AMERICAN UNIVERSITY OF BEIRUT

AN INTEGRATED ECOLOGICAL AND PLACE-BASED LANDSCAPE APPROACH TO RETHINKING ZONING IN JEZZINE, LEBANON

by

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ABSTRACT

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Title: An Integrated Ecological and palace-based Landscape Approach To Rethinking Zoning in Jezzine, Lebanon

Unrestrained growth of settlements in Lebanese mountains is fragmenting and undermining spatial relationships between the built and natural environments. One of the main factors driving this growth is the outdated and real estate centered zoning plans for town and cities. This growth is leading to the fast paced loss of cultural and ecological landscapes gradually transforming mountains into built landscapes.

This thesis requestions the tool of zoning by adopting an ecological and place-based approach to propose a new zoning plan for the town of Jezzine, Lebanon. By combining ecological design principles, landscape character assessment, and place-based tools in a GIS environment. Areas that are culturally meaningful to the residents and ecologically sensitive were identified and mapped. This outcome was overlaid on the current zoning plan (2015) to develop a new zoning plan for Jezzine. Areas were proposed to be protected and conserved while guiding development. The proposed zoning plan includes 36 zones (an increase of 22 zones). The zones were named with culturally meaningful titles with guideline descriptions of each. The results provide a new approach to zoning in Lebanon that guides development and protects sensitive areas.

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CHAPTER I

INTRODUCTION

According to Makhzoumi & Pungetti,"In countries of ancient tradition, the shaping of the land derives from both natural and human agency which, combined, produces the cultural landscape" (Makhzoumi & Pungetti, 1999).In order to maintain these cultural landscapes and the morals and qualities embedded in them a state of equilibrium between the local conditions must be reached (Makhzoumi & Pungetti, 1999). This balance is not happening in different contexts, especially in Lebanese rural towns. Nowadays, numerous towns are experiencing the adverse conditions of growth and decline caused by numerous factors such as:

- The abandonment of the agriculture lifestyle which in turn led to major modifications of the environment (regrowth of woodlands, deterioration of terraces (fig.1), and increase in forest fires. These combined factors are threatening the viability of agricultural production and eco-tourism that constitute main sources of income for locals in this rural section of the country (UNEP, 2002).

- The uncontrolled economic diversification, which made it possible to free rural development from almost total dependence on agriculture. Although some of these developments such as real estate developments (fig.2) and, quarries have a profound impact on these cultural landscapes as well on the natural landscapes, causing: degradation of water quality, loss of indigenous vegetation, plants and the loss of productive land (Darwish et al., 2010).

- The outdated building laws and urban planning regulatory frameworks that do not respond to twenty-first-century dynamic in this part of the world, in Lebanon and Mount Lebanon in specific (Fawaz, 2005).

- The migrations of locales from country areas towards coastal cities due to wars and conflicts from one side and in search for profit from another side, since the major economic activities are concentrated there (UNEP, 2002).

These combined factors have an impact on the integrity of the built and natural fabric, and on the relations of these communities to the land, which had historically been successively produced by traditions and spatial practices, as well as synchronized with climate diversity and the natural setting. Accordingly, uncontrolled growth is leading to devastating effects on the natural environment of these settlements as well as on their local communities, thus, raising concerns that the distinctiveness of these cultural landscapes would be lost due to new developments.

Figure 1. Deteriorated Terraces in Jezzine town. This photo illustrates how the abandonment of agriculture and land leads to the deterioration of the natural rural environment in Lebanon. Taken by Author 2014.

Figure 2. New developments in Jezzine town, taken by Author 2016.

A. Exploring Jezzine's Cultural, Geographical and Historical Contexts

In Lebanon, the policies of reconstruction and development in the post-civil war period corroborated the macrocephaly of central Beirut, since the major part of development projects were allocated there. The percentage of reconstruction budget that is given to rural, and agricultural areas did not exceed one-third of the planned reconstruction expenses during the first stage, although these zones constitute 80% of the Lebanese land (Harb, El-Kak, 2000).

Following the liberation of south Lebanon in 2000, rural towns did not gradually develop in Casa Jezzine, but suddenly and erratically. The capitalist process of rural development which aims to generate income from real estate rather than from agriculture and tourism industries has resulted in a drastic deterioration of the environmental quality and the way of living in rural towns. Challenges include standardized and monotonous rural landscapes as well as decreased quality of fabric morphology (Fischfisch, 2011). The major catalyst for this transformation is the replacement of traditional, smaller buildings and agricultural areas, with out of scale and

monotonous forms of architecture as shown in (fig.3,4). The sprawl patterns are mainly motivated by new housing, large blocks that result in residential areas with homes that have no character, built to the lowest standard allowed by local planning schemes and building codes. This trend has a disturbing effect on the once unique place character of Jezzine towns transforming the place character from Mediterranean agricultural town to a suburban town dominated by block housing and suburban sprawl as the comparative figures three shows.

Therefore, the current situation in Jezzine raises challenges to architects and urban designers to explore new approaches to urban design and planning that create a balance between the natural and built environment as well as between the new developments and old fabrics, while taking into consideration the evolving needs of locals in these rural settlements.

Figure 3.Comparison between old and new Jezzine townscape. This photo illustrates the shift in Jezzine character from agricultural Mediterranean town character to a suburban character. Retrieved from: https://www.facebook.com/Jezzine/photos/.

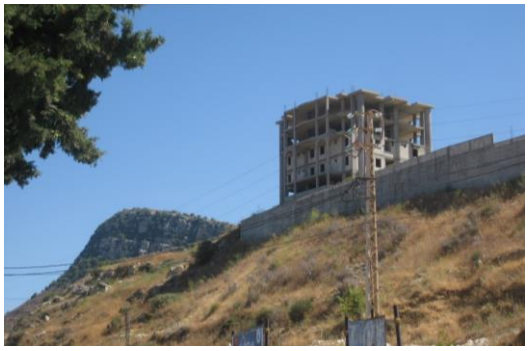

Figure 4. New building under construction in Jezzine town. This photo illustrates how the new developments are out of scale and does not relate to the surroundings. Photo Taken by Neaimeh, R.

Jezzine is one of the most famous towns in the South of Lebanon. In the Syriac Language, the word "Jezzine" means a store. Accordingly, historians believe that Jezzine used to be a storehouse due to its location on the caravans route going from the ancient port of Sidon to the Chouf and the Beqa‟a Valley to Syria. All the remaining monuments such as the archeological sites, the ancient sarcophagi and Crusader remains indicate the significant historical role the town had in the past. (Towns, 2007).

Jezzine is situated in the center of Caza Jezzine. It is 22 Km from Sidon and 40 Km from Beirut. Located on the slopes of Taoumat Niha with an average altitude of 950m, it is surrounded by four mountains: Taoumat Niha, Taoumat Jezzine, Jal Aali and Jabal Toura (Rahal, 1983). Jezzine is located along an ecological river corridor.This river water channel originates from the South-West of Jezzine and results in a glorious waterfall that cascades a 90 m cliff at its North. This reality led the city to be known as the "City of Falls." Also, Jezzine is rich with its high level of rain and snow which occurs 75 days on average of 620mm of precipitation per year (Jizzine, 2014).

Accordingly, the abundance of water coupled with Jezzine's environmental features topography, organic soil typology, sun exposure and microclimate has made

Jezzine so attractive for people to settle in and for agricultural and tourism to take place. In addition with time, these attributes has attributed to this place character where settlements are dispersed within this natural landscape of forests and cliffs (Rahal, 2006).

However, after it's Liberation in 2000 and it's reconnection with the rest of Lebanon, Jezzine began witnessing unrestrained growth. This unrestrained growth can mainly be attributed to the conventional zoning deficiencies in managing this cultural landscape.

B. Problem of conventional zoning

Planners, developers, and the general public similarly recognize that, for all its worthy purposes, conventional zoning in Lebanon has not been without deficiencies. The classifications and regulations, that this zoning has advocated to protect Lebanese cities environments and welfares, in practice have led to diverge and undesirable effects. Even, the severe segregation of land uses, shared with stringent controls on physical development zones, has created disagreeable patterns of development that stratified uses even when such diversity is more desirable. Therefore, rather than producing a cohesive urban environment, zoning has too often fragmented the city natural, built and cultural fabric (Fawaz, 2005). Accordingly, it became clear that an alternative to this type of zoning is needed.

Jezzine's first zoning master plan has been released by the end of 2000, after the chaotic building's construction boom took place following the South liberation. The city before the 2000 zoning master plan was considered as part of the unregulated zones

of the Lebanese territory. Therefore, any lot of Jezzine before the release of the 2000 zoning master plan could have been subject to building and sprawl under the unregulated areas decree, which reserved 30 percent of the land surface area for exploitation and 90 percent as for total exploitation. Although, the 2000 zoning master plan has regulated the land uses, demarcated physical zones and set general and detailed regulations for the area. However, we can still say today after 15 years of its application, that urban growth in Jezzine is still disturbing this cultural landscape badly, and that this master plan method and framework are not sufficient for growth containment. The 2000 zoning master plan has been revised and altered several times since its initial release. However, each alteration or revision made over the years reflected only the socio-politic dynamics of the era, were the self-benefit of certain stakeholders in relation to property values were being materialized, by the manipulation of the administrative zones boundaries or by the alteration of the development rights percentages.

Therefore, today it became obvious for people as well as for urban planner and designer that this outdated approach to urban planning and design remains incapable to pair the whole cultural, natural and social dimensions into its framework. As a result, a new approach to planning should be adopted in such specific context, before the damages would become irreparable.

C. Thesis Context

1. Thesis Proposition

The current threats the cultural landscape in Jezzine is witnessing, in combination with the current zoning master plan limitations leads us to frame the study by raising the following research questions: How can the existing zoning master plan be overlaid with measures and policies to safeguard these cultural landscapes, while considering inevitable growth? How can landscape ecological design inform a holistic approach to zoning in Jezzine while being place based? How can the ecological landscape design method be embedded into the planning process while being socially inclusive?

This situation amends having a holistic and integrative outlook that is based on ecological understanding and awareness of the potentialities and limitations of Jezzine cultural landscape. This thesis will tackle this limited approach to urban planning by adopting an ecological and place based approach that offers a framework for uniting conventional perspectives on zoning planning with environmental ones, by including the consideration of ecological concerns at significant spatial and temporal scales. This aim will be achieved while adopting the Ecological Landscape Association method (Makhzoumi & Pungetti, 1999). Also, this ElA method will be enriched by combing it with a place based method, since design and zoning plans that protect cultural landscape should be simultaneously aware of local landscape resources as well as locales values and experiences, since the distinctiveness of this cultural landscape is the domain of both. This combination will achieve landscape sustainability and a design approach that respects scale, community, traditional knowledge and the the wisdom of nature's own

processes. Such understanding ensures that in accommodating future growth negative impacts on cultural landscape diversity is anticipated.

2. Thesis Structure

This thesis is divided into three main parts: The first part includes the introductory chapter which resumes the general context of Jezzine and the tackled issue. The literature review chapter that highlights the deficiency of the conventional functionalist zoning approaches. Also, in this chapter, the framework of the ecological landscape design approach is presented as a suitable approach for integrating the ecological landscape design into the zoning and master plan process. Finally, this section elaborates on the research methodology the thesis will be based on, while exemplifying inquired lessons from analyzed international cases.

The second part includes the analysis of Jezzine's landscape data layers. This analysis will form the platform for understanding and associating between the different components of Jezzine's landscape. The methodological approach of ecological landscape association will be used throughout this thesis to guide the analytical phase and later the intervention phase.

The third part will include a concluding chapter that illustrates the limitation, significance, recommendations and future aspiration of this case study while comparing the conventional zoning approaches to master planning and the ecological landscape design. The following map illustrates a conceptual model for the thesis structure (fig.5).

Figure 5.Thesis structure, by Author 2016.

3. Thesis Significance

Jezzine, locals and visitors have an ongoing intimate relationship with this mountainous environment; this relationship has been stretching over thousands of years up to the present day. This relationship with the immediate environment can be detected through the various cultural sites and cultural values present along Jezzine landscape. These cultural values were built upon a long tradition of ownership, traditional use, cultivation, utilization, spiritual connection, cultural significance, ancestral influences and respect for the land and rural life, including the resources that land and mountain provide. Therefore, establishing and considering sense of place, while rethinking the zoning master plan of this area is just as important as the preservation of physical components of the landscape, since this association with nature has led people through history, to develop different methods to manage and cope with the landscape natural resources and settlement patterns. Accordingly, and in this perspective this thesis illustrates three methodological significances: Firstly, this thesis examines the possibility of integrating the landscape ecological approach to the master planning process to produce a dynamic and holistic zoning master plan. Secondly, this thesis enriches the ecological landscape design method, while combining it with a qualitative place based procedure to advocate the collective voices and experiences. Thirdly, by being a pilot case study model, that can be applied in similar settings, due to its capacity to trespass the studied case boundaries and to connect to all Lebanese rural cities/villages. Especially, those that have been already approached with the landscape ecological approach, such as Saida coastal city, which will result in landscape connectivity effect and a holistic understanding of this rural cultural Lebanese landscape.

CHAPTER II

THEORETICAL BACKGROUND

This literature review illustrates an overview of the ecological landscape design framework as a suitable design approach in the Mediterranean context to embrace nature and culture as an alternative to the existing conventional zoning master plans. This chapter will be divided into four sections. The first section will tackles the dynamic definition of heritage and what makes the distinctiveness of a particular cultural landscape. The second section demonstrates the shortage of modernist zoning master plan ordinances in integrating a sense of place and landscape ecology. This section is exemplified in the Mediterranean context, by the Lebanese invalid regulatory zoning master plans in reacting to twenty-first-century dynamics. The third part complements the second section by illustrating the suitability of the theoretical framework of ecological landscape design approach, in comparison to the outdated modernist zoning in embracing the cultural and natural layers especially in the Mediterranean context.

