AMERICAN UNIVERSITY OF BEIRUT

REVISTING MUSHA LANDS THROUGH AN ECOLOGICAL LANDSCAPE APPROACH: THE CASE OF TIBNEEN

by
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A thesis
submitted in partial fulfillment of the requirements
for the degree of Master in Urban Planning and Policy
to the Department of Architecture and Design
of the Faculty of Engineering and Architecture
at the American University of Beirut

Beirut, Lebanon
December 17, 2018

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ACKNOWLEDGMENTS

I would like to start by expressing my sincere thanks to my family: mom, dad, and my lovely sisters: Lama, Noor, and Dima for their prayers and for being my back bone during this journey but also in my life. Thank you as well to my brother-in-law Marwan for being a big support and a real brother and for baby Nai for being the best distraction at times and a huge motivation behind this journey.

There are no words to express my appreciation to my dear friends, Salwa, Zarifi, and Ali who have been by my side since the beginning. Their encouragement and our stimulating conversations are priceless. Thank you to Hayat for the continuous reassurance and support.

Thank you to my thesis committee: Professor Mona Fawaz to whom I owe my deep gratitude for all the continuous support, and guidance and for steering me in the right direction when I needed it. Thank you to Professor Howayda Al Harithy to whom I am grateful for all the useful comments. Simply being surrounded by their vast knowledge was inspiring.

My sincere gratitude to my co-advisor Professor Jala Makhzoumi, to whom I dedicate this thesis, for her patience and guidance throughout the years. Dr. Makhzoumi has been and continues to be a mentor I hold in high regards. I could not have imagined pursuing my master's studies without her motivating words and invaluable insight.

Last but not least, I am deeply thankful to my husband Alaa for always encouraging me to follow my dreams. I couldn't have imagined having a more thoughtful and inspiring partner by my side through every milestone. I also dedicate this thesis to Alaa, the love of my life, and our new baby boy who has already brought so much hope and joy into our life.

ABSTRACT OF THE THESIS OF

Reem Nabil Fayyad for Master of Urban Planning and Policy
Major: Urban Planning

Title: Revisiting Musha' Lands through an Ecological Landscape Approach: The Case of Tibneen

The Arabic term musha' corresponds to undivided common lands representing particularly grazing lands, agricultural fields, forests and communal ponds that are shared by a community. Some scholars associated the terms to a particular land category, namely collective land ownership, stemming out from mirri land while others linked the term to a system or practice characterized by periodic redistribution of plots. For generations, musha' lands in the Middle-East were considered a fundamental source of livelihood for rural communities that are sustainably managed and governed by cultural practices and communal rules and customs. The modernization of land tenure systems was to disrupt these practices. In Lebanon, the modern land registry established under French Mandate didn't recognize musha' as an ownership category. Lands that were classified in earlier surveys as Musha' were therefore scattered, some privatized, others left for a later survey. Today, the lack of a single custodian, bureaucratic legislative differences, and failure of the legal planning framework to recognize the specificity of rural landscapes in Lebanon have undermined this important socio-cultural, economic and ecological asset. It makes it imperative to investigate musha' beyond its legal aspect, to emphasize its significance as landscapes that contribute to the collective identity of the place and consolidate the communal sense of belonging.

Taking up this challenge, this thesis adopts the ecological landscape approach to propose concepts and strategies that integrate environmental, social, economic, legal and cultural aspects of musha' land and promote sustainable development based on community inclusive scenarios. The thesis takes for case study the town of Tibneen (South Lebanon), focusing on the outskirts that include one of the largest areas of musha' lands in the region. The thesis adopts an expansive definition of Musha' to cover all lands historically considered as shared, including agricultural fields. It thus seeks to counter the historical privatization of the commons and the ongoing transformation of the village landscape by conventional land-use planning. The thesis aims to expand the definition of musha' in order to prioritize the collective identity of the village and consolidate the communal sense of belonging. To this end, it applies Ecological Landscape Associations and integrates on their basis the physical attributes of the land with socio-cultural perception of the landscape. The thesis concludes by proposing a planning framework that reclaims communal ownership and revives the institutional framework of musha'. It also proposes a strategic design and conceptual approach tackling two of the identified musha' landscapes in Tibneen.

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CHAPTER I

INTRODUCTION

A. Musha‘ Overview: Origin Hypothesis, Evolution and Adopted Approaches

With growing awareness of environmental challenges, natural resource scarcity and degradation, reconsidering historic land classification, musha‘ [1] has come to the forefront of research as sustainable and community inclusive use of land resources. Musha‘, however, is still one of the most controversial and puzzling forms of land tenure in the Middle East due to the multiple meanings associated to it. The word musha‘ in Arabic means undivided common lands. Given, however, that this popular term was never been adopted as a property category or form of ownership in the official land registries of Lebanon, only limited documentations exists about its use and management (Clerc-Huybrecht, 2008). Some scholars associate the word musha‘ with specific land tenure: “collective land ownership” (Owen and Bunton, 2000), while others define it as “system of communal land holding” (Said & Lim 2006, p.71). This “system of communal land holding” consists of re-allocating land in unequal shares (at regular intervals) to which is attached customary right of ownership (Warriner, 1948), where land distribution process and use was governed by rules emerging from the community itself.

Firestone (1990) went further with a more systematic analysis of musha‘ and placed it in a form of land tenure belonging to *Miri* or *Emiri* lands in the context of Islamic

[1] The term musha refers to the Arabic term مشاع that spells as mashaa in English. However This thesis will use the word musha in order to be consistent with the historical resources and literature references,

law. Within this ideology, musha‘ refers to divided portions of cultivated agro-communal lands, basically homogenous in characteristics (soil, terrain, resources and constrictions), that are subject to periodic redistribution entitling each shareholder an equal portion of the whole common cultivated land. Based on this hypothesis, musha‘ refers to lands that belong to God attributing its system to the will of God through the Quran itself. Schaebler (2000), on another hand, adopted the social historian beliefs that some of the confusion and mystery surrounding musha‘ is due to its association to the common cultural and national traditions belonging to specific social groups. In this context, ethnicity defined by the local communal costumes, plays an important role in determining “the way land was accessed, worked and handed on to the next generation, “below” and “beyond” the ottoman law” (Schaebler, 2000, p.243). Sait & Lim (2006) also discussed the possibilities of ownership of these lands by the villagers in question as a way to affirm a sense of belonging and social status within the community (Sait & Lim, 2006, p.67).

1. Historical Evolution of Musha‘ Land Category

The evolution of musha‘ landholding was drastically affected by the modernization of land tenure systems during the Ottoman and French mandate periods, which in turn altered land uses and property right status. During the Arab conquest, musha‘ land was a popular term of a form of group landownership especially in Palestine and “*Belad el Sham*”. At that time, musha‘ lands were labelled “*amiriyye*” and were dedicated for the benefit of the Islamic community *(likhidmat al omma al islamiyah)* and represented/governed by the imperial treasury (Clerc-Huybrechts, 2008). During the Ottoman era, before the initiation of the 1858 land code, musha‘ lands changed from a term representing land title into a system characterized by periodic redistribution of plots

among peasant cultivators (Al Salim 1998). In 1858, when the Ottoman property code was indorsed, aiming to increase tax revenues and enable the central government to expand it control over the provinces, landholders required landownership registration. This privatization process continued during the French mandate when musha‘ lands fell under the category of ‘*metrouke murfeke’* as the private domain of the state.

2. Musha‘ in the Twenty First Century: Challenges and Approaches

a. Bureaucratic Approach to Musha‘ Lands

The failure of the Lebanese government to uphold official decrees to recognize the specificity of musha‘ lands as an essential part of the rural landscapes with socio-cultural and ecological significance, have put musha‘ lands under great risk. Unfortunately, musha‘ lands fell between the cracks of the administrative bureaucratic legislative differences between various Lebanese authorities in an attempt to revitalize, sustainably manage and govern those lands as rural cultural and natural heritage. In this concern, two of the governmental initiatives will be illustrated namely Mashrou‘ Al Akhdar and The National Physical Master Plan of the Lebanese Territories.

i. Mashrou‘ Al Akhdar

There is no official record of all musha‘ land in Lebanon. However, it is known that over 66 villages in the rural zones of Lebanon have been reforested in lands identified as musha‘. These abandoned spaces were the subject of a targeted project by the Ministry of Agriculture in the 1960s under decree no. 13335 that led to revitalizing these areas through reforestation. The latter were part of a national initiative, “*Mashrou’ Al Akhdar*” that aimed at re-establishing woodlands in sixty-six villages in the rural zones of Lebanon

covering four regional governorates “10 villages in Mount Lebanon, 21 villages in the Bekaa, 21 villages in the North and 20 villages in the South” (Makhzoumi 2011) (Figure 1).

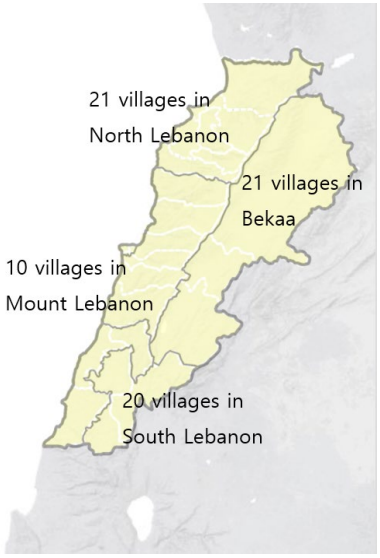

Figure 1: Location map of the reforestation project of Mashrou Al Akhdar across 4 Lebanese Governorates (Makhzoumi, 2011)

After completion of the project, the established forests were categorized as ‘Protected Zones’ within the jurisdiction of the Ministry of Agriculture. The enforcement of top-heavy forestry protection laws banned the local community from the use and management of the woodland resulting in the loss of communal interest and stewardship over the forests. Another factor that worked against the project was the use on non-native species in the reforestation, like Eucalyptus and Pinus Brutia.

ii. National Physical Master Plan of the Lebanese Territories

In 2002, the Council for Development and Reconstruction (CDR) launched the National Physical Master Plan of the Lebanese Territories (NPMPLT) project that was officially ratified in 2009 by the Council of Ministers based on the decree no. 2366. The set forth master plan, aimed at providing a holistic framework of land use management

through a unified reading of the Lebanese territories that organizes territories according to their natural assets, orienting hence building activities to targeted areas. Taking into consideration that the foundation of the study was not based on the registered land categories, the NPMPLT introduced a fundamental change in the land categorization strategy within the Lebanese regulatory mechanism that is based on three distinctive criteria: environmental characteristic, available natural resources and obstacles and challenges of the future.

The final report of the national physical master plan, addressed the future environmental challenges and stressed on the importance of the land use management in reinforcing an optimal, rational sustainable use of our natural resources.

Considering that "the Lebanese forests are nowadays located essentially (more than 80%) on State-owned land, *Meshaa* and *Awqaf* lands" (NPMPLT, p. 186), The NPMPLT's final report classified musha' lands as Protected Areas[2] (PA) (Figure 2) under 3 of 7 main categories:

- Sites protected by <u>laws voted by Parliament between 1992 and 1999</u> in the framework of Mahmiyyat (protected natural reserves). Under this law, 7 sites were declared as PA, namely Machaa' Horsh Ehden; Palm Island – Ramkine – Sanai; Chouf cedars; Coast of Tyr; Tannourine cedars; Bentaël; Yammouneh. the later represent approximately 2% of the Lebanese territory and occupy roughly 200 square kilometers[3]. In general the previously identified lands are located on

[2] A protected area is a clearly defined geographical space, recognized, dedicated and managed, through legal or other effective means, to achieve the long term conservation of nature with associated ecosystem services and cultural values. (IUCN Definition 2008)

[3] The most important among all is that of Chouf area, with a total surface area of 160 square kilometers.

Musha‘ lands, state owned lands or public lands. Protection consists of forbidding construction, quarries, tree cutting and grazing.

- Sites protected by decree 85 dated 1991 by the Ministry of Agriculture prior to the 1996 law of forested zones: the protection of these natural zones on public lands and musha‘ is limited to forbidding tree cutting and camping and includes reforestation programs and tree management[4].
- Sites protected by decree 558 dated July 24,1996 by the Ministry of Agriculture after 1996: protecting coniferous woods and forests on the musha‘ and public properties[5]. Protection consists of preserving forests from construction, cutting of trees, grazing, excavation, camping etc. Within a radius of 500m.

According to the NPMPLT, more than 80% of the Lebanese forests are essentially located on Publically owned lands, state-owned lands, musha‘ and Awqaf lands. The recommendation of the NPMPLT stressed on the importance of the legal status of these properties where “concerned authorities should establish management mechanisms permitting the maintenance of the forests” (NPMPLT,2005, p.187). The plan also emphasized on the preservation of all woods and forests located on musha‘ lands without allowing any activity that might hinder their development including quarries and grazing.

[4] Sites protected by this decree includes: Mushas of Maasser esh- Chouf, Barouk, Aïn Zhalta and Aïn Dara in 1991, protected marine area of Batroun in 1991, protected zone of Kherbet Silm – Zaïdani – Wadi el-Hajair (caza of Bent Jbayl) in 1992, and protected zone of Kfar Zabad (caza of Zahle) in 1992.

[5] Sites protected by this decree includes: Bezbina (Akkar), Qammouaa (Akkar), Soueyssa (Hermel), Cedars (Besharre), Tannourine, Hadath el Jebbe, Jaje, Karm Shbat (Akkar), Qnat, Merbyn Wadi Jhannam, Qariet es- Safina (Akkar), Jurd en-Njas – Jabal el-Arb’ine – Danniyeh, Aïn Qlaïlat – Karm el- Mahr, Qornet el-Kaïf, Mashaa, Shalout, Danniyeh (North), and Bkassine-Jezzine (Jezzine).

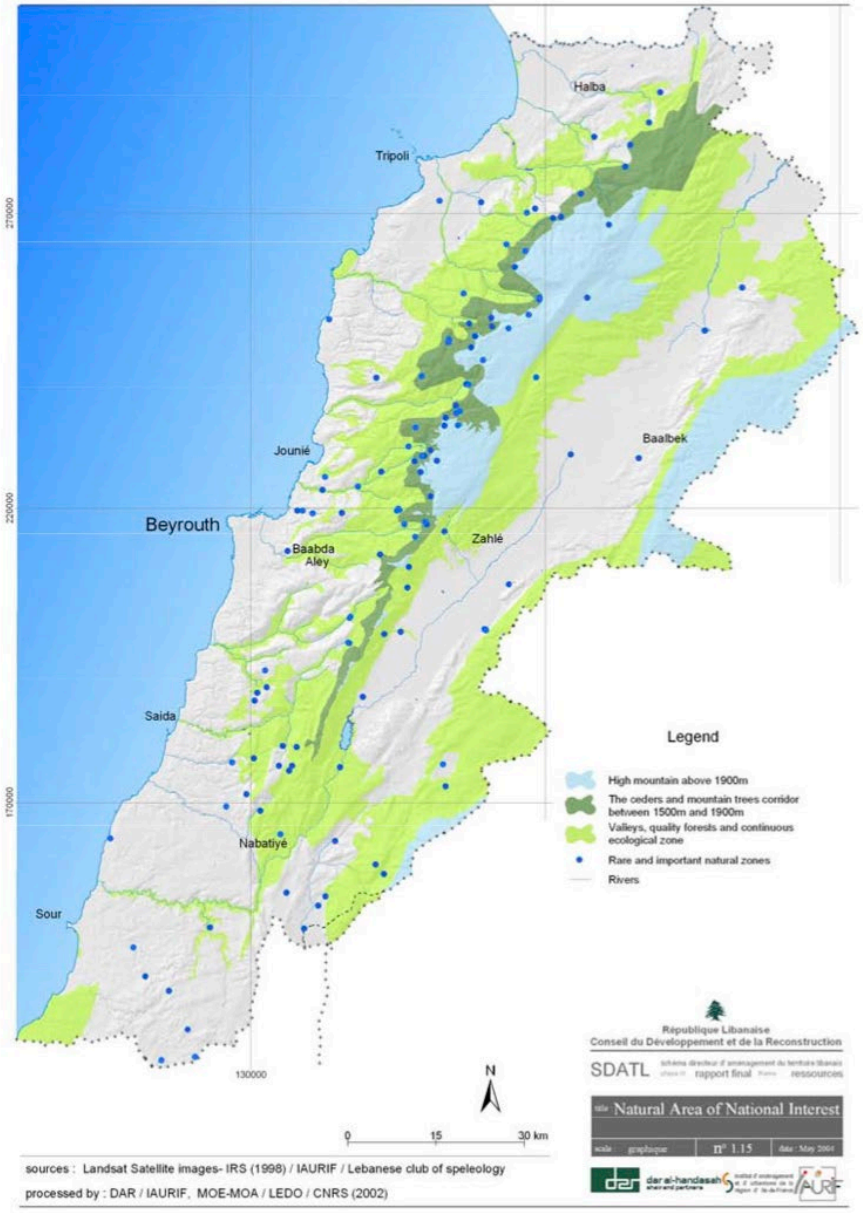

Figure 2: Map showing natural reserves and protected areas as identified by the NPMPLT (NPMPLT, Final report, (2005), CDR, p.I-17 of 26)

In short, the discourse of musha‘ lands within the National Physical Master plan of the Lebanese Territories was framed in terms of forests and Protected Areas (*mahmiyyat)*. So musha‘ lands were not recognized as a category of land with a specific cultural and environmental identity. Instead, their value was limited to forests and natural

resources. In other words, agricultural lands, grazing lands and scrub lands that legally fits under musha‘ land as a property status were excluded from the recommendations of the National Physical Master Plan of the Lebanese Territories.

Despite their importance, both projects, Mashrou’ Al Akhdar and the NPMPLT, dealt with musha‘ lands from a narrow perspective without emphasizing their potential as active communal spaces with environmental, ecological and socio-cultural value. They completely neglected the social dimension that was historically considered a key differentiating character of musha‘ lands distinguishing them from other publicly owned lands.

b. Corporate Real Estate Development Approach to Musha‘ Lands: A repercussion

The absence of a solid legal setup and planning framework, that clearly defines property statuses and associates rights, leads to negative implications on the traditional rural cultural landscapes making them fragile and susceptible to economic and political pressures. Those lands were a target of the real estate development agenda with no attention being paid to the social rights and environmental repercussions. As the state refrains from fulfilling its role as a protector of social rights, the Lebanese environmental assets and landscape sceneries are slowly being converted into marketable goods catering for the economic interest of the fortunate elite. The failure of the state to uphold legal articles/decrees in addition to the continuous deterioration of the rural economies, forced marginal communities to relinquish their rights to communal lands and natural resources that are integral to the Lebanese national identity and collective heritage. Considering the contested Land registry status of communal lands, the inaccuracies and vagueness of property rights are leading to land exploitation. It also becomes “an added asset, a legal

loophole, seized upon by neoliberal politics to acquire prime landscapes for large scale developments" (Makhzoumi, 2011).

Sannine Zineth is one of the market led realty development projects that highlights the pressure that musha' lands are facing from real estate developers. In this context, nature abuse and the disregard of the local socio-economic dynamics becomes totally legitimate with the expected high financial returns of the proposed mega scale projects. Sanine Zineth is one of the mega-scale neoliberal projects targeting rural landscapes that are economically and politically driven highlighting the pressure that musha' lands are facing from real estate developers.

i. Sannine Zineth Case Study

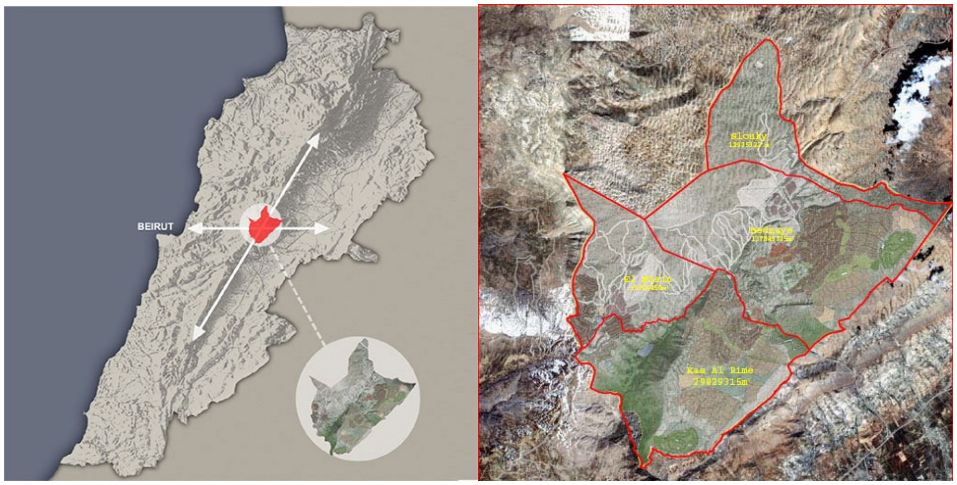

Figure 3: Location map of Zinet Sannine Project. (Baydoun, M (2005)."Ecotourism as an alternative development option for rural sites: the case of Kaa Al Rim in the Sannine Area". MS thesis, AUB).

Considered as prime landscapes, musha' lands hold promising potentials for large-scale development projects. Sannine Zenith is a project located on mount Sannine, a prominent mountain representing an iconic landscape that is appreciated and cherished by the Lebanese as a natural and cultural heritage. The project's limit stretched to embrace the municipal boundaries of four villages, namely Kaa El Rim, El Mtein, Slouki and

Bednayel. Large portions of the musha‘ lands of the four villages were purchased and then reconsolidated forming an area of 9,600 hectares, advertised to be 1% of Lebanon’s total area (Figure 3).

Ruled by profit, this huge portion of the Lebanese mountain landscape would have been completely destroyed and replaced by a high-end touristic resort with extensive sports, recreation and business facilities. Despite its incompatibility with the main principles of sustainability, the project was publicly advertised and promoted as an eco-touristic sustainable initiative. Beyond the environmental and social injustice, the Lebanese state paved the ground for the privatization of public and/or state-owned lands and facilitated “conditions for investors and property developers by easing property laws, alleviating taxation and encouraging lands speculation” (Krijinen & Fawaz, 2010). Although Sannine Zineth land was already appropriated and construction was planned to commence in 2004, fortunately the project was delayed, and not yet implemented till date, mainly for political reasons.

The proposed project comprises of three villages (Figure 4): The Lake View Village, the Eco Farm Village in addition to the International Sports Village. The master plan also incorporates an airport, but no details about its size and location are announced.

The later described project was followed by public objection including academics, professional, NGOs and local community who raised environmental and ecological concerns, addressed legal challenges, socio-economic and planning considerations.

Figure 4: map showing Zinet Sannine Master and perspectives of the proposed village.

(https://www.nabilgholam.com)

Considering the environmental and ecological throwbacks, Sanine Zineth project contributes to the destruction of the ecological integrity and natural processes, landscape fragmentation and wasteful use of natural resources as well as the interruption of the visual, physical and ecological continuity. Due to its prominent location spreading over one of the Lebanese iconic mountain peaks, Sannine holds an ecological significance being the second largest aquifer in Lebanon and lies on the path of migratory birds. Hence the project will invariably disturb the recharge of Sannine aquifer (Makhzoumi, 2011) and threaten the wild life habitats beyond the existing local flora and fauna.

Dismissive of the diversity and socio-cultural and natural significance of traditional rural landscapes, the economic benefit of this large-scale development on the local economy is questionable as well. Considering the fact that the developing company is non-Lebanese, hence the capital investment and financing don't necessarily cater for the development of local communities and economy. In terms of local job offerings, "project construction will invariably require highly skilled engineering expertise and non-

skilled manual labour neither of which will be recruited from Lebanon, nor will the project benefit local communities, for example inhabitants of the four villages whose masha' land was acquired by Sannine Zenith" (Makhzoumi, 2011, p.235).

From a planning and design perspective, "The generic, formalized approach" as described by Makhzoumi (Ibid)), resulted in the colonization of the rural scenic landscape of Sanine Mountain and unjust social exclusion of the community from their right to their land and natural resources. According to Makhzoumi they failed to recognize the landscape as a "powerful arena for advancing socially and economically just development for the rights of marginalized communities" and as a "powerful arena local community conceptions of natural and cultural resources." (Makhzoumi, 2011, p. 229). The expected high financial return of the project renders the abuse of nature totally legitimate.

B. Thesis Position and Significance

1. Position:

As an urban designer with a landscape ecological design and planning background, I am advocating in this thesis "the right to Landscape" vis-a-vis the right to communal lands. The concept provides a rich discourse on the relationship between landscape, on the one hand, and human rights, on the other. As defined by Egoz, Makhzoumi, & Pungetti in 2011, the right to landscape looks to "integrate the spiritual and cultural values of land and local communities into landscape and nature conservation and socio-economical needs into sustainable development, and to support biological and cultural diversity as well as awareness and understanding of, and respect for, landscape and nature" (Egoz, Makhzoumi, & Pungetti, 2011, p. 1). This theoretical concept is based

on an innovative critical thinking associating social justice with the landscape. In other words, it presents a new model for addressing human rights in the context of the landscape. Accordingly, "the right to landscape is conceived as place where the expansive definition of landscape, with its tangible and intangible dimensions, overlaps with the rights that support both life and human dignity as defined by the UDHR" (Ibid).

This thesis raises the following questions, How can we transform musha' lands in the rural Lebanon from leftover abandoned spaces to active communally integrated spaces through the application of a landscape ecological approach? How can we, through application of the ecological landscape approach, expand the definition of musha', beyond the restrictive land category to ensure communal empowerment/ engagement, landscape integrity and sustainable development?

This thesis argues that by integrating in the planning and design process the proposed interpretation of musha', informed by the ecological landscape approach and social perception of land, it is possible to articulate sound planning strategies and design guidelines that maintain landscape continuity, ensure ecological integrity, preserve the natural and cultural heritage, and promote sustainable development based community inclusive scenarios. It also helps preserve landscapes that strengthen the communal sense of belonging and consolidates the collective identity of the place.

2. Significance:

The thesis is significant for several reasons.

First, the adopted approach will help in distinguishing landscapes that hold communal significance irrespective of property ownership, land cover and administrative boundaries. The holistic comprehensive approach adopted in this thesis provides a new perspective in conceptualizing the relationship between human and their landscapes

through the concept of musha‘, surpassing the existing conventional land use planning identification of musha‘ as a land category.

Second, based on the proposed definition of musha‘, the thesis will propose criteria that can be generalized to be applied to different case studies that require distinguishing and locating landscapes that hold shared meaning and contribute to the collective identity of the place.

Finally, the significance extends beyond Tibneen, the case study adopted in this thesis. That is by deriving a property framework that aims at reclaiming communal ownership of musha‘, reviving institutional framework, and proposing planning guidelines and incentives that ensure the protection, preservation and management of musha‘. The proposed frameworks that aim to strengthen collective ownership and reinforce shared responsibility in preserving and managing musha‘ lands for the sake of the common good could be integrated within the Lebanese planning framework as a means to overcome the fragmented compartmentalized traditional planning approach.

C. Thesis Methodology:

1. Secondary Resources:

The interest in investigating musha‘ lands in general and Tibneen woodland in specific emerged from several academic exercises that were conducted during a planning and design workshop as part of the MUPP/MUD program at the American University of Beirut in Fall 2011/2012. The workshop addressed several planning and design limitations at different scales over the case study of Tibneen from an economic, environmental and socio-cultural perspective. The objective of the workshop aimed at

embracing some holistic sustainable developmental strategies that can infuse local income generation practices, preserving the natural and cultural heritage of the town and finally, re-connect the splintering urbanization to strengthen Tibneen's spatial identity by assessing the current master plan, understanding the land-use, urban morphology, social practices as well as environmental challenges.

2. Ecological Landscape Approach

The adopted methodology will apply the principles of Ecological Landscape Approach using the Ecological Landscape Associations (ELAs) (Makhzoumi & Pungetti, 1999) over the case study of Tibneen. This approach adopts a dynamic and holistic framework which advocates the study and understanding of various processes and relationships between different components in a given ecosystem rather than analyzing them separately while looking at the past, present and future processes. This methodology promotes land management, ecological integrity and sustainable development that respects the character of the place. The application of the ecological landscape methodology in this thesis will help construct a holistic, integrative and comprehensive understanding of the site and identify the basic units that compose the Tibneen landscape.

In other words, the ecological landscape framework maintains its solid foundation from the understanding of existing conditions and processes thus the consequential design and planning guidelines will minimize environmental degradation, stress on ecological integrity, and guide urban development by responding to environmental pressures and urban needs. The ecological landscape methodology is based on 3 lines of investigations

a. Ecological Landscape Assessment

Influenced by the methodological framework adopted, this thesis will provide an expansive reading of various landscape components of Tibneen addressing the biotic, abiotic and cultural components over spatial and temporal dimension. This assessment will help in exploring the relationships that exists between the natural and cultural components of Tibneen landscape and understanding the interplay among various complex landscape processes across the spatial hierarchy and temporal scale. This comprehensive assessment will be done through an investigative framework by adopting the reconnaissance survey, which includes landscape classification, description, history, legislation and evaluation of the village landscape. The result of this assessment will produce site-specific landscape characters that are of natural and cultural basis.

b. Ecological Landscape Association Methodological Framework

This conceptual and operational method will be based on the comprehensive ecological landscape assessment outlined above to "categorize the different processes into heterogeneous units on different scales from regional to local in form of landscape associations". (Makhzoumi, 1999). This approach will help in establishing an ecological understanding of the landscape under study, identifying ecological landscape associations, and finally locating the spatial patterns of the associations.

The ELAs identified will then be used as a foundation in reinterpreting the concept of musha', locating musha' landscapes in Tibneen, highlighting the evolution of musha' as a practice, and identifying damaging trends that are contributing in the transformation of the village landscape.

c. Planning Guidelines and Design Intervention:

Building on the ecological landscape associations identified, this thesis will propose a new definition of musha‘ and develop an identification criteria that will be used as a foundation for distinguishing musha‘ landscapes in Tibneen. The associations will further be used to highlight threats contributing to landscape fragmentation, threatening ecological integrity and hindering the sustainable development of musha‘ in Tibneen. This thesis will then propose a planning and institutional framework as well as strategic design interventions that responds to the challenges identified.

3. Ebel-es-Saqi Case Study

The thesis will take the case of Ebel-es-saqi woodland as a local exemplary project where the ecological landscape approach was adopted as an alternative way in dealing with musha‘ lands (Makhzoumi, 2003, 2004, 2010). Informed by the adopted methodology, the interdisciplinary team working on the project decided to widen the project’s objective beyond the tangible physical boundaries of the woodland to embrace the whole landscape of the village addressing intangible components related to identity, heritage and ecological networking in a dynamic landscape master plan. The Ebel-es-Saqi woodland project aimed at proposing a master plan that protects the Hima as an “amenity landscape”. Through Ebel-es-Saqi project, it was argued that by applying the ecological landscape design approach to rural landscapes, landscape becomes a medium for interpreting natural heritage, unfolding cultural values and understanding ecological processes. The discourse of the rural cultural landscape of the village was elaborated with relevance to identity construction as well as collective conception of heritage.

4. Data Collection and Interviews

Applying the ecological landscape methodology in both analysis and planning requires mapping the various ecological layers, biotic, abiotic and cultural components in Tibneen landscape to come up with ELA associations. It also requires mapping the physical changes that took place within the woodland and surrounding landscape by using the GIS maps provided by the CDR. Literature about the musha‘ lands in Lebanon will also be collected including the emergence of the term and the historical evolution of this land category, its current legal status and associated property rights regarding the management, use and ownership, in addition to the approaches adopted by the Lebanese authorities tackling those natural resources. All this information will be gathered in the form of archival documents, reports, historical maps, aerial photographs, master-plans, zoning and cadastral maps.

