AMERICAN UNIVERSITY OF BEIRUT

THE POLITICAL ECONOMY OF AGRICULTURE IN LEBANON
THE CASE OF MACHGARA

by
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AN ABSTRACT FOR THE THESIS OF

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Following a tumultuous year of anti-austerity and anti-corruption protests driven by a currency crisis and longtime abysmal political and economic conditions, the Lebanese economy had found itself at the lowest point in its recent history, the lira's exchange rate plummeting from a 23-year-long stable 1,500 lira to the dollar to fluctuating around 10,000 lira to the dollar in less than eight months. No sector has been as much of chronic casualty to an economic and political history of internal corruption, a high import to export ratio, and low productivity in Lebanon as the agricultural sector. Despite the low productivity of this sector, a product of decades of state neglect in favor of the finance and service sectors, land potential is very high. Evidently, information and literature on agrarian crises and questions in the Arab world, particularly on Lebanon, remains sparse in agrarian studies journals. In this thesis, I analyze how agriculture's decline in Lebanon can be examined in context of the greater global capitalist transformation, including its effect on small farmer livelihoods. Furthermore, I seek to further this assessment by analyzing how planning is or isn't effective in helping protect or valorize agriculture. Using a mixed methods approach combining a historical analysis of the long durée, in the lens of a world system analysis, I hone in on farmer oral histories, in the southern West-Beqaa village of Machgara, to better diagnose and identify how Lebanese family farmers respond to agrarian changes. By placing small family farmer testimonies in the context of a greater historical chronology and the world system, I identify and analyze how the themes articulated in their responses reflect the commodification of land and labor alike and how these complications can help planners focus on the integration of local actors and organizations, from an agroeconomic lens, into rural development interventions.

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CHAPTER I:
INTRODUCTION AND CASE STUDY

A: Overview: Situating the agricultural problem in economic crisis

The struggles and trials of family farmers in Lebanon have never felt so strongly as they have leading up to the 2019 currency crisis. While the demonstrations represented grievances over a lack of accountability in government and economic mismanagement, they were spurred mainly out of a liquidity crisis. This sparked the introduction of additional austerity policies, pushed by the IMF earlier that year and presented in the form of the .06 cent "WhatsApp tax" that sparked the protests that began October 17. Yet largely absent in the discourses of the movement were farmers, especially those from the rural Lebanese fabric. Clearly, the present agricultural crisis finds its roots in origins that are macro-historical, with their own local processes of change that both have responded to and changed manifestations of an agrarian crisis in their own locales. In digging deeper on Machgara as a case study in point, I will see what effect these economic transformations are having on local farmer livelihoods and how these trajectories are affected by the planning framework. Historically and in the present, the most acute historical-political effects on farmers were affected by many factors. Among those, I highlight the three following points:

1. *Atrophy of the export market and food-import dependency***:** Khalil Gibran made some nods to Lebanese deterritorialization in its cultural, social, but also agrarian manifestations as he pitied the nation that "eats a bread it does not

harvest, and drinks a wine that flows not from its own wine-press." Import dependency, a contradictory economic feature in light of Lebanon's water richness, is signified by a balance of trade that has consistently been negative since Lebanon's inception: of all imports, 16% are food imports, indicating a strong food import dependency (Atlas du Liban, 2016). Between 1957 and 1961, the import/export balance fell from one third to one eighth, paid back primarily through tourism, trade, and the service sector. In 2017, export value was at just $3.91B to an imported $20.8B, amounting to an over 16B deficit. While last year represented a slight shift to local consumption as import values decreased from $1.64 billion in 2018 to about 1.47 billion in 2019, the trade dynamics of the country remain very import-dependent (Lebanese Customs, 2020; IDAL, 2020).

2. *Severing of export routes between rural Lebanon and Syria*: Conflict has historically predisposed the region to a destruction in the agricultural sector and severing of regional inter-Arab trade networks (Kadri, 2016). The effects of the war on Syria, a country that had been rural Lebanon's closest regional agrarian trade partner, plummeted regional exports in this region to around 10%, whereas it had been about 30% prior to 2014 (Atlas of Lebanon, 2019). This has also been manifested in the hegemony of Beirut in commerce and trade. This is especially significant given the rural West Bekaa's reliance on Syria as a primary agricultural market for trade and exports. As imports from Syria plummeted to zero and became eclipsed by smuggling, Machgara too found

itself on the receiving end of these impacts, where a historically close export market and shared agricultural history had closely knit both economies.

3. *Historical inequalities of land access:* The history of unequal distributions of power in Lebanon manifested itself in the countryside by the inequalities of land tenure. Disparities in land holdings and access parallel this nationwide disparity in access and distribution of capital. The transition from Ottoman land code that "made no provision to secure the position of the share tenants" to later sharecropping agreements predisposed sharecroppers to unequal land access and tenure insecurity (Warnier, 1948: 17; Sadr, 1971: 23). As the costs of production in farming increased, farmers in Lebanon's rural regions fled to urban misery belts and from the country and "rural capitalists," owners of large scale monocrop farms, monopolized the countryside (Nasr, 1978: 6). In more recent years, farmers with more than 10 hectares, which represented a fifth of all farmers, cultivate 30 percent of arable land as 75 percent of Lebanese farmers, occupy under 1 hectare of farmland; 20 percent of total farmland (Bush, 2016). Despite the productivity and tireless effort of family farmers, tied to their land for various reasons, poverty in the agricultural sector in Lebanon is concentrated highest amongst small-holders.[1] For small-holding of under 1 hectare, or ten

[1] Most family farmers in Lebanon, and in Machgara in particular, are small holders. Each country case will have its own classification of what farms are considered small-holder farms based on the statistical significance of the small-holder farmer category in relation to in Lebanon's case, the classification is statistically significant at around 1 hectacre, or 10 dunums, the size which encompasses more than three quarters of family farms in Lebanon (FAO, 2016: 81)

> dunums, 13 percent of farms listed in the Bekaa fall into this category and 29 percent of households live in poverty. In comparison, out of 53 percent poor in North Lebanon, 33 percent are small-holder farmers, and in the south, comprising 14 percent of farmers of this classification, 42 percent of households live in poverty (FAO, 2016: 39).

Today, family farmers, despite their necessity in any society or economy, are not reflected in the nation's expenditures or productivity, a testament to the neglect of this sector in the Lebanese economy. While farmers make up around 20-25% of the labor force in Lebanon as a whole, with up to 80% in the poorer regions (down from nearly 50% in 1971), their labor makes up only around 3% of GDP, as opposed to the early 1970s when agriculture comprised around 20% of GDP (UNDP, 2018; Sadr, 1971). In Lebanon's poorest rural regions of Akkar, the Northern Bekaa, as well as in the South, up to 80 percent of the local GDP comes from agriculture. The productive sector makes up just 16 percent of total GDP despite employing a quarter of Lebanon's workforce (McKinsey Report, 2019) with services making up over 75 percent and industry around 21 percent.[2] The liquidity shock that came to most urban Lebanese in 2019 that could suddenly no longer fairly exchange their lira was already felt by farmers over the course of decades that could long fail to secure access to fair exchange of their livelihoods in a market stunted by free and unfair trade.

Despite this marginalization, farmer grievances and voices were mainly absent from the 2019 protests, despite their historical ubiquity. To urban Lebanese and their expatriate

[2] Embassy of Denmark, 2013. "Lebanon as a Market." <https://libanon.um.dk/en/the-trade-council/general-on-lebanon/>

compatriots, the Lebanese government, at one time, had made promises. These promises of a stable exchange rate, attractive and stable real estate, a safe banking sector, and a tourist haven, were built-high rise- at the expense of the neglected sector of the farmers, who hadn't been given, nor did they come to expect the same promises, empty as they may have been. The construct of Lebanon as a "Paris of the Middle East" acclimated the country to its place as a means of exchange for western finance capital at the direct expense of its productive and agricultural sector. Evidently, by design, Lebanon was not a country designed for the economic prosperity of its citizens. Evidently, it became not country with banks, but rather, a conglomerate of banks with a country attached to it.

The economic structure of the country has also put Lebanon's natural potential at odds with its productivity, 64% of the country's area is uncultivated (IDAL, 2017), and though the tiny nation boasts one of the best groundwater reserves in the Middle East, the reality of the extent of agricultural production and the state of farmers in the country is otherwise dire. In addition, 14% of the country's land is considered arable for growth (FAO, 2020; as cited in IDAL, 2020). The main planning threat to this land cover, including urban encroachment onto agricultural areas, includes deforestation, extractive activities such as mining, and land reclamation projects (Mitri, 2019). The main agglomerates where urban expansion has especially expanded have been in the Bekaa's main centers of Zahle and Chtaura, with Machgara existing a periphery of these main regional cities.

B. Theoretical and physical landscapes: defining the situation and study area

1. The Physical Dimension: Machgara and the study area

a. The Planning Perspective and Situation of Machgara

The greater Bekaa, the largest province in Lebanon, is composed of Baalbek, Hermel, Rachaya, the West Bekaa, and Zahleh. Machgara, situated in the West Bekaa, has historically been considered a part of the Jabal ‘Amil region, which in historical literature has corresponded to the Southern Lebanon mountainous region, from Saida at its easternmost border, the Qaroun at its uppermost boundary to the west, and encompassing everything south of that. While Machgara is highly agrarian dependent, it does not suffer from the poverty of Akkar or the northern Bekaa. This is most likely due to the high number of expats in the village, which bring the population up to a total of nearly 14,000 from its year-round population of 8,000 (Khalaf, 2019). Machgara is relatively spared of many of the ecological problems faced elsewhere in Lebanon, such as depleted soil and water quality. It is blessed by historically abundant aquifers, good soil, and forestry. Over 30% of the land’s area is agricultural, with an estimated 2,250 households dependent on agriculture as a primary source of income (UNDP, 2018). This amounts to around a quarter of the village’s year-round population and signals a locale that is still highly dependent on, or at least in the realm of, family farming.

The municipalization of Machgara came during the late Ottoman Era, though Machgara itself as an entity of Jabal Amel had a history of over 1,100 years. Its master plan was developed in 1977, the year that intersected with the construction of the CDR. This plan laid out the zoning arrangement for land use in the village.

Machgara was identified in the National Master Plan for the Lebanese Territory (NMPLT) as a relay city for the region extending from Machgara to Maydoun (NMPLT, 2005). This positionality as a “relay city” holds a number of implications. First, it

demonstrates the planning framework for Machgara as a "periphery" of major Western Bekaa cities such as Chtaura and Zahle. Second, it suggests that Machgara's development is analyzed in the framework of urbanization rather than in natural and agricultural revitalization.

Similarly, the 1960/1961 French International Institute for Research and Training for Harmonized Development (IRFED), which issued the first road map for development planning in Lebanon, classified Machgara as part of a 'tertiary' pole of development (IRFED , 1964 found in Atlas du Liban, 2016: 106).

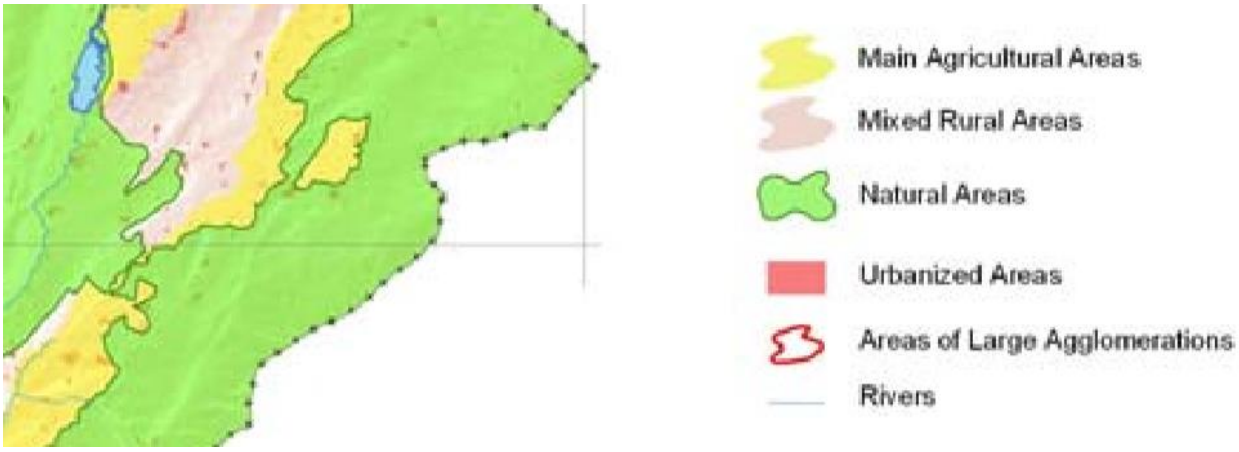


Figure 1: NMPLT Zoning of Qaroun Catchement and Rachaya Areas

Source: NMPLT, 2005. Page IV- 54 of 90

Likewise, the NMPLT classified Machgara within natural and agricultural territory. The following passage from the Master Plan outlines this vision as follows:

"West Beqaa could remain a peaceful region with its splendid sceneries of large agricultural lands and the Qaraoun Lake, where a moderate tourist activity could be developed concurrently with diversifying activities mainly centered in the important small cities of Machgara, Saghbine, and Joub-Janine. These small cities could host primary service industrial activities, health and education services, as well as small non-polluting industries."-Page IV- 14 of 90

The maintenance and preservation of agricultural territory, for purposes that are even solely or mainly aesthetic, demands that major risk factors that currently contribute to the degradation of agricultural and natural territory in Lebanon are addressed A recent study of the environmental situation in the country identified “socioeconomic factors” such as land tenure, poverty, inputs, population pressure, and mismanagement of soil as the main risk factors to degradation (Mitri, 2019: 19). Prospects for an economy centered around tourism and the service sector, as the assumptions of the plan outline, involves high dependency on external capital, a prospect shattered by the current currency and political crisis that have drastically reduced the number of dollars flowing into the country. Lastly, the prospects of hosting “industrial activities, health and education services” in addition to “small, non-polluting industries” in a matter which expands and reinforces the existing ones mapped is conditional upon the presence of the state, even in a decentralized capacity, to be able to deliver and organize said services and institutions in this sector.

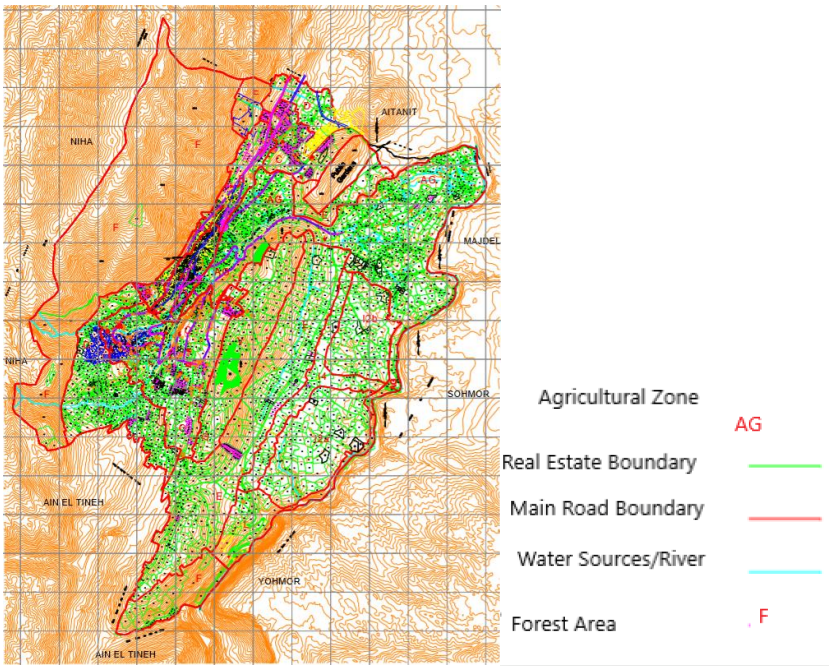


Figure 2: Machgara Zoning Map
Source: Machgara Municipality

2. Main terms and concepts: Situating Machgara in the discipline

a. The Propertied Landscape

All these intents come in conflict to the paradigm of land commodification dominant in Lebanon, which displaces productive economies and render land as a commodity. This approach, reflected in planning, renders land a 'propertied' landscape (Fawaz, 2015). This thesis aims to explore Lebanon's integration into the global political economy and how the resulting economic transformations affected the countryside and agricultural livelihoods. In order to offer an appropriate diagnosis of the agrarian crisis and how it plays out in Lebanon, I analyze how planning has been both instrumental in facilitating its commodification, also exploring which planning interventions, if any, could assist in protecting small family farmer livelihoods. Honing in on the southern village of Machgara, I will attempt to chronicle the histories of local family farmers, how they are dealing with these changes, and the presence or absence in their testimonies of paradigms and discourses of agroecology and/or agribusiness.

b. Agribusinesses vs. Agroecology

Agroecology, chosen as the default paradigm to which the framework of an economically and ecologically sustainable framework will be made the case for in this work, contrasts with the paradigm of agribusiness as the dominant mode of agriculture in Lebanon. Agroecology is a sustainable means of practicing agriculture in the context of a biodiverse ecosystem and/or in resource poor farming communities (Altieri, 2002). In contrast, agribusiness is the practice of agriculture as a commodity for capital accumulation, marked

by the control of few corporations, and their associated pesticide and biotechnology firms. In the global south, agribusiness makes its entry into the countryside through the facilitation of neoliberal policies and trade liberalization, which at the local level urges on the dismantling of national policies that provide farm subsidies and rural support for family farmers (Martiniello and Riachi, 2019: 134). In this work, I advocate for agroecology, an ecologically sustainable and economically viable option for small family farmers that also holds implications for the necessity of political sovereignty and farmer agency as its preconditions.

c. The Agrarian Question

There has been relatively little attention paid to this region in the literature on Global South agriculture and development studies (Ajl, 2020). Peasant literature on the Arab world, and especially on Lebanon is virtually absent from many agrarian journals and studies based on the global south. This negligence, economically but also scholarly, stands in the face of the relatively high dependency, albeit decreasing, on rural livelihoods of people in the Arab world (Bush, 2016).

This further necessitates the diagnosis of the dynamics of agrarian transformation and the implications for family farmers in Lebanon and in the greater Arab world. The region's political and economic sovereignty is held hostage to its positionality as "collateral against a global dollar supply" (Patnaik, 2008). Over the 20th century, the Arab world, which historically was heavily agrarian based, saw its rural labor composition dwindle down to around 40% as excess labor reserves, unable to be absorbed into increasingly financialized economies, find themselves unemployed or performing menial, redundant,

and unproductive service-sector jobs, further cheapening labor (Kadri, 2012). In Lebanon, this is definitely the case; these jobs were the best case scenario for many young adult Lebanese of the middle and lower classes, who, despite varying educational levels and skill backgrounds, could barely manage to find work. More significantly, families in Lebanon became increasingly dependent on remittances. Capital inflows came from most high school and college-educated youth who traveled abroad to the Gulf and sent money back to their households. These remittances would comprise a significant portion of the Lebanese economy, making up a fifth of its GDP, and of that portion, nearly two-thirds coming from the gulf (Yahya, 2020).

C: Thesis Purpose and Structure

1. Purpose and main methods

This thesis will explore the situation of agriculture in Lebanon, using the village of Machgara as a case study, through a combination of historical analysis subdivided into three main pivotal time frames. To gain insight on the conditions these macro-historical changes created for farmers on the ground, 13 semi-structured interviews with small family farmers of the village were conducted to better analyze and understand livelihood changes and how farmers are responding to these changes. These questions focused on identifying patterns and histories of agrarian, land, and environmental change, analyzed discourses and approaches to farming, and showed, through interview responses, the key economic, political, institutional, and planning-based demands of farmers. Additionally, mapping key indicators of land degradation and land use will help provide a supplementary overview on patterns of land degradation, soil quality, and environmental change as well as the

comparative extent of land degradation between Machgara and other regions in Lebanon. Our conceptualization of land degradation particularly in this area, as both indicated by the mapped analysis I have compiled from GIS trendolizer and the maps and information from the 2019 UNDP-led planning initiative, "Sustainable Land Management in the Qaroun Catchement," offers a number of indicators and projections of land degradation regionally (UNDP, 2018).

