost of production	<p>With high cost of production and low productivity, profit margins of farmers are minimal.</p> <p>It is a vicious circle in which certain farmers prefer to minimize orchards interventions to save, which, however, in turn also reduce productivity and profit.</p> <p>Most interviewed experts agree that a major production cost is harvesting cost. The use of mechanical harvester has helped farmers reduce cost significantly. This method is particularly efficient when linked to proper pruning of the tree.</p> <p>As well significant high cost of production is link to the small scale of production. Cooperative structures can play a key role to reduce cost by creating common procurement schemes as well as, when feasible, common application of inputs (fertilizers, pest control application, etc).</p>	<p>Within the framework of an intervention, there is scope to work with cooperatives to improve its services, and for them to include the design and implementation of common procurement schemes.</p> <p>Interventions need to ensure technical training curriculums that adopt an integrated approach. This approach should aim to focus on the importance of adopting a set of linked agricultural practices based on improving orchards and tree management.</p>
Milling		
Challenges	Potential solutions	Potential interventions
Reliance on traditional mills (that are costlier and generally lead to a lower quality olive oil as per international standards)	Sustain on-going efforts to modernize olive oil mills, with a specific focus on cooperatives managed mill.	There should be partnerships with existing cooperatives to support investment in modern milling technologies.
Inadequate storage practices and non-implementation of Good Manufacturing Practices at the mills	Inadequate storage practices remain a limited concern, most mills are now using tins instead of plastic containers for storage.	Support local cooperatives that manage an olive mill to implement Good Manufacturing Practices through the provision of adequate training, include potential redesign of the mill layout.
Marketing		
Challenges	Potential solutions	Potential interventions within ACTED project

Lack of customer awareness about olive oil quality standards and specification	<p>Most Lebanese consumer have clear preferences for “sweet olive oil”, which does not coincide with international standards.</p> <p>There have been several efforts to raise awareness on olive oil specification. Change in behavior is also supported by additional supply of quality extra virgin olive oil thanks to recent private and cooperative investments in modern mills.</p>	There is scope to support cooperative marketing and communication strategy aimed at raising consumer awareness on olive oil quality standards.
Lack of enforcement of olive oil denomination regulations, in terms of both quality and origin	<p>Lack of regulation has led to unfair competition in the local market and lowered incentives to produce high quality olive oil.</p> <p>Unfair competition is primary due to the fact that large companies have no obligation in specifying who their lower prices products have been obtained.</p> <p>Enforcing regulation on olive oil geographic denomination is as also an effective way to create to compete with imported olive oil from Syria, since a significant segment of Lebanese consumers would be willing to pay a premium price for locally produced oil.</p>	There should be support towards cooperatives efforts to advocate for the implementation and enforcement of market regulation that makes it mandatory to inform consumers of olive oil origin, and to ensure proper quality denomination especially for blended olive oil produced with refined oil.
Opportunities		Potential interventions
Recent investments in production and distribution of high quality olive oil, have increased the overall economic value added of the olive oil sectors, opened export opportunities, and reduced saturation of local market by diversifying product ranges and increasing demand through supply-push mechanism		There should be support for local initiatives regarding the production of high quality olive oil. Nonetheless, interviewed experts have warned that high quality olive oil production is growing faster than the ability of the local market to absorb production.
Diversification of cooperative market strategies by targeting both higher and lower end olive oil markets		

Increased demand for olive oil in export market in which Lebanese olive oil can receive a premium price, e.g. Arab Gulf countries, and Lebanese diaspora niche markets	<p>There is a need to increase awareness of consumers as well as guarantee export markets reduction of excess supply in the local market.</p> <p>There should be consideration of opportunities that diversify cooperatives' marketing strategies, by integrating cooperatives to lower quality olive oil value chains.</p>
Increased and sustained interest from the Ministry of Agriculture (as well as in the international donors' community) in the development of the olive oil sector	<p>ACTED should ensure synergies between its olive oil interventions and on-going program.</p> <p>Also there should be capitalization on public interest in the sector to advocate for market regulation changes as well as for change in the governance and legal framework of cooperatives.</p>
Link the olive oil value chain to rural and agro-tourism activities, to diversify and increase farmers income	<p>Whenever feasible, there should be support for cooperatives to diversify activities by introducing rural and agro-tourism activities. Such activities may be directly related to the olive oil production process (olive harvesting, visit to the mill, olive oil tasting), but can directly capitalize on local resources to develop rural tourism packages.</p> <p>Such activities, could also support cooperatives efforts to create linkages with local communities and contribute to rural income generation and job creation.</p>

4. The Honey Value Chain

4.1. Value chain map

4.1.1. Input and production base

Honey production in Lebanon is predominantly mountain poly-floral honey, and orange blossom honey. Small and large-scale beekeepers produce mountain honey at high altitudes, while orange blossom honey is produced in citrus groves, usually at lower altitudes along the coast in the winter and spring when orange trees blossom. Because of Lebanon's diverse terrain, honey production occurs in every region of the country. The major production constraints to beekeeping include the lack of understanding of modern beekeeping techniques and principals on one hand, and the diseases affecting honey bees the other hand.

Challenges

Beekeeping as a secondary income. Beekeeping provides primary, secondary or in-kind income to approximately 6,200 rural households in Lebanon. Previous reports on the honey value chain tend to divide beekeepers in five different categories according to size and marketing strategies (see textbox 6 for a description of beekeepers' categories based on Hamade (2016b)³⁰ and (USAID, 2013). As a matter of fact, there is an increasing interest for farmers as well as non-farmers to adopt beekeeping as both a hobby and/or a secondary income generating activity. As a matter of fact, starting a beekeeping activity requires a limited investment in material and inputs. Correspondingly, return on investment comes within one season and farmers do not need to own or lease grazing land³¹. Till now, beekeeping activities are limited to Lebanese households.

The main input and production related challenges faced by beekeepers are discussed hereunder.

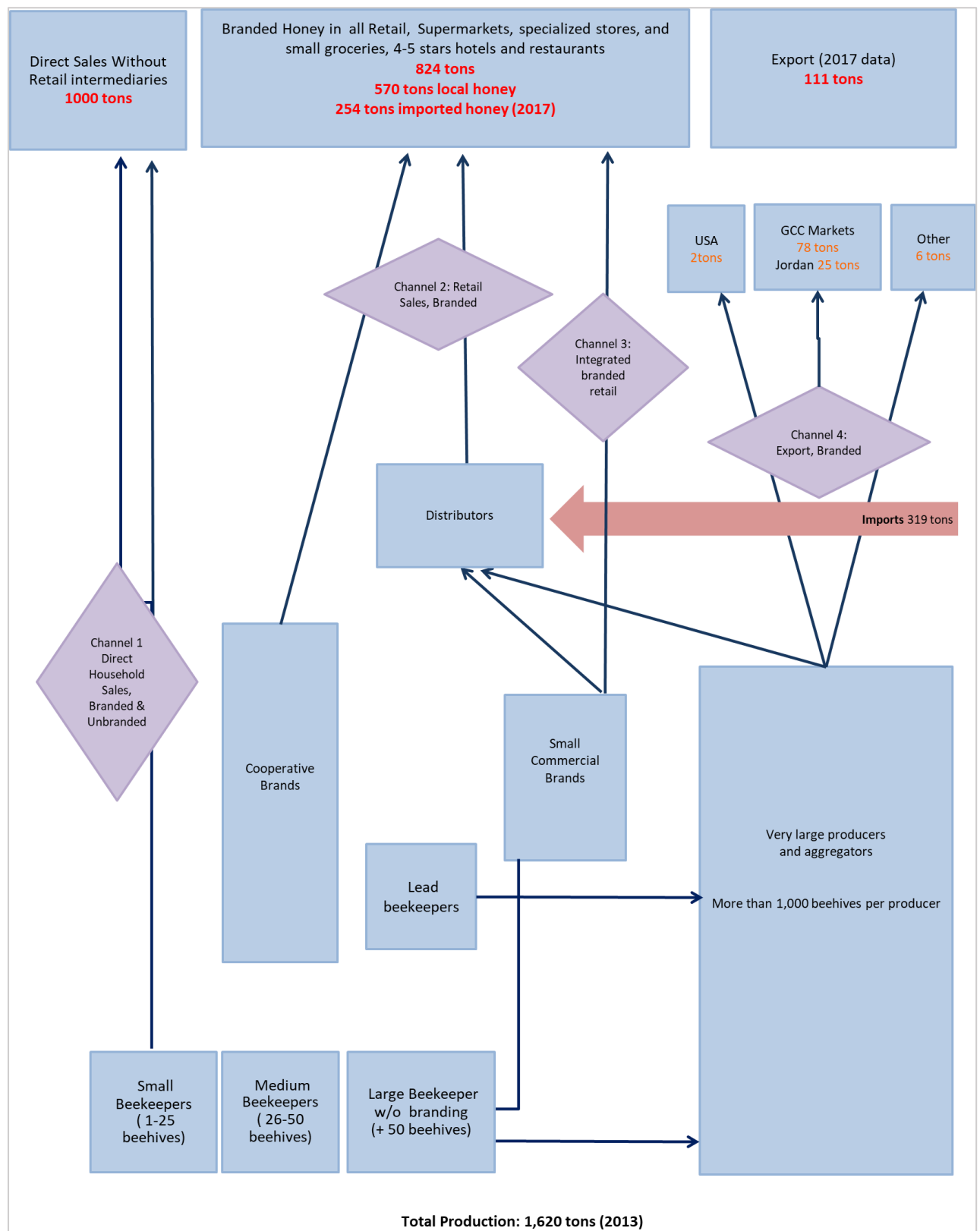
Grazing land. The relatively limited availability of grazing is the major limited factor for honey production. Lebanon honey production capacity remains underexploited. However, the degradation of grazing is a major threat to both the environment and to plan policies aimed at expanding honey production. For example, interviewed producers complained that areas around Saida and Tyr that were used to be bee-friendly 10 years ago are not anymore, and that improper use of herbicides are significant damaging bee pastures.