Most of the interviews outlined below where conducted during my early enrollment in the MUPP in spring 2012-2013 which includes interviews with:

- Urban planners and decision makers who participated in the formulation of the NPMPLT namely Dr. Wafa Charafeddine (CDR) and Mr. Habibi Debs. Those structured interviews helped, on one hand, in understanding the regulatory mechanism adopted in the study and research of the NPMPLT, specifically musha‘ lands, as well as guidelines for the development and usage of the Lebanese lands and, on the other hand, the limitation hindering the implementation of the outlined guidelines after 10 years from its initiation. As part of the thesis outcome, this will help in revisiting the regulatory tools used to come up with a planning framework promoting rational sustainable use and management of natural resources, ecological integrity and local socio-economic

dynamic while stressing on the importance of the socio-cultural heritage of the Lebanese traditional rural landscapes.

- Academicians and policy makers namely Mrs Raghda Jaber. Being an expert in local planning policies, Jaber gave a closer insight on the historic evolution of property rights in Lebanon, current legislations governing musha‘ lands and their property status addressing issues related to ownership, management and use in addition to the role of each of the public authorities, non-governmental organizations, international organizations,

- Board members of Tibneen Municipality to gather information about (a) the historical evolution of the woodland since it implementation during the 1960s till date, the physiological changes that took place and the challenges facing the forest (b) understand the logic behind the initiation of land-use master plan of the village, how the woodland was articulated within the master plan, the measures adopted for the protection and conservation of the forest and whether the approved master plan complied with the recommendations and guidelines of the National Physical Master Plan of the Lebanese Territories, (b) the legal status of the sport facility that was built in the forest as well as the institutional framework governing its management and use in addition to the environmental, ecological and social impact of the project.

- Local community to understand the social perception of the residents towards the woodland and their expectations for future development plans. adopting a participatory integrative approach, this thesis stresses on the importance of the communal participation in generating a sustainable discourse vis-à-vis the

woodland taking into consideration the economic, environmental and socio-cultural dimension in the design and planning framework.

D. Thesis Structure

The structure of this thesis includes six chapters. Chapter 2, literature review, will be mainly divided into two parts, the first will introduce the two fundamental aspects of musha‘ highlighting its origin and evolution as an official land category as well as its principle as a practice or system. The second part of this chapter will present various approaches to musha‘ lands in the Lebanese context including the bureaucratic and neoliberal approaches highlighting the challenges musha‘ landscapes are facing.

Chapter 3, Tibneen case study, will introduce Tibneen, the case study of this thesis. Through Tibneen this thesis will not only tackle musha‘ as a land category, represented by Mashrou‘ Al Akhdar but also identify, based on secondary resources, landscapes that maintain shared meanings, contributes to the collective identity of the village and consolidates communal sense of belonging, hence rendering them as musha‘. This chapter will also highlight the need for a comprehensive and holistic approach in dealing with musha‘ landscapes especially with the failure of the traditional land-use planning in maintaining and preserving communal landscapes.

Chapter 4, Ecological landscape approach: principles and methodological framework, will introduce the ecological landscape approach, its methodological framework as well as its application through Ebel Es-Saqi case study. Chapter 5, reading Tibneen landscape, will concentrate on applying the methodological framework outlined in the previous chapter on Tibneen by comprehensively reading and studying the abiotic, biotic and cultural components of Tibneen’s landscape. The later reading will be the foundation of chapter 6, re-conceptualizing musha‘ through ecological understanding,

which will define interactions between various landscape components and thus identify ecological landscape associations. Those ELAs will help in the reinterpretation of the concept of musha‘, outlining a clear identification criteria, locating musha‘ landscapes in Tibneen and highlighting trends affecting musha‘ and contributing to the transformation of the village landscape. Chapter 7, thesis recommendations, will end by proposing, on one hand, a regulatory and institutional framework governing musha‘ and, on the other hand, strategic design intervention design intervention that can strengthen the communal sense of belonging, preserving the collective identity of the village, recognize the village natural heritage as well as ensure landscape continuity, ecological integrity and sustainable development.

CHAPTER II

LITERATURE REVIEW

On an international level, the term musha‘ was reflected by multiple notions where scholars tried to define and understand their significance from a social, environmental and cultural context. Communal lands, commonage, common pool resources and ejido refer to the same notion of the commons which includes lands such as Forests, grazing lands, fishing ponds and groundwater basins. “The term *common* identifies precisely what the space is not” (Blackmar, 2006, p.49). This broad definition introduced by Blackmar in which she associated this kind of land ownership category with a unique type of land tenure that is “neither public nor private space” (Blackmar, 2006, p.49) but common. “Common property refers to a set of rights and obligations whereby a group of individuals collectively governs use of a resource by its members” (Burger, Ostrom, Norgaard, Policansky, Goldstein, 2002, p.83). Jiménez went further in describing this land tenure by differentiating between “open access” that represents the situation where the resource is subject to no access or use rules (Jimenez, 1997) and common property which represents the situations where a resource is governed and managed collectively by a group of people (Jimenez, 1997). Commons serves as an umbrella term that reflects the feeling of connection, place sharing and community participation in an open space. The Common denominator among all definitions is the dominance of the social factor in relation to a specific type of land tenure “the commons”.

The literal definition of the term musha‘ in Arabic is ‘undivided common land’. However, the term musha‘ is used to designate several forms of landholding in legal and

popular parlance, making its use frequently controversial. Given that this popular term was never adopted as a property category or form of ownership in the official land registries of Lebanon, only limited documentations exists about its use and management (Clerc-Huybrecht, 2008). Some scholars associate the word musha‘ with specific land tenure: collective land ownership (Owen and Bunton, 2000) stemming out from state lands specifically Mirri Lands, while others define it as "system of communal landholding" (Sait & Lim 2006, p.71). Neither its origin nor its importance have been sufficiently explained. Kark and Grossman stated in this context that musha‘ as a term "does not appear in classical Arabic dictionaries, a possible sign that the system was not practiced in classical Islamic times." (Kark & Grossman, 2003, p.223).

Musha‘ lands were considered, for generation, as a source of livelihood for rural communities, that were sustainably managed through traditional cultural practices and costumes, hence granting those lands a socio-cultural and ecological significance. Today, musha‘ land is facing various challenges resulting in their transformation into abandoned left-over spaces or a medium for mega-scale market driven developments. This chapter will trace the origin of the word musha‘ and its historic evolution as a land category during the Ottoman era, French Mandate and after independence. The chapter will also illustrate various hypothesis tackling the emergence of musha‘ as a system of periodic redistribution of plots governed by communal rules and costumes linking it to the concept of hima.

A. Musha‘ as a land category: Origin and Evolution

1. Musha’ Evolution during the Ottoman Empire Era

a. Musha’ Before the 1858 Ottoman Land Code

In Lebanon, The evolution of musha‘ lands were drastically affected by the modernization of land tenure systems during the Ottoman and French mandate periods. Historically, official laws had combined Islamic values and principles with the urge of the state to secure and maintain property rights and utilize unidentified lands. During the Arab conquest and the early years of the Ottoman Empire before the initiation of the 1858 official land code, musha‘ land was a popular term of a form of group landownership especially in Palestine and “*Belad el Sham*”. At the time musha‘ lands were labelled “*Amiriyye*”(also known as *Mirri* or *Amiri* lands) referring to state owned lands belonging to *Ameer Al Muslimeen* that were dedicated “*likhidmat al omma al islamiyah”* (to the benefit of the Islamic community) represented by the imperial treasury (Clerc-Huybrecht, 2008). During that period, almost all agricultural lands belonging to the state in the possession of individuals were known as *Miri*, a term referring to the literal explanation of lands under the control of the Ottoman state specifically the leader of the Muslims. In the case of *Amirri* lands “the state owns the land as a representative of God, but creates a range of access and usufruct rights for individuals through cultivation or payment of taxes” (Said & Lim, 2006, p.12).

b. Musha‘ After the initiation of 1858 ottoman land code

In an attempt to formalize the dominant Islamic principles and customs related to land and codify the respective property right associated to them, the ottomans initiated the 1858 official land code. The set forth land law was driven by the state’s desire to

increase tax revenues and enable the central government to expand its control over the Ottoman's province. The code also aimed at defining land categories, developing mature land tenure regime and requiring landholders to register their lands as private properties. In the context of the Ottoman code, two rights where identified and had direct association with the landownership concern, the first represents the right of resource Ownership known as *Hak al Raqabah* while the second represented the usufructray right known as *Hak al Tasarouf*.

To clarify and solidify legal rights, the state faced one of the most significant challenges for land administration defined by developing an appropriate cadastral system outlined by the registration and mapping of all the settlements of the empire. The initiated system of cadastral registration that was considered a principle feature of the Ottoman law during the 16th and 17th century was conducted in the government land register office where title deeds have been issued as an evidence of ownership for those who claim usufruct right in state lands. According to the provisions of the 1858 Ottoman land code Article 78, the right of use can be granted to anybody who cultivates *Mirri* lands for 10 consecutive years. However, if the land is not cultivated for 3 continuous years, it will be withdrawn and eventually passed on to someone else.

Although the registration process of lands was open in nature and exposed to all, however the peasants, "*Fellahin*", were reluctant in claiming ownership and presenting their names to the Ottoman authorities fearing any attempt from the state to drive them in military conscription. Consequently, the local notables where asked to register the village lands, that were for generations collectively owned, under their names as private properties. As a result, lands that had for years been communal properties of the villages became legally private properties of people who never lived, worked or benefitted from

those lands. This transition in ownership statuses of properties from lands with collective possession to private acquisition by the elite had a significant repercussion at all levels of the society. This came to the advantage of the big families who had custody over the communal lands because of their political and social status that eventually resulted in them owning the villages and became the sole landholders. In return, the *fellahin* that used to be owners became share-croppers and preserved their rights as tenants with absentee owners. The title deeds that where issued during the registration process and were provided in accordance to the ottoman code were essential as they became the base of ownership claims in latter historical phases. the set forth land registration system paved the way for the privatization process and thrived in developing a vast and comprehensive land records (*Kuyud-n-Hakani*) comprising of all the information related to land distribution and Ownership that was collected and synthesized.

It was during that time when state owned lands, to which musha‘ lands belong, were subject to reform, introducing a new category of land known as *Metruke* lands stemming out from *Mirri* lands, while maintaining the latter type as a separate land category. *Metrouke* Lands (Given over) refers to lands owned by the state that are reserved for public and communal use (Tute,1858). Here the ownership right (*Hak al Raqabah*) strictly belongs to the ruler while the famers who cultivate the lands enjoy the Usufruct right (*Hak al Tassaruf*). The state preserves it right of converting *Metrouki* lands into two sub categories known as ‘*Metrouke Mahmiyya*’ or ‘*Metrouke Murfakah*’ property to be used by a particular community referring to lands allocated for grazing and wood collection. As per the ottoman code, regardless of their spatial location, *Metrouke* Lands were classified based on their use solely. The unchangeable use of

Metrouke lands was discussed in Act1, note3, Article 5 of the ottoman code stating "The most important incidents of true *Metrouke* lands of both classes are that they can never be acquired by an individual, and may never be put to any use, other than that for which they were originally intended."(Tute,1858, p. 15).

According to Clerc-Huybrecht, the term musha' was used to designate a specific category of lands named *Metrouke Murfakah* (Clerc-Huybrecht, 2008). The term *metrouke murfakah* officially appearing during the Ottoman cadastral reform in the code 1858 where left for the use, benefit and service of the inhabitants of a specific community, usually used as battlefields, grazing lands or for wood supply.

Building on extensive investigations in property records, Clerc-Huybrecht explains that the term musha' was historically used in two principle ways in the Lebanese context, namely (i) the village musha'" and (ii) '*Matrouke Murfeke*'.' The former term (village musha') was associated to a special type of lands, those held in the form of undivided collective lands for which rights were expressed in the form of transferrable shares. Periodically without any change in the right of ownership, land lots were combined and redistributed in a process of periodic rotation, which in most cases took place every three years. In this form of communal ownership of the village, each Family received during the periodical sharing of lands different parcels than the ones that where attributed in the precedent sharing. The property of the territory belongs to the community at large and the private rights of the families or individuals are restricted to the shares that they possess. Lands are divided in precise parts but the rotation process makes them precarious where possession is not permanent in this form of tenure. In other words, the communal property doesn't lead to the collective possession where the latter is unstable but is always strictly individual.

This type of musha‘ lands was subjected to two phases of reforms. The term “musha‘ village as property” or “ the village as musha‘ property” evolved for the first time, according to Clerc-Huybrecht, to become “village of tenure musha‘”, which changed from the right of use to the right of ownership. This came to the advantage of the big families in the villages who had custody because of their political or social status that eventually resulted in them owning the villages where farmers who previously used to be owners became sharecroppers.

In the second half of the 19th century, and after the general census of properties was conducted, the second transformation took place where a new term was introduced; “villages with fixed musha‘ parcels”, properties where no more subject to distribution, rotation was banned and property titles where granted.

2. Musha‘ During the French mandate

The French accelerated the process of dissolving communal claims following the decree 1925-1926. It is worth mentioning that during that era in the Cadastral Department (Bureau de cadastre), the established system was in terms of shares given to farmers or villagers in the communal land as a division of the total without having an official individual land holding. A distinguished advantage of the applied landholding registration system during that era was that “it brought to an end the key element of the musha‘ system of communal landholding” (Ziadeh, 1993, p.10). It was believed that this practice can have a harmful side effect on the lands; thus during the 1930s, colonial officials accused the musha‘ of being an inefficient form of farming “due to over-seeding, loss of time in moving between strips of land and loss of land to cultivation” (Sait & Lim, 2006, p.71).

3. Musha‘ After Independence: Legal Framework

Based on the second section of Lebanese property law no. 3339 dated 12/11/1930, specifically clauses 5 to 9, five distinctive categories where adopted for the classification of lands in Lebanon, where musha‘ lands where not identified as an independent land category with distinguished specifications. The officially identified land categories in the land registry are outlined as follows:

- *Mulk* Land (known as Private lands) represent lands that are held as ‘absolute freehold ownership’. Conferring full land ownership, landlords of his category of lands enjoy the privilege of both the right of resource Ownership known as *Hak al raqabah* and the usufructray right known as *Hak al Tasarouf*.
- *Mirri* Lands also known as *Amiri* signifying lands that belong to the state in the possession of individuals. in other words, the resource ownership right (*Hak al raqabah*) belongs to the state while the individual enjoy the Usufruct right (*Hak al Tassaruf*)
- *Mewat* Lands, also Known as *Khaliyah Mobaha*. Those undeveloped dead lands refer to private state-owned lands that are geographically located outside the limits of villages. Functionally the term *Mewat* refers to waste lands that cannot be cultivated such as sand dunes, rocky slopes and swamps that belong to no one and are not allocated since ancient times to a specific village.
- *Metruke Murfakah*,(Given over) represents to state-owned lands where the right of use is generally for the inhabitants of the village. According to Act 1271 of the law newspaper defined *Matruke Murfakah* lands as those near to the built-up settlement and that are left for the use, benefit and service of the inhabitants of a

specific community, usually used as battlefields, grazing lands or for wood supply.

- *Matruke Mahmiyeh* refers to public lands that are controlled by the state or municipalities. Those lands are left for the general public use including roads, streets, public parks, etc.

The Lebanese property law also differentiated between public lands and state-owned lands. The former type includes lands that are left for the use of the public interest. Referring to the decision 144 issued in 10/07/1925, public lands cannot be sold, acquired or disposed of and no rights can be acquired with time. However, State owned lands refers to lands that are owned by the state as a legal entity where the right of use is granted for either the state, community or individual. The later type of lands where clearly identified in law number 275 issued in 25/5/1925, that specified *Mirri* lands, *Matruke Murfakeh* as well as forests and uncultivated lands as state-owned lands governed by State Private Property Department except for forests that are administered and managed by the Ministry of Agriculture.

Based on the above classifications and definitions, Musha‘ lands can be either public lands referring to *Matruke Mahmiyeh* or state-owned lands signifying some of *Mirri* lands especially those that are located outside what was known as *Motasarifiyat Jabal Lubnan* during the ottoman era and *Matruke Murfakeh*. Based on the law issued in 1971, all *Matrukeh Murfakah* lands are owned by the municipalities if they are located within a specific municipal boundary. In this concern and in reference to law no. 275 issued in 1926, each ministry or municipality preserves the right in managing and administering its properties keeping the governance of public lands under the Ministry of Finance.

Being part of Municipal lands, musha‘ Lands are divided into two categories as follows:

- Private Municipal Lands (*Mulk Baladi Khas*): where the municipality preserves the right of use of those lands in establishing projects that are of the public interest and serves the local community. The municipality also has the right in giving the right of investment to any member or group of the community. However, and based on Law no. 173 decree number 36 issued in 4/2/2000, the municipalities are prohibited from selling or disposal of those lands without the approval of the council of ministers.
- Public Municipal Lands (*Mulk Baladi 3am*): lands under this category cannot be sold or acquired and cannot be used for any purpose. However the law gave the municipalities the right to convert those lands to municipal private lands based on municipal board decision and after the approval of the Council of Ministries.

Unfortunately, the law number 110 issued on 26/06/2010 as an amendment of the provision law number 332 issued in 24/03/1994 gave people that were affected by natural disasters the right to build on lands that they possess a right of use on. This included musha‘ lands under *Matrukeh Murfakah* and *Mirri* lands. That was considered the first step towards the privatization of musha‘ lands after independence.

B. Musha‘ as a System/Practice:

Tracing back the historic evolution of musha‘ as a land tenure in Lebanon acts as an essential foundation and a vital stepping stone in formulating a clear understanding of musha‘ lands from a legislative perspective. However, Several hypothesis tackling the origin of musha‘ lands linked it to a ‘system of communal landholding’ or a

"phenomenon" (Sait & Lim,2006, p.66) with a single significant feature of " periodic re-distribution of lots" (Schaebler, 2000, p.244). The land distribution process and criteria was mostly governed by the communal rules emerging from the community itself, were the custom is "reallocating land in unequal shares (at regular intervals) to which a customary right of ownership attaches" (Warriner, 1948, p.19). This process was explained by Kark and Grossman (2003) as outlined below:

> *"Land was distributed by lots. A common method was by calling a child to pick small stones, which carried the names of fields, and matching the names with certain persons, which were pointed out by another child. The fields were divided into relatively equal units having similar resources, which were called siham (pl. of sahem). The siham were divided into long and narrow strips of land called muaris (pl. of mars), whose total number was equal to the number of shares. The outer base lines of the muaris were usually measured by ropes. They consisted of paths, wadies, or other identifiable elements".* (Kark & Grossman, 2003, p.225)

Kark, 2003 in his is article called "The communal (musha') village of the middle east and north Africa" presented several hypothesis concerning the origin of village musha' or musha' al Balad. In one of his arguments he considers musha' land as "agro-communal systems" (kark & Grossman, 2003, p.229) that belongs to God. This hypothesis was based "on the concept that religion is one of the components of traditional culture which contribute to the nature of communal involvement in land management, and also the widespread inclination to anchor the need for cooperation by the use of ideological arguments and mystical beliefs" (Kark & Grossman, 2003, p.229). Hence, under this hypothesis communal systems can be attributed to the will of God and to the Quran itself under *Miri* land category.

Another hypothesis outlined by Kark stressed on the "relationship between the age of the settlement and the existence of a communal system of land management" (Kark & Grossman, 2003, p.232), linking its origin to farming rather than herding. The main advantage of musha'-al-balad system stems from its potential in "re-grouping over-fragmented holdings" (Kark & Grossman, 2003, p.232). He further explains that small scattered parcels eventually become uneconomical hence leaving most of the village land uncultivated. Therefore "the solution found by the villagers was to give-up the former private system and to adopt communal holding instead" (Ben-shemesh, 1953).

Early attempts to understand and further explain the origin of musha' systems concentrated on lifestyle. Brigit argues that "it was either assumed that the origin of the system goes back to the process of settlement of nomads or that, rather, a sen spaysan was indispensable to the development of such a system, attributing it to the sedentary peasants" (Schaebler, 2000, p. 243). However, later studies avoided lifestyle with respect to the origin of musha' lands and concentrated their research on understanding the basic characteristics of musha' lands as a complex system proving its compatibility with Islamic law. Firestone put forward a more systematic analysis of musha' lands in a series of articles placing "this form of land tenure squarely in the context of Islamic Law (Schaebler, 2000, p. 244) and he went further in defining four equalizing features when it comes to dividing lands among the village or community shareholders illustrated below:

1. It was part of *Miri (Amiri*) land, i.e.; the ultimate title was vested in the state, and was held in undivided shares.
2. Cultivated land was divided into several sections, each basically homogeneous in soil type, terrain, and other economic resources or constrictions.

3. Each shareholder was entitled to an equal portion of the common cultivated land as a whole and of each of those sections.
4. All the common Arab land was periodically redistributed, usually by lot, in proportion to the number of shares held by each holder.

C. Musha‘ and the Concept of Hima:

Musha‘ system can functionally and practically be linked to the concept of Hima. The Arabic term ‘*Hima’* literally means a ‘preserved place’ or ‘protected area’. Within Islamic Law, Hima refers to a natural area such as grass lands, wetlands and woodlands that were set aside seasonally or permanently for the local communities to protect, in the interest of preserving their economic wellbeing and regenerating biodiversity. This community-based conservation and management system depended on sustainable land use patterns that ensured the long-term survival of tribes and rural communities in the face of scarce resources. The participation of the local community in the decision making and their active involvement in Hima as a source of livelihood differentiates Hima from natural reserves, which usually forbid/restrict people from accessing and benefiting from the resources within the reserve. For more than fourteen thousand years, this popular ancient traditional conservation system in the Arabian Peninsula was consider as “one of the most successful institutions integrating nature conservation with human well-being.” (Kilani, Serhal, Llewlyn, 2007, p.1).

Before the emergence of Islam, Hima was treated a private reserve where access was forbidden and land use was restricted by powerful chieftains who have used it as a mean of oppression. With the rise of religious practices and beliefs in Islam, Hima was functionally transformed to signify a property dedicated for the wellbeing of the local

community. This community-based natural resources management and conservation system aims at attaining social justice grounded by the equitable resource allocation among the member of the local community. During that time, tribes were granted the authority to be the custodians of their Hima, as self-governing on the behalf of the state. The tribal society whom enjoyed the right of use of those lands including the right of grazing, have successfully established environmental planning and management strategies as well as developed an institutional framework to control their Hima with the Shaykh being the leader. This framework was elaborated by Lutfallah in his article 'A History of the Hima Conservation System':

"The chieftain or the nā'ib had the full power to implement agreed upon environmental rules, and to punish persons found guilty of an infraction. He was assisted by a planning commission in the form of a permanent committee, equally representing the kin-groups living in the settlements; two to eight persons form the council and other administrative groups appointed by the settlement council. One group was involved in the management of rainwater runoff, guaranteeing its fair distribution. Another group, in charge of the natural landscape, especially quarries, forests or grazing lands, reported environmental misconduct to the settlement council. The council would decide the type of punishment and the value of fine. The group members were also responsible for proposing improvements to the vernacular landscape and preventing any expected hazards. A third group was in charge of the tithe, one-tenth of the total agricultural harvest to be allocated to the settlement treasury. A fourth group was in charge of business transactions, the weekly market and the settlement's affairs. Any expenditure needed for improvement of landscape and local issues was approved by the planning commission

and the chieftain, who verbally authorized the release of settlement moneys." (Lutfallah, 2006, p.219)

During the second half of the 20th century, various political and socio-economic changes in the Middle East have led to the deterioration of Hima concept. On one hand, Normand land became nationalized subject to the control of the central government, on the other hand, population growth led to transformation of the demand on land for housing and farming. Consequently, Hima as a traditional practice with socio-economic, cultural, environmental, and ecological significance gradually dissipated and lost its status as an integral part of communal livelihood.

This chapter highlighted the historic evolution of musha' lands in Lebanon as a practice and their transformation as a property category in the land registry. The next chapter will discover musha' in Tibneen, the case study adopted in this thesis, highlighting, on the one hand, their ecological and soci-cultural significance, and on the other hand, the political, economic and environmental challenges that musha' lands are facing in the 21rst century.

CHAPTER III

TIBNEEN CASE STUDY

This chapter introduces the case under study, Tibneen, a village in the south of Lebanon. Through Tibneen, the research will investigate the 'commons' away from its legal status as a registered land category with associated property rights. Instead, it will approach the concept of musha' based on its socio-cultural dimension grounded by the communal sense of belonging, collective understanding of place and the shared responsibility to sustainably maintain, preserve and manage the landscape and its resources for the sake of the common good and ensure the ecological integrity of the town. Hence, this chapter focuses on the village's forest being historically a musha' land, legally registered under *Metrouke Murfakah* land category, and also the agricultural fields, that were historically the agricultural commons of the village and were afterwards converted into privately owned lands maintaining agriculture as the land use.

Tibneen was also the case study taken by several researches and theses at the American University of Beirut within the urban planning and design masters program. Hence, the root information upon which this research is grounded will be primarily secondary resources based (extracted from) on the findings of three theses. The first research by Marwa Boustani addressed sustainable rural tourism as a successful tool for encouraging local economic development of the village. Boustani's thesis proposed an integrated social heritage network through small scale urban design interventions, policies and institutional setups that responded to the thesis objectives. The second thesis was presented by Rami Harajli who questioned the master planning process as a tool for sustainable development. The thesis stressed on the importance of the social/communal

participation in generating a sustainable discourse vis-à-vis agricultural lands in the village. The third thesis was written by Ali Zeineddine who took Sahel El Khan, the agricultural commons between Tibneen and surrounding villages as an entry point for rethinking the current master planning tool and testing taxation strategies. The findings of the three theses will be further elaborated in the course of development of this chapter.

A. Tibneen: Case study Profile

Tibneen is a village located in south Lebanon at a distance of 106 km from Beirut, the Lebanese capital, more specifically in Nabatiyeh District within Bint Jbeil Caza (Figure 5). The village is situated 22km away from the Lebanese/Palestinian border across several hills, at an approximate altitude ranging between 650m and 700m above sea level, occupying a total area of 7,477,671 m2. Based on municipal surveys, the estimated population showed considerable fluctuation dropping from around 9,400 people during summer and weekends to less than 4,000 permanent dwellers, with another 8,000 Tibneeners residing in the United States, primarily in Michigan (Boustani, 2013) in addition to many other Tibneeners who moved to Beirut and its suburbs seeking job opportunities.

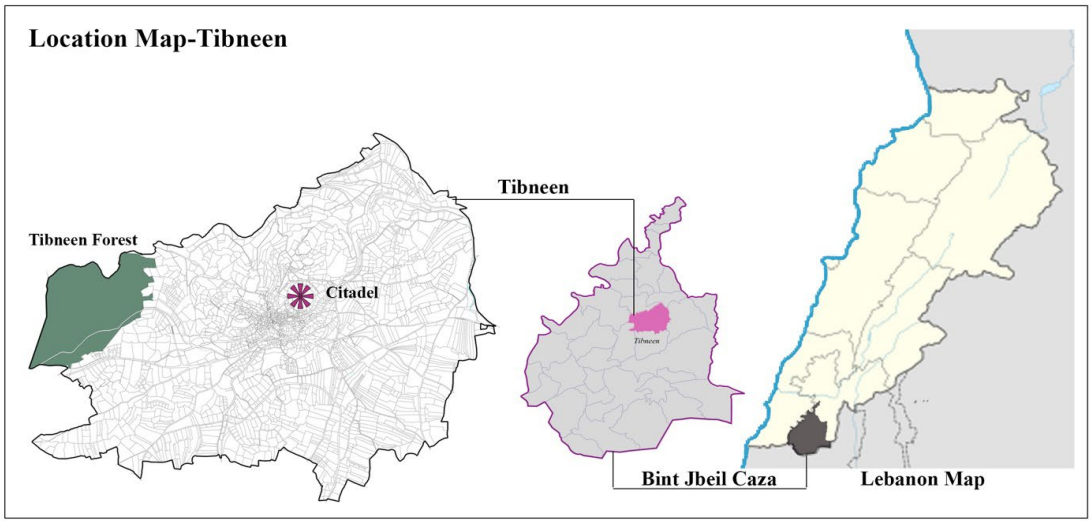

Figure 5: Tibneen Location Map

As an administrative center that grew particularly after the Israeli occupation of Bint Jbeil, the village acquired an essential institutional and commercial significance in the region and includes a police station, a governmental hospital, an Islamic court of law, financial banks in addition to several restaurants and a weekly Friday market that brings together sellers and buyers from all over the area. Tibneen is mostly known for its twelfth century Crusader's citadel, being one of the most prominent archeological site in the region. Historic urbanization patterns placed the bulk of residential development in the area immediately surrounding the town's Citadel, though recent decades have seen urban sprawl beginning to creep out of the historic core. Landmarks in the village includes al Husayniyyeh, The Grand Sarai, a Mosque, Prophet Siddiqi site and the town's school. Tibneen is also known for its religious diversity specifically between Muslims and Christians.

While reading the landscape, Tibneen retains at its outskirts two prominent natural components with socio-cultural, environmental and ecological significance forming a greenbelt confining and encircling the existing urban fabric of the village. The

defined areas include Tibneen's forest known as Makhrou' Al Akhdar and the agricultural fields of Sahel El Khan (Figure 6). The following section will outline the historic evolution of each of the two zones, their natural and socio-cultural significance in addition to the legal, political and environmental challenges.

