



SUSTAINABLE LAND MANAGEMENT IN THE QARAOUN CATCHMENT (SLMQ) PROJECT

Baseline Socio-Economic Assessment
and Monitoring & Evaluation Guidelines Report
for the districts of Zahle, Rachaya and West Bekaa



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Baseline Socio-Economic Assessment in the districts of Zahle, Rachaya, and West Bekaa and Monitoring & Evaluation Guidelines Report

Reference project

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1. EXECUTIVE SUMMARY

The Final Baseline Socio-Economic Assessment report presented in detail the status of the social and economic standpoint across the three regions under consideration (Zahle, Rachaya, West Bekaa). Through the analysis, the key developments, as well as key challenges were identified across the key economic verticals (Agriculture, Forestry, Livestock); in parallel, a prioritized list of new business development activities was highlighted and further articulated. To sum up the analysis and provide project continuity, a set of policy interventions has been identified and developed. These prescribed interventions create the platform by which further actions, across key stakeholders, could be planned and undertaken, with a specific target to promptly boost socio-economic conditions in these regions, while optimizing the use of natural resources.

The objective of this report is to complement the analysis conducted to this point, across three key main areas: a) define and articulate list Key Performance Indicators (KPIs) to be closely followed in order to monitor socio-economic progress across the three regions, b) develop detailed project charters across all prescribed interventions in order to provide actionable plans for relevant stakeholders to take forward, and c) define Monitoring and Evaluation mechanism (M&E) guidelines in order to ensure that indicators' tracking and reporting could be effectively and promptly completed in due time, as well as key developments/issues highlighted and still required corrective interventions.

The list of KPIs developed revolves around the three main economic activities previously identified: Agriculture, Forestry and Livestock, as well as on key social and economic indicators for the three regions. The project charters, developed for each intervention, are structured around presenting expected results, required set of activities, performance indicators to monitor progress, execution timeline, required activities budget, and stakeholder engagement (also linking to current policy activities and projects). Moreover, M&E guidelines present the principal means to collect and verify progress across the full list of deployed KPIs, ranging from a suite of primary (e.g. surveys/interviews) and secondary (e.g. updated statistics and project reports) research options. The different M&E guidelines are further mapped across all reported KPIs and project charters progress indicators. In addition, the process of collecting, evaluating, assessing updated data, and eventually prescribing corrective actions needed, is further presented.

Lastly, this report provides a clear plan of actions and required steps that involved stakeholders need to undertake to ensure effective and prompt implementation of prescribed interventions. Only when these interventions (or set of those) are implemented, project activities continuity will be ensured and substantial progress in respective socio-economic conditions in these three regions will be reported, when the next November 2018 progress touch-point takes place.

2. KEY PERFORMANCE INDICATORS

Background

The baseline assessment conducted earlier provided an overview of the socio-economic situation of the three regions, Zahle, West Bekaa and Rachaya, whilst analyzing and comparing based on the consideration of the three target economic verticals: Agriculture, Livestock Management, and Forestry. Across each vertical, a number of challenges has been identified and further confirmed through meetings with local stakeholders. Addressing those challenges required a comprehensive approach that outlined needed interventions in each of the three sectors, as well as the validation of the proposed solutions for each sector, supported by key actions that could be undertaken to implement relevant projects and enhance the social and economic conditions of the region. These prescribed interventions will be further considered by UNDP and possibly certain pilot projects, along these lines, will be implemented in the different regions with the active participation and support of various stakeholders.

This report is complimentary to the previously developed Socio-Economic Assessment report, in that it provides a summary of the findings, and lays ahead a comprehensive monitoring and evaluation plan that includes the different prescribed interventions, also referred to as project charters, KPIs relevant to the interventions, baseline values and means of measurement, along with general guidelines on project implementation. The sections below provide more detailed information on the indicators assigned, project charters, and the methodology adopted for measuring the progress and impact of such interventions over two consecutive years.

The Need and Use of Indicators

Ensuring the successful implementation of different pilot projects, abovementioned, requires monitoring that will track the progress of each pilot project towards achievement of its intended results, as well as evaluate its impact. This mandates the development of a thorough and exhaustive dashboard of KPIs. For each pilot project prescribed, a specific set of indicators as well as sub-indicators are assigned to further assess the evolution of the projects.

The list of indicators will be first attributed to the 2016 baseline value, and will later be monitored throughout the implementation phase of the pilot projects. In fact, monitoring will occur intermittently over two years: November 2018 and November 2019.

Key Indicators' Pillars

The key indicators developed for the implementation of the pilot projects revolve around the three main economic activities previously identified in the reports: Agriculture, Forestry and Livestock, as well as social and economic indicators for the three regions.

The following tables summarize the main indicators outlined in the Indicator Sheet and their corresponding definition across the different verticals: (1) Socio-economic, (2) Agriculture, (3) Forestry and (4) Livestock.

Table 1: Social and Economic Indicators

Social and Economic Indicators	Definition
A. Population	
Total number of households in each district	The division of the total number of households in each region based on gender, nationality, and vulnerability
Gender breakdown	The percentage breakdown of the national population based on gender
Age brackets (% of total population)	Percentage of total population within the different age brackets
Urban population (% of total)	The percentage of population living in urban areas
Number of urban people	The number of people living in urban and peri-urban areas
Number of peri-urban people	
B. Economic Indicators	
Total GDP	National nominal GDP (USD)
GDP per capita	National nominal GDP per capita (USD)
Agriculture and forestry contribution to GDP	Agriculture and forestry contribution to GDP in USD and in percentage
GDP breakdown per vertical (%of GDP)	Percentage contribution of the main economic sectors to the overall national GDP
Unemployment	Total unemployment rate as a percentage of total labor force (men and women)
Income levels	Average family income measured in USD (men and women including social benefits)
C. Social Indicators	
Quality of Life	Percentage improvement in the livelihoods of the targeted population mainly through: creation of job opportunities, increase in income, access to finance, governance rights, and finally improved access to social and infrastructural services
Gender equality and women empowerment	Percentage improvement in women economic empowerment through increased employment, increased income, access to leadership positions, and general improvement of working conditions

Table 2: Agriculture Indicators

Agriculture Indicators	Definition
A. Value of Natural Resources	
Recognition of value of natural resources	Percentage change in level of water utilized for agriculture
B. Agricultural Land Use	
Land use per crop	Size of land planted with each different type of crop
Number of farmers per average land size	Number of farmers per different land size (in dunums)
Total agricultural and residential land size	Size of agricultural or residential area
Average % of area used per crop	Percentage of agricultural land planted with the different types of crop
Total abandoned agricultural land	Agricultural land that is abandoned in each of the three regions
Percentage of land irrigated using the different irrigation sources	Percentage of land irrigated by different irrigation sources
Yield per dunum per crop	Yield of the different types of crops measured in MT/ dunum
Production cost per crop	Average cost of production of one dunum of land for each crop, including agricultural inputs, mechanization, water, labor and energy
Market prices per crop (farmgate price)	Average prices of the crop at the farm prior to transportation and sale at wholesale markets
Family members employed	Number of full time and part time family employees in agriculture
Non-family members employed	Number of full time and part time non-family employees in agriculture
Employment and daily wage	Percentage of male and female employees from total people employed in agriculture, and their respective daily wage
Local and export markets	Percentage of agriculture crops sold through local or export markets
Average quantity of processed products sold	Quantity of processed products sold (in tons)
Number of processing facilities	Number of processing facilities available in each region, and registered as either enterprise or cooperative
Type of processing facilities	

Table 3: Forestry Indicators

Forestry Indicators	Definition
A. Value of Natural Resources	
Recognition of Value of Natural Resources	Importance and reliance on natural resources as main contributor to income
Improved governance of forest areas	Percentage change in the risks impacting forests
Increased size of re-forestation areas	New reforested areas measured in hectares
Number of cases of non-compliance	Number of reports documented for non-compliance with zoning permits
B. Forest Land Use	
Segmentation of ownership	Division of forest areas as per ownership, (in hectares)
Area forest cover	Size of land covered by different forest cover types
Total area of forest covered	Percentage of land covered by forests and other wooded land for each region
Negative influencers of forest	Number of forest fire incidents reported and quantitative measurement of risks based on intensity and frequency of occurrence, classified as high, medium, low

Table 4: Livestock Indicators

Livestock Indicators	Definition
D. Animal Production	
Total number of animals	Total number of sheep and goats in each region
Average number of animals per herd	Average number of sheep and goats per herd
Animal production systems	Percentage of herders using intensive or extensive animal production systems
Total animal production	Average amount of meat produced per herder (in MT) and total milk production in Bekaa region (in liters)
Production cost per animal type	Average cost of production per animal type; includes vaccination, labor, feed, vet services
Farmer sale price per animal product	Price per animal type and product type
Employment (average number/ herd)	Employment opportunities created by type of employment and average income for herders

For each indicator, the following information is provided:

- Indicator's definition and unit of measurement
- The 2016 baseline value, identified in the socio-economic assessment
- The mid 2018 value that will be defined for each of the three districts
- The mid 2019 value that will be defined for each of the three districts
- The means of verification of the KPI, sourced from reports, assessments, or surveys
- The association of the KPIs to the relevant prescribed interventions

The below table provides a snapshot of how each of the indicators will be monitored as per the list above, with an exhaustive Indicator Tracking Table that will be enclosed as a separate Excel file. It is important to mention that some of the indicators outlined below are expected to remain static (denoted as "Not Applicable" in the main Excel sheet) or change over time, in that case verified through the different reports and surveys. Additionally, monitoring and updating the progress on such indicators will consume around a month time or 25 working days for collecting, verifying and updating the data.

Table 5: Snapshot of the Indicators Tracking Table¹

Geographic focus: Zahle, Rachaya, and West Bekaa area.

Indicator	Unit	Definition of indicator	2016			Mid 2018			Mid 2018			Means of verification	Correlation with intervention	Source
			Zahle	Rachaya	West Bekaa	Zahle	Rachaya	West Bekaa	Zahle	Rachaya	West Bekaa			
A. Value of Natural Resources														
Recognition of Value of Natural Resources														
Percentage reduction in water over exploitation	%	Percentage change in level of water utilized for agriculture	To be covered by perception analysis extension project									Survey with farmers in the three regions (sample)	Prescribed intervention 5	
B. Agricultural Land Use														
Land Use per Crop														
Open field crops	dunum	Size of land planted with open field crops measured in dunums	493,486	58,921	186,580							CNRS land use land cover mapping	Prescribed intervention 2	Council for Development and Reconstruction, National Council for Scientific Research, 2011 (published in 2017)
Intensive farming (greenhouses)	dunum	Size of land where crops are planted using greenhouses measured in dunums	520	-	161							CNRS land use land cover mapping	Not applicable	Council for Development and Reconstruction, National Council for Scientific Research, 2011 (published in 2017)
Fruit trees (stone fruits, pome fruits, others)	dunum	Size of land planted with stone fruits and pome fruits measured in dunums	49,340	8,170	17,862							CNRS land use land cover mapping	Prescribed intervention 1	Council for Development and Reconstruction, National Council for Scientific Research, 2011 (published in 2017)
Olives	dunum	Size of land planted with olives measures in dunums	11,105	16,612	17,893							CNRS land use land cover mapping	Not applicable	Council for Development and Reconstruction, National Council for Scientific Research, 2011 (published in 2017)
Vineyard	dunum	Size of land used for vineyards measured in dunums	18,174	3,806	9,375							CNRS land use land cover mapping	Prescribed intervention 2	Council for Development and Reconstruction, National Council for Scientific Research, 2011 (published in 2017)
Number of farmers per Average Land Size														
No agricultural Land	nb.		570	48	403							MOA	Not applicable	Ministry of Agriculture 2010 census, validated for 2016
<1000	nb.		14	9	31								Not applicable	Ministry of Agriculture 2010 census, validated for 2016
1,000 - 2,000	nb.		254	275	552								Not applicable	Ministry of Agriculture 2010 census, validated for 2016
2,000 - ,5000	nb.		666	767	1,177								Not applicable	Ministry of Agriculture 2010 census, validated for 2016
5000 - 10,000	nb.		677	697	825								Not applicable	Ministry of Agriculture 2010 census, validated for 2016

¹ It is important to mention that the same sources for which the data was obtained will be used for the verification of the updated data during the monitoring process. Whereas some of the publications will not be updated on an annual basis, the relevant experts will be consulted to validate if any changes occurred in that year. For example, CNRS does not update the data on an annual basis thus Euromena Consulting will consult with experts working at CNRS to validate changes in the data. All this effort is already part of project continuation activities with the two monitoring touch-points by mid-November 2018 and mid-November 2019

3. POLICY INTERVENTION CHARTERS

Throughout our Socio-Economic Impact Assessment certain key challenges across the three main pillar economic activities (e.g. agriculture, forestry, livestock) in the regions examined have been identified. Based on our economic analysis, distilling key stakeholders' interactions, as well as examining international and regional best practices specific, targeted holistic policy interventions to boost performance and alleviate challenges have been devised.

In parallel, throughout the assessment and further dwelled upon during interaction with stakeholders, new opportunities emerged as well, including economic diversification in new sectors such as beekeeping, rural tourism, grape molasses, kechek and dried fruits. Such opportunities, if pursued, can have a positive impact on the regions in terms of increased economic returns and job creation; below a recap of the five identified business cases is further provided.

Adjacent Opportunities Business Cases

Stakeholder interviews helped in identifying potential adjacent economic sectors that could contribute to the development of the region. The business cases developed focus on rural tourism, beekeeping, grape molasses, kechek and dried fruits. Other adjacent economic opportunities were assessed such as mushrooms, aromatic plants and damask rose. The table below provides a rationale of how the business cases were selected based on the potential impact and contribution to income generation. While gender impact and potential for women involvement is a cross cutting issue, the actual base value data are difficult to get a hold of given the scarcity of reliable information on gender employment pertaining to these particular sectors. Thus, the assumption is that the designed recommended interventions would positively impact both men and women and improve their socio-economic status.