Overall, this thesis aims to place the many manifestations of this problem of agrarian crisis in Lebanon in its greater historical and macroeconomic context in order to better understand how power and power actors, at their national and international levels, affect family farming livelihoods in Lebanon. Moreover, I will show how planning has been ineffective in light of these historical or macroeconomic conditions, and why planning fails to provide a meaningful means of intervention in the rural milieu.

2. Thesis organization and structure

This thesis is divided into five chapters. Chapter 2, Methodology, will explain the rationale behind the selected methods, approach, and framework used in the thesis. Chapter 3, the literature review, will lay out key themes central to the analysis of this thesis, with the first focused on explaining world systems analysis and the middle east's integration into it, the second part will explain the planning framework and its basis in the thesis, the third detailing the literature used for the historical analysis portion of the thesis, and finally, the fifth part details the works used for the environmental analysis of the thesis, from sources that range from UNDP reports to studies and analysis that have captured the full landscape of the environmental and agrarian landscape in Machgara and in its situated region. Chapter

4, the historical analysis, will chronicle the historical timeline of the political, economic, and agrarian dimensions of the region. The choice of historical analysis in the longue durée helps place an analysis of a world system in its own historical context (Braudel, 1958). The history will be subdivided into four main sections based on their positionality in the global food regime: the first food regime (1870-1930), the second food regime (1940s-1975), the civil war era (1975-1990) and the postwar era of neo-liberalization (1991-onward). The selected time frames in which this chapter is divided in, based off food regime and world systems analysis, highlights the dynamics of global political control and agricultural production that give context to the dynamics of agrarian change in Lebanon. Chapter 5, the findings and discussion, will identify the main themes arising from farmer interviews and data that give an answer to the research questions' focus on farmer livelihoods, offering a bottom-up, local understanding of how agrarian change affects farmers in the village directly. Finally, the conclusion will reflect on the question of planning in relation to the findings, suggest a few interventions to directly address the main problem of neglect of the agricultural sector, and from there, determine how well or how closely the research questions were answered.

CHAPTER II
METHODOLOGY

A: Introduction

This study fused together a historical analysis in the longue durée with a participatory rural appraisal approach undergone from interviews with local farmers in a critical interpretive lens. To give a general diagnosis of the macroeconomic problems faced by Lebanon, the first part of the general analysis consisted of recounting this history in the long durée through the lens of world systems analysis and dependency theory. Grounding world systems theory in its history was done to illustrate how core-periphery relations play out in Lebanon, a specific given global south context. However, the macroeconomic dimension of the literature review and general framework of the first part of this thesis, while situated in dependency theory and world systems analysis, is insufficient in enabling us to analyze changes on the ground. Therefore, in order to best capture local trajectories and identify the micro-level challenges of farmers and gain a more accurate insight into the source of land use, economic changes, and responses to it, I obtained farmer testimonies to directly answer key questions on land use and land changes. This combination of methods enabled me to contextualize the political and environmental changes affecting rural livelihoods and helped me identify the material, economic conditions that forced and facilitated those changes alike. There was also a necessity in tempering the generalizing and potentially reductionist conclusions and assumptions of world systems analysis with a local historical trajectory found in the literature.

B: The Research Process and Rationale

My objective in the research process was to explore these trajectories of historical and agricultural change from a local nexus, finding the existing comprehensive historical literature on Lebanon unattuned to this region and its social demographic. While my objective was to find answers to these issues, my motives as a student and an apprentice, in this discipline to give local farmers a platform to share their experiences, challenges, and demands of their agrarian realities. Additionally, I sought to employ a strategy that would better probe and understand local farmer knowledge and instead of working from a top-down position, center the farmer's perspective and demands as the agent of change and knowledge and myself as the facilitator (Chambers, 1994). The benefit of this method is, as was mentioned, the chance to construct an alternative, "bottom up" history from information missing in more general historical accounts of Lebanon and/or the Jabal Amel region, the utilization of primary, local sources from oral accounts, and facilitating a role for farmers to share, exchange knowledge, and be active agents and participants in articulating problems and demands overlooked by decision-makers. With the proper facilitation and direction, this method can also help both researcher and farmer center agricultural and rural paradigms and demands ignored in conventional research on rural development. Michael Altieri argues that research in conventional organizations is commodity-oriented and fails to consider the needs of the poor nor does it pay attention to the ecological milieus of the subject context (Altieri, 2014: 5). Participatory rural appraisal (PRA) is an approach that, through any interaction, observation, or dialogue between researchers and small family farmers, enables researchers to learn directly from farmers and

center their needs, perspectives, and strategies in their assessments of rural development. This methodology can help researchers or decision makers identify local strategies and practices for resource management in rural, global south settings by inviting farmers to share experiences, strategies, and struggles while offering their own analysis and proposed course of action (Webber & Ison, 1994). In the absence of quality data, a main problem in conducting research or doing a study in Lebanon, participatory studies from local knowledge can often help us obtain information in the absence of good data sets (Zurayk, el-Awar, Hamadeh et. al, 2001).

The second part of the qualitative portion of the research methodology consisted of a semi-structured questionnaire conducted in both private meeting spots such as family businesses and family homes and farms. Using the oral histories of 13 family farmers from Machgara, I probed interviewees to better understand the historical, local trajectories of change in the region, as well as their economic, political, environmental, and social manifestations. These interviews were semi-structured, allowing for flexibility and diversity in responses and in direction as the objective was to holistically cover the full spectrum of local history from an agrarian nexus, how patterns of change affect farmer livelihoods and if farmers still employ indigenous practices and understandings of land as a means of resistance against these changes. As family farmers, I also probed them for their discourses and approach to farming, mainly to determine the presence of indigenous farmer discourses and practices, or for the degree of an internalization of agribusiness practices and discourses. I searched for core and recurring themes around changes in labor and

livelihoods, as well as farmer's perceptions on environmental changes and how a combination of these changes and macroeconomic conditions are affecting their practice.

Aside from phone interviews, the farmer interviews were conducted in the span of 10 weeks in a variety of private and semi-private settings in the domain of the small farmer milieu. I was careful to respect the protocol demanded by semi-structured interviewing with respect to the context of the local space and setting. The second half of the interviewing process, coinciding with the national and international response to the COVID-19 epidemic, was conducted over the phone with social messaging and voice calling applications such as WhatsApp. With the assistance of my field notes, photographs, and supplemented by an assortment of quantitative data from maps to statistics from the Ministry of Agriculture that show and detail the quantitative profile of the region's agrarian demographics and the breadth of its physical degradation.

To ensure that the full spectrum of topics would be covered in their fullest depth, I interviewed cohorts of five interviewees at a time and compiled a set of preliminary findings based on the responses. Areas of key inquiry that were insufficiently covered in the first set were emphasized more in future interviews. Past interviewees were also contacted again if points needed to be made clearer or if follow-up questions were needed. As Chambers rightly recognized, the dangers of PRA include "rushing" through the encounter, missing important details and responses, and an abundance of "formalism" in coding and in research that stifles and inhibits information in pursuit of essentializing it (Chambers, 1994). The measures I took to ensure maximum flexibility, informality, and time without sacrificing research protocol were in pursuit of this goal. Ensuring flexibility

with the content of questions as well as the setting was crucial to ensuring personal experiences, social factors, and specific perceptions were not additional contributors to bias and that I remained a facilitator and collaborator, rather than a gatekeeper, in the process.

Interviewees were selected based on their personal understandings and experiences with working either in or alongside the Lebanese agricultural realm. The selection consisted of family farmers from the village, most residing in the Harat-al Fawqa (upper) part of the village, yet farming in a variety of locations in the region, with either family farms in residential areas or in the region's main sahl. Two of these farmers lived on the border of Machgara and Sohmor. I aimed to select family farmers, sharecroppers, or local agricultural vendors with a family history of or tied to farming, omitting refugees and those owning more than 5 hectares of land, which would place them outside of the regional milieu. While all of the farmers were from and resided in Machgara or the border between Machgara and Sohmor, some had present, past, or historical farming experience in the neighboring Ain el Tineh, Sohmor, or Maydoun. These farmers were mostly male, except for two, and almost all were senior citizens. These individuals represented a variety of social classes, life experiences, and work histories.

The approach, despite attempts to capture a full spectrum of participants, risks only representing a narrow range of voices. It's questionable if PRA can really capture an accurate picture of the full demographic picture of farmers of the focus area due to the limitations of access and the natural selectivity of which voices do get heard (Cooke & Kothari, 2001). The draw-backs of this method was the potential for personal biases to interfere with answers, different meanings conceptualized by researcher and interviewee on

certain terms and ideas (i.e. land access) and difficulty in obtaining clear answers for areas of interest that were either obsolete or perceived by the farmer as irrelevant. For example, the lack of sharecroppers over all made insights on land tenure and sharecropping difficult to obtain. More significantly, the primacy economic problems took in the mind in farmers peripheralized questions and concerns on the environment and environmental change, an issue farmers perceived largely to be a nonissue of or an area often disregarded. I had interviewed these family farmers, residents of my family neighborhood in Machgara, over the course of a twelve-week period. While this timeline intersected with the COVID-19 pandemic, I did not face any major difficulties with regards to completing interviews; Machgara had remained free of any recorded cases with residents changing little about their social and personal lives and activity. A good proportion of interviews had been completed prior to the nationwide lockdown that went into effect March 15, and, though the measures had extended into June, a de-facto relaxing of social and business activity had resumed in the village within weeks. Yet in adhering to safety and health procedures, WhatsApp-conducted interviews substituted in place of phone ones in cases where social distancing or other safety percautions could not be secured or maintained.

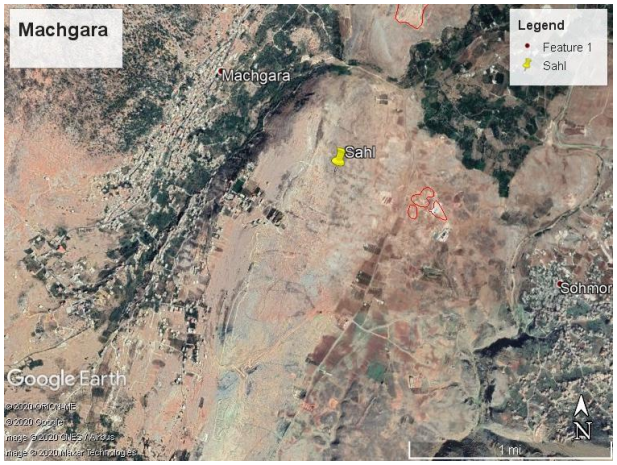
I cross checked the PRA approach with some quantitative data that would give some supplementary analysis to the demographic and/or environmental picture and patterns of the region. GIS Trendolizer depictions of land and soil degradation demonstrated a scientifically-tracked breakdown of these changes, and from there, discuss to what extent this data confirms, compliments or contrasts the oral histories and scientific environmental

literature on the region. The supplementing of GIS data with oral histories will add to a scientific assessment of the ecological context in which this work situates itself.

C: Methods and Materials

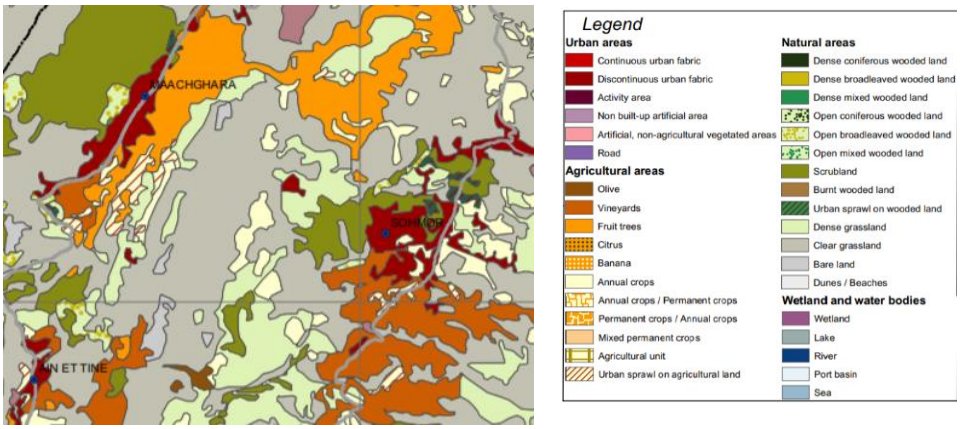
1. *Defining the Study Area*

While the oral histories were limited to Machgara residents, identifying the natural boundaries of study was considerably more ambiguous. The main field and agricultural zone, or the *sahl* in Arabic, where the family farms of the local farmers are located, represents a territoriality that overlaps with the administrative boundaries of village and town.



Machgara Source: Google Maps

Located at Machgara's east, Ain el Tine's northwest, and Sohmor's west, it describes a sense of agrarian place defined more by natural typology rather than an administrative one. Historically, two of the main feudal families mentioned, the Traboulsi's and the Rizks, were said to have "owned the whole area" of Machgara, Sohmor, Ain el Tineh, and Maydoun. This indicates a natural boundary on the basis of a shared typology and history.



Land Use Map of the West Bekaa

Source: Ministry of Environment, 2014

2. *Types of Data Used*

Type of data source	*Databases*	*Involved indicator(s)*
Archives, Historical Literature	*References in text, old manuscripts, peer-reviewed research*	*Historical Long Duree*
Qualitative interviews	*10-15 small holder (<5 hectares) farmers that farm in the "salhl"*	*Livelihood changes*
Trendolizer Earth plugin on ArcGIS	*Images from the Land Degradation Monitoring Toolbox plugin, screenshot to zoom in on West Bekaa*	*Urbanization changes for2000, 2005, 2016* *Soil Degradation*

3. Analyzing the Data

Given that specific themes were sought out from the interviews, the method of data organization and extraction from the responses followed an interpretative thematic analysis where key points and coded categorization were extracted from a process of immersion. Interpretive thematic analysis enables us to identify "the meanings of events and interactions within them" from data generated through interviews (Owen, 1984: 274). From my own transcriptions of each interview, I coded key quotes and fragments of the discussion that correspond to key dimensions of the research questions. The selected quotes and sentences were organized into political, economic, environmental, and historical categories, and the quotes were selected based on their relation to the research question. From this, coding extracts the important aspects of those meanings to categorize them into data that led me to answer and contextualize the problematics and its associated themes and responses related to the research questions.

CHAPTER III

LITERATURE REVIEW

A: Main problematic: Gaps in critical analysis

There is relatively limited literature on small family farmer agrarians' effects from agrarian change in Lebanon and in the greater Middle East/North Africa (MENA) region. A lack of studies and articles on this region and topic in most journals on peasant studies and agrarian change in the global south have left a vacuum of understanding on the region's current agrarian crisis and challenges (Ajl, 2020). Ray Bush argues that it is important to examine the structural factors of why, considering family farming's historical importance in the region, it continues to be underdeveloped and neglected in policy. He emphasizes that in light of a critical understanding of the region, through the absence of reliable data and scholarship, there is a need to emphasize and center farmers' voices and from there, determine their current challenges in finding systemic solutions to the problems of rural changes (Bush, 2016).

This thesis will look at both the macro and micro factors of historical change to give a territorially informed of land and agrarian relations. In the context of the global food regime, Lebanon's agricultural market, peripheralized by its finance sector with time, would serve only to supply high-value cash crops to export markets (Ghadban, 2013) (FAO, 2016). At the same time, the neglect of price-stable grain crops and the alienation of peasant farmers from land owned by large landowners decreased agriculture's role and

strength in Lebanon (Martinello and Riachi, 2019: 128). Dependency and world systems analyses help offer an informed macroeconomic framework on the patterns of unequal global economic distribution and its effect on global south economies. Despite the variance in national or state systems occurring between nations, the global organization of labor and resources systemized all into one global economic unit. Markets, competing firms, and class divisions can differ from state to state, yet all are similar by virtue of the relationship of these features to the global market (Wallerstein, 1976: 39). Yet, as I will show here, the concepts articulated by Immanuel Wallerstein who coined the term "world systems analysis," were not unprecedented.

B. Main Themes and Frameworks

1. Global Historical Change: world systems analysis

Across the global south, a number of dependency theorists and scholars taking the more Marxian world systems approach had articulated the dynamics between the core, where the inflow of the capital accumulation is concentrated, and the peripheral countries, which supply low-skill, labor intensive inputs, and how these extractive relationships were the cause of underdevelopment. Samir Amin identifies agriculture's role in the global south as governed by the principle of accumulation and return on capital, which is localized almost exclusively in North America, Europe, and Australia (Amin, 2012). On the labor end, Ali Kadri adds that the penetration of colonialism, later developing into capitalism, in the Arab world has proletarianized the labor reserves. This has furthered the effects and evidence of capitalism as a world system marked by the positionality of subjugation of developing

countries to the core, the latter continuous beneficiaries of the terms of global trade in commodities of labor and production (Kadri, 2012).

In 1962, anthropologist and social critic Jalal al-e Ahmed dichotomized the world into two poles, one "wealthy and sated" and the other malnourished and low-wage. He described the latter's maladies as the consequence of global North-centric accumulation where class differences cannot be simply reduced to the contradictions of "worker and employer" but rather one of the "global market" (Ahmed, 1962: 30). Similarly, the Guyanese historian Walter Rodney identified core nations as price-setters, and owners of capital, which also set the price for manufactured outputs, additionally accumulating from the price imbalance in trade (Rodney, 1974: 38). In Lebanon's case, the multitude of these elements articulated by these anti-colonial theorists contributes to the complete lack of agency peripheral states and their economies have over their domestic markets, with farmers especially disadvantaged by high input costs and costs of social reproduction, set at increasing rates by the global capitalist market, and ever decreasing return on investments and production, relegating farmers as passive reactors to increasingly inaccessible markets. Mahdi Amel contextualized dependency theory in explaining the role of the sectarian state in benefitting core-periphery neocolonial dynamics in Lebanon. The colonial mode of production, suspended in a state of structural economic dependency, remains subservient and subaltern to the imperial core on the basis of this relationship (Amel, 1973). The identification of the primary native mediator in this exchange, the 'nationalist bourgeoisie,' a categorization shared with Ghanian revolutionary Kwame Nkrumah and Samir Amin, both described a class that maintained colonial accumulation even after the departure of direct colonial presence in the colony and simultaneously, exercised its leverage over, and

in shaping, state power. In this trajectory, the transition from direct colonial occupation or control to "neocolonialism" is marked by the maintenance of colonial class structure through this comprador class and its consolidation through the adoption of property models that reinforce these structures (Nkrumah, 1970). Amin adds that this national elite becomes enriched by its use of the state to its benefit, particularly in post-independence contexts in the periphery (Amin, 1977: 342). As Wallerstein argues, the weaker the state, the less wealth can be generated through productive activity, which, consequently, predisposes capital accumulation towards corruption, bribery, and extortion (Wallerstein, 2004: 71). This both indicates the presence of poor functioning institutions that are a feature of colonization and peripheralization, also highlighting a consequential outcome of the inequalities the capitalist world-system inflicts in global south localities. In the context of internal power dynamics, this global organization of power defines the internal dynamics of governance in colonized nations.

