

AMERICAN UNIVERSITY OF BEIRUT

THE POTENTIAL OF MULTI-FUNCTIONAL  
AGRICULTURE IN LEBANON'S RURAL AREAS

by  
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A thesis  
submitted in partial fulfillment of the requirements  
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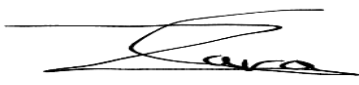
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# ABSTRACT OF THE THESIS OF

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for

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Title: The Potential of Multi-Functional Agriculture in Lebanon's Rural Areas

Rural areas in Lebanon are facing several challenges in the agriculture and tourism sectors. The agriculture sector is responsible for a bulk of rural employment and is considered a major contributor to food and nutritional security. However, the farmers are facing challenges relating to production, marketing their products and lack of full-time farmers. Furthermore, rural areas lack proper infrastructure for tourism and the existing tourism activities are increasing the stress on the natural resources. Consequently, the adoption of pro-poor multi-functional agriculture would promote local tourism, empower farmers, revive the rural communities, promote sustainable agriculture, and primarily enhance the livelihoods of the poor. Accordingly, this research will help in understanding the challenges facing farmers in the Lebanese rural areas and explore the potential of multi-functionality.

A qualitative approach was used in this study using semi-structured interviews. The interviews were conducted with key informants and stakeholders (MoE, MoA, MoT, two NBTOs, five municipalities and two NGOs) in addition to 23 Family Farmers. For the recruitment, snowball sampling technique and searching for contact information online was used. The data attained was analyzed using thematic analysis and identifying themes and sub-themes. The main result sections were as follows: relationship with the agricultural land/village, existing forms of MFA, challenges related to MFA, effects of the Lebanese economic crises on MFA, opportunities related to MFA, recommendations of family farmers and key stakeholders and the perception of NBTOs.

The family farmers are facing various challenges related to agriculture, especially financial difficulties related to agricultural production and the lack of governmental support. However, this has pushed them to adopt new cost-effective strategies which are less harmful to the environment. Also, it has been observed that due to the economic crises, people are coming back to the agricultural lands and realizing the potential between agriculture and tourism.

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## ABBREVIATIONS

COVID-19: Coronavirus Disease 2019

MFA: Multi-Functional Agriculture

MoA: Ministry of Agriculture

MoE: Ministry of Environment

MoT: Ministry of Tourism

NBTOs: Nature-Based Tour Operators

NGO: Non-Governmental Organization

SBR: Shouf Biosphere Reserve

# CHAPTER I

## INTRODUCTION

### **A. Overview**

Rural areas in Lebanon are facing several challenges in the agriculture and tourism sectors. The agriculture sector is responsible for a bulk of rural employment and is considered a major contributor to food and nutritional security. However, the farmers are facing challenges relating to production, marketing their products and lack of full-time farmers. Furthermore, rural areas lack proper infrastructure for tourism and the existing tourism activities are increasing the stress on the natural resources. Consequently, the adoption of pro-poor multi-functional agriculture would promote local tourism, empower farmers (through the diversification of their income), revive the rural communities (through creating job opportunities) and primarily enhance the livelihoods of the poor. In addition, it promotes the use of sustainable practices and makes the best out of the available resources that help conserve the natural environment. Accordingly, this research project will help in understanding the challenges facing farmers in the Lebanese rural areas and explore the potential of multi-functionality.

### **B. Topic and Purpose**

To explore and analyze the challenges of the agricultural sector through the family farmers and key stakeholders' lens and explore the potential of multi-functional forms of agriculture and tourism.

### **C. Potential Significance**

After the Lebanese civil-war period has ended in 1990, unbalanced development strategies were present. These have resulted in a drastic change in rural inhabitant's living patterns and culture, a fallback in the agricultural sector in addition to the deterioration of the landscape. This has led the young generation to move to the urban areas seeking better job opportunities to enhance their living conditions (Ghadban, Shames, Abou Arrage, & Abou Fayyad, 2017). Accordingly, urban bias was present in Lebanon, encouraging people in rural areas to migrate to urban areas instead of developing their agricultural sector and making the best out of their available resources. This confirms Lipton's views in *Why Poor Stay Poor*, stating that poverty in rural areas is attributed to the urban bias resulting in uneven distribution of resources causing poor agricultural and infrastructural reforms in rural areas. Urban bias results in anti-rural policies in many developing countries, causing an increase in prosperity in cities only (Lipton, 1977). Moreover, inequalities and urban bias are interlinked with one another. Harriss argues in his text that "Inequalities within rural areas also owe much to the urban-biased nature of development policy" (theories of peasant economy and agrarian change p: 68) (Harriss, 1992). Besides, Lebanon is one of the most unequal countries in the world, since the top 1% of the richest population receives approximately a quarter of the total national income (Alvaredo, Assouad, & Piketty, 2019).

For that reason, shifting to multi-functional agriculture is associated with various benefits. The multi-functional farms focus on three pillars: food production – environmental preservation and upgrading the farms to hot spots for tourism. It embraces the maintenance of landscapes and the conservation of biodiversity. It produces high quality products (i.e., organic products) with an enlarged added value. These products are

produced with sustainable use of energy, water, and other resources. Moreover, the farm would include on-farm processing and agri-tourism activities which would enlarge accessibility to the countryside and create short value chains. The adoption of these activities would promote the diversification of income and strengthen the overall income at the household level (Van der Ploeg & Roep, 2003).

#### **D. Research Question**

What are the existing forms, conditions, challenges and potential of multi-functional agriculture?

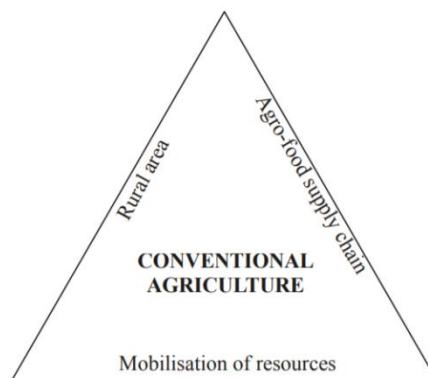
## CHAPTER II

### LITERATURE REVIEW

#### A. Multi-Functional Agriculture

Multi-functional agriculture (MFA) is said to serve as a framework for viewing agriculture in developed countries. In fact, it is not only seen as a foundation of food production but also having a holistic role which involves environmental and cultural management in addition to the development of rural areas. With respect to the United States, MFA has been largely addressed at a macro-economic level when discussing topics related to trading. However, the concept of multi-functionality has emerged in the European Union when discussing the future of agriculture and rural development (Brown, Goetz, & Fleming-Muñoz, 2012).

The farm enterprise is divided into three main aspects (**Error! Reference source n**



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Figure 1. The three sides of the agricultural enterprise (Van der Ploeg & Roep, 2003)

First, the agricultural aspect, or agri-food supply chain, which is related to the production of animal products, crops, and other commodities. The second aspect is the rural side, where the farm enterprise contributes to the overall rural landscape and its

natural value; and it is part of the local and regional economy, culture and is essential for social relations in the countryside. The third aspect is the mobilization of resources. These resources are present in the form of water, animals, knowledge, machinery/technology, financial capital, knowledge/expertise etc. These three aspects are dependent on each other and mastering farming lies in the mutual coordination between them (Van der Ploeg & Roep, 2003).

Rural development transforms and reproduces these three components as shown in **Error! Reference source not found..**

Figure 2. The structure of rural development at farm enterprise level (Van der Ploeg & Roep, 2003)

The agro-food supply chain, rural area and mobilization of resources are subjected to deepening, broadening, and re-grounding respectively. In the process of deepening, the agro-food supply chain, rural area and mobilization of resources expand and relink agricultural activities with other players and agencies. This would help in delivering products that have added value and meet society's demand. For instance, organic farming, producing high quality products and creating short linkages between production and consumption all fall under the deepening process. However, the broadening process entails the reorganization and the amplification of the rural side. These changes can be in the form of agro-tourism, management of nature/land,



diversification (i.e., production of energy) and the creation of on-farm activities (i.e., care activities). These kinds of activities increase the income of the farms since society is willing to pay for the offered services and goods. Lastly, the re-grounding process involves the using of different sets of resources or adopting new patterns of resource use. These can be in the forms of pluri-activity which is partly built on off-farm income, making the farm less dependent on the variations of big commodity markets. For example, having a farm and an urban job would secure the person's income. Furthermore, a second form of re-grounding is farming economically, which revolves around the use of low external input agriculture. Thus, using fewer external inputs and loans and efficient using the available internal inputs (i.e., manure, savings etc.). Farming economically falls under the notion of sustainable agriculture, increase the farm's income with the same level of production (Van der Ploeg & Roep, 2003).

The three different pillars of MFA, broadening, deepening and regrounding can be assessed according to specific activities or measures. For instance, broadening measures include agri-tourism and recreation which result in farm-related income. Agri-tourism and specialty food sectors provided extra income for farmers through using different marketing strategies. These were in the forms of direct farm-to-table food marketing, farmer's markets, pick-your-own fresh produce, web-based sales etc. (Brown et al., 2012). Also, other activities related to broadening are custom harvesting and agricultural services which generate extra income. Whereas one of the ways to measure deepening activities is by measuring direct sales to consumers. On the other hand, regrounding activities can be measured though determining intensive off-farm labor (Brown et al., 2012).

Accordingly, these three processes transform the farm into a multi-functional enterprise. The farm would be addressed as a multi-product firm entering various markets. These markets aren't only for agriculture commodities, but also might involve tourism, services, labor, and energy markets. This would result in a more complex rural enterprise focusing on the production of new products and services which would support its sustainability (Van der Ploeg & Roep, 2003). Definition of multi-functionality, diversification and pluri-activity can be found in **Error! Reference source not found.**

Table 1. Definition of phenomenon (Multi-functionality, diversification and pluri-activity) (Aguglia, Henke, Poppe, Roest, & Salvioni, 2009)

<i>Concept</i>	<i>Unit of analysis</i>	<i>Definition</i>
<i>Multi-functionality</i>	Agriculture / Farm	Use of the farm's resources for agricultural production and non-market outputs (e.g., landscape, organic products, quality products, on-site conservation of biodiversity, etc.).
<i>Diversification</i>	Rural business (agricultural and non-agricultural)	Use of the business' resources for agricultural and non-agricultural production (e.g., photovoltaic energy, rural tourism, etc.).
<i>Pluri-activity</i>	Family household	Use of family resources on or off the farm.

One of the main aims of MFA is to create “nested markets”. According to Van der Ploeg, nested markets have less to do with globalized systems of exchange and more with exchanges in real meeting places. These markets are driven by ethical and social values and focus on the quality of the products, human relationships, and the development of environmental protection. The products produced by the farmers are unique and differ from conventional agricultural outputs since the farmers dedicate their time, energy and resources to produce new goods and services. This will result in an enlarged added value for the products produced (Hebinck, Schneider, & van der Ploeg, 2014).

When it comes to Europe, rural development and MFA are strongly present, in practice and political discourse. The rural development led to a shift in agriculture and

contributed to the living in the countryside. However, there is a shortage in rural and agricultural policies and the involvement of the state. In fact, rural development strengthened the economies of the farms and restructured regional rural economies. In brief, rural development contributes to the consolidation and the creation of new interlinks between agriculture and society, the improvement of the socio-economic conditions of the farm in specific and rural area in general, and the reconstitution of rural resources (Van der Ploeg & Roep, 2003).

### *1. Indicators of Multifunctional Practices (MP)*

The Italian Farm Accountancy Data Network (FADN), which is a micro-database systematically gathered and national in scope, have developed indicators that reveal the presence on multifunctional practices (MP). These indicators reflect MP associated with environmental and socio-economic functions, MPs producing socio-economic externalities at the local level and traditional forms of diversification and pluri-activity. However, they are missing indicators related to energy production and the provision of social and therapeutic services (Aguglia et al., 2009). The multifunctional practices indicators are listed in **Error! Reference source not found.**

Table 2. Multifunctional practices in the FADN data base (Aguglia et al., 2009)

<i>Indicator of multifunctional practice</i>	<i>Broadening</i>	<i>Deepening</i>	<i>Regrounding</i>
Organic process/product certification		X	
Use of low-impact production methods		X	
Certification of origin		X	
Traditional products		X	
Direct sales		X	
Extensification		X	
Agritourism/farm stays	X		
Landscape conservation	X		
Biodiversity conservation	X		
Renting machinery	X		
Leasing of land	X		
On farm processing		X	
Pluriactivity			X

## **B. Rural Development and Family Farming**

Rural development and family farming intersect various levels. “Rural development is reconstructing the eroded economic base of both the rural economy and the farm enterprise”. Rural development encouraged the implementation of innovative methods to combat the increasing costs that were associated with an increase in external inputs and expensive technology associated with the modernization project. These types of capitalistic forms of agricultural systems that focused on mass production not only increased the costs related to transactions and energy, but also paused a growing concern for the environment, animal welfare and food safety (Van der Ploeg & Roep, 2003).

Chambers highlights the importance of using a people-centered approach to rural development when addressing small-scale farms (Chambers, 1994). Family farms are small-scale socioeconomic structures using landholding to pursue diverse agricultural, pastoral and natural resource management activities relying on the labor of family members. These farms primarily did not receive the right support from the green revolution, as discussed by Patel, since the green revolution mostly targeted large-scale farms (Patel, 2013). The focus has been shifted toward these types of farms since they

were neglected before due global capitalistic movements, which encouraged Chambers, Moyo and Bush to highlight the small farmers' situation (Bush, 2016; Chambers, 1994; Moyo, 2016).