Quality of imported input. Access to input is not a major issue for most beekeepers. However, key informant interviewees have pointed to the low quality of hives coming from Syria as well as pesticides or antibiotics residues in beeswax foundation imported from China. There are several wax recycling units in Lebanon, and proper methods need to be applied to ensure recycling is done in manner that ensure no residues are left.

³⁰ Hamade, K. (2016b). Non-Wood Forest products Value chains in Lebanon. FAO: Cairo

³¹ Beekeepers still need to find agreement on the bee-hives locations. Especially, if beehive location changes according to seasons. This is usually done through gentlemen agreement or in exchange of improve orchards pollination in the case of Citrus blossom honey.

Figure 5: Honey value chain map



Source: adapted and updated from USAID (2013)

Small-scale beekeepers with 25 hives or less – They represent the vast majority of Lebanese beekeepers. These producers are mostly hobby beekeepers, and hive production per hives is usually lower than market-oriented production units. Honey is used for home consumption and sold to friends and networks of acquaintances. These producers may be linked to cooperatives for production aggregation.

Medium-scale beekeepers having between 26 and 49 hives – This category of beekeeper operate as small family businesses. A beekeeper with 40 hives can produce up to 1,200 Kg of honey per year and make a significant profit if honey is sold with at a price premium through a direct sale channel – which is difficult for such volumes. These producers may be linked to cooperatives for production aggregation.

Unbranded large-scale beekeepers with 50 hives or more – These producers exhibit many similarities to medium beekeepers. Virtually all large beekeepers will practice hive migration to yield at least two harvests per year. At this level of production, beekeepers need to develop specific sales strategy to be able to market their volume of production. These strategies are often built on business linkages and long-term cooperation with medium and large-scale companies – either directly or through the intermediary of a local lead beekeepers - whose role is to aggregate local production to reduce transaction and transport costs.

Branded companies (or cooperatives) with more than 200 hives – There a limited number of beekeepers in Lebanon with over 200 hives all of which have their own brands. This category of large beekeepers has invested in maintaining their own specialized retail outlets in Beirut and other urban centers to be able to access consumers in those areas. In addition, they rely on fairs and exhibitions stalls. Competitive and well managed cooperative tends to act as similarly to branded companies.

Large branded companies with more than 1,000 hives – There are two main players in this category. These actors developed brand names and control a significant share of the domestic market and most of the export market. However, they have different supply strategies, the first consists of increasing market share through outsourcing the majority of its production to other small beekeepers (directly or using local lead beekeepers), while the second sources most of its honey internally, making it the largest beekeeping operation in Lebanon.

Bee diseases. As it is the case worldwide, diseases affecting bee colonies is a major production challenge; these diseases are:

- The American foulbrood disease, which affect the bee-Larvae;
- The Varroa mite parasite (a major problem in Lebanon);
- The Colony Collapse Disorder (CCD), an unexplained phenomenon in which bees do not return to the hive, i.e. die outside the hive most probably from increased pesticide residues in both plants and water.

Bee rearing. There is no certified center for rearing of certified queen bees in Lebanon. Depending on the bee variety, queen bees are either imported or reared by local bee-keepers. A certified queen bee rearing center require a significant investment in both equipment and

learning. However, such center could support stakeholder's effort to improve productivity and expand Lebanese honey production.

Beekeepers knowledge and skills. Basic honey production has a relatively flat learning curve. However, if production expand and beekeepers need acquired advance technical and management skills. Technical assistance program to full and part-time beekeepers should be sustaining to improve the overall level of skills and knowledge.

Prospects

Political support. There is an increased awareness among policy maker of the importance of honey production as an instrument for rural development. Several interviewed stakeholders have pointed out to the positive externalities of honey production, such as its capacity to contribute to poverty alleviation and to valorize local forest and natural resources, as well as the sector's potential to attract women and youth in rural areas. Unfortunately, the latter potential has not been tackled and encouraged yet.

Honey cooperatives. Over the last several years, the Ministry of Agriculture (MoA) has encouraged the formation of beekeeping cooperatives. Cooperatives have been formed mainly to help organize input supply and provide local level farmer-based extension services. Despite this high number of registered cooperatives, only a limited number is now actively working with beekeepers. Many of the nonfunctional cooperatives were formed by donors as vehicles for distributing aid and technical assistance which stopped functioning once project funds were spent. Other cooperatives were formed by member beekeepers only to receive technical as well as in-kind and in some cases financial aid from the MoA. The active cooperatives have membership numbers that vary between 100 and 300³².

Most of these cooperatives offer fee-based honey extraction with centrifuges and a handful of cooperatives offers marketing services for their members. Generally, the services provider provided by cooperatives include: input ordering, honey extraction, bottling, honey humidity reduction, wax recycling, distributing anti-varroa treatments from the MoA, and extension. Few cooperatives are financially sustainable, and membership fees often do not cover the cost of operations, which include rent, machinery maintenance, and other expenses.

Despite the limited formal impact of beekeeper cooperatives, the training provided by the MOA and various donors to individual cooperative members has in many cases created networks of skilled beekeepers who spontaneously cooperate with neighbors to combat diseases, share queen bees and honey to establish new colonies, share extraction equipment and help each other at harvesting in reciprocal labor sharing agreements. These achievements are considered as important, as they have helped creating a favorable enabling environment for beekeeping in many areas.

Nonetheless, properly managed cooperatives with potential for expansion and economy of scale remain a major element in supporting honey aggregation from small producers. There is scope, to explore on a case to case basis the potential to upgrade these informal networks to functioning and competitive cooperatives that are able to expand and grow.

³² Key informant interviews

Bee venom and honey production by-products. Lebanon has recently witnessed significant effort to introduce innovation in the agricultural sector, through initiatives such as the Berytech led Agrytech program³³. Several of this initiative are directly concerned with the honey sector, some of them with very promising technological breakthrough regarding extraction of bee venom. With the expansion of the honey sector, there is scope to ensure diversification of production in linkages with industrial research and development. Honey cooperatives should be aware and linked to innovation incubators and labs.

4.1.2. Marketing and market sub-systems

The Lebanese honey and olive oil market sub-systems are organized in a very similar way, i.e.; i) interpersonal direct sales of what is view by consumers has high quality traditional honey / olive oil, ii) retails market dominated by cheaper and lower quality imports and blended honey / olive oil, iii) expansion of local high quality honey /olive oil markets, iv) opportunities for export (although these opportunities seem to be significantly higher in the honey subsector).

Home consumption and direct sales

A significant segment of Lebanese consumers prefers to buy honey directly from the beekeepers' house or farm and are willing to pay a significant market premium for unbranded honey purchased from beekeepers. Meanwhile, branded bottled honey from retail markets, which in many countries would be more expensive, is sold at a 25% lower price. This lower price is due to a distrust of brands, and to the general perception of the existence of a high volume of very inexpensive "fake honey"³⁴ in the market. While for many small beekeepers, the existence of such market has allowed for significant return on products, the reliance on such channel put a significant barrier to small business expansion growth. As a matter of fact, there is a limit to the ability to sale larger quantities of honey through this channel, and they find significant difficulties in integrating the retails market.