2. Planning

The relationship between these structures of power and land manifests itself in planning. The efforts of planners in making a case for the discipline as a potential intervention in unequal landscapes was first pushed by advocacy planners such as Davidoff, where the responsibility of the planner is to directly represent the needs and interests of marginalized citizens in a space and further consider for whom planning primarily and typically benefits (Davidoff, 1965). However, as Mona Fawaz argues in the case of the village of Tibnin, Lebanon, land planning often operates to reinforce a "propertied landscape," meaning that it works to dissociate subsistence farmers from the land they can

access, even if they don't own it, because it facilitates its building and supports processes that prevent them from participating in decision-making processes about its future uses. Thus, while it claims to protect commons and work against land erosion, planning ultimately reinforces the weakness of sectors like agriculture and the stakeholders that benefit from them (Fawaz, 2015). The evidence for this, in both rural as well as urban landscapes in Lebanon, can be traced through the policy framework traceable throughout Lebanon's recent history. A "Review of Urban Land Management Policies in Lebanon," published in 2013, chronicles the progression of planning policy as it relates to the conditions of the political economy in Lebanon. The report details planning, zoning, and economic policies as they relate to the built environment throughout Lebanon's development into a rentier economy. As the policies towards land planning is evidently biased towards construction, farmers find themselves at a disadvantage without protections for land, waterways, and natural areas. Complimentary to this is the policy report of Dr. Kanj Hamadeh on Lebanon's agriculture in the absence of "public vision and policies." Here, Hamadeh introduces the concepts of food sovereignty as distinct from mere food security, situating the food sovereignty debate in a historical brief of the Lebanese political economy and its associated "modes of production" (Hamadeh, 2019). Finally, the impacts of land degradation, as evidence of metabolic rift and environmental exploitation of land as a result of its commodification, are illustrated in George Mitri et. al (date) to further his argument that land degradation, while indicative of socio and macro-economic challenges in the rural landscape, can be a tool to assist in better land-use planning rather than evidence of its weakness as an intervention (Mitri, 2019).

Lebanon, like the region's agrarian question, stems generally from the macroeconomic conditions imposed by the global peripheralization of its economy. As Ali Kadri argues, the Arab state under the neoliberal order assumes the role as a transmitter of US policy to their respective countries, facilitating the implementation of economic and trade policies that benefit international finance capital at the expense of the national right to development (Kadri, 2016: 236). To understand how peripheralization takes place, it is important to understand the political-economic history of how Arab societies became integrated under the global food regime. While this was a process accelerated by MENA trade liberalization in the mid-to-late twentieth century under what Riachi and Martinello identify as the 'second food regime' of the Cold War era, it took root notably in the late 19th century as Arab world agro-industry served as exporters of food to supply and fuel European industrial expansion abroad and the build-up of imperial Ottoman armies at home (Martinello & Riachi, 2019).

3. Analyzing local processes of change: Historical review

As such, to understand these macro-historical economic transformations, it is important to understand Lebanon through a holistic historical analysis that pays tribute to how local and social dynamics shaped and responded to greater macro-historical changes. As Joel Beinin argues, the limitations of empirical analysis in the lens of world systems and/or dependency theory risks marginalizing or minimizing our understanding of the significance of the local dynamics of agrarian change (Beinin, 2001). Lebanon's economic transformation was analyzed by Paul Saba and Roger Owen in 1976, in a compilation of essays on the Lebanese economic crisis. Roger Owen's literature chronicles the development of

Lebanon's economy and its integration into European and Western markets. Simultaneously, careful attention was taken by Owen to analyze the structure of local governance that would shape the Levant as was originally instituted during the Ottoman Era. In the regions of Mount Lebanon and the Bekaa in particular, the institution of local tax collectors in districts filled up the gaps where Ottoman authority could not be as easily directly enforced. Later, the modern economic crisis in Lebanon came with the expansion, and later domination, of finance capital into Lebanon (Owen, 1976). The degree to which these affected local processes of change and local histories and economies would be dependent on the level of integration of these regions with Western economies over the Levant hinterland. Additionally, the inability of the Lebanese state in its Chehabist experiment to harness foreign capital under its reigns, combined with the political-economic phenomenon of Western-based finance capital assuming stronger control over the Lebanese economy, had effectively severed rural Lebanon from Syria and help accelerate the erosion of agricultural livelihoods (Owen, Saba, 1976). These historical trajectories have been documented comprehensively by Fawwaz Traboulsi through his account of the history of Lebanon on a national scale as well as a regional scale, in showing how political and social change in Lebanon was shaped by both local, national, and regional balances of power from the Ottoman Era to the present day (Traboulsi, 2007). Traboulsi's historical literature on Machgara, in specific, hones in on the local dynamics of patronage and sectarianism as they played out in this regional change, giving attention to the agricultural context in which these exchanges and positions of power occur (Traboulsi, 2004).

4. Environmental review, metabolic rift and alienation of land

Economic changes resulting from Lebanon's integration into the world system generated both environmental as well as agrarian consequences. The metabolic rift analysis holds that the commodification of land has the effect of isolating humanity from nature, alienating people from land as a means of production, and harnessing a communal relation to earth (Foster, 1999). Jason Moore clarified the links between the world system and the degradation that occurs to lands in a global south that result from its commodification. Contextualizing his argument in Wallerstein's work, he identifies monoculture mass production, capitalism's insemination into the global south, as a "hallmark" of "capitalism's present day environmental degradation" (Moore, 2003). As John Bellamy Foster writes, the symbiotic relationship and interdependence between humans and nature becomes convoluted and disrupted when the commodification of both elements occurs under capitalism (Bellamy-Foster, 1999). A disruption to this natural metabolic order, it is argued, is what produces crises ecologically and economically.

These environmental effects of Lebanon's integration into the modern capitalist world system are not absent in the rural domain. Most of the existing literature on the region's typology and its changes, helps us quantify and situate this location in its present ecology, assessing the consequences of change over time. Most conventional definitions of land degradation pertain to any reduction in a land's potential or capability to support ecosystem functioning or local society and development (Smelser & Baltes, 2001). The initiative, aimed at identifying patterns of land degradation, surveying agricultural and land use patterns, also put in place suggestions and recommendations accordingly for detailed master plans. The final paper generated out of this effort, "Assessing land degradation and identifying sustainable land management practices," hashed out the demographic, agrarian,

and ecological composition of the West Beqaa, also identifying socioeconomic causes, including insecure land tenure, and poverty, as main culprits of land degradation in the heavily agrarian-dependent West Beqaa and greater Qaroun catchment area (Mitri, 2019). The past 10 years have seen an unveiling of environmental campaigns and laws focused on the rural sphere, including reforestation and the preservation of biodiversity (FAO, 2016: 62). Yet these plans did not offer a solid intervention against the material commodification of land or did much to address the economic precursors to land abandonment, mismanagement, and degradation. The direct causes of rural land degradation in Lebanon corresponded to the main culprits behind agribusiness and the capitalist commodification and misuse of land: "natural causes," poor soil management, industry and mining, overgrazing, removal of natural vegetation, urbanization, and withdrawal of water, amongst others (Mitri, 2019). These highlight the natural consequences of agribusiness farming, placing its disadvantages on labor as well as land. In the context of the 2005 NMPLT, which situated this area of the West Beqaa as a protected natural agricultural area with potential for small-industry and tourism, we can understand how practice under Lebanon's integration into the world system, over time, invalidated planning as an intervention protecting rural ecologies and livelihoods.

While these studies will be important in situating Machgara's physical typology and identifying the quantitative side of the economic and ecological effects of rural transformation, a qualitative assessment that hones in on the livelihoods affected remains critical. In balancing social needs with environmental challenges, an agroecological framework of ecosystems management can assist in productivity while preserving ecology and protecting local livelihoods (Altieri, 1995). Developing and fostering an agroecological

paradigm in Lebanon includes understanding the presence and history of current agro-ecological paradigms and practices in Lebanon. This requires a facilitation of rural common knowledge for farmer-first and bottom-up identification of solutions (Chambers, 1994). An early application of this approach was employed in a 1971 survey of land tenure showed how increasing input use and cost as well as land tenure insecurity predisposed Lebanese agriculture to its current abysmal state (Sadr, 1971). The state ultimately furthers its role as a mediator between the interests of owners of capital, contributing to an absence of protection for farmers, redistributive policies, or price-stabilizing interventions for tenants. Sadr's analysis came at the end of a period that saw the number of farmers increase as they began to descend into poverty. Bush had further shown that patterns of increasing regional inequality in the distribution of land had predisposed farmers to near-landlessness and often forced farmers to supplement their incomes with other work (Bush, 2016). Bush writes that in Lebanon in particular, though the number of farmers grew 36 percent from 1960 to 1971, with 75 percent of Lebanese farmers occupying under 1 hectare of farmland while occupying only 20 percent of farmland. At the same time, farmers with more than 10 hectares, representing a fifth of all farmers, cultivate 30 percent of arable land (Bush, 2016). This combination of land-tenure insecurity and increasingly marketized economic conditions would decrease the size of land holdings by average family farmers and exacerbate their poverty. In 2010, it was estimated that the average area of a farm is 13.6 dunums (1.36 Ha), a 3.5 percent decrease in average area compared to 1998. During that same time, agriculture would go from employing nearly 19% of the workforce to just 6% (FAO, 2016: 50). These disparities of land tenure and land access have predisposed farmers today to a lack access to markets, and forced neglect and abandonment of lands, all

of which will be elaborated in the historical longue durée. Overall, the content reviewed allows me to ground the following research questions into this work and both its theoretical and practical context:

1. What have been the historical and macroeconomic changes that affected agriculture in Lebanon, particularly the West Bekaa and its southernmost field farmer livelihoods?
2. How useful can planning tools be to address these changes and their impacts and what changes are needed to be made in planning to help support family farming?

CHAPTER IV

HISTORICAL ANALYSIS: MACHGARA IN THE LONGUE DUREE

A. Introduction

The economic and historical backdrop to Lebanon, and more specifically Machgara's, integration into the world system, is critical to understanding how rural and agricultural livelihoods were affected by these changes historically. Additionally, understanding the propertied dynamics of land use and control in this historical light offers a clearer understanding in how planning has served to reinforce these global and local dynamics of power and land, and its product.

B. The historical timeline: Lebanon's food regime in the world system

1. Ottoman Era (1850-1914)

The Ottoman Era period ushered in a coinciding period of one regime with the first "food regime," from the 1870s to 1930s period as defined in the contemporary food regime analysis framework (Riachi & Martiniello, 2019). The primary purpose of land under this regime had been, throughout, to raise taxes through agricultural production and sale, and to harness this objective towards maintenance of the large, expansive, and consuming Ottoman empire (Sadr, 1971; Owen, 1981). This was also characterized by early forms of primitive accumulation in the Middle East, where excessive accumulation by land-owning notables and tax (*miri*) collecting district leaders, little more than cosmetic organizational rearrangements between states and elites, came at little to no change or benefit to workers

and peasants. (Owen, 1993: 11). This was an agrarian society and economy: three quarters of its population resided in the countryside, drawing their living from the land (Quatert, 2001: 44). The agricultural composition of the area during this time was primarily grain based, with about 80% of lands cultivated for cereals (Issawi, 1988: 271).

Ottoman organization of land and the economy was heavily foundational upon originally the Muqata'ji System from 1842 to 1861. The Muqata'ji system was a means of land organization by which power and authority was mainly held under feudal families presiding over land divided by districts. This land organization placed property under the domain of those with those established families with connections to the Ottoman authorities (amirs or walis) and had land deeds and titles in their possession (Hourani, 1991). The main tax-collecting feudal families in Machgara at this time included the Christian families of Traboulsi and the Rizk, whose influence consolidated especially following the transitory period of land reformation of 1858-1861 (Trabousi, 53). The land laws of 1858 were foundational in legalizing private property of land and orienting land cultivation and organization to export-orientation (Beinin, 2001: 51). These laws, as Beinin explains, had an effect of reaffirming state authority over tax-farmed lands, organize tax-collection, thereby reinforcing patrilineage over land.

In Jabal Amil, this had coincided with the decline of traditional feudal arrangements in farming as tax farming consolidated itself as the prime arrangement. Some land was owned by families or individuals as mulk, most of it was farmed for *miri*, with typically a fifth of districted land as waqf. The economic and social dynamics between mulk (privately owned) and miri (tax farmed) were very similar--though the state acted as a mediator in delegating local overseer of this land (Sadr, 1971). A sharecropping agreement known as

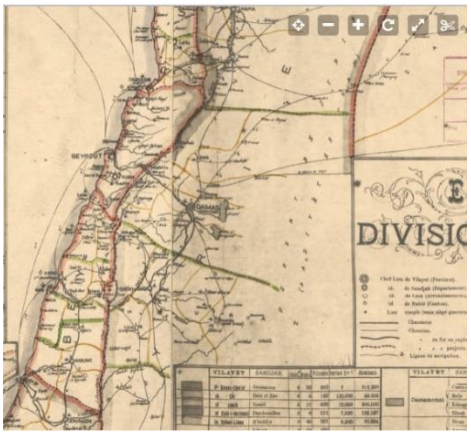
the muraba'a burdened farmers by forcing them to cover input costs and taxes while being only entitled to little and often insufficient share of the annual harvest (Chalabi, 2006: 20). The landowner, enjoying rights of inheritance and paying no rent to the state, acted basically as a landlord as the owner of *malk* land would (Sadr, 1971). As wheat farming had predated tree crop cultivation in this lower region of the West Bekaa, farmers often suffered from the high taxes imposed upon them. The feudal district leaders had links with those in Mount Lebanon, where silk cultivation was prime and where another market for wheat was found. The unrest that came with increased taxation was the catalyst for the 1858 farmer uprising, affecting most heavily Shiite peasants (Chalabi, 2006: 21). The reforms that came after were little more than concessions made to consolidate and ease the heavy burden on Turkish authorities challenged by the heavy burdens of tax collection and conscription. As such, they predictably came with little material benefit to workers of the region. After 1861, the Mutasarrafiya system took the place of the Muqata'ji order. These concessions legalized private property for better orient products for export, reaffirmed state ownership over miri, which was backed by iltizam (tax farming system) and the malkate, and facilitated tax collection from cultivation on lands now registered by deed and reserved to those that can cultivate (or hire cultivators and sharecroppers) and pay the tax (Beinin, 2001: 51).

The economic disenfranchisement faced by the peasant class in the Ottoman Era defined the social divisions of agricultural labor in Machgara but also elsewhere. A common memory of the Ottoman empire has been recalled as primary occupiers that had implications for the agricultural and social landscapes of the countryside:

"Turkey ruled us for 100 years. Turkey would take our people and send them to their wars. They occupied our lands" (Ammar, 2020).

The strength of the Maronites increased under the French occupation (1920-1948) after a brief period of Ottoman conscription (which only began for Christians in 1909, before then which they had been exempt from). The combination of forced conscription and political marginalization had sent both Christians and Shiite Muslims in early waves of migration out of Lebanon (Pelekis, 2003: 74). In this period, the effects of primitive accumulation coincided with displacement of both agricultural workers from their lands through the earliest manifestations of land tenure insecurity. However, the 1914-era out-migration of Shiites was not for as long as had been the latter waves of diaspora or as far away as their Christian compatriots:

"In 1914, people in Machgara left to Syria. These were, of course, the poor migrants. The Muslims, mostly the Shi'ite Muslims oppressed under Ottoman rule. The Christian migrants would migrate to Europe and America. The poor Muslims escaping the ottomans couldn't even pay the price of a ticket. Anyway, they would migrate to Syria to obtain wheat. Those sharecropping under the Ottomans would only be entitled to 5 kilo of wheat or corn a day" (Sharaf, 2020).



Mutassarafiya divisions, 1899, (Source: Library of Congress)

2.Decline of the Ottoman Empire, Rise of the French Mandate (1920-1950)

The fall of the Ottoman Empire in the first and second decade of the 20th century would give way to a political and economic arrangement dominated by the soon-to-be French mandate. This had its implications on how land would come to be reorganized. In the 1920s, a process of re-registration had complicated the process of land reorganization, in which legal authority presided over the jurisdiction of land and land redistribution by sect. The new parceling off as land now came under various sectarian courts, with the Jafari court given the task of defining personal status for the now politically salient sect after 1926. A French administrator that had surveyed Machgara territory noted these complications in a 1920 dispute over waqf property, one of many that failed to result in a clear settlement both from French or Shi'ite authorities. As referenced in Michael Weiss's "Practicing Sectarianism,"

"Under the Ottoman regime, the Shi'i Community—like the [other] communities attached to Islam: Druze, Alaouite etc.—was not recognized and was legally treated as an integral part of the Sunni Muslim community. The Muslims of these communities were always subjected to the law of the Hanafi rite, the official rite of the Ottoman Empire. This is no longer the case in Lebanon, where the particular and independent existence of the Shi'i and Druze communities was consecrated by the creation of Chérieh courts for the Djafarite and Druze rite. As these communities [were] also separated from Sunni Islam, they obviously must exercise, vis-à-vis the latter, full independence in the management of their canonical interests and temporal patrimony." (Weiss, 2010; 126).

French development planning would attempt to lessen, through rural development planning, the gaps between Beirut and Mount Lebanon on one end and newly-integrated rural regions on the other, also instituting the institutionalization of private property, the

creation of sectarian-based court systems to manage property and other social and personal affairs, and the introduction of the cadaster. At this time, the French mandate also brought in the first uses of land-use planning in the 1930s, ushering the country into modernist development and crystallizing the path for land privatization that was already started under Ottoman rule (Fawaz, 2015: 371). In rural regions and villages, this reorganization transitioned land and land's purpose from the "collective organization" of earlier Ottoman Eras to the "commercial individualism" of the French mandate (Mundy, 2007). At this point, land was seen as a commodity and a means of exchange, reinforcing and accentuating the urbanization and commodification of agricultural land and existing wealth inequalities among villagers *because* of colonial-era planning rather than in spite of it.[3]

In 1936, new treaty definitions to recognize Syria as independent of France also would reinforce Syria and Lebanon as separate entities, emphasizing the economic primacy of Lebanon's coastal activity (Owen, 1974, 25-27). In industry, the Jabal Amel region had strong economic ties to Palestine, with the Palestinian lira circulating more amongst the markets of Bint Jbeil and Mashghara than the Lebanese lira, the latter being heavily under the domain of French trade (Abisaab, 2009). As Lebanon's dependence on the interland declined, the importance and prominence of coastal cities--and thus, the respective leaders of those coastal communities in the framework of the new nation--became central. This was also marked by an increased importance on the service sector, trade, building, and the

[3] "Propertied" organization of landscape took precedent over other means during the land organization schemes of the early 20th century. Ottoman Era "agricultural commons" would be privatized and even zoned for building by the late Ottoman Era. See Fawaz, 2015: *Planning and the Making of a Propertied Landscape* p. 375

emerging tourism industry, all which rose as the silk industry faded into oblivion (Owen, 1974: 26).

Machgara, at the intersections of the Syrian-linked Bekaa and the Palestinian-tied Jabal Amel, fell under both domains geographically and economically. Before the establishment of the Grand Liban absorbed the entirety of Lebanon into the French domain, it's agricultural market and composition had links to Syria's hinterland as a Bekaa city, but also its industrial production, manifested in its leather factories, had a strong market in Palestine. Lebanon would be officially recognized as a separate state in 1943 with Bishara al-Khuri as its President. Just five years later, the illegal Zionist entity would be established, cutting off trade to Lebanon's Palestinian export market to the south- a move that effectively destroyed Jabal Amil's economy, especially given its economic neglect by Beirut, devastating its industrial workers and peasantry alike (Chalabi, 2006: 95).

Government planning was characteristically marginal in this entity, being only 13.7 percent of national income in 1958 (Hudson, 1959). The main objective of French-mandate era planning had been to narrow the wealth gap between Mount Lebanon and Beirut (Hamadeh, 2019), a mission that had failed due to the stronger effect finance capital had over planning in designing regional economic outcomes between different Lebanese localities. At around this time also, the Gulf experienced an oil boom that would shape Lebanon's own political economy and embolden its already disproportionately wealthy merchant and finance class. Massive petrodollar profits to the amount of around $7,732,000,000 would enable Gulf oil producers to purchase Arab market goods (Issawi, 1964). Between the whole period of 1950 to 1974, bank deposits multiplied nearly forty-fold and between 1950 and 1963, average income per capita nearly doubled from $235 to

$449, mostly a rise skewed towards the urban bourgeoisie in Beirut and its outskirts (Laasko, 1989: 6).