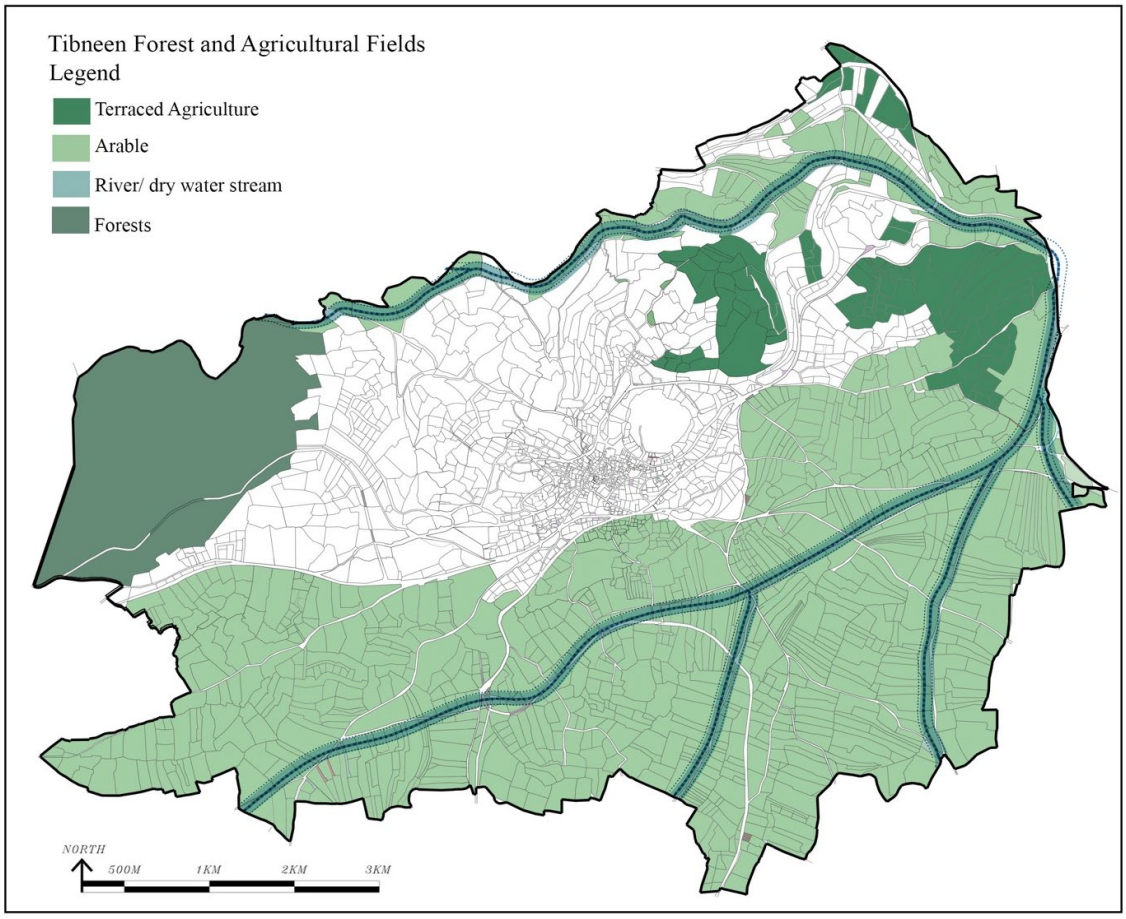

Figure 6: Map showing the agricultural fields of Tibneen and Mashrou' al Akhdar

B. Tibneen Forest - Mashoru' Al Akhdar:

Occupying 7.28 % of town's total area with an area of 546,000m2, Tibneen forest is one of the remaining few and largest musha' lands in the region. The forest is also known as al Mashrou' Al Akhdar in reference to the reforestation project initiated by the Ministry of Agriculture during the 1950s. The forest was mostly planted with

Pinus, quercus *Spp* during the early years of the 1960s. The established forest was categorized as 'Protected Area' under the governance of the Ministry of Agriculture. Today, the forest matured to become a visually prominent landscape and a significant aspect of the town's identity and natural heritage. However, seventy years later, the forest is still under the jurisdiction of the Ministry of Agriculture with very limited responsibilities handed to the municipality. The latter's role is restricted to waste management and security patrolling due to the municipal limited available resources.

Figure 7: Pictures of Tibneen Woodland-Mashrou' Al Akhdar

Physically, the forest overlaps two adjoining cadastral units no. 2271 and 2272 at the edge of Tibneen municipal boundary with the village of Haris (Figure 8). The woodland is physically cut by a relatively narrow vehicular road which is considered to be the only safe accessible area of the forest considering the steep topography which renders most of Mashrou' Al Akhdar unreachable and hazardous (Figure 7). Several outdoor structures including benches, lighting poles, garbage cans and few play equipment in poor conditions are scattered along the access road dominantly located in the upper part of the forest (Figure 9).

Despite the fact that the forest is weakly managed, Mashrou' Al Akhdar however, provides an important recreation and leisure space for the residents of Tibneen and surrounding villages. Based on Boustani's findings, the forest is considered the most

appreciated recreational destination with 24% of the local community almost visit the forest on daily basis for running, walking and biking especially between 5:00 and 8:00 pm.

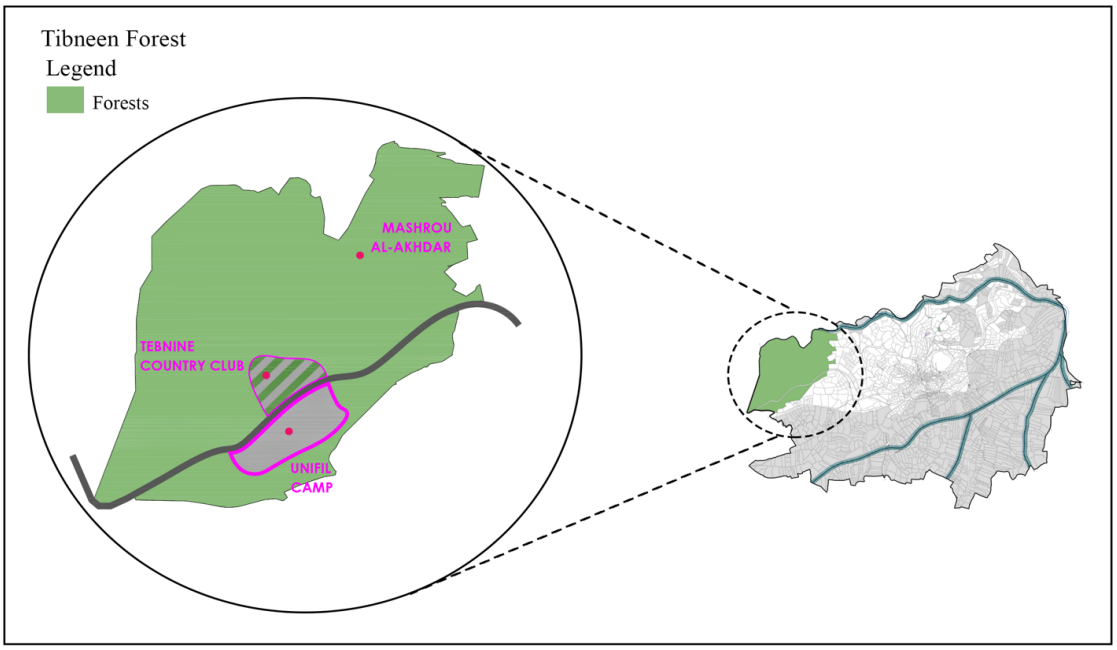

Figure 8: Tibneen Forest-Mashrou‘ Al Akhdar

Figure 9: Pictures of Tibneen Woodland-Existing Furniture

1. Political Significance

Like most of the surrounding villages in south Lebanon, Tibneen was greatly affected by political instability during the civil war (1975-1990), as well as the Israeli-Lebanese conflict. Until 2000, Tibneen’s forest represented the grounds for numerous

para-military actions carried out by several political parties mainly Hezbollah. In May 1978, the security of south Lebanon was handed over to the United Nations replacing the Lebanese Army based on the UN-Security Council Motion 425. At the time, Tibneen was chosen to be the Irish Ballalion army base which forcibly occupied several adjacent privately-owned lands in the village. However, a political agreement in 1995 relocated the UNFIL camp were the forest, being a state-owned land, was selected as the strategic location for the establishment of the UNIFIL's new complex.

The camp was built at the upper entrance of the forest occupying the cadastral unit no. 2272 with a total area of approximately 50,000 m2 occupying around 9.15% of the forest total area. The militarized nature of the UNIFIL complex presents an uninviting entrance to the Mashrou' Al Akhdar with harsh security perimeters of high concrete walls strung with spools of wire enclosing all sides of the camp, in addition to tall gates and guards (Figure 10). In an interview with a municipal council A.F, he confirmed the absence of any official legal agreement between the UNIFIL and the municipality nor the Ministry of Agriculture neither the National Lebanese Army. However, the UNIFIL's recent decision concerning the location of the camp did not face any objection from any of the three parties. Unfortunately, many trees were cut during the excavation and construction process of the camp and replaced by concrete building blocks.

Figure 10: Pictures of the UNIFIL Camp

2. Economic Pressure

Considered as a prime landscape, the forest became the center of attention of one of the local investors who saw in the Mashrou‘ Al Akhdar a great potential for a sports and recreational facility (Figure 11). With no objection from the municipality, an official letter was sent from the municipality to the Ministry of Agriculture seeking the approval on the investment request to build a sports complex in the forest to be funded and implemented by a non-profitable organization called Tibneen Sports Club. Being the president of the later organization and a figure with political influence, M. Berri was able to get the consent on building a sports club in the forest called Tibneen Country Club in 2003. Consequently, an official agreement was signed between the MoA from one side and Tibneen sports club as well as the municipality as a partner from another side on the 1st of November 2013 with a yearly rent fess of 100,000 LL for 15 years subject for renewal. After more than 14 years, the project was completed and fully operating in summer 2017 occupying a total area of 15,000 sq.m fully located in the cadastral unit no. 2271.

Throughout the construction process, many trees were cut and others were heavily affected. In 2014, during a visit of the public prosecutor to the construction site, he ordered the planting of more than 100 trees elsewhere in the forest replacing the removed ones. Eventually, 3.66% of the forest total area was completely destroyed and replaced by sports and recreational facilities including an enclosed gym, jogging track, basketball, tennis, volley ball and squash courts, as well as a kid play area, billiard room, a restaurant and a parking space. The access to Tibneen country club is controlled with access bars at the entrance and exist where visitors have to pay an entrance fees of L.L. 2,000.

Figure 11: Pictures of Tibneen Country Club

Despite the environmental and ecological negative implications of the project, Tibneen country club is providing job opportunities for more than 15 employees from

Tibneen and nearby villages. It also created a place that is more secure due to the presence of security guards and the treatment of the steep slope to become a safely accessible place.

The finding of a survey conducted by Boustani to understand the local community's perception of the village landscape, showed that 25% of local community chooses the forest together with the Municipal Saha as recreational and sports areas. The forest was also valued as a scenic landscape and integral part of the village's rural natural heritage as well as a place for social connectivity.

C. Agricultural Fields of Sahel Al Khan

The second key landscape component to be discussed in this chapter is the fertile agricultural valley of the village known as Sahel Al Khan (Figure 12). Occupying 66% of the village total area with an area equivalent to 5,000,000 m2, Tibneen represents one of the seven villages that Sahel Al Khan stretches over (embraces) forming an ecological connective element that was intensively farmed throughout history. The agricultural fields are considered the town's historical commons, reflecting a rich natural and cultural heritage defined by traditional rural practices and social costumes that are environmentally sustainable and ecologically significant ().

Until their privatization in the late ottoman era, these fields were planted by farmers in exchange of taxes. Despite being registered as private properties during the twentieth century and later during the French mandate, "the fields have maintained locally their communal significance as "agricultural fields," the location of agrarian investments for most town dwellers, whether they are propertied or not." (Fawaz, 2016). However the privatization process excluded some physical common features of the cultivated fields,

particularly natural rain waterways, which were left unidentified as private lots nor common resources.

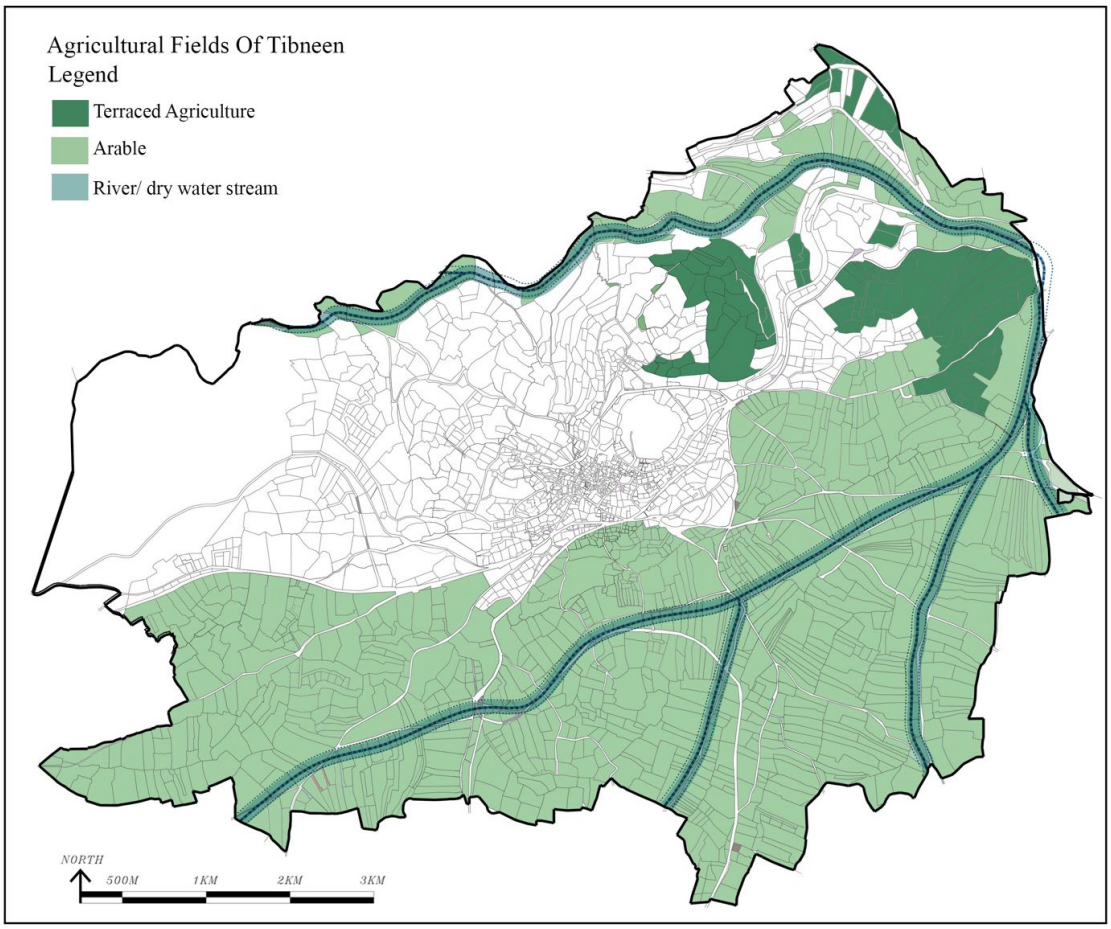

Figure 12: Existing Agricultural Fields of Tibneen

Figure 13: Pictures of Sahel Al Khan- Agricultural Fields

1. Agricultural Fields as a source of Livelihood

Based on interviews conducted by Harajli (2013) with farmers, landowners and other stakeholders to assess and understand local perception of the agriculture fields in Tibneen, the findings showed that, despite being neglected and deteriorating, the agricultural sector remains to date active and vital for the livelihood of farmers. Based on the municipality's estimation "over 60% of the permanent inhabitants in Tebnin engage in agriculture." (Harajli, 2013, p. 50). The findings of a survey conducted on 1000 plots showed that 55% of plots still engage in a variety of small scale agricultural farming including seeds (beans, sunflower, corn, watermelon, brinjal, lentils, wheat, chickpeas), fruits and vegetables (apples, lemon, tomatoes, cucumber) as well as tobacco. Agriculture production also includes olives that are considered native and integral to the rural cultural landscapes of the region. The area is characterized by fertile flat agricultural lands, orchards as well as stone wall terraces that reflect agricultural traditional cultural practices. Harajli's survey also showed that "Almost 82% (450 lots) of the 550 lots used for agricultural uses are planted for subsistence use and 18% (100 lots) are planted for commercial use." (Harajli, 2013, p. 35).

2. Agricultural Fields as a fundamental component of Tibneen's memory

Apart from its value as a source of income and livelihood, the survey revealed an important significance of the agricultural fields that is sentimental in nature and is fundamental to the memory of the place inherited from one generation to another. The presence of those agricultural fields is a tangible "reminder of the Sahel's history" that "provides a sense of belonging" (Zeineddine, 2014, p.14). Surveys showed that 73% of the interviewees of Tibneen's local inhabitants agree that agricultural fields are vital to

preserve “as part of Tibneen’s heritage and for the sake of public good of the village” (Harajli,2013, p.62). In the perception of the vast majority of the inhabitants, these cultivated lands remain “the agricultural fields of the town”, in another word, they are still appreciated as the agricultural commons.

Today the valley is valued as a scenic landscape (aesthetically favored), as a shared public green space providing recreational opportunities and promoting social networking as well as a place that revives memories and anchors the sense of belonging. Despite the fact that the agricultural valley constitutes of privately owned cultivated land, it is publicly perceived by the local community with an evident and strong sense of communality transcending individual property rights.

The spirit of the place as demonstrated by the interviewees was based on memories and experiences shared among Tibneeners related to incidents that took place a long time ago which became an integral part of the cultural heritage of the village. One of the shared spatial narratives told by an old Tibneener was the “Estiskaa Pray” of Sayyed Muhsen Al Amin in the year 1924” (Zeineddine, 2014, p. 14-15) where communal prayers were held in the agricultural fields following the severe drought season of that year. Peasants from the entire region gathered to participate in the shared prayers wishing the fertile fields an ample amount of rain. It is as well a reminder of the “social cohesion that once significantly existed between families in the same and neighboring villages and imposed farming cooperation, trading goods, and sharing available resources for food security and at times profiting from their production surplus” (Harajli, 2013, p. 32), which is a source of pride to most of the villagers who lived and experienced those traditional social costumes and norms. Local perceptions illustrated by collective

memories and experiences of the agricultural fields contributed to the shared identity of the village and its collective heritage.

3. Agricultural Fields of Tibneen in the 21rst Century

The agricultural fields are also appreciated as a shared place for social networking especially during the tobacco season and as an area for recreational activities such as jogging, walking, and exercising. With the changing lifestyles of the twenty first century and the obvious loss of the agricultural productivity, "the role of the fields as shared communal space has shifted to an open landscape where numerous dwellers walk daily between unfenced fields or along the main road that overlooks them, without reducing their centrality to the shared identity of town dwellers" (Fawaz, 2016). Consequently, the local communities share a collective right to the scenic landscape enjoyed by the majority of the local inhabitant.

4. 2005 Master Plan- challenges and constrains

From a planning perspective, Tibneen's master plan represents one of the main challenges that the agricultural fields are facing and that will, eventually, change the whole landscape character of the village. In a process that lasted for three years of surveys and negotiations between the municipality, local stakeholders and the Directorate General of Urbanism, the first master plan for the village of Tibneen was approved in 2005.

The planning process in Tibneen adopted the typical scenario of the traditional comprehensive planning, which resulted in a land-use master plan characterized by zones with relevant permitted uses in addition to regulations mainly determining building

parameters that define construction activities by limiting building heights, floor area ratios, setbacks, built-up areas, etc. Despite the centrality of the agricultural fields to the livelihood of more than 60% of the local permanent inhabitants, the approved master plan classified most of the agricultural fields as mixed use reducing their spread from 66% of Tibneen total area to 8% only (Figure 14). The master plan not only contributed in physically diminishing the fields and destroying the open landscape but also disregarded "the natural elements of the landscape that have not been delineated as individual properties in earlier surveys, such as natural waterways or agricultural passages." (Fawaz, 2016).

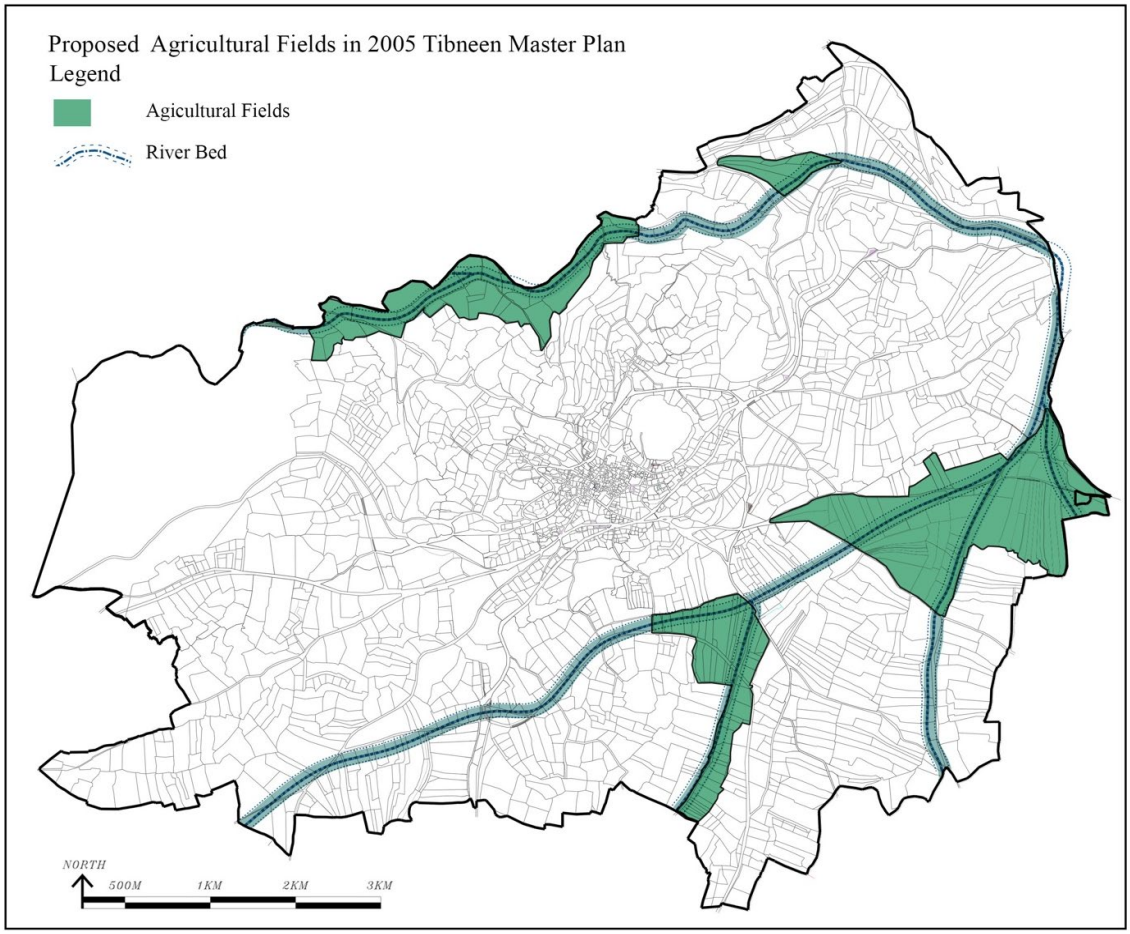

Figure 14: Proposed Agricultural Fields- Tibneen Master plan 2006

Unfortunately the land use planning scenario in the case of Tibneen is typical to other villages in Lebanon where "predefined understanding of the landscape as propertied shapes the outcome of the planning process to serve propertied interests" (Fawaz, 2016). Hence, "the (private) interests of property owners take precedence over the (shared) interest of town-dwellers to protect cultural landmarks and "agricultural commons" (Fawaz, 2016). The proposed master plan was designed to support the propertied interests of those who value their lands as a real estate asset aiming at increasing their market value with a higher building coefficient. Accordingly, "non-propertied claims over the landscape were dismissed, as concerns over property value eclipsed other modes of claiming or relating to the village's landscapes" (Fawaz, 2016). Consequently, a powerful network of property owners succeeded in manipulating the planning process producing a land-use plan serving their own benefits. Hence, the outcome was tailored to meet the desires and aspirations of the powerful elite falling short in responding to the local inhabitants' needs and requirements for a sustained living and in preserving the village's natural heritage and identity.

Although Tibneen shares the agricultural valley with seven other nearby villages, the land-use map was restricted to the municipal boundaries of Tibneen only where the landscape was perceived as a collection of freehold land parcels. Hence by accepting the urban sprawl to invade Sahel Al Khan and eventually replace the agricultural fields of Tibneen, the proposed master plan disregarded the environmental negative implications of such as a decision on the region as a whole. In addition to the destruction of the scenic landscape, it will disrupt the ecological continuity of the cultivated lands and consequently destroy the common resources such as rain water collection channels threatening the possibility of farming.

While some people found in maintaining the agricultural zoning a threat to the financial value of their real estate assets and fought hard for the rezoning of the agricultural fields to mixed uses with higher exploitation ratios, a good percentage of local inhabitants strongly believe that preserving the agricultural valley is vital for the common good. Based on the interviews conducted by Harajli, findings showed that 70% of the local inhabitants were not aware of the master plan and the new proposed zoning of the agricultural fields. This same percentage demonstrated a great dissatisfaction of the decision made and considered the master plan not responsive to their needs, hence concurred that the crop fields "must be preserved for the public good of the village" (Harajli, 2013, p.62). While 30% of the interviewees believe that preserving the agricultural valley is useless due to the deterioration of the agricultural sector in general, "The majority of the agricultural stakeholders argue that if incentives were provided, such as micro credits, water supply, marketing channels and other, the demand for agricultural lands will increase and hence facilitate the process of convincing landowners to accept new zoning regulations that would protect their interests and the interests of the public good" (Harajli, 2013, p. 62). In the words of one of the farmers who was asked about rezoning the agricultural fields he raised concerns and questioned "Do people realize the importance of preserving agricultural lands? Do they know that soon the beautiful open space of Sahel Al Khan and Waddi Yahoudeya would be transformed into a dense polluted residential area? We are losing our heritage, our traditions, our agriculture, our environment and thus our village and yet we cannot do anything about it." (Harajli, 2013, p.62).

In conclusion, the proposed master plan failed to propose a protection scheme for communal land use such as the agricultural lands, as well as to recognize the

specificity of those agricultural fields and preserve the cultivated lands that contributes to the mutual shared meaning of the place. By strengthening the perception of the landscape as individually owned and claimed spaces, the master plan failed to mediate and create a balance between the public and the private interest that will eventually alter the communal understanding of the town's landscape embodied in the memories and practices of the local inhabitants. It will also alter "the shared imagination of the village" (Fawaz, 2016). While today the agricultural fields maintain their communal significance.

With 8% only of the agricultural fields saved, the master plan will slowly dissipate the main landscape features that contribute to the shared memory of the place and anchor the sense of belonging. In this sense, with the implementation of the proposed master plan, the scenic landscape will be slowly replaced by concrete building blocks dissociating the local inhabitants from the landscape that had nonetheless been integral to the village's identity and cultural heritage. The only traces of the agricultural fields will be present in the intangible memory of people, which will eventually diminish with the absence of the tangible evidence. As discussed earlier, the master plan will also impose negative environmental and ecological implications on the region failing to protect the green commons and the available natural resources (water channels) that are vital for the cultivation of the rest of Sahel Al Khan.

In a critique to the planning process, Fawaz said that, "A good place to initiate an alternative practice of planning is to learn to see and read landscapes outside the lens of property, to develop the planning tools and institutions that can manage landscapes outside the prerogatives of property, to acknowledge non-propertied forms of claiming both natural and built environments, and to assign them greater value than land-use planning typically has" (Fawaz, 2016). It is on this last point that the next chapter will

place the most emphasis, where the ecological landscape approach will be adopted in an attempt to overcome the fragmented compartmentalized approach of the traditional planning process. The framework is based on a holistic interpretation and comprehensive understanding of the landscape as a product of natural and cultural evolutionary processes. Hence, it is believed that the expansive, responsive and dynamic framework of the ecological landscape approach will contribute to a sound planning strategy that maintains the landscape integrity, being both ecological and cultural, promotes sustainable development based on community inclusive scenarios and reinforces the natural and cultural spirit of the place.

CHAPTER IV

ECOLOGICAL LANDSCAPE APPROACH: PRINCIPLES AND METHODOLOGICAL FRAMEWORK

A. Introduction

Nowhere within the Lebanese traditional rural landscape is the ecological and cultural significance more prominent than in musha‘ lands. With the dominating influence of climate change, scarcity of natural resources, fragile ecosystem and catastrophic human impact on environment, musha‘ lands can be seen as a great potential in identity construction and natural heritage conservation.

The interest in researching the ecological landscape design approach and applying its principles on musha‘ lands has developed from several areas of concern (Makhzoumi and Pungetti, 1999). First, the concern over the environmental degradation and natural resource deterioration of the traditional rural landscapes, mainly by rapid uncontrolled urbanization, and second, the failure of the Lebanese public authorities and decision makers in creating a clear planning and design framework that realizes the specificity of the Lebanese cultural landscapes and appreciates its role in sustaining the regional ecology. This justifies the significance of adopting an ecological landscape approach as a holistic framework towards a sustainable planning, design, management of these landscapes.

As an urban designer who is concerned with endorsing environmental awareness, promoting sustainability and advocating for the preservation and conservation of the socio-cultural and natural heritage, this chapter argues that the ecological landscape

design framework offers an alternative approach to dealing with musha‘ lands, first, as a medium for interpreting culture, identity and heritage and second in restoring ecological integrity and ensuring environmental sustainability. The underlying understanding of landscape as a holistic and dynamic idea enables a framing that is responsive to the socio-economic, morphological and environmental transformations.

B. Definition of key Terminologies:

In order to understand the conceptual framework of the ecological landscape approach, it is necessary to define the terms landscape and landscape ecology.

1. Landscape

According to the European Landscape convention, landscape is defined as a “part of land, as perceived by people, whose character is the result of the action and interaction of natural and/or human factors” (The European Landscape Convention[6], 2006). Landscape is recognized by the convention as “an essential component of people’s surroundings, an expression of the diversity of their shared cultural and natural heritage, and a foundation of their identity” (Dragoni, 2018, p5). Besides the cultural and natural dimensions, landscape is appreciated as an economic asset and recognized for its social dimension as a common good that relates to the individual and communal wellbeing. Consequently, the importance of landscape is perceived and recognized in relation to human rights, democracy and sustainable development where the latter is achieved by creating a

[6] https://www.coe.int/en/web/landscape/the-european-landscape-convention/

harmonious and balanced relationship between the environment, social needs and economic activities.

a. Rural Cultural Landscapes

In 2012, Makhzoumi discussed[7] the heterogenic characteristic of the rural cultural landscapes, being at once natural and cultural, illustrates the meaning of landscape as a holistic dynamic entity. Traditional cultural rural landscapes, according to Makhzoumi (2012), are a result of various natural and cultural processes exemplifying numerous successful ways in which communities responded to their needs for shelter and production by efficiently utilizing the natural resources. They portray, not only the physical features, but also the socio-economic and cultural changes over the years and form a medium through which people build memories, reflect their beliefs, decodes traditional valuation of the place, and construct collective identities.

The term rural cultural landscape is composed of the combination of two terms, rural landscape, implying "areas that occur between wilderness and urbanized lands" (Dower, 1994) and Cultural landscape, referring to the landscape modified by successive shaping of land by natural and cultural processes. According to Sauer, cultural landscapes are about identity construction, social relations, and communication of experience, customs, values and aspirations that signifies culture.

In regions, like Lebanon, the natural landscape was continuously shaped, modified and gradually replaced by a diversity of cultural landscapes forming a rich mosaic of maquis scrublands, woodland patches, grass-lands and cropping terraces. Rural

[7] In her chapter, "Is rural heritage relevant in an urbanizing Mashreq? Exploring the discourse of landscape heritage in Lebanon ", in I Maffi and R Daher (eds) Practices of Patrimonialization in the Arab World: Positioning the Material Past in Contemporary Societies. I.B. Tauris, London"

cultural landscapes form ‘a sort of ecological cultural units’, being part nature and part culture, that respond to the environmental, ecological and socio-cultural context. Characterized as being multifunctional in use, environmentally sustainable and culturally valued, rural cultural landscapes are managed by vernacular codes and practices. Musha‘ lands, are a successful example of rural cultural landscapes portraying the co-evolution of natural and cultural processes. Thus, this could be understood by the comprehensive study of the social, natural, and cultural factors that shaped, conserved and maintained the landscape over time.