Table 6: Business case assessment

Business case / Alternative income generating activities	High potential	Medium potential	Low potential	Justification
Beekeeping	X			<ul style="list-style-type: none"> High market demand Positive contribution to land degradation High potential for income generation for the rural population
Rural Tourism	X			<ul style="list-style-type: none"> Existing interest in eco-tourism Interest of local stakeholders to further develop the sector Cross-cutting agriculture, environment and gender
Grape Molasses	X			<ul style="list-style-type: none"> Trend of increased demand for natural sweeteners Preservation of local grape varieties High potential for income generation for the rural population
Kechek		X		<ul style="list-style-type: none"> Traditional product dairy based and processed by women cooperatives High market value but impact limited to direct stakeholders
Aromatic plants		X		<ul style="list-style-type: none"> Positive contribution to alternative income generating activities for rural population Limited existing market assessment and information on the potential growth of such sectors
Damask rose		X		
Shanklish			X	
Dried Fruits			X	
Mushrooms			X	

Source: Euromena analysis, stakeholder industry experts, 2017

The main aim for the development of the business cases was to visualize the impact of working on developing a new economic vertical in the Bekaa region by simulating the baseline data and looking at consequential changes in revenues, operating and capital expenditures, employment, and finally sector profit. For Kechek and dried fruits business cases, the simulation was done for the Bekaa region. However, for the beekeeping, rural tourism and grape molasses business cases, a region was selected for the case of simulation and presentation of potential impact. Beekeeping was simulated for West Bekaa, rural tourism for Zahle, and grape molasses for Rachaya. However, the potential benefits and impact are not exclusive to one region, but rather affect the three regions simultaneously, with interventions able to be pursued for any region. For the other products considered, namely damask rose, aromatic plants and mushrooms, while current information doesn't predict a noticeable potential, their potential would be higher function of future activities of the project, be it through increase in supply, better access to market, or improved organization of the sector and thus should be explored further if the project does contribute to increasing the products competitiveness.

Beekeeping Business Case:

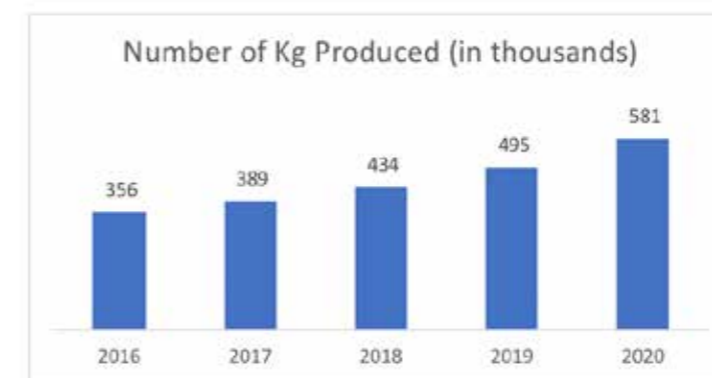
The beekeeping industry has been booming for the past six years, doubling its market value between 2011 and 2016. Similarly, prices have also been increasing due to an increase in demand and a stable or decreasing level of production due to bad weather conditions (%33 increase between 2011 and 2016 according to DAI). One of the main challenges faced by this sector is matching the demand market locally and internationally. In fact, beekeepers are facing difficulties in increasing their honey production volumes.

The following business case highlights the effects of an increase in production of honey in West Bekaa on both the social and economic level, assessing potential revenues increases, associated costs, as well as employability and profits.

The total number of beehives and beekeepers in the region as well as the productivity per hive, that is mostly linked to the presence of a foreign queen, were factored into forecasting the potential production volumes that West Bekaa could reach by 2020.

To start with, based on the Ministry of Agriculture data summarized in table 7, honey production volume in West Bekaa was estimated to be around 356,000 Kg in 2016. This was obtained by segmenting the beekeepers into four categories depending on the number of beehives owned and then attaching to that the related number of beehives, productivity per hive and the number of harvests per year as shown in table 7.

Figure 1: Honey production (Kg)



Source: Ministry of Agriculture, 2016, Euromena Analysis, 2017

Table 7: Production per hive and number of harvests per year by apiary size

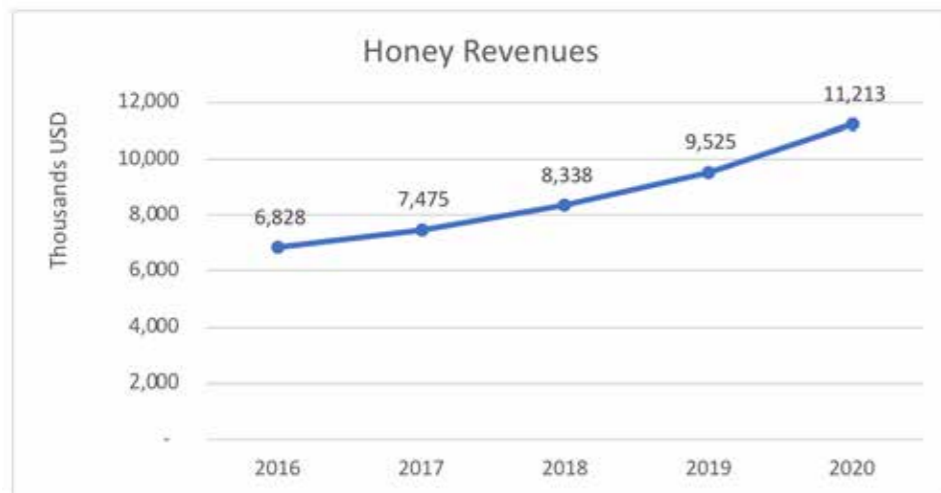
	Number of Apiaries by Apiary Size	Production per Hive per Harvest by Apiary Size	Harvests per Year by Apiary Size
0-24 Hives	147	4	1
25-49 Hives	56	13	2
50-99 Hives	45	13	2
100+ Hives	34	16	2

Source: Euromena Consulting analysis, 2017

Increasing the local production of honey would be attained through growing the number of beehives that are currently increasing by two to three beehives per apiary. Another aspect that was highlighted constantly during the stakeholder interviews was the problem of queen bees. Good quality queen bees are not easily available in the local market and importing them is expensive. Working therefore on the productivity per hive by properly introducing foreign queen bees and finally adopting modern and more efficient beekeeping techniques can help boost the production of honey in the region. The profitability of the sector as well as the increase in demand will naturally attract more entrants to this business and further push production volumes up as well as boost the market value of honey. Translating those actions into numbers showcases that honey production has the potential to increase to around 700 tons a year, a growth ranging between 18 to 20%.

The development of the honey sector in West Bekaa will translate into higher revenues, more jobs created, and higher profits (as per figures below).

Figure 2: Average revenues of Honey

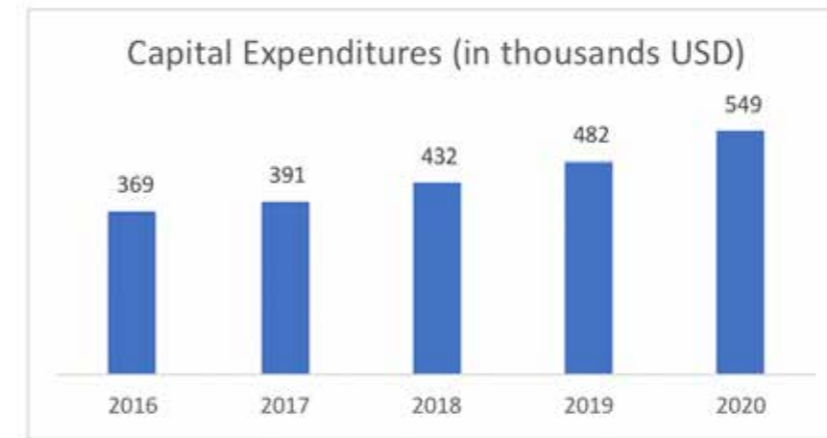


Source: Euromena Consulting analysis, 2017

In regard to revenues, the trend of increasing demand, coupled with an increase in the average price of honey will lead to higher revenues for the beekeeping sector in West Bekaa, reaching around \$11.2 million in 2020, doubling 2016's revenues.

In terms of cost, the largest capital expenditure for the beekeeping sector are the beehives and honey extractors. Beehives cost around \$43/hive with a useful life of around 5 years, translating to an annual depreciation cost of \$8.6. Traditional and modern honey extractors are both used in West Bekaa. The price of a traditional honey extractor is around \$400 with a useful life of 10 years and a depreciation cost of \$40. The electrical honey extractor is of higher value and costs around \$110 with a useful life of 10 years and annual depreciation cost of \$110. The figures below summarize the estimated increase in cost as a result of the development of this sector.

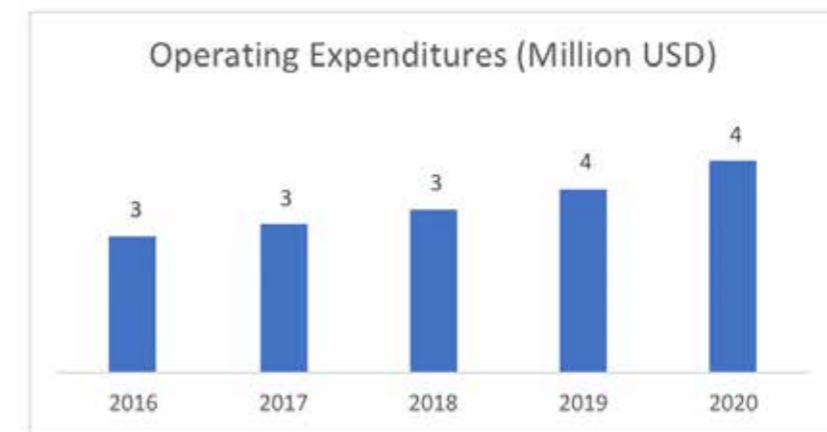
Figure 3: Capital expenditure of Honey



Source: Euromena Consulting analysis, 2017

Operating expenditure includes production cost as well as labor cost. Production costs vary by apiary size and decrease as the number of beehives owned decreases. Based on table 8 below, cost of production ranges from \$7/Kg for small beekeepers (0 to 24 hives) to around \$3.5/Kg for larger beekeepers with 100 or more hives. The overall operating expenditure for the local market of West Bekaa will therefore increase from \$2.6 to \$4.6 by 2020.

Figure 4: Operating expenditure of Honey



Source: Euromena Consulting analysis, 2017

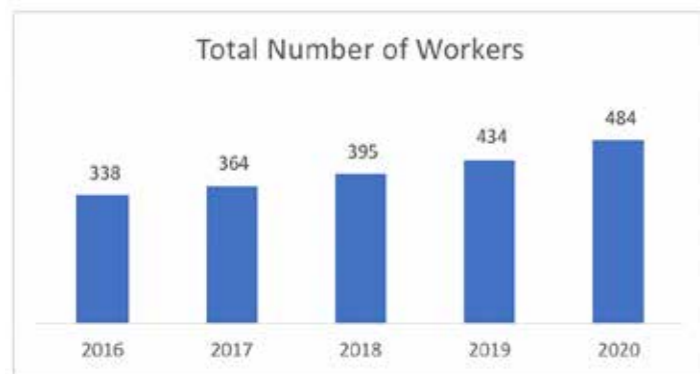
Table 8: Production cost per Kg per Apiary Size

Production Cost per Kg per Apiary Size	
0-24 Hives	7
25-49 Hives	5
50-99 Hives	5
100+ Hives	3.5

Source: Euromena Consulting analysis, 2017

In terms of job creation, the current estimated number of people employed in the beekeeping sector in West Bekaa averages 338, including full time and part time employees. The average daily wage of a seasonal beekeeper is around \$40 (20 days worked per season) and the monthly wage of permanent workers is around \$500. The increase in the number of beehives or even the number of new entrants to the business can push employability to an average of 480 employees in West Bekaa by the year 2020 (Figure 5 below).

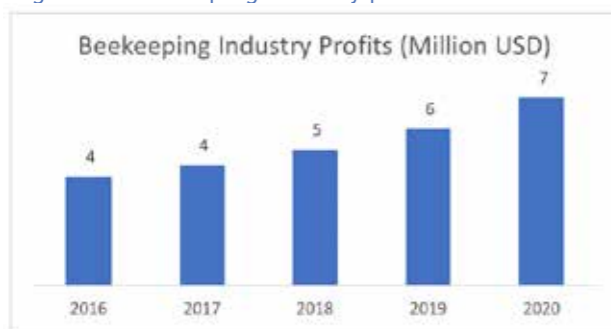
Figure 5: Employment in the Beekeeping sector



Source: Euromena Consulting analysis, 2017

Finally, given the current state of the beekeeping sector in the Bekaa region as a whole and specifically in West Bekaa, the potential growth that the beekeeping sector can experience can push profits to triple within the next four years to reach around \$7 million (Figure 6), as long as the proper beekeeping techniques are used and if the introduction of high quality foreign queen bees is successful.

Figure 6: Beekeeping industry profits



Source: Euromena Consulting analysis, 2017

The below table summarizes the key enablers and the key risk of the development of the beekeeping market in the Bekaa.

Table 9: Key enablers and risks for Beekeeping

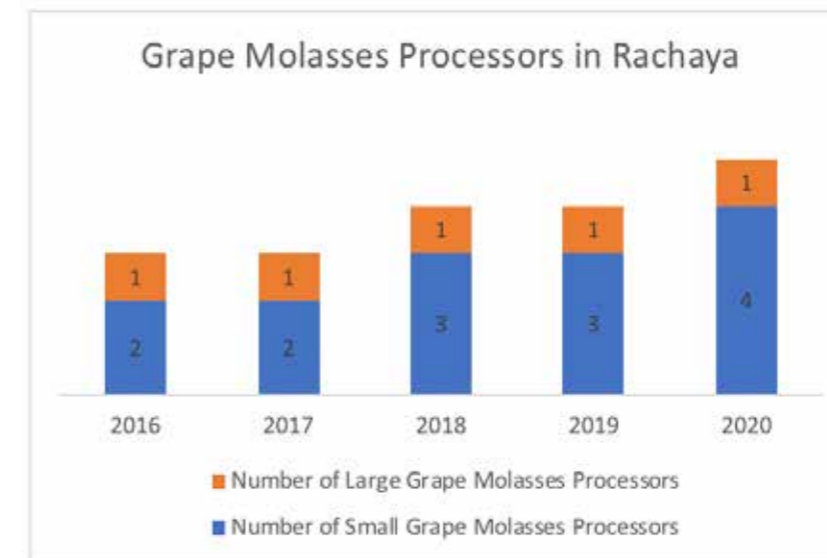
Key Enablers	Key Risks
<ul style="list-style-type: none"> - Willingness of beekeepers to improve production - Support from local authorities in management and supervision of reforestation areas - Implementation of breeding programs by the Ministry of Agriculture to produce productive queen bees - Sustained demand of mountainous honey in local and international markets 	<ul style="list-style-type: none"> - Harsh climatic conditions affecting bees and beehives - Incompatibility of foreign queen bees to local climate - Smuggling of lower quality imports affecting competitiveness of local producers - Reduced forest areas negatively impacting pollination

Grape Molasses Business Case

Grape molasses production is a good way to distribute any excess of grapes or even to use lower quality grapes for processing, all keeping in mind that grape molasses has a higher economic value compared to the other alternative of using grape molasses to produce vinegar.