The demand for export-oriented crops, such as fruits, vegetables and poultry, from Lebanon helped expand agricultural export markets to further and wealthier regions, like the Gulf (Issawi, 1964: 285). Yet this came at the expense of national agriculture, sustenance agriculture and price-stabilizing grain production that had been an important, yet increasingly marginal, crop for the Bekaa. The introduction of tree crops and the expansion of fruit-based agriculture during this time in Machgara also ushered in an era of intensive pesticide use. This began with the Demol (Parathion) brand used as far back as the 1930s, an old staple chemical for farmers in the area, but then expanded during the 1950s and 1960s to include an assortment of petrochemicals from a variety of European sources (Ammar, 2020). These included the German Bayer company, Parathion, and from Sweden, Ecalix (Sharaf, 2020). This intensive imported pesticide use, driven by the need to produce took off around 1958, represented a political as well as ecological transformation these inputs would bring upon the agricultural domain in Lebanon.

Between the 50s and 60s, the massive regional economic boom expanded and accelerated commerce, trade, and tourism in Lebanon. Consequently, this acceleration in growth also contributed to accelerating land degradation in Lebanon, especially during the 1960s, that came with this growing industrialization. At the same time, the increasing commodification of agriculture in rural Lebanon took hold, transforming the practice from sustenance agriculture and family-oriented farming to intensive fruit crop production, mainly for export. Deposits in Lebanese banks, thanks to Gulf Capital, grew from $232 million to $792 million by 1961 (Issawi, 1964). In order to keep supplying and developing

the agricultural sector, which was based on price-unstable produce, more capital-intensive techniques of rural development were instituted, spurred on by this influx of fuel capital.

This influx was accompanied by a rapid shift into financialization that did not leave support the more rural or "primitive" sectors of the economy. Kadri references Amin's convictions that capitalist (industrial and capital intensive) industries dominate the more rural, labor intensive forms of production that cohabit the same systems in a nation (Kadri, 2012: 15). In fact, the same rings true looking purely at rural economic contexts in the global south with the understanding, as Kadri argues, that both these urban and rural contexts are operating under a historical and global formation of capitalism that functions as a world system rather than as a dichotomy.

Several factors in the 60s and 70s accelerated the rural to urban migration in Lebanon. Land tenure became increasingly unfair for farmers sharecropping on it, and the mechanized inputs increased the cost of production for farmers that had little access to capital (Issawi, 1964). Also, and at this time, Western finance capital found its way into rapidly urbanizing and developing the Lebanese market (Owen, 1974; Issawi, 1964). As young people began to migrate to the city, and increasingly abroad, land in some cases changed hands and, at times, farmers abandoned their lands.

The 'urban bias' this economic change represented was marked by produced a number of social changes. On one hand, the exodus of people from the villages into cities manifested itself across two different waves first in the 1950s when pull factors towards more affluent jobs and standards of living pulled the initial wave of migrants to cities: *"Nowadays young men, especially Maronites and other Christians, many of whom are educated, are unwilling to work on the land. They prefer jobs in the towns, and failing that many of them*

would rather live with their families, unemployed and aimless. So, too, the women of the more sophisticated villages no longer work long hours in the fields." (Lewis, 1952: 7)

In many other instances, however, the proletarianization of labor enabled access to land for a whole class of villagers. Many of Machgara's homes with land around them, and the agricultural field (sahl) area, had been mainly in the domain of the Traboulsi and Rizks, began to get purchased in small plots by these increasingly urbanized workers with the help of their newly acquired wealth.[4] Remittances as a secondary source of income for small-holders was a factor in household income for family farmers in 1952, but also increasingly an additional means which these later farmers, mainly formerly landless Muslim Shiites, would purchase small plots post-1960s:

"In the late 1960s, there were bigger migrations of these kinds of agricultural workers, the oil workers. Those would go to the Gulf. As they acquired more wealth, they began to purchase land. This was the land from the big landlords and landowning families" (Sharaf, 2020).

"The sharecroppers began to work, they found labor in the cities and in industries, and began to buy off lands from the owners" (Kanso, 2020).

And evidently, though class differences pushed wealthier rural people out into the cities earlier, and into relatively better urban conditions, high input costs would come to be a push factor from agricultural labor and lifestyles for even the relatively wealthy:

[4] Ammar H.; Naji A., interview. March 2020.

"In the old days the low-grade wheat terraces were maintained by the work of the owner's family; now they are not worth the cost of labor because of the low yields of the unscientifically cropped, tired land 20-30 kilograms per dunum (200-300 pounds per acre) is an average yield. The use of chemical fertilizers and similar methods of increasing the yield is highly restricted, but with their adoption yields might be doubled and wheat farming made more profitable" (Zeina, 2020).

The introduction of cash crops and fruit trees during this time came as the family cultivation of wheat had been eclipsed by this new product. While the high yields from these higher value, higher volume agriculture products and booming economy had been temporarily promising to urban workers as well as farmers in Lebanon, the costs of social reproduction increased, which included inputs, maintenance costs, and production expenses.

3. Capital Inflow, Agricultural Decline, and Civil War (1950-1990)

From the mid 1950 to the onset of the civil war, foreign, non-Arab control that comprised over 40 percent of bank deposits in the Banque du Liban, began to dominate Lebanon's economy, pushing out industry and agriculture and handing over half of Lebanon's domestic market to foreign goods (Traboulsi, 1974: 155). At this time also, the export-import balance in Lebanon became heavily biased in favor of importing due to its high dependency on external capital and external markets, with exports covering just one-eighth of imports in 1961. (Issawi, 1964: 289)

Even as industry eclipsed, the industry that did remain imposed its capital centric model on agriculture. Capitalist accumulation also exploited the vacuum left by the government on land tenure and land redistribution, with both French code inapplicable at

local levels and “miri” land left unregistered and neglected by the state (Sadr, 1971: 30). This opened the opportunity for formerly agricultural, unmanaged land to become a function of the financialized economy and land a commodity for this purpose.

This form of ‘capitalist sharecropping’ would also contribute to the lack of food sovereignty for farmers, who, even when they were provided high-capital farming inputs from landowners and landlords, were either giving a portion of their products to these land-owners or finding their product greatly devalued and reduced by the commodification of agriculture. Some farmers, known as “rabai’in” or “the quarter” entered in a type of sharecropping agreement where they would be able to take a portion of the product for working the land. When times were good, the efforts of their labor would not be represented in the portions they would take, and in hard times, the yield they would take home would be very low.

The top agricultural exports, fruit and poultry, would comprise over ⅔ of total production (BankMed, 2016). Local food consumption was largely the product of these imports, with only 15% of food consumption from locally sourced inputs, and to today Lebanon imports at least 80% of its food (ESCWA, 2016). Agricultural workers became more and more disadvantaged most by the lack of sovereignty they had over food and crop production, and by falling victim to local agribusiness monopolies for industrial production.

Lebanon was growing as the strongest port country that cemented the primacy of the economies of the Arab world with the West. City-oriented development and institution-building combined with externally-inclined financialization of the economy has pushed hundreds of thousands of farmers out of the profession. In the two decades between the

1950s and 1970s, 100,000 agricultural workers left farming, crowding into the cities to be absorbed into a workforce that has grown from 65,000 to 120,000 during that same corresponding decade (Issawi, 1964). Only 20% of Lebanese would remain farming in 1975, in contrast to 50% in the 1950s (Sadr, 1971; Owen, 1974).

The launch of the IRFED economic mission in 1958 resulted in producing findings that identified large socioeconomic inequalities in Lebanon. According to the findings of the study, four percent of the nation's very rich had usurped a third of the national income whereas the bottom half altogether took over only 18 percent. The mission, of whose research was conducted in 1960 and 1961 suggested developmentalist planning initiatives that prescribed capital-intensive infrastructural projects to remedy inequalities (Nasr, 1978). This demonstrated a modernist-developmentalist approach to planning that paved the way for a number of often internationally-financed infrastructure projects, where regional development projects modeled after the United States' Tennessee Valley Authority model was exported to many countries (Molle, 2006). These included a number of developmentalist initiatives such as the Litani River Authority (1959), the nearby Qaroun Dam project (1959), the Green Plan (1959), and the General Directorate of Cooperatives (1963).

Farmer cooperatives in Lebanon, established through a 1909 law that was reamended in 1932 and 1938, aimed at providing farmers with resources to better market their products, access to credit, and reduce costs in inputs (Polat, 2010). In 1955, there were 22 registered agricultural cooperatives, and by 1961, this number had grown to 128; however, only 11 were active (Al-Haj, 1961). An initial uptick in the number of cooperative registrations had ensued after 1956, when pesticide commodities had been

given out for free through registered cooperatives. This trend continued throughout the ‘60s and ‘70s, when, until the civil war, cooperatives formerly well supported by the state lost this support, and hence, functioning[5].

The geopolitical implications of development were evident in agriculture as well as infrastructural construction. During this year, the US directly occupied Lebanon, landing on Khaldeh beach at the request of US-allied President Camille Chamoun. As the US sought to cement western friendly allies in the Middle East to cement support for the Baghdad pact and crush the potential of both Nasserite and Soviet pushback in the region, particularly as the pro-Nasserite rebellion was strong (James and Leake, 2015). Accompanying the US’s cold war-era military occupation was the parallel so called “Eisenhower project,” a strategy of agricultural domination:

“America ruined our wheat agriculture and they fed the world with their wheat (exports). Before America flooded the Lebanese market with wheat Lebanon used to even sell wheat to Italy. America destroyed Lebanon’s wheat farming. The Eisenhower project would sell wheat to us in the form of food aid. Wheat was a commodity and it became very cheap. Whoever wanted it could just buy it. They would sell us wheat to beat out the Soviets and gain control over people and nations” (Sharaf, 2020).

The Public Law 480, launched in 1954, flooded Lebanon with 65,000 tons of wheat from the United States under the pretext of drought season relief. It was part of the United States’ “Food for Peace” program, which enabled “friendly countries” that were also “food

[5] Polat, 2010 “Cooperatives in the Arab World: Reaffirming their validity for local and regional development.” ILO Report. pp 11

deficit" to purchase grain from the US.[6] Yet Lebanon was not food deficient, especially not in grains. In fact, the Bekaa was widely historically regarded as the breadbasket of the Roman Empire, mass cultivating wheat to supply the Roman Army. While most wheat cultivation was concentrated in the Baalbeck and northern regions of the Bekaa, family and sustenance wheat cultivation were a common practice of households in Machgara and Sohmor prior to the days of tree crop farms and plots of land. As previously mentioned, the majority of Ottoman era farming was cereal and grain farming. It's clear that this wasn't a solution to an agricultural crisis, but part of a cold-war era political strategy of the "Food for Peace" framework for the Third World.

The immediate aftermath of this political frame led into the 1960-1975 "Golden Age" that had galvanized Beirut a the "Paris of the Middle East." This was a time where incredible capitalist growth had accompanied an increasing gap between rich and poor and a neglect of the agricultural sector in this growth and development. Chehabist statist reforms of 1958, evidently, did little to challenge or alleviate power and land dynamics (Owen, 1974). Yes, there were some state institutions and national-scale development launched at this time, a legacy of Chehabist initiatives that intersected with the modernist planning paradigm of the era. Land taxes on undeveloped land were repealed in 1959, thereby encouraging more rural families to practice agriculture (Clerc, 2013). However, efforts at redistributing land and wealth, reforming land tenure, or protecting farmers were little to none. While these reforms did start farmer's cooperatives and some subsidies, these

[6] Congress, U.S., Hearings before Subcommittee of House Committee on Appropriations, Consisting of Messrs. Bingham, Gillett, Brick, Livingston, and Burleson. *Charge of the Legislative, Executive, and Judicial Appropriation Bill for 1909*.

reforms would not offset the high input costs, unfair land tenure arrangements, or decreasing wages and incomes farmers were suffering from.

As Kadri describes, successive military defeats in the Middle East coincided with "a long term erosion of state autonomy over policy" deprived working classes in Arab countries over a relationship with the state as a medium of policy, which in this case included declining social support to the rural sectors and the institutions that had been intended to transmit this support (Kadri, 2012: 19). The little state support for agriculture was offset by shaky land tenure and land access inequality, and rapid financialization of land and labor. Between the late sixties and mid-seventies, more farmer's unionizing and strikes characterized the dissent of this time. A Soviet source counted 20 workers strikes in one month of 1960 alone (Issawi, 1964). Peasants continued nationwide revolts against agribusiness monopolies, and tobacco farmers, unable to sell at fair and higher prices, refused to deliver their product (Traboulsi, 2007: 146-147).

Agriculture's contribution to the Lebanese economy sunk from around 20 percent of GDP in 1948 to under 9 percent by 1974 (Nasr, 1978). The further global neoliberalism had hoisted Lebanon into market-based economic development, the less government planning and nationwide institutional support became in being of credible support to small family farmers:

"There are agricultural cooperatives but they aren't assisting farmers. In the past, long ago, they did used to. They would usually assist farmers through municipalities. If the [agricultural] ministry would send anything or any assistance to farmers, they would do it through the co-ops. We register through the municipality and then the co-ops would distribute to the farmers, but that doesn't regularly happen now" (Baalbaki, 2020).

The testimony that farmers gave to the existence of these cooperatives in the past would become compromised by the effects of financialization and state neglect on rural institution and capacity building. Though the Lebanese Directorate of Cooperatives at one time had provided the institutional capacity for local, agricultural cooperatives to provide inputs and resources to small family farmers, these institutions have, as many of the farmers described, no longer served or fulfilled their intended function. After 1990, a year that marked the institutions' integration into the Lebanese Ministry of Agriculture, the cooperative sector had replicated the sectarian and institutional problems of the state it was integrated under. Instead of acting as a platform of bottom-up organization, cooperatives had eventually assumed a role as furthering corruption and clientelism rather than challenging it. The distribution of resources and funds, digressed from a formerly autonomous to one on a "clientelist and political affiliation basis," funded mostly by international NGO donorship (Hamadeh, 2019). The role of these mainly inactive cooperatives largely became relegated to the distribution of pesticides and fertilizers by large suppliers through international donors—a pattern that began as early as the 1950s with the early proliferation of additional cooperatives—further encouraging the use of these inputs on farms (Ghadban, 2013). The cooperative's integration under the Lebanese state, evidently replicated the same function of being a means of exchange between international finance capital of NGO funds. The farmers role, too, vis a vis the cooperative, would be little more than clients of political parties or private agencies rather than as citizens; whereas the role of the cooperative would be a tool for the farmer to market their labor, the contemporary cooperative became a mechanism for global petrochemical firms to market their product.

Soon following the onset of the civil war, two factors in agriculture would be the result of the complete institutional collapse of the nation: the destruction of the export market and the further NGO-ization of agriculture. At the same time, the developmentalism that ushered in the Golden-age area planning initiatives in Lebanon began to wane as market-led initiatives and foreign capital overpowered economically. After 1970, the collapse of Bretton-Woods had ushered in a balance-of-payments surplus for the US that projected it into a global campaign to sell off as many of its assets (Hudson, 2003). This required the enveloping of every global economy into the US's orbit. As the early-to-mid 70s neoliberalism was in full swing, the United States sought out external, global south markets to exports to, which included flooding local markets with agricultural surpluses.

For many small and landless farmers in the Arab world, the 1970s corresponded to a turning point away from planning and into a more free-market led environment that particularly affected rural development and livelihoods (Bush, 2016: 6). This produced its corresponding changes in the Lebanese agricultural market. After 1974, the United States would have landed a prime agricultural import market in Lebanon. That year, the value of US agricultural exports boomed from $25 million in fiscal year 1973 to $57 million (Kurtzig, 1975). At the same time, the post-Bretton Woods institutional arrangement drove the US into finding export markets for excess capital, vested in protecting U.S. industrial and agricultural exports at the expense of agricultural and industrial sovereignty and prosperity in the periphery (Hudson, 2003: 187). To eliminate all export competition from global south agro-economies, the World Bank and IMF had designed their programs to facilitate the sustaining of large-scale exports that required the undermining of local industrial and agricultural sectors (Hudson, 2003: 185). At the same time by 1975, the year

that marked the start of the 15-year-long Lebanese civil war, a number of foreign NGOs began to dominate the rural sphere in Lebanon, capitalizing off the weakened state institutional capacity that civil war had added into an already laissez faire economic sphere (Saadeh, 2020).

In Lebanon, both factors facilitated the complete destruction of agriculture as a state and regional economy and helped further aggrandize disparities between the North-centric import-to export balance. Not only were these two factors the direct outcome of the 1975 institutional collapse, but they would also be the foundation for many of the problems in agriculture and ecology in Lebanon today. The external plundering of the agricultural market in Lebanon had now been supplemented by the further internal dissolution of the state, its institutions, its society and economy.

The mid to late 70s decline felt by farmers across the country when these external price shocks in the market, which the agribusiness cash-crop economy became highly tied to, negatively affected farmers. The state's negligence in ensuring protection for farmers, especially as the state moved from "a civil service to a self-service mentality" (Saadeh, 2020). The out migration of workers abroad and to cities, the increasing import and export balance that killed the competitiveness of Lebanese agricultural exports, and the dwindling presence of state support had sent agriculture, as a livelihood, into free-fall. As Mahmoud recounts: "One had 100 dunams of land and another would have 10. People migrated to, more went to the industries…this was around the 1970s at this time also you began to see the strength of agriculture weaken...by 1975 and up was the decline."

The struggling aspects of this sector and the existing inequalities in wealth and land that were increasingly pronounced during the Golden Age would further be devastated by

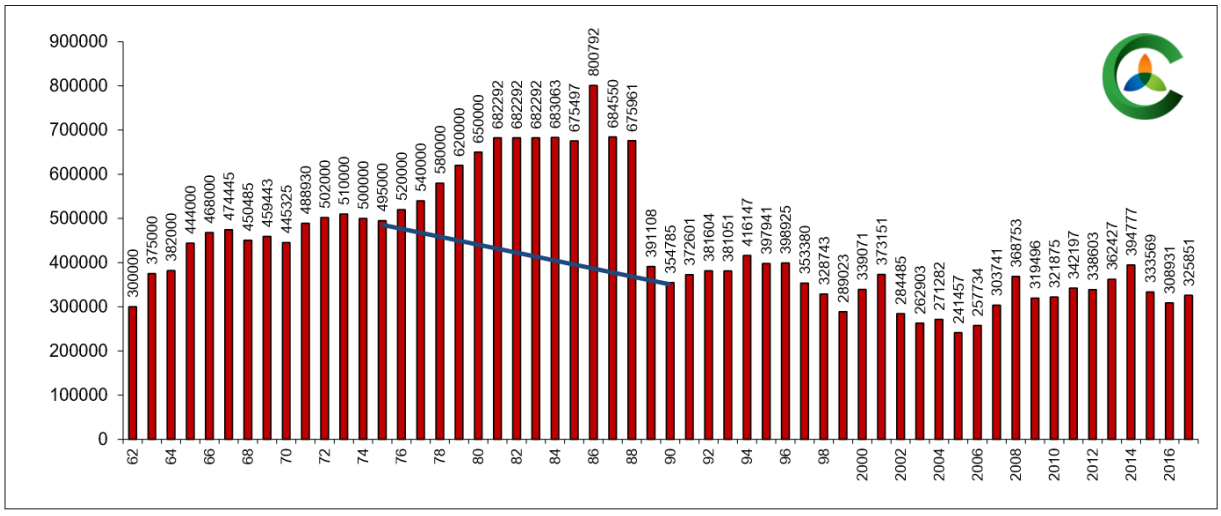
the Civil War and the Zionist occupation. By 1986, these macroeconomic factors as well as the impact of war and occupation had made agriculture a heavily disenfranchised and deprived sector. The sharp uptake in inflation, combined with the sharp and drastic decline in Gross National Product for agriculture post 1986 at the height of Civil War and Zionist occupation. As one farmer and vendor additionally recounted, this made the natural mobility necessary for agricultural production and distribution impossible, killing of a sector in the '80s that had been in freefall from the '70s: "From the advent of the occupation, there was no freedom of movement for the farmers, and challenges in movement meant farmers can't drive to Beirut to sell in the markets. They cut off the roads of access between their farms and Beirut. There became a lot of challenges from this. Prices fell a lot, lower and much lower than now. Agriculturalists lost everything and people lost their farms in the tons" (Reda, 2020).