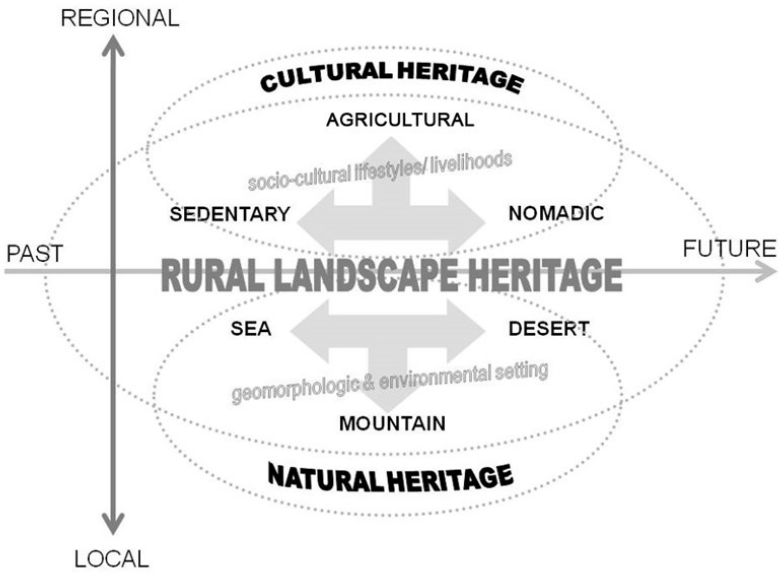

Figure 15: Conceptual representation of rural landscape heritage (Makhzoumi, 2013, 238)

2. Landscape Ecology

Landscape ecology, a younger branch of modern ecology, was first introduced by Carl Toll during the 1930s arguing that landscape should be seen as a tangible entity

or an object resulting from the co-evolution of man and his environment. Landscape ecology was developed to deal with the concept of landscape as a whole, including its forms, function and genesis based on the study and understanding of the interrelationship between man and nature (Makhzoumi & Pungetti, 1999). Thus, the integrative approach of landscape ecology, takes into consideration cultural, socio-economic and ecological processes.

According to landscape ecology, the principle point of departure in defining landscape is based on three building blocks namely biotic, abiotic and cultural component. The interrelation of the three components compose the landscape in a way that can be distinguished across the spatial scale and temporal continuum. Hierarchical classification, a fundamental theory of landscape ecology, helps in discovering patterns and processes across the spatial and temporal scale.

In short, drawing on the holistic interdisciplinary approach of landscape ecology, landscape can be defined as "a dynamic process developing on the earth surface, resulting from the interaction between abiotic, biotic and human factors which vary according to site and time", where " time and space are fundamentals to be considered in this framework, as it is the holistic approach to the subject that allows us to understand the complexity of the landscape and its wholeness (Makhzoumi & Pungetti,1999, p.6-7).

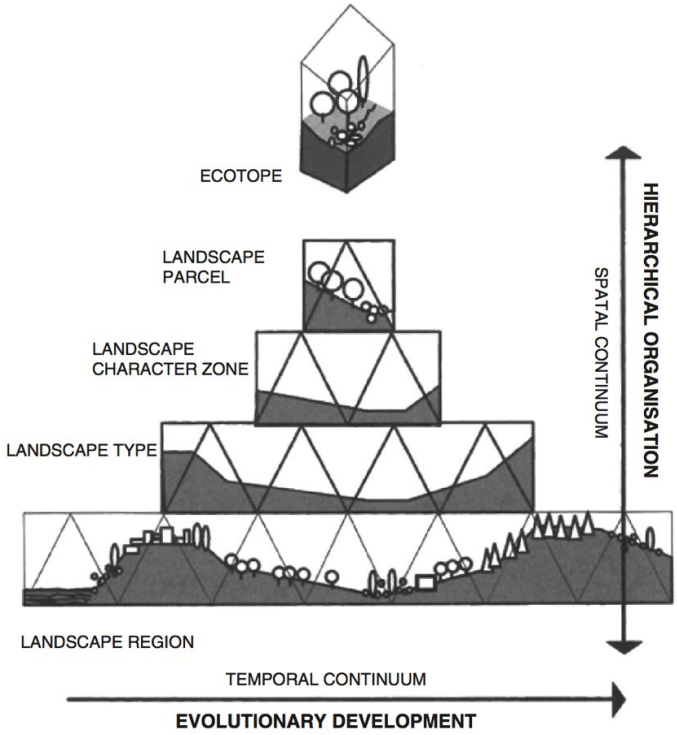

Figure 16: Spatial Hierarchy and Temporal continuum of the Ecological Landscape components (Makhzoumi, 2000, p. 339).

C. Ecological Landscape Design Paradigm

1. The Need of a New Paradigm

Makhzoumi, 1999, in *Ecological landscape design and planning,* proposed a paradigm shift in design, the ecological landscape design paradigm, arguing for alternative objectives and different methodology inspired by ongoing ecological processes, embracing environmental principles as well cultural values. The ecological landscape paradigm[8], was developed to explore the potential of landscape architecture in creating

[8] Thomas Kuhn (1962) proposed the term paradigm to indicate the whole way of working, thinking, communicating and perceiving with the mind. Kuhn argued that the structure of ideas and scientific theories

future environments that are ecologically stable, sustainable and stimulated by cultural and natural heritage of a place. Hence the paradigm perceived "landscape as a manifestation of natural and cultural evolutionary processes and aims to research ways in which such manifestations can be understood, expressed and integrated into a landscape design methodology" (Makhzoumi & Pungetti, 1999, p.202).

2. Ecological Landscape Design Paradigm

According to Makhzoumi and Pungetti (1999), the ecological landscape design paradigm was based on the integration of the analytical and descriptive nature of ecology coupled with the problem-solving capabilities of design. It is believed that the knowledge gained from ecology and landscape ecology could promote comprehensive understanding of the complex layers of landscape as a product of cultural and natural evolutionary processes which accounts for the existing patterns, ecological diversity, as well as environmental sustainability and stability. This dynamic understanding that Makhzoumi and Pungetti illustrated, widens the scope of work of landscape architecture to provide more possibilities in developing sustainable multifunctional landscapes that appreciates natural and cultural heritage of a place.

The conceptual and functional framework of the ecological landscape design paradigm was based on three essentials 'mutually inclusive objectives'. The first objective stresses on maintaining landscape integrity that implies creating design and planning alternatives that appreciates ecological integrity of natural, semi-natural and

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that we take for granted signifies an established paradigm because we must take some such structure for granted. As new systems of concepts and approaches accumulate they give way to a 'scientific revolution' which heralds the replacement of the old paradigm with a new one

modified ecosystems. The second objective highlights the importance of promoting sustainable development. In this concern, planning and designing for sustainable futures will necessitate a synergistic, holistic and integrative approach that is based on ecological understanding and realization of the potential and limitation of a specific place while contributing to the ecological, environmental, socio-economic and cultural objectives. The third objective of the ecological landscape paradigm stresses on appreciating and enhancing the 'sense' and 'spirit' of place or what is recognized as the 'genius loci'. Landscape character signifies the way societies inhabit, react and modify their landscape settings which reflects cultural heritage and sense of belonging which need to be protected, maintained, and enhanced (Makhzoumi & Pungetti, 1999).

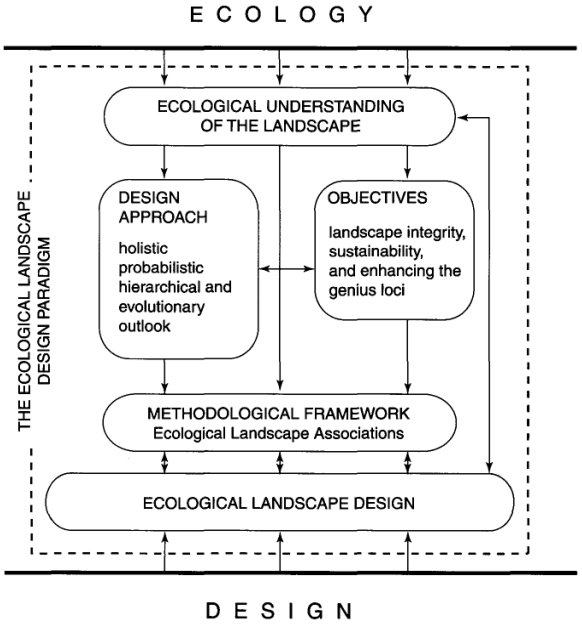

Figure 17: The ecological landscape design paradigm (Makhzoumi & Pungetti, 1999, p.210)

3. Landscape design Principles

The ecological landscape design approach aims at responding to the environmental, socio-economic and cultural specificity of the landscape guided by the

holistic, dynamic and integrative principles of landscape ecology. In this concern, five main landscape principles were identified by Makhzoumi and Pungetti, (2008),

- *"Adopting Holistic framework":* which focuses on the tangible physicality as well as the intangible components of the landscape. Moreover, the hierarchical classification of landscape based on temporal/evolutionary and spatial/hierarchical understanding of the landscape forms the foundation of the holistic landscape framework. The holistic approach offers several advantages; first, by considering the past, present and future, history becomes central for the understanding of landscape[9], second, by helping bypass the rural/urban divide, and third, by bridging between the ecological realm of sciences and the cultural realm of humanities.
- "*Accepting Multifunctional format"* which represents a living model for the sustainable use and management of resources. Reinterpreting multifunctional landscapes into the contemporary scene implies integrating ecological (habitats), economic [10] (production), socio-cultural (recreation), historical (heritage and identity) and aesthetic (psychological well-being) dimensions of landscape.
- "*Moving from biodiversity conservation to eco-diversity conservation"*. Accepting the fundamental dependence of biodiversity[11] on both natural settings and cultural practices justifies the move towards Eco diversity conservation. As

[9] According to Makhzoumi et al (2008), landscape evolution provides a dynamic medium within which present landscapes need to be assessed, and future strategies formulated (J. Makhzoumi1 and G. Pungetti 2008, p.339)

[10]

[11] Biodiversity is the variability of living organisms equally in terrestrial, marine or aquatic ecosystems, including the diversity within species, between species and of ecosystems (Wilson 1992)

Makhzoumi (2008) states, the broad concept of ecological diversity strongly reflects the duality between biological and cultural diversity.

- *"Considering Landscape connectivity"*. Fragmented landscapes resulting from the human modification of landforms and land use undermines the integrity of ecosystems. Landscape connectivity was seen as a dynamic framework to overcome the environmental fragmentation using two conceptual approaches namely ecological networks[12] and greenways. While the concept of greenways indicates the movement of species and people via corridors, ecological networks represent the wider landscape in a comprehensive ecological framework (Makhzoumi and Pungetti, 2008, p.341).
- "*Prioritizing cultural diversity"* where the cultural landscapes, product of different cultural successions should be considered in the context of the past by looking at historical processes. This helps the degree to which the environment has been used or abused by the society, allowing to better identify solutions and remedies (Makhzoumi1 and Pungetti, 2008, p.344).

This interpretation of landscape broadened the scope of landscape architects from the formalist visual appreciation of landscape towards a holistic and dynamic approach based on ecological understandings.

[12] Ecological network is defined 'as a framework of ecological components, e.g. core areas, corridors and buffer zones, which provides the physical conditions necessary for ecosystems and species population to survive in human-dominated landscapes' (Jongman and Pungetti 2004, p. 3).

4. Ecological Landscape Associations: Methodology

The methodology of ecological landscape association was developed by Makhzoumi to act as an 'interaction framework', for understanding and investigating the complexity of landscape patterns and processes and as a tool for designing it (Makhzoumi and Pungetti, 1999). The proposed methodology acts as a dynamic and holistic framework that advocates the study and understanding of various processes and relationships between different components in a given ecosystem rather than analyzing them separately while looking at the past, present and future processes.

The framework promotes holistic comprehensive assessment of landscape by exploring processes that tie/bind one or more landscape components (including biotic abiotic and cultural aspects) into associations[13]. The validity of the discerned associations is then tested across the spatial hierarchy and temporal scale. Once validated, those identified spatially articulated units will then be used as the building blocks for design interventions.

The search for associations, on the one hand, develops the dynamic and holistic understanding of landscape and on the other hand, motivates designers to integrate this understanding in the design approach. Hence, "The simplicity and spontaneity of the methodological framework encourages the intuitive and creative problem-solving potential of the landscape designer while prioritizing the maintenance of landscape integrity and long-term environmental sustainability." (Makhzoumi, 2000, p.168)

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[13] The term *association* is used to reflect the integrative and interactive relations discerned among two or more landscape components, namely the abiotic, biotic and the cultural, i.e. man-made or man-maintained. The term *ecological* is used to signify that the associations discerned are not strictly visual but the result of an ecological understanding which is gained through a holistic, hierarchical and evolutionary approach. (P.214)

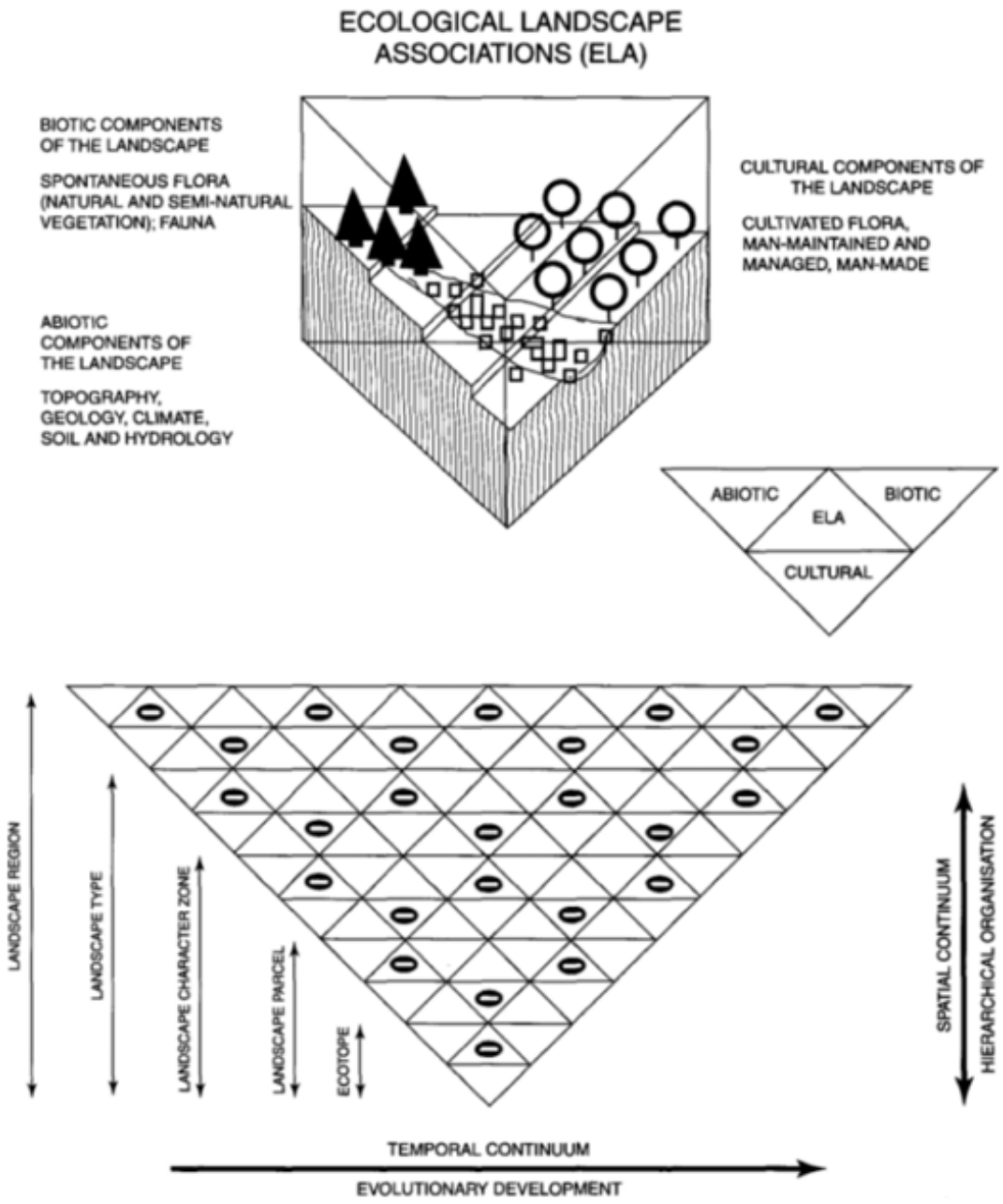


Figure 18: Schematic illustration of the Ecological Landscape Association methodology. (Makhzoumi & Pungetti, 1999, p. 212)

5. Ebel-es-Saqi case study

This section will demonstrate the application of the ecological landscape design approach and methodology outlined above over the case of Ebel-es-saqi. The holistic framework of landscape design will emphasize on the specificity of the Lebanese rural landscapes, being the outcome of both natural and cultural processes.

Ebel-es-saqi is a village located in southern Lebanon, 70km away from the coastal city of Sidon with a total cadastral area of 750 ha. The village extend over two hilly peaks, around 684 m above sea level. The hillside southeast zone of the village is characterized by stone-terraced slopes of olive cropping stretching all the way to Hasbani River, mainly on private lands. The northern side of the village was mainly occupied by the village woodland. The *hima* (designating common land) occupying 44% of the village total area, is formed mainly of grassland and degraded garigue with advanced maquis scrubland along the Hasbany River verges (Makhzoumi, Talhouk, Zurayk and Sadek, 2012, p.184). However, the village woodland, signifying the forested zone of the *hima*, comprise only 5% of the *hima* forming a visually prominent landscape.

Over the years, the village woodland was subject to a lot of transformation including its total destruction during the last decades of the Ottoman Empire era. Later during the 1960s and 1970s, Ebel-es-saqi village was part of the green project initiated by ministry of agriculture that aimed at reforesting communal lands in rural Lebanon. The degraded woodland was replanted with inferior fast-growing trees including pine, cypress and eucalyptus trees instead of native oak, hawthorn and cedar trees that previously composed the original woodland. Unfortunately, only the north-eastern side of the woodland was planted, which represent one third of the village communal land, keeping the rocky south-eastern slops bare. Eventually, the governance of the forest was

transferred from the village to the ministry of agriculture prohibiting the local community from using and managing the woodland. As a result of the top-down approach, the community not only lost stewardship but also lost interest in the woodland. Like most southern Lebanese villages, Ebel-es-saqi also experienced 22 years of civil war and Israeli invasion that impacted people and environment alike. Agricultural terraces were disrupted, orchard cleared and woodlands burnt out. Protected by the United Nations International Force in Lebanon, Ebel-es-saqi woodland was able to survive and eventually became a visually impressive and prominent landscape in the region.

In 2002, the woodland became one of the focus areas of the post-war recovery initiative. It was agreed that a landscape ecological approach and methodology will be adopted to secure a comprehensive and holistic reading of the woodland and the village's landscape. The interdisciplinary team that participated in the project agreed that the adopted approach will conceive a dynamic master-plan that would look beyond tangible woodland achieving the wide project objectives to provide for livelihoods, address issues of identity and rural heritage, and include the entire village landscape (Makhzoumi, 2014, p.241). The developed master plan was finalized in March 2003.

The project started by reading the tangible physical aspects, by undertaking comprehensive surveys including geomorphology and land cover, onsite surveys of fauna and flora and historical archrivals search of historical maps of the village from the French mandate, as well the intangible socio-cultural perception, through semi-structured interviews with focus groups and local community, photographic documentations of views from within the woodland in addition to aesthetic preference survey.

The holistic reading of the Ebel-es-saqi landscape, broadened the scope of work of the team and extended spatially beyond the limits of the woodland to include the entire

hima, addressing intangible social needs and the appreciated rural heritage[14]. The first step in developing the master plan of the *hima* was to apply the ecological landscape design association methodology based on the expansive reading. Three broad landscape character zones where identified constituting the building block of the proposed landscape master plan (Makhzoumi, Talhouk, Zurayk and Sadek, 2012).

Zone 1- Pine Woodland: despite its visual dominance, it was considered ecologically poor, because the reforestation project didn't include indigenous species. Hence the master plan recommendations for this zone is to replace those species with native ones including oak trees and associated shrubs that reflects the natural heritage as well as collective memory o of the local community.

Zone 2- Rocky Outcrop: being an open landscape with rocky slopes, it was considered the richest in terms of species diversity. The developed master plan called for its protection especially from public access in order to support and boost biodiversity responsive uses, such as honey-bee keeping.

Zone 3- Hasbani River Ecotone: Being the zone merging of two ecosystems, namely the riparian ecosystem of Hasbani River and the open scrubland of the hima, it was of ecological significance linking Hasbani river corridor with the outskirt landscape of the village.

[14] The Master Plan Team consisted of conservation biology, Salma Talhouk, ecosystem and environmental resource management, Rami Zurayk, GIS expert, Dani Leshia , ecologist, Riadh Sadek, agriculturist, Khaled Sleem, graduate students Ranya Nasrallah and Rhea Selwan, junior architect, Fatima Qaissi and the project leader, architect and landscape architect, Jala Makhzoumi

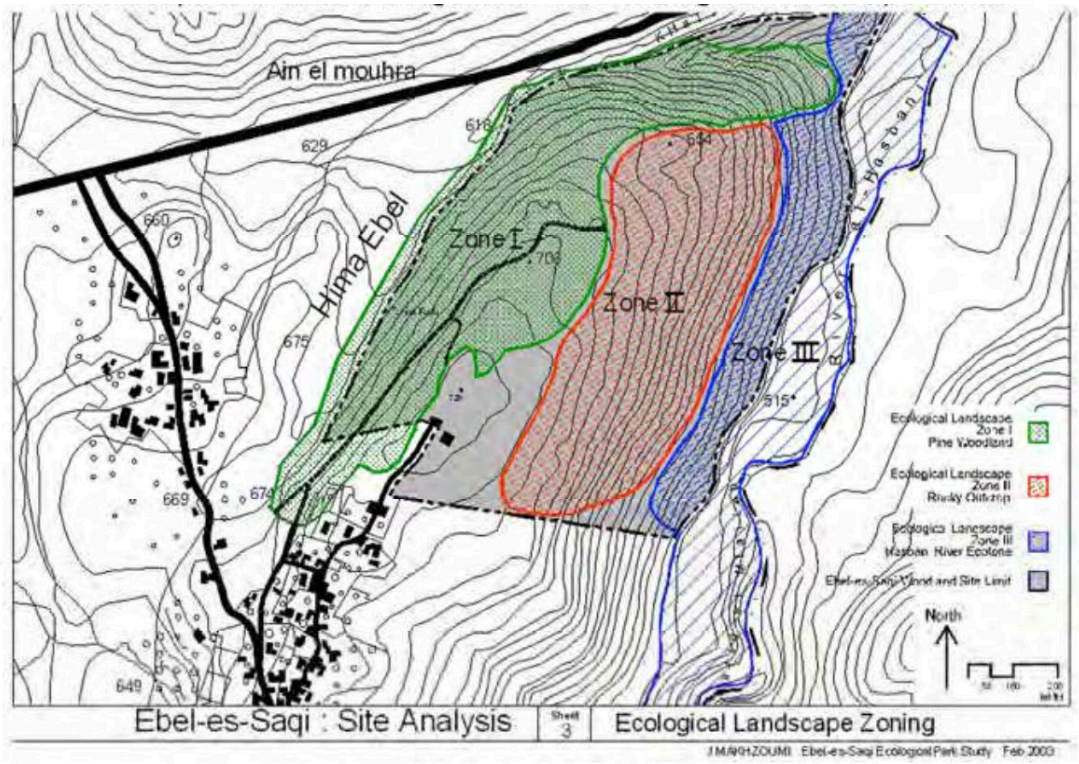


Figure 19: Ecological landscape character zone were identified for Hima Ebel-es-saqi (Makhzoumi, 2003)

Adopting the concept of multifunctional landscapes, the developed master plan[15] envisioned the woodland as a site for natural tourism, promoting alternative livelihood and rural culture at once. Hence the plan proposed "the 'Ebel Market' at the entrance of the ecological park to promote local produce and the village's historical heritage (Makhzoumi, Talhouk, Zurayk and Sadek, 2012, p. 190). The master plan also provided recreational areas dedicated for activities for the local community and inhabitants of nearby by villages, embracing promenade, informal spaces and a sports court. The proposed formal and informal spaces focused on engaging and creating awareness among

[15] The landscape master plan was completed in 2003. An international campaign was made by UN- ESCWA to introduce the Ebel-es-Saqi project together with three others projects it had initiated to secure funding for implementation. The Ebel-es-Saqi woodland was selected by Mercy Corps (http://www.mercycorps.org/), which was already funding other projects in south Lebanon. Thereafter, Mercy Corps secured funding for implementation of the master plan.

local community on nature conservation and the environment (Makhzoumi, Talhouk, Zurayk and Sadek, 2012, p.190).

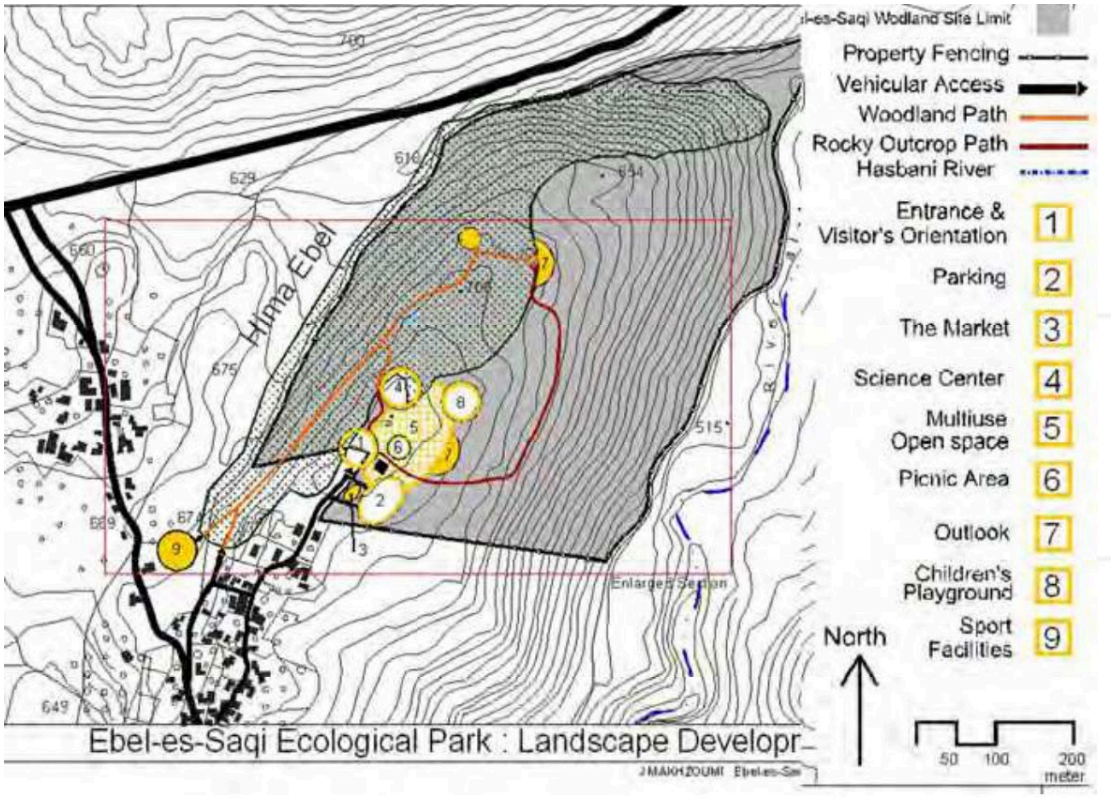


Figure 20: Schematic Concept for the Ebel-es-Saqi Woodland landscape master plan (Makhzoumi, 2003)

The proposed master plan of Ebel-Es-Saqi woodland was based on four initiatives (Makhzoumi, Talhouk, Zurayk and Sadek, 2012):

- **"Reclaiming stewardship of the Hima"** was a key factor in achieving the community inclusive objective of the project. It contributed to the success of the project for two reasons, first in protecting and maintaining the woodland and second in securing funds for the implementation of the master plan. Hence negotiations with the Ministry of Agriculture resulted in an official decree reverting the governance of the woodland to the village.

- **“Recognizing the village rural heritage”** by proposing the Bait Al Fallah museum to exhibit a collection of traditional agricultural tools. Being housed in one of the stone houses in the village, the museum became an iconic representation of traditional architecture and a mean of identity construction.
- **“Broadening the agenda of biodiversity”** by declaring Ebel-es-Saqi woodland as a bird migration ‘hot spot’ and recognizing its significance as an Important Bird Area (IBA). The later became a source of economic development being a touristic bird watching site
- **“Recognizing the rural landscape heritage”** through reviving the concept of *Hima* as a community-based nature conservation opposing to the top-down state declared and managed nature conservation strategy. In this concern Makhzoumi stated “Far from being a relic vernacular, the concept of *hima* continues to function as an operational framework for sustainable land use and efficient management practices, a living cultural heritage” (Makhzoumi, Talhouk, Zurayk and Sadek, 2012, p.195).

The expansive framework of the ecological landscape approach offers several advantages when applied to the rural cultural landscapes. First, the approach and method adopted are integrative of the totality of rural landscapes, being at once natural and cultural. Second, being a bottom-up approach, landscape design is “Responsive to place and inclusive of local community needs and aspirations while aiming for economic and social betterment” (Makhzoumi, Talhouk, Zurayk and Sadek, 2012, p.182).

CHAPTER V

READING TIBNEEN'S LANDSCAPE

The previous chapter outlined the ecological landscape design methodology and its application in urban design and planning profession. This chapter adopts the ecological landscape framework for the case study of Tibneen. The significance of ecological landscape methodology lies in offering a holistic interpretation and comprehensive understanding of the landscape as a product of natural and cultural evolutionary processes. Hence, it is believed that the expansive, responsive and dynamic framework of the ecological landscape design approach will contribute to a sound planning strategy that maintains the landscape continuity, ensures ecological integrity and promotes sustainable development based on community inclusive scenarios. It is also believed that it will preserve the natural heritage, consolidate the communal sense of belonging, and maintain the collective identity of the village.

This chapter will concentrate on reading the various landscape components of Tibneen addressing the abiotic aspects, including geology and soil topography, hydrology and climate, and the biotic components, mainly vegetation cover including the forests and Mediterranean scrubland, as well as the human and cultural components including the agricultural landscapes, built-up landscapes and transportation landscapes.

A. Reading Tibneen Landscape:

1. Abiotic Components of Tibneen Landscape

Tibneen is a village that spreads across several hills of Jabal Amel, a

mountainous region of southern Lebanon, recognized in the NPMPLT as the "hills of south terraces", one of the Lebanese remarkable agricultural national sites (NPMPLT, 2005, p.I-12). It is situated within one of the identified "national historical and landscape asset zones", identified for its picturesque natural and built up sites. The historic core of Tibneen is situated on the rift of a hill stretching from east to west, splitting Tibneen into two foot hills: from the northern side towards the village of Sultaniyeh and from the southern side, towards the villages of Safad Al Batikh and Aaita Al Jabal, with the citadel demarcating the highest topographical point at 720m a.s.l. Two seasonal water streams run along the valley defining the edges of the foothills at 480 m.a.s.l.

a. Geology and Soil Type:

The geological formation of Tibneen consists of three derivatives of limestone: pale regularly bedded limestone as well as White Marls and Sub Reefal Limestones that results in the dominant Red Discontinuous Soil type. Being "well drained, moderate in organic matter content, and non-saline and calcareous" (Zeineedine, 2014, p.39), Red Discontinuous Soil is one of the main essential factors behind the fertility and prosperity of the agricultural valley especially for olive intercrop, deciduous fruit trees, and arable agriculture. The center of the north western side of the village is formed of White Marls and Mary Limestone resulting in a small patch of white greyish soil with a rocky base constituting a perfect soil medium for tobacco cultivation.