The grape molasses industry is a new segment in Rachaya's economy. Figure 7, which showcases the projected number of processors in Rachaya, highlights the fact that there were only two small grape molasses processors and one larger processor in 2016.

Figure 7: Grape molasses processors in Rachaya



Source: Euromena Consulting analysis, 2017

The following business case focuses on the impact that an increase in the number of processors, in production per processing facility, and in demand can have on the social and economic status of Rachaya.

Industry experts confirmed the assumption of having one new grape molasses processor entering the sector every two years. It is less probable for a large producer to enter the market within the next four years, but any of the small producers have the capability to expand and increase their local market share. Based on this assumption, the total number of grape molasses processors in Rachaya can reach five processors by 2020 (four small and one larger processor).

As per data from experts, the total penetration rate of demand for grape molasses in Lebanon is at 70%, 49% in Rachaya and 21% in the rest of Lebanon. Working on initiatives to make Rachaya's grape molasses products available at additional retailers and reverting to strong marketing initiatives to increase the popularity of grape molasses can lead to a yearly increase in the penetration rate of demand by 9%, to reach 99% in 2020 (Figure 8 below).

Figure 8: Change of the penetration rate of demand between 2016 and 2020



Source: Euromena Consulting analysis, 2017

Looking more in depth at the supply side of the sector, industry experts confirmed that producers only process grape molasses at 50% production rate as they produce grape molasses at demand (70% penetration rate) minus 20%. With two small processors producing 42 tons/year and one large processor producing around 250 tons/year currently, the local industry is only at around 300 tons/year. Increasing the demand as mentioned above can create initiatives for processors to increase their production within a range of 15 to 20% each year, working in line with demand increase to eventually reach a quantity of 750 tons/year.

To have a closer look at revenues, two prices have been identified: the local Rachaya price of \$8 and national price of \$18 for grape molasses sold in the rest of Lebanon, the difference in prices due to the marketing channels adopted (retail, high end). Revenues will therefore be around \$2.6 million in 2016 and could potential reach \$8.1 million by 2020.

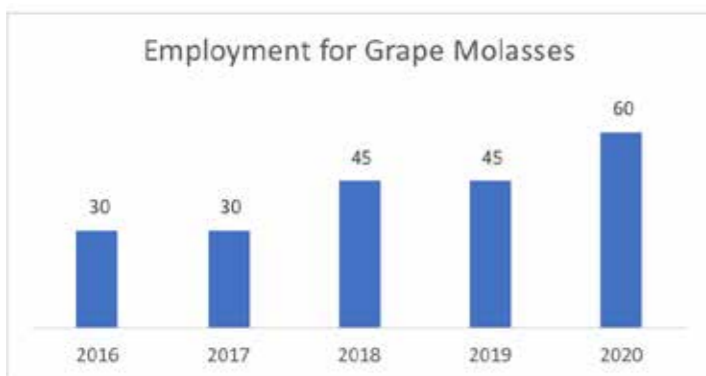
As for costs, operating expenditures and capital expenditures are considered in this case. Operating expenditures include the operational cost per ton of grape molasses which is around \$2,000 (including labor). Fifteen employees per processor are needed with a wage of around \$33/day (60 working days) totaling a labor expense of \$60,000 per year. In terms of capital expenditures, the main costs include the depreciation cost of machinery as well as the initial investment for new processors, which is around \$15,000.

Figure 9: Operating and capital expenditures



Source: Euromena Consulting analysis, 2017

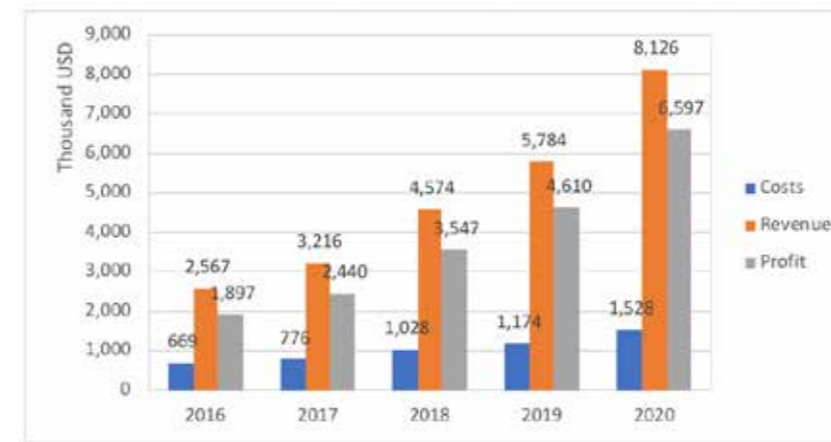
Figure 10: Employment for Grape Molasses



Source: Euromena Consulting analysis, 2017

With the current revenues and cost and the expected growth of the industry, profits for the grape molasses sector in Rachaya has a potential to grow to generate around \$6.6 million in total profits by 2020 (Figure 11).

Figure 11: Revenues, costs and profits of the Grape Molasses sector



Source: Euromena Consulting analysis, 2017

The following table summarizes the key enablers and key risks linked to the development of the grape molasses sector in Rachaya:

Table 10: Key Enablers and key risks of Grape Molasses in Rachaya

Key Enablers	Key Risks
<ul style="list-style-type: none"> - Increased trend for alternative sweeteners worldwide - Increased awareness of health benefits of grape molasses among urban communities - Interest of distributors and retailers to market the product locally and internationally 	<ul style="list-style-type: none"> - Product requiring longer time before having a return on investment - Farmers not willing to invest in new varieties or adopt good practices - Harsh climatic conditions negatively impacting yield and consequently production of grape molasses

Rural Tourism Business Case

The purpose of this case is to forecast the economic benefits of increasing demand for rural tourism in Zahle by a feasible estimation of increase of 20% year on year based on Euromena's assumptions and analysis, through the promotion of rural tourism locally and internationally.

Our model tracks the hotel, restaurant, winery, historical attraction and natural attraction subsectors of the tourism industry in Zahle. Based on field insights and stakeholder interviews, we assumed that these subsectors account for 70% of the total tourism industry revenues in Zahle.

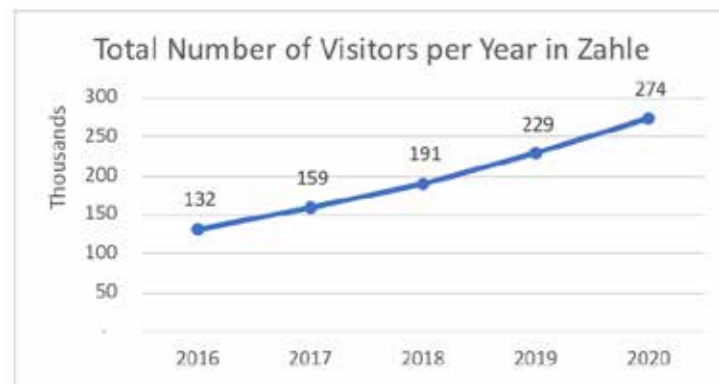
Based on the segmentation in percentage of the different sub-sectors given by industry experts, table 11 summarizes the estimated number of visitors per year for each of the subsectors of rural tourism. In fact, the total estimated number of tourists visiting Zahle in 2016 was around 132,000, and a year on year growth of 20% (based on Euromena's analysis of previous trends and potential growth of the sector) would result in a total of 274,000 tourists visiting Zahle in 2020 (Figure 12).

Table 11: Total number of visitors per year per sub-sector in Zahle

Total Number of Visitors per Year	2016	2017	2018	2019	2020
Hotels/Guest Houses	64,800	85,701	112,369	146,278	189,255
Natural Attractions	26,469	34,939	45,738	59,459	76,839
Restaurants	131,681	161,194	197,244	241,267	295,008
Historical Attractions	13,234	15,881	19,057	22,869	27,443
Wineries	92,640	111,168	133,402	160,082	192,098

Source: Euromena Consulting analysis, 2017

Figure 12: Total number of visitors per year in Zahle



Source: Euromena Consulting analysis, 2017

Hotels and Guest Houses

The total number of visitors for hotels and guest houses is around 64,800. The occupancy rate given by experts is currently at 30% for high seasons and 10% for low seasons. The revenues for the industry are therefore derived from the number of hotels in Zahle, their total capacity, and their prices. There are 12 hotels in Zahle, with an estimated total capacity of 1,200, and an average price of \$109/night for high seasons and around \$98/night for low seasons. Factoring in the total number of visitors as well as the occupancy rate reveals that the current revenues for hotels in Zahle are averaging \$6.6 million. In terms of costs, industry experts confirmed that costs in hotels make up 30% of revenues. In 2016, the total industry cost for hotels in Zahle was around \$2 million.

Promoting rural tourism in Zahle and working on encouraging the establishment of guest houses to reach a 20% growth (as analyzed and estimated by Euromena) of tourists will increase the number of tourists to 189,000 and will therefore, based on the pricing and costs discussed above, present revenues of \$13.7 million and profits of \$9.6 million with occupancies reaching 60% during high seasons.

Figure 13: Hotel and Guest Houses profits



Source: Euromena Consulting analysis, 2017

Figure 14: Occupancy rates of hotels and guest houses in Zahle



Source: Euromena Consulting analysis, 2017

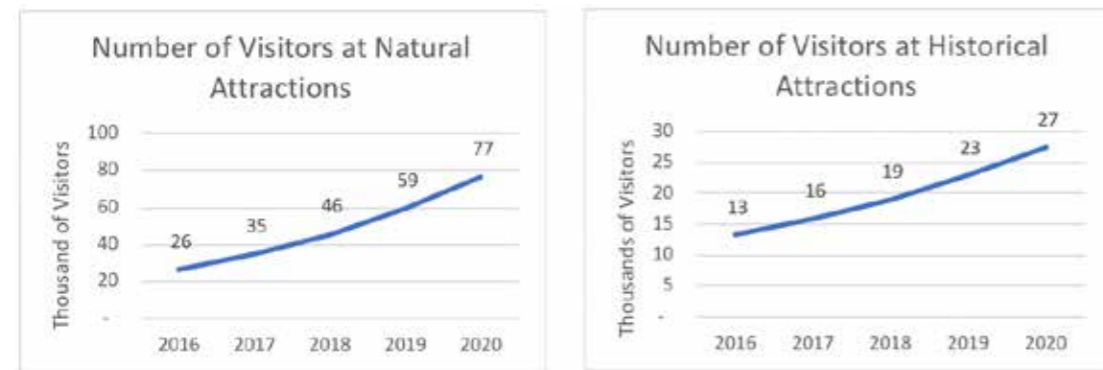
Natural and Historical Attractions

Natural and historical attractions receive less visitors per year than other attractions but demand is increasing as more organized tours through Facebook groups and through NGOs are being created in order to promote rural tourism. In fact, the number of Lebanese interested in exploring their own country is increasing which is playing a major role in boosting the share of rural tourism in the economy.

In 2016, the estimated number of visitors for natural and historical attractions are around 26,000 and 132,000 tourists respectively. Entrance prices for both attractions average \$7 a visit which generated in total, during 2016, around \$185,000 in total revenues for natural attraction and \$93,000 in total revenues for historical attractions. Profits were estimated to be around \$167,000 for natural attractions and \$83,000 for historical ones. Finally, the industry's overall costs are usually around 10% of its revenues.

The promotion of touristic trails that includes a package for food, accommodation, and entertainment can help in achieving a 20% increase in visitors in Zahle which will in turn increase the profits of natural attractions by 30% year on year and by 20% for historical attraction.

Figure 15: Numbers of visitors at natural and historical attractions



Source: Euromena Consulting analysis, 2017

Figure 16: Profits of natural and historical attractions



Source: Euromena Consulting analysis, 2017

Restaurants

When it comes to the restaurant industry in Zahle, tourists have always visited the region to have family lunches or, for foreigners, try Lebanese food. With the promotion of rural tourism, it is expected that an increased number of tourists will be visiting these restaurants, therefore increasing their average occupancy rates. Having on average 131,000 tourists going to restaurants each year and with an average price for a meal at around \$14, revenues are estimated to be \$2 million. Costs for restaurants constitute on average 30% of revenues generated (\$600,000) which puts the restaurant industry third in terms of profitability, right after hotels and wineries. The growth of the sector by 2020 will push the number of tourists to 295,000 and profits to \$3.1 million.

Figure 17: Number of customers at restaurants



Source: Euromena Consulting analysis, 2017

Figure 18: Restaurant profits

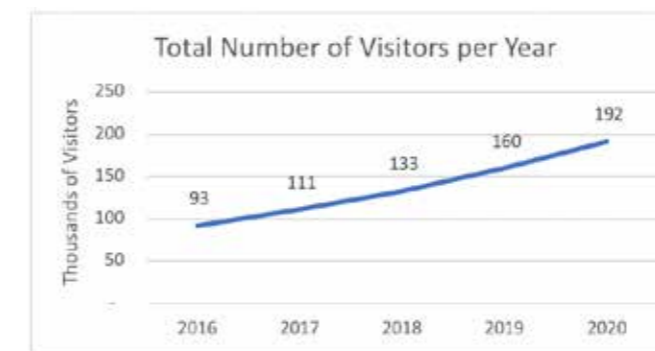


Source: Euromena Consulting analysis, 2017

Wineries

Wineries in Lebanon, and specifically in the Bekaa region, constitute a very well-developed sector attracting on average 92,600 tourists per year in Zahle alone, out of which one big winery attracts 30,000 visitors a year, and twelve smaller wineries attract the rest.