Hamade (2016b) and USAID (2013), suggest that the direct sale channel conveys more than half of the local produced honey. It provides both a premium price to producers (price range between \$20 and \$30 per Kg) and the opportunity to retain 80% to 100% of the product price value, thus rendering small production units profitable. It is suggested that an independent beekeeper can market the output of 20 hives per year using personal relationships and direct sale channels (approximately 600 kg of honey). Indeed, just as for olive oil there is a series of investment in high quality local honey. These investments are capitalizing in the growing urban and formal local market demand for branded local honey.

Lower end local distribution and retail market

While the domestic market is still dominated by direct household sales of unbranded bulk honey, Lebanese brands of bottled honey have made very significant inroads in the past few years. Currently, at least four companies³⁵ have relationships with large distributors to sell into the expanding supermarket segment.

However, the retail market remains dominated by lower quality imported honey. Lebanese honey is considered as "expensive high-quality honey". In fact, the average price of Lebanese

³³ <http://agrytech.org>

³⁴ Honey to which sugar, rice or other type of syrups have been added.

³⁵ Jabal El-Cheikh, Kaddoum, Miel du Levant, La Maison du Miel.

honey in 2011 was US\$16.80/kg. According to the FAO, the per capita consumption in kg of honey is about 0.7 kg per year, about average compared to other Middle East countries. Lebanese trade in honey has increased significantly since 2007, and the country is a net importer of honey. Import values for honey increased by around 62.4% from 2007 to 2011, from US\$ 936,000 to US\$ 1,520,000; while the export market increased by 105% from US\$ 163,000 to US\$ 334,000. In 2011, 61% of imports were from Saudi Arabia and are most likely re-exported of rebranded Chinese Honey.³⁶

The prospects of honey export

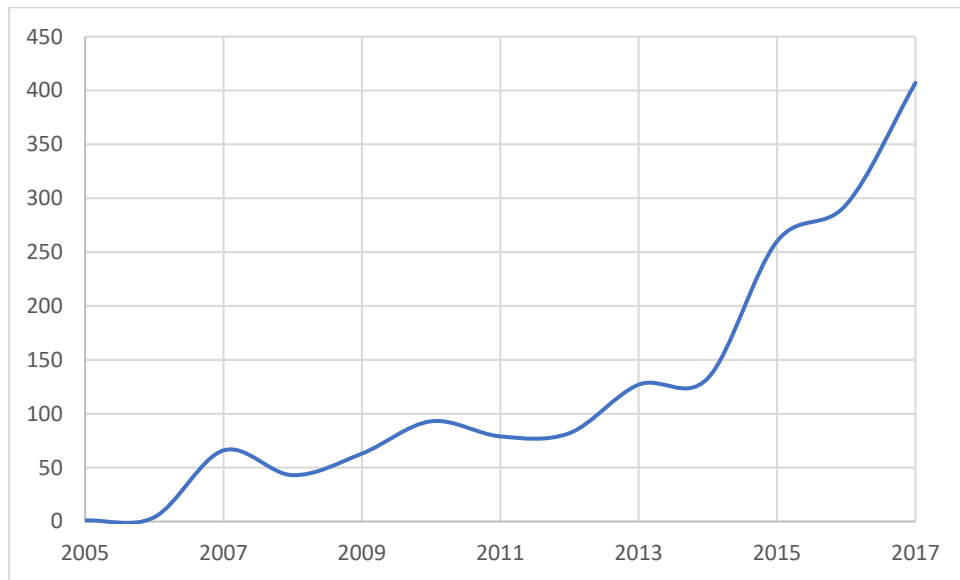
The existence of export market channels is a sine qua none condition for policy makers to engage in expanding local production. There are great export opportunities for Lebanese honey; however, honey exports remain at the stage of market channel identification although they have been growing since 2008 (see figures 6 and 7 below), with a significant change in 2017 with the penetration of Lebanese honey in the Jordanian market

In 2016, around 85% of Lebanon's honey exports were directed to the GCC. Lebanon was also able to penetrate the Jordanian market after the ban of a Saudi commercial brand. The GCC markets – especially the Saudi market which represents 4% of total world import of honey, are important markets for Lebanon. Efforts should be made to promote Lebanese brands and open new market channels. Honey aggregation strategies, led by coalition of cooperative and/or private businesses should allow reaching significant supply volume needed to penetrate large distribution channel, in both the Saudi mainstream market, and the US niche delicacy and ethnic food markets.

According to Hamade (2016b), Lebanese honey brands have been able to reach the US market since 2005 with sustain yearly shipment. Lebanese honey exports to the United States are sold in ethnic markets that target the Lebanese diaspora community who are willing to support the notably higher price of Lebanese honey. As of 2012, Lebanese exports to the US are still essentially in the very early stages of market penetration, however, the US honey market that represents around 25% of the world imports of honey should be seen as a strategic market for Lebanese honey production. Nonetheless, the implementation of proper rules and regulations – e.g. in terms of phytosanitary measures, antibiotic uses and traceability, especially if volumes are to be gathered from small producers – is a sine qua none condition for export expansion in high value markets.

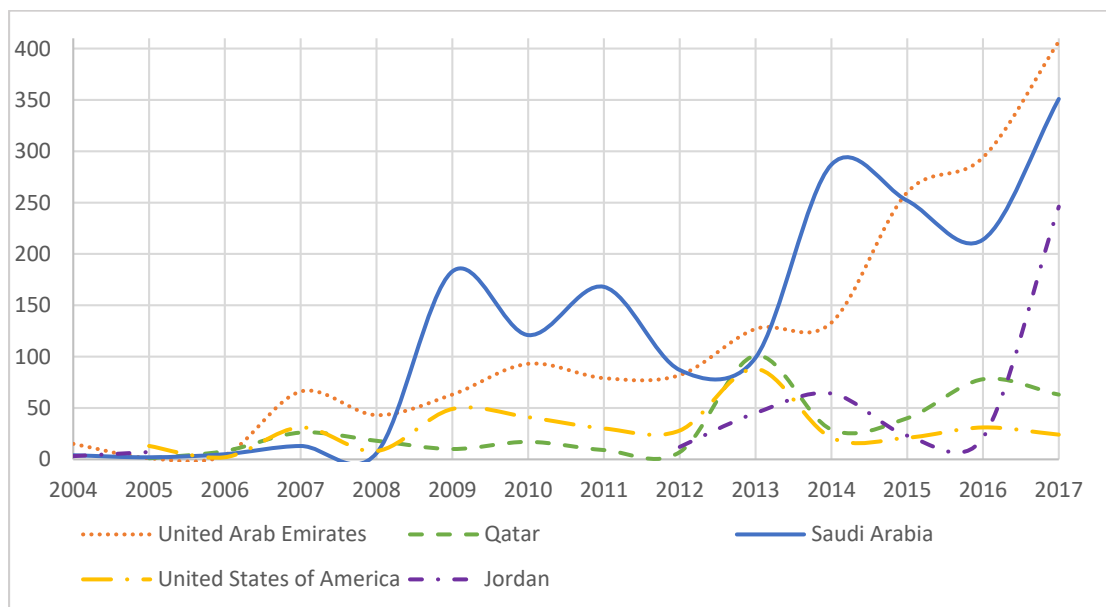
³⁶ Source: Key informant interviews

Figure 6: Lebanon export value of honey in thousands of USD, 2005 -2017



Source: Trade map. www.trademap.org

Figure 7: Value of Lebanese export of honey to main export markets in thousands of USD



Source: Trade map. www.trademap.org

4.2. Challenges and opportunities analysis

The following table present a strengths, weaknesses, opportunities and threats SWOT analysis of the honey value chain. Then the main challenges (mainly weaknesses) and the main opportunities are further analysis in Table 3.