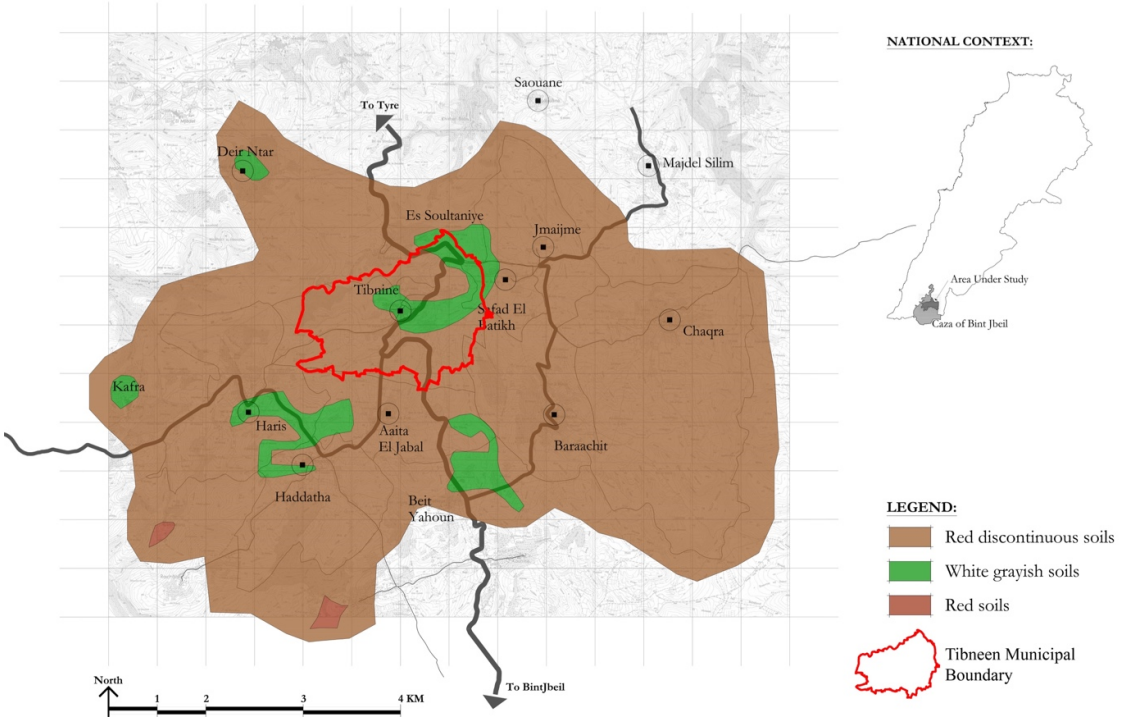


Figure 21: Soil Type Map, Information based on GIS developed for the 2009 master plan of Lebanon
Analysis by Zeineddine, A. 2014

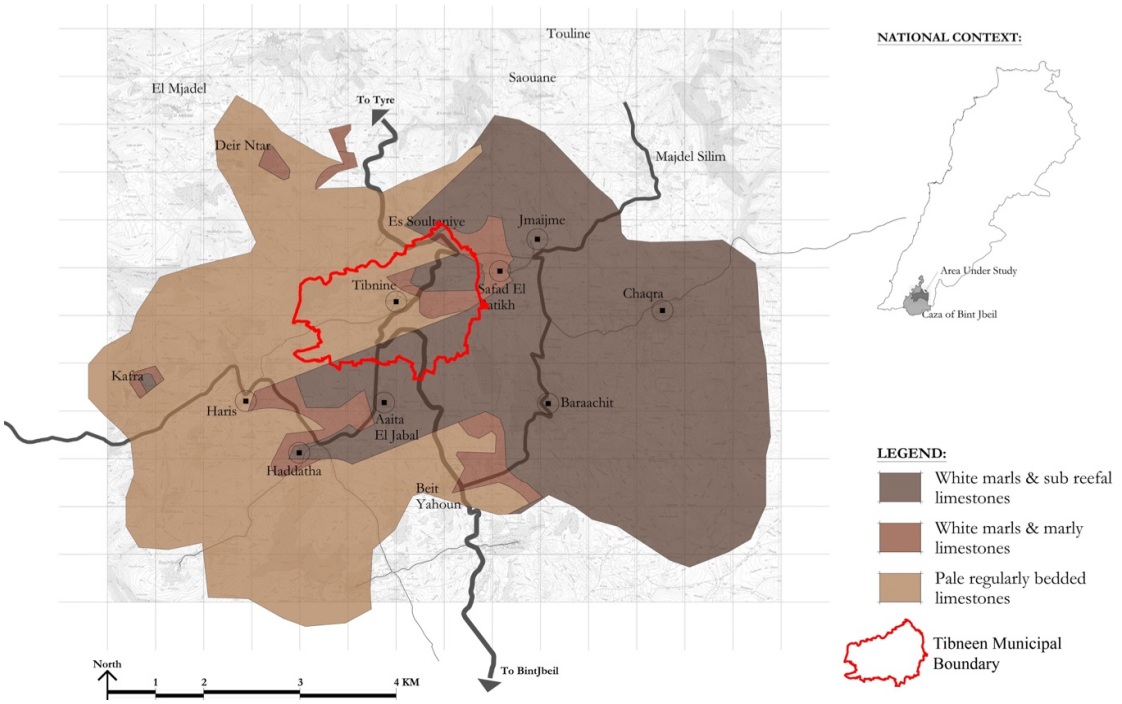


Figure 22: Soil Type Map, Information based on GIS developed for the 2009 master plan of Lebanon
Analysis by Zeineddine, A. 2014

b. Topography

Tibneen varies in altitude between 480m a.s.l. and 720m a.s.l. Historically, topography played an essential role in the distribution of the vegetative cover as well as the pattern of the built-up settlement. Steep slopes, ranging between 26 and 32%, helped preserve the natural landscape characterized by forests and scrubland while the hill side of the village, with slopes between 8 and 17 %, where traditionally transformed into agricultural terraces. Lands situated along the valley, with altitude between 480 and 550 m. a.s.l and slope ranging between 0 and 8%, benefit from the proximity of seasonal streams and ample supply of water promoting agriculture as a land-use. Topography also influenced the distribution pattern of the village built-up settlement over the course of the history where the crusaders castle stands at the hill top, forming a strategic defense point, with the historic core spreading at its peripheries ().

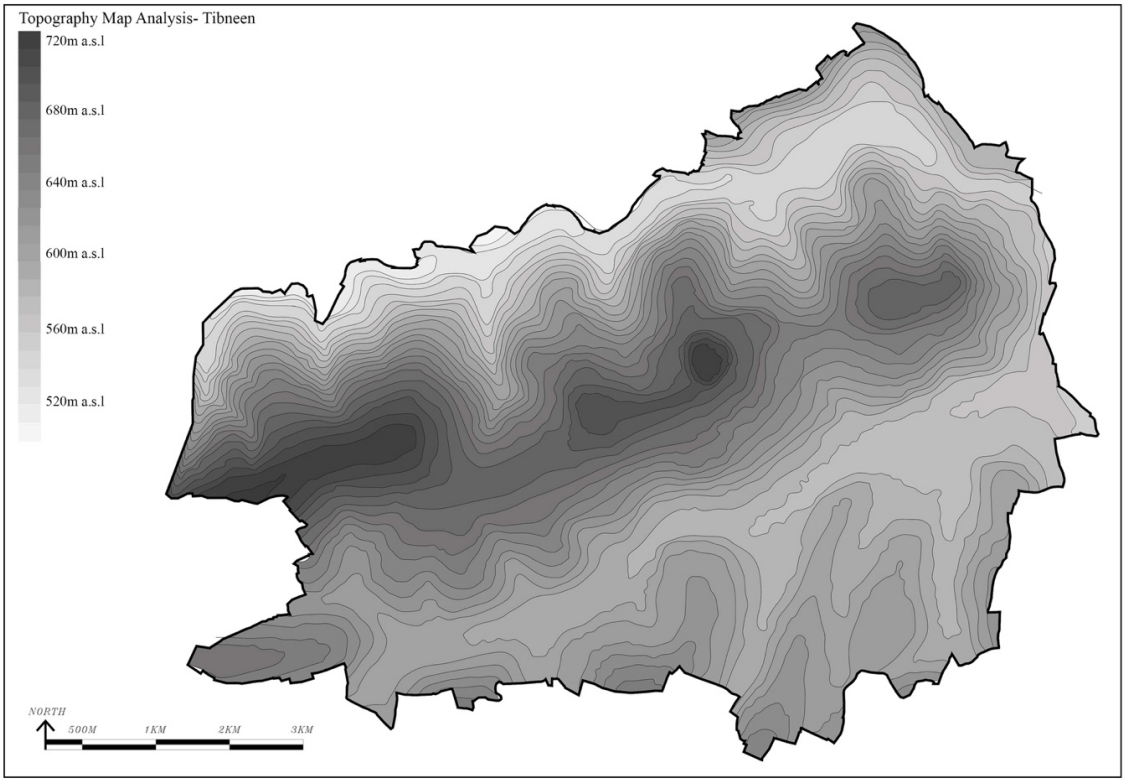


Figure 23: Tibneen Topography Map

c. Hydrology

Water resources in Tibneen, played an essential role, throughout the course of history, in defining the geomorphological aspects of the village and in the prosperity of the cultivated fields. Tibneen hydrological sources are diverse and can be divided into two categories; natural and cultural resources (Figure 24).

The natural resources consist of one water spring, Ain El Mizreb, and two seasonal streams running from east to west:

- *Ouadi Soultaniyeh* on the southern side running across Sahel El Khan
- *Khallet Hassan* on the northern side connecting *Ain el Mizreb* and the Mashrou' Al Akhdar, flooding *Wadi Yahoudiyah* in the winter with water level reaching up to 2-3 meters in depth during the heaviest rainny season

The two streams are part of a greater network connecting villages along Sahel El Khan that are fed by natural springs and rainwater runoff. Traditionally, lands that lie along the seasonal streams have been the town's most fertile and agriculturally productive fields. Hence, the seasonal streams are fundamental ecological corridors ensuring the continuity and integrity of the landscape as well as a main source feeding the irrigation networks.

However, the contemporary built-up expansion, excessive demand on water and extensive road development along the river bed had largely disrupted the rivers natural path and led to the scarcity of this natural resource, hence converted the water streams into dry water courses.

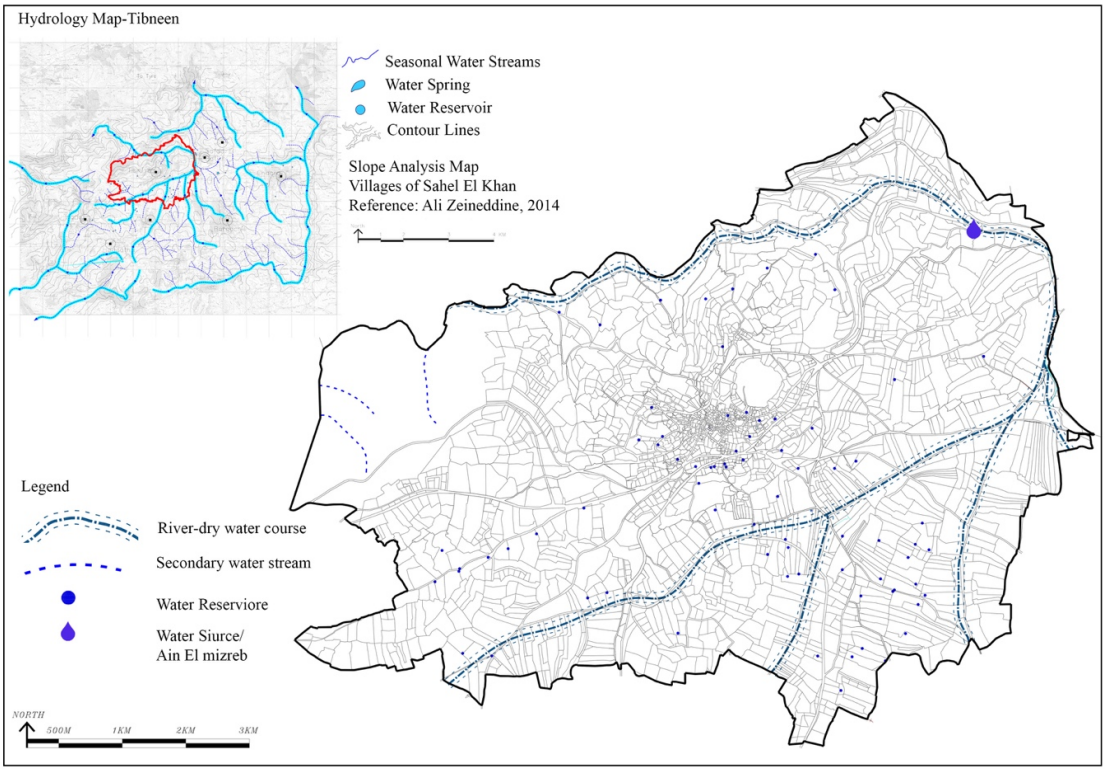


Figure 24: Tibneen Hydrology Map

The cultural water resources consist of:

- Historic communal rainwater collection pond: The location of the village core at the hill top refrained the community residing in the old historic town from benefiting from the natural water resources located at the lowest topographical areas of the village. Hence, a communal rainwater collection pond was built at the base of the Citadel adjacent to the old city core, in order to fulfill residents' needs of domestic water. The pond collected water runoff from the Citadel's steep topography as well as two main routes through the *zakouk* of the old historic core. According to the residents, the pond was a main water source used for irrigation of agricultural land located at the village core vicinity, household needs, and watering livestock. Today, a large building housing the Municipality and other government functions occupies the location of the

communal rainwater collection pond. The rainwater was diverted towards *Wadi Yahoudiyah* through underground channels wasting several thousands of cubic meters of harvestable rainwater every year (Figure 25).

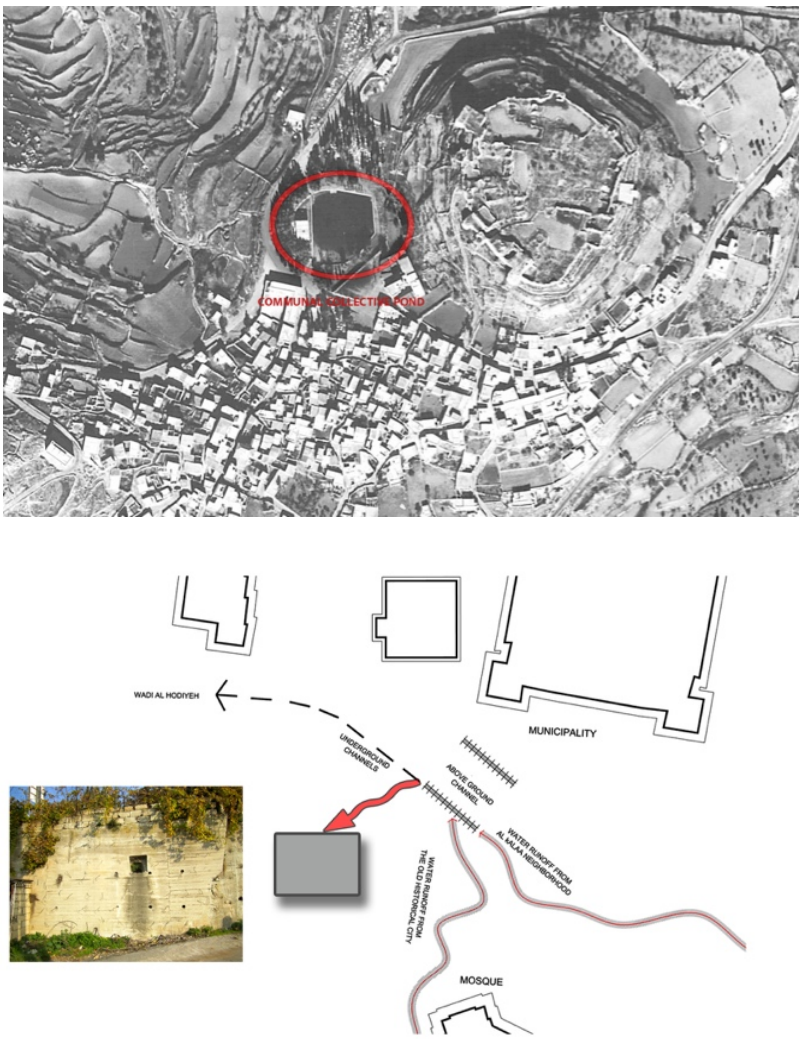


Figure 25: Communal Rain Water Collection Pond

- Scattered reservoirs within the agricultural fields: As an additional water source to the seasonal streams, farmers built their individual reservoirs for rainwater collection to compensate the water demand during drought season.

d. Climate and Rain Fall:

Similar to the rest of South Lebanon, the rainfall season in Tibneen extend over an average of 5 months with an average precipitation rate of 700-800 ml/year and average temperature of 8 degrees. The village is also characterized by a 5 month of dry season extending from June to October with average temperature of 23 degrees. The remaining two months of the year are subject to limited rainfall.

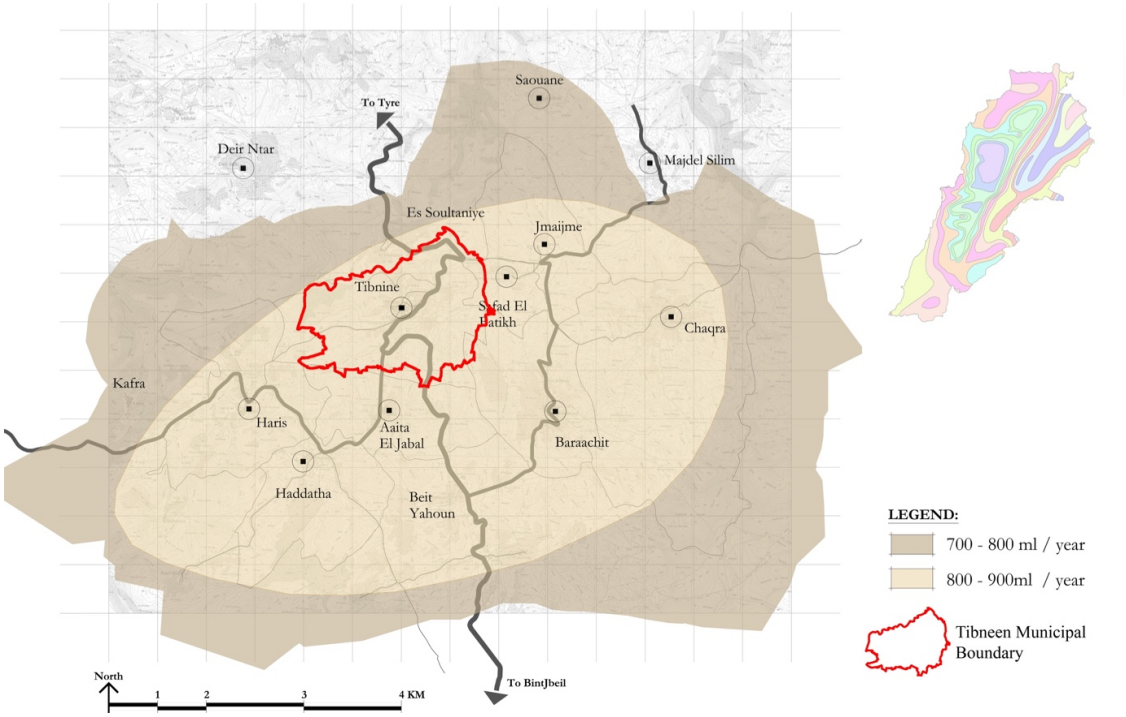


Figure 26: Rainfall Map. (Zeineddine, A, 2014)

2. Biotic Components of Tibneen Landscape:

After considering the abiotic components, the following two sections will highlight on the biotic and cultural components of Tibneen. Analyzing the land cover map of the village, two biotic components emerge, namely the forest and Mediterranean scrubland as well as two other cultural components defined by the agricultural fields,

including both arable and terraced agriculture in addition to the urban fabric embracing the historic as well as contemporary development.

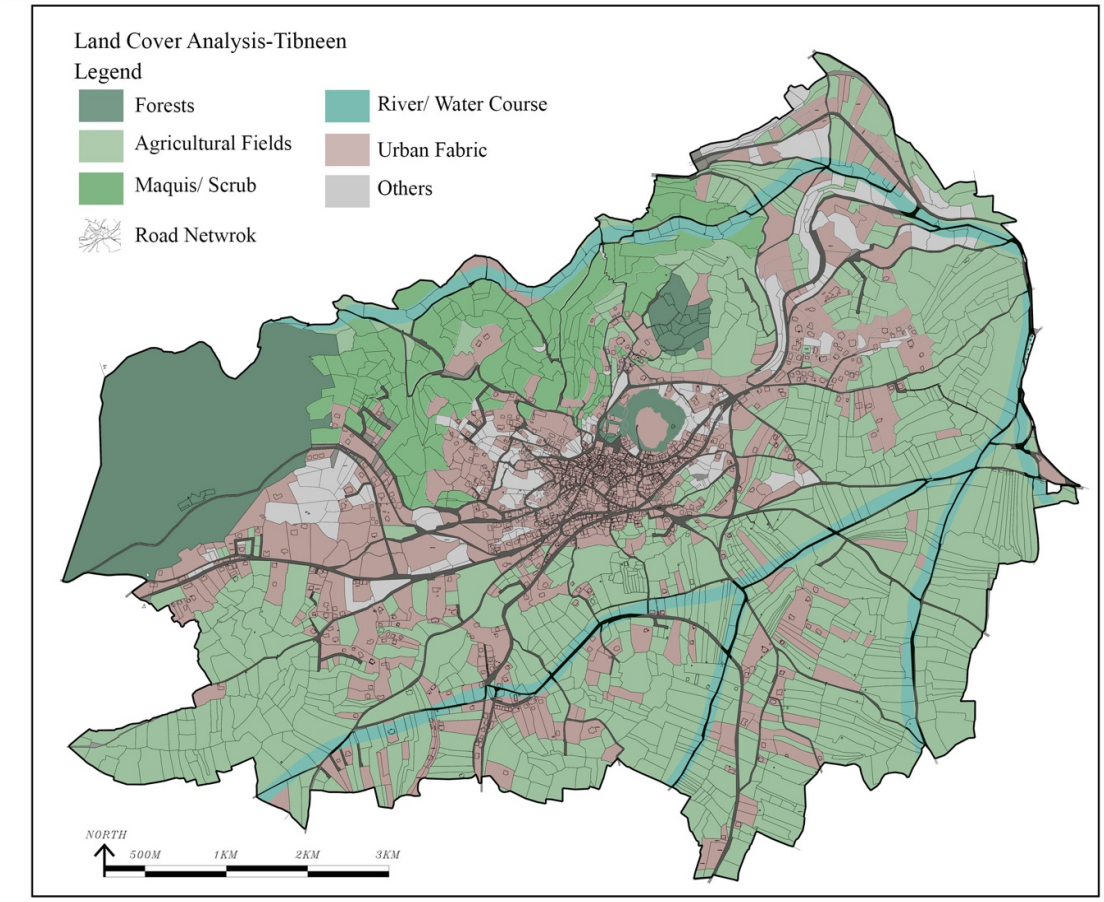


Figure 27: Land Cover Analysis Map of Tibneen

a. Forests

In addition to Mashrou‘ al Akhdar, discussed in the previous chapter, Tibneen embraces two smaller ‘forests’ or green areas. The first is located at the north western steep hill side of the village with a total area of 5,500sq.m dominated with pine trees (*Pinus pinea*). The second forest represents the green buffer zone of the citadel that stretches along the surrounding slope hill sides towards the old urban core of the village, occupying a total area of 3,040 sq.m (Figure 28).

Figure 28: Pine forest Pictures

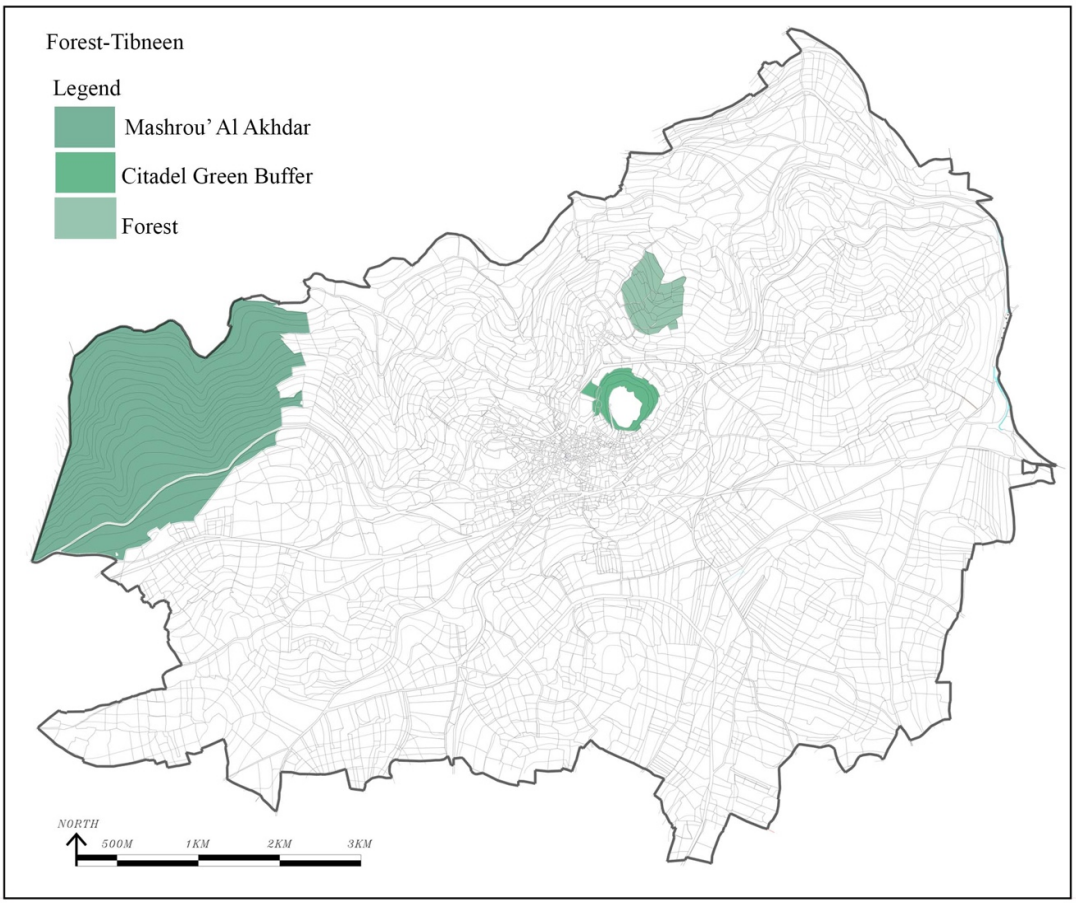


Figure 29: Map showing forests in Tibneen

b. Citadel Green Buffer Zone

Historic aerial images and photographs indicate that the Citadel's green buffer zone was extensively terraced and accessible from multiple points in the village. The terraces back then were planted with grape vines, and farmed collectively by villagers from the town's core specifically Hay al Qalaa. Over the years, the buffer zone's terracing fell apart and slid due to inadequate management, which eventually resulted in soil erosion and uncontrolled rainwater runoff. The area was eventually transformed into a waste dump site degrading the quality of life for residents in the surrounding old city (Figure 30).

Figure 30: Citadel and buffer zone in 1962 (L) and 2009 (R)

In 2003, as part of the Municipality's action plan to manage and control the environmental threats arising from this left-over abandoned space, approximately 2,000 trees were planted in the area that is now known as the citadel's green buffer zone. The area was dominantly planted with *Pinus pinea* in addition to a variety of tree species including *Cupressus sempervirens,* mostly occupying the lower side of the buffer zone, and *Jacaranda mimosifolia* primarily planted along the vehicular road connecting the old city up to the citadel (Figure 31).

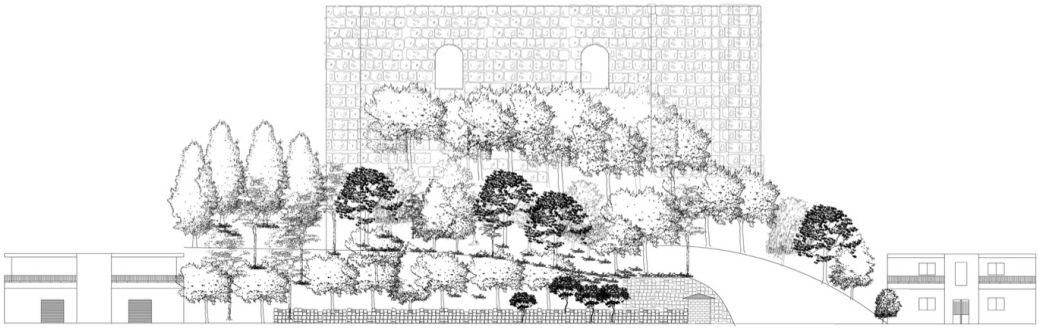


Figure 31: Citadel Green Buffer Zone

Although the citadel green buffer area is zoned as "Area of Archeological Importance.", this cultural and natural landmark is under a threat of building encroachment (Figure 32). Approximately 27 residential or mixed-use buildings were developed in this area, including single family houses and 2-3 story multi-story buildings. Properties in this zone are characterized with backyards that open into the Citadel's buffer zone planted with various tree species, namely *Olea europaea*, *Elaeagnus angustifolia*, *Ficus carica*, *Punica granatum*, Cactus spp., that were in most of the cases planted beyond the property limits encroaching the green buffer zone. Many residents have built one or a series of retaining walls to help contain erosion, rainwater run-off, and the infiltration of pests into their homes.

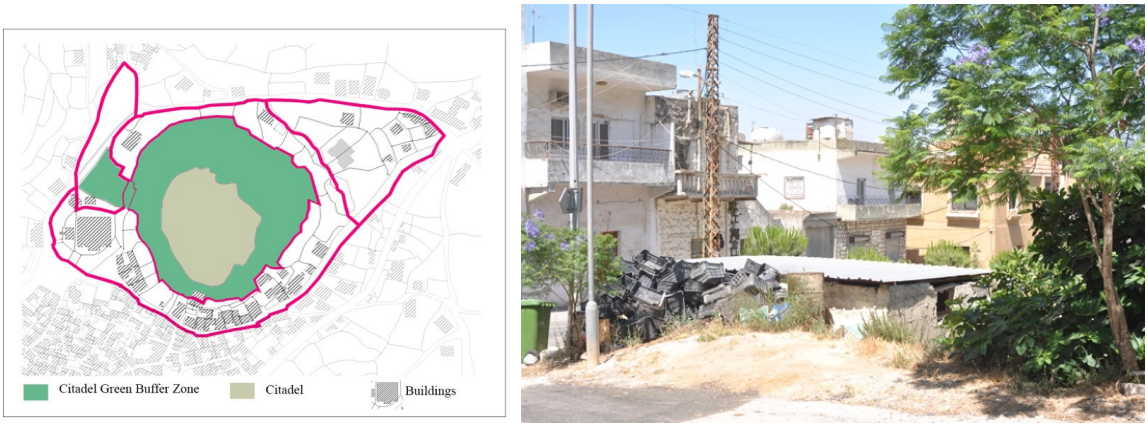


Figure 32: Tibneen Citadel and the Green Buffer Zone

Despite the negative implications of the planting scheme adopted by the municipality and the lack of management strategies, the numerous trees located in the buffer zone and in the Citadel itself function as nesting grounds for a variety of migratory birds. Ironically, villagers consider the Citadel to be the town's best bird hunting perch.

c. Scrub-land

This category of the semi-natural vegetative land cover is specific to the northern rocky steep hill side of Tibneen. In the upper zone of the hillside, the maquis constitutes of a combination of thick scrublands primarily composed of *Spartium junceum, Pistacia lentiscus and Arbutus unedo*, sheltering a profusion of annuals that fail to survive under the thick canopy of the forest namely *Cictus libanotis, Avena sterilis* . Within the same hillside as we move down the slope towards the river bed, the shrub land is replaced by a sparse layer of vegetative cover namely *Avena sterilis* , exposing the limestone rocks that forms the hill side. The diverse spread of this semi natural vegetative cover is of extreme significance as they help in protecting the exposed rocky hill side, preventing soil erosion and providing a habitat for a large variety of flora and fauna (Figure 34).