Family farms have implemented and sustained rural development initiatives as a way out of the modernization paradigm, which promoted industrialization and large-scale investments. Consequently, this has led the European farming population to focus on rural development that serves their own interests. Rural development is seen as a new agricultural development model that encompasses many elements, including but not limited to quality production, new short chains linking producers and consumers, organic farming, management of nature and landscape, agro-tourism and low-cost sustainable farming etc. Thus, rural development is considered multifaceted in nature. Major activities that are increasingly adopted by family farms in Europe are innovative cost-reduction strategies, direct marketing, and the integration of care-activities into farms (Van der Ploeg & Roep, 2003).

### ***1. Slow Food Movement in Italy***

The international Slow Food movement has started in Italy in 1986 aiming to preserve the traditional food, pay attention to traditional farming methods and techniques in addition to highlighting the pleasures of eating that includes the social aspects of sharing a meal etc. The main problems that encouraged the development of this movement is the threats on biodiversity and the unsustainable ways of food production and consumption. Some of the movement's goals is to safeguard the environment, promote sustainable practices, and promote direct relations between the consumers and the farmers in addition to protecting and supporting the local communities. It basically opposes the intensive

style of agricultural production because it is seen as “unsustainable modern agribusiness”. It also emphasizes creating cohesive stakeholder engagements, thus creating strategic connections between local players (e.g., producers, local authorities, cook etc.)

MFA and rural development are said to be proper responses to the outcomes of agricultural modernization that have resulted in an agricultural crisis especially in Europe. According to Van Der Ploeg, “the farm income basis can be diversified by broadening, deepening and re-grounding the farm enterprise” which are the main elements of multi-functionality (Van der Ploeg & Roep, 2003).

## **C. Agricultural Sector**

### ***1. Family Farming in Lebanon***

Climate change will impact the agricultural sector in the MENA region due to the change in weather patterns (change in temperature, water precipitation and droughts), thus affecting the livelihoods of the farmers (Jobbins & Henley, 2015). Moreover, other stressors are affecting the farmers in Lebanon, such as rapid urbanization expanding since the 1965 with 87.5% of its population living in urban areas in 2016 and is projected to reach 90% by 2050 (Marzin, Bonnet, Bessaoud, & Ton-Nu, 2016). Furthermore, the farmers in Lebanon face various challenges relating to production (i.e., financial difficulties and lack of eco-friendly agricultural activities), marketing their product (since they’re competing with large-scale produces) and the lack of full-time farmers (due to migration of rural communities to the cities). As for the political constraints, a major challenge facing the agricultural sector in Lebanon is the high cost of production, since the government doesn’t assign an adequate budget to improve this sector with a lack of incentives such as subsidies (Women Economic Empowerment Portal, 2014). However,

the country has a lot of potential relating to the agricultural sector. In fact, the agricultural sector is responsible for a large bulk of rural employment and is considered a major contributor to food and nutritional security. For instance, one-third of farmers in Lebanon used their produce primarily for on-farm consumption and food security in 2010. Moreover, various small-scale farmers tend to process dairy products, mainly through short channels providing extra revenues for the farmers (Marzin et al., 2016). However, the COVID-19 outbreak have worsened the socio-economic situation in Lebanon. This was reflected through an increase in unemployment rate, reduction of the household income and a disruption of the supply chain, raising the risk of food insecurity (Ministry of Agriculture, 2020).

## *2. Ministry of Agriculture and National Agriculture Strategy (2020-2025)*

The governance of the agricultural sector involves different actors in society ranging from governmental, non-governmental, to civil and private actors. The Lebanese government allocate a budget for the sector and issue relevant legislations (MoE, GEF, & UNEP, 2015). A legislative Decree No.5246 issued in 1994 decided to organize the Ministry of agriculture in Lebanon. It formulates the strategic framework and develops practical policies and programs that improve the sector facilitating the operations of investment, production and marketing (Ministry of Agriculture, 2021). The Ministry of Agriculture (MoA) is the main governmental actor that regulates and manages the agriculture sectors and oversight, supervises and delivers specific basic needs. The ministry includes two general directorates which are the agriculture and cooperatives and are responsible for agri-food sector and all active cooperatives respectively (**Error! Reference source not found.**) (MoE et al., 2015). The ministry lacks both the funds and human resources restricting its scale of interventions. However, national (e.g.: Green

Line, MECTAT etc.) and international (e.g.: YMCA, Word Vision etc.) NGOs (Nongovernmental organization) are offering wide varieties of programs targeting local farmers across Lebanon in different agricultural disciplines (organic farming, pesticides handling, irrigations etc.) (Ministry of Enviroment, 2001).

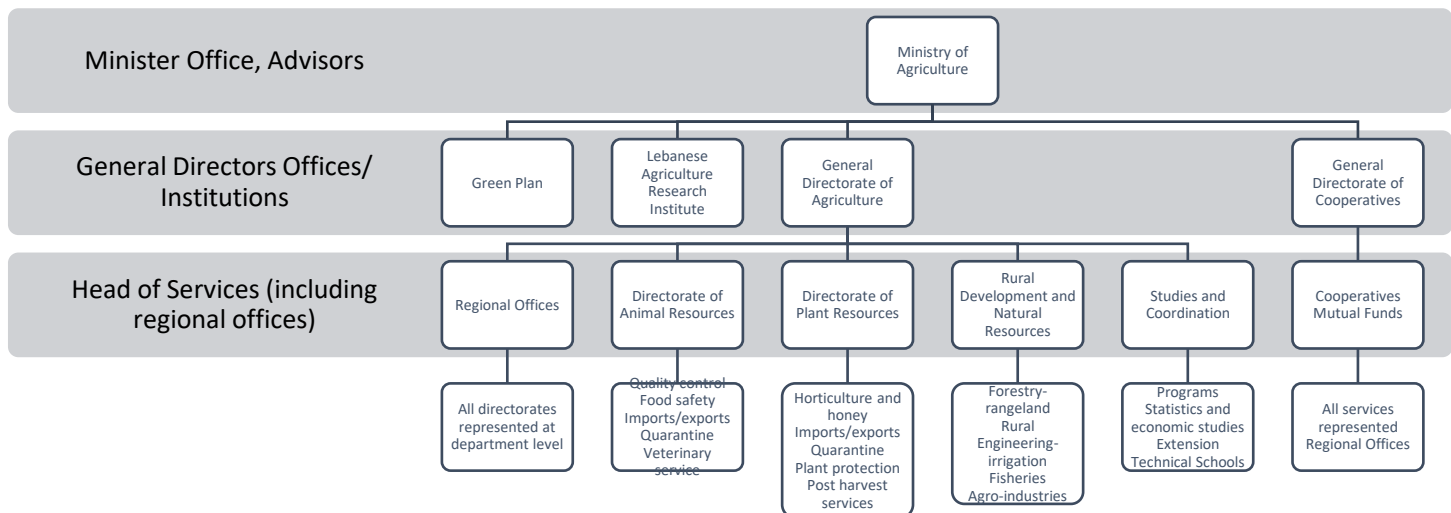


Figure 3. Organization of the Ministry of Agriculture (MoA) (Ministry of Agriculture, 2020)

A 5-years National Agriculture Strategy (NAS) was developed by the Ministry of Agriculture for the years 2020 till 2025. It aims to increase the resilience, inclusion, and competitiveness of the Lebanese agri-food system in addition to the promotion of sustainable agri-food system. It is designed based on five strategic interventions constituting of: restoring the livelihoods and productive capacities of farmers and producers, increasing agricultural production and productivity, enhancing efficiency and competitiveness of agri-food value chains, improving climate change adaptation and sustainable management of agri-food systems and natural resources in addition to strengthening the enabling institutional environment. The NAS overall cost is 710 million US dollars and is divided across sectors in Figure 4 **Error! Reference source not found..**



Only around 14% of the budget is estimated to be contributed by the government and the 73% financial gap is estimated to be covered by systematic resource mobilization (Ministry of Agriculture, 2020).

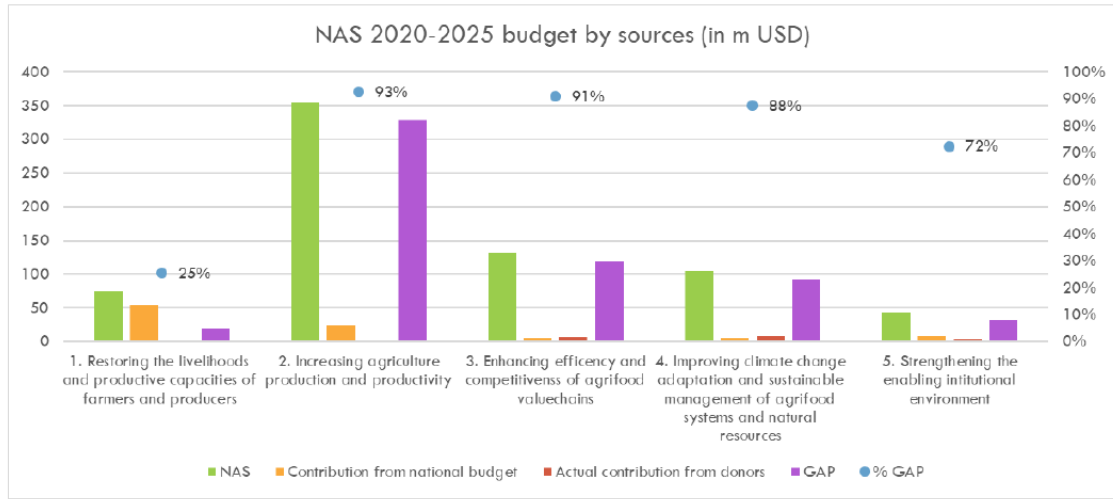


Figure 4. NAS 2020-2025 budget by sources (in m USD) (Ministry of Agriculture, 2020)

### 3. *Agriculture in Lebanon*

#### a. Macroeconomic context

Lebanon’s growth relies heavily on the inflows being transferred from the Lebanese diaspora in addition to foreign investment and funds. Although its real GDP annual growth averaged 9.2% between the years 2006 and 2010, it decreased to almost nothing between 2018 and 2019. In fact, a constant increase of government debt reached 155% of GDP in 2019. Whereas the inflation rate has been steadily increasing since 2015 and having food price inflation spiking to 150.3% year-on-year in April 2020. The exchange rates of Lebanese Lira with US dollars have contributed to increasing the costs of the imports and making them expensive (Ministry of Agriculture, 2020). Due to the economic crisis, a lot of businesses have closed while others have decreased their employees’ incomes. This has led to an increase in the unemployment rate reaching a 11.4% on

average in 2018 and as high as 40% in some governorates. These factors will directly reduce the access of vulnerable citizens, including farmers and agri-food producers, to basic services and food and eventually worsen their socio-economic status (Ministry of Agriculture, 2020).

b. Agriculture in the Lebanese economy

The agricultural sector in Lebanon accounts for 3% of the GDP in 2016-2018. However, approximately 24% of the total employment in the country is in agriculture and agri-food industry. The rural population is around 771 thousand people or 11.2% of the total population in Lebanon. Yet, they are considered relatively poorer than the rest of the population. In fact, the agriculture-related activities account to 80% of the local GDP in the poorest regions in the country including Akkar, Northern Beqaa's and South etc. Also, around 70% of the farm operators cultivate less than 1 hectare, whereas only 4% of farms operate on more than 6 hectares (Ministry of Agriculture, 2020).

The agricultural sector in Lebanon is characterized by different weaknesses and is subjected to threats. These include but are not limited to, small farms and agribusinesses, poor farmers' organization and limited participation in value chains, low productivity in key products, weak post-harvest infrastructure and organization, and high dependency on import and export. For instance, approximately 70% of farm operators cultivate less than 1 hectare. Whereas the high costs of production are due to high input costs, which include land rental, and the high cost of imported products (e.g., seedlings and agrochemicals etc.). In the presence of high cost of production, income diversification through engaging in off-farm activities have become essential for small-scale farmers and producers. With respect to productivity, Lebanon yields in most items, except chicken, sheep and goat

meat, are considered underperforming in comparison with other countries in the MENA regions caused by following outdated techniques and low investment in technology. Furthermore, Lebanese farmers need to grow varieties that meet high-end markets and produce good quality of products up to the international standards. As for the import dependency in Lebanon, it is estimated to be 75-80% of total food consumption. Also, climate change and population growth are increasing the pressure on the water resources, affecting the agricultural sector which is considered the largest consumer of water in the country (Ministry of Agriculture, 2020).

On the other hand, the agricultural sector in Lebanon is characterized by several strengths and opportunities. These include but are not limited to favorable agro-ecological conditions, favorable geographical location, high innovation potential, niche product demand growth, domestic market expansion potential, high export potential and high cooperatives potential. In fact, the Mediterranean climate is suitable for a wide range of agricultural products. Lebanon's location is considered strategic for trading since it's close to Arab, Russian, European and African markets. The consequences of the financial crisis will reduce the Lebanese people's purchasing power towards imported agricultural products, thus is considered a great opportunity to substitute it with local production. Therefore, increasing the employment of marginal population groups (Ministry of Agriculture, 2020).