Figure 19: Wineries visitors in Zahle



Source: Euromena Consulting analysis, 2017

Sources of revenues for wineries originate from wine tasting tours, sale of wine bottles, and when applicable, meals at the winery's restaurant. Wine tasting tours are usually complimentary for small wineries, while it costs about \$7/person for bigger wineries. During or after tours, tourists usually buy one bottle of wine for an average price of \$15/bottle. Once the tour is over, around 60% of tourists stay to dine at the restaurant where the average price of a meal is \$20/person and the average price of wine is \$15. Therefore, the current level of revenues for this sector in Zahle is estimated at around \$3.5 million. The overall growth rate of rural tourism of 20% revenues can potentially double within the next four years to reach \$7.3 million.

Figure 20: Revenues of Wineries in Zahle



Source: Euromena Consulting analysis, 2017

Costs for the wine industry consists of Cost of Goods Sold for restaurants, the sale of wine bottles during the tour, and finally tour guide wages. Tour guides usually get paid \$5/person for each tasting tour completed. Having around 92,600 tourists visiting wineries with an average group size of 25 people, the total labor cost for the wine industry in Zahle currently averages \$18,500.

Figure 21: Total cost for wineries



Source: Euromena Consulting analysis, 2017

The wine sector is booming worldwide and wine tourism is gaining popularity. Encouraging and promoting wine tasting in Lebanon can create huge economic and social impacts in the region of Zahle were profits can reach up to \$4.3 million by 2020 (Figure 22).

It is worth highlighting that Zahle is the first region in Lebanon to establish wineries and start marketing the concept of wine tasting. However even with Zahle being the starting point for a highly developed and organized sector in the Bekaa region, this has already lead and will increasingly promote the proliferation of more wineries in West Bekaa specifically. In fact, West Bekaa’s weather as well as its land and scenery makes it a highly suitable region for grape production and growth of the sector. Kefraya is one successful example of a winery in West Bekaa that lead to the attraction of more tourists and the creation of more job opportunities through the concept of wine tours in its vineyard and restaurant dining. Through the various stakeholder interviews conducted, the region showcased a high interest from wineries to develop the sector and create unique experiences and different incentives to attract more tourists. The growth of the sector in West Bekaa therefore has the potential to directly impact market participants in the region in terms of job creation, revenue generation, and women inclusion.

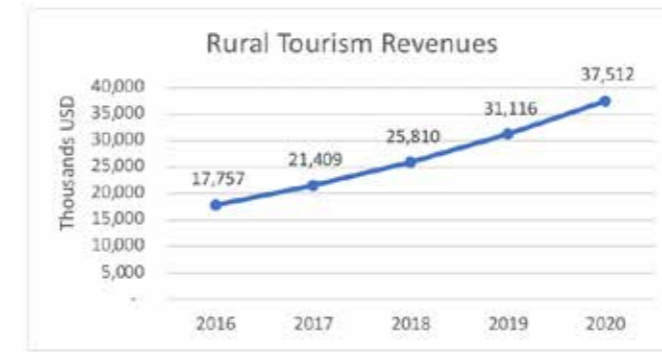
Figure 22: Wineries profits



Source: Euromena Consulting analysis, 2017

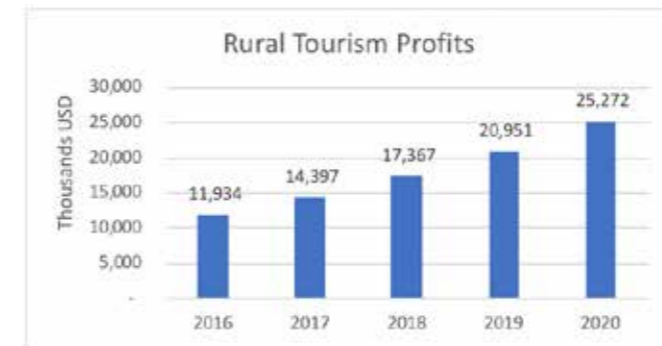
In conclusion, having a rich sector like rural tourism that is gaining popularity in Lebanon and encompassing developed sub-sectors like wineries and the restaurant industry is creating more income generating activities, and more importantly, involving women in the workplace, especially for guest houses and local rural restaurants. In fact, revenues have the potential to increase by \$19.8 million as shown in the figures below, particularly if more investments are made in this sector and if international campaigns are organized.

Figure 23: Rural tourism revenues



Source: Euromena Consulting analysis, 2017

Figure 24: Rural tourism profits



Source: Euromena Consulting analysis, 2017

The following table summarizes the key enablers and the key risks of the development of the rural tourism sector in Zahle:

Table 12: Key enablers and key risks for rural tourism in Zahle

Key Enablers	Key Risks
<ul style="list-style-type: none"> - Willingness to invest in guest houses and obtaining accreditation from the Ministry of Tourism - International campaigns conducted by the Ministry to attract Lebanese diaspora and foreigners - Increased trend worldwide for engaging in alternative tourism - Proximity of wineries allowing for more coverage per single tour - Increased interest of wineries to attract visitors through designing different activities and programs 	<ul style="list-style-type: none"> - Worsened security situation demotivating tourists to visit high-risk regions - Lack of “new” experiences offered to tourists - Weakened tourism infrastructure in terms of telecommunication and transportation - Popularity of other regions in Lebanon

Dried Fruits Business Case

Dried fruits are gaining popularity globally and in the Middle East in specific since it is considered an important source of nutrients and positioned for consumption, as a healthy snack.

Dried fruits have been identified as one major opportunity to focus on in the Bekaa region since they can be linked to the existing line of products (fresh fruit production), thus providing additional sources of income for several target groups of farmers on one hand, but also involving women processors on the other. Dried fruits also have a long shelf life (around 2 years), and could be an income stabilizer during off seasons for both farmers and processors in the Bekaa.

The dried fruit market can be segmented based on the fruit that is dried, but for this business case study, the focus will be on the following types: dried grapes, dried figs, dates, dried apricots and prunes. It is important to note that dates are not supplied by the region under study but are one of the highest demanded dried fruits in the market.

Looking at the international markets, the worldwide production of the major dried fruits has been increasing and is expected to grow by a CAGR² of 5.5%. The Middle East is the largest producer of dried fruits in the world, constituting more than 50% of the total market (1.3M metric tons) and therefore placing Lebanon in a very competitive regional market (Nuts and dried fruits, INC, 2015/2016). Dried grapes and dates are the main products produced regionally, followed by dried apricots and dried figs.

According to International nuts and dried fruits council (INC), the Middle East is also the second biggest consumer of dried fruits after Europe (Middle East 26%, Europe 27%) which exposes the local Lebanese producers to one of the biggest markets in the world.

Demand Dynamics

Throughout the various stakeholder interviews, women cooperatives, trading companies, and local producers in the Bekaa, the demand for dried fruits in Lebanon has shown to be increasing over the past 5 years since Lebanese are becoming more health conscious and are therefore following the worldwide trend of consuming healthy snacks instead of sweets and junk food. Despite being a niche market in Lebanon, the organic or homemade dried fruit demand has been also gaining momentum in the market and could create numerous opportunities for farmers by insuring a stronger access to markets through the creation of durable links with the relevant processors as well as rural and women cooperatives in the Bekaa region.

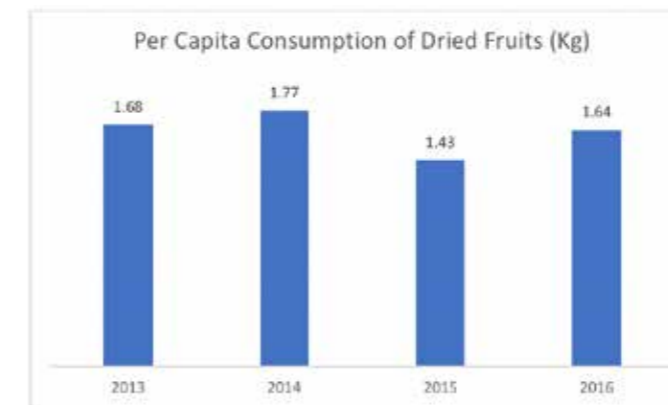
The demand for dried fruits in Lebanon is not only fueled by the healthy lifestyle, but also by seasonality, increasing significantly during the holiday season, reaching its peak demand during Christmas, Eid el Fitr (mainly dates, raisins and apricot) and Easter, thus giving processors and farmers a big opportunity to benefit from this market.

Having a negligible local production of dried fruits in Lebanon and the Bekaa region and based on the import values of dried fruits that reflect the local supply, the per capita consumption of the Lebanese population peaked in 2014 where the per capita consumption of dried fruits reached 1.77kg/year (Lebanese Customs, World Bank, Euromena Consulting Analysis, 2016). The consumption dropped after 2014 and reached of 1.64kg/capita/year in 2016. Around 80% to 85% of the dried fruit consumed throughout the year are dates especially around the holiday season where it is heavily used in the production of sweets. The prices for dried fruits vary depending on the type of fruit and whether it is locally produced or imported, but on average the price of dried fruits is around \$4/kg which creates a local Lebanese market of around \$40 Million (10,000 tons of dried fruits sold). In the districts of Zahle, Rashaya and West Bekaa, it is estimated that around 1,200 tons of dried fruits are sold locally, which creates a market of dried fruits of around \$5 million. (Stakeholder interviews, Dried Fruit Sector Analysis, DAI (prepared by ECE consultants, Euromena Consulting analysis), 2017).

² CAGR: Compound annual growth rate

The figure below summarizes the change in the consumption of dried fruits between 2013 and 2016:

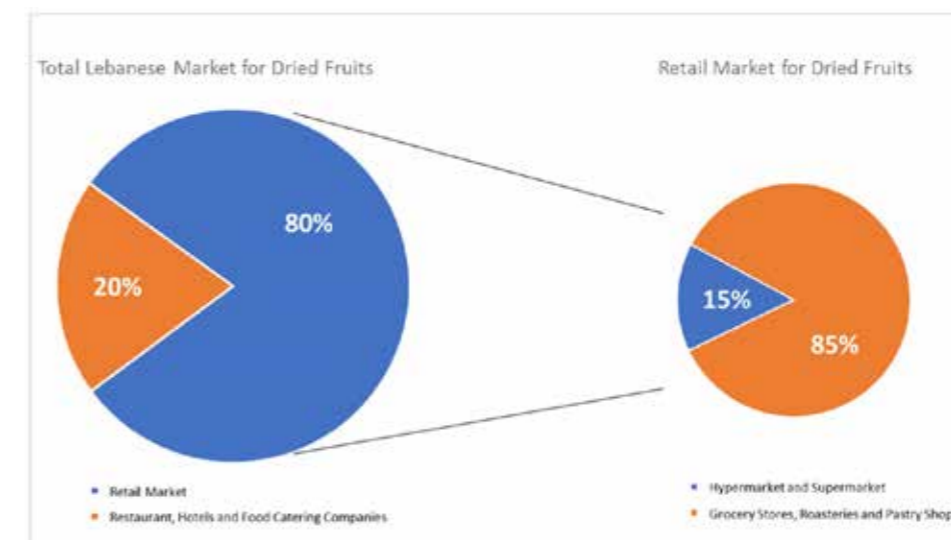
Figure 25: Per Capita Consumption of Dried Fruits



Source: Lebanese Customs (Imports of Dried Fruits), World Bank, Euromena Consulting Analysis, 2016

The reported demand for dried fruits is mainly served through two key channels: the retail market (80%) and the restaurants, hotels and food catering companies (20%). In turn, the retail market encompasses groceries stores, roasteries and pastry shops as well as supermarkets; the diagram below highlights the market segmentation:

Figure 26: Lebanese Market for Dried Fruits



Source: Dried Fruit Sector Analysis, DAI (prepared by ECE consultants), 2015

Hypermarkets and supermarkets account for only 15% of the retail market for dried fruits, most of the retail market is dominated by grocery stores, roasteries and pastry shops. Grocery shops are the main distribution channels for the dried fruit market, especially through selling energy mixes. Pastry shops or bakeries, on the other hand, are also integrating dried fruits into their desserts and pastries.

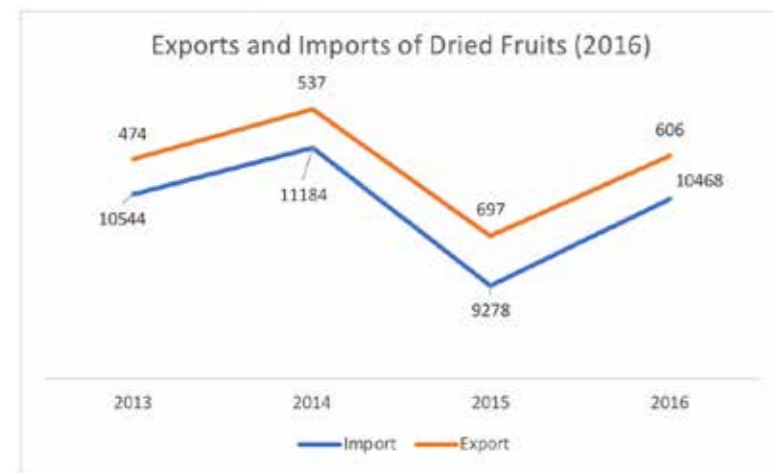
Regarding the different varieties of fruits, dates are the most demanded in the market, covering almost 82% of the total volume of dried fruits sold in supermarkets in 2014 (DAI, Dried Fruit Sector Analysis, 2015). Other varieties mainly include raisins, figs and apricot.

Local Supply Shortage in The Dried Fruit Market

The increasing demand for dried fruit in Lebanon is not being met by the local supply. The local supply of all types of dried fruits in Lebanon in general, and in the Bekaa specifically, is very low. The country is facing a significant shortage in the market where the market is essentially dominated by local distributors who import in bulk and supply the Lebanese market.