Table 4: Honey value chain SWOT analysis

Strengths	Weaknesses
<ul style="list-style-type: none"> • Profitability of small scale production units, and low initial investment cost • Less than a year return on investment • Lebanese honey has a premium value in local and GCC markets • Potential for the production of different type of honey (seasonal, mountain, forest, citrus orchards). 	<ul style="list-style-type: none"> • low productivity of bee-hives, beekeepers and cooperatives management capacities • Difficulty in Marketing relatively large quantity of honey through direct sales channel, thus rendering expansion above 25 hives difficult. • Limited aggregation capacity of cooperative (geographic constraints) • Lack of consumer awareness of honey quality standards • Conditions and stringent requirements are imposed on the Lebanese honey exports to the EU, due to lack of constant quality and product certification. • Export needed laboratory tests are not readily available in Lebanon.
Opportunities	Threats
<ul style="list-style-type: none"> • Expanding local market and penetration of export though the production of high quality honey • Introduce honey production within Syrian refugee's informal settlement and gathering • High potential of honey-based products and other bee extractions 	<ul style="list-style-type: none"> • Reduction of bee pastures • Bee diseases: American foulbrood disease, the varroa mite, and colony collapse disorder (CCD) • Honey trade Fraud • Unregulated import (in term of quality specification and honey blend labelling)

Table 5: Challenges and opportunities in the honey value chain

Challenges and opportunities analysis – Honey value chain		
Inputs and production management		
Challenges	Potential solutions	Potential interventions
Improve productivity of bee-hives, beekeepers and cooperatives management capacities	<p>There is a need to improve knowledge and skills of bee-keepers to improve productivities of bee-hives.</p> <p>As mentioned, knowledge of entry barriers in honey production are low, however, additional training on skills are needed to improve hives productivities.</p> <p>Also, there is a need to improve businesses and management skills of bee-keepers, as for them to act as sustainable and economically viable businesses. In parallel, coaching and business support should be provided to cooperatives as for them to become efficient and competitive honey aggregator.</p> <p>In that context, cooperation between cooperatives and regional aggregation is a must.</p>	<p>Programs should intervene at both the level of the cooperative but also at the level of the beekeeper. Business development services packages that includes both technical and managerial skill development programs should be provided to beekeepers.</p> <p>Programs with cooperatives have to reach a certain level of achievement and interventions need to go a step further by working on honey aggregation at the regional level. This in turn would allow cooperatives to access large local retailers as well as export markets (assuming alignment with international regulations).</p>
Fight increasing bee diseases and reduction of bee pastures	<p>Bee diseases and reduction of bee pastures have been a major challenge for the honey sector. However, this is a worldwide phenomenon that is related to the overall degradation of natural resources.</p> <p>Nonetheless, there is a need to work with public institutions and increase their awareness on pesticides use, uncontrolled and unplanned urbanization as well as preservation and management of natural resources.</p>	<p>Work should be done to raise awareness of farmers, cooperatives and municipalities on environmental protection and sustainable use of agricultural inputs.</p>
Marketing		
Challenges	Potential solutions	Potential interventions

Sustain the growth of small scale honey production	There is a significant growth in small-scale home production, this has led to the increase in income of vulnerable and middle-class families. However, for small-scale production unit to sustain growth and income, they must be able to aggregate through informal network and/or cooperatives.	Programs should support the creation of informal beekeeper networks and support cooperatives plans to expand membership through technical assistance and on the job coaching.
Opportunities		Potential interventions
Expanding local market and penetration of export through the production of high quality honey		<p>There are two necessary conditions for cooperatives to be able to reach export market: i) be able to aggregate large supply of high quality honey, ii) be able to obey international regulations and standards.</p> <p>There should be a development of training curriculum programs and on the job coaching and work at three levels: the beekeeper, the cooperative/informal network, and at the regional level by working with formal cooperatives union or informal gathering of cooperatives.</p>
Introduce honey production within Syrian refugee's informal settlement and gathering		<p>With the framework of its LCRP interventions, there is scope for to the development of programs aimed at allowing Syrian refugees to implement small scale honey production. This production would allow for high quality nutritive and calories intake and may generate seasonal disposable cash income.</p> <p>Furthermore, refugees could transport the bee-hives back to Syria when they do return.</p> <p>Implementing such project on a small or medium scale, should not have market distortion impact. Scale of intervention and selection of beneficiaries should be coordinated with stakeholders through existing coordination mechanism such as the food-security and agricultural working groups.</p>

High potential of honey-based products and other bee extractions	Work should be done with cooperatives to find a way to invest in honey based products as well as other bee extractions that are highly demanded in export markets and in the pharma industry.
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5. Cooperative Prospects and Challenges

5.1. Sector overview

In 1937, the very first cooperative in Lebanon was established: Abadieh Farmer Cooperative. Today, there are approximately 1,250 registered cooperatives across the country (see textbox 7 on the governance framework of cooperatives), with a high number of them dedicated agriculture (51%).³⁷ Despite the high number of agricultural cooperatives, there are only 4.5% of Lebanese farmers are members of cooperatives. The Lebanese Federation of Cooperatives, established in 1968, is the main representative body responsible for coordinating with the government, training cooperative members, and overlooking the work of cooperative members. Although the federation is active, it doesn't have the resources needed to expand and meet the growing needs of farmer. Cooperatives in Lebanon are male-dominated (81.5%). However, it is worth noting that of the 18.5% women cooperatives, the majority are members in women led and controlled agrofood cooperatives³⁸.

Nonetheless, most interviewed stakeholders reported that the vast majority of cooperative are not operational and mostly established to

receive governmental subsidies. Furthermore, most cooperatives are centered around one person, who is a well-respected individual in the village with a capacity to mobilize farmers. However, such local leaders may lack the knowledge and experience needed to create democratic structure.

The Ministry of Agriculture 2015-2019 strategy noted that *"The weakness of cooperative work in Lebanon is affecting negatively the agricultural sector as a whole. National and local policies and programmes for the development of cooperative work are absent, leading to a weak public-sector support to cooperatives."* However, interviewed experts considered that cooperatives have a key role in allow farmers to overcome the challenges of high costs of production, land fragmentation, financial insecurity, excessive importations, and difficulty with market entry. Indeed, the NCFC reiterates this notion, pointing out that cooperatives help

Textbox 7: Cooperatives legal framework

The law that governs the cooperative sector was enacted in 1964 (decree law 17199), and further amended in 1972, 1977, and 1983. It defines cooperatives as non-profit organizations whose objective is to improve the socioeconomic conditions of their members through cooperation between them towards a common objective. The first amendments of 1972 and 1977 introduced changes to three articles related to the characteristics of the cooperative and the inspection of the Directorate of Cooperatives for the board of directors. The law was again amended in 1983 with changes in two articles concerning increased monitoring of the activities of cooperatives by the General Directorate for Cooperatives, which is responsible for registering, assisting, and monitoring all cooperatives in Lebanon. By law, cooperatives are exempt from certain taxation the most important being the exemption from profit tax, municipal rent tax and the municipal construction tax, finance fee on contracts, and tax on owned real estate. These exemptions have encouraged traders as well as exporters of fruits and vegetables to establish and register as cooperatives.

³⁷ Personal communication. General Directorate for Cooperatives to the report authors

³⁸ ILO (2018). Agricultural and agro-food cooperative in Lebanon. ILO: Geneva

farmers gain access to competitive markets and capitalize their bargaining powers, in addition to attaining products and services needed³⁹. Ultimately, this empowers them financially and helps improve the overall job opportunities in an area. In addition, they have the capacity to strengthen social networks and alleviate rural emigration to Beirut, Tripoli and other concentrated city centers.

5.2. Cooperatives barriers to growth

In the following the report discuss the main cooperative challenges as identified during field data collection.

Management of cooperatives. Lack of knowledge in cooperative operations and financial management has been reported by interviewed stakeholder as one of the major barriers to cooperatives growth. Management difficulties have forced cooperative to provide minimum services to members, i.e. olive oil milling, or honey aggregation services. Only a handful number of cooperatives can provide integrated input supply, production, milling/aggregation and marketing support. The lack of management skills of cooperative leadership is also a key factor contributing to the ability of cooperative to grow. A recent study⁴⁰ showed that the level of education (and therefore of skills) of the cooperative manager is a key factor in determining the ability of the cooperative to attract additional members. Furthermore, lack of management skills lessens the cooperative's board ability to manage the cooperative in a democratic and participatory way, in which each member take part in the decision-making process and increase sense of belonging and ownership. Thus, in turn reduce farmers' commitment to participate, improve and expand cooperative services and overall business turn-over.

➔ *Support should be provided on technical assistance to cooperative manager and work directly with a group of cooperative members. Technical assistance package should not only focus on management technical skills but should also tackled issue related to cooperation, interpersonal communication, as well as democratic and participatory decision-making processes.*

Legal and regulation barriers. The cooperative law limits the ability of the cooperative to grow beyond a certain geographical location. As any income generating activities, agricultural cooperatives need to be able to expand and reach economy of scale, limiting the cooperative geographical scope to a restrained location (usually at the municipal level) is a significant barrier for its ability to grow. For example, honey cooperatives cannot act as regional or national honey aggregators and this role is taken over by larger private companies. This also apply to olive oil cooperatives, that because of their geographical limited scope (among other factors) cannot act as high-quality olive aggregators and are instead solely acting as suppliers of private traders and middlemen.