A. Cultural Landscapes

The UNESCO in the universal declaration on cultural diversity in the 21 st century has defined heritage as follows: “Having at one time referred exclusively to the monumental remains of cultures, heritage as a concept has gradually come to include new categories such as the intangible, ethnographic, industrial heritage as well as natural heritage. The concept of heritage in our time accordingly is an open one, reflecting

living culture every bit as much as that of the past" (Universal Declaration on Cultural Diversity, 2001). Such a dynamic definition of heritage connects heritage to all aspects of life where people lifestyles, beliefs, aesthetics, ways of using their land and of living harmoniously with their surrounding environment, habits and customs, architecture and arts all become tangible and intangible products that are tied to heritage.Subsequently, such a definition for heritage also entails cultural landscapes, since cultural landscapes are defined as the result of shaping the land over an extended period by both natural and anthropic impacts (Makhzoumi & Pungetti, 1999). Therefore, any understanding or exploration for rural settlements where new design approaches are to be considered should be preceded by an understanding of these cultural landscapes, because they incorporate the cultural as well as the natural aspects. Therefore, to understand what could protect these cultural landscapes, designers should first recognize that cultural landscapes are outlined around perennial values which are a set of values and local codes that have withstood time. Aware of their importance, the society, with the passage of time, increased their value. Thus, perennial values and protection of cultural landscape are directly related to each other.As a result, the challenge for the protection of the cultural landscapes becomes to increase their resistance by preserving their perennial values which in return, keep their physiognomy and functionality. However, the insertion of cultural landscape dynamics in a given geographical landscapes is still complex, since it requires an integrated approach with respect to particularities and local distinctiveness (Ioan , Irina, Valentina, & Daniela, 2014).

Accordingly, to embrace an integrative approach to planning and designing for these cultural landscapes, understanding at first the problem of existing conventional

zoning in integrating these cultural and natural dynamics are of vital importance. This zoning problem will be tackled in the following section.

B. Zoning Approaches

1. Modern Approaches to Zoning

Nowadays cities all over the world are undertaking different processes of growth: some are shrinking whereas others are expanding. However, all cities are now interrelated and connected by various sorts of networks, which will determine their future of universal nature, due to the shifting of production means and the staggering increase in communication speed. Unfortunately, and simultaneously the growing environmental challenges are affecting the entire globe. The bulk of environmental issues originate in human interference in the natural environment. The ecological disaster is a predicament of unsuitable design-it is a consequence of how cities have been developed and ecoscapes used. The problem essentially, has been due to the insufficient integration of ecological concerns into planning (Shu-Yang et al., 2004). Conventional zoning is not immune from these dynamics, nor is it uninfluenced by these processes. However, its regulatory system that is well known for its static nature, has demonstrated its limit to integrate these twenty-first-century dynamics as we will see in what follows:

a.Governance Deficiencies

Conventional zoning acknowledged stability is mainly maintained by land use planning. This approach to zoning offers predictability for landowners and developers, by supplying them with information on development rights before any investment is pursued. This process minimizes the risk of proposing new developments. However, most of the time, this static nature of the regulatory systems is not supple enough to effectively handle alterations in economic trends, social needs, and social values.

In order to address this static nature of conventional zoning, multiple toolkits have been embedded into dogmatic zoning decrees through last decades. These regulatory amendments took several forms such as special exceptions, incentives vs. expectations, special use permits, contract zoning and rezoning. However, all of these methods for the containment of growth and change, have in fact increased developers and landlords profit by enabling them to negotiate and inquire facultative decisions regarding their zoning permits. This reciprocal process of negotiation between developers and public officials in practice was defined by Richard Babcock as “zoning game” (Stach, 1987). These fluctuating zone approvals, permits exceptions and unequal variance through years of practice, have undermined the foundational idea conventional zoning have been laid upon as a provider of predictability and certainty. Therefore, this training became nowadays a type of governance without substance, playing the role of shield for untraced administrative and legislative decisions under the general title of urban planning and zoning (Stach, 1987).

b.Environmental Deficiencies

In addition to being static conventional zoning often produces dissonance and monotony in urban developments; this condemnation is based on the rigid design amendments conventional zoning applies that decreases innovation and design intuitivism as well as segregates and separates land uses. Therefore, once applied, this stratification of land uses becomes harming for the natural environment, for example, dependency on daily car use becomes a must to accomplish daily tasks.

These tangible conventional zoning consequences undeniably reflect that conventional zoning ordinances have been primarily based on social and economic considerations, more than environmental and cultural consideration. Therefore, the destruction and consumption of agricultural lands, arable lands, forest, and watersheds become, in this perspective; symptoms and evidence of these outdated zoning measures to protect the natural and ecological layer (Marwedel, 1998).

c.Socio-Economic Deficiencies

Conventional zoning has multiple economic and social drawbacks that have been tackled in detail by different scholars but foremost it has two main socio-economic deficiencies. Firstly, it has an exclusionary approach to planning that manifests itself clearly in the adopted top-down approaches that excludes a vast range of stakeholders and people classes. Secondly, it has a speculative influence on real estate values, which increase whenever a zone is classified for building developments. In addition, these speculations would amplify in combination with paperwork delays that developers

tolerated for getting their zoning permits, and if the classified zones were limited in vacant lands (Marwedel, 1998).

Therefore, we can see that conventional zoning and modernist attempts of planning have neglected the aim of ensuring continuity in urban development. Therefore, the city became a combination of fragmented zones of developments and land uses. Accordingly, and in uniformity with this perspective, the historic city natural, urban and cultural layers were no more considered as part of modernity,or a component to integrate; it became a fragment. As such and in reaction to this reality, a joint architectural urbanism conservation movement came to the forefront. However, with time, this conservation approach has reached its limits and has ceased as much as urban planning to react to the necessities of a mobile, multi-layered, globalized urban society. This condition is mostly factual in regions of the world where the recognized codes, are ordinarily of Western origin, have been imported, and are not integrated into local practices that reflect localities urban values, cultures, natural resources and social perceptions. Lebanese regulatory zoning master plans fall into this section as we will see in what follows.

2. Conventional Zoning in Lebanon

The notion of town planning in Lebanon has been defined in title II (articles 5-19) Act of September 24, 1962. Later, in 1983, the urban planning law was released, and it is still in use till today. This planning approach has been mainly based on the French mandate urban planning practice. In Lebanon, conventional urban planning codes and ordinances employ a regulatory toolkit that serves the public domain as well as the

private domain. This toolkit becomes visible by directory master plans when it regulates the public realm, and zoning permits and detailed master plans when it regulates private development (Fawaz, 2005).

In definition, master plans represent a legal document designed to outline in detail the provisions and regulations that organize the collective life of the localities and agglomerations. It is the physical representation of the law of urban planning in Lebanon at the level of the locality or the agglomeration within the wider framework of general territory planning. In order, to better understand what a master plan do and its consequences on planning localities we need first to understand what it contains. The content of an urban plan under Article 6 of the Act of September 24, 1962, entail two main parts:

- The first being the plan on which are brought physical planning and operations organizing the locality or the urban area in question;
- The second regulation embodied in a text which defines the conditions for use of the land and building of buildings (harvesting ground coefficient, the coefficient of the overall operation, classification of the region, urban easements, aesthetic considerations , archeological considerations).

Two categories of urban development plans exist: the “Schema directeur” and the “Plan detail d’urbanisme”.

a.Schema Directeur

The directory plan traces the general framework of action in agglomerations and presents an overview of the project while laying down the basic planning rules.

Directory Plan is binding from the date of its publication unless otherwise decided. The directory master plan must indicate:

- The boundaries and, if needed the modes of use of the road network that it is to retain, modify, or create.
- The boundaries and, if needed, the places it is necessary to retain, modify, or create.
- The regions and the interior of these regions that need to be fitted for a specific use or a particular form of habitation, as well as those minted by a final or temporary decree.
- The areas that should be reserved for construction or public use. Also, they must indicate the areas that must be reserved for conservation.
- The areas where the installation of industrial, commercial and other institutions - and growth of existing ones - is prohibited or regulated.
- If necessary, draft amendments to the form and the size of the parcels of land to an appropriate development.

These provisions relating to the master plan, compounded by those laid down in the regulations referring to all of the particulars on the scheme. Establish a set of regulatory easements that serve the needs of public safety, health, traffic or embellishment (Mallat, 1982).

b. The Detailed Master Plan

Detailed master plans and detailed regulations lay down the conditions for the implementation of plans and guiding regulations for each area and each district. Thus,

the urban detail plan specifies the provisions which do not appear in the Director Master plan or which are mentioned in a general and comprehensive manner as an option. Therefore, detailed master plans determine the mode of using a limited geographical space while providing the detail of the actions of promotion or renovation needed(Mallat, 1982).

Although the general and detailed plans have been set since 1983 and although general and detailed planned have been updated several times by the authorities, however, the deficiency of the current planning framework in regulating urban growth can be clearly seen today on locale as well as on national scale. In this perspective, rural cultural landscapes don't present an exception. According to Mr.Mohamad Fawaz, the Decree 71/2165 has been applied for 20 years, and its results are now obviously seen. Therefore, the order and model that has led to this chaotic urban growth is not suitable and must be altered. The symptoms of the current urban planning deficiencies can be seen by the presence of:

i.Scattered Buildings

The scattered buildings result in losing the neighborhoods' unity and in increasing costs for the public companies to ensure services for citizens as roads, water, electricity, phones, and drainages (Fawaz, 2005).

ii.Unregulated lands

In Lebanon, construction is allowed in all areas, even if the lot designated for construction is not equipped with general services or even if it is unaccessible also, in

non-urbanized areas, which consitute 75% of the Lebanese territory, the construction law allows the construction in a density equal to the allowed construction density in the city of Marsilia, instead of imposing higher protection measures on land use due to Lebanon small area.

The constructed areas in towns, till to date, does not exceed 6% of the real estate scale space of the town, and it is not accepted to allocate the remaining 94% for construction from now. The percentage of the 6% from the open French properties for construction equals 30000 square kilometers for 55 million of the population, so if we take the same proportion for Lebanon, the open area for construction needed would not be more than 1900 square kilometers if the classified zones were limited in vacant lands and rather than 10452 square kilometers (Fawaz, 2005).

iii.Constent provisioning of exemptions and exceptions

Lebanese citizens have been accustomed to exemptions decrees that are issued approximately every ten years. These exemptions lead to solving settlement irregularities, by leading people to apply for exemption forms and by paying small fees. These procedures, in reality, are considered incentives rather than repressive measures, since by exempting the irregularities, outlawed developers double their financial profits (Fawaz, 2005).

iv. Continuous Failure In Protecting Valuable Agricultural And Touristic Sites

The agricultural production constitutes an important part of the country's income and a substantial factor in the environmental country's economics. In parallel,

tourism and eco-tourism constitute essential contributors in the Lebanese future economy; however both sectors are not seriously planned and protected. Therefore, protecting these touristic sites and natural areas is a must since, protecting these areas would:

- Preserve agricultural valuable lands from speculations, instead of being planted temporarily by landowners while awaiting developers' higher bids.
- Form a platform for future developments and job provisions in these sectors.
- Preserve these valuable lands from being subdivided into smaller units inefficient for agricultural production (Fawaz, 2005).

v.Unsecured Future Needs

Land areas that are pretty ready for construction projects exceed the present and near future urban development needs. Inhibiting, sorting, and building in areas that are considered isolated from construction and where there is no urgency to it in the present or the near future is therefore of vital importance (Fawaz, 2005)

A we can see, conventional urban planning for cities has eradicated mixed uses and segmented cities, while being unsuccessful to protect agricultural lands, scenic beauty and natural resources, as well as unsuccessful in controlling the sprawl over the outyling natural landscapes which threatened these cities distinctiveness. In reaction to this reality, many scholars tried and in different discplines to rise awarnes of zoning deficiencies and to present solutions from different angles. The main issues tackeled ranged from how to consider: urban form and typo morphology , civic engagement, urban values, spirit of place and economy till lately natural processes.

Although their key importance in enhancing urban planning and urban design all these study have been limited in some perspectives . Therefore, today, we face a twofold challenge in urban planning, since urban planning as intended as a top-down political and limitative administrative process to regulate urban growth dynamics has evidently proved its limits and is being replaced by a variety of management, participatory and design tools. Similarly, urban conservation and land use segregation have also shown unable to guarantee the long term integrity of these cities physical and social fabrics. These challenges have become even more complex by the ever-changing context of urban management, where concerns about sustainability, ecology, social inclusion and the evolution of transportation and work patterns have become of supreme significance and will prove serious in the coming decades.

Finding a particular direction is implausible, given the variety of political, economic and social circumstances prevailing in diverse settings.. Accordingly, we must recognize which measures to abide by and that will enable us to mirror local circumstances and necessities, to attain an advanced order of objectives that guarantees the embedding of the principles and frameworks a society wants. (Bandarin, 2015).

This new condition foremostly has been addressed by researchers in the area of Ecological landscape planning, this new attitude towards urban planning opens up a new dimension for planning and designing especially for Mediterranean rural cultural landscapes.

As a result, the historic city's cultural and natural landscapes become a place-based model, to respond to new requirements, to express innovative physical and social

patterns, and to value what centuries of experimentation in the design of urban spaces and form have given us.

C. Ecological Landscape Design and Planning

1. Ecological Landscape Planning

With the growth of cities worldwide, ecological knowledge of cities integrated with social science approaches to direct the development of sustainable cities has proven to be mandatory. Many definitions and explanations have been set forth on ecology and urban planning which are considered the most influential means for the protection of nature, its development, and carrying it to the future. Here are some of the definitions with common goals:

The integration of cities and nature was mainly achieved in traditional planning primarily in the form of parks and open spaces design. However, contemporary design approaches have based their foundations and perceptions on the work of the Scottish-American landscape architect and planner Ian McHarg, who placed the discipline of landscape architecture at the center of the urban management process. The integration of ecology and urban values offers a suitable framework for studying the associations between ecology and humans in urban areas by endorsing Interdisciplinary and Transdisciplinary approaches (Wu 2008). According to Stitt (2009), ecological planning is defined as "the use of natural and sociocultural information so as to suggest various probabilities and restrictions in the process of decision-making regarding the use of natural resources". By focusing on making a

connection between ecological patterns and the processes, ecological landscape planning become an area of expertise within the scope of landscape planning studies, which embraces social and economic dimensions in terms of human activities and cultural values. Accordingly, ecological spatial units establish the foundations of ecological landscape planning in research and plan suggestions (Akpınar, 2008).

The favorable/restrictive conditions of an area biophysical and socio-cultural data are used in the ecological planning process when defining the optimal places for land use in areas which have not degraded yet. It is a planning approach that offers the opportunity to choose the best living space in terms of natural potential among our living spaces while considering sustainability and spatial organization of different types of land uses (Çelikyay, 2005).

Land use planning and decision-making with respect to the way of, and strategies for, using natural resources are embedded in the process of Ecological landscape planning. Moreover, ecological landscape planning entails the whole of the objectives that the society desires to achieve in planning as well as the process of physical change which results from the application of these goals. The optimum and continuous efficiency of the natural and artificial environments in all special physical planning form its primary purpose.