Machgara was under Zionist occupation for approximately three years, from 1982 to 1985. The start of the civil war had already displaced many family farmers, landowners, and fellahin to outmigration for either economic or war-related reasons. In Machgara, this led to lands being abandoned or repurposed. However, under the new conditions of war and poverty had meant that land hadn't been taken care of properly. Ali identified agriculture's decline in the 1970s in Lebanon, but the Civil War and the sectarianism it brought as the culprits for decline along with the macroeconomic factors that had preceded it: "The Muslims were poorer. The Christians had land. The latter would leave and migrate during attacks. Upon taking the Christian land, this had a negative effect on all the agriculture in Lebanon. Now, the owner of the land has to give back to the land. A person in an emergency war time mindset will take from the land but they won't take good care of it and give back to the land. They wouldn't fertilize it. Until they made some production off of it, they would work on it a little bit, but not all

the way. Just to take what they need out of it but not to think about the future or health of the land" (Sharaf, 2020).

Class differences in the village had manifested somewhat along sectarian boundaries, thanks to aspects of the social power dynamics between sectarian groups instilled by the Ottomans and continued by the French, yet Ali emphasized that the divisions between those that owned land and those that didn't represented the true underlying dynamics.

At the time, agriculture became paralyzed by the closure of roads, the halting of transport routes, and the occupation and destruction of Lebanese farmland and villages by the Zionist occupation. And as was mentioned, this had market and price-oriented repercussions that directly ensued from the current political crisis.



Gross National Agriculture Product of Lebanon 1962 – 2018 (**in constant value of Lebanese Lira X1000**)

Source: Saadeh, 2020

4. *Post-Ta'if, post-War: Solidere, Beirut's reconstruction, speculative transformation (1990-Present)*

The 1989 Taif Agreement brought an official end to the civil war. With it came a new set of political actors that would cement Lebanon's post-war order. The destruction of Lebanon during the civil war and the dishevelment of a state apparatus demanded massive funds as well as a framework and practice for planning; needs that have found themselves unfulfilled in the postwar milieu.

The new prime minister at this time, Rafic Hariri, a former teacher from these modest origins, became a successful contractor in Saudi Arabia, with his business prowess winning him several contracts and a Saudi passport. Having established his own development firm, Saudi Oger, in 1978, as well as his own foundation in 1979, a combination of his personal connections at home in Lebanon, and in Saudi Arabia amongst international contractors and developers, would help secure his business empire in his native land post-war (Baumann, 2012).

Upon becoming prime minister in 1992, Hariri, though Saudi Oger, would take Lebanon's reconstruction under the domain of his company (Makarem, 2014). This was done through a combination of patronage--winning the consent and control of municipal officials, the old bourgeoise, different political leaders and groups, and contending local powers--and changing the legal framework to enable real-estate regeneration, symbolized by 1991's Law 117 that launched development projects Solidere and Linord, to override government and municipal planning (Baumann, 2012). This market-led approach to planning followed a paradigm, increasingly apparent in the Middle East as it was worldwide, that placed private-sector developers as the main decision makers and beneficiaries (Hanieh, 2013: 146).

The official start of the post-war project in Lebanon came following a series of deregulations that would task the Solidere model to rebuild Beirut and economically restructure the whole country. In 1992, Law 117 would give the two private companies exclusive rights, under the CDR to appropriate land for large-scale reconstruction. In January of 1993, the government would pass a Law 192 to consolidate the banking sector and facilitate a merger between some of the main banks following 1991 deregulations on banks through Law 110 (Makarem, 2014).

Patronage in the Lebanese institutional framework had followed the rise of corruption as the "slow dismantling of state institutions" gave way for less regulation and rule of law, economically as well as administratively (Saadeh, 2020). In the case of Solidere, this enabled not only a larger advantage to shareholding to main players legally restricted to holding 10% of all shares, but also signified the complete hegemony of speculation and finance capital over governance, signified also by legislation that enabled the CDR to assume override local governance (Baumann, 2012: 125).

One of the biggest losers to this restructuring remained agriculture. Given no break during or after the civil war, the government's bias in lending towards the reconstruction sector and the accumulation of capital by banks leveraging public-private control over public loans and finances not only deprived the rural sector of some much-needed investment but added to the complications of sustaining work in this field. After 1992, the financial budget, heavily oriented the Lebanese economy towards reconstruction through private redevelopment. At the same time, this involved the heavy underbudgeting of money and resources to agriculture. In the 14 years after 1991, the Ministry of Agriculture received an average of just 0.87 percent of the total state budget yearly (MoF, 2007) (Ghadban,

2013). Offering little to no funds and resources going to farmers, or to well-managed institutions that can best manage and assist farmer livelihoods and rural community development, is how, “the Lebanese government killed agriculture,” as one respondent said.

The lack of investment in agriculture was egged on by banks which were pressured by a strong incentive to speculate, due to poor credit and high liabilities (Baumann, 2012). In Machgara and in the West Bekaa from the 1990s into the 2000s, agriculture was not able to recover from the end of the occupation onward; the price of product remained low, the cost of labor had increased considerably, and this spurred a big wave of outward migration and land desertion. Pesticide markets had further found opportunity among the institutional vacuum. The Lebanese General Directorate for Cooperatives had been shuffled from an independent entity with Ministry of Agriculture guidance and oversight to directly under the Ministry after 1990. After the civil war, there was a period of intensification of agriculture that accompanied rapid urban investment and development. Large agricultural petrochemical suppliers, many of which were local branches of international companies, pushed an unsustainable use of chemicals and pesticides (Hamadeh, 2019). This post-war cooperative environment was facilitated by political parties, who had taken hostage and subdivided state institutions during and post war, and international private donors (Adwan, 2004; Hamadeh, 2019: 268).

Yet livelihoods and the active workforce, outside of the turgid service and banking sector, remained highly dependent on the agricultural sector. To fill up this labor gap, Lebanon’s agricultural sector has, for the past few decades, relied on seasonal migrant labor, using devalued labor in tandem to the rent-seeking activities of the new economy.

Syrian and other migrant labor, thought to be a feature in Lebanese agricultural fields only after 2011, has rather been a consequence of the devaluation of agricultural labor in Lebanon's rentier and real estate economy decades prior. In 1997, migrant labor in the manufacturing and agricultural sector comprised up to 600,000 workers, mostly Syrian (Chalcraft, 2005). That same year, 194,829 agricultural holdings were counted in Lebanon, with over 72 percent of those less than one hectare. After this time, the agricultural workforce had only employed around 8 percent of the national workforce, with just 3.5 of the nation's women participating (Bush 2016; FAO, 2016).

At the same time, agricultural land cultivated increased since 1991. Increasing at rates higher than any decade prior, total area cultivation rose by 25% percent from 1961 to 6,580 sq. km from 5,500 km (FAO, 2018). The rapid development and cultivation of this land, occurring over a course of decades that saw family farmers leaving agriculture, shows the predominance of agribusiness in the Lebanese agro-economy in increasing yield, consumption, and agricultural profit while underutilizing the labor reserves in Lebanese society. The development-centric paradigm of agribusiness, similar to the modernist paradigm, continued to encourage mass production at the expense of equitable, sustainable production, thus reinforcing the business-model of the "food security" vision of agricultural and rural development over the food-sovereignty oriented one. The recommendations of the UNDP and Food and Agriculture organization fell in line with this vision. Of the recommendations from a 2016 "enhance agricultural marketing (FAO, 2016) with techniques that would integrate technology, research, and public-private partnerships, even in the agricultural sector" (UNDP, 2016).

CHAPTER V

FINDINGS AND DISCUSSION: MACHGARA IN THE WORLD SYSTEM

The main purpose of this study is to: a) situate a trajectory of key dynamics of agrarian change and b.) identify farmers' challenges, disclose farmers' attitudes and practices in response to these transformations c.) and better understand their responses to these environmental and agricultural changes in the context of world systems analysis in rural Lebanon's long durée. As the chapter will show, based on the responses of family farmers in Machgara, a number of factors and themes represent the primary impediments to the viability of an agricultural livelihood in Lebanon's present day. Overall, the main challenges farmers articulated, through their market-related, administrative, environmental, and personal manifestations were the result of how macroeconomic transformations take hold in a rural community.

A. Physical and Demographic Profile of Respondents and their Area

Nearly all of those interviewed are owners of their farms. Three are sharecroppers, with one owning a separate plot of family land nearby. This matches the current dynamics of the village, where no longer does land tenure insecurity define the main contradictions facing family farmers, but rather the ability to make use of existing land in the context of vertically structured and concentrated agricultural markets. According to personal historical accounts the farmers gave, their land was acquired from previous generations, such as parents who had purchased plots, and land that had otherwise been in family hands for

generations. Thus, it is also the case that the definition of conception of land access has changed from simply access to lands to access to markets.

Almost all farmers are senior males over 60, apart from one middle-aged woman, and another middle-aged man. Moreover, their experience with farming spans at least several decades--all but one had been farming for over 30 years, with many reporting having farmed for 50 years or more. This shows the extent to which these family farmers are enveloped in farming, as well as their engagement in pluriactivity to sustain their livelihood. I targeted those with a long duration and history of farming that spanned across food regime eras and historical periods of major capitalist transformation. As family farmers, they had worked as family units on their land, with many also soliciting or hiring additional seasonal help. Most of them are working class, with four farmers representing slightly higher income levels: One, a former schoolmaster; another, a retired hotel branch manager; a third, a close relative of someone with a successful local restaurant franchise overseas; and fourth, a leisurely farmer who grew on the border of a neighboring village with children working abroad. This is evident in the challenges farmers expressed with selling or finding markets for their crops in spite of expressing ease and no challenges with the security or access to the land itself.

1. Demographic Profile of the Area

The region that encompasses Machgara is relatively well endowed with water, hosting its own aquifers. According to farmer testimony, the aquifer sources also spout into Sohmor. The village is lucky to be relatively absent of considerable aquifer stress, a commonplace problem in the Middle East. Its abundance of water has enabled the proliferation of tree crops, especially around residential areas. Maysam B., who farms on

her husband's family land with her family, insists that there was "never a problem" with poor water quality or insufficient water quality as far as Sohmor because "all water is sourced from Machgara chalets," where water from sprouts and streams irrigates the fields. Aquifers also run through residential areas, where neighborhoods were built up around myriad wells and water sources. Terraced gardens line and surround homes and neighborhoods, growing mainly apples, peaches, plums, pomegranates, figs, and walnuts. Towards the sahl, at the easternmost part of the village, a wider assortment of crops are cultivated, including vegetables and olive trees. The land is relatively low prone to degradation, though some isolated areas present some mild risk.

B: Main Themes

1. *The Politics of Access*

The differing variations in how farmers interpreted 'access' is a testament to the changing connotations access has when it is no longer tied to land tenure insecurity. In the past, land issues took precedence as the primary obstacle to equitable farming and land as well as food sovereignty. In the mid-to-late 20th century, when land tenure arrangements were primarily arranged by rending and sharecropping as well as owner-operator, land tenure insecurity manifest through the unfairness of lease contracts and reduced farmer access to credit and inputs (Sadr, 1971). Contemporarily, however, land access and land tenure issue are no longer the primary concern or issue for small family farmers in Lebanon and especially in Machgara. Given that most remaining family farmers own or have inherited their land, the definition and common understanding of access has shifted from

reflecting a concern over access to land to access to markets or to the resources necessary to secure and continue their livelihoods in farming.

A couple farmers interpreted “land access” to mean literal access as either a time factor (“If I have time, I go”) or a physical and infrastructural factor. Mohsen, a former hotel branch manager abroad who returned to farming post-retirement, took the latter approach in interpreting land access quite literally:

> “There are some fields inaccessible by steer and others only by road and car. I was able to pave a road from my own account, not from the state. Maybe there are cases where the municipality can play that role but of course there’s a difference in that case...I haven’t seen it. (Mohsen Z., interview. March 2020)”

Mohsen’s cognizance of the way in which his capital gives him relatively easier access to land highlights the contradictory role urban bias and the peripheralization of the countryside have on the costs of social reproduction. To properly continue farming, it is necessary that an external and additional source of income substantiates it as it becomes an economically unsustainable lifestyle in and of itself. His recollection also revealed an important dimension in the dynamics of land access generationally. The trend of income and stability for family farmers being tied to proximity to urban capital has been strong since the original wave of rural exodus to urban misery belts and abroad that followed the “peak” of agribusiness-led initiatives that took place in the ‘50s and ‘60s. It was during this time that the greater urban-rural divisions were exacerbated by capitalism’s transformation of the countryside, producing a greater dependency on market capital where production became insufficient. Karl Kautsky similarly saw the decline of traditional rural livelihoods as accompanying urban large-scale industry’s replacement of rural labor, producing a shift

in the need for cash income to purchase what he would previously produce on his own (Lipton, 1976: 116).

"It's much easier to work for a month to feed yourself easier and better than to work all year for the same amount of wheat or food" (Sharaf, 2020).

Thus, we can see the consequences of farmers' "increasing dependence on the market" which devalues production and produces financial results "more moody and incalculable than the weather" (Lipton, 1976: 117). Moreover, it is a clear consequence of the devaluation of product in the periphery for production in the core. Declining prices for agricultural commodities struggled to compete with growing prices for manufactured goods in the core, and a heavy import to export balance threw the global south deeper into debt. This is what Samir Amin referred to as "unequal exchange" (Amin, 1974). An elderly family farmer from the Haret al-Fawqa area, likewise, complained of being unable to "sell our products in the market. It's now just a side activity" (Eidy, 2020).

Though himself a once-sustenance farmer with his father on the family land, Eide's sons, tare now relegated to recreational farming: "One family has a piece of land and his sons help out with it in their spare time" (Eidy, 2020). This is especially evident in the regional case of fruit and apple cultivation. Encouraged as a high value cash crop export, free trade combined with a dependence on western capital inputs (such as technology or pesticides), an absence of a domestic market, and low value export to the core, reciprocated in higher value importations from the core all contribute to effectively indebting the periphery, which struggles to level up to the value produced by the core (Amin, 1974).

The demand that agricultural cooperatives do assist with developing the capacity and resources to enhance farmer competitiveness represented a central demand for farmers.

Requests ranged from demands of the government and/or local agencies to “open the cooperatives so that [farmers] can have resources ready,” in order to be provided with “seeds, inputs” and help “sell the product [for us] and give us our share from it” (Khishn, 2020) (Hussein, 2020).

Cooperatives in Lebanon have acted mainly as brokers of pesticides and petrochemicals instead of actual community organizations dealing with providing farmers with resources and assistance in competitively selling their product. Revitalizing the cooperative sector in Macghara and rural Lebanon can help put participatory planning approaches to practice. When farmers have cooperatives as leverage towards market access, in obtaining resources, inputs, and in price setting and negotiation, can contribute to the success of the sector as a whole.

The slight class differentiation occurring between farmers are based on access to foreign capital, whether it was through a child sending remittances, education level of the farmer, and/or how well the farmer, in his own past, was already well integrated economically or to urban society and markets. These class differentiations also represent urban bias and peripheralization at work: the higher the approximation to the urban society and its markets, the better off farmers seem to be. This approximation to the urban and global markets and capital determined too the levels of poverty experienced by farmers in the latter decades of the 20th century into the 21st century. At the flip side, the future generations of farmers are no longer able to be reabsorbed into productive rural sectors that have long been devalued. If this surplus labor doesn’t manifest itself in unemployment, then these young workers often find themselves hoisted into unproductive and redundant service-sector labor. This is the ironic outcome that occurs as this new proletarianized

workforce integrates into cheapened, redundant labor just to purchase food past generations would produce themselves.

2.Input costs and Debt

Hussein, Nazem, and Ahmad were among the oldest interviewees and the poorest. They were all sharecroppers on the fields of Machgara, where the land bordered Sohmor. In contrast, they had the least proximity and access to capital as farmers with low skill and education levels. As farmers who were not only the oldest in age, but also the most representative across most modern eras of contemporary rural transformation in the modern area, they proved most receptive to this rural historical trajectory in the long durée. Two had found themselves in deep debts from taking out loans to buy pesticides. The poorer, less educated, and less connected farmers were to urban and global capital, the more dependent, and thus more indebted, to these chemical inputs they were. Hussein and Ahmad were struggling in deep debts to pay for these inputs. Their debts were incurred primarily from the cycle to continuously compensate failed harvests and break even in a devalued apple market. These factors posed themselves as basic challenges even before the addition of chemical inputs becomes factored in. As the input prices on chemicals rose, they had taken out loans from local shop owners to help pay for these chemicals. Unfortunately, the volatile nature of tree crops had not guaranteed a stable return on investment for these farmers, who found themselves further in debt with no market to sell their crops as their products declined even more in value. Thus, farming becomes a fruitless effort in repaying debts rather than making an income and securing a livelihood.

As Hussein, a sharecropper, recounted, “With the apple prices so low, we can’t even pay back our debts.”

However, economic considerations at times caused them to shift over to more natural forms of environmental and soil management. When prompted with a question as to how farmers deal with the costs, when debts on pesticides are too burdensome, they claimed that it was through substitution of inputs or strategies with less costly options. He added:

> “Now the chemicals are expensive but we farmers are starting to put fertilizer or mulch, which is 5,000 a bag. Compare that with a half liter of chemicals that’s 70,000 LL. And 70,000 LL. worth is going to do what? Not feed two trees! 50 kilos (of chemical) worth will cover about 10 trees only” (Sultan, 2020).

The dollar crisis in Lebanon is further contributing to the damage inflicted onto this sector and farmers are currently struggling with paying back previous loans at an ever-fluctuating black market rate. The lack of local seed production, the dollarization of all chemicals, pesticides, fertilizers, and other farm tools and inputs, and the low return on investment of production have further sunk farmers into existing debts, expected to push more farmeres out of agriculture and into selling their land should proper agricultural support and intervention remain absent, despite a recent push by some communities and political groups to actually turn to agriculture to cope with reduced imports, hyperinflation, and the Caesar Act. The farmers that had expressed difficulties in coping with a volatile exchange rate during the first third of 2020, when black market had hiked up input prices three times the usual rate, are finding debt repayment and input access near-impossible as the lira soars past a black-market rate of 9,000 LL to the dollar, in comparison to its originally fixed rate of 1,500 LL to the dollar.

3. *Ecological and Environmental Issues*

The problem of unfettered environmental degradation of Lebanon has been aggravated by the low priority environmental or natural considerations have that do not service the capital-accumulating orientation of the Lebanese rentier capitalist economy. Insufficient integration of ecological concerns into planning comes as a result, and even attempts at zoning are rendered ineffective (Shu-Yang et. al, 2004). Despite the approval of a national master master plan in 2009, which dictates the protection of agriculture, water, and more, the plan's broad lines remain ineffective before detailed regional plan translate their recommendations, which has still not happened (Clerc, 2013: 52).

With the clientelist organization of Lebanon prioritizing concentrated gain over distributed benefit, governance, an organization managing clients instead of demonstrating its accountability to citizens, becomes unable to enforce credible protection over land. The neoliberal model renders the objective of cooperatives to increase production and profit. This, consequently, intersects in Lebanon with the clientelist functionality of social and governmental institutions. Consequently, mismanagement and corruption eliminate the social and communal functionality of cooperatives, and the global market, through NGOs, relegates their only use to distributors of petrochemicals and pesticides.