➔ *Support should be provided to local cooperatives' action to advocate for a reform of the current cooperative regulatory and legal framework.*

³⁹ NCFC 2005, as quoted in "Agricultural Cooperatives I: History, Theory and Problems"

⁴⁰ ILO (2018)

Ability to invest. Cooperative structure lacks the ability to invest. This is due to two main interdependent factors:

- There is a dominant perception with the cooperative movement that cooperatives are entitled to public support either from international NGOs and/or from the Ministry of Agriculture. This dominant discourse also tends to describe agricultural cooperative as local community-based organization rather than business entities. This misconception of the role of cooperatives, which disincentivizes willingness to invest, is also shared by policy makers and public institutions that tend – through financial support - to instrumentalize agricultural cooperatives to gain political backing.
 - The disincentives of investment are also directly linked to the informality of the agricultural sector. Farmers have no legal status in Lebanon. This is also the case for the farm as a productive entity, it has no legal business status as would any other private business. Membership of agricultural cooperative is done on individual basis and several interviewed cooperative members have mention the non-ability (and/or the complexity) of inheritance are a major barrier to their willingness to invest in a cooperative, i.e. a commonly owned productive asset that they would not be able to pass on to their daughters and sons. This unwillingness to invest is generally not a problem:
 - *In countries where agriculture cooperatives' membership is made of agricultural businesses (e.g registered private entities).* In that case, when a farmer (business owner) pass away, his business is inherited by his family and at the same time remain part of the cooperative and still have access to the its productive assets.
 - *And/or in countries with high level of cooperative social capital, in which people and community highly value common ownership of productive assets.*
- ➔ *In such context, it might be beyond the scope of any program to advocate a full reform of the agriculture sector legal setting. However, interventions can be directed to raise awareness of the cooperative movement leadership and members on the importance of such reform as well as the importance of investment in commonly owned productive assets.*

Cooperative independence. The cooperatives' inability to undertake investment using their own funds (and/or credit funds) has created a donor and public institutions dependency undermining their independence and autonomy. According to ILO (2018) report, "donor and public aid dependency are a major obstacle to the sector sustainable development. This dependency is further exacerbated by the absence of a unified cooperative movement and the lack of a common discourse and action. Aid dependency has also allowed for the multiplication of inactive and phantom cooperatives which aims only for accessing political based public support. In that regards, the cooperatives movement institutions and governance body – as well as international donors – must gradually engage in a process that encourages self-managed and autonomous cooperatives through refraining from providing non-matched financial grants. The cooperative sector needs to move from being aid dependent to becoming a sustainable private-sector-led economic sector, in-line with the cooperative movement values and principles"

- ➔ *Support should be provided to cooperatives to advocate for the creation of specific financing tools and institutions to support cooperative capacity to undertake investments and improve and grow cooperatives' income generating activities. The reform and re-foundation of the National Union for Cooperative Credit (NUCC) including potentially the dissolution of the current entity constitutes a step toward improving cooperative access to funds. Interventions should also focus on raising cooperative members' awareness of the importance of building an independent cooperative movement.*

Value chain integration and access to market. The above-mentioned barriers to growth are major factors impeding cooperatives ability to integrate value chains and/or to access and gain market share. In addition, cooperatives (especially in the olive oil and honey sub-sector) have been encouraged by donor funded programs to improve production quality and develop marketing strategies that focus on short value chain. Donor projects market strategy choices have been partly guided by the relatively small supply capacity of cooperatives. Such limited capacity limit cooperatives ability to integrate larger and more complex chains.

- ➔ *Support should be provided to leading cooperatives on a diversified value chain strategy that allow for diversification of market outlet and thus reduction of risks from informal networks to cooperatives. Cooperatives are agents of change in rural area. Being part of an efficient cooperative can minimize the costs of land, labor and pesticides. They also act on farmers' empowerment and induce positive social change.*
- ➔ *Support should be provided to informal farmers' network to gradually enhance cooperation and common action and establish democratic and well manage cooperative and/or union of cooperative structures.*

6. Business Enabling Environment

6.1. Political factors

6.1.1. Political instability and shocks

Political instability in Lebanon is one of the biggest impediments to trade and economic development. The decades of the Lebanese civil war (1975-1990) stalled the state's infrastructure, economic stability, and the general political, economic and social development. The reconstruction years following the war (1990-2005) were largely dedicated to physical infrastructure and foreign investments focused on the services and real estate sectors, with many productive sectors such as agriculture not effectively considered.

After the Syrian army withdrawal in 2005, the country witnessed a period of chronic political instability that is likely to settled down only temporarily after the 2018 elections. This period of instability witnessed several significant shocks such as: The 2006 Israeli war, the domestic imbalances and local security tensions during 2008, and the 29-month presidential vacuum from 2014 to 2016, and, of course, the 2011 on-set of the Syrian crisis.

The gradual influx of more than 1.5 million registered and unregistered Syrian refugees has, in tandem with Lebanon's already fragile economic infrastructure, significantly impacted the Lebanese economy, in addition to the impact of the Syrian war on Lebanon's socioeconomic and political landscape.

Nonetheless, within that context, agriculture seemed to have acted as a resilient sector that supported rural host communities in withstanding the effect of the Syrian crisis shock. The sector has witness significant endogenous growth and new investment (especially in Coastal Akkar and Northern Beqaa) in addition to growth and improvement supported by international donors funded programs^{41, 42}. However, dynamisms and self-resilience mechanism are hampered by the lack of public policies.

6.1.2. Agriculture public policies and institutional setting

The Ministry of Agriculture

Agricultural policies in Lebanon were only tackled in the late 1950's during the Chehabist period. Pushed by increasing concern about inequality and poverty in rural area, a series of reform have restructured and significantly changed the agricultural policy landscape. These years witnessed the implementation of a large irrigation infrastructural projects, including the Litani dam, the creation of the Green Plan, the general directorate for cooperatives, the tobacco monopole, the wheat and sugar beet subsidy program, and the Litani River Authority. All these institutions together with the Ministry of agriculture constitute the current institutional setting governing the agricultural sector.

The Ministry of Agriculture is the main institutional actor influencing agriculture and agro-food policies. The ministry's mandate can be summarized as follows:

⁴¹ Hamade, K. (2016a). Agriculture as a key to the resilience of Lebanon rural areas to the effect of the Syrian Crisis. In CIHEAM (eds), Crisis and Resilience in the Mediterranean. CIHEAM watch Letter 36, Paris.

⁴² Hamade, K., Blanc, P., Jaubert, R. and Saade-Sbeih, M. (2015). De part et d'autre de la frontière libano-syrienne : les mutations de l'agriculture du Haut Oronte. Confluences méditerranéennes 92:19-32.

- Regulating the agricultural sector in terms of production, processing, marketing, as well as export and import trade (including agro-industrial food products);
- Controlling and monitoring the implementation of laws and regulations;
- Supporting the sector development;
- Providing extension services related to production, harvest, storage, and transformation of agricultural products;
- Planning and coordinating projects related to the sector;
- Documentation, statistics and socio-economic research.

In addition to the General Directorate for Agriculture, three institutions are attached to MOA:

- The Green Plan Authority: An entity that could be considered as a department for rural development. It is an executive body in charge of rural infrastructure, i.e. farm-level irrigation, rural roads, and reclamation of agricultural land.
- The Lebanese Agriculture Research Institute (LARI): LARI is generally considered as a relatively efficient institution, with research programs well directed towards providing answers to farmers' production concerns and needs. LARI laboratory is performing analysis and testing for food quality and safety in support to the ministries of Agriculture and Health, as well as for providing services to farmers testing their products for export. LARI's department of food safety for analytical and micro biological test methods, as well as its department of animal diseases laboratories are seeking ISO 17025 accreditation⁴³. Such an accreditation, would allow LARI's laboratories analysis to be internationally recognized, facilitating export trade of Lebanese products. Unfortunately, no laboratories in Lebanon have such accreditation.
- The General Directorate for Cooperatives: It covers all cooperatives and not just agricultural cooperatives. Its mission includes: (1) legal and financial control over cooperatives, (2) technical formation of cooperatives leadership, (3) economics and statistical follow-up of cooperatives. Its impact and efficiency are usually reported by agricultural stakeholders as very limited.

However, some important issues related to agriculture and rural development do not fall under the direct responsibilities of MOA. Large irrigation programs and water resources management are the responsibility of the Ministry of Energy and Water through the Litani River Authority. Existing subsidy programs are also out of the mandate of MOA – the wheat and sugar beet subsidy program is under the responsibility of the Ministry of Economy; tobacco monopoly is under the tutelage of the Ministry of Finance. Furthermore, issues related to food safety fall under the common jurisdiction of MOA, the Ministry of Health, and the Ministry of Economy. This has taken important policy tools and budgets away from MOA. As a matter of fact, the limited budget of the ministry does not allow it to undertake fully its mandate. Therefore, it has relied on projects funded by international donors.