Ecological planning constitutes one of the main important sections of physical planning, and it is, in general, linked to the arrangement of the physical space for ecological objectives. In other words, ecological planning that is the complementary planning, filters special plan objectives while determining the negative effects of human actions along with the physical factors on natural resources. Ecological planning

constitutes a link between two processes: the spatial planning that is particularly directed to land use and the effect evaluation for natural resources (Cengiz, 2013).

In conclusion, ecological planning is the process of examining the physical and social factors about the determination of the optimum place for the types of land uses selected in order to reveal the opportunities of, and barriers to, decision-making regarding the use of natural resources (Cengiz, 2013). This definition entails that ecological landscape design is a suitable approach to tackling planning in the rural cultural landscape as a place-based approach as we will see in the following overview of ecological landscape design as a suitable approach to planning and design in the Mediterranean context.

2. Ecological Landscape Design

In planning, the rural character is linked with qualities that generate the sense of place. Research on sense of place is based on assessing how and why places are significant to people. The connection people have to a place can hardly be endorsed to a particular factor, which indicates that sense of place is multidisciplinary (Guth, 2009). In spite of this fact, an appropriate design and planning can create "genius loci" and character as Jivén's (2003) has argued: "*There is a clear view that genius loci and 'character' can be created through appropriate design and planning: this runs contrary to the view that these characteristics emerge from individual and community perception, values and experience*" (Jivén & Larkham, 2003). In this perspective, Ecological landscape design presents a holistic ecological understanding of the theory of space and place in rural culture, because according to Makhzoumi (1999) ; an ecological

understanding, embraces not only the way, we perceive, imagine and feel towards a specific place, but in addition, includes landscape processes and ecosystem interactions. Therefore, social and ecological systems are linked, adding a social aspect to ecological thinking which did not exist in earlier models (Muir, 2010). This linkage between ecology, design and local distinctiveness presents Ecological Landscape Design as an adequate holistic methodology, which designers may begin to develop strategies to accommodate inevitable growth in rural settlements. The central characteristics that distinguish this approach that was laid by Makhzoumi and Pungetti (1999), based on an ecological interpretation of landscape, is that the given design process promises a "holistic, dynamic, responsive, and intuitive approach" based on the following principles:

- The holistic attitude supports designers to tackle more parameters by including biodiversity and cultural landscape transformations.
- The dynamic attitude assists designers to tackle the temporal dimension in terms of evolution as well as the spatial dimension in terms of chosen scale.
- The responsive attitude helps designers to be context sensitive and responsive.

The concern that Makhzoumi and Pungetti's (1999) addressed for the Mediterranean in their book: *Ecological Landscape Design and Planning: The Mediterranean Context*. According to Makhzoumi (1999), there is a need to preserve rural culture landscapes because they retain the cultural heritage as well as the "delicate ecological balance between availability and use of natural resources". From this perspective, she tackled the issue of designers in the Mediterranean ecosystem, whereas most architects and landscape planners are unaware of the Socio-Cultural and Ecological aspects of local

context. She saw in regionalism a force that can have a positive effect in retaining cultural heritage instead of applying urban planning models from overseas that are not compatible ecologically, culturally and aesthetically.

- Finally, Ecological Landscape Design intuitive approach provides no "final end product" instead provides a continuously developing process. "This intuitive approach embraces a new definition of creativity that departs from the formal, i.e. object-centered, appearance-oriented aesthetics to a phenomenological participatory aesthetics where the emphasis is on the totality of human experience of the object" (Makhzoumi & Pungetti, 1999).

Although this approach mentions the consideration of human experience and urban values, however, social voices and experiences tend to be given less weight than the natural and built form in the methodological application of ecological landscape design. Therefore, to create this balance, Ecological Landscape Design methodology should emphasize the involvement of the intangible qualities of space that would be integrated into the planning of the built environments because people, individuals and society integrate physical features, through their value systems, to form a sense of place. Therefore, I agree with Kropf that "this underlines the need to put any account of physical characteristics within the context of other aspects such as activities and intentions to move towards a better account of character" (Larkham & Jiven, 2003).In this perspective, in the following section, two case studies will illustrate to examples of qualitative research methodology that generate guiding principles that could inform master planning based on the sense of place. In this case, these guidelines would be used to direct the final planning and design intervention based on the ecological landscape

design, while satisfying the need of meaning in urban surroundings and while creating a balance between the morphological and non-physical components of place.

In their article titled an “An Exploration of Sense of Place as Informative for Spatial Planning Guidelines: A Case Study of the Vredefort Dome World Heritage Site,South Africa” by Roos,Drewes and Puren in 2007 emphasized the importance and role of physical properties with regards to the sense of place and related concepts. They considered that physical features exist as objective realities of space but were the physical setting establishes only one of three known constructs of place namely physical context, activities and meanings. Therefore, for them, any qualitative investigation must consider the relationship between people and their settings, their experiences and meanings since it would help understanding the place. Therefore, to explore the sense of place they suggested conducting a qualitative investigation that emerges spatial guidelines to inform later the spatial planning. This article exemplifies a method to integrate spatial planning, and psychological aspects, such as a sense of place where spatial planning and design would take awareness of the emotional experience of the environment by attaching suggestions in the distinctive identity of the site (Puren et al., 2007).Veronica on the other hand in 2013 in her article titled “Toward A Holistic Understanding of Sense of Place” argued that the reading of place derives from the lived experience where sense of place derives from the structural pattern of a particular place and the association to the human activity and spatial use, but within the setting of the historical and globalized urban environment where vital qualities of place are derived from its visual and social ques. Therefore, she suggests that the exact exploration

methods should readily represent human experience in experiential terms for both resident and visitors that could be later translated into spatial guidelines (Ng, 2013). This literature review provides the basis to develop guidelines for solutions and illustrates a possible way to refine ecological landscape design method. Therefore, in the following section, we will see how such place-based guidelines could be embedded in the ecological design methodology to overlay current zoning and master plans that safeguard the environmental and cultural aspects of Jezzine.

CHAPTER III

METHOD

A.Case study

Jezzine town was taken as a case-study since it has been witnessing an uncontrolled growth in its built environment during the post-civil war period. Also, it was chosen because it presents an example of the rural Lebanese mountain settlements which have both a historical and contemporary built environment, as well as a rich Mediterranean natural and cultural setting that the current unrestrained urban developments are threatening. This research on one hand criticizes conventional planning regulations in Jezzine while demonstrating their incapability in regulating growth while considering social, ecological and cultural inclusion measures. On the other hand, it investigates a new approach to urban development and planning in it. Hence, the challenge, in this case, becomes finding a balance between the protection of this cultural landscape, maximizing tourist accessibility and protection of those intangible qualities that foster unique attachments to this site.

In order to achieve this aim, spatial concepts would be anchored in the identity of the place by encompassing local inhabitants from the beginning of the planning process. Especially, that urbanized indigenous people and society integrates landscape physical features through their value systems, to form a sense of place, and because "Involving local inhabitants at an early stage of the planning process and incorporating their attitudes and opinions in future intervention in the area, may also contribute to the

acceptance of the legitimacy of future policy and sensitively planned cities that provide for both spiritual needs and in some cases cultural harvest" (Puren, Drewes, & Roos, 2007). Accordingly, and to create this balance this thesis proposes emphasizing the involvement of the intangible qualities of space, in the Ecological Landscape Design model to inform the process of master plan making. The adopted methodology relates the approach of ecological landscape design, urban planning and urban design. The principle of Ecological Landscape Association (ELA) will be used to assess, revise and rethink existing planning tools and regulations as well; reveal the physical structure and interaction of different landscape components by establishing an ecological understanding in combination with the sense of place based method learned from Vredefort case.

This thesis method will be divided into four sections: The first two sections will illustrate the assessment of the natural, cultural and urban landscapes of Jezzine. The third section will cover the landscape association, the deduced detailed guidelines and maps that will inform the new zoning. The fourth section will cover the process of producing the new zoning and guidelines while going from Ela's to LCZ. The method I'll be adopting in this thesis is summarized in the following diagram (fig.6):

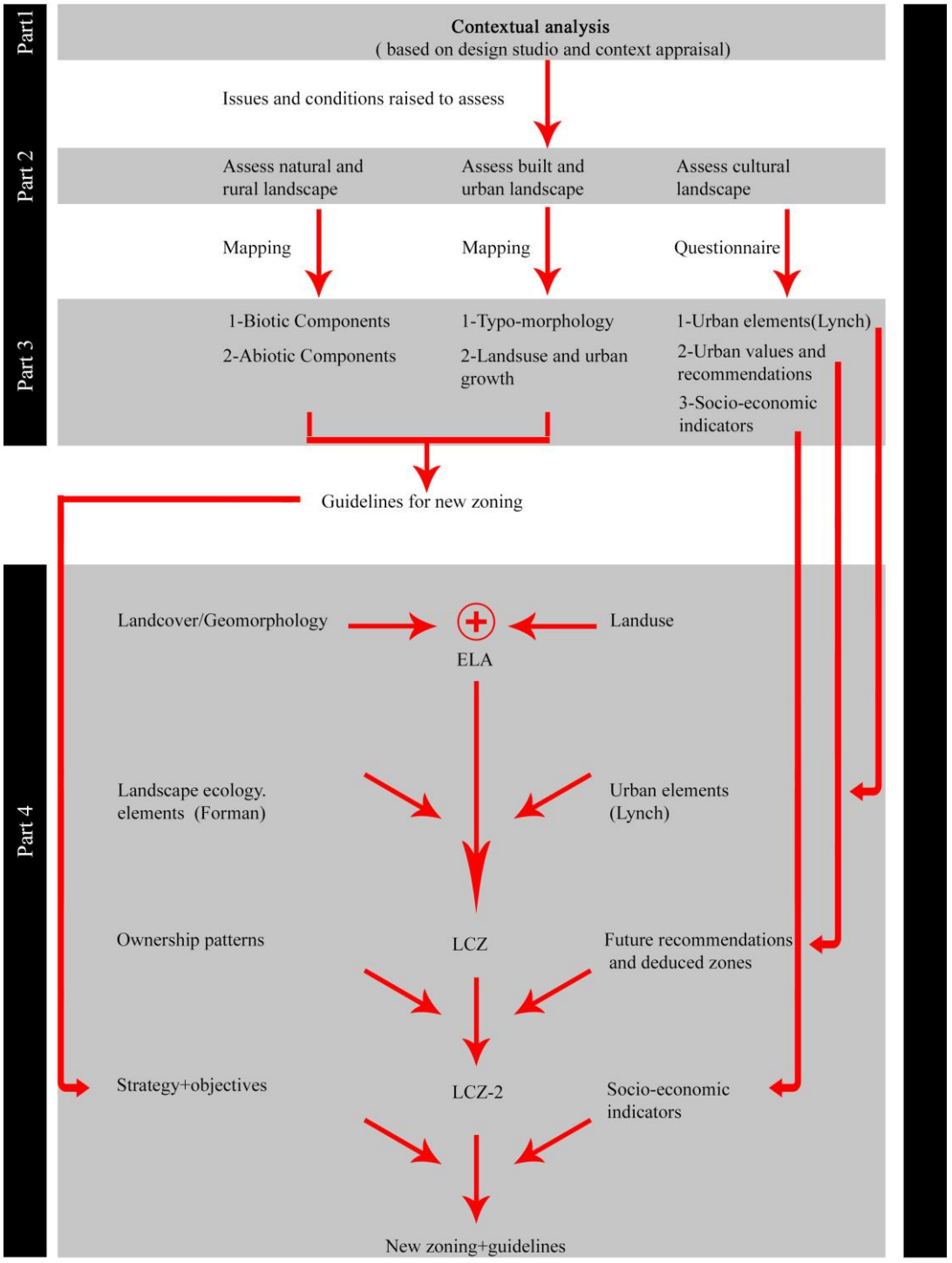

Figure 6.Thesis Method. Graph was produced by author 2016

B.Data

1. The Identification and Mapping of Change Over Time in Jezzine

Collecting the written archive related to Jezzine was examined to retrace Jezzine's architectural history, land use, ownership patterns, historical ecotopes, archetypes, evolution timeline, spatial data, socio-economic features and major historical events that shaped the space.

Old photos, movies, and all sort of visuals that relate to Jezzine's cultural landscape has been collected to perceive the visual evolution of Jezzine townscape, abiotic, biotic and human activities through the different historical periods.Aerial photos and satellite images of Jezzine had a relative importance since these aerial photos were beneficial to map the physical evolution of the town by revealing its footprint, its morphological characteristics, and its physical and natural boundaries through the different historical periods.

Field validation have been necessary to ensure compatibility of the collected data (zoning maps, old photos, written archive, landscape elements) with real conditions.

Producing analytical maps have been necessary to illustrate and map where and how the changes and influences had occurred mainly during the different periods. This data was mainly gathered from the municipality archive, previous workshops done on Jezzine and from multidisciplinary backgrounds, Dr.Ghassan Rahal books and journals, Architect Mariya Helou publishing, Architect Fadi Aoun references, locales personal photo collections.

2. The Analysis of Jezzine Zoning Master Plan and Building Regulations

a.Referring to Past Researchers

Referring to past researches, studies, existing zoning master plans, building regulations and maps of Jezzine has helped in retracing and identifying the spatial history of the town, its landscape patterns, natural resources, circulation patterns, land tenure, morphological patterns, landscape types, socio-economic features, landscape parcels and landscape elements.

b.Conducting Interviews

Conducting interviews has been a helpful approach to grasp and reveal more information about the area regulations during field investigations and to address issues that emerged from the spatial, historical, regulatory analysis of Jezzine. The stakeholders related to the case that have been interviewed have been grouped into two clusters informants that are being affected by zoning such as locals and tourists, and informants that are implementing zoning such as the head of the municipality and UJM in order to understand how the existing laws and plans are influencing the physical shaping of the town landscape. A snowballing sampling method has been also used during field investigation, since it gave an easier way to obtain local references, build trust and acquire more information about different stakeholders that are influencing the planning process. The interviews took place during 2015.However, for a better understanding; the stakeholder matrix in the context of Jezzine, the study has referred to the following

analytical categorization of stakeholders in Jezzine conducted by AUB masters students at UP661_UD601_Planning and Design Workshop during Fall 2013 .

c.Field Validation

In parallel to the previous steps, a field validation has been necessary in order to relate the collected data that have to do with building regulations and the zoning to the reality on the ground.

d.Producing Analytical Maps and Info- graphs

In order to illustrate and map the different zones, regulations and laws influences along Jezzine, different maps and info graphs have been produced. This data was mainly gathered from the municipality archive, previous workshops and studies conducted in the area, Dr.Ghassan Rahal books and journals, Architect Mariya Helou publishing ,Architect Fadi Aoun references, Archive of the DGU, maps and topographic map that have been gathered from the CRNS ,the Army and the UJM.