As indicated by the responses, there was a high probability that pesticide usage appears to be increasingly ineffective and even contributing to further damage of the soil. This pesticide usage, occurring due to the encouragement of pesticide use by local cooperatives, organizations, and institutions act more as mediums of transfer for capital inputs than agents of enforcing proper planning. Farmers reported new types of crop fungi

negatively affecting their crop, such as Septoria, and pests that have damaged apple trees in Lebanon's northern fields have now become apparent in the West Bekaa. Farmers employment of traditional, indigenous methods still were in use, including terracing, use of organic fertilizers, tilling, and crop rotation. However, this was countered by their dependence on the pesticides. One described pesticide uses as having substituted for proper tilling, and, on the converse, natural fertilizer being of use as its own substitute as the costs of pesticides and chemicals increase. Likewise, in a 2016 study on farmer's willingness to adopt agro-ecological strategies, researchers found that farmers who are more reliant on fertilizers are less likely to adopt conservation agriculture strategies (Chalak et. al, 2016).

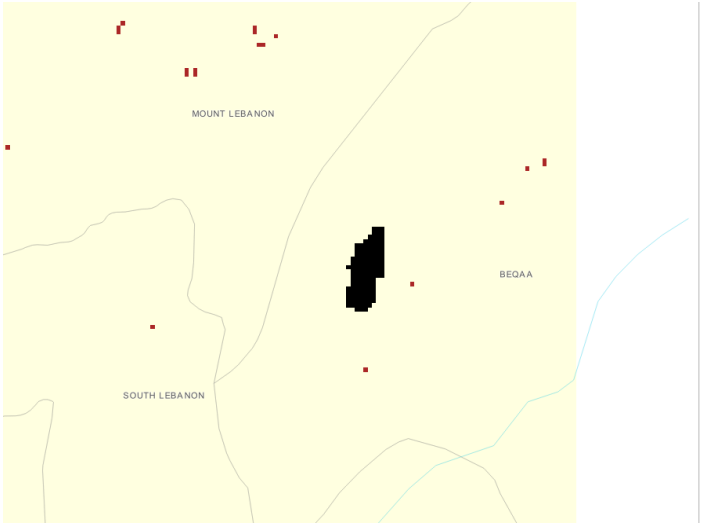


Fig. 3

Identification of main points of land degradation and soil erosion in Machgara, GIS trendolizer

Red dots point to soil erosion

GIS projections of soil quality and soil erosion appears to be minimal. In comparison to the regional problems of water depletion, soil erosion, and deforestation, Machgara and its surrounding area are in relatively good condition and show little signs of

degradation. As can be observed in Figure 1, the near-entirety of the sub-Qaroun region of the West Bekaa is absent of major markers of soil degradation. This is something that has been also confirmed by farmers, who overwhelmingly reported little to no signs of environmental changes to soil or water quality. In part, the region is blessed with its own water sources and its own aquifers.

4. *Practice vs Planning: Implications for master planning*

The socioeconomic threats discussed and identified as the key precursors to land degradation matched the main concerns, threats, and challenges identified in the responses. While current land degradation levels, excess urbanization extending into main agricultural areas, and stress of groundwater resources remain low, the absence of support for farmers and services for rural communities poses a number of risk factors for land mismanagement and neglect. The absence of agricultural support and enforcement in curbing land speculation, as evidenced by encouragement of sustainable community development, skill, and job retention has failed to provide a credible support to agriculture, let alone conservation agriculture and family farming, particularly in offsetting the high costs of social reproduction and low return on investment. Problems such as land fragmentation, high cost of production for small and medium family farmers, and high inactivity of cooperatives have been factors in preventing agriculture from being a lifeline and livelihood as well as a sector (ILO, 2018).

The rapid degradation of regions in Zahle and Chtaura in the West Bekaa, standing in contrast to Machgara's relative preservation of its agricultural and natural areas, has come amidst the rapid industrialization and urbanization (UNDP, 2018). The absence of

land taxation, particularly on lands adjacent to major industrial centers and zones (Clerc, 2013) in these major West Bekaa cities, creates an incentive to build without ensuring a mechanism would capture that value to be then re-invested into agricultural resources and agricultural infrastructure. This would serve both as a deterrent against further unfettered construction while providing a mechanism of income and support back over to the agricultural zone of a community. The process of building in Lebanon is materially motivated by the incentives in the use of land to store wealth. In rural areas, building is driven by city-dwellers and expats that desire to have a home in their villages, usually on land inherited rather than exchanged and bought in the same area. Given the presence of poor planning and low turnover in land ownership, the outcome usually is building sprawl, regardless of zoning guidelines or placements if they exist.

The maintenance of terracing, which farmers said was still an important tactic in growing tree crops on the region's heavy sloped terrain, is critical in preserving soil quality from rain runoff. Many farmers identified the sloped terrain as a main challenge and feature of the land. At the same time, highly steeped and sloped land, a key characteristic of the West Bekaa, predisposes soil to degradation and erosion.

The National Masterplan of the Lebanese Territory (NMPLT) had also designated this area of the West Bekaa as highly prone to landslides, erosion, and a relatively high risk of desertification (NMPLT, 2005). The construction and maintenance of terraces remains a key strategy in farming on the steep terrain of hillsides or in the highly sloped residential areas of the village (Zeina, 2020) (Kanso, 2020). Thus, terrace and soil erosion, enveloped in the greater problems of the marginalization of family farmers' livelihoods and their contributions to agricultural production, highlight the consequences of neoliberal

agricultural reforms as political and economic problems rather than a primarily environmental one, where each one of Machgara's "degraded terraces corresponds to abandoned land" (Kanso, 2020). Though the NMPLT dictates the topographical reality of this area, the plan failed to translate this into actionable steps or a detailed strategy aimed at mitigation of environmental impact.

5. *Environment and agroecological strategies*

Crop rotation is another common conservation agricultural strategy reported and practiced by farmers in Machgara that has gained popularity considering agribusiness's failures and incongruencies with family and sustenance agriculture. farmer's responses and the projection in Figure 1 show that vegetable and olive cultivation is more common in the field (sahl) in contrast to the fruit tree crop dominant central area of the village. But many farmers, both on the periphery of the village as well as in the sahl increasingly opt to include a full diversity of crops. For most of the time, this is elected by farmers that both appreciate the aesthetic qualities of maximizing crop diversity, but also escaping the paradigms of fruit-crop centered cash-crop production. One farmer noted that his neighbor had switched apple cultivation out for olives, noting that while the latter are not volume intensive, they are a lot more stable than apples against bad production seasons and the instability they bring. Though these have primarily economic reasons and motivations, with the proper guidance and education, crop rotation and diversification can bring outcomes resilient against both the ecological and economic negative impacts of monoculture farming.

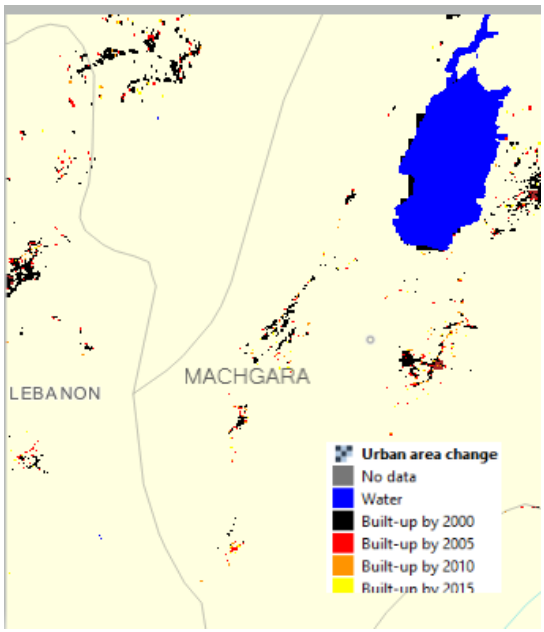


Fig 4 Source: ArcGIS Trendolizer

Urban Area Change by Patterns of Build-up, per 5-year period

The entirety of Lebanon's economic disposition and agribusiness oriented agro-economical practices as a result have posed a threat to the immediate agricultural environment of local farmers. Out of all farmers interviewed, only one regularly tested the soil and confirmed that there had been a noticeable decline in soil quality over the years. While these land changes have not been conspicuous, they demonstrate an aspect of ecology inseparable from the consequences of an ecosystem in the periphery and the effect of global capitalism on environmental transformation.

A farmer identified these chain consequences to the entire ecosystem that can take root even in the most preserved parts of the periphery: "One would put pesticides on their crop to spray to kill the pests but it wouldn't just kill the pests, it would kill the roots of the

trees too that lie on the surface. These die from pesticides. When the pesticide companies come and encourage people to spray, it also kills whatever eats the pesticides too. So, it's a whole chain problem" (Reda, 2020).

It is reasonable to assume, therefore, that the ecosystem chain effects of corporate agribusiness paradigm, an after effect of capitalism's grip on the countryside in the periphery, have taken root. The extent to which this paradigm reinforces its hegemony over indigenous/farmer knowledge and practices in agriculture is strong, even in a village with its own indigenous history of farming. Yet the introduction of pesticides and capital-intensive inputs and strategies in agriculture coincided with the advent of colonialism and capitalism in Lebanon's history. As American influence came and eclipsed the French occupation, similar patterns and manifestations of agrarian change the capitalist world system brought with it were almost unanimously articulated by farmers. While the use of the Demol pesticide came into use as early as the 40s, coinciding with the French-mandate era introduction of apples into the country, pesticide usage became highly widespread beginning in the mid-50s to 60s. According to the accounts, this coincided with the highest peak of agribusiness production that intersected with the boom in capital inflow, cash crop exports, and pumping of pesticides into farming through agencies and cooperatives intended to assist farmers.

6. State Policies and International Trade

The second food regime post World War II was based upon state intervention in the countryside through "green revolution" technologies to favor export-based cash crops.

These fused together with developmentalist and nationalist ideologies which later turned into the corporate/agribusiness model. One farmer referenced a rendition of this in Lebanon with the "green project" or *mashroua'a akhdar*. The Green Project, established in 1963, aimed to reclaim and revalorize agricultural lands, also taking on projects in preventing soil erosion, constructing agricultural roads, and building water infrastructure (Green Plan, 2014). According to him, the project has promised to take on several initiatives neglected by the state, such as building roads and terraces. However, when prompted to speak on the accessibility of such programs, he admitted that despites "demands and requests" for assistance and support on the farm, nothing comes without "wasta," or connections. These projects, following in the vein of the Green Plan, established in 1959, aimed to "support agricultural land reclamation projects and investment in farm-level infrastructures" (Hamadeh, 2019). However, as Ammar described, the Green Plan was never enforced to ensure its plans and programs were materially assisting or made accessible to farmers. The Green Plan, with all its promises and provisions, still did not escape institutional clientelism and corruption. Furthermore, the Green Project's scope of work, in remaining at the level of farm-level infrastructure, hadn't widened to encompass greater community rural development plans, also hampered by significant budget cuts the program had undergone since 2011 (Hamadeh, 2019).

American import dependency and its intersections with both political and economic hegemony were articulated as well. Many farmers identified this factor as historically consistent:

"A long time ago, in the 1950s, King Faisal of Iraq was close to President Chamoun. Faisal was brought in by Britain, and both were allied with the US. He told America to buy the apples from Lebanon and

throw them into the sea. It happens with many foreign interests affecting agriculture in the Middle East" (Sharaf, 2020).

Surprisingly, this story was recalled by three other farmers, revealing a shared political and agrarian memory. Ahmed, one of the oldest interviewees and among the poorest, recalled the same mid-50s era account:

"When I was a little child and Camille Chamoun came, he said to America, take the apples, buy them from us, and throw them in the sea if you need to" (Ibrahim, 2020).

The same story was recounted by one family farmer, Mohammad, with a slightly different accuracy where the metaphorical aspects of the exchange were reimagined literally, true to the political and economic reality of Lebanon's relationship with the United States:

"In the Camille Chamoun days, the government forced apple exports upon the Americans. They [the Americans] ended up throwing the apples into the sea" (Sadr, 2020).

The "decline" period was almost unanimously reported as the mid-70s, coinciding with the influx of imports and the post-Bretton woods neo-liberalization of the economy that had additionally compromised Lebanon's exports. By 1986, as one farmer said, agriculture "had grown completely dead." Just as it has today, the mid-civil war collapse of the Lebanese lira had been a main factor in raising the costs of social reproduction to a rate that, compared to production and sale costs, had badly damaged the agricultural market. At the same time, other farmers had expressed a consensus with identifying the 1980s as a particularly volatile and devastating time for agriculture in Lebanon whether due to civil war, the Zionist occupation, or the increasing political and economic instability that

enabled global neoliberalism and smuggling to completely compromise the lack of state and institutional structure.

Farmers identified the sources to their agricultural and economic problems as political. In their historic assessment, the impacts of colonialism and colonial rule have served a historical purpose in disenfranchising farmers, rescinding them of access to both land and agency in production, and in land organization and distribution. Patterns of agricultural cultivation shifted under various historical food regimes of their own right, from the Roman occupation of the Beqaa into the Ottoman Empire, French mandate, and present era respectively.

The responses on solutions were varied. Out of all farmers interviewed, the top demand was for state support and government accountability. Farmers overwhelmingly recognized the source of the problems in the agricultural livelihoods as part and parcel to the institutional problems of poor governance. These ranged from farmers demanding the "state do its job" and for "the state to help us" to recognizing that "there will not be any changes, with the land with the production, unless there is a holistic political transformation" (Khishn, 2020) (Sadr, 2020) (Zeina, 2020).

The reliance on pesticides and imported chemical inputs makes itself apparent in the above results, with a demand for pesticides and other chemical inputs being the second most frequent demand. This demonstrates the extent of the dependency on systems of agriculture on the global accumulative capitalist system of "commodity production" that essentializes nature, maximizing its destruction and the "toxicity of production" (Foster, 1999: 177). The request for agricultural extension services by other farmers, such as access to agricultural engineers and agricultural extension services, reflects an inclination to

integrate agricultural education and apply agroecological approaches to finding solutions to crop diseases. As farmers explained, this is a necessary demand in order to "directly diagnose which diseases are affecting crops" and also to "regularly test the soil" to see what crops can be cultivated on it.

Mahmoud, the vendor, had identified the chain-ecosystem effects of pesticide use, and attributed damaging capital-intensive inputs to a lack of agricultural education on agro ecological methods as a necessity in lessening, if not eliminating pesticide use. Noting that, in Lebanon, the economic situation had left "few farmers" that "don't have the right information or education," it was the first demand for him to "demand the state to encourage agricultural engineers to help farmers increase their consciousness to adopt better and healthier practices." Proper agricultural education is identified as integral to the production process and necessary towards developing approaches that work with soil and land.

The farmers' demands to fix the export market were articulated as demands for government assistance in restoring Lebanon's historical position as a fruit exporter, especially in light of the country's poor export-import balance. Challenged by the country's poor export market and regional volatility that have destroyed regional trade, the severing of Lebanese agricultural trade from its neighbors and the proliferation of smuggling and neoliberal trade have waged the most devastating impacts on agriculture in recent years. The region suffers from low interregional trade, and as free trade between the Arab World and the global capitalist market increased, interregional trade stagnated and decreased; average interregional trade hovers around 12 percent (Kadri, 2016).

Given farmer's cognizance over the impact of imperialist food regimes in shaping agricultural patterns, many also identified the US's role post French mandate in being particularly instrumental in contributing to agricultural market failures. A common story that came up repeatedly was that of an exchange between then-Lebanese president Camille Chamoun and then-US president Dwight Eisenhower. In preserving an unequal trade exchange, Chamoun had pleaded to the US president to accept Lebanese apple exports at all costs and even "throw them in the sea" if needed (Bsharri, 2020) (Sadr, 2020) (Sharaf, 2020). A number of farmers credited the United States with completely destroying the agricultural economy of Lebanon through its mass wheat imports in the late 1950s.

"America ruined our wheat agriculture and they fed the world with their wheat (exports). Before America flooded the Lebanese market with wheat Lebanon used to even sell wheat to Italy. America destroyed Lebanon's wheat farming. The Eisenhower project would sell wheat to us in the form of food aid. Wheat was a commodity and it became very cheap. Whoever wanted it could just buy it. They would sell us wheat to beat out the Soviets and gain control over people and nations" (Sharaf, 2020).

The intersection between the 1958 military occupation of the United States and the mass importation of grain, identified by one farmer as the "Eisenhower Project" taking place, according to him, in 1958.

While the role in foreign governance by means of hegemony was identified as a culprit for wrecking the domestic agricultural market, the role of the domestic state remained the most acute focus of blame for farmers. Every farmer reported a complete absence of organizational or institutional support for farmers, from nongovernmental to governmental support. Just as a farmer had blamed the United States for destroying the wheat market, other farmers had placed blame on their own government for likewise

destroying agriculture through institutional corruption and offering a lack of assistance. Besides occasional seed distribution, there has been pesticide distribution (which were reported by three of the farmers as being expired anyway), and one year of a partial reimbursement of failed apple crops mentioned among the assistance that was given. Otherwise, as a number of farmers reported, corruption at the local and national level enables many funds to go syphoned into the pockets of "local officials," an effect of weak state institutions (Sultan, 2020) (Zeina, 2020).

Corruption, evidently, arises from the marriage and manipulation of state institutions in the service of easier access to commodities. Post war, the 1977 creation of the CDR, which dealt with reconstruction, experienced a 1991 takeover by the "new contractor bourgeoise," represented by the likes of Saad Hariri and Solidere, during a time that had additionally ushered in debt-financed reconstruction as a basis for the nouveau economy (Baumann, 2012: 284). In the post-war environment, similar to the civil war era, militia-led, sectiarian regimes leveraged their power in utilizing state institutions and resources as personal patronage networks. Mediating its proximity and connection to foreign capital while exercising personal and class benefits over state institutions, this change and exchange of relations demonstrates how the shifting of centers of dominant loci of capital to its local manifestations have been integral in the propping up of the national bourgeoise (Amin, 1977: 342).

In Lebanon, this weak market is upheld by poor state structure and institutions, today beholden to Western neoliberal trade policy. As Ali Kadri reminds us, policymaking that upholds sovereignty and strengthens the national, industrial apparatus in Arab world countries comes as a detriment to US-led capital and its role in the region (Kadri, 2016:

227). A weak state ensures that less wealth and less production can be made within state boundaries, to the disadvantage of the state and its citizens and to the benefit of capitalist elites in the country and finance capital abroad as the nation's wealth becomes accumulated and siphoned into private hands (Wallerstein, 2004). This is why, for the farmers, the demands for the state to be a present and active force in agriculture coincides with requests to assist in the sale of apple and fruit crop exports, crackdown on smuggling, and to open up the border between Lebanon and Syria. Ammar, a family farmer with 20 dunums of mostly apples, said that among the highest demands were to "open the borders with Syria so that we can sell our products there again," while at the same time "preventing smuggling coming in from there." Lamenting declining apple revenues over the years, one farmer demanded that the state should "open the roads between us and Syria, Jordan, Iraq so we can sell, and stop importing apples so that people can take their livelihoods" (Khishn, 2020). Thus, as "a good harvest, formerly a blessing, becomes a curse," a lack of a market to sell excess product to becomes the latest detriment of farmers, as evidenced by decades of crippling apple surpluses with no export market. Some have taken upon seasonal workers to help consume and absorb some of the excess product to prevent waste: "In almost 70% of the cases in difficult times, a farmhand will be allowed to directly eat from the land so it stays good and green. Under a lot of sharecropping. Sometimes they divide it half with the sharecroppers." (Zeina, 2020).