## **D. Tourism Sector**

### ***1. Tourism Globally***

In a world facing global issues related to globalization, conflicts, and poverty, it is advocated that tourism has the potential to contribute to world peace. In fact, in the book

“Tourism, progress and peace” Kelly and Moufakkir argue that there is more to peace than the absence of war and there is more to tourism than economic interests. Nevertheless, tourism has both positive and negative impacts on different levels. These levels include environmental, ecological, socio-cultural, and economic aspects. They believe that tourism contribute to development and poverty reduction since it’s a labor-intensive sector, creating opportunities for both youth and women. Additionally, the supply chain present in tourism complements and support other economic activities (ex: traditional agriculture, transport, and handicraft). Small and medium enterprises (SMEs) face lower entry barriers in the tourism sector, which facilitates their involvement in poor areas. Other non-material benefits of tourism are encouraging community pride in the local culture and the appreciation and reservation of the natural environment and environmental resources. Mostly, tourism helps in breaking down barriers created by politics and the differences present in culture, nationality, ethnicity, lifestyle and economic development (Moufakkir & Kelly, 2010).

In 2009, about 77.3 million jobs were directly offered by tourism around the world. If the indirect job opportunities of the sector are considered, they are equivalent to 219.8 million jobs, that is 7.6% of the world’s total. Moreover, it contributed to 9.4% of the world’s total GDP in the same year. This shows how tourism is unique as a development sector for many countries around the globe. However, it is worth to mention that the Third World countries still cannot receive the same amounts of profits the First World countries make out of tourism (Mustafa, 2010).

Public and private investment are presented worldwide, helping the development of the economy in general and the tourism industry in specific. Therefore, this has resulted in an increase in the number of tourist destinations and the promotion of different kinds

of tourism. These include ecotourism, cultural and heritage tourism, adventure tourism, health tourism and sport tourism. These different kinds caused an increase in economic benefit to countries worldwide due to a rise in the number of arrivals and profits (Mustafa, 2010). Nevertheless, it has caused significant negative impacts on both the environment and communities in the Arab world. Furthermore, in the late 1970s, the neoliberal model of tourism mainly focused on gaining profit at all costs without taking into consideration the local communities or the natural environment. Also, the economic benefits generated from these neoliberal agendas were mainly skewed towards the wealthy investors, thus contributing to the increase in inequalities (Wearing, McDonald, Taylor, & Ronen, 2019).

## ***2. Tourism in Lebanon***

It has been seen in Mustafa's work that Arab countries don't comply with tourism guidelines and that there is a gap in the policy formulation and agenda setting (Mustafa, 2010). In the case of Lebanon, there is a weak compliance with the international ecotourism principles and guideline. This highlights the fact that ecotourism in the country remains an unorganized sector; with the nature-based tour operators (NBTOs) showing a weak understanding and awareness of the ecotourism concept (Abou Arrage & Hady, 2019). Other primary challenges facing rural areas are that they lack proper infrastructure for tourism. The increase in the number of visitors increases the stress on both the infrastructure and natural resources (USAID Lebaon, 2014). However, the Lebanese government invested in rural tourism through setting the first comprehensive national rural tourism strategy in 2015. It mainly aims to enhance domestic tourism in the country with one of its objectives is to improve the quality of the visitor's experience in rural areas (Ministry of Tourism, 2014). Fortunately, Lebanon has a lot of natural reserves

and beautiful relaxing sceneries that would attract tourists. Thus, the villages in Lebanon should take advantage of this and convey an image of authenticity by highlighting on its natural and cultural richness and providing touristic packages that suit different age groups (Abou Arrage & Hady, 2019). Fortunately, Lebanon dedicated a ministry for tourism shows their interest in improving this sector, and especially having departments like tourists' rest houses and tourism agencies and guides etc. present in Figure 5.

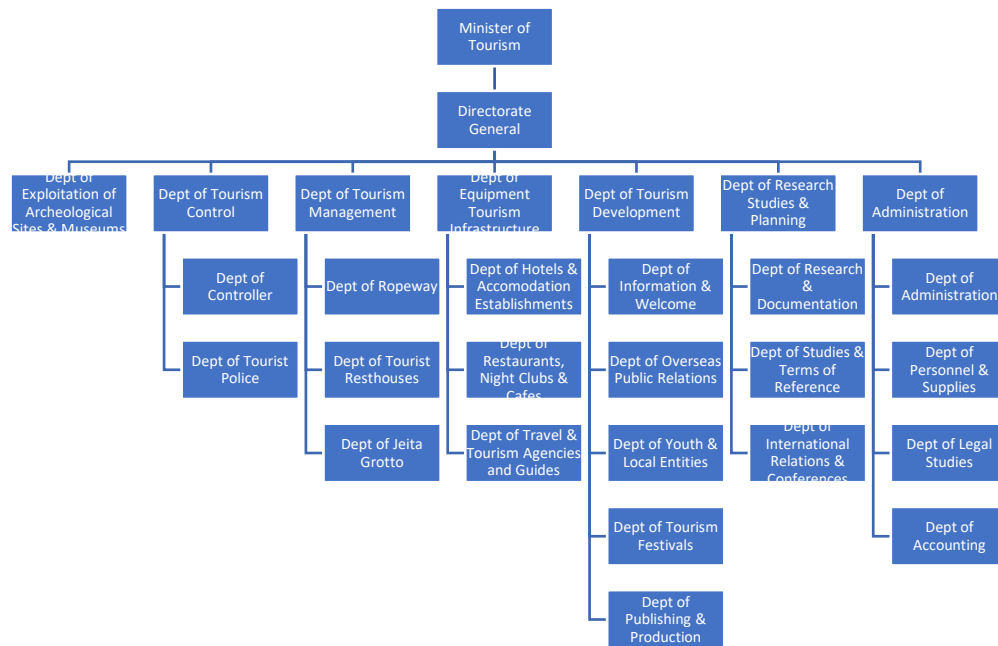


Figure 5. Current Organization Chart of the Ministry of Tourism, Lebanon (MOT, CDR, & JICA, 2004)

The tourism sector in Lebanon had many difficulties, especially which the tourism industry relies on the country's image and investment. The development of the tourism sector in Lebanon has been affected by the civil war that lasted between 1975 and 1990. After the war has ended, the stability in the Lebanese economy resumed since much of the infrastructure was rebuilt helping the tourism sector to prosper. Yet, the tourism industry collapsed again due to the brief war with Israel that occurred in 2006. These instabilities discourage long-term investments in the country in the form of infrastructure or efforts and money of tour operators. Also, since tourism is a service that relies heavily

on image, this could be a major obstacle to attracting high-spending tourists from America and Europe (Morakabati, 2013). On the other hand, Bassil, Hamadeh and Samara have found evidence for tourism-led growth hypothesis In Lebanon between the years 1995 and 2013. They validated the relationship existing between tourism and economic growth despite the terrorist events facing the country (Bassil, Hamadeh, & Samara, 2015). Also, Abou Arrage and Hady argue that “Despite the political and security situation in the country between 2011 and 2018, a steady increase in rural tourism activities and accommodation services has been recorded”(Abou Arrage & Hady, 2019).

The Ministry of Environment is responsible for the establishment of the protected areas in Lebanon since 1993. These protected areas are important in order to preserve the cultural and ecological heritage of the country. They are divided into three categories that are nature reserves, nature sites and protected forests. The nature reserves are fifteen and can be found in Table 3 including Al Shouf Cedars, Horsh Ehden and Palm Islands etc. and are geographically scattered across the Lebanese territory Figure 6. These protected areas were supported by different international institutions including but not limited to the Global Environment Facility (GEF), the United Nations Environment Programme (UNEP) in addition to the Ministry of Environment and other local NGOs (MoE et al., 2015).

Table 3. Information of the Nature Reserves in Lebanon (MoE et al., 2015)

Nature Reserve	Legal Instrument	Date of Creation	Approximate Surface Area (ha)	Elevation Zone (meters)	International Designations	Management Plan
Horsh Ehden	Law 121	March 09, 1992	1,740	1,200 - 1,900	Important Bird Area	Yes
Palm Islands	Law 121	March 09, 1992	417.73	Sea Level	Ramsar Site, Specially Protected Area, Specially Protected Area of Mediterranean Importance (SPAMI), Important Bird Area	Yes
Karm Chbat	Decision 14/1	October 06, 1995	520	1,400 - 1,900	None	No
Al Shouf Cedars	Law 532	July 24, 1996	15,647	900 - 2,000	Biosphere Reserve, Important Bird Area	Yes
Tyre Coast	Law 708	November 05, 1998	3,889.25 (Land: 176.32, Sand: 6.12, Water: 3,706.81)	Sea Level	Ramsar Site, Specially Protected Area of Mediterranean Importance (SPAMI)	Yes
Bentael	Law 11	February 20, 1999	75.31	250 - 800	Important Bird Area	Yes
Yammouni	Law 10	February 20, 1999	2,100	1,400 - 2,000	None	No
Tannourine Cedar Forest	Law 9	February 20, 1999	195.48	1,300 - 1,800	Important Bird Area	Yes
Wadi Al Houjeir	Law 121	July 23, 2010	3,595	250 - 400	None	No
Mashaa Chnaniir	Law 122	July 29, 2010	27	500 - 530	None	No
Kafra	Law 198	November 18, 2011	40	~650	None	No
Ramya	Law 199	November 18, 2011	20	~650	None	No
Debl	Law 200	November 18, 2011	25	~600	None	No
Beit Leef	Law 201	November 18, 2011	20	~550	None	No
Jaj Cedars	Law 257	April 15, 2014	20	~1,650	None	No

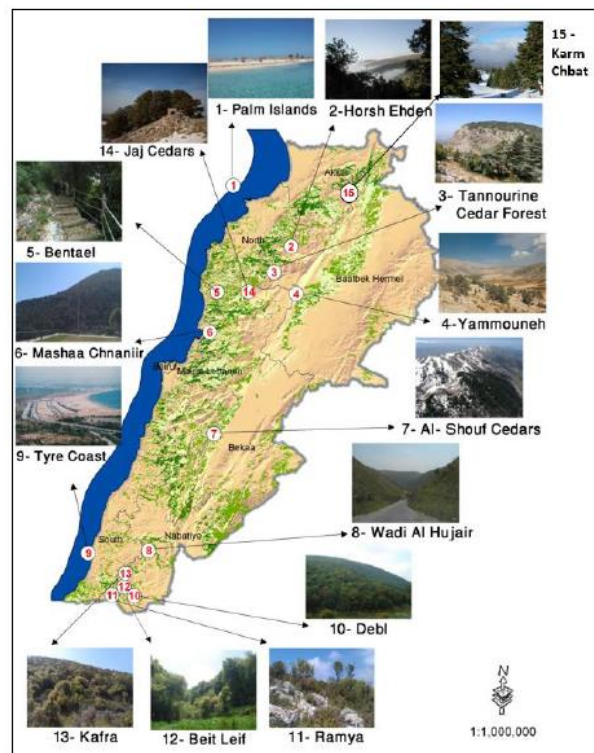


Figure 6. Nature Reserves in Lebanon located on the map (MoE et al., 2015)

A study was conducted in two villages (Hasroun and Jezzine) in Lebanon to economically assess the application of agri-tourism in 2001. It showed that there's a



presence of demand and supply relating to agri-tourism in these areas. In specific, there's a demand for agricultural and locally produced products in Lebanon, which can be a great opportunity for the farmers to generate extra income. Also, locals were open to host visitors with minimal restrictions on the types and style of the visitors. Its main findings confirmed that promoting agri-tourism may generate extra income for the farmers in addition to preserving their cultural and physical settings (Moukarzel, 2001).

### 3. *Pro-Poor Tourism*

Pro-poor tourism (PPT) interventions intend to increase the net benefits for the poor from tourism activities and ensure that the growth in tourism will eventually contribute to the reduction of poverty. It provides opportunities for the poor in the form of economic gain, livelihoods benefits or participation in decision-making. Sustainable tourism and pro-poor tourism overlaps, yet they are quite different. The two perspectives are very distinctive and provide different perspectives (Figure 7).

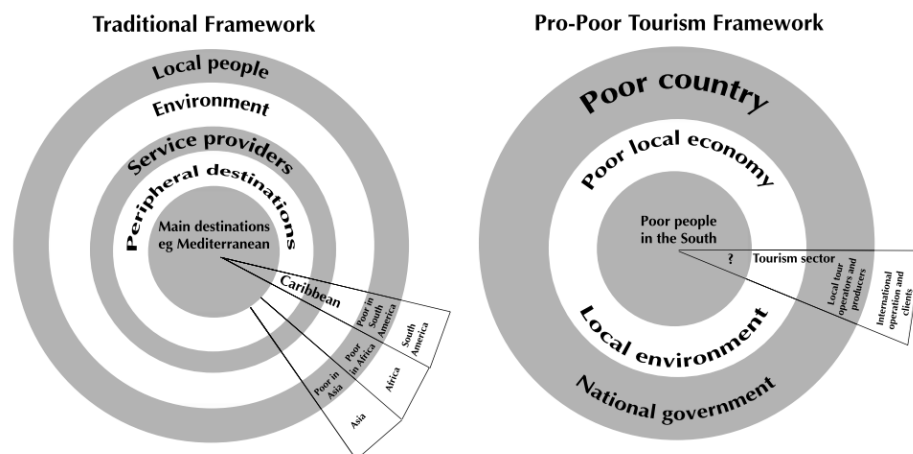


Figure 7. Sustainable, or traditional, tourism framework and pro-poor tourism framework (Ashley, Roe, & Goodwin, 2001)

PPT mainly focuses on the countries of the South, and its core focus is poverty rather than environmental sustainability, which is the main focus of sustainable tourism. Poverty reduction is not usually a major component of the sustainable tourism agenda, while PPT interventions put it as its main focus. Nevertheless, tourism is already affecting the livelihoods of millions of poor people, both negatively and positively. Thus, pro-poor growth in tourism is considered essential to reduce poverty through tourism activities. PPT strategies encompass the promotion of community tourism to develop enterprises and local capacity. Furthermore, it involves working with different stakeholders from the public and private sectors. The private sector includes enterprises and businesses, while the public sector mainly target policies and regulations in addition to the local community and ensures its participation in decision-making (Ashley et al., 2001).