In fact, imports of dried fruit (mainly including dates, raisins, figs, apricot and prunes) to Lebanon in 2016 amounted to 10,468 tons with an average value of \$17M while exports were of only 606 tons with a total value of around \$1.9M (Lebanese customs, 2016). Exports are usually previously imported products that are packaged branded and re-exported to countries like KSA (41% of total products exported), Kuwait (14%), UK (12%) and Turkey (5,6%) (OEC, MIT, 2015).

Figure 27: Export and Imports of Dried Fruits in 2016



Source: Lebanese Customs, 2016

In the Bekaa region, many of the women cooperatives and SMEs like Aita Al Fekhar and Crazy farms produce dried fruits. The main dried fruits produced in the region are raisins and figs. These dried fruits are to this point produced in very limited quantities and infrequently because the production process is considered to be very labor intensive and time consuming, the members of the cooperatives or the SME owners would rather focus on other artisanal products who are less costly and more rewarding. Even large processing facilities or SME like Gardenia Grain d'or and Crazy Farms (who have the potential to produce around 1 ton of dried fruits on average per day) produce dried fruits as a marginal product in their business, it is only SMEs with strong financing support that can produce dried fruits but with little to no profit.

Profitability and Employment

The dried fruit market in Lebanon is not yet a very profitable market. It is challenged by foreign brands and imported products. The shortage of local supply is mainly due to the high costs associated with the production of dried fruits. For processors, 60% to 70% of the production cost is taken up by machinery (electricity consumptions mainly), and solar powered plants are expensive to set up. However, processors have a significant potential to grow and improve the dried fruit market in the Bekaa region specifically since the supply of fresh fruit is present and medium sized facilities with around 6 to 7 machineries can produce up to 1 ton of dried fruit per day on average. Currently, revenues are barely meeting costs but with corrective actions and support to limit cost, the dried fruit market showed to have solid potential and profitability to the processors (possible corrective actions listed in Summary section below)

As for the numerous rural and women cooperatives in the Bekaa, a wide variety of rural products along with dried fruits are currently produced. They use the conventional method of picking, cleaning, deseeding and naturally drying the fruits. This process is time consuming and requires long hours of work. However, the cooperatives are being able to charge premium prices for the products produced since they are homemade and mostly organic. Other challenges faced by cooperatives are mainly finding the adequate funding to modernize the production process and finding new distribution channels.

Despite it being a niche market, the dried fruit market has the potential to create many jobs opportunities for both women and men, either in cooperatives present in the Bekaa region or in medium to big processing facilities that can employ around 10 to 15 people. As mentioned before, the dried fruit market can play an important role in creating new sources for income sources for farmers in the Bekaa if the right variety and quality of fruit is planted and if relevant support is provided to the sector.

Summary

The below table summarizes the key enablers and the key risk of the dried fruit market in the Bekaa.

Table 13: Key Enablers and Key Risks

Key Enablers	Key Risks/Challenges
<ul style="list-style-type: none"> - Long shelf life (around 2 years) - Trend for a healthier lifestyle and increased consumption of healthy snacks - Middle East being the 2nd highest consumer of dried fruits in the world (right after Europe) - Income Stabilizer: Create additional income through processing fruits during off season (higher profit margins for processors) - Potential for import substitution given the unique taste of the Lebanese fruits 	<ul style="list-style-type: none"> - High production cost - Weak linkages between farmers and processors - High reliance on imported products - Non-compliance with international requirements for export - Competitive pricing with foreign brands - High set up costs for processing facilities - Detection of pesticides and toxins in dry fruits

Main Key Support Actions

Actions that can better shape the support for the sector and seek after the presented opportunities:

- Technical assessment of the cooperatives, identifying the current drying techniques used, and main opportunities for upgrading the process, improving the efficiency and pricing.
- Exploring ways of reducing production costs through bulk sourcing of the fruits: linkages with farmers or farmer cluster thus reducing costs.
- Provision of equipment, and solar panels that can reduce energy costs and promote environmental friendly solutions.

Kechek Business Case

Dairy processing is one of the most important agricultural sectors in the Bekaa. Hundreds of small-scale dairy processors as well as cooperatives are widely distributed throughout the Bekaa region, playing a major role in the value chain year after year as demand keeps increasing for dairy products.

The kechek has been identified as being a potential market to develop since first, it is one of the value added dairy product typical of the Bekaa region as well as showcasing an increase in its demand over the last couple of years. The fact that kechek is a product of the small ruminants, it has an impact on the income of the herders in the region if proper linkages with the cooperatives are established. It can also highly contribute to women engagement in the dairy value chain through the numerous women processing cooperatives present in the Bekaa.

Cooperatives have been in fact becoming more active in the small ruminant dairy value chain and a significant support has already been provided through technical and financial assistance as well as support through milk collection tanks, refrigerators and refrigerated trucks.

The kechek business case will be tailored around the main women cooperatives (and not the commercial or SME production of kechek) present in the Bekaa region as well as women households involved in the production of powder kechek that is usually prepared as a soup (with cooked meat and garlic) or placed in pita bread and consumed at breakfast. The selection is mostly based on the assumption that addressing the artisanal kechek would provide better income and create more job opportunities for women, either as part of cooperatives or individually, rather than focusing on enterprises for pulling the whole value chain up.

Demand Dynamics

Interviews with the different stakeholders in the Bekaa indicated and asserted an increase in the demand for kechek and more specifically, the artisanal kechek. The green kechek did not appear as being a highly demanded product, among the interviewed stakeholders.

The main consumers of kechek are:

- Bakeries and restaurants
- Lebanese households
- Lebanese diaspora

The traditional kechek is mainly demanded by households who have a preference for the typical rural products. The less traditional or industrial kechek is demanded by bakeries and restaurants that opt for a cheaper product that is available in bulks for the production of traditional dishes, using kechek as main ingredient.

Kechek is not a frequently consumed product, comparing to other dairy products, but highly demanded by the large Lebanese diaspora living abroad, who look to purchase all year long.

In addition, according to the local cooperatives in the Bekaa, demand has been increasing for the past 3 years, where all production is being sold to individuals or NGOs and cooperatives like Fair Trade (Terroirs du Liban) and Rural Delights Cooperative (Atayeb Al Rif). Orders are also being placed more frequently with higher volumes requested each time.

The main difficulty lies in the access of such product by consumers, mainly those living abroad. Export procedures are strict, and more often applied without fully understanding the making of the product and the ingredients. The fact that kechek is sold in powdered form, this makes it more difficult to control by foreign authorities and thus rendered as inaccessible, denied entry into foreign markets. However, there is room for improvement and increasing awareness on the use and benefit of such products, through proper marketing and labeling. This will also help improve the outreach by the women cooperatives, in integrating in more organized and targeted distribution channels.

Supply Dynamics in the Bekaa

The supply of dairy processed products in the Bekaa has three main sources:

- SME dairies and big processing facilities
- Cooperatives and women cooperatives
- Households (mainly women)

The focus of this case study is on women cooperatives as well as households (mainly women) as mentioned earlier.

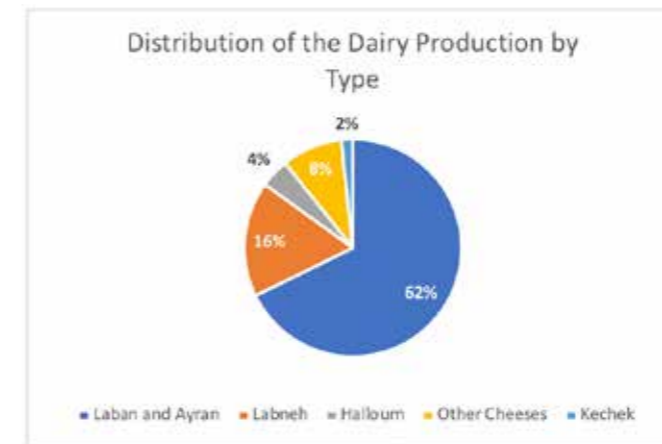
Rural cooperatives are usually composed of 10 to 50 people who have been equipped with the adequate tools and have been provided technical and financial support to produce traditional and natural rural Lebanese products. The production within those cooperatives is labor intensive and requires high levels of skills. The productive capacity of the cooperatives is small compared to the SME processors or industrial ones but are believed to provide tastier and more natural products.

Homemade processors who are mostly women play a considerably smaller role especially with the growing focus on women cooperatives and the change in purchasing habits (more towards shopping from mini-markets and supermarkets).

On a national level, the supply of kechek represents around 2% of the total dairy production in Lebanon that mainly encompasses the production of Laban, Ayran and Labneh (68% of total dairy production in Lebanon) (Developing the typical dairy products of the Bekaa and Baalbeck-Hermel, Lactimed, 2014)

The diagram below shows the percentage breakdown of the production of the different dairy products in Lebanon:

Figure 28: Distribution of the Dairy Production by Type of Dairy Product



Source: Developing the Typical Dairy Products of the Bekaa and Baalbeck-Hermel (Diagnosis and Local Strategy), Lactimed, 2014 and Euromena Consulting Analysis

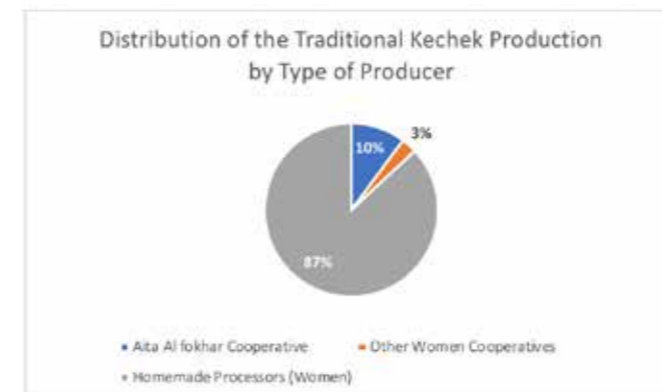
Throughout the different stakeholders interviewed, the total estimated production of kechek by women cooperatives and women at home in the Bekaa region currently amounts to around 7 tons per year.

Four main and active cooperatives have been identified that produce kechek in the Bekaa:

- Rural Woman Cooperative of Fourzol: located in Fourzol, made up of around thirteen women from the village producing goat kechek, grape molasses, baba ghannouj, hummus, apricot jam, strawberry jam, fig jam with sesame...
- Nejmet el Sobeh Cooperative: located in the southern side of the Bekaa, it is made up of around 20 women producing pomegranate molasses, rose syrup, fig jam with sesame as well as other specialties such as kechek.
- Aita Al Fokhar Cooperative: is a food-processing unit located in the village of Aita Al Fokhar in West Bekaa made up of eleven women producing cocktail pickles, cucumber pickles, wild cucumber pickles, goat kechek, goat labneh in oil.
- Kherbet kanafar women cooperative: located in Kherbet Kanafar, West Bekaa, the Cooperative is operating since 1994, and has the processing plant set up with funds from YMCA. The coop produces jams such as pumpkin, strawberry, mulberry, wild blackberry, as well as pickles, concentrates, sun-dried tomatoes, dairy products, and zaatar, with wild blackberry jams as their specialty product.

The diagram below summarizes the market share distribution of the different suppliers in the traditional kechek market:

Figure 29: Distribution of the Traditional Kechek Production by Type of Producer



Source: Stakeholders Interviews, Euromena Consulting Analysis, 2017

The biggest producer of kechek among the women cooperatives in the Bekaa is Aita Al fokhar cooperative who focuses mainly on the dairy production with a total production of around 700 kg of kechek per year. The cooperative moved from producing 50 kg/year to 100kg/year and is currently at 700kg/year. The other women cooperatives are smaller producers of kechek and produce around 30 to 40 kg of kechek per year.

Most cooperatives, especially in the dairy sector suffer from the fragmented and inconsistent supply of good quality milk. With an increase in demand, cooperatives are unable to always address such increase. Some cooperatives like Aita Al fokhar started to need around 1 ton of milk per day. In addition, cooperatives lack proper storing facilities that allow for higher production volume. Thus, they revert to meeting the demand, with placing orders prior to production, rather than producing in higher volumes.

Main marketing channels for the Cooperatives are:

- Direct sale of the product from the cooperative center
- Local shops in the region
- Personal contacts made in the village, in Lebanon in general or even abroad
- Supermarkets (when well packaged and labeled)
- NGOs and organization supporting women cooperatives (ex: Fair Trade)
- Other: hotels, restaurants, local markets...

Their products are sold either under the private label of the cooperative, through cooperating with agro-food enterprises or in bulks.

The majority of cooperatives have received different types of support: technical as well as financial, be it funding from local and international donor organizations to help them boost their supply of their products or technical support through provision of equipment and trainings that are focused around food processing, quality control procedures and business management. Yet, with all such support, cooperatives still lack capacities when it comes to marketing and sales of their products, ensuring better distribution channels and help in stimulating the demand of their products.

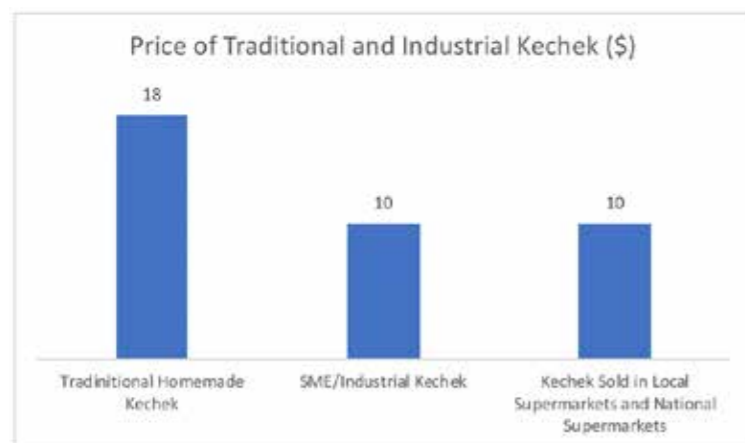
Profitability and Employment

Employment within the kechek market is mainly dominated by women cooperatives in general as well as women who produce from their homes. Women are in fact considered the most experienced when it comes to the production of traditional Lebanese food. The support provided to the cooperatives as well as encoring women to sell the products they produce at home pushed the women in the Bekaa region to take part in the workforce and acquire new sources of income.

Those cooperatives and women have the ability to charge premium prices for their products since they are considered to be naturally and traditionally made, which gives a better and stronger taste to the products (Figure 30). The products made by those cooperatives are also very labor intensive and sometimes require long hours of work and expertise in the work conducted.