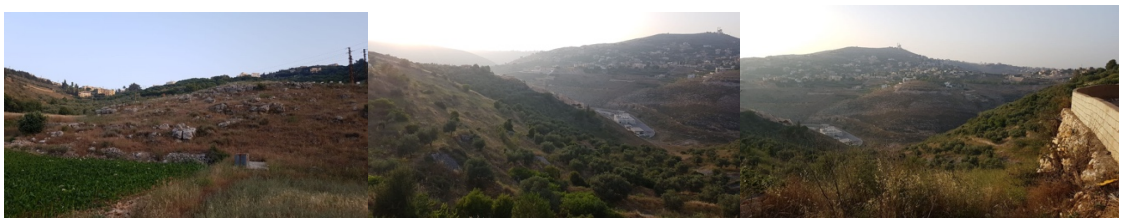


Figure 33: Pictures of Tibneen Scrubland

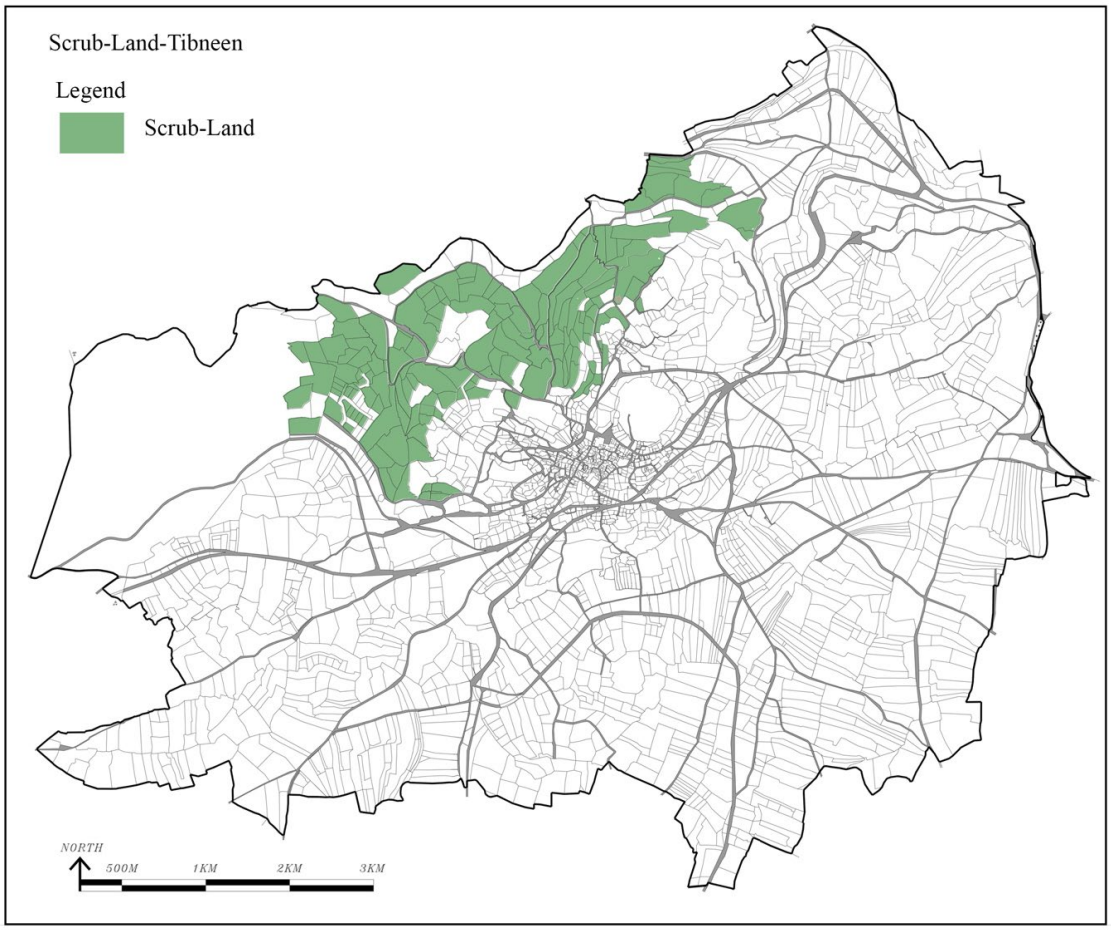


Figure 34: Scrubland distribution in Tibneen

3. Cultural Components of Tibneen landscape:

a. Agricultural Landscapes:

In addition to being an essential source of livelihood, the agricultural fields in Tibneen are a reflection of the village's natural and cultural heritage and an integral component of people's memory. The agricultural fields occupy the southern side of the village in addition to some cultivated fields at the north-western hill side, ranging between arable agriculture and terraced agriculture. Agriculture in Tibneen includes seeds (beans,

sunflower, corn, watermelon, brinjal, lentils, wheat, chickpeas), fruits and vegetables (apples, lemon, tomatoes, cucumber) as well as tobacco (refer to chapter 4) (Figure 35).

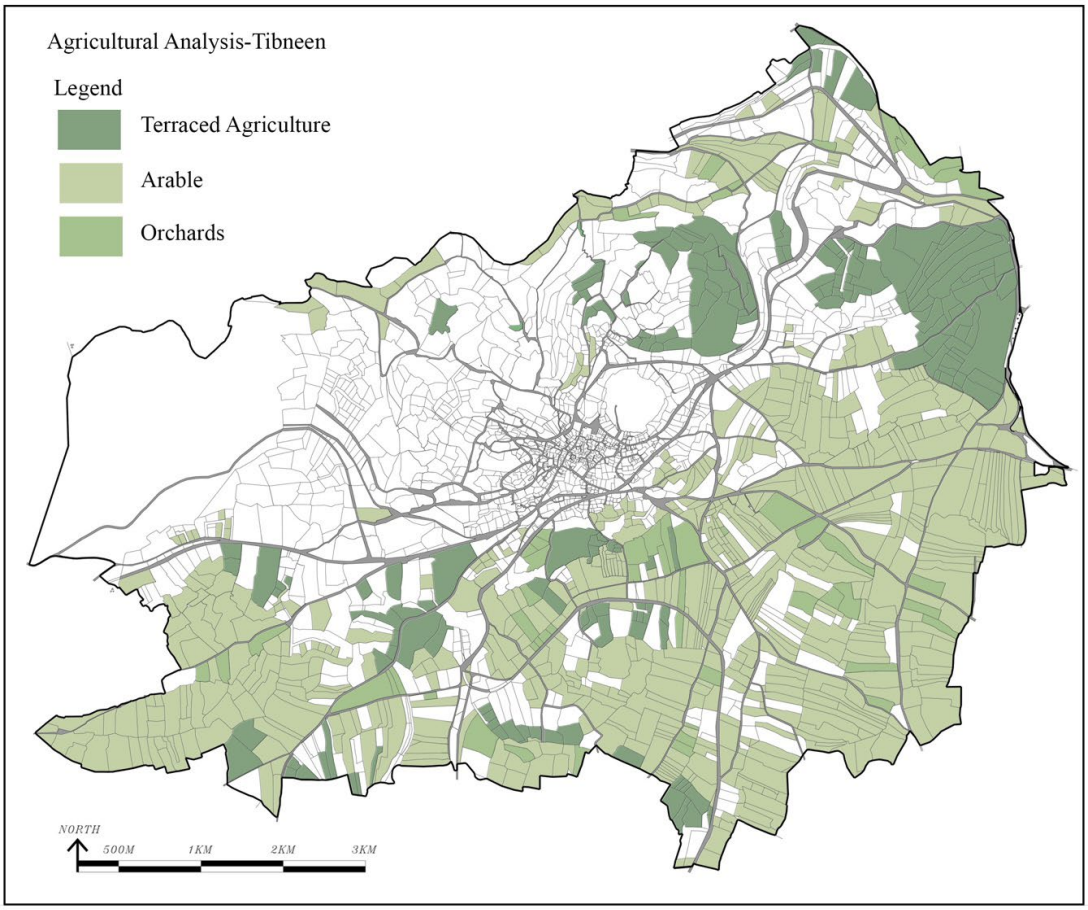


Figure 35: Tibneen Agricultural landscape

Stone wall terraces in Tibneen are not unique to the area. Rather, these stone walls represent agricultural practices common to the region and the country. Agricultural terraces in the village dominantly occupy the north western and along the east western hill side, reflecting sustainable practices for the use and management of natural resources. Based on a survey conducted by Harajli (2013), the existing terraces are dominantly cultivated with olive trees (Olea europaea).

b. Built-up Landscape

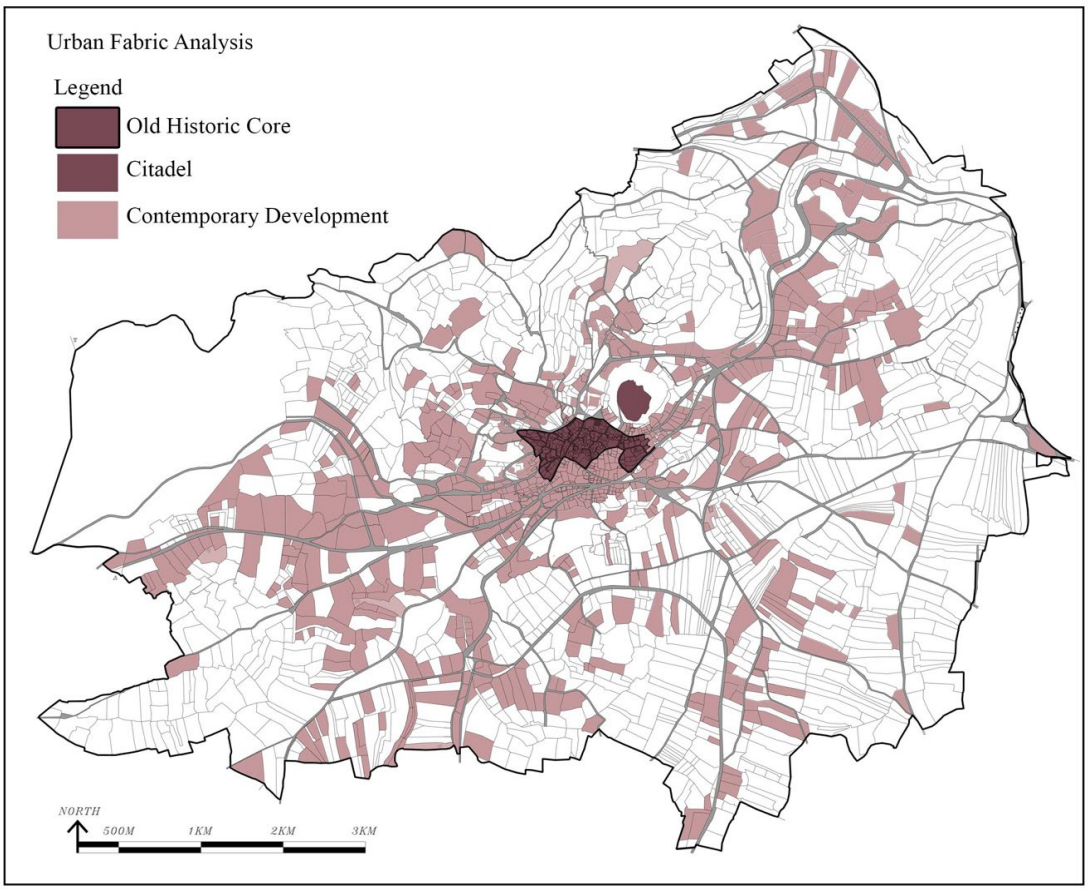


Figure 36: Tibneen Built-up Landscape

i. Citadel

Located in the heart of Tibneen at 720m a.s.sl, the crusaders citadel represents one of the most prominent archeological sites in the region that dates back to the year 1105 (Boustani, 2013). The citadel is protected by a thick green buffer zone (discussed earlier) that strengthens the view to the Qalaa. While the citadel is under the jurisdiction of the Directorate General of Antiquities, the green buffer zone surrounding falls under the jurisdiction of the Municipality.

Today the citadel is perceived by most of the Tibneeners to be spatially disconnected from the rest of the village with the main road leading to the citadel mostly used as a parking space. Despite some few activities that had been sponsored by the municipality, such as the summer festival and other UNFIL events, the citadel is considered socially inactive with very few visitors come, and only in the summer season. The unsafe conditions of the road and the interior of the Qalaa as well as the steep unmanaged terrain of the green buffer zone renders the place as dangerous and uninviting. The view of the Qalaa is also under a great threat with the possible further development of the privately-owned lots at the edge the green buffer zone that can reach up to 3 story high.

With the citadel standing at the hill summit occupying a total area of 3,040 sq.m, the old historic core of the village developed underneath reflecting the early development of the village's human settlement known as Hayy Al Qalaa. The old historic core preserves an urban morphology that reflects the history of the place. It is characterized by its tight and winding alleys with stone houses built along the zaqouq with minimal setbacks that preserves a tight-knit social fabric. The existing street typology provides exceptional sightlines, street perspectives and experiences to the pedestrians passing through the historic town. Alleyways and open courtyards within the old town are considered as active social spaces that are informally appropriated by scattered chairs and tables. "The built heritage in the zaqooq allows for a unique way of life where neighbors live in proximity to each other, women use their front porches as a public space, elderly socialize by the mosque, and narrow alleyways creating a more pedestrian friendly environment which allows more social interaction" (Boustani, 2013).

ii. The Historical Core

The historical core of Tibneen was once a long, linear street along which single-story houses were developed around internal courtyards. Built before the introduction of the car in the area, the narrow, winding street is only 3-4m wide with property lots immediately marked by walls. The old road opened on the main village square where the town's old mosque and its pond, main features of South Lebanon's villages, were located. Here, the town's weekly market, *Souk el Jom'a* brought sellers from surrounding town every Friday before the prayer.

Since the mid-1990s, a number of interventions have however begun to disfigure the historical core and its main square. Through the intervention of powerfully connected political figures, the old small mosque was replaced with a larger building that now dominates the main town square. A few years earlier, the town's communal pond had been dried out and a multi-story serial replaced it, introducing a main governmental facility (including a jail) to Tibneen. In 2012, still owing to the same political interventions, the old school was demolished and replaced by a square designed along the guidelines of European squares: a contained, landscaped area with a fountain at its center now provides a space in front of the new mosque, increasing its presence on the public square.

Figure 37: Pictures of Tibneen Historic Core

The rapid transformation of the old core's character was further precipitated by military airplane raids during the 2006 Israeli war in Lebanon. Air raids destroyed the thrust of the town's historical core, demolishing many old houses and contributing to the erasure of its character (and heritage). The war and its aftermath precipitated a process already begun a decade earlier, as the demolished old houses in the village's main historical artery (the Zaqouq) were replaced by multi-story buildings. The multi-story apartment buildings transformed dramatically the way space in the historical town is lived and perceived. As they overlooked the remaining surrounding courtyards, the new buildings disrupted the building typology of the area irreversibly, transforming permanently the morphology and "feel" of the old city.

iii. Contemporary Built-Up Development: Status and Trends

In line with the rest of Lebanese towns, much of Tibneen's modern expansion has followed the development of road network. Old aerial photos showed that it was during the early years of the twenty first century, when the built up development significantly started to expand beyond the old city's tight urban fabric.

Several reasons encouraged the expansion and the morphological transformation of the built environment, the most influential was the development of three primarily roads namely Tibneen-Bint Jbeil, Tibneen-Hariz Road, Sultaniyeh-Tibneen Road. This was particularly the case of the 1990s road development that paved roads within the agricultural tracts, facilitating development in these areas (Zeineddine, 2014). Consequently, the once strictly residential, one story stone house typology that dominated the old historic core is changing to a mixed-use 2-3 story building typology with a commercial shop at the ground floor. Today, more residential and commercial buildings continue to develop along the main roads, regardless of existing land-uses.

Another factor driving the production of the built environment and encouraging the expansion of the contemporary built-up fabric lies in the transformation of Tibneen's role from an agricultural town until the 1950s to a secondary home week-end/summer area in the past two decades. Today, 72% of Tibneen's total population is composed of temporary visitors residing in Beirut and/or abroad. To them, Tibneen is perceived as a weekend and/or summer destination. As a result, most of the new building activities represent secondary homes for temporary residents transforming the village economy into weekend homes.

The third factor influencing the form of contemporary built-up expansion is

associated with propertied interest. In line with the rest of the country, landowners in Tibneen value their lands as a real estate asset in which their financial worth needs to be protected by securing high building exploitation factors. As stated by Fawaz (2014), this understanding of land was further consolidated through the development of Tibneen's Master plan, since the passage of the master plan alerted land owners to the "threat" posed by an agricultural zoning of their lands that would reduce its financial value by lowering exploitation factors.

c. Infrastructural Landscapes

Tibneen is located at the intersection of four primarily roads that connect the town to the nearby towns of Sultaniyeh, Haris, Aita, and Bint Jbeil. The later road was theoretically supposed to connect Lebanon with Palestine. The Sultaniyeh Road acts as the northern access to Tibneen connecting Beirut to the city of Sur, an important institutional and commercial hub. The Haris, Aita and Bint Jbeil road provides accessibility to and from the South. Between Tibneen hospital node and the turn off to Bint Jbeil, the four primary roads share the same route for approximately ¾ of a kilometer, carrying all traffic using Tibneen as a throughway to travel north or south.

Tibneen's primary road hosts the bulk of the village's mixed-use developments: a typology of 2-3 story buildings with ground floor commercial shops, backyards typically planted, and residential units located on the upper floors. It is along this main road that historically, the village's hospital, a main landmark in the region was developed. More recently, and following this "institutional" trend a cultural landmark has opened. Initiated by the Municipality and supported by the French cultural center, the hub includes a library, a theater, and other communal facilities. Furthermore, the new public school is built on the same block.

In its inner section, the road overlooks the large agricultural tracts, making for a scenic view. Consequently, the main village's "cruising" (kazdoura), has concentrated on this road. Once pedestrian, the practice has become largely dominated by drivers who cause congestion, particularly in summer weekends. It is also in this location that several restaurants, the best known among them being "al Kashif Restaurant", have opened, attracting dwellers, visitors, and expats as the primary café destination in the town.

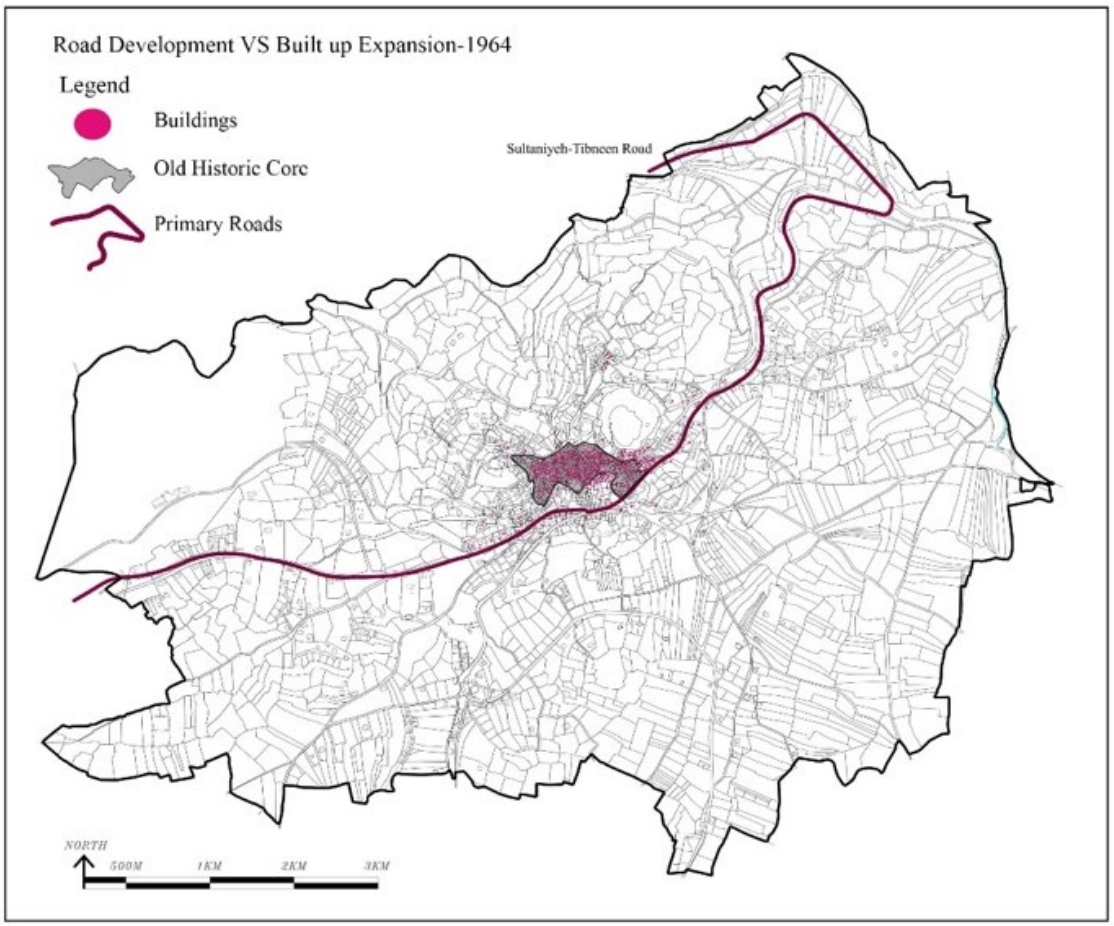


Figure 38: Road Development VS Built-Up Expansion, 1964.

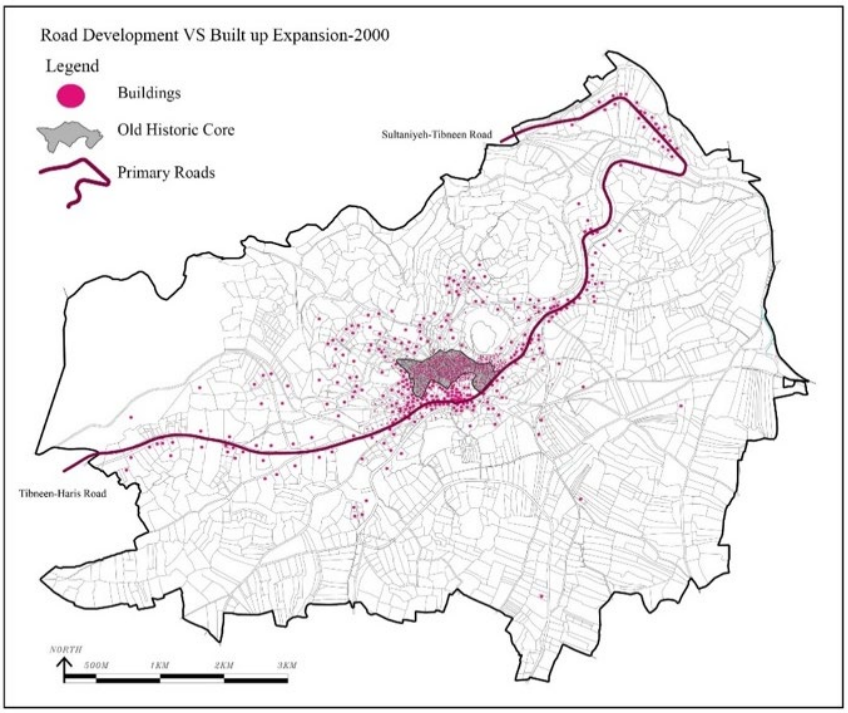


Figure 39: Road Development VS Built-Up Expansion, 2000.

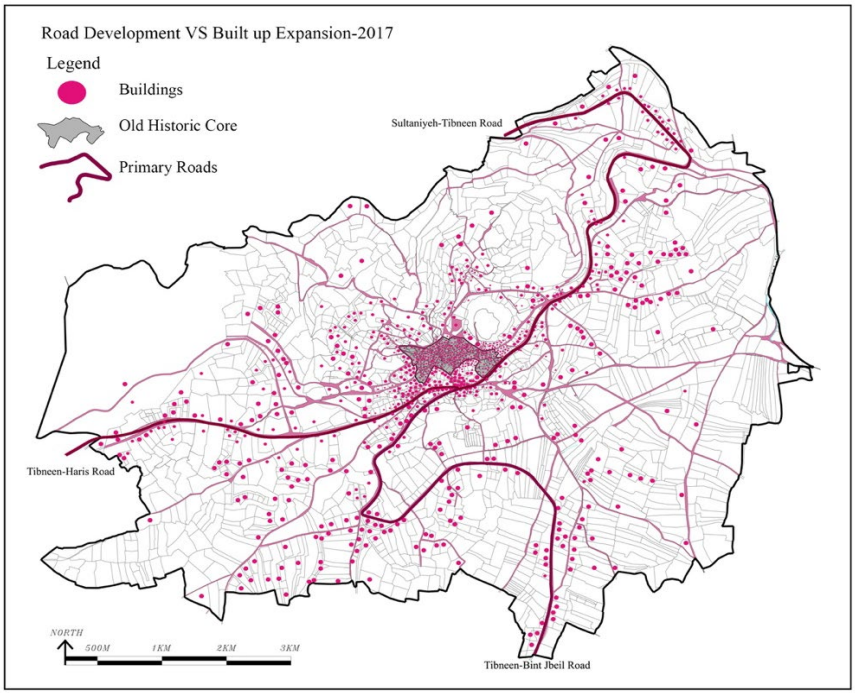


Figure 40: Road Development VS Built-Up Expansion, 2017.

In addition to the commercial significance, the primarily roads passing through Tibneen are an important component of people's memory and reflect a strong sense of nostalgia, particularly the traditional Kazdoura that once took place along Tibneen-Haris road. Similar to a promenade, the *kazdoura* used to be a pedestrian social practice promoting social interaction amongst different age groups and genders. Today, with the fast pace vehicular circulation of this primary road, the kazdoura is no longer safe hence erasing a key local social practice.

The secondary road network within Tibneen is relatively limited to the inner village circulation system. The most important is the ring road that connects the hospital node to the citadel node passing through the municipal square, providing access to the village core. At the hospital node, other primary roads merge with the ring road connecting the old historic town with the western and southern parts of Tibneen. Secondary roads also include two narrow vehicular roads that cut through the zaqouq linking the municipal square with Tibneen-Bint Jbeil road in addition to another circuitous and winding but wider road connecting the square to the Christian quarter, Mashrou' Al-Akhdar, and other landmarks such as Al Hosn and the public park.

Tertiary roads are mainly confined to the residential quarters, specifically to the historic old core of the village used by people who live in it. Those roads hold a unique identity: narrow and often surrounded by stone houses built without setbacks, they that run along both sides of the street. These roads constitute a major element of Tibneen's heritage.

In sum, the holistic extensive landscape reading presented in this chapter addressing the abiotic, biotic and cultural components of Tibneen will only be significant in the design and planning process if articulated within a dynamic ecological

understanding of the processes and relations among those components. Hence, the following chapter will build on this comprehensive and holistic reading of various landscape components, being the tangible products as well as the intangible processes of cultural production, to distinguish ecological landscape associations. By identifying those spatially articulated units and understanding the logic behind their distribution pattern, I hope to articulate the holistic understanding of the landscape and, consequently inspire designers and planners to integrate this understanding in the design and planning approach promoting environmental sustainability, ecological integrity, and landscape continuity.

CHAPTER VI

RECONCEPTUALIZING MUSHA‘ THROUGH AN ECOLOGICAL APPROACH

The thesis has so far argued that by integrating in the planning process the frame of musha‘, formulated by the ecological understanding of the social perception of land, it is possible to articulate a sound planning strategy that maintains landscape integrity in both its ecological and cultural significance, promote sustainable development based on community inclusive scenarios, and reinforce the natural and cultural spirit of place. To this end, the thesis proposes to substitute to the restrictive conventional definition of musha‘ as a property category in the land registry a definition of musha‘ that includes all lands, one which collective/shared social meaning is inscribed, irrespective of property ownership. The exploration of musha‘ in Tibneen, as this chapter will show, points to the tangible and intangible resources that are shared by the local community, extending over multiple land covers and beyond individual property parcels as well as beyond the administrative boundary of villages. By adopting this definition, the thesis hopes to overlap in-depth ecological understanding over property, allowing hence communal meaning to trump private ownership.

This chapter will present the results of in-depth ecological understanding through ELA analysis upon which a new definition of musha‘ is established and identification criteria proposed. The later will be implemented on Tibneen to identify musha‘ landscapes in the village as well as the threats facing those landscapes.

A. Ecological Landscape Associations of Tibneen

The previous chapter presented in-depth reading of Tibneen's landscape as a foundation for the holistic and comprehensive understanding of the dynamics occurring between the natural, semi natural and cultural components. Building on the extensive landscape reading, this chapter will apply the ecological landscape methodology as a framework for investigating and understanding the complexity of various existing landscape processes and patterns. As argued by Makhzoumi and Pungetti (1999), the significance of the ecological landscape methodology lies in offering a holistic, dynamic and integrative assessment of the landscape by exploring processes that bind one or more landscape components into association (including biotic, abiotic and cultural aspects). Identified Ecological Landscape Associations will then be used as the building blocks for proposed design/planning in order to address environmental and ecological challenges, respond to people's needs, and provide sustainable development strategies. The process of searching and identification of those spatially articulated units promotes, on one hand, the holistic understanding of the landscape and, on the other hand, inspires designers and planners to integrate this understanding in the design and planning approach (ibid).

The analysis of various landscape layers presented in chapter 5, provides a range of associations or building blocks stimulated by the complexity of existing landscape patterns and processes and the ecological understanding of Tibneen's diverse components and their interaction. The ecological landscape methodology promoted the categorization of various interactions between the biotic, abiotic and cultural components into a set of ten ELAs covering Tibneen.