⁴³ ISO 17025 certification specifies the general requirements for the competence to carry out tests and/or calibrations, including sampling. It covers testing and calibration performed using standard methods, non-standard methods, and laboratory-developed methods. (www.iso.org)

International donors

International donors have also contributed to the enhancement of the Lebanese agricultural sector through the implementation of projects directly with the ministry of Agriculture, local NGOs, and/or the private sector. In these projects, the focus was often directed towards either: (1) rural development and improvement of livelihoods, or (2) increasing quality and compliance with international standards. In addition to irrigation infrastructure projects implemented in cooperation with the Ministry of Energy and the Litani River Authority, and that are expected to have had an impact on rural economies.

The FAO, UNDP as well as the EU and the Italian Cooperation are the main partners of the Ministry of Agriculture. Nonetheless, USAID remains the main international organization – in terms of project dedicated funds to projects in the agricultural sector - however, has very limited interaction with the ministry of agriculture.

Local NGOs

The lack of extension services is one of the most important constraints to agricultural development. Any intervention in the sector should contain a technical support and extension services component. As a matter of fact, public extension services in Lebanon have historically suffered from lack of sufficient human and financial resources. The weakness of the extension services of the Ministry of Agricultural has opened the space for several politically affiliated as well as civil society grass-roots based NGOs to step in the agricultural sectors through the provision of agricultural extension services. The most influential in being: The Safadi Foundation, Rene Mouawad Foundation, and to a lower extend Mada, while Jihad Al-bina is particularly influent in the Marjeyoun-Hasbaya Area.

6.1.3. Policies related to the olive oil and honey sector

The Lebanese ministry of agriculture has defined the main line of its policies through the 2015-2019 agricultural strategy (2015-2019). The strategy revolves around the need to increase the competitiveness of agricultural production by increasing its productivity while ensuring conformity with international sanitary and phytosanitary requirements, thus facilitating access to international markets.

The Ministerial strategy has proposed eight lines of action:

1. Improve food safety and quality of locally produced and imported products;
2. Increase productivity and competitiveness of the Lebanese agricultural products,
3. Improve the good governance and sustainable use of natural resources;
4. Strengthen agricultural extension and education:
5. Strengthen agricultural research and laboratories,
6. Develop the cooperative sector and mutual funds;
7. Develop the ministry of agriculture's capacities;
8. Respond to climate change impacts.

In terms of policies directly related to the olive oil and honey sectors, the Ministry of Agriculture's efforts have focused on the increase in the value of the local market by increasing demand on the higher quality segment.

In regard to the olive oil sector, the Ministry of Agriculture is implementing a long-term partnership with the Italian cooperation through the CIHEAM⁴⁴ Mediterranean Agricultural Institute of Bari (Italy), which are the entities implementing the Olio del Libano program. Recently (2018), the Ministry has renewed its agreement with the CIHEAM and through it the Ministry committed to improving the quality of olive oil in Lebanon and ensuring that it is raised to international standards.

Another major policy related to the olive oil sector, although not yet fully implemented, is the Ministry of Environment's decree number 100/A of 2010, that imposes standard procedure on olive oil milling operations in order to minimize waste and residues. Acidic and contaminated water and large volumes of pomace are the two potential hazardous effluents produced by olive mills.

Regarding the honey sector, the Ministry of Agriculture has implemented measure aiming at ensuring quality and controlling fraud in the honey sector. The Ministry's decisions were incentivized by the mid-2000's EU three years ban on Lebanese honey exports (after antibiotics residues were found in a Lebanese honey shipment to the EU). The Ministry's measures include:

- **Traceability measures.** Full product traceability to the beekeeper-level has become a requirement for all honey produced in Lebanon since 2011. Complete enforcement of this regulation is yet to be achieved, but significant progress has been made so far, mainly through the registration of bee-keeper at the ministry (a mandatory measure to receive public extension services support). Furthermore, compliance to the regulations is largely voluntary as bee-keeper are increasingly aware of the importance of trust and traceability in the sector.
- **Norms and export test.** Honey sold in Lebanon prior to 2013 was only required to meet LIBNOR norms, which sets a limit for purity and required eight simple chemical tests. However, as of 2013 a decree that set stricter (EU compliant) level of pesticide and chemical residues in honey was issued. Also, as of 2015, a total ban on the use of antibiotic has been imposed. However, till now there is no Lebanese laboratory capable of conducting the full battery of required test under the new regulations. Note that all honey export need to be tested in Lebanon for available test that fall under the regulation.

6.2. Economic factors

6.2.1. Lebanon's economy overview and the impact of the Syrian Crisis

Macro-economic balance. Characterized by a laissez-faire model, Lebanon's economy has minimal government intervention in foreign trade and almost no restrictions on capital, dividends, cash inflow and outflow, and remittances. Some of its main financial challenges are the staggering public debt and the dependence on external finances for domestic management.

⁴⁴ Centre International d'Hautes Etudes Mediterraneenes. An inter-governemental organization working on the improvement of agriculture and on cooperation across the Mediterranean Basin.

Lebanon open economy model has allowed the country to benefit from significant capital influx, allowing it to benefit from a positive balance of payment; although the country historically show chronic trade deficit. However, the Syrian crisis has highly impact macro-economy balances with extensive trade deficits recorded at \$1,187.22 million in February 2018⁴⁵, and a shortfall of \$156 million in the (usually positive) balance of payment⁴⁶. Nonetheless, the banking sector has till now withstand the effect of the crisis thank to price stability and a noticeable growth in private banks' deposits. The liquidity status of Lebanese banks is also encouraging, ensuring the banks' ongoing ability to continue funding the economy.

Informality. Lebanon's economy is also characterized by extensive informality, with 19% of workers lacking access to social insurance and labor regulations⁴⁷. In Lebanon, agriculture is almost a fully informal sector with a significant reliance of the sector on unskilled as well as skilled low-waged Syrian workers.

Trade policies. An important facilitation was the European Free Trade Agreement, initialed in 2002 and implemented in 2006, which has impacted exports and liberalized trade between the EU and Lebanon. As per the agreement, Lebanon's agricultural products have free access to the EU's market, now accounting for approximately 9% of exports⁴⁸. There are also ongoing negotiations to join the World Trade Organization, which would push for necessary legislative and institutional changes, and better integration into the global Market. Lebanon is also a signatory to the Greater Arab Free Trade, which promotes free trade among 17 Arab countries and eliminates administrative and monetary barriers between them, as long as GAFTA's standards are being met. Further, as of 2010, it is part of the regional Economic and Trade Association Council, along with Syria, Jordan, and Turkey. Lebanon is also negotiating with MERCOSUR (Argentina, Brazil, Paraguay, and Uruguay) countries regarding free trade agreement, in addition to more than 50 bi-lateral trade agreement that could benefit Lebanon agricultural exports.

These trade agreements have had positive impacts on agricultural production in Lebanon, as there is now smoother access to European and Arab markets. Indeed, a report by BLOM Bank notes that the "total exports of olive oil surged by 70% y-o-y in 2013 to hit 7,085 tons worth \$22.45M compared to 4,163 tons worth \$15.24M in 2012." The three main importers of Lebanese olive oil are the U.S., Saudi Arabia, and the U.A.E.⁴⁹.

The Syrian crisis and the influx of Syrian refugees are a huge challenge to Lebanon's business climate, particularly in relation to the two domains that agriculture largely depends on: tourism and trade. Prior to the Syrian war, Lebanon benefited from international highways with sprouting malls and trade centers en route to Syria. Its main export partner was Syria,

⁴⁵ <https://tradingeconomics.com/lebanon/balance-of-trade>

⁴⁶ http://investinlebanon.gov.lb/en/lebanon_at_a_glance/economic_profile/trade_performance

⁴⁷ http://www.ilo.org/wcmsp5/groups/public/---arabstates/---ro-beirut/documents/publication/wcms_535107.pdf

⁴⁸ http://investinlebanon.gov.lb/en/lebanon_at_a_glance/economic_profile/trade_performance

⁴⁹ <http://blog.blominvestbank.com/wp-content/uploads/2016/01/Hidden-opportunities-in-the-Lebanese-economic-sectors.pdf>

with 24.9% of its products exported there⁵⁰. However, highways connecting the two countries have been blocked and rapid deterioration in trade relations with Syria has been experienced since 2011. This has also affected trade relations with other countries, largely because of the closure of land routes from Syria to Gulf countries, such as Saudi Arabia, and, more critically, the closing of the Nasib border point. The Nasib border point is an international border crossing on the Damascus-Amman highway. In 2015, land exports through that channel were stopped entirely, adding extra strain on Lebanese farmers in particular. Indeed, land exports make up around 35% of all Lebanese exports, and GCC's imports of Lebanese products were \$920 million alone in 2014⁵¹. The Nasib border was Lebanese truckers' main option after 2011, with many farmers depended solely on it. Moreover, in response to the closing of the land borders, the Lebanese government is subsidizing products exported via sea routes with an allocation of \$20 million⁵². Although there have been talks signaling reopening the border, there has been no decisive change.