This PPT framework is somehow similar to the bottom-up approach that was encouraged by Chambers. The Bottom-up approach or farmer first development has influenced the way that rural development is practiced today. It puts participation and empowerment as a main principle in development. Whereas the top-down development limits the farmer's benefit such as in the case of using modern technology associated with the green revolution. Getting farmers to participate more fully in technology development is a good strategy yet it can be challenging. Moreover, participatory methods allow farmers to communicate their knowledge and preferences, enable them to identify and analyze problems, in addition to set priorities and plan solutions. Therefore, it is the optimal method to use participatory development by professionals and researchers (Chambers, 1994).

## CHAPTER III

### RESEARCH DESIGN AND METHODS

#### A. Overall Approach and Rationale

Since the current models of agriculture and tourism in Lebanon aren't being regulated, facing a lot of challenges, and not targeted towards the poorest, this study will explore and analyze the challenges and opportunities of multi-functional forms of agricultural and tourism through the family farmer and key stakeholders' lens.

The study adopted a qualitative research approach (semi-structured interviews). According to Berg, qualitative research refers to the meanings, concepts, definitions, and a description of things. It captures the meaning being put by human beings in two ways: the like of people of an object/event or what event/phenomenon is attached to this object (Berg, Lune, & Lune, 2004). For Denzin, qualitative research involves an interpretive and naturalistic approach to the world. The researcher in qualitative research is seen as "bricoleur", or a person who assembles the images into montages. Thus, the viewer interprets different shots, bringing psychological and emotional interpretive experience united together (Berg et al., 2004; Norman K. Denzin & Lincoln, 1994).

Both Atkinson and Hammersley believe that ethnography and participant observation are viewed as a humanistic and interpretative approach as opposed to the scientific and "positivist" position, which is similar to Denzin's view on qualitative research saying that it involves an interpretive and naturalistic approach to the world (Norman K Denzin, 1994; Hammersley & Atkinson, 1994). Bush believes that research should promote justice and equality. Mainly, it should give voice to small farmers through promoting a bottom-up approach, especially since there is inequality of landholding in the MENA. He said that "To understand rural MENA it is necessary to build from analyses of small

farmer strategies for managing and coping with their livelihoods, in a time of economic crisis, to the processes that link farmers with policy makers at the local, national and international level” (Clark & Cavatorta, 2018). This was also highlighted in Appadurai writings when he argues that research is a right, especially for the people who didn’t have the chance to reach high educational levels (for instance, usually small-scale poor farmers) (Appadurai, 2006). Accordingly, this way research in general and qualitative research in specific would be used to higher the voices of the poor.

In dependency-oriented writings, scholars point out that the expansion of capitalism in agriculture generates increased economic differentiation within the rural population, creating a relatively small capitalist class and a growing agricultural proletariat (Glavanis & Glavanis, 1983). Glavanis highlights that there is bias in the ethnographic literatures and that it includes a lot of stereotypes of rural life in the Middle East. For instance, the peasant was seen as “so ignorant, unaware, diseased and tradition-bound” (Glavanis & Glavanis, 1983, p. 6). Atkinson and Hammersley then support their argument by mentioning that “traditional ethnographic work has been criticized for embodying a hierarchical and therefore the undemocratic relationship between researcher and researched” (Hammersley & Atkinson, 1994, p. 254). Similarly, Firth believes that fieldwork might create this issue of unequal power between the fieldworker and those observed; yet he sees action anthropology as a style that implies close involvement with the community and help them address the challenges they face (Firth, 1984); this type of approach is similar to Chamber’s view on participatory development for rural area (Chambers, 2014).

## B. Site, Population, Research Context

The recruitment and data collection were conducted in the Shouf, Lebanon. The area was selected based on the presence of family farmers with some farmers interested in sustainable agricultural practices in addition to the presence of the SBR promoting the good agricultural practices and local tourism (including agri-tourism). The Shouf Reserve is the biggest reserve in Lebanon and attracts many visitors. For instance, the SBR was the main attraction between other reserves (Jabal Moussa, Horsh Ehden and Tannourine Cedars) with the highest numbers of visitors in 2018 accounting to 64% out of 178,000 visitors (Figure 8) (Abou Arrage & Hady, 2019).

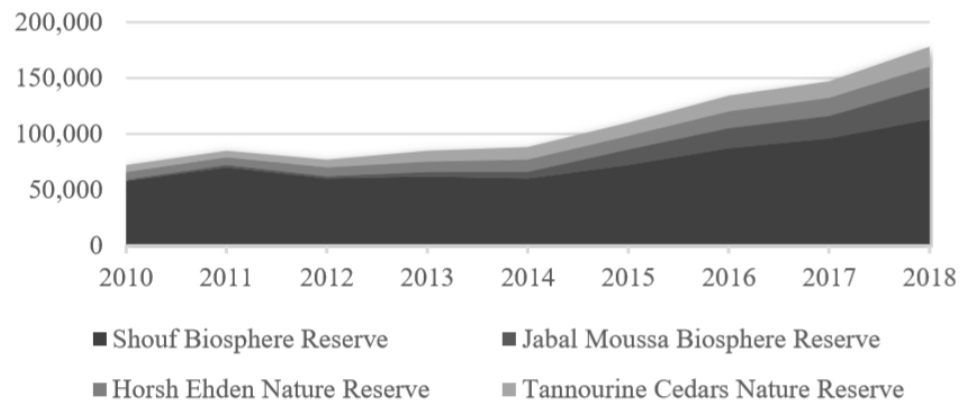


Figure 8. Evolution of the number of visitors to Lebanon's nature reserves (Abou Arrage & Hady, 2019)

Furthermore, there's a presence of favorable weather and attractive green landscapes for visitors (Ministry of Tourism, 2014). The SBR is a unique model in Lebanon for the integration of tourism with agriculture which might not be present in other rural areas. The family farmers in the Shouf are interested in this combination especially with the presence of the support from the local municipalities, governmental authorities and local NGOs. Also, the presence of Darb El-Karam trail, the first food trail in Lebanon, which

was established by the Food Heritage Foundation in 2014 connecting 9 villages in Higher Shouf and West Bekaa (as shown in Figure 9) contributed to agri-tourism in the region. Where the visitors are offered the chance to participate in picking and preservation activities in the harvest seasons. Also, the visitors are offered to eat at the house of food producer with local specialties or to stay at the host's place. These activities help in raising awareness of the rural food culture through promoting traditional dishes that are tied to the destination's culture. Consequently, this would result in the diversification of the income of the hosts through promoting rural tourism.

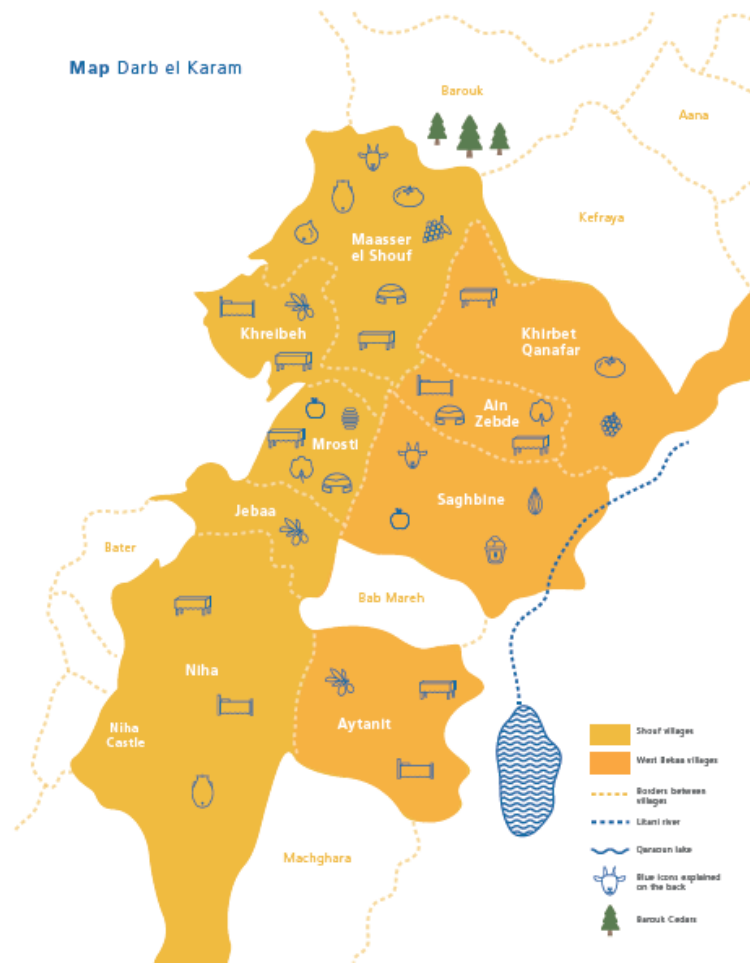


Figure 9. Darb El Karam Map (Food Heritage Foundation, n.d.)

The inclusion criteria for the small-scale family farmer was as follows: Lebanese men/women, aged between 18 and 65 years old, living in the studied area for more than 5 years, owning a small farm (less than 2 hectares) (Rapsomanikis, 2015); and is responsible of or performs farming activities. The participants were recruited on a voluntary basis.

### **C. Recruitment**

The research team contacted the different public and private entities in addition to the potential farmers referred by the SBR. Participants from both public and private entities were approached after collecting their contact information on the entities' website (which is publicly available). Whereas the farmers referred by the SBR, using snowball sampling technique, were identified and recruited in the following methods to preserve their privacy. The contact information of potential subjects was shared with the investigators, only after an approval was sought by the seed participant to share this information.

### **D. Data Collection Methods**

Data collection took place over 2 months (March and April 2022) hand in hand with the data analysis using thematic analysis in the Shouf (). Semi-structured interviews were conducted with key informants and stakeholders accounting for a total of 35 interviews. The interviews were done with representatives from MoE, MoA, MoT, two NBTOs, five municipalities and two NGOs and 23 Family Farmers (Figure 10**Error! Reference source not found.**). The interview guide was developed according to multifunctional practices indicators present in Table 2, in addition to other key questions needed to explore

challenges and opportunities related to MFA. The participants were asked to provide their oral consent for the interviews according to an interview script. The interviews were conducted face-to-face and lasted between 45 to 60 minutes and were audio taped. The timing was set prior to the interview considering the availability of the participant. Because of Covid-19 pandemic, preventative measures will be taken (wearing masks, use of sanitizers and maintain social distance).