3. The Analysis of the Existing Natural Landscape Components in Jezzine

a.Providing Information

Through informal interviews and interviews with local and national administrators. The first group that have been interviewed are the residents of the historic core, those who are rooted in the area in order to cover their social practices,

cultural values, spatial practices and perceptions. These interviewsfocused on particular information such as the vernacular code, practices, space perceptions, social connections, nature of their relation to their immediate natural surroundings yet retaining an open-ended nature, giving the interviewers the freedom to express them, and thus revealing potentially unanticipated information.

b.Providing Firsthand Knowledge of the Landscape

Field surveys to map natural, semi-natural, rural cultural and contemporary landscape zones has been conducted in order to understand what areas are considered valuable natural resources for Jezzine and should be preserved , and what areas are considered less critical and should be managed or can be altered by new developments . In this direction the study of the Shouf reserve on the biotic and Abiotic components present into this bio-sphere was of key importance as reference for this study.

c.Undertaking Floristic Surveys

Ecologically critical zones in terms of floral diversity and ecological processes were identified, in order to guide the proposed master plan towards maintaining this landscape integrity.

d.Producing Analytical Maps and Info- graphs

In order to illustrate the importance of the different natural zones along these different zones, so it would be later overlaid and considered when producing the new zoning and master plan different maps and info graphs have been produced. This data was mainly gathered from the municipality archive, previous workshops and studies conducted in the area, Dr.Ghassan Rahal books and journals, Landscape Architect

Carole Aoun ,Shouf Biosphere existing study on this area natural components, Archive of the DGU, maps and topographic map that have been gathered from the CRNS ,the Army and the UJM.

4. The Exploration of Sense of Place as Informative for Spatial Planning

My field survey and questionnaire to Jezzine's citizens illustrate an example of qualitative research methodology, which generates three types of guiding principles. These principles would be integrated to direct the final planning and design intervention in combination with the produced landscape character zones based on the ecological landscape association method. The first set of guidelines generated from the questionnaire is related to the visual urban characteristics of the area that has been generated while implying Lynch methodology .The second set of guidelines contains all sorts of locals and regionals socio-economic indicators. And the final set includes the finale socially deduced zones for intervention based on people future recommendations.

This combination satisfies the need of meaning in urban surroundings while creating a balance between the physical and non-physical components of place. The examination of the Sense of Place of Jezzine on a town scale as Informative for Spatial Planning Guidelines was achieved by adapting the qualitative method used in the Vredefort Dome case study. This case was chosen was due to its qualitative method that investigates the relationship between people and their environment, their experiences and meanings that contributes to an understanding *place* and promotes an understanding of the human dimensions that form part of natural resource management on a town scale. This aim was achieved by.

a.Analyzing Visual Data

The systematic listing of the constituents and cataloging of the literal meanings of collected visual materials. Asking questions about the listed elements, thus llowing themes and statements to be revealed spontaneously.

b.Analyzing Textual Interviews Data by

Reading the descriptions.Discriminating units of descripitons with a focus on the phenomenon under study. Synthesizing the transformed meaning units into a consistent statement regarding the participants' spatial experiences.

c.Classifying the Emerged Spatial Guidelines

From the qualitative Investigation of the sense of place.

d.Producing Mental Maps

Different maps and info graphs have been produced as illustrative data for deducted conclusions from questionnaires in a view to show the location of the different character zones for locals and how they relate to them; the different produced maps are of key importance to generate the new master plan.

5. Developing A New Zoning Master Plan For Jezzine

This overlaying and association between the zoning analysis, Ela's and the mental maps/sense of place will lead us to the development of an alternative zoning master plan on town scale.

CHAPTER IV

DEVELOPMENT AND ANALYSIS OF THE DATA LAYERS

A.Spatial Analysis

This research on one hand criticizes conventional planning regulations in Jezzine and on the other hand, investigates a new approach to urban development and planning. This reality dictates on any researcher willing to understand the dynamics of this cultural landscape, to understand Jezzine long history with agricultural heritage and tourism. Since these two sectors have been major contributors in the defintion of this cultural landscape. Accordingly, the following section highlights the historical timeline that shows the key historical and cultural moments in Jezzine during the different historical eras, before moving to the thourough analysis of Jezzine different cultural and natural layers.

1.Jezzine Historical Timeline

a.Before and during Greek Era

Jezzine was a hiding place and a storage area for Phoenician yields and valuables (Rahal, 1983).

b.Roman Era

The Architecture reached its peak during this time, particularly in this mountainous region. Even Bridges were implanted to reduce and facilitate

transportation's difficulties in between villages and regions to facilitate transportation as we can in the below picture(fig.7).

Figure 7.The oldest bridge in Jezzine. This bridge was built during the Roman period near the waterfall, but it was removed in 1926 to renew and expand the road that has been constructed during this period. Adapted from La Memoire de Jezzine, by Harfouch

c.Ottomans Era 1520

The Mani governed the area between 1516-1693. Under their governance, the city witnessed the end of the Shite presence in Jezzine. In parallel, the Maronites labors began migrating from the North and settling in Jezzine.

Many historic architectural and infrastructural elements that still exist today were built during thi period such as the current municipality building, Monasteries, the Dibagha Bridge built in 1866, the Makhada bridge built in 1883, the Wellspring Bridge built in 1883, the Monastery Bridge built in 1906, and the Bayader Bridge built in 1889(Rahal, 1983). Moreover,during 1868, the first road passage was cut through the rock, which used to block Jezzine's entrance from the surrounding (70m long and 7m

height) giving this area its name which remains, till today, known as Al Mabour, meaning the passage (fig.9) (Rahal, 2006).

Since the late 19th century, a huge number of citizens left the city for Egypt and America; these immigration patterns had helped to enhance the local economy by the remittances that immigrants used to sent to their relatives. This reality has been materialized evidently in palaces and brick houses that became spread in beautiful forms, colors, details and diversity in Jezzine as the below picture reveals (fig.8) (Rahal, 1983) .

Furthermore, during this period, the agriculture sector flourished and became the main living resource for people who began raising silkworms and planting grape vines. The flourishing of agricultural sector can be mainly attributed to the ownership law that was issued by Ottomans in 1858. The property law had allowed Christians to become owners of land by written deeds. Therefore, this gave labors the needed incentive to increase their production efforts since they began collecting direct profits in comparison to old times where landlords solely collected benefits from this production cycle (Abou Chakra, 1999).

Figure 8. The Lack restaurant. The picture illustrates the big houses built at the time. Adapted from La memoire de Jezzine, by Harfouche, K. 1997

Figure 9. The passage (Al Mabour). The picture illustrated the opening of Al Mabour in 1868. Adapted from La Memoire de Jezzine, by Harfouche, K. 1997.

d. First World War Period

In contrast to other villages and towns during this war period, Jezzine had earned economic benefits, since rich traders who fled war came and settled in it. Also,

since 1906, roads began to qualify and to become valid for the cars passage. These right of way infrastructural developments had contributed later to the emergence of the tourism sector were cafes and hotels along with the hostelries began emerging, some of these foundations still exist till today such as The Slave Khan, Fares Khan and Khan Al-Kanaan. Also, the municipality built the old market in 1880 to replace the old way of trading in outdoors along the streets(Fig.10) (Rahal, 1983).

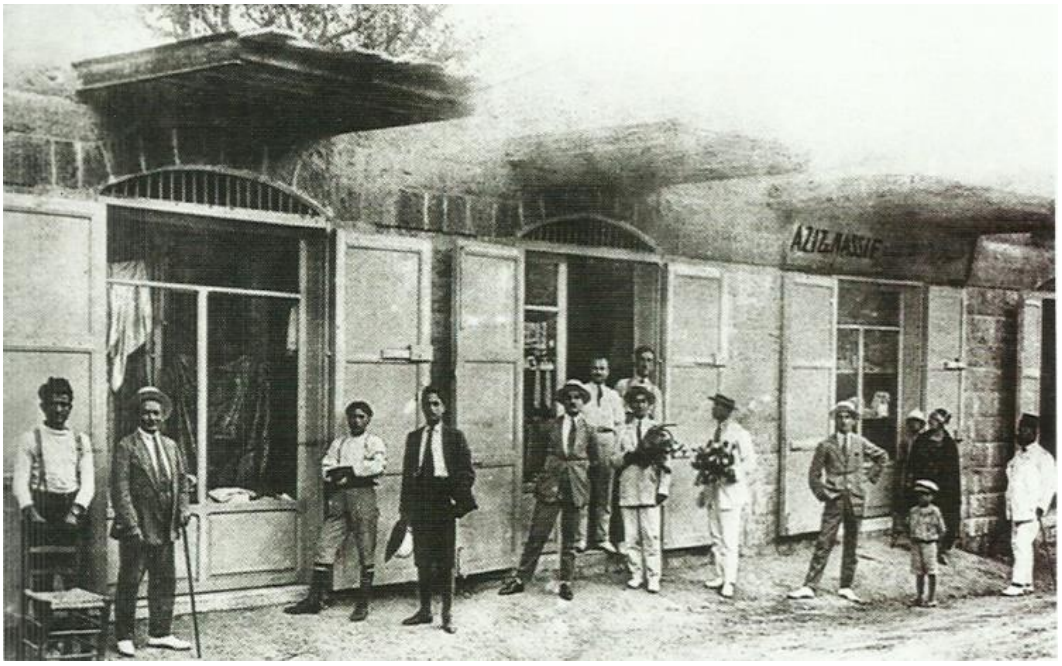

Figure 10. Shops in the new market. The picture illustrates active along the new market. Adapted from La Memoire de Jezzine, by Harfouche, K. 1997.

e.Period Before the Palestinian Nakba of 1948

The region of Jezzine was considered as one of the first Lebanese summer destinations at the time. Therefore, Jezzine used to receive Arab visitors from Egypt and Palestine who used to come by train from Palestine before the borders with Lebanon were closed following the Palestinian Nakba in 1948. This event was the first factor that

affected the course of life in Jezzine Region since Arab visitors, mainly from Palestine and Egypt, stopped coming. At the time, there were several hotels in the town of Jezzine among them:

- Pyramid Hotel
- Al-Ahram
- Palestine Hotel
- Cascade Hotel
- Haret Kannan (fig.11)
- Roukoz Hotel
- Wehbe Hotel

Even though, the flow of Arab tourists decreased with time, the internal flow of visitors remained constant, especially from Saida and other Lebanese regions, since Jezzine was well-known for its waterfall, restaurants and exquisite foods. This movement represented one of the main sources of income in addition to farming that was widespread in the region. Jezzine was well-known for farm goods such as apples, olives, grapes, and citrus vegetables, as well as pine forests that are among the largest in the Middle East (Rahal, 2006).

Figure 11.Haret Kanaan. The picture illustrates tourist standing in front of Al-Kanaan hotel. Adapted from La Memoire de Jezzine, by Harfouche, K. 1997.

f.The Chehabist Rule 1960

The number of locales increased due to security and strong governance (fig.12). Despite the decline in the number of Arab tourists from Egypt and Palestine to Lebanon, Jezzine's region maintained its place as a summer resort and remained a popular destination for internal tourism.

Figure 12.Municipality building. The picture illustrates locales standing in front of the municipality during the French Revolution memorial day. Adapted from La Memoire de Jezzine, by Harfouche, K. 1997.

Moreover, Jezzine's souk became a major commercial center attracting people from the Chouf and Iklim Al Toufah. The industrial sector also flourished specially the cutlery that became popular and gained a reputation for Jezzine.Briefly, the history of the craft goes back to 1724 when Chamiye and Halabiye family began arriving at Jezzine. Both were blacksmiths that began producing tools and assuring the village with the required tools for agriculture and construction. These blacksmiths also secured the swords, daggers and knives which, at the beginning, were only minor [kabadat (fists-gripes)], that is to say, without the details of wood and bone. Later, with the arrival of the European troops to the area by 1918, the western civilization traditions and habitude such as the table etiquette, became reflected by the blacksmiths or more specifically called kordahjiye (fig.13). The Kordahjiye began producing cutlery with details and ornaments ,which made the area became famous with, while helped to generate fixed income for a large portion of Jezzine locals; that helped them to stay in their town and produce items regardless to the limited available resources in these rural areas (Rahal, 2006).

Figure 13.Kordahji (the man who produce cutlery). The picture illustrates a Jezzini Kordfahji showing his handmade cutlery following the Jezzini way of production. Retrieved from: https://www.facebook.com/Jezzine/photos/.

g.1975 Civil War

The civil war suspended the social activities, clubs, and development movements due to migration and immigration of locales, a fact that led to a decline in tourism, agriculture, and other economic activities. In 1982 Israelis occupied Jezzine, and then in 1985, the area witnessed population displacement from East Saida to Jezzine. However, the area was reconnected to Saida year 2000 by the reopening of kfarfalous checkpoint and liberation from Israeli occupation (Rahal, 2006).During this liberation year, the main chaotic, new developments began taking place, where people rushed for building to increase their profits and benefits in the absence of any public surveillance or governance yet.

2.Zoning Development and Analysis

a. Zoning Development in Jezzine

In this section, the evolution of Jezzine's zoning master plan and building regulations along with their impact on its built and natural fabric will be tackled. Also, a comparison between the planning guidelines in Jezzine to those of Deir El Qamar will be undertaken, since people referred to it, repetitively, as a role model regional town. Indeed, both Deir El Qamar and Jezzine have a lot in common in their natural and built setting, however, over a period, the law and regulations applied in them had led to the production of two different outcomes (fig.14).

Figure 14. Deir El Qamar fabric .This photo illustrates the historical fabric patterns in Deir El Qamar that used to look like Jezzine old fabric. The photo was taken from the Aub library archive.

In the past, the growth of the built fabric in Jezzine took an organic shape around the Nabaa spring, as it used to happen in similar Lebanese mountain villages which have been constructed around water springs. Then, there were no zoning or regulation at all. Hence, people used to build in accordance with vernacular codes and common agreements. Later, in 1960, this area was categorized by the government as non-classified zone. Therefore, any parcel thay would have been subject to development should have abided by 40 percent surface area exploitation ratio (sar) and an 80 percent total exploitation ratio (ter) and a maximum allowable height of 13 M. This situation endured till 2000; however, from 1975 till 2000, growth was almost unimportant due to Lebanese civil war and Israeli occupation, since most of the people fled from the area.