The following diagram summarizes the prices at which the kechek is sold depending on the type of supplier or the distribution channel:

Figure 30: Price of Traditional and Industrial Kechek



Source: Stakeholder interviews, 2017

On average, cooperatives and women who produce the kechek charge around \$18 for each kilogram of kechek sold. However, industrial kechek as well as kechek sold at supermarkets is sold at cheaper prices as bulk or packaged under private labels for a price averaging \$10/kg. The total market for artisanal kechek in the Bekaa region encompassing women cooperatives and women who produce at home is estimated to be around \$130,000 with an estimated production volume of 7 tons/year on average.

The cost of production varies depending on the recipe adopted by the cooperative or the women preparing the product (it usually varies depending on the amount of labneh put in the mix). With an average price of \$18, profit margins for women cooperatives and women in general ranges between 30 to 40% which creates more incentives for women to enter the market of dairy products in general and kechek in specific.

Summary

The below table summarizes the key enablers and the key risk of the kechek market in the Bekaa.

Table 14: Key Enablers and Key Risks

Key Enablers	Key Risks/Challenges
<ul style="list-style-type: none"> - Ability to charge premium prices compared to industrial kechek - Increased demand from diaspora - Increased demand for traditional Lebanese products - Increased demand for organic and natural products - High consumption/capita of dairy products in Lebanon - Long shelf life up to one year 	<ul style="list-style-type: none"> - The primary limiting factor in the cooperatives' production volume is not production capacity but assured sales. - Shortage of milk and poor links with milk collectors (or hallabs) - Weak product marketing and branding - Weak distribution channels - Volatility of milk prices that is tied to the quality of milk provided by the herders

Main Key Support Actions

Actions that can better shape the support for the sector and seek after the presented opportunities:

- Support for dairy processors and cooperatives in product development and marketing to increase demand for kechek
- Standardization of kechek recipes and adopting new packaging methods to supply ready to cook portions to the market
- Linking with other NGOs to improve branding and packaging to improve the product presentation and meet local and international standards
- Creating linkages between cooperatives and the market; locally and abroad to ensure that the products meet consumer demands in terms of quantity and quality.
- Provide training on quality processing
- Improving and standardizing the quality of milk provided by the herders in attempt to reach good milk prices and stabilize them

Key Prescribed Interventions

A recap of the challenges identified and the corresponding prescribed interventions, both related to holistic sector level as well specific to business cases, are presented in the table below.

Table 15: Prescribed Intervention Per Vertical

	Priority	Sector Challenges	Prescribed Intervention	Main Key Actions						
				Holistic sector level						
						Grape molasses	Rural tourism	Beekeeping	Kechek	Dried fruits
Agriculture	1	Reduced market access	Clustering of farmers	Working as a group of farmers: providing technical support to improve quality and increased uniformity in both quality and volume, ultimately leading to improved market access	Impact Visible across all the value chains including tourism.					
			Access to markets		Improving access to markets through increased productivity and linkages with processing channels, especially for table grapes in Rachaya					
					Diversify marketing channels through increasing awareness on grape molasses and promoting horizontal linkages					
Forestry	2	Overgrazing and urbanization	Increased reforestation and replantation actions	Supporting zoning to organize grazing in each region (working with municipalities)			Increased tourism activities related to tourism			
				Carry out pilot reforestation activities based on assessment findings			Increased Tree Varieties fit for pollination: higher honey yields.			
			Reduction of land available for grazing and lack of proper herd management	Improve the quality of local animal feed	Technical support: capacity building (on field) to improve quality and increase shelf life				Improved milk quality resulting in higher quality Kechek Production and sales	
Livestock	3	Overexploitation of natural resources and misuse of fertilizers and pesticides	Increase access to water resources	Linkage with existing projects and Green Plan (to provide lakes)	Impact Visible across all the value chains including tourism.					
				Training on optimal water use	Impact Visible across all the value chains including tourism.					
	4	Lack of agricultural calendar	Plant crops that can be strategic for each area	Land suitability and adaptability	Increased value of natural resources that has positive impact across all value chains					
5	High cost of production and reduced competitiveness (reduced product prices)	Control of Syrian borders that is leading to loss in market share as well as bringing in disease	Improve the quality and outreach of animal vaccination provided by the Ministry of Agriculture	Improve the storage conditions of the vaccines to preserve quality and prolong shelf life				Increased milk quality and production, thus higher production and sales of dairy products		
				Increase quarantine inspection and enforcement at the borders to minimize the risk of trans-boundary animal diseases and reduce smuggling						
					Improve quality of milk as means to access better markets via value added products such as kechek					
			Breeding program	A long-term objective for increasing productivity of local sheep and goat is to work on a breeding program, improving genetics, undertaking cross breeding with highly productive breeds, and ensuring new breeds adapt to local conditions						

The interventions are prioritized based on the risk of increasing land degradation if not addressed promptly, and the impact that such interventions can have on the overall improvement of access to natural resources and increased economic opportunities for the rural population in the targeted regions.

Project Charters of Prescribed Interventions

For each key prescribed intervention, a project charter has been developed to present the structure/framework that guides the implementation. While the baseline assessment included a brief overview of such interventions along with their potential impact and associated costs, the project charters are more detailed in their descriptions. They are structured to include the following elements:

- Expected results to be achieved for each intervention
- Associated activities that should be undertaken to achieve the desired results
- An estimated intervention budget, divided per training, procurement, or technical support costs
- KPIs that should be monitored to measure performance and results
- Stakeholders that should be involved, including target direct beneficiaries and potential collaborations or partnerships with other existing projects and stakeholders

The project charters are developed as per the prescribed interventions listed in the baseline assessment report, organized as per the priorities indicated and associated economic vertical, be it Agricultural, Animal Production, or Forestry. It is important to mention that while it was originally planned to explore alternative income generating activities, it appears that optimizing current operations and policies can result in increased revenues, increased productivity and overall improvement of livelihoods of the rural communities in the three regions as originally sought.

Agriculture Vertical

The recommended projects and interventions outlined for this sector are mostly focused on clustering for improved quality and production volumes of major agricultural crops, and promoting sustainable agricultural practices as a means of improving market access.

Prescribed Intervention 1: Clustering of Farmers

The main objective of this intervention is to improve the quality and volume of agriculture production. Focusing on a strategic export oriented crop, in this case apples, the project will work on improving the quality and volume through farmer clustering: consolidating volume and standardizing quality of apple production. Currently, high quality exports account for only 10-15% of total apple production, and thus there is room to increase access to more markets. Through building capacities and providing relevant technical support to apple farmers, the project will increase the volume and quality of apple production, Grade A apples, which in turn will improve its marketability and export. By increasing export volumes, farmers will have higher returns and will eventually increase their income. To achieve such expected results, different activities need to be undertaken, targeting apple farmers directly through a series of practical trainings on different sustainable agriculture techniques. Additionally, the project can work on building capacity for groups of young farmers or agriculture school students, by equipping them with different technical skills (pruning, clustering, and fertigation) who in turn will provide support to farmers on a needs basis as well as earning a living from it, as indicated in the charter below.

Figure 31: Clustering of Farmers' Project Sheet

Intervention Description	Support clustering of farmers: provide technical support to farmer groups to improve quality of produce and increase volume of production	Execution timeline	12 months
Expected Results (by 2020)		Key Activities	
<ol style="list-style-type: none"> 1 Production of high quality apples, grade a, is increased (Around 40 to 50% increase) 2 Marketing of apples is improved locally and for export (increase in export share by at least 3 to 4%) 3 Income for farmers increased (around 50% to 55%) 		<ul style="list-style-type: none"> • Training on good agricultural practices (+monitoring) • Training of trainers to support farmers on pruning, terracing, organic farming, conservation agriculture, clustering fertigation (service providers) 	
KPIs (by 2020)		Estimated Budget	
<ol style="list-style-type: none"> 1 Percentage increase in yield/hectare per crop 2 Percentage increase in market prices at farm gate 3 Percentage increase in income 		<p>Technical support: training of the trainers (ToT) around \$1150/day</p> <ul style="list-style-type: none"> • Trainer fees = \$500/day • Training venue + catering = \$500/day • Training material-150\$/day <p>Training:</p> <ul style="list-style-type: none"> • Training of good agricultural practices \$30,000 (same as technical support cost + • Monitoring and follow-up: \$10,000 	
Stakeholder engagement	<p>Target beneficiaries: Apples farmers in the 3 regions</p> <p>Stakeholders: MoA and relevant municipalities</p> <p>Linkages with projects: DAJ, LIVCD project (USaid funded)</p>		

The related performance indicators that should be considered to measure the project's success are mostly related to increase in crop yield as a result of adopting new and sustainable agricultural practices, increase in farm gate prices, or prices paid by the traders to farmers for higher quality produce, and ultimately the change or positive increase in the farmers' income as a result of increased sales and market access. This intervention can be entirely implemented within one year, training farmers prior to harvest and providing technical support during harvest to ensure uniform quality. It is also recommended to liaise and partner with different relevant projects, such as the USaid-funded Lebanon Industry Value Chain Development (LIVCD) project implemented by DAJ, and involve the Ministry of Agriculture through their extension offices in the different regions considered, as well as municipalities, to ensure sustainability of results and maximize impact.

Prescribed Intervention 2: Access to Market

The main objective of this intervention is to facilitate linkages between producers and processors so as to improve value chain efficiency and increase market access. Adopting a market oriented approach; the project will focus on a traditional value-added product, grape molasses, for which the market is growing and expected to further increase in the coming period, given its position as a sweetener and healthier alternative to sugar. For market access to be improved stronger links need to be created between farmers and processors so as to allow continuous information flow on market demand, translated into practical steps on the field. Therefore, the project will work on increasing production of the local table grape varieties that are best fit for processing into molasses, thus increasing the volume of grape molasses production, which will ultimately translate into a positive increase in income of both farmers and processors, and pulling the whole value chain upward.

Figure 32: Access to Market Project Sheet

Intervention Description	Improving access to markets through increased productivity and linkages with processing channels especially for table grapes in Rachaya		Execution timeline	24 months
Expected Results (by 2020)	<ul style="list-style-type: none"> 1 Increase production of local grape varieties (around 25% to 30%) 2 Increased production volume of grape molasses (by at least 30%) 3 Increased farmers income (by at least 5 to 10%) 			
Key Activities	<ul style="list-style-type: none"> • Promoting efficient production of local table grape varieties • Facilitating linkages to processing channels for molasses production • Providing support for farmers on utilizing good agricultural practices for table grapes 			
KPIs (by 2020)	<ul style="list-style-type: none"> 1 Increase in percentage area used for grapes 2 Reduced production cost by 50% 3 Percentage increase in farmers income 4 Percentage increase in job creation (Female, male) 5 Average quantity of processed product sold 			
Estimated Budget	<p>Training: Training of good agricultural practices, around \$1150/day</p> <ul style="list-style-type: none"> • Trainer fees = \$500/day • Training venue + catering = \$500/day • Training material-150\$/day <p>Technical support: demo plots \$50,000 (\$2,500/dunum for 20 farmers)</p> <p>Procurement: 3\$/hectare for local table grape varieties</p>			
Stakeholder engagement	<p>Target beneficiaries: Table grapes farmers in Rachaya</p> <p>Stakeholders: MoA, relevant municipalities unions, local non-governmental</p> <p>Linkages with projects: DAI (LIVCD) and EU private sector development programme</p>			

In practice, the key activities that will help realize such results are mostly based on providing technical support to farmers through setting up demonstration plots: the planting of local table grape varieties along with practical trainings on these plots, helping farmers to adopt good agricultural practices that can increase yield and translating the demand of processors accordingly. Through the dissemination of information between the two value chain actors, the project can help facilitate linkages, first locally, and then regionally so as to increase molasses production.

To measure the success of the project in achieving its results, KPIs need to be monitored, namely those related to the increase in cultivated areas planted with local table grape varieties, increase in sales transactions between processors and farmers, increase in employment opportunities upon increasing processing capacities, and finally creating new opportunities for women through engaging them in production of grape molasses traditionally produced through their processing cooperatives. Setting up demonstration plots and training farmers on these plots and good agriculture practices will require time, especially that such activities require proper preparation and may not fit well with production season in the first year. Thus, it is recommended to have this project spread over a period of two years, with the first year more focused on training, and the second year on technical support. To maximize the impact that such intervention will have, the project should network with existing projects, building on their results and linking to their beneficiaries (especially processors). Most relevant projects to consider are the LIVCD project implemented by DAI, and Private Sector Development Project implemented by Expertise France targeting both table grapes and cherries value chains in the Bekaa. The Ministry of Agriculture and local authorities are key partners in this project and will mainly assist in the outreach to beneficiaries and to facilitate work through their networks.

Figure 33: Diversifying into Local Value-Added Products

Intervention Description	Improving access to markets through diversifying into value-added local products		Execution timeline	12 months
Expected Results (by 2020)	<ul style="list-style-type: none"> 1 Increase production of dried fruits by around 20% 2 Improved management and technical capacities of women processing cooperatives 3 Increased income of women by at least 5 to 10% 			
Key Activities	<ul style="list-style-type: none"> • Training of processing cooperatives on good manufacturing practices and adherence to quality standards • Facilitating linkages to producers in marketing channel • Providing support to producers on adherence of quality standards 			
KPIs (by 2020)	<ul style="list-style-type: none"> 1 Increase in local supply of fruits to cooperatives 2 Percentage increase in sales 3 Average quantities of products sold 4 Percentage increase in job creation 			
Estimated Budget	<p>Training: Training of good agricultural practices, around \$1150/day</p> <ul style="list-style-type: none"> • Trainer fees = \$500/day • Training venue + catering = \$500/day • Training material-150\$/day 			
Stakeholder engagement	<p>Target beneficiaries: Women processing cooperatives in the three districts, herders in the three districts, milk collectors</p> <p>Stakeholders: MoA, relevant municipalities unions, local non-governmental</p> <p>Linkages with projects: DAI (LIVCD) and AUB (ESDU)</p>			

Another means of helping local communities to access new markets is through diversifying their production and engaging in value added processed products that have both local and regional demand. Local products, such as dried fruits and kechek have good market potential but are in need of further polishing and upgrading in production to be of the required quality and one that can have higher sales and consequently higher incomes for all actors. This can be done through providing technical support and building capacities of local processing women cooperatives to upgrade their production and comply with quality requirements. However, as a prior step, there needs to be a technical assessment of the local cooperatives that are engaged in dried fruits and kechek production. The assessment will help identify the gaps existing in each, and the upgrading requirements, be it through equipment or capacity building. Based on the outcome of the assessment, training programmes will be designed and administered to members of the coops, focusing both technical and managerial aspects. As quality is key factor, the assessment outcome could pave the way for further supporting cooperatives in upgrading through procurement of equipment, be it solar panels or fruit dryer or kechek mixers, based on assessment findings. Additionally, there is need in facilitating linkages between cooperatives and farmers/milk collectors, to ensure traceability and consistency in the quality and volume of supply.