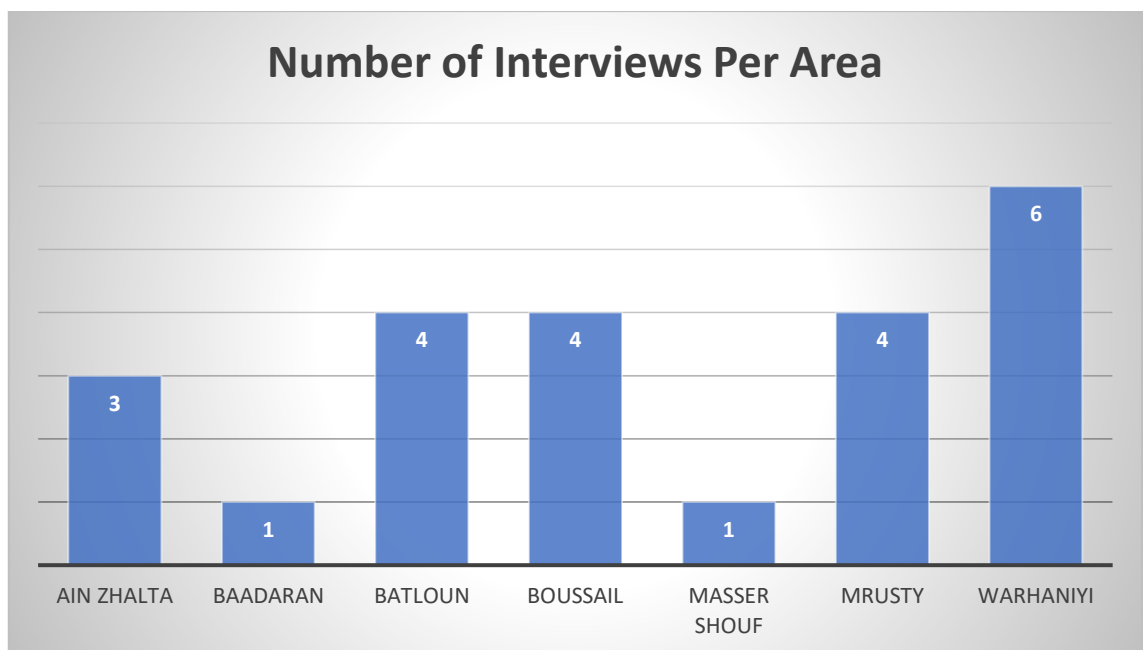


Figure 10. Distribution of interviews with family farmers per area



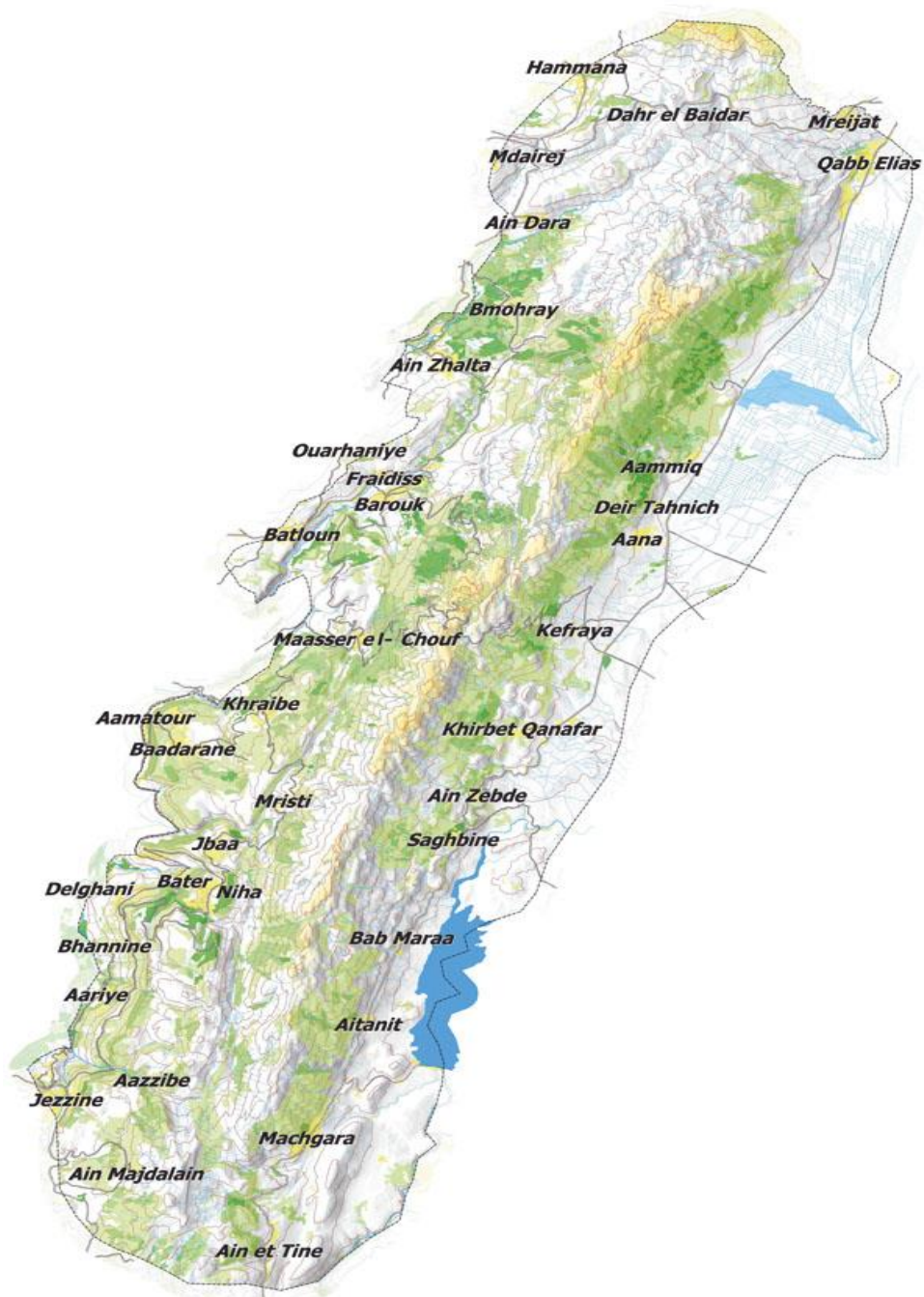


Figure 11. Map of the villages in Shouf (SBR, n.d.)

### **E. Data Analysis Procedures**

The collected data was transcribed verbatim and was analyzed using thematic analysis to identify common themes and sub-themes. Thematic analysis allows the researcher to associate the analysis of the data with the frequency of the themes and then relate the

theme to the general content. Coding is considered a major part of the analysis since it brings out the essence and meaning of the raw data collected (Mannan, 2020).

#### **F. Trustworthiness**

Before the first data collection dialogues take place, the research team developed an early familiarity with the culture and community to be researched and studied. This was done through reading documents/research articles relative to these areas in addition to making exploratory visits to the organizations to meet the people there who helped in the recruitment of participants. After seeking their approval to participate, the research team introduce themselves, the university they are studying in, in addition to the topic and purpose of this research. This helped in increasing the trust between the researcher and the participants. In essence, breaking the ice and creating a good bond between the researcher and the participants can help the participants to feel more at ease and express themselves freely.

#### **G. Ethical Considerations**

Interview script was prepared prior to data collection, and ethical approval for the study was sought from the Social and Behavioral Sciences Institutional Review Board at AUB. The autonomy of all participants in this study was ensured through the anonymity of the data analysis process. No personal identifiers (name, ID number) will be collected at the time of data collection or at the time of the analysis. The collected data will be kept on password-protected computers to ensure confidentiality, and only the research team will have access to the data. No deception will be used, and participants will be recruited

based on their voluntary free will. Furthermore, this is a study representing a minimal risk to participants.

## CHAPTER IV

### RESEARCH FINDINGS

This section describes the findings with the themes that emerged from analyzing the interviews which were carried out with local municipalities, ministries, and family farmers. The main sections present are the relationship of family farmers with the agricultural land/village, existing forms of MFA, challenges related to MFA, effects of the Lebanese economic crises on MFA, opportunities related to MFA, recommendations of family farmer and key stakeholders and the perception of NBTOs to MFA.

#### A. Relationship with the Agricultural Land/Village

Table 4. Relationship with the agricultural land/village

	<b>Sub-themes</b>	<b>Illustrative Quotes</b>
Relationship with the agricultural land/village	Relationship with the agricultural land	<p><i>“My relationship with the land? It is surely a relation that is rooted to the land”</i></p> <p><i>“The land is like our mother/father”</i></p> <p><i>“The more we take care of the land, the more it will produce”</i></p>
	What makes the village unique	<p><i>“We have a lot of archeological sites, mills, water steams; in addition to the cultural heritage tied with music and traditional dances like “Dabke””</i></p>

All the farmers interviewed demonstrated their strong bond with their agricultural lands. Many intentionally use the word “rooted” when describing their relationship with the land. While another farmer has described the land as its primary care giver. Some highlighting the importance of taking care of the land stating which is considered promising as it shows the farmers believe in the potential of his/her land. An organic farmer expressed that the land is dear to his heart since it was owned by his father for the

last 50 years, aiming to make it self-sufficient (with the presence of solar panels, rainwater harvesting and livestock etc.), and that he is proud as they have reached this goal today.

When asked about what makes their village unique, half of the farmers listed the main touristic sites, trails or agricultural lands, the other half focused on describing the interpersonal qualities they have. For the touristic sites it included Roman bridges and archeological sites, water springs, museums, and others. Whereas for the interpersonal qualities, the “loving and caring attitude” of the villagers were highlighted, in addition to their generosity and great hospitality. They expressed that they are immensely helpful, which was further validated with examples shared throughout the interviews. For example, they emphasized how the villagers support each other through the good and bad events, and that they supported each other financially during the difficult times.

## B. Existing Forms of Multi-functional Agriculture

Table 5. Existing forms of MFA and its components

Component of Multi-functionality	Sub-themes	Supporting Quotes
<b>Broadening</b>	Farms stays and agri-tourism	<i>“Visitors take a basket and pick the vegetables and fruits they want, paying money for the experience and learning techniques related to agriculture like where to cut the crops and how to avoid harming adjacent crops in the process”</i>
<b>Broadening</b>	Preventing birds hunting and promoting biodiversity	<i>“I plant diversified crops and I inform my neighborhood to stop bird hunting in the area; we keep the crops for the birds and insects”</i>
<b>Broadening</b>	Renting of lands/machinery	<i>“I rent machines like small tractors, and I don’t rent lands; I use my own land”</i>
<b>Deepening</b>	Crop rotation	<i>“ In agriculture we don’t use mono-cropping, we change the type of crop each year”</i>
<b>Deepening</b>	Varieties helping each other (Mutualistic?)	<i>“We plant crops that help each other (I.e., the presence of basil with tomato helps prevent insects”</i>
<b>Deepening</b>	Food processing at home	<i>“We have food processors in the house, and our mother’s taught us how to use them. We used to watch her carefully till we grasped all the steps and then started processing food on our own”.</i>
<b>Deepening</b>	Organic farming certificate	<i>“Attaining a certificate is hard and expensive.”</i>
<b>Deepening</b>	Short versus long value-chains	<i>“If we have excess agricultural output, we sell them directly to customers we know after processing them to jams, juices (i.e., apple juice and cherry juice)”</i> <i>“The direct communication between the farmer and the customer is better, as it will eliminate the middleman, and the profit will not be reduced.”</i>
<b>Deepening</b>	Using chemical/organic pesticides	<i>“I’m minimizing the use of chemicals and trying organic pesticides like garlic”</i>
<b>Regrounding</b>	Optimizing the use of agricultural land	<i>“Planting crops that grow vertically such as green beans, cucumbers and using plastic tubes to save space”</i>
<b>Regrounding</b>	Work outside of the farm	<i>“Of course, the income from agriculture alone is not sufficient. We are investing in agriculture to be self-sufficient. We plant to save money and buy less from the market. When you are planting your own fruits and vegetables you are sure of the quality of the products and that it doesn’t include excess chemicals”.</i>

### 1. Farm stays and agritourism

It has been noted that most of the family farmers have a touristic component in their farm activities whether directly or indirectly. For instance, several farms have touristic

activities as part of visiting the farms experience which include: “pick and eat” services, food processing, cow-milking, donkey rides, learning about agricultural practices and last but not least the presence of guest houses or staying overnight. Other farmers expressed that they work as touristic guides, bake for visitors, or cook meals for visitors which their recipes are tied to the village’s heritage.

International tourists and Lebanese expats are visiting the Shouf area. Also, festivals that occur like in Batloun or Mrusty are increasing the number of visitors; especially that they are focusing on the cultural heritage and include farmer’s market which are consequently helping the farmers to sell their agricultural products.

## ***2. Preventing birds hunting and promoting biodiversity***

Most of the family farmers use crop rotation and introduce new varieties and avoid mono-cropping. Whereas only few remain on replanting the same kind of crop. Almost half of the interviewed farmers clarified. While one of the farmers noted that he is planting legumes to increase the fertility of the land. One of the two farmers reported that they notify their neighborhood to not hunt birds in the areas in order to conserve the area’s biodiversity.

## ***3. Agricultural Practices (Crop Rotation – varieties that help each other – renting machineries/lands)***

Only a minority of farmers own machinery while the rest rent machinery like tractors from agricultural cooperative or other farmers. Almost all the farmers don’t rent land, although two farmers expressed that they would be interested in renting other lands if they had the financial means aiming to generate more profit.

#### ***4. Food Processing at Home***

Although most of the farmers interviewed said that they keep on using old recipes, a small number of farmers, who happened to be youth, expressed that they like to experiment and try new recipes. The traditional recipes are sought by old people (grandparents) to reserve the taste. On the other hand, youth farmers interviewed are eager to learn old recipes and are being taught from by their parents. This dedication exerted by the youth for learning shows commitment from the youth and demonstrates a closer step towards sustainability and relying on agriculture and food processing for long-term benefits. In fact, they are also trying new recipes and products like pizza sauces and pesto sauces with nuts which are gaining enormous attention from customers.

#### ***5. Organic Farming Certificate***

Only one family has an old organic farming certificate, while other families either are not interested in organic farming or were complaining that attaining a certificate is hard and expensive.

#### ***6. Short versus Long Value-Chains***

The youth organic farmer shared that he was facing challenges in selling the agricultural output, since the shelf-life of the vegetables is short. Nevertheless, this pushed him to start processing the food (i.e., transferring it to Mouneh or drying the food etc.) which resulted in a longer conservation of the product and having a fixed selling price that the customer cannot reduce as when it happens when selling raw agricultural products. Also, it is also worth to mention that the production of Mouneh and food processing is a type of social event were each family gather to produce food like tomato



paste and baking bread etc. people in the cities are more interested in purchasing agricultural products and Mouneh since almost all the houses in the village produced its own Mouneh. Thus, sometimes they transfer their agricultural products to relatives' shops in the city as they are sold quicker and there is a higher demand of rural home-made Mouneh in the cities.

All the organic farmers sell their products directly to consumers to eliminate middleman. Also, they are selling their produce to people who suffer from chronic illnesses. Whereas for the farmers using pesticides, they sell their products both directly to consumers or to vegetables markets or shops. Yet, they expressed that they prefer direct selling to get more profit.