The relative inactivity of NGOs and international aid organizations, outside of imposing agribusiness models, promoting capital-intensive agricultural strategies and techniques and selling and transmitting petrochemical inputs, there is a relative inactivity of NGOs and international aid organizations in assisting and sustaining farmers on a

substantial and long-term basis. Therein lies ample opportunity for the government through extension centers, or organizations such as cooperatives, to take a more proactive role in assisting farmers, despite the current contradictory effect that the confessional power struggles have on ensuring the needs and rights of citizens, especially family farmers, are met and honored. After decades of neglect, there have been intentions by forces in government to concentrate on local food production. Especially as of recently, campaigns to distribute wheat and seeds and reimburse failed apple seasons show this willingness. However, farmers have expressed a deep seeded mistrust in the effectiveness and competency of the government's ability to deliver on these promises, plans, and intentions. From complaints of government distribution of "expired" pesticides, identification of the role played by government regionally as one of extortion and corruption and persisting expectations of government neglect that transpire into judgements over the perception on potential follow through for such projects. Maysam, lamenting that the widely announced wheat distribution program had not reached the Machghara-Sohmor area, added that "the West Bekaa is the most neglected region in Lebanon." Evidently, forthcoming agricultural initiatives will prove to be a test in trust-building as well as expediency.

Yet the vision that local NGOs have for the region is a different, practically contradictory paradigm. Since the onset of the civil war, NGOs flooded into Lebanon, particularly into the rural realm, particularly considering state absence (Saadeh, 2020). Into today, the NGO presence represents contrary interests to the interests and role of a state, despite its utilization of "civil society" discourse. As Jane Harrigan points out in the cases of Jordan and Lebanon that, even when national agricultural programs to encourage food sovereignty were put in place, the aims of NGOs in those countries would continue to push

agribusiness paradigms, in conflict with the national development aims of those countries (Harrigan, 2014). In the context of this investigation, in line with the historical agricultural development pattern/history of Lebanon, this has included a heavy emphasis on high-value production of fruit crops for export over the production of cereals, where the roles of NGOs have been situated in facilitating the inputs and paradigms supporting and enforcing agribusiness models and practices in the countryside.

War and conflict have been throughout a main negative impact on trade. Between 2014 and 2018, the value of Lebanese agricultural value in USD dropped by around 30,000 dollars from its 2014 value, contributing to heavy losses in Lebanon and the Beqaa's agricultural market (IDAL, 2020). Given especially the West Bekaa's specialty in fruit and cash crops, the severing of routes to Syria and Iraq had devastating impacts on non-grain cash crop exports. The interlinkages between Syria, Palestine and Lebanon agriculturally and historically in the farmer's own personal historical trajectories illustrates the gravity of neoliberal and colonial political transformations as well as the occupation that severs these natural trade relationships as occupation, political and economic, eclipses sovereignty. Mahmoud, the small shop owner and agricultural vendor, recalls:

> "People that wouldn't find work here would work in Palestine. That's how the Palestinian lira would circulate in this market. And we would sell there. It's a proximity thing too. Palestine is closer to Machgara than Beirut is. You see the same thing now in Majdal Anjar. It's closer to Syria so there's a closeness between the two economies. That's why when the occupation happened, the industries in Machgara went" (Reda, 2020).

The effects of war and occupation were acutely realized during the Zionist occupation from 1982 to 2000 that coincided with the Lebanese civil war. The occupation

was mentioned as a significant factor in damaging agriculture and severing the flow of product to market within Lebanon as well:

> "In the 1980s, [agriculture] died with the 1982 Israeli occupation. From the advent of the occupation, there was no freedom of movement for the farmers, and challenges in movement meant farmers can't drive to Beirut to sell in the markets. They cut off the roads of access between their farms and Beirut. There became a lot of challenges from this. Prices fell a lot, lower and much lower than now. Agriculturalists lost everything and people lost their farms in the tons. The land laborer, he stopped, and could no longer work and make a living. When the farmer can't make a living, no longer can he farm" (Reda, 2020).

While the decline of agriculture came with the neoliberalization of the Lebanese market in the early to mid-70s, it was during this period of mid-80s volatility that agriculture was essentially killed off. Maysam Baalbaki was one family farmer who had been farming with her husband only in the last 13 years. Her husband, who had been involved with managing and farming on land that had been with the family since the 1930s, had pinpointed the "death" of Lebanese agriculture to the 80s era, pinpointing 1986 as that year (Baalbaki, 2020). Both farmer testimony and data have confirmed the mid-80s era as the effective end point of agriculture, where civil war, inflation, and occupation had further catalyzed the demise of a paralyzed and unsupported market.

Like the demand for pesticides, the demand for provision of certain non-input tools and non-cash resources was articulated as a necessary one for assistance. The main concern, articulated by almost all farmers as the number one challenge, is input costs. This is currently exacerbated by the currency crisis. The consequence of a dollarized, input based economy is manifest in the decreasing quality and breadth of the quality of imported pesticides and the high input costs of gardening tools, sprays, and fuels. The average price increase of these chemical inputs has increased four times in previous years, hiking

especially high amidst the 2019 dollarization crisis. The costs of these supplies and tools, including apple fridges, hedges, tractors, greenhouse sheds, or other costly agricultural needs were dollarized and had also experienced a sharp price increase. As Hussein, one of the sharecroppers, recalled: “There’s no work anymore and people are just looking for a meal. Look at these scissors [for trees] in the old days they used to cost 6 *warqat*, now they’re 100,000 LL” (Sultan, 2020).

7. Maintaining Livelihoods: Pluriactivity and Dynamics of Class Mobility

It was a near-unanimous consensus shared by farmers that the absence and even destructive role of the state had created a very bleak outlook. The context in which pluriactivity, (Van der Ploeg, 2016) finds itself in indicates the insufficiency of family farming as an economically insufficient livelihood in itself, yet also a main defining strategy to which farmers have been able to secure and sustain their livelihoods in farming amidst increasing costs of social reproduction. For 10 out of the 13 total farmers, other sources of income had primarily supplemented farming. Pluriactivity is a central and highly significant means of sustenance to Lebanese family farmers (FAO, 2009). This includes those receiving remittances from family members abroad, working in the parallel market, receiving money from employed adult children, taking in retirement money, and receiving income from other personal or political patronage networks, in addition to the marginal income obtained by farming. The remaining three sharecropper-family farmers appeared more stuck, incurring debt. Those, ironically, that were family farming more recreationally had reported more satisfaction and optimism with their livelihood, as opposed to poorer

sustenance farmers. Naji, for example, cultivates a small roadside family farm that extends into property around the old family home of a close expat relative:

"In the beginning, we didn't have land, but now we have land. It's easier. When one has land he can fix it up as he likes. I have fixed up a garden, and I buy for it what I need and work on it. My kids are out of the country, and they send me remittances, as we like. And I'm happy because I got two cars in front of my house and the greens and flowers come out of the land, but other than that there isn't a big benefit" (Ali, 2020).

This relative satisfaction, evident where the disappointment of agriculture as an economic livelihood had long lived its course, is where farming finds some solace in Machgara. Naji, like most of the subjects interviewed, is part of the generation that began to acquire land after the period of Shia out-migration from southern villages, first into the peripheries of Lebanese cities, mostly Beirut, as well as abroad in the mid-to-late 20th century, and then as a consequence of war and occupation in the Civil War and Zionist occupation era and beyond. And this return to the land remains to be one pull factor for farmers to remain in agriculture despite its economic infeasibility. While many held family land in their possession with little means to travel or work elsewhere, others were grounded by feelings of personal accountability to land, a personal attachment to agriculture as a livelihood or practice, or a love of the land.[7]

[7] A recurring theme articulated in interviews with Hassan K., Mahmoud R., Naji A., Ali S., and Mohsen Z.

CHAPTER VI

CONCLUSION

The agrarian question in Lebanon has been an effect of greater historical, political, and macroeconomic processes of change that have, in turn, affected the livelihoods of small family farmers and many in the nation's rural periphery. The question of planning, as an intended intervention of organizing land, communities, and space, also runs the risk of commodifying land or reinforcing inequalities in the built or natural environment rather than equalizing them. In Lebanon, as actualized during the post-IRFED developmentalist surge, modernist and developmentalist planning has sought to act as an almost technocratic intervention where economic and special inequalities and gaps widened. As Mona Fawaz emphasizes, there are multitudes of ways in which land planning interventions reinforce the commodification and social segmentation of space in the assumption that landscapes are "propertied," ignoring the way in which the registration, zoning, or formalized organization of land ignores other, often underrepresented local uses or claims to land. Even in the participatory process of research methodology and planning, that attempts to center the narratives of local family farmers in the solution-making process, risking replicating 'a new tyranny' when the retreat of the state are left unchecked and material and honest assessments of farmer livelihoods are not adequately investigated (Scoones, 2009; Cooke and Kothari, 2001). While I do employ participatory strategies, such as participatory rural appraisal through interviews with small family farmers as the focal point of this work, these

interviews are aimed at chronicling and critically analyzing not only the impact of global macroeconomic trajectories of change on local family farmers, but also the discourses and approaches to farming adopted in their practices. I also turn to this demographic in this locale to articulate their central demands and critically analyze these demands in terms of the historical and material conditions that shaped the contexts and discourses in which small family farmers operate. The research questions, thus, were answered in the process of placing these responses in the context of political economic history, checked against the observed material conditions of family farming today.

The reliance of small family farmers on pesticides and chemical inputs represents the relationship between capital, capital-intensive practices, and environmental issues. At the same time, the balance between critique and blame of the state as a catalyst of agricultural decline and a need for state accountability and intervention towards the very problem it has orchestrated was articulated, expressing the overwhelming lack of agency felt by these farmers.

By contextualizing these problems and grievances in the context of power—as informed by the global-economic framing of world systems analysis I detail but also in the process of historical long durée—researchers can not only center family farmer's oral histories and main grievances but also critically analyze local as well as global power dynamics and how they play out in the rural sphere. We can give a critical identification of the major needs and necessary interventions in planning in light of the multitude of these dimensions. Based on farmer responses, access to and provision of resources remains sparse and their responses admitted and pointed to a combination of chemical input-dependency and local-knowledge deficiency that had directly pointed to the improper role

both the state and international agri-business paradigms have played in facilitating and encouraging these patterns and practices over agroecological ones. Given this, it is clear how institutions, organizations, and the state (if present) have served to exchange capital over knowledge and service provision.

The visual supplementation of maps, taken from the Ministry of Environment, the Municipality of Machgara, and analyses I made with ArcGIS's Trendolizer plugin, were intended to further visualize and understand the disparities and presentation of land organization and land use. This was meant to understand and identify where key areas and patterns of degradation are and how congruent land use planning is to actual land use and misuse. The sparse and lack of accurate data, however, urges us to consider further methods of understanding the impacts and disparities of planning and practice.

The strong effects the world system had on policy was made manifest in how planning was clearly unable to enforce protections for agriculture and agricultural land. In the rural domain, planning has attempted to make its affect in various development projects and in the modernist-driven approach of IRFED planning, land use zoning and master planning. Planning's intentions in organizing and safeguarding land thus were insufficient against the global macroeconomic changes to the countryside imposed by the world system. As I argue, the role the global world system played peripheralizing Lebanon's economy and proletarianizing its rural workforce had an effect at organizing land and transforming the countryside that planning would do little to curtail. This was apparent in the area of French area land organization where planning reinforced the institution of private property and land as a commodity, with the political economy and rentier-based system in Lebanon reinforcing these disparities in land use. The nearby city of Jezzine, whose meticulous

experiment in land use planning has been exemplary for other rural municipalities looking to protect natural and agricultural areas. Yet even Jezzine's intervention could do little protect natural and agricultural lands or improve the overall economic standing and conditions of local farmers (Neaimeh, 2016: 21-22). In this sense, while localized zoning plans can provide a forward-looking guideline and vision for sustainable planning and development in rural communities, to assume that they can be primarily effective in curtailing unrestrained urban growth on natural areas and environmental degradation fails to consider the greater macroeconomic and political conditions that determine if zoning will be enforced or respected to begin with.

Some further interventions that can assist planning reach its intended economic effect include reinstating a tax on absentee lands or on residential units. Clerc identifies low property taxes on undeveloped land to be a catalyst in speculation. While this is especially true in cases of agricultural lands that are to be converted into industrial or urban areas, it can risk happening to any agricultural or natural area where more value stands to be created from real estate or construction than from agriculture or natural preservation. Reinstating the 1950s era Land Tax on urban and industrial construction as well as unused land would help generate revenue needed for municipal, agricultural resources while being a slight deterrent against unfettered speculation.

An expansion of extension centers in regional districts would ensure, par farmer's demands, that the proper diagnostic expertise and resources would be made accessible. These agricultural extension centers would provide the education and training necessary for farmers to identify plant ailments, soil types, and engage in agroecological practices. Expanding rural field schools in Machgara and in surrounding regions would be a possible

means of exchange between farmers and researchers, and a potential frontier for local and national university agriculture programs to explore.

Furthermore, an approach intended at facilitating participatory planning aims risks not representing the most marginalized stakeholders in that community. The criticisms associated with PRA, in failing to guarantee the representation of marginalized groups and communities, are also applied to the advocacy planning case. Though advocacy framework has attempted to bring considerations of equity to planning, it risks replicating, rather than challenging, power dynamics in taking for granted the easy access of a few powerful voices for granted as "representation."

Additional interventions within planning should ensure that local institutions both assist play more active roles in improving the material conditions of farmers, providing equal opportunity in agriculture and access to markets. Local cooperatives need to be supported and repurposed and reorganized to serve their intended purpose of decreasing the cost of production for small farmer producers as well as improving access to markets (Ghadban, 2013: 39). Instead of being a means of exchange for large chemical input-producing firms, cooperatives, as the farmers reiterated, should provide resources, programs, and tools available and accessible necessary towards these objectives and needs.

Overall, the main prerequisite, highlighted by the farmers' constant and ubiquitous demands for government accountability, would be a political transformation that would ensure that institutional and planning propositions would be enforced and followed through. Political accountability is not only the top demand but also the foundational element for functioning institutions that ensure an equitable revalorization of the agricultural sector.

Just as political accountability should be actualized at the local level, political sovereignty too should be secured at the national level. As Amin reminds us, is it through struggle that peripheral states resist the hegemony of the imperial core (Amin, 1977). Only in this pursuit of sovereignty can food sovereignty and internal inequities be successfully challenged. The forceful intervention and penetration of core powers into peripheral states and regions for the purpose of monopolizing resources and markets has been central to the phenomenon of underdevelopment and dysfunctional agricultural systems and in Lebanon. In the pursuit of honoring a truly sovereign, bottom-up and farmer first approach to agriculture, I chronicled a political history and process that analyzed this change from the global level, where I diagnosed its cause, to the local, the level of which solutions can be identified. Future work on this topic can probe a possible farmer-first bottom up integration of cooperatives and agricultural extension centers, in the lens of agroecology and based on a low capital intensive yet education-centric paradigm, as a possible intervention in encouraging a sustainable and citizen-led revalorization of the agricultural sector.

APPENDIX A

Sample Oral Consent Script – SBS Student Project

The Political Economy-Ecology of Land Degradation in Lebanon: The Case of the West Bekaa

Dr. Giuliano Martiniello

Julia Kassem

Hello. My name is Julia Kassem. I am a graduate student in the Department/School of Urban Planning and Policy at the Faculty and Engineering and Architecture at AUB. I would like to invite you to participate in a research study about Agriculture and Rural Change in Lebanon.

Before we begin, I would like to take a few minutes to explain why I am inviting you to

participate and what will be done with the information you provide. You will be asked to

participate in a short interview regarding your experiences with agriculture as a rural livelihood.

The purpose of this research is to understand the changes and challenges in agrarian livelihoods today, especially in Lebanon's economic context, and how farmers in the West Bekaa are dealing with these challenges. These questions will include questions on land change, how farmers are dealing with economic and ecological changes, land tenure, and agricultural strategies. The questions will also provide you with an opportunity to provide policy recommendations and ideas for this sector. Please stop me at any time if you have questions about the study.

The subjects I am interviewing include farmers from Sohmor and Machgara and those directly connected to agrarian life in the villages and in its field. This study will not only consist of farm owners and sharecroppers in the area, but will also broaden to include anyone that has worked on a farm in the Sohmur-Machgara area in the past and stopped, or the spouse/offspring/parent of a farmworker that is also involved in the lifestyle. Villagers that are sole vendors will be excluded, as will refugees or anyone without a lived experience and history in the village.

I am doing this study as part of my studies at AUB. I will be interviewing 10 people from our region, using this information as a component for my master's thesis. These interviews will be collected by giving out researcher contact information to interested participants, and interviewees solicited by the initial participant can contact the researcher to set up a time to be interviewed. The data from the responses may also be presented in articles that might be published as well as in academic presentations. Your individual privacy and confidentiality of the information you provide will be maintained in all published and written data analysis resulting from the study. The data will be collected through handwritten notes and typed notes and transcripts saved on a Google Drive. All interviews will be held over WhatsApp, video chat, or any social media or voice calling application of the interviewees choice. Contact information and any interview recordings will also remain safely stored in this drive, accessible only to myself and to the Principal Investigator. I will not be disclosing any identifiers or revealing any identifying information about you, your family, or your farm and the responses will just focus on qualitative perceptions on farming and livelihoods in our region. With permission, I can record the interview or hand write your responses if you so wish. I will assign each participant with a

pseudonym of your choice and a number to protect your identity. None of this information will be shared with other researchers or placed into any archives and all recorded information will be destroyed upon completion of the study.

Your participation should take approximately one hour. Please understand your participation is entirely on a voluntary basis and you have the right to withdraw your consent or discontinue participation at any time without penalty. This minimal-risk interview will not delve into any personal questions, however, if you feel uncomfortable with answering any question at any time you are more than welcome to refuse to answer any question or answer it to the best of your comfort and ability. ` While there are no direct benefits or compensation involved immediately following the study, the benefits which may reasonably be expected to result from this study are the indirect benefits of having farmer experiences and knowledge factored into this research and subsequent policy recommendations for the Lebanese agricultural sector.

A copy of this consent form will be provided to you prior to your confirmation.

However, if the interview lasts significantly more than an hour, or the participant is in need of water or food, light snacks and water will be made available.

If at any time and for any reason, you would prefer not to answer any questions, please feel free

to skip those questions by telling the interviewer to skip the question or not record specific information discussed.

If at any time you would like to stop participating, please tell me. We can take a break, stop and

continue at a late date, or stop altogether. You will not be penalized for deciding to stop

participation at any time.

If you have any questions, you are free to ask them now. If you have questions later, you may

contact me at +961 78 812 820. If you have questions about your rights as a participant in this research, you can contact the following office at AUB:

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American University of Beirut

ACC Building 3rd floor

Tel: +961-1-738024 or +961-1-350000 ext: 5464

Are you interested in participating in this study?

[ ] Yes [ ]No

Consent to Record Interview

APPENDIX B

Sample Oral Consent Script – SBS Student Project-Arabic

الاقتصاد السياسي - بيئة تدهور الأراضي في لبنان: حالة البقاع الغربي

الدكتور جوليانو مارتينيللو

جوليا قاسم

مرحبا. اسمي جوليا قاسم. أنا طالبة دراسات عليا في السياسة والتخطيط الحضريين في كلية الهندسة والعمارة في الجامعة الأمريكية في بيروت. أود أن أدعوكم للمشاركة في دراسة بحثية حول الزراعة والتغيير البيئي في لبنان.

قبل أن نبدأ، أود أن أختتم بضع دقائق لشرح سبب دعوتكم إليها المشاركة وما الذي سيتم عمله بالمعلومات التي تقدمها. سوف يطلب منك شارك في مقابلة قصيرة بشأن تجاربك مع الزراعة كمعيشة ريفية.

ستتضمن هذه الأسئلة أسئلة حول تغيير الأراضي، وكيفية تعامل المزارعين مع التغيرات الاقتصادية والبيئية ، وحيازة الأراضي ، والاستراتيجيات الزراعية. ستوفر لك الأسئلة أيضًا فرصة لتقديم توصيات وأفكار متعلقة بالسياسة العامة لهذا القطاع. من فضلك توقفني في أي وقت إذا كانت لديك أسئلة حول الدراسة.