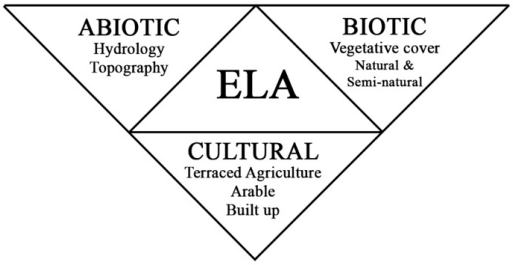


Figure 41: Schematic illustration of the Ecological Landscape Association methodology

(Source: Makhzoumi and Pungetti, 19999)

Table 1: Ecological Landscape Associations of Tibneen

			BIOTIC		CULTURAL			
			Forest	Scrub-land	Arable	Terraces	Built-Up	
							Historic	Contemporary
ABIOTIC	Hill Top						ELA 1	
	Hill Side	Steep Slope 26-32 %	ELA 2	ELA 3				ELA 4
		Gentle Slope 8-17 %				ELA 5		ELA 6
	River Valley (0-8%)				ELA 7			ELA 8
	River Bed				ELA 9			ELA 10

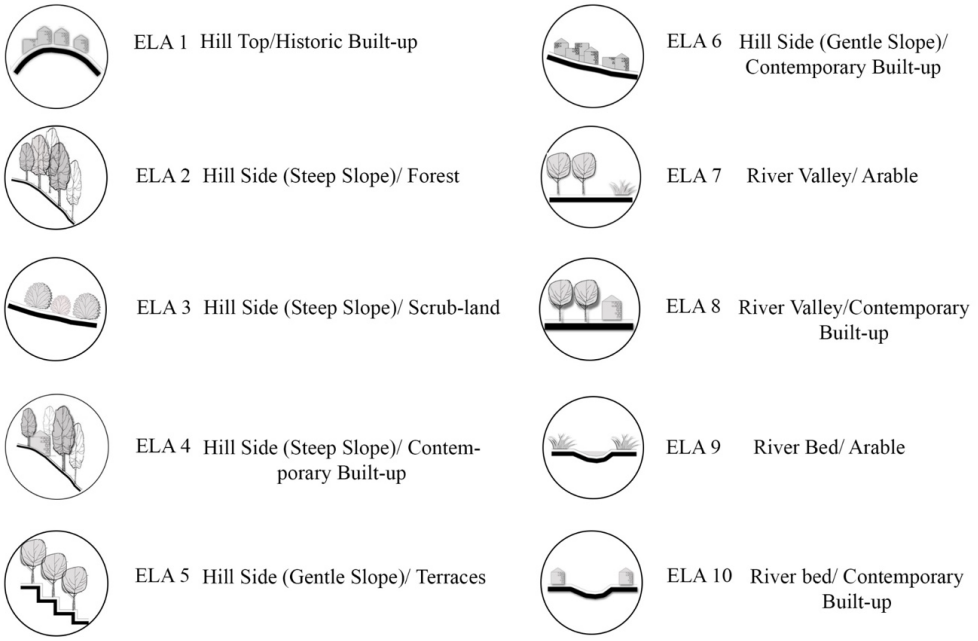


Figure 42: ELA Components

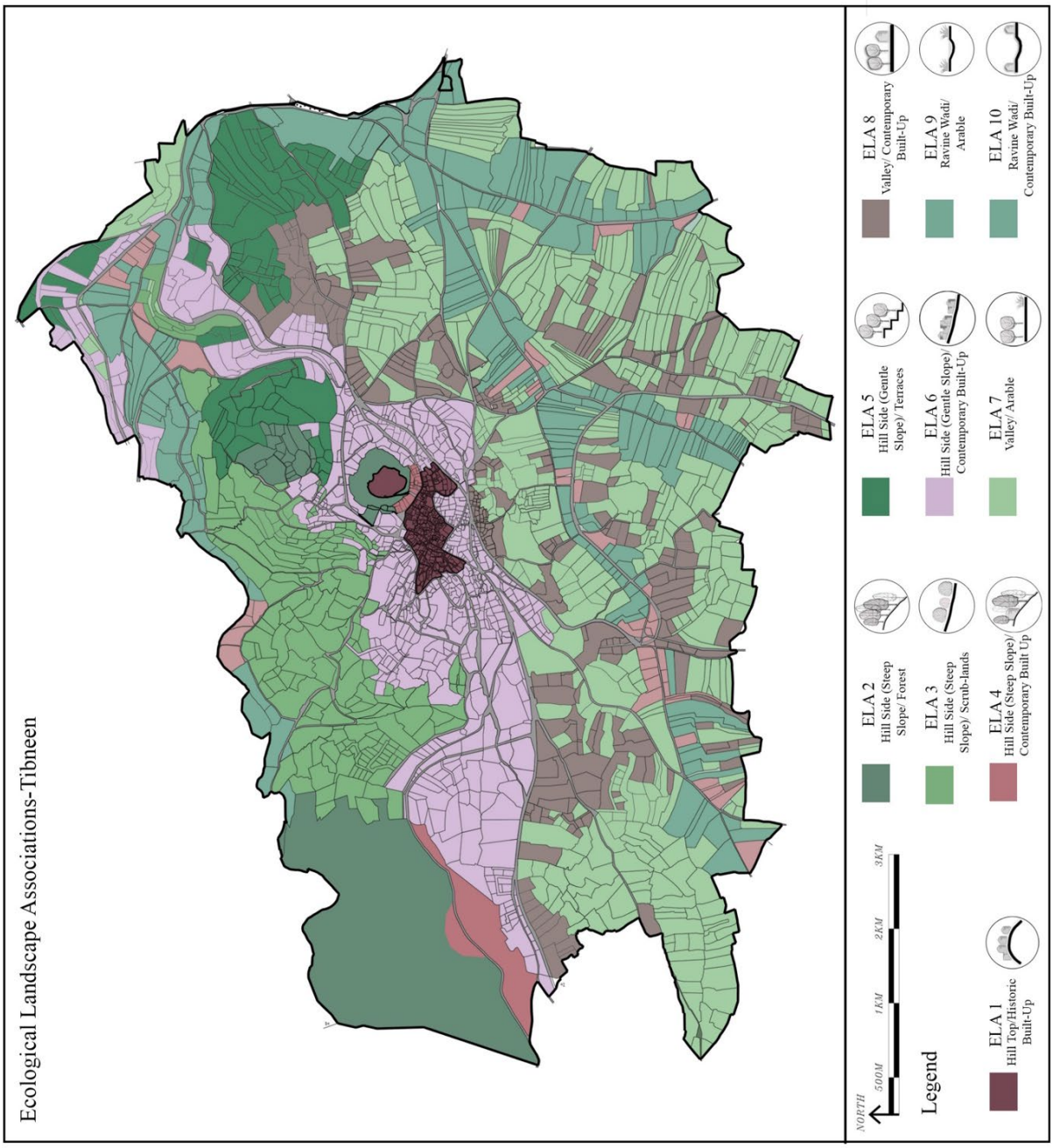
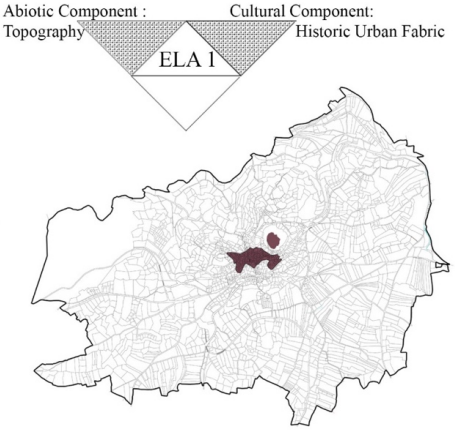


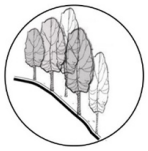
Figure 43: Map showing the Ecological Landscape Associations of Tibneen

ELA 1: Hill Top-Historic/ Built-up

This association is located at the highest topographical point of the village between 690m a.s.l and 720 m.a.s.l. it embraces the old historic core/fabric of the village in addition to the citadel that represents a touristic landmark.
This Association preserves cultural, architectural, archaeological significance

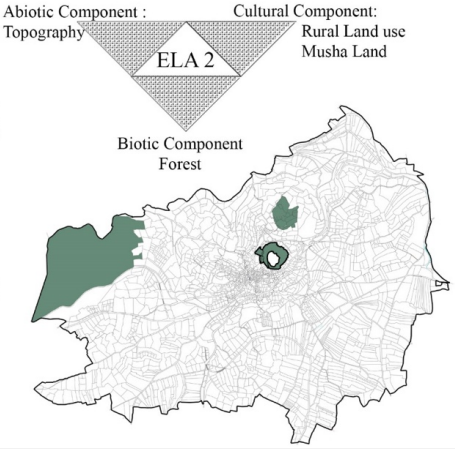


ELA 2: Hill Side (Steep Slope)-Forest



This Visually and Aesthetically prominent association is primarily located at the steep hill side with slope ranging between 26-32% with some areas exceeding 33% slope.

This association is of Ecological and environmental significance being the habitat of a diversity of flora and fauna, improve ground water permeability and soil retention (prevent soil erosion) etc., it also preserves socio-cultural significance appreciated by the local community as an essential component of the natural and cultural heritage of the village.



ELA 3: Hill Side (Steep Slope)-Scrub-land

This association represents the semi-natural vegetative land-cover occupying the northern rocky hill side of the village with slope ranging between 26-32%. the upper side comprise of dwarf shrubs that slowly changes into a sparse layer of vegetative cover next to the river bed exposing the limestone rocks of the hill side

This Association preserves an environment and ecological significance by protecting the exposed rocky hill side, preventing soil erosion and being a habitat for a large variety of flora and fauna.

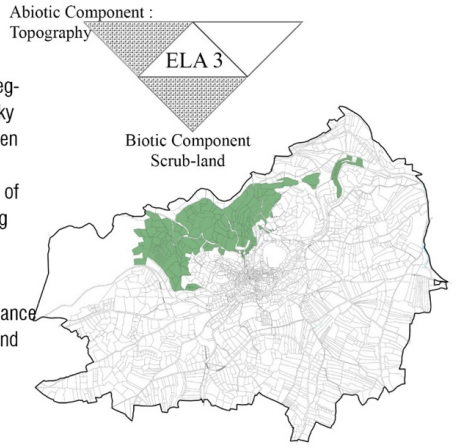
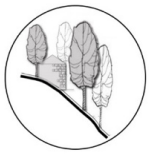


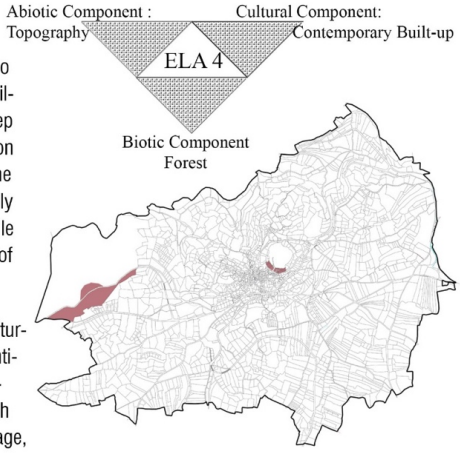
Figure 44: Ecological Association Analysis of Tibneen-1

ELA 4: Hill Side (Steep Slope)-Contemporary Built-Up



The hill side-Built up association corresponds to the contemporary built-up development of the village that are specifically located in areas of steep slopes ranging between 28-32%. this association is confined in two areas the first representing the built fabric in the Mashrou' Al akhdar specifically the UNIFIL Camp and Tibneen Country Club while the other represents the built fabric at the edge of the Citadel Green Buffer Zone

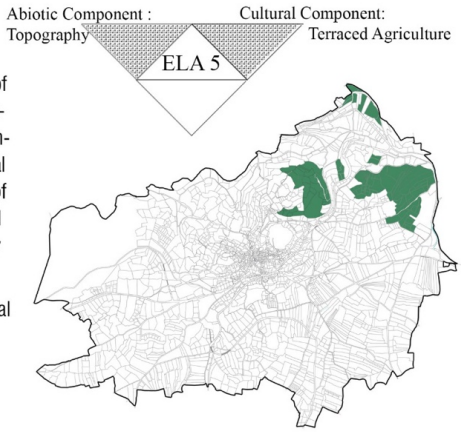
This association imposes environmental, ecological and socio-cultural Negative Implications including the destruction of landscape continuity, ecological integrity, visual connectivity, degradation and fragmentation of the landscape, disruption of the social connection with the natural landscape and threatening the natural and cultural heritage,



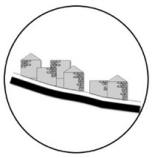
ELA 5: Hill Side (Gentle Slope)-Terraced Agriculture

The Terrace/Hill side Association is a result of the man-natural evolutionary process reflecting sustainable practices for the use and management of natural resources. it is an integral component of the rural cultural landscapes of the Mediterranean that is directly associated with slope ranging between 8-17% primarily cultivated with olives.

This Association preserves cultural, economic, ecological and visual significance



ELA 6: Hill Side (Gentle Slope Slope)-Contemporary Built-Up



The Hill Side/ contemporary buil-up Association corresponds to the contemporary urban development outside the old historic town towards the hill side of the village. it occupies an with a slope ranging between 0-17%

This Association preserves economic and Cultural significance,

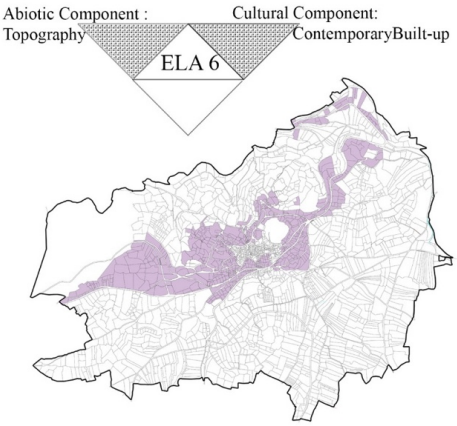
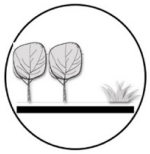


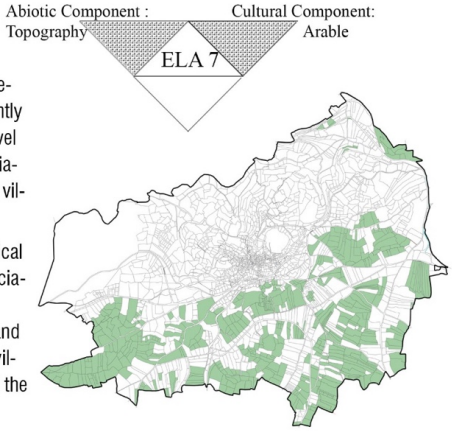
Figure 45: Ecological Association Analysis of Tibneen-2

ELA 7: River Valley-Agriculture

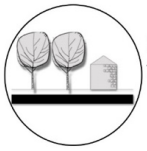


The River Valley/Agriculture Association corresponds to the fertile agricultural fields dominantly located between 580 and 610m above sea level with slope ranging between 0-8%. this association is concentrated at the southern side of the village stretching from east to west.

This Association preserves an economic, sociocultural and ecological significance. in addition to it being a source of livelihood this association provide an ultimate rural recreational space, appreciated as a scenic landscape. This association is part of the village's natural and cultural heritage and an integral to the historic development of the village. it represents an essential component of people' memory and the village's collective identity.

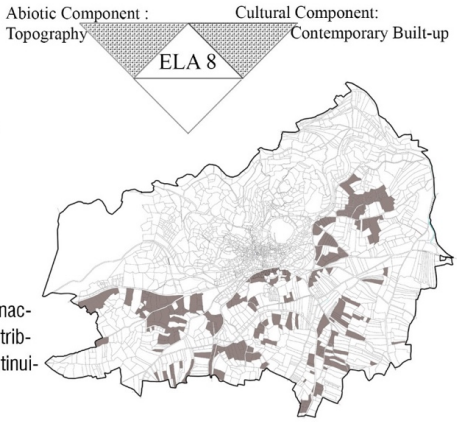


ELA 8: River Valley-Comtemporary Built-Up



The River Valley/ Built up association represents the contemporary built fabric expansion towards the fertile agricultural fields . this association shows that the agricultural fields are being jeopardized at the expense of the real estate development. this pattern of urban sprawl was facilitated with the developed network of roads linking the nearby villages.

This Association Threatens rural cultural landscapes and social vernacular practices associated with it, disrupt the scenic landscape, contributes to the fragmentation of the landscape, threaten landscape continuity and ecological integrity.



ELA 9: River Bed- Arable

This association corresponds to fertile agricultural fields along the river bed with the a slope ranging between 0-8%.

This Association is of ecological and economic significance,

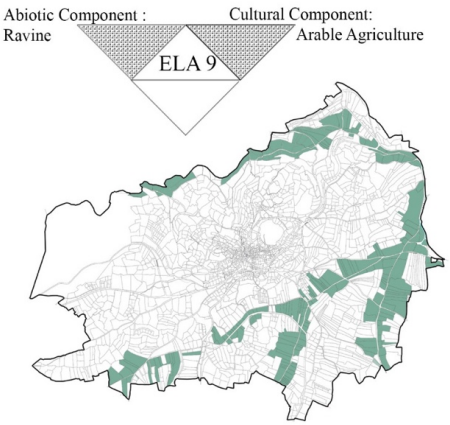


Figure 46: Ecological Association Analysis of Tibneen-3

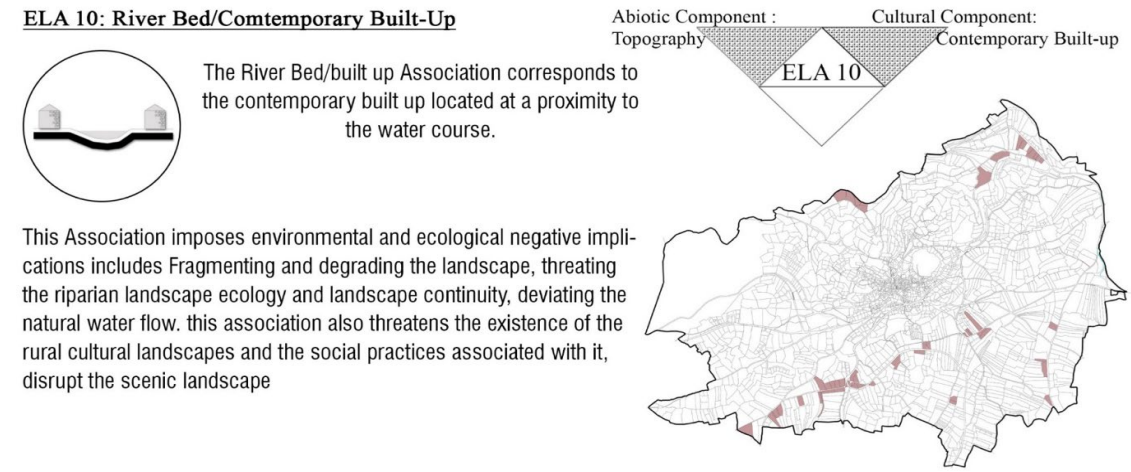


Figure 47: Ecological Association Analysis of Tibneen-4

B. Musha‘ as communally shared landscapes: a new concept

1. New Proposed Definition

Based on the above findings, this thesis aims at expanding the definition of musha‘ beyond the restrictive conventional definition of a property category. The analysis presented in this thesis showed that people hold shared perceptions towards land, buildings, and landscapes, irrespective of property ownership, imposing shared (communal) meaning on private lands. In some sense, one could call such meanings “public”, so long as the term doesn’t refer to the state institutions that, in theory, support them. The proposed interpretation to the concept of musha‘ is based on reconceptualizing and reconfiguring the human-land relationship, surpassing the preexisting land categories of conventional land-use planning. Opposing to the narrow self-interested conception of the landscape being a collection of freehold land parcels, the concept of musha‘ transcends individual property rights to include collective-communal ownership (Right) models based on the tangible and intangible resources that are shared and accessible to

every member of a specific community. Thus, musha‘ corresponds to the natural and built landscapes that could be either private or public on a scale of the individual unit, but hold a collective meaning attached to the identity of the place with communal rights over the landscape as a whole entity. Accordingly, musha‘, in the new definition and interpretation provided in this thesis, tempers the polarity of private and public. Instead, it restores a vision of the landscape perceived as whole, extending beyond the cadastral zones and beyond municipal administrative boundaries.

2. Criteria of Musha‘ Identification

After proposing a new interpretation to the concept of musha‘, the comprehensive reading and ecological understanding of the village landscape informed by the ecological landscape methodology was used to outline the identification criteria of musha’. This criterion will be the foundation in distinguishing and locating musha‘ in Tibneen, later in this chapter. For a landscape to be rendered as musha‘, one or more of the following characteristics should be applicable. Musha’ are natural and built landscapes that (are)

- Privately, public or state-owned (foot note) but are communally perceived and appreciated by an area’s residents as shared spaces holding a shared meaning,
- Tangible natural resources that are shared by the residents contributing to the livelihood of the local community such as the hydrological resources that are used to irrigate cultivated fields,
- Managed by norms and costumes developed by local communities,
- Equally accessible to every member of the community,

- Recognized by the community for its significance in the memory of the place being the ground for historic events and/or past common social practices anchoring the sense of belonging,
- Accommodates present common social practices that could be different from past practices yet contributing to the collective identity of a place.

C. Redefining Musha‘ in Tibneen: classification, threats and forces affecting their existance

Analyzing the identified ELAs in Tibneen based on the proposed interpretation of musha‘ shows that a variety of communally shared tangible and intangible resources spatialize the collective identity of the villages and extend over the landscape irrespective of property ownership (private or public), land cover (natural, semi natural or built), and terrain (e.g. forests on steep slopes, agricultural fields occupying the village hillside, river valley, old historic core, citadel occupying the hill top, hydrological resources). Indeed, in addition to state-owned lands that are officially categorized as musha‘ (Mashrou‘ El-Ahkdar), the extensive landscape reading of the village showed that the privately owned agricultural fields are communally perceived and appreciated by village residents as commons.

The following discussion will redefine musha‘ in Tibneen under three categories, identify the challenges and threats those landscapes are facing and pull out the forces affecting the proliferation of the damaging threat of musha‘.

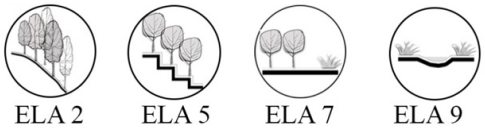
1. New classification of Musha‘ in Tibneen

Adopting the new interpretation of musha‘, the ELA reading helped identify three distinctive categories of musha‘ in Tibneen as outlined below. The scope of this thesis will only concentrate on the natural and open landscapes and will not incorporate the built landscapes within the identification of musha‘ in Tibneen.

Table 2: Table showing the ELAs representing Musha‘ on Tibneen

			BIOTIC		CULTURAL			
			Forest	Scrub-land	Arable	Terraces	Built-Up	
							Historic	Contemporary
ABOITIC	Hill Top						ELA 1	
	Hill Side	Steep Slope 26-32 %	ELA 2	ELA 3				ELA 4
		Gentle Slope 8-17 %				ELA 5		ELA 6
	River Valley (0-8%)				ELA 7			ELA 8
	River Bed				ELA 9			ELA 10

ELAs Representing musha in Tibneen



ELA 2 ELA 5 ELA 7 ELA 9

a. Musha‘ as natural resources

The first component that represents musha‘ in Tibneen is the hydological resources that constitues the most distinct landscape feature of Tibneen including the river bed, the seasonal water channels and the water spring. As part of a bigger network extending to include neraby villages governed by the ministry of transportation, the river bed and seasonal water channels played an essential role in the proposperity of Sahel El Khan not only on the scale of Tibneen but also on a regional scale feeding the irrigation channels of the cultivated fields.

b. Musha‘ as productive landscapes and sources of livelihood

The arable and terraced agriculture of Sahel el Khan are also part of the village’s musha‘. Based on the ELAs identified, those productive landscapes are either adjacent to the river bed occupying 18.77% of Tibneen total area, as represented in ELA 9, or situated in the topographical flat areas of the river valley with slope ranging between 0-8% representing 35.3% of the village total area, as represented in ELA 7. They also existed as terraces occupying 4.8% of Tibneen total area along the village hill sides with slopes ranging between 8 and 17%, as signified in ELA 5.

In addition to being a source of livelihood, those privately-owned lands are cherished as a scenic landscape and green public space that promotes social networking, providing recreational opportunities as well as a place that anchors the sense of belonging. They are considered an essential component of Tibneen’s natural and cultural heritage, contributing to the town’s collective identity. Yet, their recognition officially as musha‘ and consequently their protection is challenging as long as the perception of land as financial investment highlighted in the previous chapters is kept.

c. Musha‘ as natural heritage:

Musha‘ also existed as forests located on steep slopes ranging between 26-32%, as represented in ELA 2. Three forests were identified in Tibneen as areas governed and managed by a coalition of different governmental authorities such as the Municipality of Tibneen and The Ministry of Antiquities, in the case of the Citadel’s green buffer zone, the Ministry of Agriculture and the Municipality in the case of the Mashrou‘ El Akhdar.

therefore, assigning a single custodian to these areas is considered a biggest challenge especially with that they fall under the jurisdiction of several public agencies.

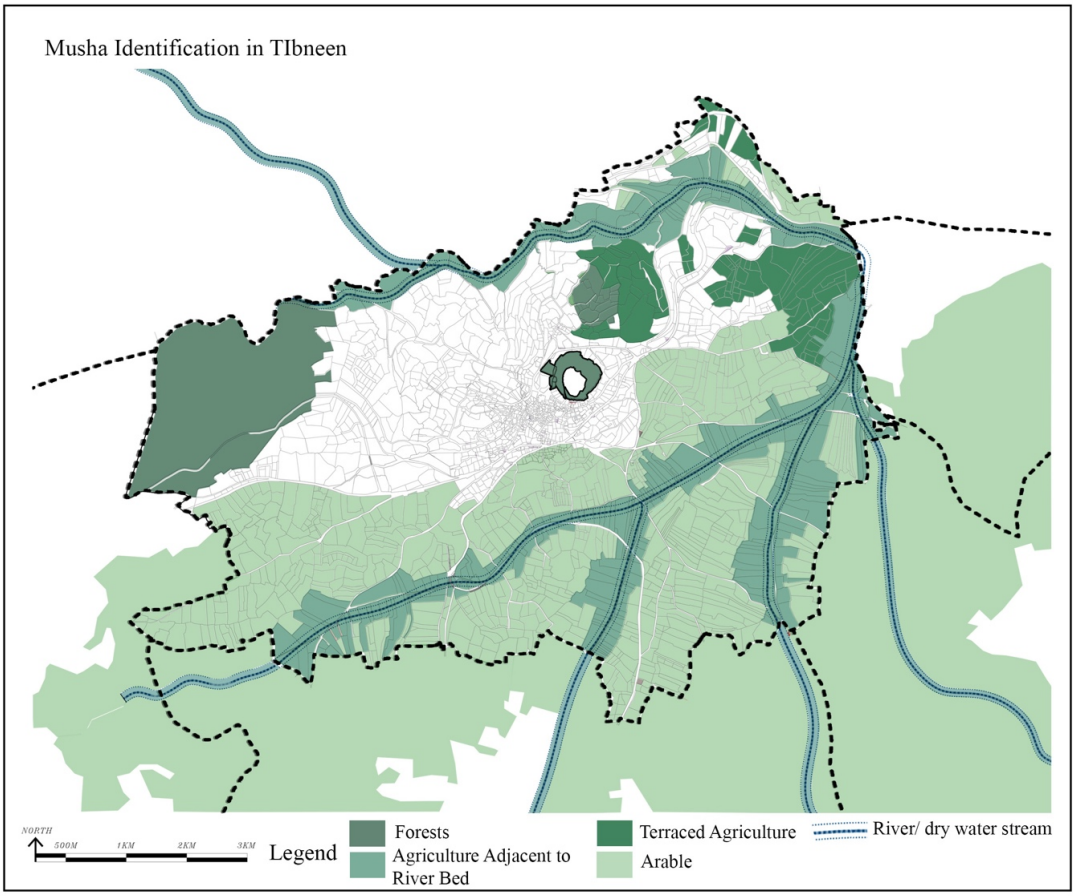


Figure 48: Map Showing Musha‘ in Tibneen

2. Trends Affecting Musha‘ in Tibneen and its Environmental, Ecological and Socio-Cultural Implications.

Further to the identificatin of musha‘, the ELAs also highlighted trends that impose negative impact on musha‘ in Tibneen. The major threat identified is the contemporary built up expansion that is gradually invading musha‘ and will eventually alter the communal understanding of the town’s landscape. Unlike the historic settlements in the village that primarily occupied the hill top (such as the Citadel and the historic core)

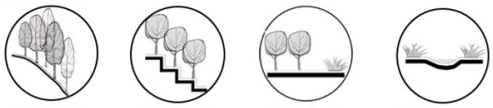
as signified in ELA 1, the expansion of the contemporary built-up footprint is gradually expanding outside the historic core, as shown in ELA 6, and down the slopes towards the fertile agricultural fields, as represented in ELA 8. The latter is contributing in the destruction of the productive landscape despite the fact that this landscape is a source of livelihood for to 60% of Tibneen's permanent resident who use it for subsistence agriculture (Harajli, 2013). It also promotes the destruction of the communally appreciated scenic landscape and shared public green space that is cherished as an ultimate recreational space.

Table 3: Table Showing the ELAs Representing Musha' of Tibneen and the Damaging Threats

			BIOTIC		CULTURAL			
			Forest	Scrub-land	Arable	Terraces	Built-Up	
							Historic	Contemporary
ABOITIC	Hill Top						ELA 1	
	Hill Side	Steep Slope 26-32 %	ELA 2	ELA 3				ELA 4
		Gentle Slope 8-17 %				ELA 5		ELA 6
	River Valley (0-8%)				ELA 7			ELA 8
	River Bed				ELA 9			ELA 10

ELAs Representing musha in Tibneen

ELAs representing damaging trends in Tibneen



ELA 2 ELA 5 ELA 7 ELA 9

ELA 4 ELA 8 ELA 10

As illustrated in the table above, the built-up encroachment on musha' was also signified in ELA 10 specifically along the river bed. The latter building expansion resulted in deviating the natural water flow of the water stream that is essential for the cultivation of the agricultural fields and distrupting the habitat of a variety of flora and fauna, hence hindering the wealth of this ecological corridor. being a resource that is shared by several villages, the environmental and ecological implications of such a threat will affect Sahle el Khan as a Whole.

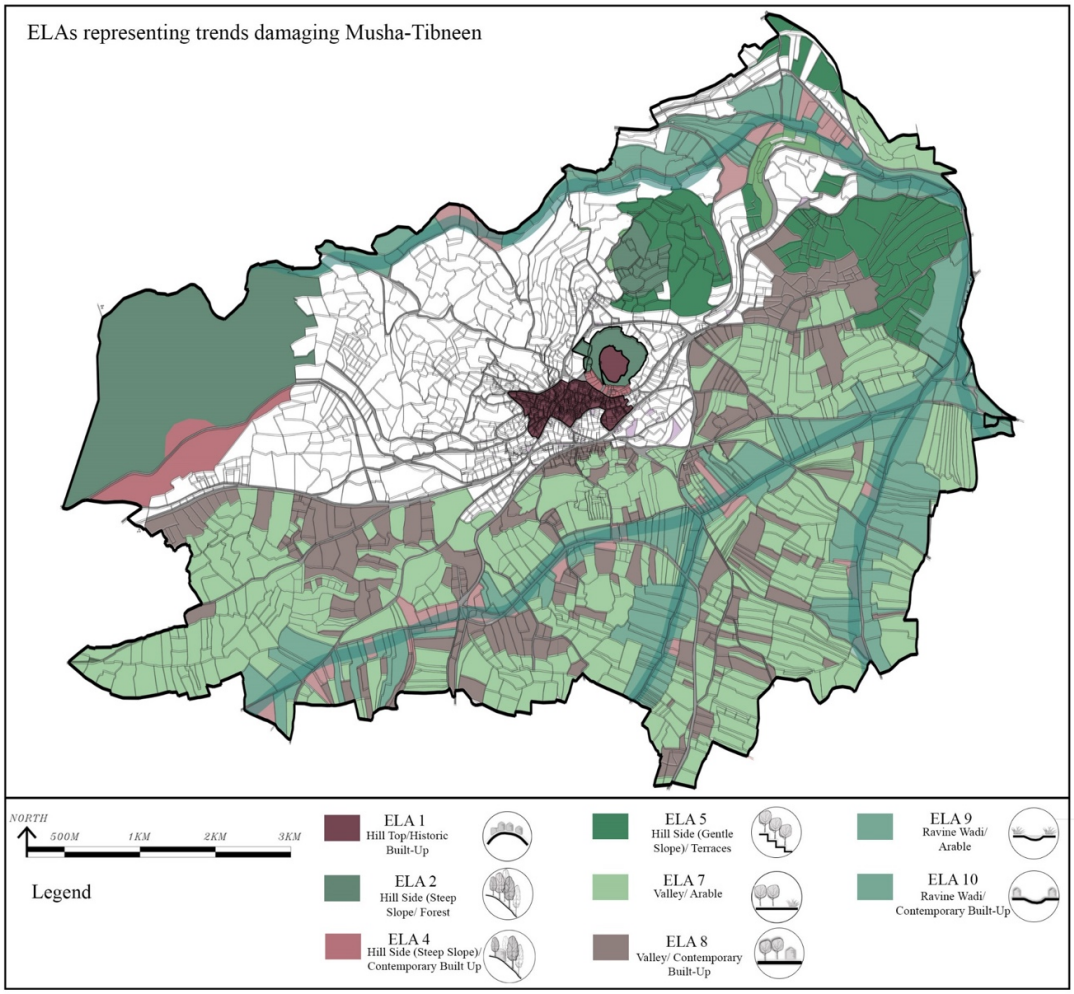


Figure 49: ELAs Representing Musha‘ Damaging Trends in Tibneen

As represented in ELA 4, musha‘ was recognized as a strategic location for the establishment of a UNIFIL camp and other sports and recreationl facility specifically in the forest. The built-up expansion eventually altered the distinctive features of the forest by cutting most of the trees within the area of the development to build two gated complexes with restricting accessiblity. In the case of the citadel’s green buffer zone, and despite zoning this area as as area of archeological importance, a main villa was

developed within this green belt, blocking the view to the citadel which represents an essential component of tibneen's cultural heritage.