### ***7. Using Chemical/Organic Pesticide***

It has been observed that all the farmers are minimizing the use of chemicals and pesticides due to the huge increase of their prices as they are mostly imported. Many complained as well about the inefficiency of the pesticides and that they are in some cases diluted. Subsequently, they demand the government to monitor the chemical composts and pesticides being present in the market. Accordingly, this has pushed farmers to use organic pesticides out of necessity. Examples of the organic pesticides used include but are not limited to garlic, vinegar, ash, hot peppers, and Melia Azedarach. Almost all the farmers are using organic compost from cattle, and the SBR is helping in providing the compost made from manure and woodchips as mentioned by a representative from SBR.

### ***8. Optimizing the Use of Agricultural Land***

It has been noted that all the farmers were making the best out of the available land. In a farm visited in Batloun, the family is making sure that all the agricultural area including its borders are planted with diversified crops aiming for an ecological farm. They are taking more care of the land's health and are considering it as a valuable asset with an economic return. Preventing it from becoming arid due to the excessive use of chemicals in pesticides. Another farmer is using new agricultural practices to make the best out of the available land like planting crops that grow vertically. And using plastic tubes to save space. Accordingly, they recommended that the entities that are interested in supporting agriculture (i.e., MoA and NGOs etc.) raise awareness and conduct training in new agricultural techniques like the ones they are already implementing.

### ***9. Work Outside of the Farm***

Only the farmers who offered services to tourists (pick and eat, bed and breakfast etc.) reported that their incomes are sufficient as they are not working additional jobs outside of farm. Whereas the farmers who solely relied on the land for producing agricultural products said that the income from agriculture alone is not enough, so they are working jobs outside of the farm. For instance, a female farmer mentioned that she also does crafts from recyclable materials like plastic (i.e., bags and accessories) and she's also a touristic guide.

### C. Challenges Related to Multi-Functional Agriculture

Figure 12. Main reported challenges of MFA



Table 6. Challenges related to MFA

	<b>Sub-themes</b>	<b>Illustrative Quotes</b>
<b>Challenges</b>	Cost of transportation	<i>“I used to transfer the vegetables to the farmer’s market in cities, but now it’s more challenging with the increase in the fuel prices.”</i>
	Marketing challenges	<i>“In the last year, due to the change in dollar rate it was easier for us to sell our products against imported products as they are cheaper”</i>
	Maintenance costs	<i>“Drop irrigation system needs maintenance every year”</i>
	Weather conditions – unexpected costs	<i>“You cannot plant the same crops as before because of the changes in the weather patterns”.</i>
	Water availability	<i>“We face shortage of water especially at the end of the summer”</i>
	Relations with governmental entities	<i>“The municipality doesn’t listen to our concern or support us financially”</i>
	Impacts of COVID-19	<i>“Due to COVID-19 lockdown and working remotely, we had more time to take care of the land”.</i>
	Inadequate municipality budget	<i>“The municipality try to help as much as it can, relying on its modest budget”</i>

### ***1. Cost of Transportation***

People used to transfer the vegetables through trucks to the cities but now it’s more expensive due to the increase in oil prices. Transportation was having a negative impact on the tourism sector, as people are not coming to camping sites, touristic sites, and Shouf Biosphere Reserve due to the huge spikes of gas prices. For example, a representative from the SBR highlighted that in the years 2018/2019 the reserve used to welcome around 120,000 visitors, yet after COVID-19 and economic crises in 2020, the number dropped to almost half if not less.

### ***2. Marketing Challenges***

Many farmers pointed out how the imported agricultural products are competing against the local production. Especially that the government isn’t restricting the importing

of these products. However, one of the farmers mentioned that it was easier to sell their products against imported products as the dollar rate is increasing which is making the local products cheaper for the potential customers.

### ***3. Maintenance Costs and Unexpected Cost***

Regular maintenance costs are related to the machinery used (i.e., tractors, sprayers etc.), irrigation systems like drip irrigation and solar systems. On the other hand, other unexpected costs can emerge for the farmer. For instance, one of the farmers shared that their old plastic greenhouse was destroyed due to change in weather (heavy wind), which made him replace it by a new one which is bought in fresh dollars. While another farmer also complained about changing weather conditions and specifically how snow destroyed the agricultural walls and that he had to reconstruct these all over again. Furthermore, the extreme weather conditions (heavy wind and snow) contributed to breaking the trees or the removal of flowers from trees (thus inhibiting the growth of the fruits). Also, one of the farmers stated that they can't plant some of the crops they used to plant in the past due to the change in weather patterns in the area.

### ***4. Water Availability***

The challenges related to water availability varied across villages. For the villages that has lakes for rainwater harvesting, they reported no problems related to water availability (i.e., Mrusty). Other villages having water springs near their agricultural land where the water is transferred to them through gravitational force also didn't complain about water scarcity. However, villages at a higher altitude (i.e., Batloun and Bmohray)

reported problems related to water availability especially since they need to use water pumps (which function on diesel).

Many farmers in the Shouf are interested in investing and creating rainwater harvesting stations to preserve the rainwater which usually goes to sea without benefiting from it. Some of the villages had the privilege to create more than 5 rainwater harvest stations (i.e., Mrusty), while other villages especially the ones that can't get water naturally from gravitational force (i.e., Bmhoray etc.) are also interested in rainwater harvesting, yet aren't able to secure funds for it.

#### ***5. Relations with Governmental Entities***

The family farmers voice their concerns either through the agricultural cooperative or the Shouf Biosphere Reserve to the municipalities or central governmental entities like the Ministry of Agriculture. While some of the farmers reported that they have bad communication with governmental entities as they don't hear their concerns or support them financially. However, others claim that the municipality and ministry of government help when they have the means. The rest of the farmers either do not communicate their needs or they say that there is no response from the governmental entities.

There's a shortage of staff members in the municipalities working on development projects. In some cases, municipal members are living outside of the village, and in other cases we can see the head of municipality playing different roles. This issue does not only delay the services and the transactions in the municipality, but also prevents the municipality from managing projects and applying for project proposals to develop the agriculture and tourism sectors in the area.

Fortunately, these challenges have encouraged some of the municipalities to start working on the creation of a Municipal Union that would help strengthen their case when contacting central governmental entities and further enhance collaborations between the adjacent villages in the Shouf.

### 6. Impacts of COVID-19

The lockdown due to the COVID-19 pandemic had its positive and negative consequences on the farmers. While various farmers reported an increase in local tourism, some mentioned a drop in the number of tourists (especially during the lockdown and roads closure). A family farmer that used to work as a chef in a touristic restaurant had to leave because the restaurant had to close. Nevertheless, one of the organic farmers stated that the COVID-19 lockdown and working remotely gave them the opportunity to give more attention to the land.

### D. Effects of the Lebanese Economic Crises on Multi-Functional Agriculture

Table 7. Effects of the Lebanese Economic Crises on MFA

Impacts of the Economic Crises	Sub-themes	Illustrative Quotes
Positive Impacts	Experiment with organic farming (even in small quantities)	<i>“We started experimenting in a small area that is away from the land we spray with chemicals”</i>
	Interest and investment of youth in agriculture and tourism	<i>“NGOs are helping by giving us trainings, seeds and seedlings”</i>
	Agriculture for household food security	<i>“I’m mainly planting fruits and vegetables to feed my family during winter and summer”</i>
	Conserving seeds instead of buying new seeds in the next season	<i>“We are using methods that are less costly, we’re buying less chemical fertilizers and pesticides.”</i>

	Impact on organic farmers was less	<i>“For organic farmers, the dollar rate will affect them less since they don’t need to buy imported chemicals etc.”</i>
	Processing raw food and vegetables (Mouneh)	<i>“Sometimes we are having challenges in selling raw products, but we started processing the vegetables and fruits into Mouneh for the product to have a longer shelf-life.”</i>
<b>Negative Impacts</b>	Decrease in purchasing power	<i>“People are pickier and more attentive to the prices when buying.”</i>
	Couldn't plant more because of increase in agricultural costs	<i>“Buying seeds and seedlings is more costly, you can't event buy 4 or 5 seedlings, and if the agricultural land is not well prepared for planting the seedling will die”</i>
	Transportation of agricultural products is harder	<i>“It is harder to sell agricultural produce especially because it is difficult to transport them to the cities with the increase in fuel prices”</i>
	Maintenance costs (i.e., green houses, machinery)	<i>“The plastic greenhouse got destroyed by heavy wind, and I had to pay in fresh dollars to get a new one”</i>

### ***1. Positive Impacts***

After the rapid increase in the prices of the chemicals and pesticides, several farmers started considering switching to organic farming even for small quantities as trial. Also, people are buying more local products since it is becoming cheaper, thus increasing the profits for farmers.

A youth farmer shared that his peers were not interested in agriculture and preferred to have a desk job. However, with the dire economic situation and the lack of job opportunities, this has pushed these youth to try getting involved in agriculture. And with the educational and technical support from the existing NGOs in the area, this has increased their commitment to agriculture and tourism. Thus, they started viewing tourism and agricultural activities/services as a vital source of income. The farmers are using social media and TV channels to market their agricultural products and services. Also, they are marketing their product by indirectly making the customers taste them in



products they already know. Like for example using pesto sauce with traditional Lebanese Man'ousheh.

The agricultural land needs certain requirements (plowing and fixations etc.) for the seeds and seedlings to grow. With the time and efforts being invested by the farmers in the land, this shows that the farmers in the Shouf are committed to agriculture for a long-term benefit. Furthermore, the same farmer expressed his interest in planting vegetables that are expensive, to save money instead of buying them and gave planting garlic as an example which made him self-sufficient for one year. Nonetheless, a few farmers shared that they are conserving existing seeds and seedlings to use them in the future rather than buying them at a later stage.

## ***2. Negative Impacts***

A significant decrease in the purchasing power for some people, pushed them to be pickier and more attentive to the prices when buying agricultural products. Unlike before, when they used to pick various varieties without asking about the prices. Moreover, it is now more challenging to plant new seeds and seedlings as the prices are increasing especially if they're imported. Additionally, the increase in prices of fuel hindered the regular transportation of agricultural produce to the cities. Also, the increase in the dollar rate is burdening the farmers with additional production costs, which include the maintenance of the machinery and greenhouses that need to be paid in US Dollars.

## ***3. Quality Over Quantity***

All the farmers mentioned that they prioritize quality over quantity, especially that they consume their own products. Thus, the economic crises did not change their

priorities. Although they prefer to increase the quantity of production to increase the profit, the quality of product is their main priority.

## E. Opportunities Related to Multi-Functional Agriculture

Table 8. Opportunities related to MFA

	Sub-themes	Illustrative Quotes
Opportunities	Touristic sites and visitors buying agricultural products	<i>“A lot of people visiting touristic sites in the village pass by to pick-up fruits or vegetables or buy from our agricultural products”</i>
	Self-sufficiency and sustainability	<i>“We have a rainwater harvesting system, we do not need electricity for agricultural activities, and for instance we get the milk from the cow and drink it right away. If we produce excess milk, we take it to the factory to make dairy products (cheese and yogurt). Also, we installed solar panels to light up the farm at night and pump water”</i>
	Support from local NGOs	<i>“Many NGOs are supporting with seedlings, technical support (i.e., equipment), and trainings. Training includes how to use organic pesticides (i.e., garlic, onions, chili peppers, organic soap, plant-based oils and herbs. Also, they are guiding us on what are the crops that help each other so that they can plant them together”</i>
	Willingness to partner to with key stakeholders	<i>“We would like to be in any development project that would prosper our village”</i>
	Improving agricultural practices	<i>“I’m asking experts and neighbors about new agricultural practices that are less costly and require less pesticides”</i>
	Preferred extra source of income	<i>“Our aim is to develop a project were there is a balance between agriculture and tourism, and visitors can help in the food processing of vegetables and fruits and distillation of roses and lavender...”</i>
	Activities targeting the poorest	<i>“We allocate a share of the agricultural products for the vulnerable families in collaboration with the municipality to help them identify these families”</i>

### 1. Support from Local NGOs

Local NGOs are helping the farmers in various ways. For instance, the local NGOs are committed to giving training on good agricultural practices, food processing and marketing of their products. As well as providing them with guidelines on how to deal with compost and encouraging them to adopt good agricultural practices as mentioned by a representative from the Shouf Cedar Society. Moreover, the Shouf Cedar Society in collaboration with local municipalities like Barouk and Mrusty organize stands for

farmer's market enabling the farmers to sell their agricultural products and raw fruits and vegetables. Also, women in the Shouf are getting training of solid waste sorting, how to dry fruits and how to make jams. In addition to how to use organic pesticides (i.e., garlic, onions etc.) and educating them on what are the crops that benefit each other's.

## ***2. Touristic Sites and Visitors Buying Agricultural Products***

The presence of touristic sites and activities has encouraged more people to come to the villages. Consequently, this has led to an indirectly positive impact on the family farmers in the village, where the visitors are buying from the farmers (short chains from producer to consumer) generating more revenue. They are also engaging in agri-tourism activities like picking fruits and vegetables. In addition, several farmers reported an increase in international tourists to the rural villages. The Shouf Biosphere includes trails in the forests, archeological ruins, incredible landscape with sunset views, welcoming people, in addition to delicious local food with huge varieties.

## ***3. Self-Sufficiency and Sustainability***

One of the family farmers described how he could reach self-sufficiency. In fact, he was able to collect water through rainwater harvesting and provide electricity from solar panels. He also uses organic pesticides and preserve the fruits and vegetables produced to last longer through sun-drying (i.e., figs) . He uses manure and believes its sufficient without the need to buy chemicals. Moreover, few farmers are planning to develop agri-tourism projects that will help create job opportunities to woman who are not working and knows how to produce Mouneh.