الغرض من هذا البحث هو فهم التغيرات والتحديات في سبل العيش الزراعية اليوم ، وخاصة في السياق الاقتصادي اللبناني ، وكيف يتعامل المزارعون في البقاع الغربي مع هذه التحديات.

أقوم بهذه الدراسة كجزء من دراستي في الجامعة الأمريكية في بيروت. سأجري مقابلات مع 10 أشخاص من منطقتنا ، باستخدام هذه المعلومات كعنصر أساسي في رسالة الماجستير الخاصة بي. يمكن أيضًا تقديم بيانات الردود في مقالات قد تنشر وكذلك في العروض الأكاديمية. سيتم جمع هذه المقابلات من خلال إعطاء معلومات الاتصال للباحثين المهتمين من المشاركين ، ويمكن للمقابلات التي طلبها المشارك الأولي الاتصال بالباحث لتحديد الوقت لإجراء مكالمة مقابلة .سيتم الحفاظ على خصوصيتك وسرية المعلومات التي تقدمها في كل تحليل للبيانات المنشورة والمكتوبة الناتجة عن الدراسة. سيتم جمع البيانات من خلال الملاحظات المكتوبة بخط اليد والملاحظات المكتوبة والنصوص المحفوظة على Google Drive. سيتم إجراء جميع المقابلات عبر WhatsApp أو محادثة الفيديو أو أي تطبيق وسائط اجتماعية أو مكالمات صوتية من اختيارك. سيتم أيضًا تخزين معلومات الاتصال وأي سجلات مقابلة بأمان في محرك الأقراص هذا الذي يمكنني أنا والأستاذ الذي يدير هذه الدراسة الوصول إليه. لن أكشف عن أي معرفات أو كشف أي معلومات تعريفية عنك أو عن عائلتك أو عن مزرعتك وستركز الردود فقط على التصورات النوعية بشأن الزراعة وسبل العيش في منطقتنا. بإذن ، يمكنني تسجيل المقابلة أو كتابة

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إجاباتك إذا كنت ترغب في ذلك. سأخصص لكل مشارك اسم مستعار من اختيارك ورقم لحماية هويتك. لن يتم مشاركة أي من هذه المعلومات مع باحثين آخرين أو وضعها في أي أرشيف وسيتم حذف جميع المعلومات المسجلة عند الانتهاء من الدراسة.

يجب أن يستغرق المنشور حوالي ساعة واحدة. يرجى تفهم أن مشاركتك طوعية تمامًا ولديك الحق في سحب موافقتك أو إيقاف مشاركتك في أي وقت دون غرامة. لن تدرس هذه المقابلة غير المخاطرة في أي أسئلة شخصية ، ومع ذلك ، إذا كنت تشعر بعدم الارتياح للإجابة على أي سؤال في أي وقت ، فأنت مرحب بك في رفض الإجابة على أي سؤال أو الإجابة عليه بأفضل ما لديك. رغم عدم وجود فوائد أو تعويضات مباشرة بعد الدراسة ، فإن الفوائد التي يمكن توقعها بشكل معقول من هذه الدراسة هي الفوائد غير المباشرة المتمثلة في امتلاك خبرة المزارعين ومعرفتهم في هذا البحث والتوصيات السياسية اللاحقة للقطاع الزراعي اللبناني.

ومع ذلك ، إذا استمرت المقابلة أكثر من ساعة واحدة ، أو إذا كان المشارك في حاجة إلى الماء أو الطعام ، سيتم توفير الوجبات الخفيفة والمياه.

إذا كنت تفضل في أي وقت ولأي سبب من الأسباب عدم الإجابة عن أي أسئلة ، فلا تتردد .لإخبار القائم بإجراء المقابلة بتخطي السؤال أو عدم تسجيل معلومات محددة تمت مناقشتها

إذا أردت في أي وقت التوقف عن المشاركة ، فيرجى إخبارنا بذلك. يمكننا أن نأخذ استراحة ، توقف و .تابع في وقت متأخر ، أو توقف كليًا.

إن رفض المشاركة أو الانسحاب من الدراسة لن ينطوي على أي عقوبة أو خسارة للمزايا التي يحق للموضوع خلاف ذلك ، ولن يؤثر "أيضًا على علاقتهم مع الجامعة الأمريكية في بيروت

إذا كان لديك أي أسئلة ، فأنت حر في طرحها الآن. إذا كان لديك أسئلة في وقت لاحق ، فقد اتصل بي على78812820 961+820. إذا كانت لديك أسئلة حول حقوقك كمشارك في هذا البحث ، يمكنك الاتصال بالمكتب التالي في :AUB

مجلس المراجعة المؤسسية

الجامعة الأمريكية في بيروت

الطابق الثالث ACC٨-بناى

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هل أنت مهتم بالمشاركة في هذه الدراسة؟

نعم / لا [ ]

الموافقة على تسجيل مقابلة

(يجب طرح السؤال قبل بدء أي تسجيل)

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هل يمكنني تسجيل هذه المقابلة؟

الموافقة على الاقتباس من المقابلة

قد أرغب في الاقتباس من هذه المقابلة إما في العروض التقديمية أو المقالات الناتجة عن ذلك

.عمل. سيتم استخدام اسم مستعار من أجل حماية هويتك ، إلا إذا طلبت بالتحديد أن يتم التعرف عليك باسمك الحقيقي

هل تسمح لي أن اقتباس هذه المقابلة؟

قد تكون هناك أسباب تفضل استخدام اسمك الحقيقي في العروض التقديمية و

المقالات المتعلقة بهذا البحث.

هل ترغب في استخدام اسمك الحقيقي في أي عروض تقديمية شفوية أو مستندات مكتوبة

الناتجة عن هذا البحث؟

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APPENDIX C

Note to participants: All information discussed should be kept confidential and should not be disclosed to anyone. Please refrain from stating any information that may identify specific incidents/individuals or any sensitive information that might affect participant's employability.

Questions for Semi-Structured Interview

How long have you been farming? What are the primary crops you are involved in cultivating?
منذ متى وانت تعمل في الزراعة؟

Tell me a little bit about the history of this place, geographically and agriculturally. What would people typically grow here? What was the landscape like, compared to now? Was terracing used, what kind of strategies would farmers make use of?
أخبرني قليلاً عن تاريخ هذا المكان ، جغرافيًا وزراعيًا. ماذا يزرع الناس عاده هنا؟ كيف كان المشهد مثل الآن مقارنة؟ هل تم استخدام المدرجات ، ما نوع الاستراتيجيات التي يستخدمها المزارعون؟

How has the geographical or agricultural makeup shifted and changed across history, for both you and for your community?
كيف تحولت التركيبة الجغرافية أو الزراعية وتغيرت على مر التاريخ بالنسبة لك ولمجتمعك؟

What are the main challenges you face in your profession? How has farming gotten more difficult over time?
ما هي التحديات الرئيسية التي تواجهها في حياتك المهنية؟ كيف أصبحت الزراعة أكثر صعوبة مع مرور الوقت؟

How are farmers dealing with these social or economic changes?
كيف يتعامل المزارعون مع هذه التغيرات الاجتماعية أو الاقتصادية؟

What kind of sunk costs do you deal with in farming? Have these increased over time?
أي نوع من التكاليف تتعامل في الزراعة؟ هل زاد هذا مع مرور الوقت؟

Is farming your only source of income? If not, how else do you sustain yourself?
هل الزراعة هي المصدر الوحيد للدخل؟ إذا لم يكن كذلك ، كيف تحافظ على نفسك مالياً؟

What is your current land tenure arrangement for farming? (renting, sharecropping, owning)
كيف يتعامل المزارعون مع هذه التغيرات الاجتماعية أو الاقتصادية؟

What challenges does your current land-tenure arrangement bring you?
ما هي التحديات التي يجلبها لك ترتيب حيازه الأراضي الحالي؟

How "in-control" would you say you are over your land and over your production? How do things like your current land-tenure arrangement, input costs, and access to land factor into this?

كيف "تحت السيطرة" أنت على أرضك والإنتاج الخاص بك؟ كيف يمكن لأشياء مثل الترتيب الحالي لحيازة الأراضي ، وتكاليف المدخلات ، والوصول إلى عامل الأرض في هذا؟

How accessible do you feel like you are to your land? What is hindering its accessibility? What could assist in making it more accessible?
ما مدى سهولة وصولك إلى أرضك؟ ما الذي يعيق الوصول إليها؟ ما الذي يمكن أن يساعد في جعله أكثر سهولة؟

What strategies, tools, and/or inputs do you use to help maintain and grow your crops? (i.e. crop rotation, natural fertilization, etc.)
ما هي الاستراتيجيات والأدوات و / أو المدخلات التي تستخدمها للمساعدة في الحفاظ على المحاصيل الخاصة بك وتنميتها؟

Are you a member of any agricultural cooperatives or organizations? From your experience and knowledge, how do they or can help Lebanese farmers?
هل أنت عضو في أي تعاونيات أو منظمات زراعية؟ من خبرتك ومعرفتك ، كيف يمكنهم مساعدة المزارعين اللبنانيين؟

Do you feel like you are receiving the support you need in farming by either government, organizations, or your community?
هل تشعر أنك تتلقى الدعم الذي تحتاجه في الزراعة من قبل الحكومة أو المنظمات أو مجتمعك؟

What kind of steps or measures, or means of assistance, should be taken to assist Lebanese farmers?
ما نوع الخطوات أو التدابير أو وسائل المساعدة التي ينبغي اتخاذها لمساعدة المزارعين اللبنانيين؟

Considering both the environmental as well as economic challenges discussed--What are specific policies at the governmental level, remaining specific in your demands yet without implicating or identifying any individuals--that can better help support Lebanese farmers?
ما هي السياسات المحددة على المستوى الحكومي والتي يمكن أن تساعد بشكل أفضل في دعم المزارعين اللبنانيين؟

What are some recommendations for policy that Lebanon should adapt internationally, with its neighbors or worldwide, to help its agricultural sector?
ما هي بعض التوصيات للسياسة التي يجب على لبنان أن يتكيف معها دوليا ، مع جيرانه أو في جميع أنحاء العالم ، لمساعدة قطاعه الزراعي؟

Perceptions of Land-Degradation

Financial challenges aside, what are some of the environmental or ecological challenges and threats facing farmers today?
إلى جانب التحديات المالية ، ما هي بعض التحديات والتهديدات البيئية أو البيئية التي تواجه المزارعين اليوم؟

What have been the causes of major environmental or geographical changes in your area?
في رأيك ، ما هي الأسباب أو المذنبون للتغيرات البيئية أو الجغرافية الرئيسية في منطقتك؟

WORKS CITED

Abisaab, R. 2009. Lebanese Shiites and the Marjaiyya: Political Polemic in the late twentieth century. British Journal of Middle Eastern Studies: Vol 36 No. 2.

Ahmad, J.A.I. 1962. Occidentosis: A plague from the west. *Mizan Press*.

Ajl, M. 2020. Does the Arab region have an agrarian question? *The Journal of Peasant Studies*, pp.1-29.

Ali, Naji. 2020. Interview by author. Machgara.

Amin, S. 1976 Unequal Development: An Essay on the Social Formations of Capitalism. New York: Monthly Review Press.

Amin, S. 2012. Contemporary Imperialism and the agrarian question. Agrarian South: Journal of the Political Economy 1(1) 11-26.

Altieri, M. 1995. Agroecology: the science of natural resource management for poor farmers in marginal environments. Department of Environmental Science Policy and Management, University of California.

Bankmed. 2016. Analysis of Lebanon's Food Market. Report.

Beinin, J. 2001. Workers and Peasants in the Modern Middle East. *Cambridge University Press*.

Baalbaki, Mariam. 2020. Interview with author. Machgara. March 3, 2020.

Baumann, H. 2012. Citizen Hariri and neoliberal politics in Postwar Lebanon. Doctoral Dissertation: *SOAS University, London*.

Bsharri, Ahmad I. 2020. Interview with author. Machgara agricultural fields. March 5, 2020.

Bush, R. 2016. Family farming in the Near East and North Africa. No. 151. *Working Paper, FAO*.

Chalabi, T. 2006. The Shia's of Jabal 'Amil and the New Lebanon: Community and the Nation State. *Palgrave Macmillan*.

Chambers, R. 1994. Farmer First: Farmer Innovation and Agricultural Research. *Intermediate technology publications*.

Cooke. B & Kothari, M. 2001. Participation: The New Tyranny? *Zed Books.*

Eidy, M. 2020. Whatsapp interview with author. Machgara. April 11, 2020.

Food and Agriculture Organization, 2009. Lebanon at a Glance. *Food and Agriculture Organization.* Accessed August 15, 2020.

Food and Agriculture Organization, 2018. "Land Use in Lebanon, Km2." *FAO DataStat*.

Food and Agriculture Organization, 2016. "Family Farming in the Middle East and North Africa: Country of Focus Lebanon." *Food and Agriculture Organization Repor*t.

Foster, J.B., 1999. Marx's theory of metabolic rift: Classical foundations for environmental

sociology. *American journal of sociology*, *105*(2), pp.366-405.

Foster, J.B., 2011. The ecological rift: Capitalism's war on the earth. *NYU Press.*

Harrigan, J. 2014. The political economy of Arab food sovereignty. *Palgrave Macmillan*.

Hourani, A. 1991. A history of the Arab peoples*. Faber & Faber*.

Hudson, M. 1959, The Precarious Republic: Political Modernization In Lebanon.

Hudson, M., 2003. Super imperialism: The origin and fundamentals of US world dominance. Pluto Pr.

IDAL. 2017. Agricultural Sector 2017 Fact Sheet.

IDAL, 2020. Agricultural Sector 2020 Fact Sheet.

Issawi, C. 1964. "Economic Development and Liberalism in Lebanon." *Middle East Journal* 18.3:

279-292.

Issawi, C. 1988. The Fertile Crescent, 1914-1800: A Documentary Economic History. Studies in Middle Eastern History. *Oxford University Press*.

James, L. and Leake, E. eds., 2015. Decolonization and the Cold War: Negotiating Independence. *Bloomsbury Publishing.*

Kadri. A. 2012. Proletarianization Under Neoliberalism in the Arab World. *Althimar*.

Kadri, A. 2016. Development Challenges and Solutions After the Arab Spring. *Springer*.

Kanso, Hassan. 2020. Whatsapp interview with author. May 7, 2020.

Khalaf, Colette. 2019. Machghara, Where Everything Flows from the Spring. *L'Orient-Le Jour*,

< www.lorientlejour.com/article/1179368/machghara-where-everything-flows-from-the-spring.html>

Khishn, Nazem. 2020. Interview with author. Machgara agricultural field. March 3, 2020.

Kurtzig, M.E., 1974. Lebanon a fast rising market for US agricultural exports. *Foreign Agriculture*. 6-7, 17.

Laasko, L. 1989. Ethnicity in the world system perspective: the case of Lebanon. *Current Research on Peace and Violence.* 176-190.

Lewis, N G. 1953. Lebanon: The Mountain and Its Terraces. *Geographical Review*, Vol. 43, No. 1. 1-14

Lipton, M., 2012. Why the poor stay poor. *Milestones and Turning Points in Development Thinking* (pp. 148-159). Palgrave Macmillan, London.

McKinsey Co. 2018. Lebanon Economic Vision: Full Report.

Martinello, G. and Riachi, R. 2019. The Integration of the Political Economy of Arab Food Systems Under Global Food Regimes. *Arab World Report: Right to Food*. 127-140.

Marakem, H. 2014. "Actually Existing Neoliberalism the reconstruction of downtown Beirut in post-civil war Lebanon." Dissertation. *The London School of Economics and Political Science*.

Mitri, G. 2019. Assessing land degradation and identifying potential sustainable land management practices at the subnational level in Lebanon

Molle, F. 2006. Planning and managing water resources at the river basin level: Emergence and evolution of a concept. Comprehensive Assessment Research Report No. 16. Colombo, Sri Lanka: International Wat er Management Institute.

Mundy, M., & Smith, R. 2007. Governing property, making the modern state: law, administration and production in Ottoman Syria. London: I.B Tauris.

Nasr, 1978. Backdrop to civil war: the crisis of Lebanese capitalism. MERIP Reports, No. 73. 3-13

Neaimeh, R. 2016. An integrated ecological and place-based landscape approach to rethinking zoning in Jezzine, Lebanon. *American University of Beirut.*

Owen, Roger. 1976. Essays on the Crisis in Lebanon. *Ithaca Press*, 1976.

Owen, W.F. 1984. Interpretive themes in relational communication. *Quarterly Journal of Speech.* 70. 274-287.

Owen, Roger. 1993. The Middle East in the World Economy*: 1800-1914. I.B. Tauris.*

Patnaik, U., 2008. Theorizing poverty and food security in the era of economic reforms. *Globalization and the Washington Consensus: Its influence on democracy and development in the south*. 161-200.

Pelekis, A. 2003. Lebanese in Motion: Gender and the Making of a Translocal Village. Transacction Publishers. 74.

Reda, M. 2020. Interview with author. Machgara. May 14, 2020.

Rodney, W. 1974. How Europe Underdeveloped Africa. *Bogle-L'Ouverture Publications, London and Tanzanian Publishing House, Dar-Es-Salaam.*

Saadeh, R. & CEREL 2020. Diagnosis of Lebanese Agriculture in light of the latest financial crisis. *Lecture: American University of Beirut.*

Sadr, K. Land Tenure in Lebanon. *American University of Beirut*, AUB, 1972. 1–113.

Sadr, Mohamad. 2020. Interview with author. Machgara. April 25, 2020.

Saba, P. 1976. The Creation of Lebanon: Growth in the 19th and 20th centuries. *Essays on the Crisis in Lebanon.* 23-33.

Sharaf, Ali. 2020. Interview by author. Machgara. May 27, 2020.

Smelser, N., & Baltes, P. 2001. Land Degradation. *International Encyclopedia of the Social & Behavioral Sciences*. 8242-8247.

Sultan, Hussein. 2020. Interview by author. Machgara agricultural fields. March 5, 2020.

Traboulsi, F. 2014. Ya Qamar Machgara Patronage, Social Relations and Sectarianism in a Bika`i Town. *Riad al-Rayyes books.*

Traboulsi, F. 2007 .A History of Modern Lebanon. *Pluto Press*.

UN ESCWA. 2016. Strategic Review of Food and Nutrition Security in Lebanon. Report: Short Version.

UNDP. 2018. Machgara: Maintaining the myth. *United Nations Development Program*. Web Accessed.

UNDP. 2019. Sustainable land management in the Qaroun Catchement. MoE and UNDP.

Van der Ploeg, R. 2016. Family farming in Europe and Central Asia: history, characteristics, threats and potentials. Working Paper: 153. Food and Agriculture Organization. 8.

Verdeil, É., 2019. *Atlas of Lebanon: New Challenges*. Presses de l'Ifpo.

Wallerstein, I. 1976. The Modern World-System: Capitalist Agriculture and the Origins of the European World-Economy in the Sixteenth Century. *University of California Press.* 39.

Wallerstein, I. 2004. World Systems Analysis: An Introduction. *Duke University Press*.

Warriner, D. 1964. "Land Reform and Economic Development." A riculture in Economic Develo ment. Eicher, . an ill Co., New York .

Webber, L. & Ison, R. 1994. Participatory Rural Appraisal Design: Conceptual and Process Issues. *Agricultural systems* 47. 107-131

Weiss, M. 2010. In the shadow of sectarianism: Law, Shiism, and the making of modern Lebanon. *Harvard University Press*. 126.

Zeina, Mohsen. 2020. Interview by author. Machgara. May 5, 2020.

Zurayk, R., el-Awar, F., Hamadeh, S., Talhouk, S., Sayegh, C., Chehab, A. G., & al Shab, K. 2001. Using indigenous knowledge in land use investigations: a participatory study in a semi-arid mountainous region of Lebanon. *Agriculture, ecosystems & environment*, 86(3), 247-262.