Yet, there are certain points of opportunities instigated by the Syrian crisis, mainly the increase in demand for Lebanese products, to cater to the influx of Syrian refugees and to counterbalance for the decrease of Syrian exports felt in different Arab countries, and the supply of cheaper labor. Indeed, the World Bank reported that exports have increased by 5.1%⁵³. The Investment and Development Authority of Lebanon (IDAL) also noted that "While the Syrian crisis has had its share of negative impact on the Lebanese economy, it has allowed for increased demand for Lebanese products to compensate for the decrease of Syrian exports."⁵⁴

6.2.2. Economic investment incentives and access to finance

The nature of agricultural projects that usually requires long-term financing, the general weak organizational and managerial skills of Lebanese farmers and cooperative, and the conditions of bank credit pertaining to the availability of collateral, all hinder access of farmers to credit and thus hamper the establishment and development of agriculture-related businesses. Nonetheless, several formal and informal credit systems exist in Lebanon, some of which have been financing agricultural projects and providing support programs for the establishment of agricultural enterprises.

Kafalat. The Kafalat government-backed program, whose purpose is to support funding of small and medium enterprises in various sectors through commercial banks, is providing credit to agricultural investment, including loans designed for orchards start-up. In fact, in 2017 agriculture's share of Kafalat loans was the highest among all economic sectors reaching 36% of total loan numbers, followed by industry 33%, while tourism representing 24% of loans⁵⁵. Setting the Kafalat interest subsidy programs aside, banks are more reserved when it comes to funding agricultural businesses, and the credit approval decisions remain largely in the bankers' hands. The challenge remains to make loans accessible to a larger number of farmers, especially the owners of smaller farms.

⁵⁰ http://www.economywatch.com/world_economy/lebanon/export-import.html

⁵¹ <http://www.jordantimes.com/news/business/last-overland-route-closure-chokes-lebanon-exports>

⁵² <http://www.executive-magazine.com/industry-agriculture/regional-instability-harms-lebanese-exports>

⁵³ http://www.worldbank.org/content/dam/Worldbank/document/MNA/Mashreq/LEM_Spring_2014.pdf

⁵⁴ <http://www.executive-magazine.com/industry-agriculture/regional-instability-harms-lebanese-exports>

⁵⁵ Statistical data base. www.kafalat.com.lb

The marginalization of poor farmers from access to commercial bank loans has led to the expansion of informal credit systems and networks, where the main actors are input suppliers who give credit to farmers often in the form of deferred payment. Despite the fact that such credit is usually accompanied by very high interest rates, it is sometimes the only option for farmers. In addition, loans from relatives or friends form an important source for working capital financing for small farmers. These loans are most often interest-free.

IDAL. The Investment Development Authority of Lebanon (IDAL) is the national investment promotion agency, established in 1994 and working to promote and facilitate investment in Lebanon as well as to market Lebanese exports including agricultural and agro-industrial products. As part of its latter overall objective, IDAL has established the "Agri Plus", with a budget of about \$33.3 million for export subsidies, it aims at opening new markets for Lebanese agricultural produce. IDAL will be in charge to implement the additional \$20 million subsidies voted by the government in order to support sea road export additional cost after the closure of the Syrian-Jordanian border.

6.3. Legal factors

Establishing a business. The agricultural sector remains an informal sector in Lebanon. There are no legal entry barriers for investment in the olive or honey sector. Indeed, apart from mandatory registration for beekeepers, engaging in agricultural activities remains mostly informal. In regard to private agricultural mills, the registration of a company as well as the acquiring a proper industrial license is a must. IDAL is the main body that promotes investment in Lebanon and has a "One-Stop Shop" that eases the process for investors, making it easier to receive permits and licenses.

Export. Export in Lebanon requires several documents: an original commercial invoice, an export order, a quietus from the social security office, a certificate of origin from the Ministry of Industry that is certified by the Lebanese Customs Authorities, export licenses, agricultural health certificates, quality verification for all food products, and a declaration form based on the single administrative document.

Export Labelling. The labels on exported products should include ingredients, production and expiration date, the product's net weight, and manufacturer. The Lebanese Standards Institution (LIBNOR) is the main acting body, under the Ministry of Industry, responsible for allotting, issuing, and correcting Lebanese standards. It also grants the Lebanese Conformity Mark. LIBNOR confirms to the WTO's technical barriers to trade, which is a code of good practice related to ensuring that standards are followed through.

7. Conclusions

This study indicates that the production, marketing, and sale of both olive oil and honey have the potential to improve in order to play an important role in Lebanon's agriculture and economy.

To start with, although the production of honey has been volatile, the past five years have witnessed an increasing trend in the production of honey in Lebanon. The Ministry of Agriculture has implemented a series of measures to ensure better honey quality in the sector, in addition to controlling fraud in the market. Yet, there are still major constraints across the honey value chain.

While there are no predominant issues regarding access to input, there remains lack of knowledge on emerging techniques for the production processes. There is also limited grazing available, thereby decreasing the potential of honey production possible. Moreover, there are diseases affecting bees that require more environmental protection and sustainable farming methods to be prevented. Marketing also remains a challenge in the value chain, as a large number of the sales happen through direct channels. As such, small-scale production units have been unable to access informal networks and cooperatives adequately.

There are several opportunities, however, that should be tapped into. Local farmers can access export markets with the production of high quality honey, if the proper techniques are adopted and marketing strategies are strengthened. There is already a visible increase of honey sales to export markets in the GCC, EU, and the U.S. Moreover, given the relatively easy access to input and low investment costs, honey production can be introduced within informal Syrian refugee settlements, as there is also a high potential for honey-based products and bee extractions.

Similarly to the honey sector, the olive oil value chain is plagued by severe challenges, starting with high costs of production, land fragmentation, and outdated farming practices. Cheap Syrian imports coming in from across the borders have severely affected local Lebanese farmers, as the Syrian oil is sold through direct sales channels, retail and petty trade shops, and even large mainstream distribution channels. Moreover, many mills still operate traditionally, with some farmers storing olive in plastic rather stainless steel.

Although there have been stronger market strategies in previous years, aided by various organizations and initiatives, there remains a lack of customer awareness regarding the quality of olive oil. Despite that, there is an increased demand for olive oil in exports markets, such as Gulf countries and niche Lebanese diaspora markets abroad. There is also growing and sustained interest from both international donors and the Ministry of Agriculture, signifying the potential of the olive oil market. Interventions should engage with rural and agro-tourism activities, in addition to helping increase cooperative management and independence, and advocate less regulation barriers for market entry and changes in the legal framework of cooperatives.

8. Recommendations

In addition to the punctual recommendations stated throughout the report, CRI can highlight the following general recommendations that are common to both olive oil and honey sectors. These recommendations are based on CRI's analysis but also interviewees' visions on how to improve the value chains and cooperatives' role.

Cooperative Corporate Governance

More effective cooperatives would require strong and capable management. This is only possible through planning and setting objectives and upcoming milestones. One way to do so would be by bringing experts in the field to be advisors for cooperatives, while also involving members more and creating governance boards who have stake in the game. It is important to find a way that can turn cooperative management into a for-profit corporate management, where members would be more incentivized to use revenues and funds efficiently in the right direction and for the right expenses.

Interlinkage and Coordination

One of the most important aspects of cooperatives' success is the coordination between its members, but also the coordination with municipalities, ministries, and funding agencies. Interventions should be aimed at improving the linkages between the cooperatives and surrounding stakeholders, in order to ensure transparency, effectiveness and clarity of visions which helps in better aligning actions undertaken by each entity.

Labelling and Branding

As part of better marketing for unbranded products, simple labeling and/or stamp can improve consumer appreciation for the premium local price (help increase awareness of price to quality ratio), while also facilitating the way for export markets as a first step along the way.

Innovation and Technology

The component of technology of innovation cannot be disregarded from the agriculture sector. Investments should be made in this field as technological advancements can improve the sector on several level: disease detection, crop analysis, increase awareness, marketing, etc.

Youth Incentivizing

The overall agriculture sector does not only involve farmers anymore, it also needs engineers, marketers, technicians, and so on. Therefore, having initiatives to incentivize youth of different majors and bringing this expertise into the sector is very important. This also allows youth employment and paves the way for innovation and sustainability/improvement of the sector on the long run.

Annex A. Discussion Guides for In-depth Interviews

Interviews with Institutions

Target: *Institutions and stakeholders involved in the olive oil and/or the Honey value chain. Interviewer to introduce the research– highlighting ACTED project objectives.*

The interviewer should mention that information shared will remain confidential and will be solely used for research purposes. Ask for interviewee consent before recording the interview.