#### ***4. Extra Sources of Income as Reported by the Farmers***

When asked how the family farmers would prefer to add an extra source of income, some focused on finding new outlets to market their products, others were interested in learning new food processing techniques like drying food and distillation and planting new varieties, while the rest, which was the vast majority, were interested in encompassing tourism services. These tourism services ranged from providing bed and breakfast, to offering tours in the agricultural lands and teaching agricultural techniques or providing breakfast/lunch/dinner to visitors.

#### ***5. Willingness to Partner with Key Stakeholders***

Only a few farmers said that they aren't willing to partner with key stakeholders to develop the tourism and agricultural sector in the area. One of the reasons why they aren't interested in partnering is that they are afraid of the hidden agenda of external organizations and that they don't want to be partnering with an organization that is opposite to their political views. However, the vast majority demonstrated an interest in collaboration and mentioned that they are already collaborating with agricultural cooperatives, SBR and municipalities. They are interested to be part of development projects that would create an overall positive impact on the village.

#### ***6. Improving Agricultural Practices***

Family farmers are currently more driven to ask for new agricultural methods that are more sustainable and less costly. For instance, the ones who left the land unattended for a long time are relying back on the agricultural land as an additional source of income. They are consulting with agricultural engineers, experts, and agricultural pharmacies.

### ***7. Targeting the Poorest***

The agricultural and tourism activities in the Shouf are benefiting a wide array of people. Families involved in agricultural, which include Syrian families, are benefiting from agricultural activities as they are provided in some cases with food, a shelter, and a share from the land production. A family farmer offering touristic services explained how the services he is providing an income to at least 3 families and 10 people that helps in agriculture, cooking food for visitors, or acting a touristic guide. Another family farm explained how they collaborate with the municipality to identify vulnerable families to provide them with a share of their agricultural produce for free. This can be viewed as a solid base for future development projects with the presence of this type of solidarity.

### **F. Recommendations of Family Farmers and Key Stakeholders**

The governmental entities (Ministries and municipalities) should listen to the challenges facing the family farmers. Few farmers demanded an increase in agricultural training, specifically training that teaches how to reduce agricultural costs. One of the farmers highlighted the importance of training with an expert so that they can learn from him/her through direct application of their knowledge. Others demanded providing them with equipment and machinery and financial resources. Also, farmers performing sustainable agriculture practices emphasized the importance of spreading education and awareness on regulating pesticide. As a result of people using excessive amounts of pesticides and having agricultural pharmacies selling huge amounts of chemicals (more than the farmers need) to gain more profit.

Several farmers focused on pressuring the government to regulate imports and especially the illegally imported products in trucks from illegal borders and without paying taxes.

One of the farmers highlighted the importance of monitoring the distribution of agricultural support (i.e., pesticides, seeds and seedlings etc.), in order for it to be distributed fairly and avoid corruption and nepotism. Moreover, the types of seeds and seedlings being granted by supporting organizations (public and private) should be suitable for the area, as each crop requires certain environmental conditions to grow. Besides, the seeds/seedlings shall be diversified, as they used to provide the farmers in the region with one crop, thus promoting mono-cropping. In a land where a farmer is planting growing one type of crop, if faced by any challenge or diseases, it would affect all his production.

The three interviewed ministries suggested various recommendations. The representative from the Ministry of Agriculture recommended doing a 10 min awareness video on the TV before the beginning of the news on good agricultural practices as the TV is one of the best channels to reach the farmers. Furthermore, the representative from the Ministry of Environment emphasized the importance of developing training and improving infrastructure as these are the basis for the development of the agricultural sector in the rural areas. According to a representative from the Ministry of Tourism the creation of Destination Management Organization “DMOs” can play a huge role in developing a rural tourism strategy in the region.

### **G. Perception of Nature-Based Tour Operators on MFA**

The NBTOs interviewed expressed that the government supports mainstream tourism instead of tourism in the rural areas. TV commercials and national tourism strategies focus on visiting the main touristic castles and landmarks and hotels. They added that they can create a small-scale impact in their respective villages, as they don't have support from the government to expand their activities at the national level. Consequently, they suggested organizing a national awareness campaign that highlights the importance of preserving the environment. Mainly highlighting that the nature in Lebanon and rural tourism in specific is an important source of income in this country. Thus, every village should be improving its infrastructure and tourism sector within its capability.



## CHAPTER V

### DISCUSSION OF MAIN FINDINGS

The present study explores and analyzes the challenges and opportunities of MFA through family farmers and key stakeholders' lens. Findings show that family farmers are attached to their lands since they were inherited from their ancestors and are considered their primary source of food.

We have seen the urban bias being present in Lebanon, were people in the rural areas used to migrate to the cities to find jobs searching for a stable income and health insurance, etc. (Lipton, 1977). Nevertheless, after the health crisis (COVID-19) and economic crisis (inflation) in Lebanon, several villages in the Shouf have seen a reverse migration episode. Farmers have reported that people living in the cities who were originally from the rural areas are moving back to their local communities, including their own children. After coming back, they started working on land restoration, planting, and cultivating. The crises encouraged people to coming back to the agricultural lands and realize the potential between agriculture and tourism. Indeed, rural tourism can be seen as a secure income source and helps in the preservation of local villages' cultural heritage (Ohe, 2008; Schmitt, 2010). In other cases, MFA in general and agri-tourism in specific has been observed as an essential livelihood strategy for some family farmers and increasing the self-confidence of rural women (Schmitt, 2010).

Youth showed eagerness in investing in both the agriculture and tourism sectors. They are spending significant time learning new agricultural practices, food processing techniques and new marketing strategies. They are being innovative with the types of recipes they are creating tailored towards customer's needs. In fact, they are producing

high quality products with enlarged added value which are being sold at higher prices as similar to MFA element discussed by Van der Ploeg & Roep (Van der Ploeg & Roep, 2003). Mainly local NGOs are giving training on good agricultural practices, food processing and marketing of their products. However, the reliance on NGOs alone is not sustainable; since funds provided are not continuous and sustainable, and they could end development projects at their own convenience. Consequently, this would result in a negative and devastating impact on the agricultural and tourism sector in the area.

All MFA components have been reported by the family farmers in the Shouf. The dominant MFA component present was deepening which was reflected in activities related to agricultural practices (crop rotation, Mutualism, shifting to organic pesticides), food processing at home and the reliance on short value-chains. For instance, Mutualism, which is planting crops that benefit each other, is considered a sustainable method in agriculture that helps in creating and maintaining diversity, and resulting in more productivity (Kugbe, Yaro, Soyel, Kofi, & Ghaney, 2018). Similarly, multi-cropping can help with pest management and improvement of soil quality, thus accounting for a more sustainable approach in agriculture (Maggio, Sitko, & Ignaciuk, 2018). Primarily, the reliance on short value-chains is creating meaningful relationships between people, which is similar to the kind of relationships that are present in the nested markets animated by ethical and social values (Hebinck et al., 2014). In contrast, broadening was present in the form of agri-tourism activities (pick and eat, learning about agricultural practices in farm, staying at the farm etc.), the conservation of biodiversity, prevention of birds hunting and the renting of machineries. On the other hand, regrounding was observed in activities relate to optimizing the use of agricultural land and working outside of the farm.

The challenges reported were diversified and related to distinct aspects. For instance, the economic crises affected the purchasing power of the farmers making it harder for them to transport their produce in trucks to the cities. However, this pushed for the development of farmer's market in the local communities and organizing festivals which resulted in positive outcomes on the area. Farmers had the chance to market and sell their products without bearing the burden of transportation costs, which are currently rocketing and selling their products to supermarkets in cities reducing their profits. In addition, with the presence of hiking trails and archeological ruminants in Baadaran, Barouk and Batloun, tourists are also interested in visiting the area and experience their gateways in nature. Furthermore, the tourists would have the chance to walk in the Shouf Biosphere Reserve, which is being monitored on a regular basis and centered on eco-tourism services and experiences. Subsequently, the visitor would have the chance to buy fresh agricultural produce and processed agricultural products.

Villages suffering from shortage of water, encouraged farmers to think about solutions ranging from constructing solar panels to creating rainwater harvesting stations and make the best out of the available resources (renewable resources such as sun light), yet these projects need funds which the farmers are actively looking for.

Farmers are baring challenges related to climate change, like increased precipitation, wind, and longer winter seasons. For instance, one of the farmers reported that heavy weather conditions destroyed his trees and plastic greenhouse, emerging as an additional hidden cost. These changes in weather patterns confirm with the anticipated climate change impacts (increase in ambient temperature and reduction in precipitation) are predicted to decrease Lebanon's agricultural production. These impacts are foreseen to

harm both livestock and crops and spread climate-related diseases and pests, which will result in additional costs on the farmer (MoE/UNDP/GEF, 2015).

The NBTOs focused on how the local communities are harming the environment and creating more environmental pressure on it confirming with the “Rural tourism value chain assessment report” prepared by USAID in 2014 (USAID Lebanon, 2014). Also, rural tourism lacks a coherent marketing strategy (Ministry of Tourism, 2014); therefore, rural tourism activities and services should be highlighted in the media more often.

Training sessions, follow-up and awareness shall be targeted on how to use the pesticide in better ways. In fact, they shall focus on spreading awareness on how many sprays per season are required, the ultimate concentration needed per spray, and how to spray aiming to have minimal residue levels, in case they are willing to export their products, to meet export standards. Furthermore, raising awareness is needed on how to properly follow the guidelines listed on the chemical products, and getting familiar with the proper spraying guidelines). Also, selecting the correct pesticides and herbicides to minimize the resistance of the pests, and taking into consideration the pre-harvesting intervals especially when importing.

The adoption of Integrated Pest Management (IPT) shall also be more included in the agricultural development projects. For example, introducing natural enemies to control pests to get close to sustainable agriculture. The introduction of local natural enemies (less cost since it's not imported) would result in a significant reduction in pest populations in certain scenarios (Figure 13) (Dara, 2018). This has been introduced recently in Lebanon and was reflected in a survey conducted on the management of *Tuta absoluta*'s (*T. absoluta*) natural enemies. The survey helped in identifying two important natural enemies, knowing that this *T. absoluta* targets tomatoes (FAO, 2016).



Figure 13. Integrated Pest Management Chart (Dara, 2018)

Farmers highlighted the lack of support from governmental entities and their unwillingness to listen to their concerns. Unfortunately, this is contrary to rural development where it sheds light on the importance of giving a voice to the family farmers to develop strategies with policy makers to improve their livelihoods (Clark & Cavatorta, 2018). On the other hand, when looking at Cuba's approach in the 1990s, the government was responsible for the agricultural reform and took emergency measures resulting in measurable parameters for success (i.e., lower unemployment and mortality rates). These measures included mass mobilization and policy process encouraging public participation and debates, restrictions on agricultural markets and investment in tourism. This state-led approach focused on reducing dependence on food and energy imports and developing new export industries. These measures resulted in overall economic growth and social protection in the country (Morris, 2014). Consequently, highlighting the importance of state-led initiatives for reaching solid positive impact in different sectors.

This study did have some limitations. For instance, social desirability bias can be present during interviews, which would make the participants not only over-report socially desirable behavior, but also under-report socially undesirable behavior (Lelkes, Krosnick, Marx, Judd, & Park, 2012). Also, the sample of this study may not be representative of the general population (Adams, 2015).

## CHAPTER VI

### CONCLUSION AND RECOMMENDATIONS

Multi-functional agriculture carries various benefits on the environment, the local farmers' livelihoods, and the general status of the rural community. Accordingly, advocating for its importance to the key organizations working with farmers on increasing their resilience would encourage these organizations to include multi-functionality in their work agenda and objectives. The understanding of the farmers' perspective and challenges regarding implementing this type of farming, especially that it is expressed by the main actor in the farming activity, has several advantages. It will not only help the key actors in forming their action plans as mentioned earlier, but also will help the farmers to take part in the decision-making process. In a sense, the farmers' opinions and requests would be considered as an important entity in future developmental projects and would highlight their voice.

It has been observed that due to the economic crises, people (especially youth) are coming back to the agricultural lands and realizing the potential between agriculture and tourism. In fact, youth are eager to learn new agricultural methods, they are looking forward to trying new recipes and new marketing tools. Also, they are actively searching for funds for agriculture and agri-tourism projects and are investing a lot of time in the land. They are utilizing social media and TV shows to market their products. It is worth mentioning that they are investing time in the restoration of the land and preparing it for agriculture, which requires a lot of time and effort. Thus, with this huge drive and sense of commitment, the sustainability of these kinds of agri-tourism projects are more tangible and are being developed for long-term benefits.

Strategies and policies for rural development shall focus on activities and measures which integrate tourism and agriculture. Especially that a notable relationship has been observed between tourism and agricultural with mutualistic benefits. The integration of tourism and agricultural activities in the rural tourism strategy is essential as it has been reported that the presence of touristic sites positively impacted on the family farmers, mainly helping them sell their products. The government should have firm interventions and strict policy measures to develop the agricultural and tourism sectors which has a huge potential especially in areas that has the potential for the adoption of MFA.

Conducting a quantitative research method like a national survey would help in the quantification of the practices of multi-functionality in the Shouf area. This would not only help in further understanding the current practices of farmers in terms of MFA, but also can assist in being a guiding path for policy reforms and development projects by local and international organizations.