In addition to the environmental and ecologcial drawbakcs, the continuation of this damaging trend will impose negative implications on the sio-cultural dimension. consequuently, it will dissipate the main landscape features that contribute to the shared memory of the place and anchors the sense of belonging. This trend will also contribute in dissociating the local inhabitants from the landscape that had nonetheless been integral to the village's identity as well as Tibneen's natural and cultural heritage.

3. Forces Affecting Musha' in Tibneen

Several forces contributed to the existence and proliferation of the trends damaging musha' in Tibneen as well as to the transformation of the village landscape. One of the main reasons that stands behind the spread of musha' damaging threats in Tibneen is directly associated to the zoning strategy adopted by the approved Master plan that zoned most of the agricultural fields as mixed used plots shrinking the agricultural fields from 66% into 8% of Tibneen's total area only. Eventually, the spread of the built up fabric as imposed by the master plan will gradually replace the agricultural fields with concrete building blocks, destructing the tangible and intaginble resources shared by the local community and threatening the existence of the rural cultural landscapes and the communal practices associated to it. Furthermore, being a resource that is shared by seven nearby villages, rezoning the agricultural fields of Tibneen will also disrtupt the landscape integrity and ecological continuity of Sahel El Khan as a whole.

Taking into consideration that the majority of the identified musha' landscapes constitute of privately owned land parcels as shown in (Figure 50), the second factor

contributing to the built-up expansion is associated to the propertied interest of landowners who value their lands as real estate asset, which financial worth needs to be protected by securing high building exploitation factors. As claimed by Fawaz (2014), this understanding of land was further consolidated through the development of Tibneen's Master plan, since the passage of the master plan alerted land owners to the "threat" posed by an agricultural zoning of their lands that would reduce its financial value by lowering exploitation factors.

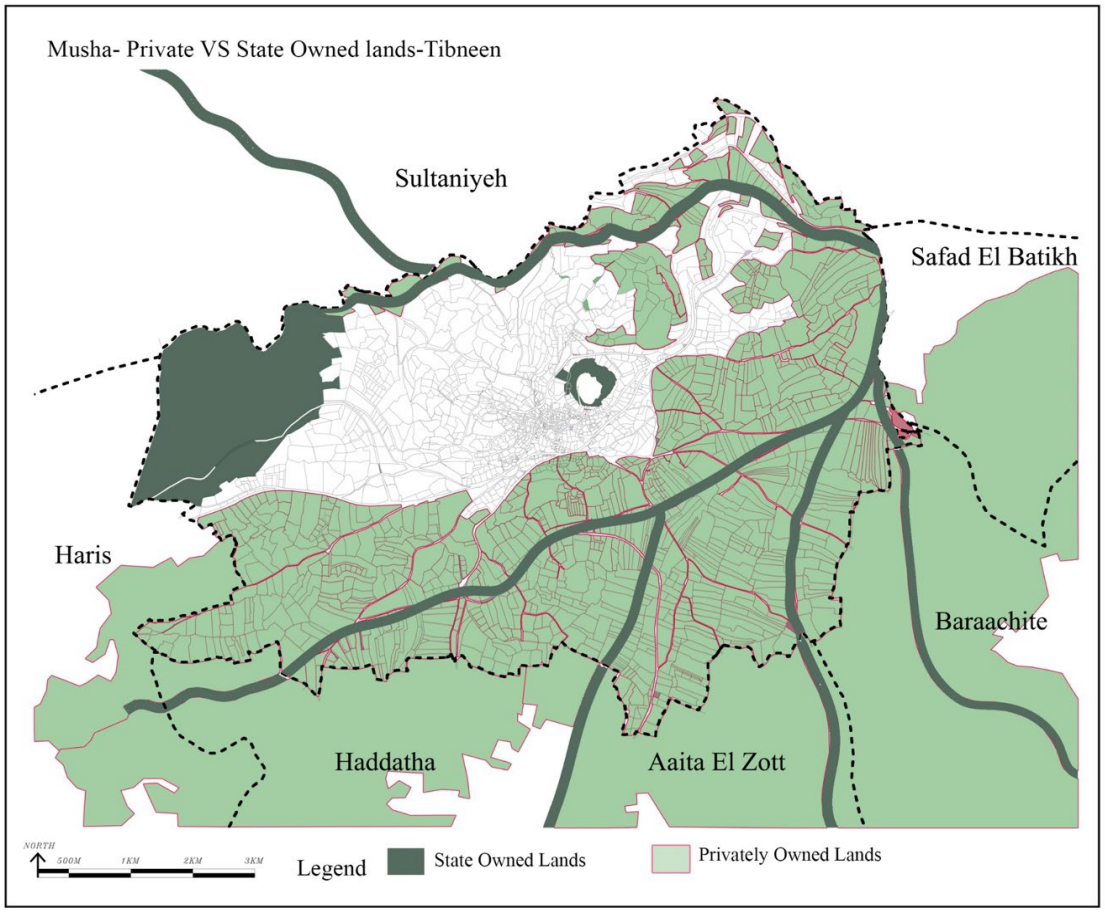


Figure 50: Musha' Private vs State-Owned Lands

Despite the fact that some landowners still believe that maintaining the agricultural fields is essential for the common good and central to their livelihood,

however, the inequality among stakeholders who, even if they may survive due to the land, may not have the actual power to defend the protection of the land. Hence, the agricultural fields are more likely to be saved if, on one hand, the "agricultural zoning" is appropriately implemented and, on the other hand, supporting agrarian practices with further economic and institutional incentives.

Apart from the privately-owned agricultural lands, the main factor that facilitates building encroachment on state-owned musha' is the lack of a specific custodian to these landscapes that fall under the jurisdiction of several public agencies that don't necessary cooperate. Hence, falling between the cracks of the administrative bureaucratic legislative differences between various Lebanese authorities. That later represented a loophole used by powerful political parties to bypass regulations for the sake of their economic benefit.

Another influential reason that encouraged the expansion and the morphological transformation of the built environment was the development of primary road network cutting through the agricultural fields and along the river bed. Today, more residential and commercial buildings continue to develop along the main roads, regardless of existing land-uses.

After presenting the threats hindering the existence and sustainable development of musha' landscapes in Tibneen and outlining the forces behind those threats, the next chapter will respond to the identified challenges through a set of planning and institutional frameworks as well as strategic design interventions and recommendations.

CHAPTER VII

THESIS RECOMMENDATIONS

The thesis recommendations are divided in two sections. First, a planning section that introduces the framework of intervention. Second, a design strategy is outlined within this framework.

A. Planning Framework: Reclaim Communal Ownership and Revive the Institutional Framework of Musha‘

This chapter will start by proposing a property framework that aims at reclaiming communal ownership of musha‘ landscape, revive institutional framework of musha‘ as well as recommend planning guidelines, strategies and incentives that helps in the protection, preservation and management of musha‘

1. Property Framework

Recognizing the communal dimension of land ownership may occur by reintroducing the notion of musha‘ in the land registry as a sub-category of propertied ownership. This may occur by recording on privately held land titles a “notation” of musha‘, pointing to a communal significance of a property. Hence, lands that constitute landscapes with shared meaning and communal significance will be recognized legally under the musha‘ sub category (e.g. municipal property- Musha‘ (ملك بلدي– مشاع) or *mulk*- Musha‘ (ملك- مشاع)). This notation, in turn, will need to introduce restrictions on

the use of land as well as incentives to encourage their communal functions. To manage this process, an institutional framework needs to be introduced.

2. Institutional Framework

To protect Musha‘, the thesis aims to revive the institutional setup that was historically associated with Musha‘. This could include the following frameworks:

a. Musha‘ Council in the Union of Municipality

Taking into consideration that musha‘, based on the new definition, includes landscapes that spill over several villages, the institutional framework would need to establish an elected council within the concerned municipalities comprised of residents, landowners, farmers and stakeholders. The council members should include figures who are concerned about the public good. The role of the proposed council would concentrate on:

- Identifying sets of protective measures and planning regulations and incentives specific to each of the identified type of musha‘ such as forests, agricultural fields, river beds, etc.
- Revisiting and approving proposed master plans of the areas falling under the musha‘ category
- Securing funds for projects related to the common good.

The aim behind the establishment of this council is to promote communal engagement in the planning and management process and raise awareness in preserving musha‘ landscapes while reaffirming the communal sense of belonging. It will also build

a sense of collective ownership and reinforce the shared responsibility to sustainably preserve and manage communal landscapes for the sake of the common good.

b. Agricultural Cooperative

Being a resource pool, the farmers/agricultural cooperatives or musha' cooperatives is considered one of the fundemental institutions that guides farmers in various agricultural practices and production and provides essential ingredients for their practice, such as fertilizers, seeds, machinery, and fuel. The role of the farmer's cooperative could include:

- Providing training and educational forums for farmers by cooperating with international agricultural organizations and NOGs
- Establishing an Agricultural Research Development Unit
- Facilitating accessibility to available fertile lands and water supply
- Securing funds from local and international NGOs
- Addressing production matters such as the availability of water storage tanks, facilitating micro-credits for farmers ect, providing high quality seeds.
- Secure markets for agricultural products (marketing and branding) by developing a marketing and distribution unit
- Raising awareness of the importance of preserving the agricultural practice for the sake of the common good
- Empowering the agricultral cooperative is also essential in providing support for the Municipal Technical Office in projects related to the agricultural fields

c. Municipal Technical Office

In order to secure funds from major donors and institutions as well as gain technical support in the implementation and management of projects, The Municipality of Tibneen should consider establishing a technical office. The role of the technical office extends beyond the agricultural sector to include other musha‘ landscapes, including forests. The proposed technical office will act as the focal point of communication between different public agencies that govern and manage various landscapes. It would also support environmental projects such as eco-touristic projects, preservation projects, maintenance and management.

Hence by creating a technically capable management body, the Municipality would be better positioned to attract and administer project funds and expertise. The Municipality can leverage technical support without cost by establishing a relationship with a university or a university program to conduct studies, assessments and research that can be used by the technical office to identify and explore the feasibility of potential projects for which to solicit funds and expertise. The Municipality could incentivize such university studies by providing a working space in its own headquarters (the Serail), guaranteeing access to Municipality officials, and creating a repository of studies and maps previously created on Tibneen.

3. Planning Franework: Land use and zoning

To respond to the challenges and threats outlined in the previous section, the thesis suggests several planning guidelines and incentives to support the regulatory transformation.

- Redefine the boundaries of regulatory plans according to the identified musha‘ landscapes where planning guidelines and strategies are not limited to the administrative boundary of any village, but rather respect ecological continuities and hence ensure ecological integrity in these plans’ approaches.
- Recognize and preserve the ecological corridor while managing water resources by enforcing protective measures to prevent, on the one hand, further expansion of building sprawl, and on the other hand, new development of roads along the river bed. A protective buffer zone of a minimum width of 50m shall be preserved along the river bed where plots situated within this buffer are prohibited from any development activities.
- Protect natural heritage by safeguarding landscapes that contribute to the collective identity and preserve ecological, environmental, cultural value. This is achieved by prohibiting building development as well as road development within the forests. The municipality should consider relocating the UNIFIL camp to a new location with less environmental and ecological drawbacks while reclaiming parcel 2272 and reintegrating it within the forest. Furthermore, the forest should be utilized in income generating eco-tourist projects that enhance recreational opportunities and encourage pedestrian accessibility while restricting vehicular one.
- Preserve productive landscapes, enhance agricultural practices and encourage economic viability: This is achieved by enforcing protective measures and planning guidelines that are not restricted to the cultivated fields of Tibneen but should also be imposed on the agricultural fields Sahel el Khan as a whole. The planning guidelines includes (a) prohibit new road development within the

agricultural fields of Sahel El Khan (b) prevent land pooling and subdivision (c) restrict building sprawl within the agricultural fields to plots that are situated along the existing roads with a minimum lot size of 5,000 sq.m. The later guideline discourages the development of further roads towards new plots.

- Planning strategies also include encouraging landowners to maintain their agricultural fields through incentives facilitated by the municipality such as the property tax incentives**.** The latter incentive is considered among the traditional planning methods used to protect agricultural fields by alleviating the taxes imposed on lands categorized as agriculture compared to other types of properties. In this vein, Zeineddine (2014) suggested in his thesis that focused on the protection of Sahel el Khan another strategy to protect the cultivated fields, a 'market-base planning incentives' such as "Tax on the View", "a common taxation mechanism where property owners are taxed on their private benefits of shared goods" (Zeineddine, 2014, p. 66). This tax is applicable to house owners who use the "view" of the agricultural fields to increase the quality and value of their private residence. The aim for this incentive was, on the one hand, to impose higher taxes thus demotivating people to build in the agricultural fields, and on the other hand, make use of the tax generated money to support community-based development projects such as training programs, agricultural extensions and local farming. This intervention works well in line with my thesis since it complements the earmarking of the musha' with actual incentives that support its making.

B. Design Intervention and Conceptual Approach

After outlining the planning, regulatory and institutional framework, the thesis proposes a strategic design interventions tackling the agricultural fields of Tibneen and another conceptual approach tackling the river bed.

1. Strengthen Landscape Connectivity and Ensure Communal Accessibility

One of the fundemental aspects in preserving musha‘ lies is in maintaining and protecting the tangible landscape features that are linked to the memory of the place and contribute to the collective identity. In the case of the agricultural musha‘ of Tibneen, this includes essentially preserving and protecting the privately owned agricultural fields, which are appreciated by the community as scenic landscapes, green public recreational spaces, and a fundamental source of livelihood, as well as the terraced agricultural landscapes, which reflect sustainable rural practices.

Inspired by the proposed definition of musha‘ and the comprehensive analysis of Tibneen’s landscape, it is believed that preserving and protecting musha‘ has significant socio-cultural and ecological implications. On one hand, preserving musha‘ will protect the social practices and communal experiences associated with those open landscapes. On the other hand, reinstating musha‘ landscapes revives the shared memories and maintains the character and spirit of the place. Building on the identified social practices linked to the agricultural musha‘, this thesis proposes to preserve the main walkway used by the local residents in their everyday activities and that contributes to the shared experience of the place.

The significnace of the green public promanade is in it being a tangible componennt acting as connective element linking the agricultural fields with the

Kazdoura, a cultural walkway, that connects along the same pathway the old historic core, the citadel, the green buffer zone, and the Mashrou el Akhdar. It also extends beyond the municipal boundaries of Tibneen to physically connect the village with nearby villages, specifically Safad al Batikh, Haris, and Haddatha.

The small agricultural pathways are also of the same importance as the green promenade. The preservation of those natural connective pathways is vital in linking the agricultural fields of Tibneen with the agrictural fields of near by villages. Hence, the proposed intervention aim at maintaining a network of interconnected natural agricultural pathways and green public promenade acting a s connective tissue linking the agricultural musha‘ of Tibneen with other musha‘ landscapes within the village as well as outside the village.

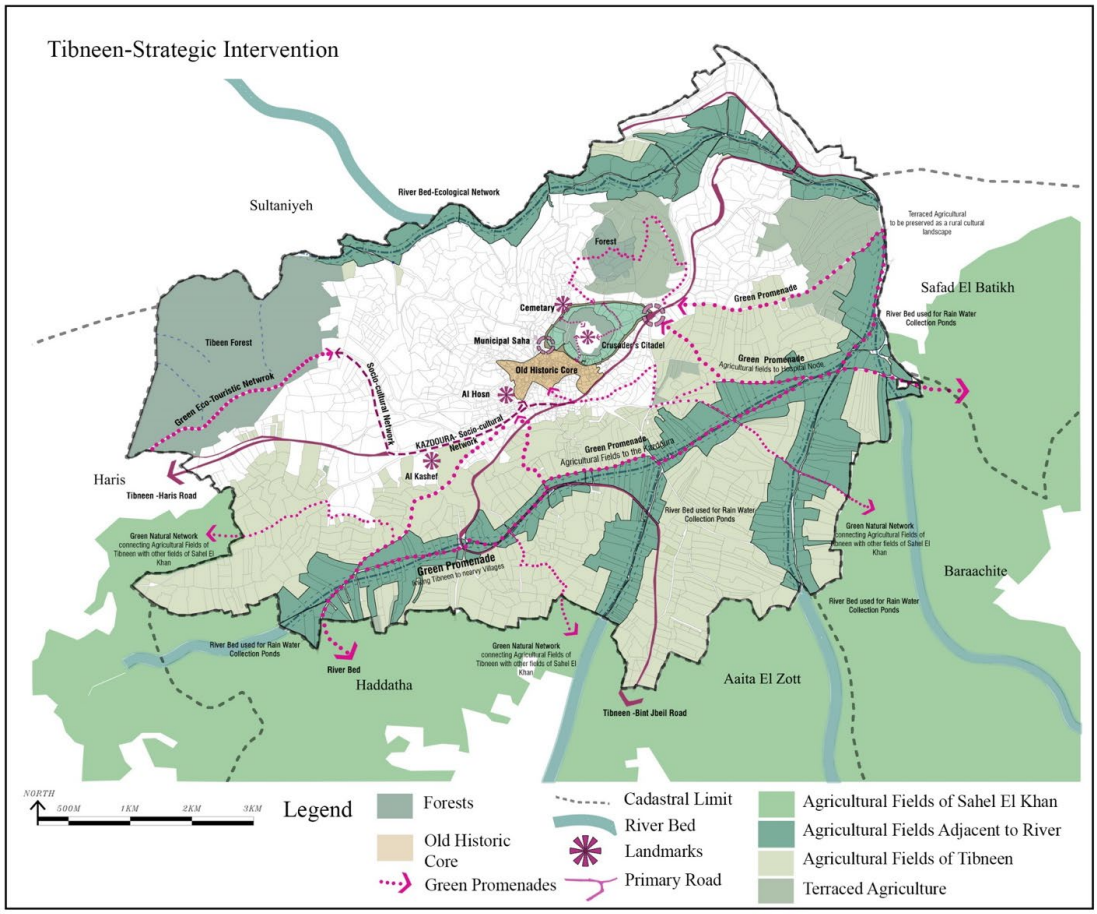


Figure 51: Strategic Design Intervention

The proposed green promenade will be used to enhance the experience and activate the place by maintaining the existing social practices and further injecting income generating activities. This promenade is envisioned as a public recreation space used for sports activities such as running, walking and jogging, but also as a strategic location for a fruit and vegetable market offering more opportunities for the farmers to sell their products. The municipality can also use this space for social activities such as marathons while the agricultural cooperative can make use of it for agricultural trainings and educational sessions.

Farm Market

Figure 52: Injecting Income Generating Activities in the Green Promenade such as Farm Market

Social Activities-Marathon

Figure 53: Activate the Green Promenade through Social Activities

In conclusion, the aim of the proposed intervention is to ensure connectivity, social viability and economic decelopment while maintaining the character and spirit of the agricultural musha‘, strengthening the communal sense of belonging and preserving the collective identity.

2. Preserve and activate the ecological corridor through small-scale water ponds

While discussing one of the essential musha‘ landscapes identified in Tibneen, the river bed comes to the forefront as an essential resource that was historically shared by the farmers of Sahel el Khan and was crucial in the prosperity and fertility of the

cultivated fields. However, as addressed in the previous section, extensive road development and contemporary built up expansions along the river bed is threatening this ecological corridor. The farmers are suffering from the scarcity of water, consequently struggling to sustain their agricultural practices given long drought seasons.

Hence, the seasonal river bed crossing through the agricultural fields of Tibneen is one of the musha‘ landscapes that should be recognized as an ecological corridor and reactivated as a resource that sustains agricultural productivity and practice. Referring to one of the exercises in the urban planning and design workshop in 2011, Ventresca and I worked on a strategic intervention that tackled the river bed addressing several factors that are negatively affecting the agricultural fields.

Influenced by the concept of the communal rainwater collection pond that historically used to be a good water resource feeding the irrigation systems of the agricultural fields, the proposed conceptual approach stress on using the river bed as a ground for establishing small collection ponds capturing and storing seasonal rainwater for off season use, thus extending the farmers growing season and crop options. A series of small and medium size collection ponds will be lined along the river bed with a PVC liner to prevent infiltration feeding the agricultural fields through a network of irrigation systems connected to the ponds. The budget of implementing such a project is considered to be reasonable with respect to constructing a huge collection pond as explained by Dr. Nadim Farajallah, which increases the possibility of finding funds especially that it could be implemented on phases.

The aim of the rain water collection ponds intervention is to revive and reactivate this musha‘ as a shared resource used by the farmers to maintain the agricultural production and expand the cropping options especially during drought seasons. The river

bed will regain its significance as an essential component contributing to the prosperity and fertility of the cultivated fields and in reviving the collective identity of the place.

The suggested conceptual approach will require further analysis and development to investigate the economic viability as well as the environmental feasibility of such a project. The involvement of water and irrigation experts in the development of the project is essential in advising and recommending the most viable and sustainable mechanism to be implemented responding to the water needs of agricultural fields.

Two of the previously proposed institutions will play an essential role in the successful execution of the project. The Municipal Technical Office will be responsible for securing funds from major donors and institutions as well as providing technical support for the implementation of the proposed intervention. The Agricultural Cooperative will in turn help farmers in implementing the right irrigation system fed by the collection ponds. The cooperative will also provide technical support including metering, monitoring, or conflict resolution that needs to take place. The rain water collection ponds project represents a pilot project that can be implemented in the villages that the river bed extends over.

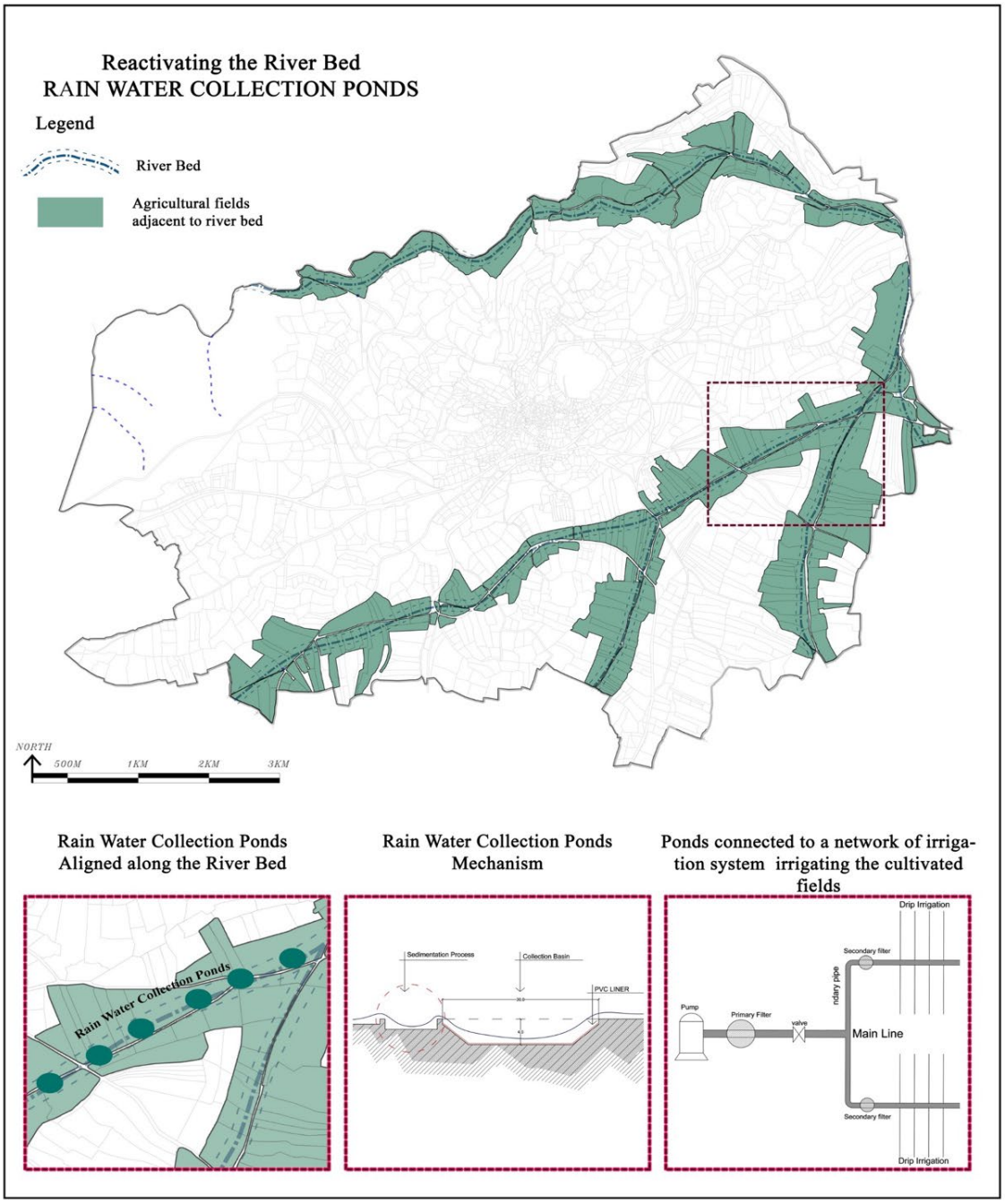


Figure 54: 8 Rainwater Collection Ponds Conceptual Proposal

C. Rethinking 2005 Tibneen Master Plan.

As discussed in Chapter 3, one of the main challenges the agricultural fields are facing is related to the planning process that was adopted in Tibneen, formulated in a land

use master plan. This conventional planning tool failed to respond to the social, environmental and ecological needs and in proposing a planning scheme that recognizes landscapes of natural significance and that contributes to mutual meaning of the place. Instead, it consolidated the propertied interest of those who value their lands as a real estate asset, hence, altering the communal understanding of the village landscape (Fawaz 2016).

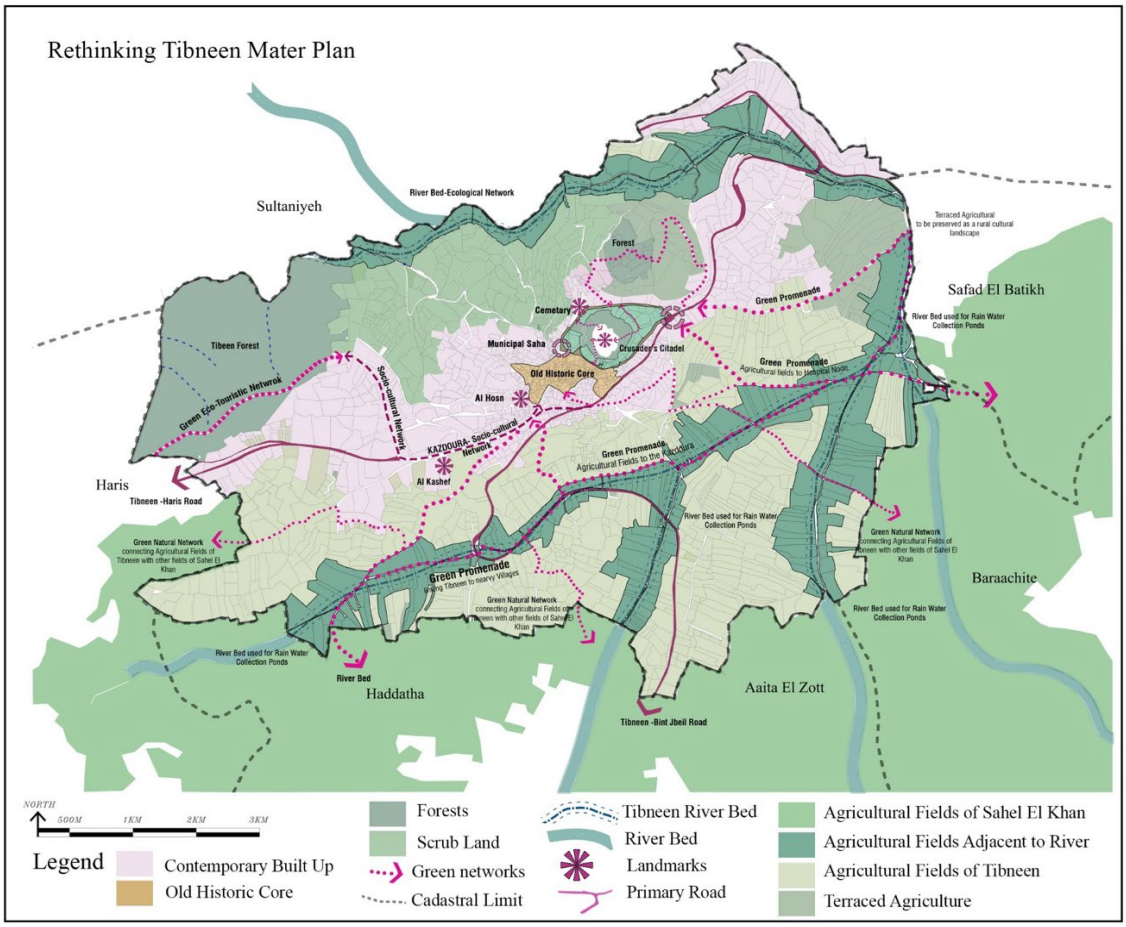


Figure 55: Rethinking Tibneen Master Plan through the Concept of Musha‘

In conclusion, the application of the ecological landscape approach in this thesis proved to be a promising approach in holistically reading, comprehensively analyzing and understanding the landscape based on the biotic, abiotic and cultural attributes. The

thesis succeeded in reviving the collective shared ecological concept of musha‘ that was disrupted for the past 100 years by privatization and lack of clear legislative protective measures, hence revitalizing the ecological and socio-cultural dimension of musha‘. The implementation of the ecological landscape associations also helped in preserving the homogeneity of musha‘ landscapes that overlaps cadastral boundaries and crosses over individual privately-owned lands regenerating one of the historic fundamental characteristic of musha‘.

The application of the ecological landscape approach also helped in preserving the natural heritage of the village, protecting the scenic landscape and shared public green space, preserving the communal practices associated to those landscapes and ensuring landscape continuity, ecological integrity and sustainable development.

This suggests rethinking the fragmented compartmentalized traditional planning approach and integrating the ecological landscape methodology in the planning process. The latter approach will help in identifying and appreciating musha‘ landscapes that hold natural and cultural significance and that contributes to the collective identity of the village and consolidates the communal sense of belonging. It will also aid in identifying damaging trends threatening the existence and continuity of musha‘ landscapes whether built or natural. It will also help in developing community based sustainable design and planning guidelines that responds to the social, cultural, environmental, ecological and economic needs rather than prioritizing one at the expense of the other.

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