After the liberation of Jezzine in 2000, an uncontrolled growth in the built environment took place. Random additions have been executed without considering regulations because there were no governmental institutions yet to enforce the law or to

control the growth. These additions and constructions were led without a profound study of the area natural and built fabric (fig.15,16). This uncontrolled growth resulted in several problems, where traditional buildings and natural landmarks became obstructed and endangered of elimination.

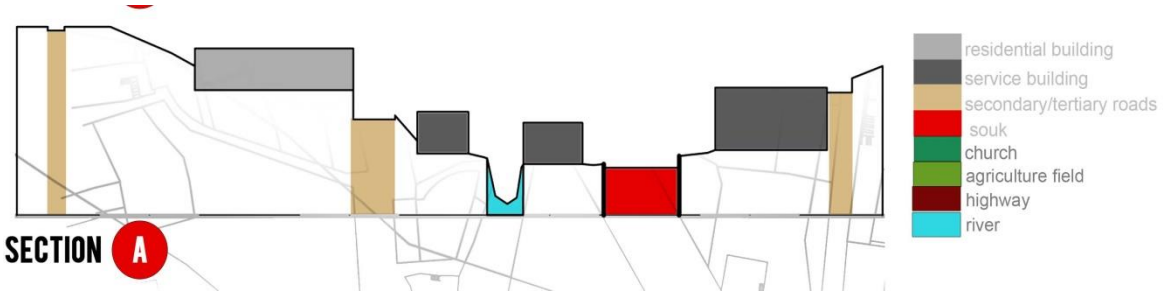

Figure 15. Jezzine fabric .This diagram illustrates a section through the city center. Map produced by Neaimeh, R.2015.

Figure 16.Jezzine second fabric.This photo illustrates the neglected river basin in the city center in contrast to the old core. Photo was taken by Neaimeh, R.2014

These circumstances steered the DGU to consider regulating Jezzine's physical growth to preserve the beauty of its natural landscape while managing its growth. As a result, the 2000 zoning master plan came to the forefront to regulate Jezzine. This zoning master plan was a regulatory management plan that aimed mainly at protecting Jezzine's valuable resources, through classifying land uses and land management. This zoning master plan was based on pre_studies that have been done and published starting from 1996 such as the study that was done by Architect Jad Tabet and Architect Habib Debs (see appendix I for more information on the book of terms and conditions that the Dgu assigned for planners).

This master plan divided Jezzine into 14 zones following the modern functionalist approach for master plan production, where each area was assigned specific land use, exploitation ratios and specific planning guidelines. These ratios were assigned in a spherical way, going from high exploitation ratios in the center to less or null exploitation ratios at the edges of the town as shown in the following classification (fig.17):

- A: Residential and commercial zone:40 80
- A1: Residential and commercial zone: 40 80
- B: Residential and commercial zone: 30 90
- B1: Residential zone: 30 60
- C: First urban growth zone : 15 30
- C1: Second urban growth zone: 10 10
- D: Private residences/ villas zone: 20 45
- D1: Private residences/ villas zone: 10 25
- N: Individual habitation and agricultural zone: 5 5
- N1: Forest protection zone: 2.5 2.5
- T: Touristic zone: 20 30
- G: Industrial and crafts zone (for enterprises classified third class) : 30 50
- G1: Industrial zone (for enterprises classified first and second class): 30 60
- S: Natural reserve zone : no building are permitted

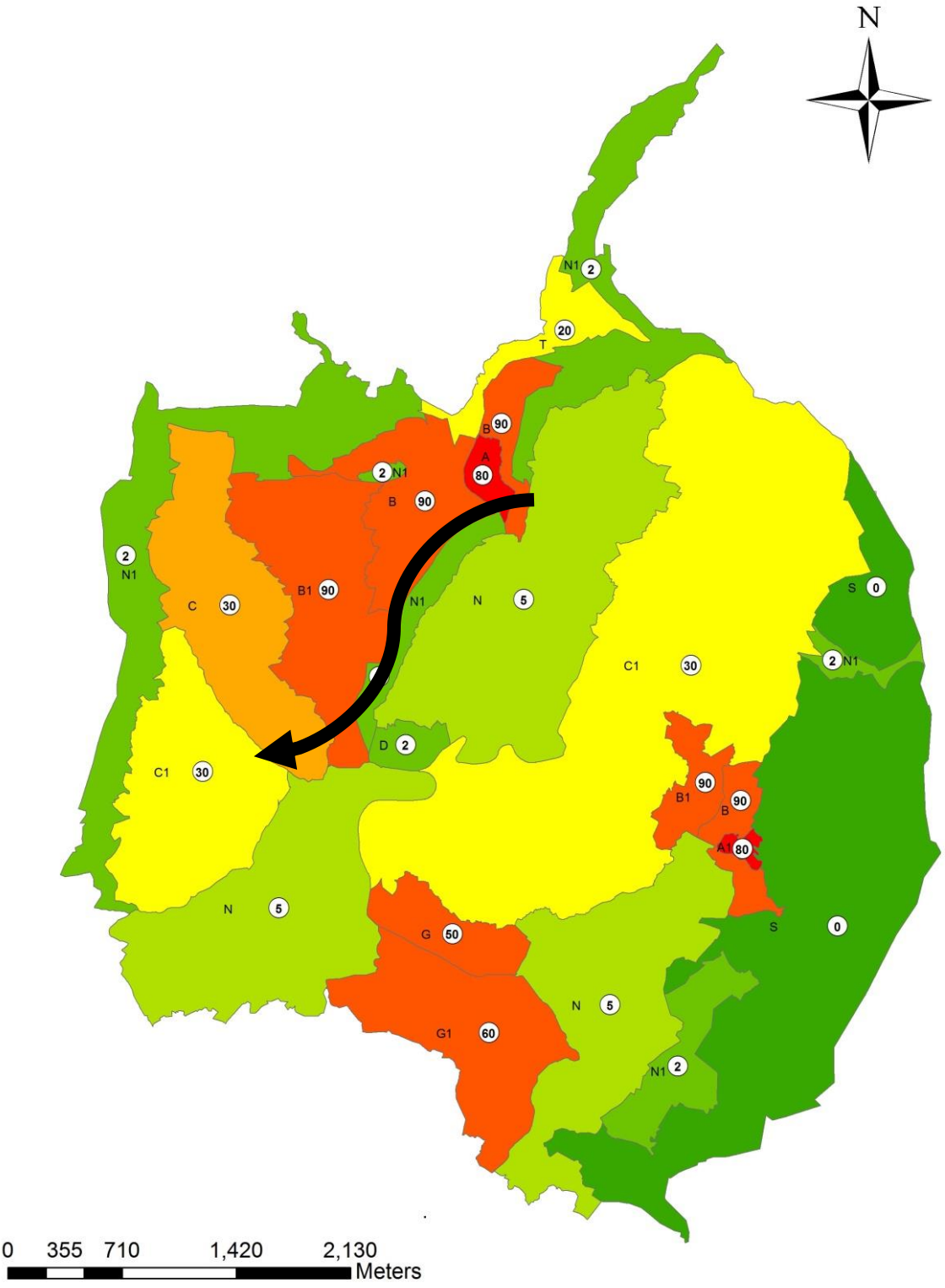

Figure 17. Jezzine 2000 zoning master plan. This map illustrates each zone Sar and Ter. Map produced by Neaimeh, R.2015.

Jezzine's zoning master plan that was first released in 2000 proved to be an outdated approach and cannot manage the current growth because it adopted the functionalist approach to planning, borrowed from international models popular in the 1960s. Were their determinants factors are density, separation of uses and exploitation ratios: floor to area ratio, total exploitation rate. This zoning master plan fragmented the landscape partially, the remaining major contributors in this rural economy through agriculture practices, and eco-tourism, thus resulting in a suburban character.

Accordingly. future reconsiderations of the 2000 master plan were made in 2004 based on the municipality demand(see appendix II for more information on the book of terms and conditions that the Dgu assigned for planners). .The current ratios were kept the same, but the boundary of different zones was modified to include or exclude some lots, in respond to socio-political influences. The modifications mainly affected zone T (touristic zone), which had been reduced to almost the half in the area, and the separated areas were transformed to zone C1 and B1, which are residence oriented. Also, zone C, in the middle area of Jezzine, (second urban growth zone) was reduced to almost the half, where the separated areas were transformed into zone N to prevent sprawl towards the agricultural lands (agricultural zone)(fig.18).

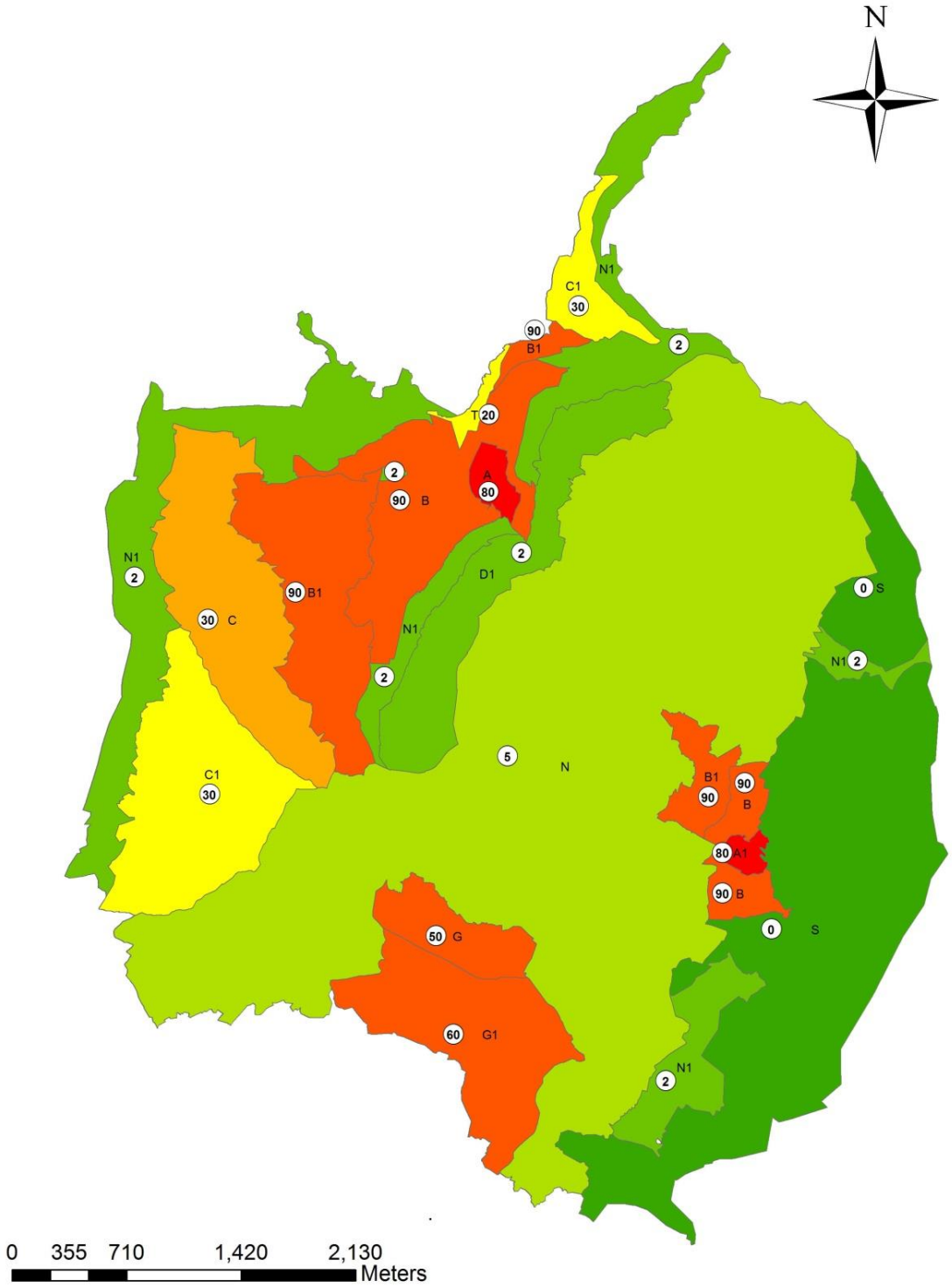

Figure 18. Jezzine 2004 zoning master plan. This map illustrates each zone Sar and Ter. Map produced by Neaimeh, R.2015.

In 2009, a new zoning master plan was considered. It reflected the reality on the ground and the linear densification that was taken place Jezzine and especially from nearby Ain Majdalayn towards Jezzine Therefore, ratios were changed, and boundaries of different land uses were adjusted as follows (fig.19):

- The agricultural area N in the middle of Jezzine that separates Jezzine's core from Ain Majdalayn was divided and new zones C and C1 were added which reflected the linear growth taking place between Ain Majdalayn and Jezzine.
- The west border was now considered as N instead of N1 which means it can be used for private residences and agriculture instead of being considered as before N1 (forest protection).
- The northern part was transformed into D1 instead of being N1.
- The industrial area is now divided into three parts instead of 2.