Main challenges facing the family farmers in the Shouf include inability to provide water for irrigation, lack of electricity and need for machinery. Accordingly, the farmers need support in the form of technical equipment and financial resources to enhance agricultural practices as it is their priority. Whereas the farmers who are not facing these challenges are more interested in investing in the agri-tourism activities and services.

This will be done through a bottom-up approach that puts participation and empowerment as a main principle in developments. In fact, a paradigm shift has occurred between 1980s and 1990s from the top-down approach to rural development (mainly focusing on external advanced technologies and national-level policies) to the bottom-up approach which “visualize rural development as a participatory process that empowers rural dwellers to take control of their own priorities for change.” (Ellis & Biggs, 2001, p.



443). After witnessing the negative effect of the top-down approach, Chambers started promoting the bottom-up approach (people-oriented development) and participatory approaches that take the human capital and social capital into account and considered them valuable (Chambers, 2014). The local farmers should be the agents of change instead of having a passive role in rural development projects. They should be working hand in hand with public and private entities to enhance the agricultural and tourism sectors in their local communities and consequently have better livelihoods.

Up scaling this research to include other areas or exploring multi-functionality on a national scale could be helpful to explore the current challenges and potential and apply policy reforms and invest in projects related to multi-functionality accordingly. Also, conducting quantities research to quantify the number of practices and having a national view related to MFA would further validate the results (through triangulation) and could be a good basis for rural development strategies.

# APPENDIX I: INTERVIEW GUIDE – ENGLISH

Note: Please do not identify any illegal activities, if any.

## 1. Opening Questions

### - Farmers:

1. Describe your relationship with the land.
2. What makes you attached to the village you are living in?
3. What are some traditions/landmarks/activities that makes your village unique?

### - NGOs and Governmental Entities:

1. Introduce yourself and your role in this institution.
2. Briefly describe how do you view the agricultural and tourism sectors in Lebanon? And in the Shouf Biosphere Reserve in specific?
3. Describe your recent milestones/achievement of these sectors in the country, and the Shouf Biosphere Reserve in specific (involvement as a person or as an institution).

## 2. Existing forms of multi-functionality

*For NGOs and Government Entities: Presence of projects, number of projects, challenges, and lessons learned*

### 1. Broadening:

Describe projects that worked on expanding farming operation including producing new good and services that encourage linking of farm production, visitors to **rural areas** and amenities of their local communities.

- a. Agritourism/farm stays
- b. Landscape conservation
- c. Biodiversity conservation
- d. Renting machinery
- e. Leasing of land

### 2. Deepening:

Describe projects that involved refocusing agricultural production to better meet the demands of customers and requires advancement of the **agricultural supply chain**.

- a. Organic farming/product certification
- b. Use of low-impact production methods (e.g., reduction of pesticides, crop rotation etc.)
- c. Certification of origin
- d. High quality of traditional/regional products
- e. Direct sales (short supply chain)
- f. Extensification (*the process of decreasing the use of capital and inputs (e.g., fertilizers, pesticides, machinery) relative to land area.*)
- g. On farm processing

### 3. Regrounding:

Describe the activities/projects that involved the total refocusing of farm **household resources**.  
“Explanation: Pluriactivity is defined as the participation by any member of the farm household in income-earning activities that contribute to maintaining the viability of the household”

- a. Activities outside of the farm
- b. Off-farm work of farm household members
- c. Farming economically (New forms of cost reduction) (e.g., reduce external input and loans, while efficiently using available internal inputs (grassland, manure, savings))

### 3. Challenges facing the implementation of multi-functionality

Describe the challenges you're facing related to: (if any)

- a. Agricultural (e.g., food production, food processing, food marketing etc.)
- b. Financing (e.g., loans, access to money, economic situation in the country)
- c. Rural tourism (e.g., communication with tourists, marketing etc.)
- d. Lack of eco-friendly agricultural and tourism (e.g., guidelines, cooperation with other stakeholders etc.)
- e. Infrastructure (e.g., electricity, water, roads etc.)
- f. COVID-19 and Lockdown (e.g., reduction in tourists)

### 4. How did the economic crisis in Lebanon affect multi-functional agriculture both positively and negatively?

- a. Relying on imports (dollar rate exchange)
- b. Adopting cost-effective methods/inputs
- c. Modernizing marketing efforts with affordable tools
- d. Optimize use of technology
- e. Optimize use of space
- f. Increase in local tourism
- g. Decrease in purchasing power
- h. Prioritize quality over quantity

### 5. Are the projects/activities targeting the poorest?

If yes, what are the strategy/framework you use to ensure targeting these people? And did these projects/activities help in increase their income or general livelihoods?

### 6. Opportunities relating to multi-functional agriculture:

#### - Farmers:

1. What are the activities you prefer and would like to generate extra income from? (New sustainable agricultural activities, food processing/preparation, handcrafts, touristic services, selling goods and products etc.)
2. Are you encouraged to participate in training and projects tailored toward diversification of incomes and eco-friendly practices (adopting eco-tourism and sustainable farming practices)?
3. How do you communicate with governmental entities to share your needs and demands? Do you feel that these entities are supportive and responsive? What is your proposed method for better future communication of your needs?
4. Are you willing to partner with NGOs, governmental bodies, or enterprises to promote multi-functionality?

**- NGOs and governmental entities:**

1. Are you willing to partner with NGOs, governmental bodies, or enterprises to promote rural tourism?
2. How do you communicate with governmental entities to share your needs and demands? Do you feel that these entities are supportive and responsive? What is your proposed method for better future communication of your needs?
3. In your opinion, what do you think is the best way to promote multi-functionality in rural areas to help family farms?
  - a. Policies
  - b. Capacity building and training
  - c. Infrastructure
  - d. Building connections with other stakeholders
  - e. Needs assessment (with farmers)

## APPENDIX II: INTERVIEW GUIDE – ARABIC

ملاحظة: يرجى عدم تحديد أي أنشطة غير قانونية، إن وجدت.

### ١. أسئلة الافتتاح

المزارعون:

١. كيف تصف علاقتك بالأرض؟
٢. ما الذي يجعلك مرتبطة بالقرية التي تعيش فيها؟
٣. ما هي بعض التقاليد/المعالم/الأنشطة التي تجعل قرينك فريدة من نوعها؟

المنظمات غير الحكومية والجهات الحكومية:

١. هل يمكنك تقديم نفسك ودورك في هذه المؤسسة؟
٢. هل يمكنك أن تصف بإيجاز كيف تنظر إلى قطاعي الزراعة والسياحة في لبنان؟ وفي في محمية أرز الشوف بالتحديد؟
٣. هل يمكنك وصف المعالم / الإنجازات الأخيرة التي حققتها في هذه القطاعات في الدولة، وفي محمية أرز الشوف على وجه التحديد؟ (مشاركتك كشخص أو كمؤسسة)

### ٢. الأشكال الحالية للزراعة المتعددة الوظائف

للمنظمات غير الحكومية والجهات الحكومية: وجود المشاريع، عدد المشاريع، التحديات، والدروس المستفادة

١. التوسيع:

هل يمكنك وصف المشاريع التي عملت على توسيع نطاق العمليات الزراعية بما في ذلك إنتاج سلع وخدمات جديدة تشجع ربط الإنتاج الزراعي والزائرين بالمناطق الريفية ووسائل الراحة في مجتمعاتهم المحلية؟

- a. السياحة الزراعية أو الإقامة في المزرعة
- b. الحفاظ على المناظر الطبيعية
- c. الحفاظ على التنوع البيولوجي
- d. تأجير الآلات
- e. تأجير الأراضي

٢. تعميق:

هل يمكنك وصف المشاريع التي تضمنت إعادة تركيز الإنتاج الزراعي لتلبية متطلبات الزبائن بشكل أفضل وتتطلب النهوض بسلسلة التوريد الزراعية؟

- a. شهادة الزراعة العضوية/المنتج
- b. استخدام طرق الإنتاج منخفضة التأثير مثل الحد من مبيدات، وتناوب المحاصيل وما إلى ذلك)
- c. شهادة المنشأ
- d. جودة عالية للمنتجات التقليدية/الإقليمية
- e. البيع المباشر (سلسلة التوريد القصيرة)
- f. التوسع) عملية تقليل استخدام رأس المال والمدخلات) مثل الأسمدة والمبيدات والآلات (بالنسبة لمساحة الأرض)
- g. تجهيز الأغذية في المزرعة

٣. الاسترجاع:

هل يمكنك وصف الأنشطة / المشاريع التي تضمنت إعادة التركيز الكلي لموارد المزارع المنزلية؟  
"توضيح: يُعرّف تعدد الأنشطة على أنه مشاركة أي فرد من أفراد الأسرة المعيشية للمزرعة في الأنشطة المدرة للدخل التي تساهم في الحفاظ على استمرارية الأسرة"

- a. أنشطة خارج المزرعة  
b. العمل خارج المزرعة لأفراد الأسرة  
c. الزراعة الاقتصادية (أشكال جديدة لخفض التكلفة) (على سبيل المثال تقليل المدخلات الخارجية والقروض مع استخدام المدخلات الداخلية المتاحة بكفاءة مثل الأراضي العشبية والسماط الطبيعي والمدخرات)
٣. التحديات التي تواجه تنفيذ الزراعة المتعددة الوظائف

هل يمكنك وصف التحديات التي تواجهها فيما يتعلق بـ: (إن وجدت)

١. الزراعة مثل إنتاج الغذاء، تصنيع الأغذية، تسويق المواد الغذائية، إلخ)
٢. التمويل (مثل القروض والحصول على المال والوضع الاقتصادي في الدولة)
٣. السياحة الريفية (مثل التواصل مع السياح والتسويق وما إلى ذلك..)
٤. عدم وجود الزراعة والسياحة الصديقة للبيئة (مثل المبادئ التوجيهية والتعاون مع أصحاب المصلحة الآخرين وما إلى ذلك..)
٥. البنية التحتية (مثل الكهرباء والمياه والطرق وما إلى ذلك..)
٦. COVID-19 وLockdown (على سبيل المثال تقليل عدد السياح)

٤. كيف أثرت الأزمة الاقتصادية في لبنان على الزراعة متعددة الوظائف سلباً وإيجاباً؟

١. الاعتماد على الواردات (سعر صرف الدولار)
٢. اعتماد طرق / موارد تقلل من التكلفة
٣. تحديث جهود التسويق بأدوات ميسورة التكلفة
٤. تحسين استخدام التكنولوجيا
٥. الاستخدام الأمثل للمساحة
٦. زيادة السياحة المحلية
٧. انخفاض القوة الشرائية
٨. إعطاء الأولوية للجودة على الكمية

٤. هل المشاريع / الأنشطة تستهدف أفقر الناس؟

إذا كانت الإجابة بنعم، فما هي الاستراتيجية/ إطار العمل الذي تستخدمه لضمان استهداف الأشخاص الأكثر فقراً؟ وهل ساعدت هذه المشاريع / الأنشطة في زيادة دخلهم أو سبل عيشهم العامة؟

٥. الفرص المتعلقة بالزراعة متعددة الوظائف:

المزارعون:

١. ما هي الأنشطة التي تفضلها وترغب في تحقيق دخل إضافي منها؟ (الأنشطة الزراعية المستدامة الجديدة، تجهيز وتحضير الأغذية، الحرف اليدوية، الخدمات السياحية، بيع السلع والمنتجات، إلخ..)
٢. هل يتم تشجيعك على المشاركة في التدريب والمشاريع المصممة خصيصاً لتنوع الدخل والممارسات الصديقة للبيئة (اعتماد السياحة البيئية والممارسات الزراعية المستدامة)؟
٣. كيف تتواصل مع الجهات الحكومية من أجل مشاركة احتياجاتك ومطالبك؟ هل تشعر أن هذه الكيانات داعمة ومتجاوبة؟ ما هي الطرق المقترحة لتحسين التواصل المستقبلي لاحتياجاتك؟
٤. هل أنت على استعداد للدخول في شراكة مع المنظمات غير الحكومية أو الهيئات الحكومية أو المؤسسات لتعزيز الزراعة المتعددة الوظائف؟
٥. برأيك، ما هي أفضل طريقة في رأيك لتعزيز الوظائف المتعددة في المناطق الريفية لمساعدة المزارع العائلية؟

- a. سياسات
- b. بناء القدرات والتدريب
- c. بنية تحتية
- d. بناء علاقات مع الأشخاص المعنيين
- e. تقييم احتياجات المزارعين

### المنظمات غير الحكومية والهيئات الحكومية:

١. هل أنت على استعداد للدخول في شراكة مع المنظمات غير الحكومية أو الهيئات الحكومية أو الشركات لترويج السياحة الريفية؟
٢. كيف تتواصل مع الجهات الحكومية من أجل مشاركة احتياجاتك ومطالبك؟ هل تشعر أن هذه الكيانات داعمة ومتجاوبة؟ ما هي طريقتك المقترحة لتحسين التواصل المستقبلي لاحتياجاتك؟
٣. برأيك، ما هي أفضل طريقة في رأيك لتعزيز الوظائف المتعددة في المناطق الريفية لمساعدة المزارع العائلية؟
  - a. سياسات
  - b. بناء القدرات والتدريب
  - c. بنية تحتية
  - d. بناء علاقات مع الأشخاص المعنيين
  - e. تقييم احتياجات المزارعين

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