To measure the success of all prescribed actions in achieving their results, KPIs need to be monitored, namely those related to the increase in local supply of fresh produce to cooperatives, increase in sales of the kechek and dried fruits, increase in employment opportunities upon increasing processing capacities, and finally creating new opportunities for women through engaging them in production of dried fruits and kechek traditionally produced through their processing cooperatives. Technical and managerial upgrading of the women processing cooperatives will require time, especially that such activities require proper preparation and may not fit well with production season in the first year. Thus, it is recommended to have an action plan spread over a one-year period. To maximize the impact that such intervention will have, prescribed actions should network with existing projects, building on their results and linking to their beneficiaries (especially traders). Most relevant projects to consider are the LIVCD project implemented by DAI, and Environmental and Sustainable Development Unit at American University of Beirut that is working on improving quality of kechek and enlisting it in the database of geographic indicators. The Ministry of Agriculture and local authorities are key partners in this project and could mainly assist in the outreach to beneficiaries and to facilitate work through their networks.

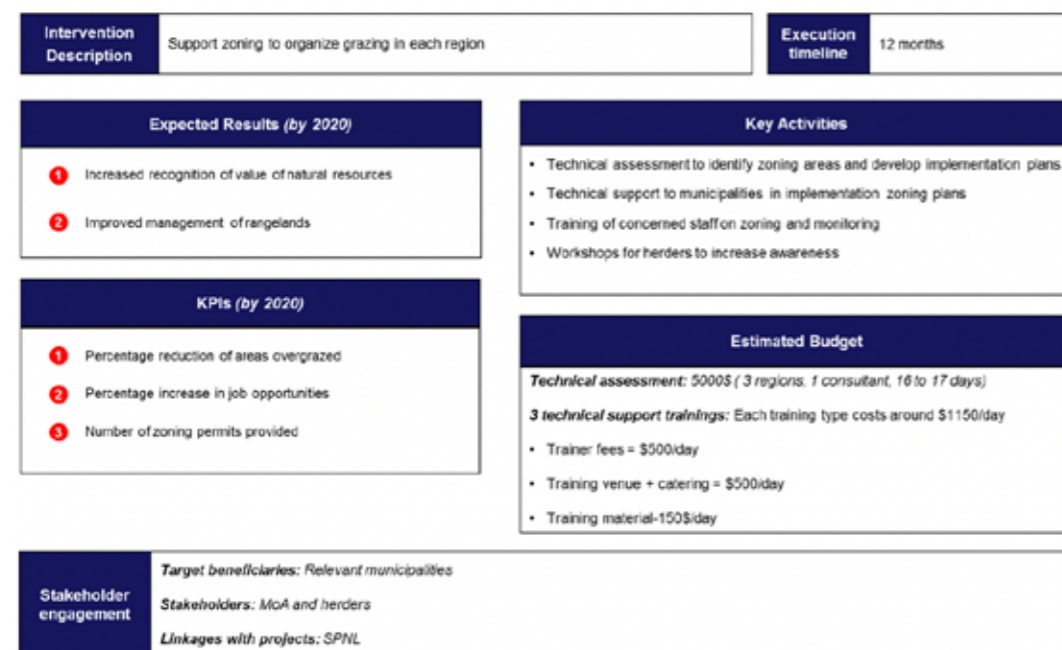
Forestry Vertical

Prescribed Intervention 3: Overgrazing and Urbanization

One of the interventions that can address the challenge of overgrazing is zoning, or defining special zones where herders can allow their animals to graze without destroying the biodiversity of the land's plant fauna. The designation of special zones in Ammiq, West Bekaa is one pilot project that yielded good results and

better management of rangelands and forest areas. The project was realized by SPNL, in collaboration with the Union of Municipalities of Bouhayra. By replicating such experience in Zahle and/or Rachaya, overgrazing will be significantly reduced and local authorities will have better control and management of the endangered rangelands and forests. Through supporting unions of municipalities or independent municipalities in each of Zahle and Rachaya, the project will contribute to increased recognition of the value and importance of natural resources, and improved management of rangelands and grazing areas. For this to be achieved, there needs to be provision of technical support to both municipalities and herders, for which an assessment is required to evaluate the current status of the rangelands, identify potential zoning areas, and develop action plans for designation and management of such areas. Once completed, continuous support will be provided to municipalities to implement the zoning action plans and train the concerned staff on monitoring of the defined zones to ensure sustainability and proper management. This will also require conducting different awareness workshops for herders to inform them on the new procedures and increase their awareness on the importance of adhering to the buffer or grazing zones in order to ensure there is no harm to environment, and that everyone gets a turn to graze their animals, thus ensuring equal access to grazing.

Figure 34: Overgrazing and Urbanization Project Sheet³



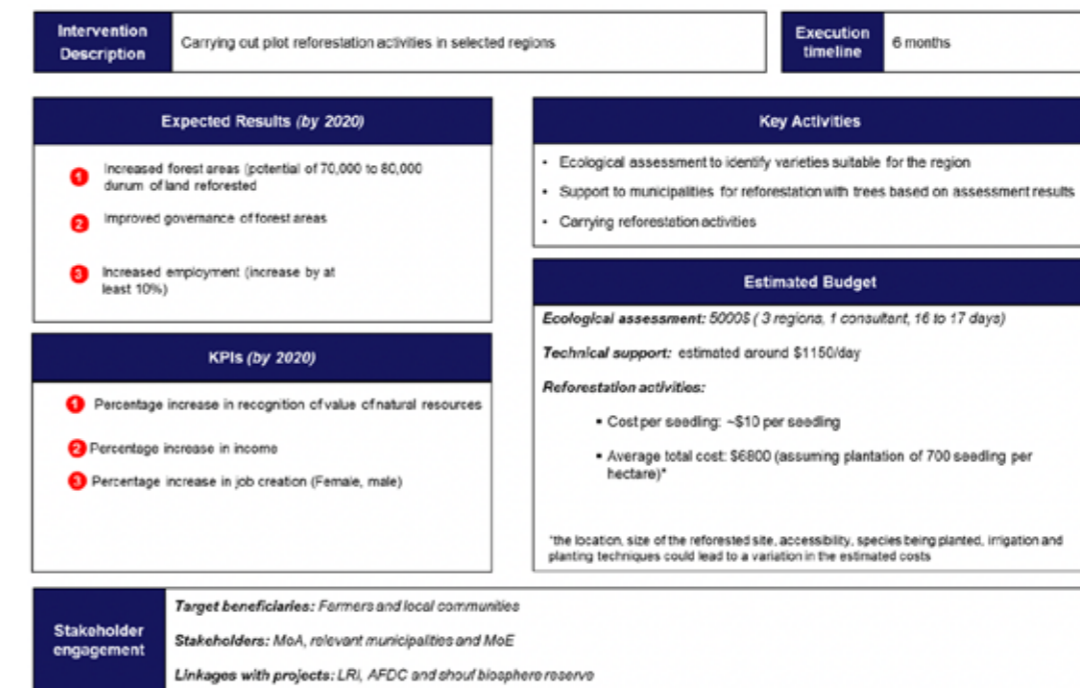
It is envisaged that all activities can be undertaken over one year with the possibility to extend should other municipalities wish to join. Close interaction with SPNL organization is recommended at first to build on existing experience, as well as collaboration with the Ministry of Agriculture, especially that their teams are involved in forest management and hence need to be aware of any plans to be implemented. Measuring progress towards achieving such results will require the monitoring of two KPIs: measuring the improved governance of rangelands through reduced incidents of overgrazing or trespassing red zones, as well as provision of zoning permits, and quantifying the potential job opportunities that will be created to ensure monitoring and management of such zones. These can be direct or indirect opportunities, i.e. service providers that contribute to better management.

Prescribed Intervention 4: Reforestation and Replantation Actions

Overgrazing and urbanization have negatively impacted natural forests and green areas in the regions, diminishing their size and reducing their quality. Addressing such challenges requires a long-term solution, such as reforestation with the right tree types, fit to the characteristics of each region, and ones for which their by-products can provide economic opportunities for the local communities. Based on that, the recommended intervention will carry out pilot reforestation activities in each of the three regions. This will have positive results overall in terms of increased green areas, creation of new income generating activities, and opportunities for local authorities to improve the management of the forest areas in their regions.

³ The expected results or targets for this intervention will be more quantified once perception analysis is completed, and will be updated accordingly.

Figure 35: Reforestation and Replantation Action



For this to be implemented, an ecological assessment is required for each region to identify the tree varieties that best fit with the regions' characteristics. Based on assessment results, the project should work closely with local authorities to select the areas and jointly carry out reforestation. This will be accompanied by technical support for local authorities to improve governance and identify products that can provide income generating opportunities for local communities, be it honey, pine nuts, aromatic plants, or even essential oils. This can be accomplished within a period of six months, with involvement of the municipalities as a pre-requisite, and collaboration with existing projects to benefit from their experience and share lessons learnt, namely Lebanon Reforestation Initiative, funded by USAID, AFDC, and Shouf Biosphere Reserve. Each of these organizations has previously carried out reforestation activities, and thus can be a good starting point to collaborate and exchange information. Measuring the success of the project will require monitoring of the three main KPIs:

- The change of how the value and utilization of natural resources is perceived (adequate use of land and avoiding overgrazing)
- The increase in job opportunities as a result of either direct employment in preservation of the newly reforested areas, or integrating the by-products of the reforestation areas and value to make them marketable
- The increase in income as a result of utilizing these by-products

Prescribed Intervention 5: Access to Water

Overexploitation of natural resources and misuse of fertilizers and pesticides is a major challenge and one that is directly contributing to land degradation across the country. Addressing such challenge requires a combination of different interventions spread over time, and involvement of different stakeholders. One intervention that can be addressed in the short term is increasing awareness on the utilization of proper water use practices and training farming communities on optimal use of water to reduce overexploitation and pollution with excessive use of chemicals.

Figure 36: Access to Water Project Sheet

Intervention Description	Increase access to water resources	Execution timeline	6 months
Expected Results (by 2020)	<ul style="list-style-type: none"> 1 Reduced pollution levels in water (by at least 20 to 30%) 2 Reduced water waste (by at least 40 %) 		
Key Activities	<ul style="list-style-type: none"> • Facilitating linkages with existing projects for increasing access to water (reservoirs and lakes) • Training farmers on optimal use of water resources and new irrigation techniques 		
KPIs (by 2020)	<ul style="list-style-type: none"> 1 Percentage reduction in water overexploitation 2 Percentage change in irrigation practices 		
Estimated Budget	<p><i>Training: around \$1150/day</i></p> <ul style="list-style-type: none"> • Trainer fees = \$500/day • Training venue + catering = \$500/day • Training material-150\$/day 		
Stakeholder engagement	<p><i>Target beneficiaries: Farmers in 3 regions</i></p> <p><i>Stakeholders: MoA and relevant municipalities</i></p> <p><i>Linkages with projects: Green plan and hasad project MoA</i></p>		

Spread over six months, the project will target farmers through engaging them in different trainings to increase their awareness on the negative impact of their current practices on water quality and use, and also to improve their current practices by introducing new irrigation techniques that can promote optimal water use and reduce pollution. By adopting the newly recommended practices, the project will positively contribute to reduced water waste and pollution levels, thus contributing to better utilization of natural resources. Liaising with Green Plan and involving municipalities is recommended as this can promote the implementation of proper water infrastructure that emphasizes the optimization of water resources. Two key indicators will be monitored for measuring results of the project, namely the percentage change in water overuse, and the new irrigation practices adopted. These are mainly an indication of change in practices that will ultimately lead to adequate water use for agriculture.

Animal Production Vertical

Prescribed Intervention 6: Animal Feed

Reduction of land available for grazing and the limited capacity of herders in integrating effective herd management practices are among the main challenges that negatively impact productivity and consequently livelihoods of the herders. Animal nutrition is a major factor impacting productivity and one that needs to be tackled so as to improve overall herd management. This can be done through focusing on the current local supply, identifying the bottlenecks and working with forage growers on supplying the right quality that can substitute imports. This will therefore improve quality of local feed, reduce costs for herders, and increase income for local farmers. It will also contribute to increased production volumes and thus higher supply for local animal feed traders. To achieve such results, there needs to be a land suitability assessment to identify suitable forage crops that should be planted in each region, and then providing technical support to farmers to plant such crops utilizing good agricultural practices to increase yield. The support will also extend to the harvest to ensure that proper harvesting and post-harvesting practices are adopted to maintain quality until the product reaches the market. In parallel, the project will work on facilitating linkages between farmers and animal feed traders through ensuring proper information flow and supporting farmers to supply as per the traders' requirements. While the main beneficiaries will be forage growers, linkages with international organizations such as IFAD is recommended as the organization is currently preparing for the second phase of its feed subsidization program. The Ministry of Agriculture can also provide support through allowing access to their farmers' database and technical expertise in feed production, covered by their extension offices in the region.