The different zones development ratios became as such

- A: Residential and commercial zone: 40 80
- B: Residential and commercial zone: 30 90
- B1: First Residential zone: 30 60
- B2: Second Residential zone: 25 50
- C: First urban growth zone: 15 30
- C1: Second urban growth zone: 10 20
- D: Private residences/ villas zone: 20 40
- D1: Private residences/ villas zone: 10 20
- N: Individual habitation and agricultural zone: 5 5
- N1: Forest protection zone: 2.5 2.5
- T: Touristic zone: 20 30
- G: Industrial zone: 30 50
- G1: Industrial zone (for enterprises classified first and second class): 30 60
- S: Natural reserve zone: 2 2

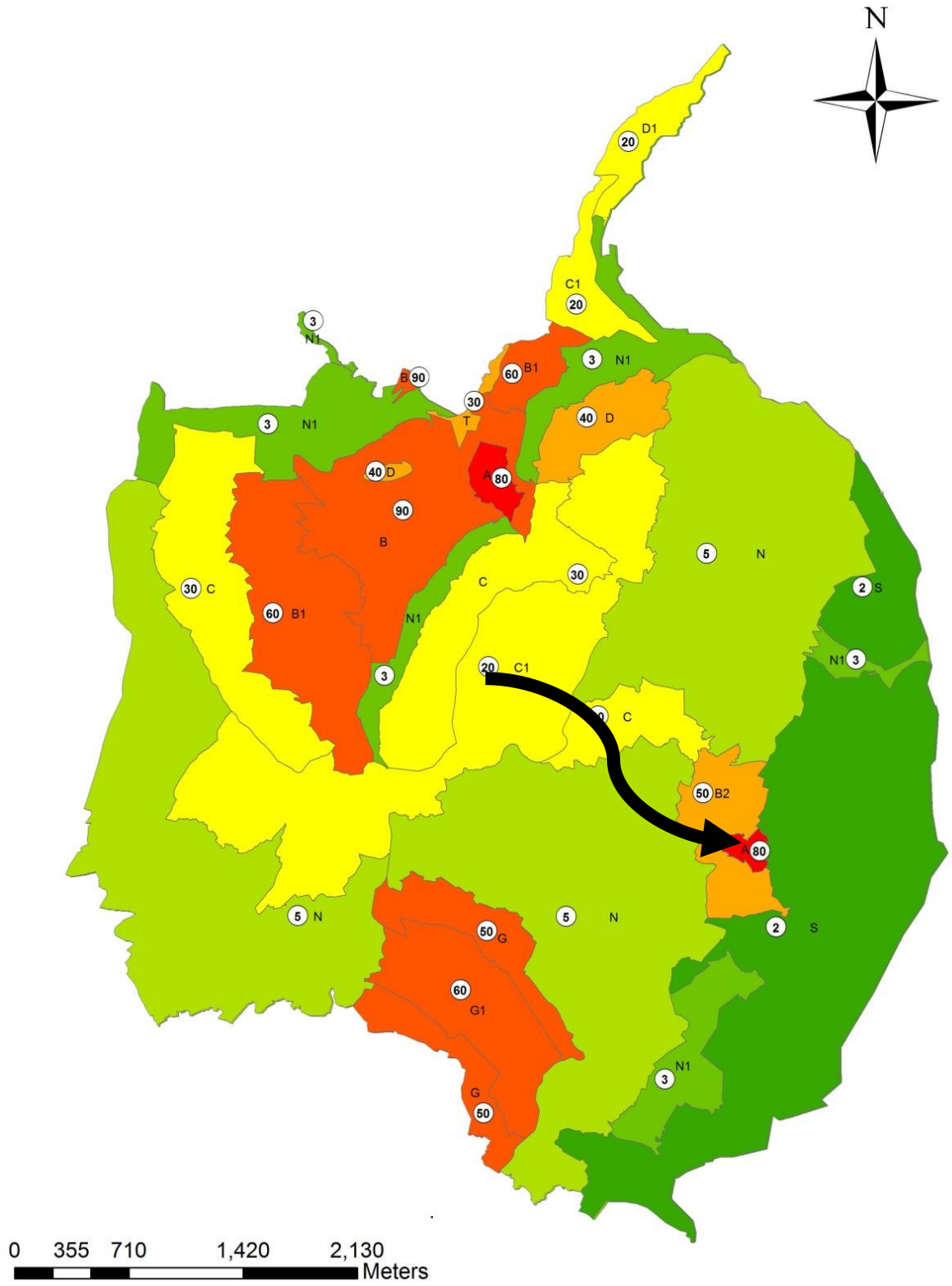

Figure 19. Jezzine 2009 zoning master plan. This map illustrates each zone Sar and Ter. Map produced by Author, 2015.

Lately, a new zoning master plan is in the process to be adapted. The 2015 master plan adopted the 2009 master plan but with slight modifications. All C zones in Jezzine were increased in the area on expenses of agricultural lands. Ain Majdalayn became now connected to the industrial area by C zone, which anticipate future linear sprawl taking place in that direction (fig.20,21). The cross hill became a buildable area since it was transformed from Being N to D.

- A: Residential and commercial zone:40 80
- B: Residential and commercial zone: 30 90
- B1: First Residential zone: 30 60
- B2: Second Residential zone: 20 50
- C: First urban growth zone : 15 30
- C1: Second urban growth zone: 10 20
- D: Private residences/ villas zone: 20 40
- D1: Private residences/ villas zone: 10 20
- N: Individual habitation and agricultural zone: 5 5
- N1: Forest protection zone: 2.5 2.5
- T: Touristic zone: 20 30
- G: Industrial zone: 30 50
- G1: Industrial zone (for enterprises classified first and second class): 30 60
- S: Natural reserve zone : 2 2

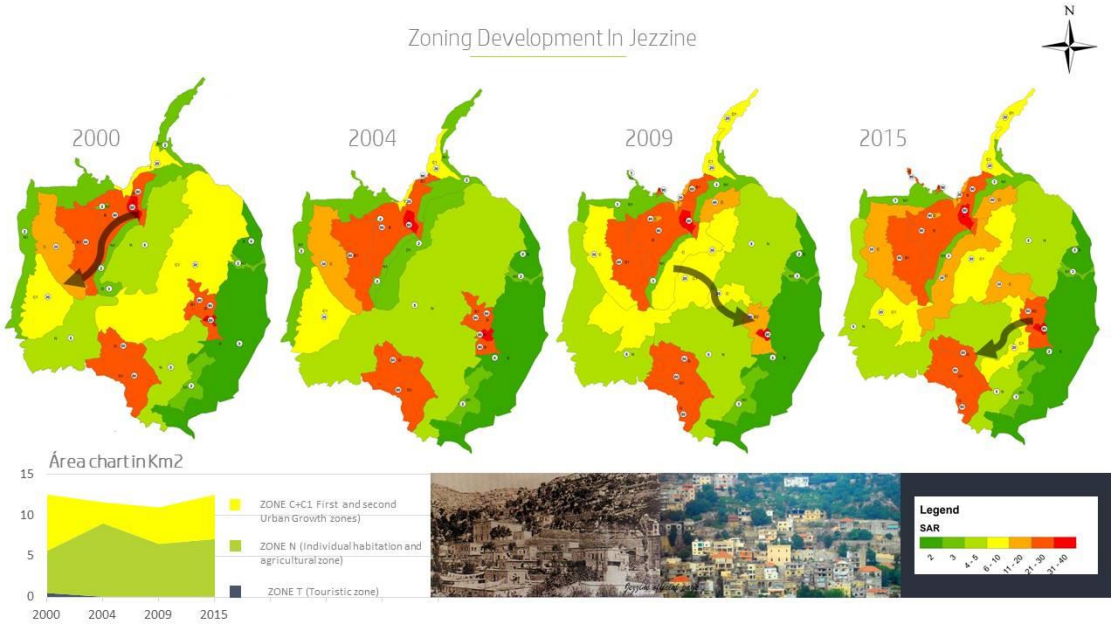

Figure 20. Zoning Development In Jezzine ,map produced by Author.2015.

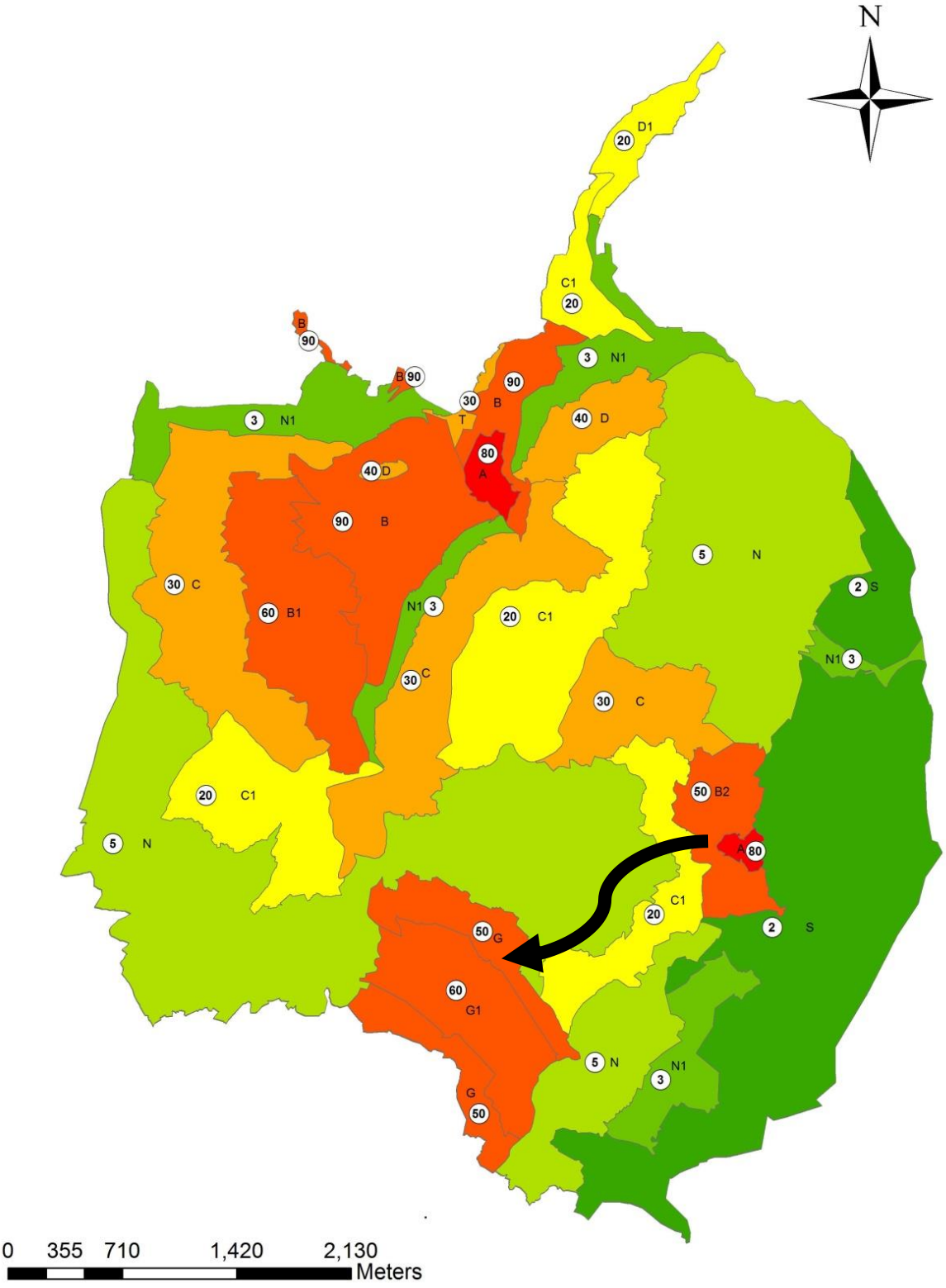

Figure 21. Jezzine 2015 zoning master plan. This map illustrates each zone Sar and Ter. Map produced by Neaimeh, R.2015.

b. Zoning Failures in Jezzine

Although it's consideration of multiple issues, however, the zoning master plan, since its application in 2000 till today, still misses a lot on several levels:

i.Land use level

First, if we are going to consider the use ground issues on which the current master plan was based, we find that the current master plan misses a lot in planning the following land uses:

- Industrial zone: The industrial zones G and G1 are allocated too far from the populated area, which makes it illogical for some of the businesses to function properly. This fact led to the rise of some small industrial shops in zone B which is considered residential and commercial at the first place
- Touristic zone: Although Jezzine is well known for its touristic sector which contributes largely to the income of locals; however, this fact is not translated in the zoning master plan. Therefore, we can see that zone T which is reserved for touristic activities is too small and have low exploitation factors in addition, to being totally built,

making it impossible for new touristic developments to be built (fig.22).

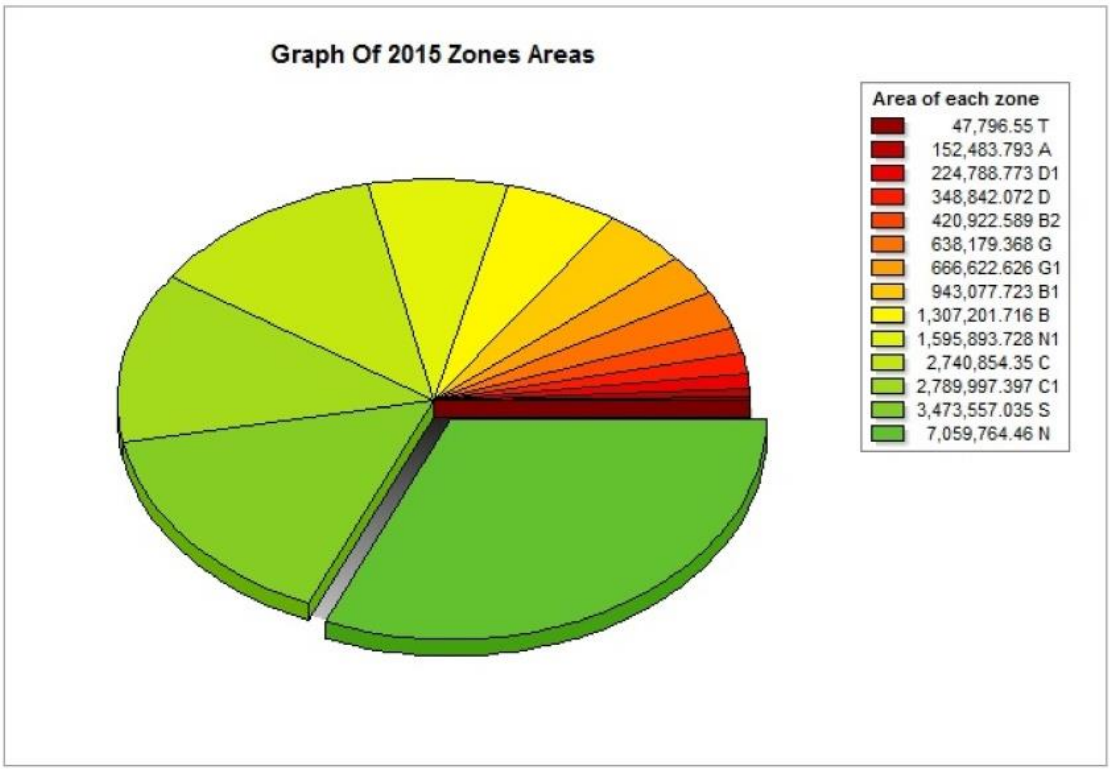

Figure 22. Jezzine zones areas .This graph illustrates the different zones areas, where we can see that zone touristic is the smallest between all areas.The graph was produced by Neaimeh, R.2015.