Material needed: Block note, recording device, A3 paper, additional pen and colored pencils.

Anchor / timeline change / services provided

1. How long have you been involved in the olive oil and/or honey value chain?
 - a. Can you please describe the scope of work of your institution?
 - b. Can you please describe the services your institution provided to farmers and cooperatives? (Elaborate with examples).
 - c. Please describe your relationship with the local authorities such as municipalities, agriculture extension centers, syndicate of food industries, CCIA, other cooperatives, and other relevant stakeholders involved in these two value chains.
2. Can you tell us what were the main changes between when you started and today?
 - a. Can you tell us when was the best year? (Why? What was different?)
 - b. The worst year? (Why? What changed? – What did you do to solve the problems faced?)
3. Did the Syrian crisis impact the sector? How? (positively and/or negatively)

Challenges and opportunities and growth expectation

4. How would you describe the current situation of the value chain?
 - a. Where do you see opportunities for farmers/ beekeepers?
 - i. What are the market factors that determine demand? What are in your opinion the main consumption trends?
 - ii. Is there any successful marketing story you are aware of?
 - b. What are their main challenges?
 - c. What are your expectations for the coming years?

Governance framework

5. On what institutional/policy change have your institutions been working on in the past three years?
 - a. What institutional reforms do you think need to be made in the honey and olive oil value chain?
 - b. What national policies are needed for the improvement of the sector?

Workforce

6. Do you think the lack of qualified labor is a limitation for growth in the value chain?
 - a. Is your institution working on improving skills of farmers/ beekeepers?

Value chain exercise

7. Ask the interviewee to draw the olive oil and/or honey value chain and actors relationship as per his understanding. *Make sure to handover a A3 blank paper to the interviewee as well as colored pens.*
8. Ask the interviewee about who is the strongest actor in the value chain, discuss their interaction? Does the strongest actor in the chain play a positive role?
9. What do you think are the comparative advantages of a cooperative?
10. In your opinion, why are cooperatives not integrated into the value chains? What do you think is the best way to integrate them?

Exit

11. Is there anything else you think I should have asked you about?

Interviews with Value Chain Actors

Target: Institutions and stakeholders involved in the olive oil and/or the Honey value chain. Interviewer to introduce the research– highlighting ACTED project objectives.

The interviewer should mention that information shared will remain confidential and will be solely used for research purposes. Ask for interviewee consent before recording the interview. Material needed: Block note, recording device, A3 paper, additional pen and colored pencils.

Anchor / timeline change

1. How long have you been working in the olive oil/ honey value chain?
 - a. Can you please describe your activities?
2. Can you tell us what were the main changes between when you started and today?
 - a. Can you tell us when was the best year? (Why? What was different?)
 - b. The worst year? (Why? What changed? – What did you do to solve the problems faced?)
3. Did the Syrian crisis impact the sector? How? (positively and/or negatively)

Value chain exercise

4. Ask the interviewee to draw the olive oil and/or honey value chain and actors relationship as per his understanding. *Make sure to handover a A3 blank paper to the interviewee as well as colored pens.*
5. Ask the interviewee about who is the strongest actor in the value chain, discuss their interaction.

Input provision

Probe the interviewee on the drawing he did (ask him why he did or did not mentioned input provision as part of the value chain).

6. What are the main challenges faced for input provision? Which of the value chain actors can intervene to solve input provision bottleneck (if any)? What do you think can be done?

Production

7. What are the main challenges faced by farmers and/or beekeepers during production? What do you think can be done? *(Information can be summarized using the table template below in the table below):*

	Potential solution (for each category specify need and value chain actors to be involved)			
Challenges	Skills /training	Equipment/ investment	Technology transfer	Regulations/ policies

Processing / storage and gathering

8. What are the main challenges faced by value chain actors during processing/ storage and gathering of production? What do you think can be done? *(Information can be summarized using the table template below in the table below):*

	Potential solution (for each category specify need and value chain actors to be involved)			
Challenges	Skills /training	Equipment/ investment	Technology transfer	Regulations/ policies

Market

9. Can you please describe the current market trends and opportunities?
- What are the profiles of your clients?
 - Can you tell us what type of products they are looking for?
 - Where do you procure the products? Do you have long term standing relationship with your suppliers/ clients?
 - Do you sell imported products? What types and from where? (distributors)
 - Do you use the services of a middlemen? Can you describe your relationship?
 - Do you export products? Where? If not is there any other successful export you are aware of?
12. Do you think there is unfair competition? From who?
13. Did you plan and implemented a marketing strategy? Can you please give us details on what you considered your competitive edge?
- How did you develop it? Did you receive support? From who?

Governance and regulation

Probe the interviewee on the drawing he did (ask him why he did or did not mentioned regulation and governing institution as part of the value chain).

14. What need to be change in term of regulation and policies- what about standards and specification? *(Information can be summarized using the table template below in the table below):*

Regulation and policy change needed	Why is the change needed	Value chain actor that need to be mobilized	Responsible entity

Skills (if not discuss above)

15. Do you think the lack of qualified labor is a limitation for growth in the value chain?

- a. In your opinion what are the needed skills improvement? (*probe for specific need of cooperatives*).

Cooperative union (for cooperatives only)

13. Can you please tell us what are the services provided by the cooperative?
 - a. How many members does it has? And how many are active?
 - b. What do you believe are the basis of cooperative work?
14. We wish to go with you through the cooperative needs in term of improvement in different areas. We would also like if you justify these needs and tell us who you think could provide them to you.

	Needs	Why	Who
Skills /training			
Equipment / investment			
Technology transfer			
Regulations / policies			

15. What do you think is the role of the cooperative union? What action should it take
Are you a member of the Cooperative union?
16. How do you describe your relationship with the Ministry of Agriculture? What do you expect from them?
17. What do you believe the cooperative can do to improve the agriculture policies and the cooperative sector governance?
18. What do you think are the comparative advantages of a cooperative?
19. In your opinion, why are cooperatives not integrated into the value chains? What do you think is the best way to integrate them?

Exit

20. What are your expectations for the coming years?
21. Is there anything else you think I should have asked you about?

Annex B. List of Interviews

	Type	Region	Stakeholder
Ministry of Agriculture (MoA)	Institution	Akkar	Michel Dib
Union of Cooperatives	Institution	Beirut	Ghassan Menhem
AgriTech	Institution	Beirut	Rami Abou Jawdeh
Syndicate of Lebanese Food Industries (SLFI) + Association of Lebanese Industrials (ALI)	Institution	Beirut	Mounir Bsar
Lebanese Standard Institution (LIBNOR)	Institution	Beirut	Cecile Obeid
LIVCD Honey Lead	Honey	Nationwide	Mansour Moudawar
LIVCD Olive Lead	Olive	Nationwide	Roland Andari
Specialised Organic Shop	Institution	Nationwide	
Transmed	Institution	Beirut	Randa Saleh
MADA NGO	Institution	Nationwide	
Municipality (Union)	Institution	Tyr	Mortada Mohana
Municipality (Union of Hasbani)	Institution	Hasbaya	Sami Safadi
Municipality (Union of Dreib)	Institution	Akkar	Abdo Makhoul
Municipality (Union)	Institution	Marjeyoun	Haj Ali Zein
Expert	Olive + Honey		Elias Wehbe
Producer + Trader	Olive	Beirut	Youssef Fares
Cooperative Akkar	Olive	Chadra	Samir El Zir
Cooperative Akkar	Olive + Honey	Kachhlak	Khaled Saker
Cooperative Marjayoun	Olive + Honey	Tebnin	Fouad Wansa
Cooperative Hasbaya	Olive + Honey	Ain Jarfa	Karam Hasanieh
Cooperative Tyre	Olive + Honey	Srifa	Ezzat Zaarour

Expert – Lebanese University	Honey	Beirut	Dani Obeid
Expert – Lebanese University	Honey	Beirut	Shadi Hosri
Syndicate of Beekeepers + Jabal Cheikh Brand	Honey	Beirut	Bahaa Kadamany
Beekeeper + Local Distributor	Honey		Antoine Kaddoum
Cooperative Marjayoun	Olive	Deir Mimes	Amal Hana Al Hourani
Cooperative Marjayoun	Olive + Honey	Jabal Amel	Tarek Yasin
J. Grove	Olive + Honey	Jezzine	May Nasreddine
Le Miel du Levant	Honey		
Adon & Myth	Olive	Bdeidoun	Jessy Naim
Jasinde Bio	Honey	Beqaa	Charbel Abu Jaoude
Bustan of Zeitoun	Olive	Saida	Walid Mushantaf