Figure 37: Animal Feed Project Sheet

Intervention Description	Improving quality of local animal feed	Execution timeline	12 months
Expected Results (by 2020)	<ul style="list-style-type: none"> 1 Increased production of forage crops (around 40%) 2 Improved quality of local feed 3 Increased income for farmers (around 40%) 		
Key Activities	<ul style="list-style-type: none"> • Assessment to identify suitable forage crops for each region • Technical support to farmers to increased yield • Facilitating linkages to animal feed traders 		
KPIs (by 2020)	<ul style="list-style-type: none"> 1 Percentage increase in yield/hectare 2 Percentage reduction in feed import 3 Percentage increase in farmers' income 4 Increase in shelf-life of feed 		
Estimated Budget	<p><i>Cost of assessment: 5000\$ (3 regions, 1 consultant, 16 to 17 days)</i></p> <p><i>Training: around \$1150/day</i></p> <ul style="list-style-type: none"> • Trainer fees = \$500/day • Training venue + catering = \$500/day • Training material-150\$/day <p><i>Support at harvest and post harvest: consultant for storage (on-site)</i></p>		
Stakeholder engagement	<p><i>Target beneficiaries: Forage farmers in 3 regions</i></p> <p><i>Stakeholders: MoA and animal feed traders</i></p> <p><i>Linkages with projects: IFAD: feed subsidies</i></p>		

The project can be implemented within a period of one year, given proper planning and implementation arrangements are adopted and progress monitored to achieve the desired results. The main indicators that should be used for monitoring performance are mostly related to percentage change or increase in the yield per hectare, improved shelf life of the feed as indicator of improved quality, reduction of imports as a result of matching demand with local supply, and finally the percentage change in farmers' income as a result of increased yield and productivity.

Prescribed Intervention 7: Small Ruminant Nutrition and Health

Improving herd management can also be attained through increasing awareness of herders on the importance of ensuring proper small ruminant nutrition and health. This can be done through providing technical support and capacity building for the herders on a variety of topics related to herd management such as breeding, milking, animal health, nutritional requirements, and optimal feed sources. Furthermore, the project will help increase the geographic outreach of the Ministry of Agriculture to provide vaccinations and medications free of charge to herds, as well as connect with nearby veterans for the provision of veterinary services. Improving the nutritional intake of the herd will result in increased productivity of the small ruminants, improved health conditions of the herd, and ultimately improve access to markets through increasing volume of both milk and meat production. The herders will be the main target beneficiaries of the project, and the Ministry of Agriculture will act as a main partner. Other stakeholders that should be considered are the veterinary service providers.

Figure 38: Small Ruminant Nutrition and Health Project Sheet

Intervention Description	Increase awareness of herders on small ruminant nutrition and health	Execution timeline	12 to 18 months
Expected Results (by 2020)		Key Activities	
<ul style="list-style-type: none"> 1. Increased productivity of small ruminants (around 25% to 30%) 2. Improved access to animal health services 3. Improved access to markets (increase in price of milk by at least 2 to 5%) 		<ul style="list-style-type: none"> • Assessment to identify suitable forage crops for each region • Technical support to farmers to increase yield • Facilitating linkages to animal feed traders 	
KPIs (by 2020)		Estimated Budget	
<ul style="list-style-type: none"> 1. Increased milk yield/head 2. Percentage increase in income 3. Percentage creation of new job opportunities 		<p><i>Training: 50 days for each region around 1150\$ a day</i></p> <ul style="list-style-type: none"> • Trainer fees = \$500/day • Training venue + catering = \$500/day • Training material-150\$/day 	
Stakeholder engagement	<p><i>Target beneficiaries: Herders in 3 regions</i></p> <p><i>Stakeholders: MoA, relevant municipalities unions and VET doctors</i></p> <p><i>Linkages with projects: N/A</i></p>		

The project can be implemented within one to one and a half years, with progress measured through specific KPIs: percentage change or increase in the yield of milk as a result of good herd management, percentage change in income as a result of increased yield, and the creation of new job opportunities, such as additional veterinary service providers to reach out to remote herders. Additionally, the project will explore the organization of the herders, through establishing a syndicate for Baladi goat herders, with the aim of stabilizing milk prices, improving the governance of value chain, and advocating for better support from the Ministry of Agriculture.

4. MONITORING & EVALUATION MECHANISM

Description of Monitoring & Evaluation Process & Guidelines

The Monitoring and Evaluation (M&E) mechanism will serve two main functions: first, the periodic assessment of the project implementation and performance activities, or the M&E of project performance, and second, the evaluation of results in terms of effectiveness and impact, or the M&E project impact. The M&E reporting of the various projects discussed above will provide answers on the progress and impact made by UNDP and all involved stakeholders, as well as all the expected results of the projects.

Project performance monitoring focuses on the management and supervision of project activities, to improve efficiency and overall effectiveness of project implementation. This will be done through a process of data collection from different sources on the actual implementation of project activities, and measuring progress through indicators as per the work plans that will be set for each project. This process will take place throughout the project implementation periods, mainly in 2018, as well as after the projects are completed, mainly in 2019, to measure the overall impact of the projects based on key indicators and identify lessons learnt and best practices as recommendations for future projects.

During executing the Monitoring & Evaluation process the following key guidelines are expected to govern respective project team's tasks:

1. Project team expected to fully update all KPIs (key performance indicators) as presented in the "EC_UNDP_Key Performance Indicators_20092017_FV" Excel file (submitted to UNDP as a separate document). The KPIs are structured around four main areas: 1. Socio-economic indicators, 2. Agriculture indicators, 3. Forestry indicators, 4. Livestock indicators.

2. Project team expected to design and implement "Perception Survey" aimed at exploring qualitatively and quantitatively the perceptions of the different stakeholders in the three regions, whether farmers or herders, on issues related to recognition of value of natural resources, and quality of life. The analysis of the findings will feed into updating the baseline value of such indicators, and will be included in the overall monitoring that will take place in 2018 and 2019.

3. Across each KPI the already specified "means of verification" will be used (reference to Table 16 below). This is largely grouped across two main sources: a) surveys with key stakeholders and b) reference to relevant international organizations reports. For the former, same surveys as the ones used during the baseline assessment phase of this project phase will be applied. These surveys are tailored across the three key economic verticals and across the key related public stakeholders and private actors (e.g. covering also key aspects of the newly developed business cases). For the latter, initially any relevant documents' updates released by respective international organizations will be checked; if updates available then the updated data will be leveraged accordingly. If no updates made, then project team will reach out to the same teams of the international organizations and seek expert opinion and advice on the potential fluctuation of respective KPIs vis-à-vis the last reported/released value

4. Project team will compile the updated list of KPIs across the three regions separately and will report progress reported, as well evaluation outcome and possible corrective actions as per objectives articulated above

Monitoring and Evaluation Activities

The main activities outlined in the M&E plan includes: use of data collection forms or surveys mostly used for primary data collection on indicators, attainment of secondary information from different sources, and completion of annual progress and evaluation reports. The following paragraphs will provide a better overview of these activities, team members in charge, and frequency of data collection for completion of such activities.

Data Collection Surveys

As mentioned in the guidelines above, surveys are the most important and critical part of the process, mainly used to source primary data required for measurement of the indicators. Surveys will be utilized to both monitor progress of the implemented projects and evaluate their impact, after they are completed, on the livelihoods of the beneficiaries and regions under consideration. The Socio-Economic Assessment carried out earlier provided a detailed overview of the regions across the different economic verticals, as well as developed a detailed list of indicators that was used to set the KPIs for each project outlined above. The surveys that have been previously developed by Euromena Consulting for the socio-economic baseline assessment will be utilized and administered to different potential stakeholders and other relevant parties to provide the necessary data to validate and evaluate the project's progress. The surveys will be tailored to the projects implemented as well as to the target beneficiaries. They can therefore be addressed to farmers, herders, municipalities, as well as other stakeholders that were directly targeted by the projects. In fact, the following processes of data collection will be undertaken:

Performance Progress and Evaluation Surveys: measuring progress against indicators will require the attainment of information from different sources so as to be able to measure and confirm change in the overall status of the target beneficiaries against the key indicators set. Euromena Consulting will administer those surveys to acquire the new value of indicators after the start of the project, compare them to the base values, and measure the change accordingly.

Other Data Collection Processes: data collection will not be limited to surveys, but will extend to include complementary secondary sources, and further validate the values calculated for the different indicators. Such sources include:

- Assessments and studies conducted by various national and international organizations such as the World Bank (forecast outlook, national indicators, quality of life indicators), UNDP (sustainable development goals reports, socio-economic assessments), ILO (labour market surveys), FAO (production indices, yield, and land cultivation economics), Central Administration for Statistics (socio-economic indicators, population indicators), Ministry of Agriculture (annual prices, land cultivation economics) and UNHCR (vulnerability Assessment), etc. It is important to mention that the same sources for which the data was obtained will be used for the verification of the updated data during the monitoring process, and validated by the various experts.
- Annual reports published by donor projects, namely USAid (Lebanon Industry Value Chain Project) and EU funded projects (Private Sector Development Program) as well as other relevant organizations
- Trade related statistics published by the Ministry of Economy & Trade, Customs Office, and Chambers of Commerce, Industry, & Agriculture

The table below provides a visual presentation of the KPIs considered for the recommended projects and main sources of verification, whether surveys or published assessments and reports.

Table 16: Means of Verification of Indicators

Means of verification	KPI		
Primary information (e.g. surveys)	Socio-economic	Quality of life	
		Gender equality and women empowerment	
	Agriculture	Percentage reduction in water over exploitation	
		Yield per hectare per crop	
		Production cost per crop	
		Family members employed	
		Non-family members employed	
		Employment and daily wage	
		Average quantity of processed products sold	
	Forestry	Improved governance of forest areas	
		Increased size of re-forestation areas	
	Secondary information (E.g. released reports / data)	Livestock	Number of cases of non-compliance reported
			Negative influencers of forest
Animal production systems			
Total animal production (in MT)			
Production cost per animal type			
Farmer sale price per animal product			
Employment			
Socio-economic		Quality of life	
		Total GDP	
		GDP per capita	
	GDP breakdown per vertical (% of GDP)		
	Unemployment		
	Income levels		
Agriculture	Land use per crop		
	Total agricultural land size		
	Average % of area used per crop		
	Yield per hectare per crop		
	Production cost per crop		
	Market prices per crop (farmgate price)		
	Family members employed		
	Non-family members employed		
	Employment and daily wage		
	Market information (export, imports)		
Forestry	Area forest cover		
	Negative influencers of forest		
Livestock	Total animal production (in MT)		
	Production cost per animal type		
	Farmer sale price per animal product		

5. CONCLUSIONS & NEXT STEPS

The final baseline socio-economic assessment provided a detailed snapshot of the current situation across the three agricultural, forestry and livestock sectors, as well as examined potential adjacent growth opportunities. While the regions experienced positive changes, be it in terms of increase in production of some major crops, improved markets, and increased awareness of the importance of forest, there remains challenges that threaten further advancement of the sectors and increase the risk of land degradation. A recap of the major challenges identified across the three verticals are related to:

- Reduced access to markets as a result of worsened security situations, border closure, and quality deterioration;
- Lack of adoption of agricultural best practices with excessive use of pesticides and fertilizers, leading to increased production costs and decreased yield and competitiveness;
- Lack of proper herd management, leading to increased production costs, increased risks of diseases and mortality, and reduced productivity;
- Reduced access to rangelands as a result of worsened security situations leading to overgrazing and lack of compliance with nutritional requirements of the herd;
- Urbanization and increased fire-breakouts leading to reduced forest coverage, increased land degradation and reduced income for local populations.

Addressing such challenges requires a combination of different interventions that could be integrated at the micro, or project, short term level, and at the macro, or long term, policy level. This is done through a combination of different methodologies to define and assess the impact of such recommendations on challenge reduction and economic growth. A thorough analysis of impact of current policies on socio-economic and natural resource status of the regions, benchmarking of successful experiences of other countries that faced similar challenges and undertook various interventions to overcome such challenges, and development of an economic model have been carried out in order to identify such recommendations and present how different interventions can boost economic activities and catalyze growth of adjacent economic sectors. Recommended interventions that could be addressed through the project have been well articulated through the simulations presented in section 3 of this report.

The challenge of reduced market access could be addressed by the project, through promoting clustering of farmers to have higher uniform quality and increased production volumes, supporting adoption of integrated pest management, diversifying into new value-added market are among the main proposed interventions that would increase productivity and improve income and employment in the agriculture sector in the regions. Improving quality of animal feed, increasing nutrition of the herd and promoting proper herd management are among the main recommended interventions for the animal sector, while promoting zoning for grazing organization and undertaking reforestation activities in the three regions are recommended for the forestry sector in Zahle, West Bekaa, and Rachaya. Such interventions could be implemented at short or long term depending on the financial, technical and human resources available.

Furthermore, new opportunities emerged through the assessment and further dwelled upon during interaction with stakeholders, including economic diversification in new sectors such as beekeeping, rural tourism, grape molasses, Kechek and dried fruits which have been extensively presented in section 3 of this report. Such opportunities, if pursued, can have a positive impact on the regions in terms of increased economic returns and job creation.

However, such interventions require also support at the macro-economic level, interventions at the policy level to reinforce and maximize impact at the local level. It is worth mentioning that these proposed interventions are in line with the ministerial strategies. Based on this, the following points highlight the main recommended interventions at the policy level required to foster economic growth:

- **Regional Specialization in Crop Production:** This calls for in depth assessment of crops that can be strategic for each area (considering soil property, access to water, market prices and employability)
- **Supporting Ongoing Initiatives and Expanding to Include Other Regions:** Supporting the zoning to organize grazing in each region (working with municipalities): work with municipalities on zoning through assessment and support to identify buffer zones and set a plan for zoning
- **Supporting Government to Increase Law Enforcement:** Improve law enforcement to protect forests, namely in empowering forest guards to better perform their duties, introduce fines in case of law breaking, and improve overall capacity to better manage forest areas
- **Ensuring Animal Health through Equal Access to Quality Vaccination:** Improve the quality of animal vaccination provided by the Ministry of Agriculture, be it in terms of storage, type, or region of administration and ensure all regions have equal access to such free services
- **Quarantine & Border Control:** While this may be challenging but itself and may require more financial and human resources, nevertheless, it is recommended to implement such control, namely at the Syrian borders so as to reduce smuggling that is affecting market transactions, leading to loss in market share as well as bringing in diseases
- **Engaging in Breeding programs:** More of a long-term recommendation but one that is essential given the advancement in the breeding programs other countries have attained, and the need to improve the overall productivity of the local breeds in terms of milk and meat production, and to make it available all year round.