- Residential zone: Regardless of its historical importance, zone A is not classified as heritage zone that should be protected and treated in a special way. Instead, it is given the highest exploitation ratio in Jezzine, with an sar of 0.4 and a ter of 0.8, without any protection measures or any categorization of valuable heritage houses. This situation in future will make these houses, especially small units and small parcels, vulnerable for investment speculations. Therefore, traders will buy several small units and merge them to build bigger units, in pursuit of profit, thus, endangering the old fabric with this vertical densification and interrupting the townscape made by terraced

houses. In contrast, in Deir El Qamar traditional houses are extremely protected, where even restoration measures are mentioned, as we can see for examples under Section 1-2-A of Deir El Qamar master plan guidelines:

For renovation works, the following is required:

- The architectural shape must be taken from Lebanese arts of palaces in the area.
- Roofs of buildings must be of the same height.
- Elevations and its exterior facades must be of natural stone.
- No concrete or steel is to be used in elevations and its exterior facades.
- Openings thus windows must have the "Mandaloun" shape and its derivatives.

ii.Land Cover

Regardless of its green character and rich natural setting, Jezzine's master plan is too general when it comes to considering the natural land cover. This reality can be seen clearly in the superficial master plan guidelines under the reforestation section. This section mentions that each removed tree should be replaced by a similar one or in case the built plot did not have trees before it was built, the lot owner should plant one tree for each 16 m2 in the remaining lot.

In addition, the current zoning master plan, combined with the existing urban codes and building laws, do not relate to the specificity of the current urban landscape, since these regulatory measures were planned for Jezzine's built development only. They did not consider any deep concern of its natural landscape while being at the same time generalized for rural as well as for urban areas. This can be clearly seen in the way

the zoning master plan has classified different landscape character areas, under the same zones as shown in the zone (C) (fig.23,24,25).

Accordingly, this analysis demonstrates how the complexity of ecosystems in Jezzine is being neglected in the current zoning master plan, instead of being enforced by profound analysis and protection measures before and after buildings are executed.

Figure 23.Agricultural landscape. This photo shows agricultural land in Jezzine zoned as C with F.A.R equal 0.3 and S.A.R equal 0.15. PhotoTaken by Neaimeh, R. 2013

Figure 24. Mountain summit. This photo shows the desrt like mountain summit in Jezzine zoned as C with F.A.R equal 0.3 and S.A.R equal 0.15. PhotoTaken by Neaimeh, R. 2013

Figure 25. Forest like landscape. This photo shows forest-like landscape in Jezzine zoned as C with F.A.R equal 0.3 and S.A.R equal 0.15. PhotoTaken by Neaimeh, R.2013

iii.Regulating Building Form

Although regulating and managing the growth of the built environment were the main aims that Jezzine's master plan was laid for, however, in practice, we can see that this goal was not reached at all because several disruptive elements can be still perceived all over this landscape. These disruptive elements can found in residential zones due to many reasons:

- The Incapacity to deal with blocks dimensions and townscape:

Although it's been classified as residential zones, however, we can see that, in zones B and B1, many huge projects are rising and disturbing the townscape. These projects can be classified into two categories under the Lebanese construction law:
First, we have the projects that have long facades with less than 25m long. They are entirely legal but intruders for the visual landscape with their enormous facades, especially when they are built on a cliff edge or hill tops (fig.26).

Figure 26. New building under construction in Jezzine town. This photo illustrates how the new developments are out of scale and does not relate to the surroundings, used. Photo Taken by Neaimeh, R.2014.

Then, we have the projects that are more than 25 m long which are divided into multiple units falling under the "Majmou3at lkoubra" construction law. This construction law also advises developers to have different units of a same big project designed differently, while the project should be in total integration with its built and natural surrounding under a 300 m radius size. However, most of the time, these projects in Jezzine are being built in compound form with identical units that give a "Chinese town" look, because building identical units is lucrative for developers(fig.27).

Figure 27. Jezzine fabric.This photo illustrates the new compound like fabric in Jezzine core. Photo Taken by Neaimeh, R.2014.

In contrast, in Deir El Kamar under section 1-2-14 of the private zoning master plan guidelines that tackled neighborhoods design, the issue of townscape has been dealt with it carefully as we can see in the following:

- 3-14-2-1- In properties where the natural slopes exceed 30%, it is forbidden to build neighborhoods

- 4-14-2-1- When a neighborhood is built on a major property or on a sorted/annexation property whose area is or exceeds 10000 sqm, 15% of the superficial investment is decreased.
- 5-14-2-1- The diversity of buildings must be adopted regarding size and proportions, and there must be convergence and coherence in the buildings in terms of architectural style and spirit to comply with the town's architectural and civil spirituality.
- 6-14-2-1- Buildings must be associated with gardens and must be distributed around piazzas.
- 7-14-2-1- A full and complete design must be provided taking into account the distinctive natural features of the land intended to build on from rocks, trees, and water points.
- 8-14-2-1- Views and archeological monuments must be respected if present or if it was discovered during the excavation.

- The Incapacity to Deal with Building Designs:Although Section 8-3 from the 2000 private and public law of Jezzine has mentioned: that any added new building should be homogenous with the surrounding building typologies and that each building should have an 1 to 2 opening ratios for it to be consistent with the surroundings old fabric,however, it was replaced with a more general one later on, where only facades should abide by a 60 and 100 percent cladding. Regardless of both laws, the outcome has been chaotic, especially for the old core where new building additions have been heterogeneous to the surrounding's historical fabric. In contrast, in Deir El Qamar under

section 1-2-9, even openings in elevations have been managed as we can see in the following:

- 3-9-2-1- All openings in elevations must be of vertical expressions to match with the natural stone's characteristics.
- 4-9-2-1- All model fine architecture elements must fit with the traditional architectural style that is used in the old town.

Moreover, although of its irrelevance nowadays, the pilots became allowable in zones A, B, and B1 after being unallowable in 2000 regulations. In fact, these floor pilots can allow visual go through and permit availability of car parking. But in zone A it would lead to visual odds with the existing terraced fabric. In contrast, in Deir El Kamar, case pilots are only permitted when there an impossibility to ensure underground parking. In case pilots are to be built, it should be 10 percent closed, particularly in the corners, and its height is considered to be from the sum of the total allowable height, that is being minimum 250 cm 1-2-6.

- Inadequate dealing with building materials and cover percentages:

Now, it is mandatory to have 60 percent cladding on all houses in all areas except D and D1 that should have 100 percent cladding while. Colors should go along with the existing buildings although exceptions could be approved for certain applied reasons, thus making the process elastic. It is also mandatory to have 60 percent red tiled roofs in all zone except D and D1 zones, where it is 100 percent. However, if we go back to old photographs (fig.28), we can see that the majority of houses had not roofs at the first place. So why to impose on them red roofs? In contrast, in Deir El Kmar case, under section 1-2-11, they specified for each area what type of roof it should have. For

example: For zone B, historical houses without a tiled roof can stay without it and can be later added. If new houses are built, they can be with or without roof tiles on condition that it satisfies a 100 percent ratio and a pyramid form. Moreover, in case buildings are more than two floors in this area, tile roof is prohibited. For zone E, for example, it should be 60 percent where staircases, water tanks, and amenities should be hidden below it. In all cases, they should have a slope with an angle between 20 and 30 degrees and not higher than 5 m.

Figure 28. Comparison between old and new Jezzine townscape. This photo illustrates the shift in Jezzine character from agricultural Mediterranean town character to a suburban character. Retrieved from: https://www.facebook.com/Jezzine/photos/.

iv.Process

One of the most important issues that Jezzine's master plan guidelines has missed is the issue of process and how fabric keeps being altered especially by physical additions. In contrast, in Deir El Qamar, this issue has been dealt accurately under section: 1-1-4 . This section mentions that even if the project ter is not going to be used totally, the avant project should be presented as if the ter has been totally used, to ensure how the outcomes will be in case additions are to be made later. Moreover, one of the main issues that need to be altered is the way the DGU alters the zoning master plan and

who is assisting in this process. For example, based on the thesis survey, I discovered that the Locale office of urban planning in Jezzine is not being referred to it, each time modifications are done. The locale urban planning office is the official directory on ground that applies regulating zoning by giving building permits and monitoring the failure and success of these zoning regulations. Therefore, this needs to be altered. Nevertheles, the way the zoning master plan has been produced at the first place missed a lot especially when it comes to social and cultural inclusions. This can be attributed to the fact that the 2000 master plan and later alterations were produced by counting on technocrats. They adopted a top-down approach to planning, which the following master plans were based upon. According to Mr. Debbs a Lebanese Urban planner who have assisted in these planning processes in Jezzine, this technocrat approach to planning reflected the DGU will, at the time that, planners should avoid interacting with stakeholders in order to prevent socio-political influences on planners and real estate speculations. However, this is totally illogical for two reasons: First, because, in this way, we are missing the collective memory and cultural side of this cultural landscape, and second, we already know that the final studies presented to the DGU have been altered later by it under socio-political influences.

In the end, and from an urban design perspective, a new approach should be adopted in zoning and master plan design processes in Jezzine to integrate the agricultural and touristic assets while controlling urban expansion. This new approach should also account for the identity of the region as well as to protect the cultural landscape and the town's valuable heritage while considering all the issues and failures that we already mentioned in this analysis.

3. Jezzine Typo-Morphological patterns

Nowadays, three types of morphology can be distinguished in the fabric of Jezzine. The three different patterns are grouped based on the historical occurrence of events along with the building typologies (fig.29, 30, 31). These groups are:

- *The pre-zone settlements (1750-1960)* Year 1750 was chosen, since, during this period, farmers mainly began moving and settling in Jezzine, and year 1960 due to the fact that during this period, and especially after the year 1958's earthquake, new construction wave began taking place, while introducing new materials, mainly concrete.
- *The post zone settlements (1960-2000)* This period can be divided into two sections, mainly from 1960 till 1975 when the Lebanese civil war began and from 1975 till 2000 when Jezzine was liberated from the Israeli occupation.
- *Recent settlements (2000-present)* During this period, zoning master plans were introduced for Jezzine.

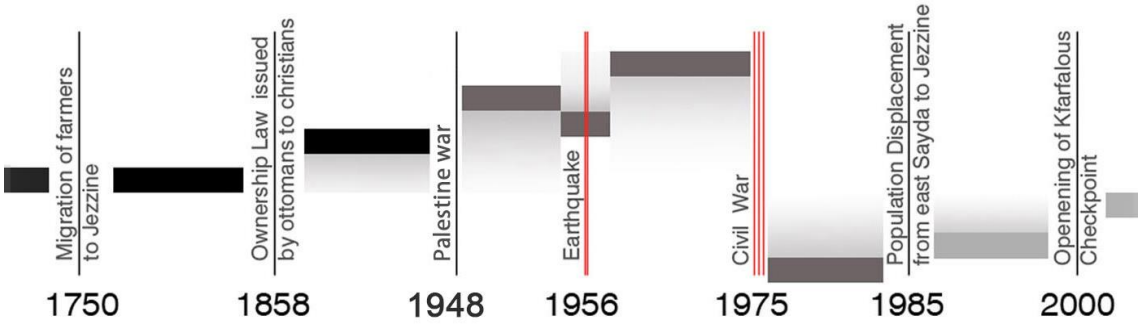

Figure 29. Jezzine timeline of major events .This timeline illustrates how the major events occurred in Jezzine and how it influenced the growth in Jezzine . Timeline produced by Neaimeh, R.2015.

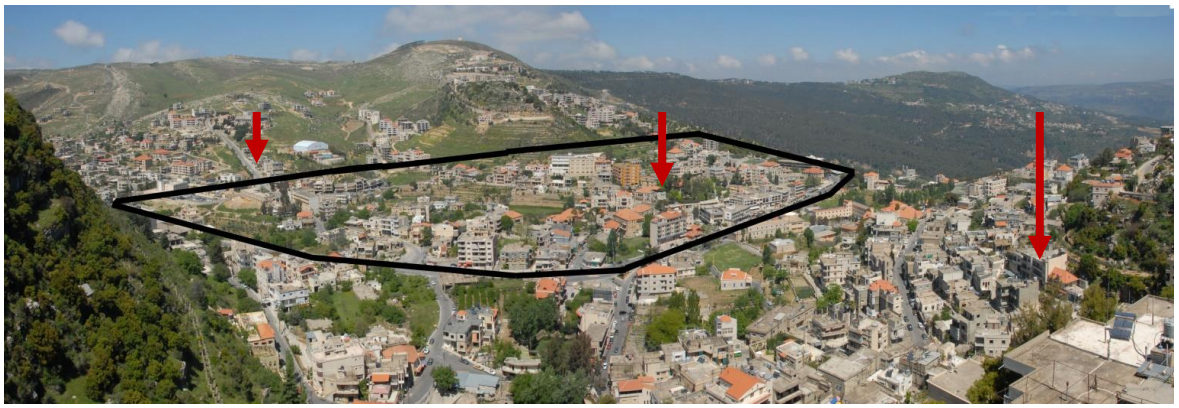

Figure 30. Jezzine fabric .This photop illustrates the location of the different fabric patterns in Jezzine, going from the oldest in the east side number 1 to the recent number 3. Map produced by Neaimeh, R.2015.

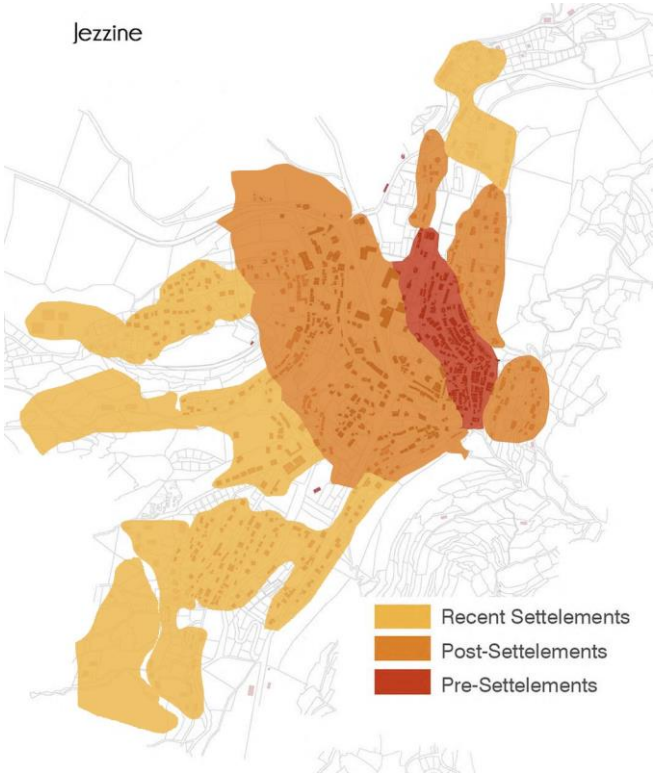

Figure 31. Jezzine fabric.This map illustrates the growth in Jezzine, going mainly from the oldest in the east side to the west side. Map produced by Neaimeh, R.2015.

a. First Pattern of Jezzine's Fabric (1750- 1960)

i.Historical Overview

This pattern presents the densification that happened, mainly during Ottomans period, when the first neighborhood in Jezzine « Hay Al Daya » was built. This densification was complemented by infrastructural works such as building roads, installing water infrastructures, and bridges that linked Jezzine to Nabatiyeh, Sayda, and Shouf (Rahal, 2006). This pattern of Jezzine's fabric is located east of the town where the old core of the village exists (fig.32).

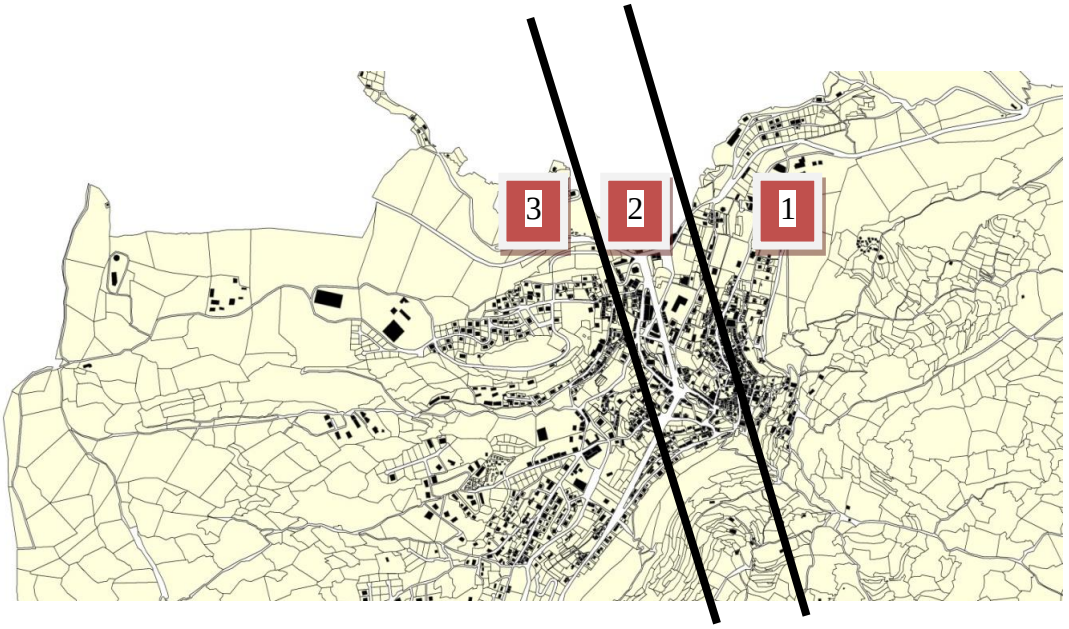

Figure 32. Jezzine fabric .This map illustrates the different fabric patterns in Jezzine, going from the oldest in the east side number 1 to the recent number 3. Map produced by Neaimeh, R.2015.

The main feature that differentiates the built fabric, in this part of Jezzine, is its fine-grained fabric. This fine-grained fabric can be attributed to several factors; however, socioeconomic influences had the paramount impact. During this period, the building sector as well as the agricultural sector flourished as locals and mainly labors became able to have deeds for land ownership. This new reality gave them the incentive to build more and to take care more of the land, in contrast to the period when they used to wirk

as labors for landlords with small percentages of profit .Furthermore, Jezzine's expatriate, who fled from the area during World War I, began sending money to their relatives who in return began capitalizing and building small houses . Therefore, the buildings of this period were incrementally built due to farmers' limited economic resources, and growth took an organic linear shape (fig.33,34).

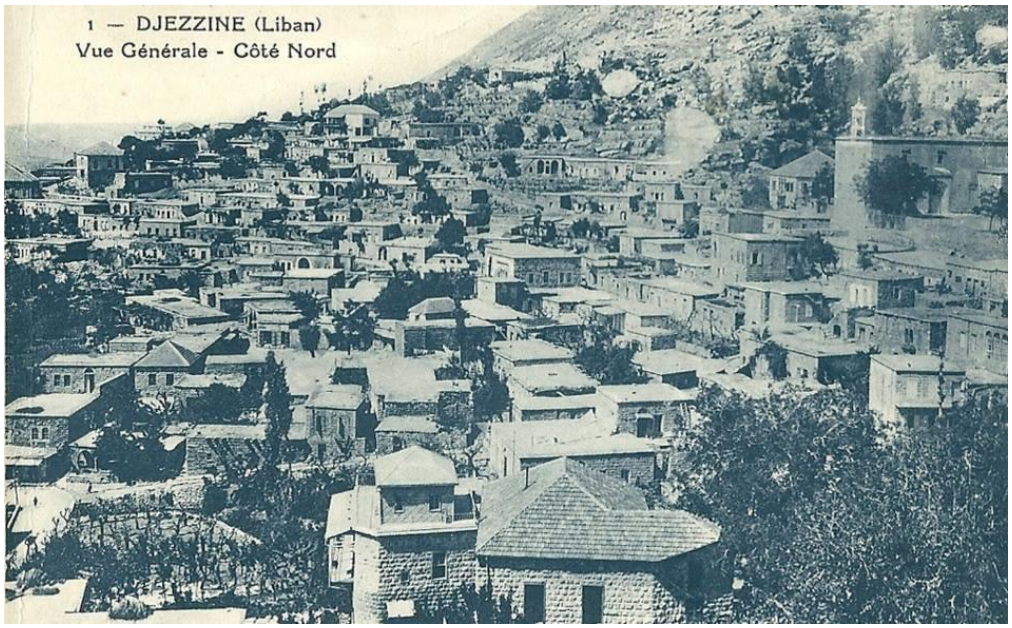

Figure 33. Jezzine fabric.This photo illustrates the old fabric in Jezzine core. The photo was taken from the digital collection of Kiwan, E.2015

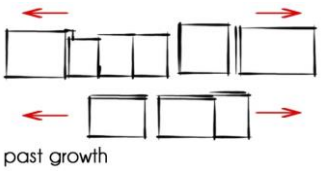

Figure 34. Jezzine fabric growth.This diagram illustrates the linear growth of old fabric in Jezzine core. Map produced by Neaimeh, R.2015.

In addition, the proximity and attachment of these houses that followed perfectly landform topography(fig.35,36), where houses are terraced and well integrated

within the natural setting regarding orientation, scale, materials, and openings. Can be as well attributed to people's sensitivity to their natural surroundings since agriculture became their main living resource at the times (Rahal, 2006).Therefore, peasants who raised silkworms and planted grape vines needed to preserve as much as they can from the agricultural fields below their residential neighborhood for cultivation. This pattern of settlement also used to facilitate surface irrigation for farmers, since they used to use gravity to distribute water over the fields. According to some studies such as Maria El Helo's study, such layout of houses would have facilitated handling and treating soil covered houses during fall and winter. Moreover, it would have facilitated the gathering of locals in the case of defense against enemies who have attacked Jezzine several times in the past (Helou, 2012).

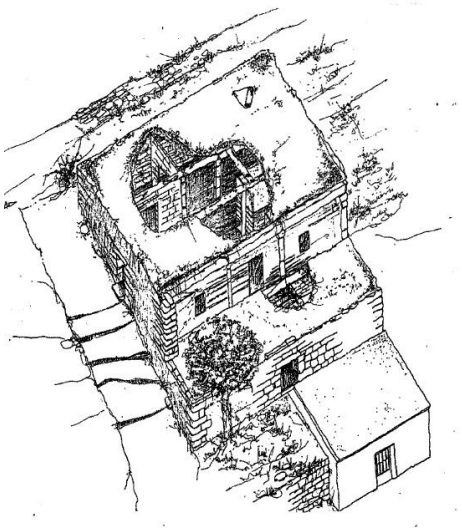

Figure 35. Jezzine fabric .The sketch on the left represents a terraced house similar to what exists in Jezzine core. The photo was taken from the Shwayri.S.1994 thesis.

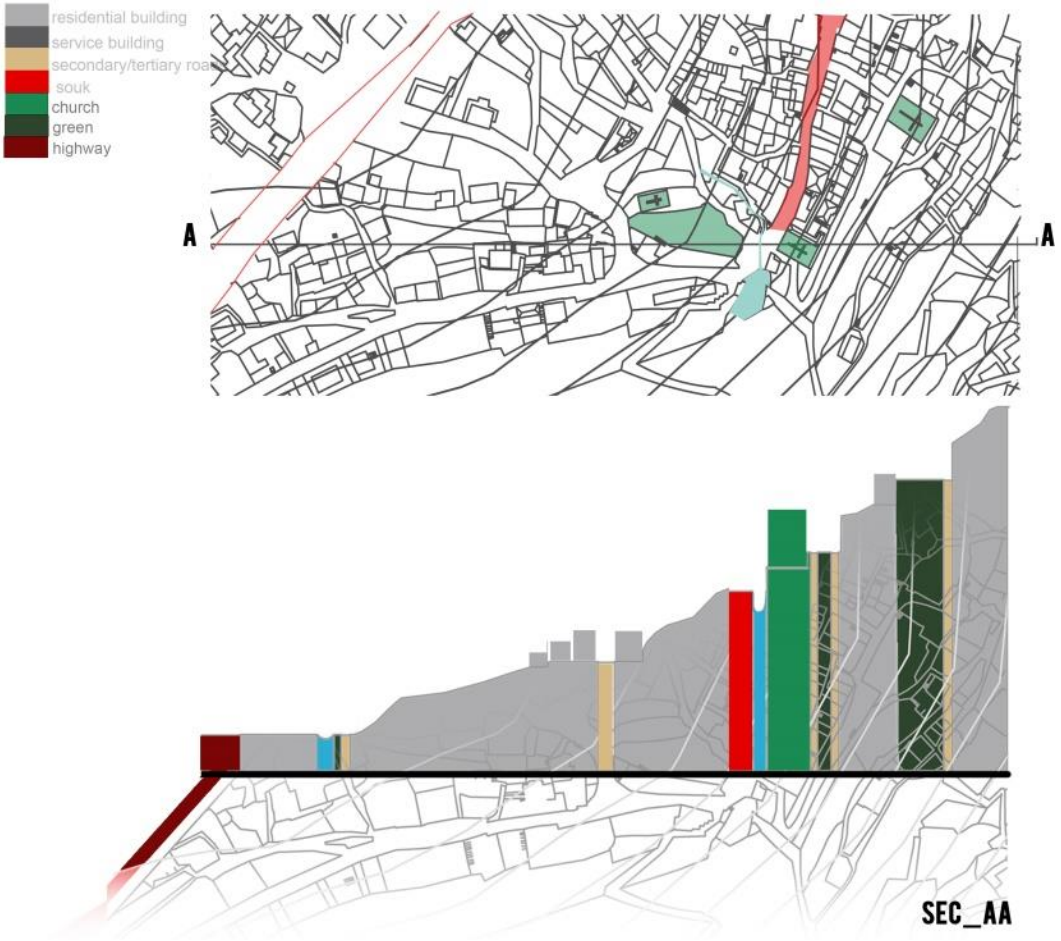

Figure 36. Jezzine fabric. This section illustrates the topography and layering of uses in the old fabric in Jezzine core. Map produced by Neaimeh, R.2015.

However, currently, growth and densification in this section of Jezzine, is taking a vertical direction. Therefore, this new massing typology is disturbing the old code, through blocking views capes and creating shaded areas all time, especially that the additions were made on built units that already have not abide to any sort of setbacks in the past(fig.37).

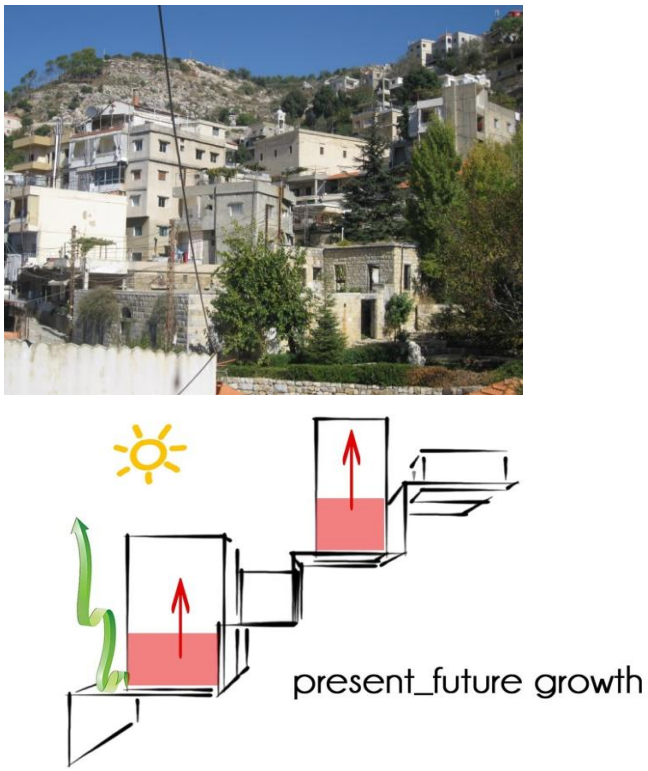

Figure 37. Jezzine fabric .This photo and diagram illustrate the new vertical densification in Jezzine core. Photo taken by Neaimeh, R.2015.

ii.The Distinctive Elements of this Pattern Are as Follows

- Houses: Traditional houses at Jezzine's core are four types: Rectangular houses (fig.38), Gallery houses (fig.40), Liwan houses, and Triple arches houses (fig.39). Rectangular and Liwan houses were peasant's houses. These houses are located mainly in Hay Al-Daya and Hay Al Chawi in the eastern part of Jezzine. Triple Arches houses were traders and expats houses which are primarily located between Hay Al Dayaa and Hay Al Sad. Gallery houses were used as trader's houses and hotels; they are located mostly in the city center and Hay Al Sad.

Therefore, we can see that this layering of traditional houses from the upper east part of the village to the center reflect two issue. The different social status of

Jezzine habitats at the time and how Jezzine has been progressing from a rural village to an urban town and its role in agriculture, trade, and tourism. Also, it shows us how such condensed, and low-rise houses have favored social interactions and respected the natural setting (Helou, 2012). These houses and by social status of resident shared the following common details:

The rich people mansions and hotels had these features in common (Aoun, 1997):

- Floor Number: two or three with roof
- Central hall always used as a living area with the bedrooms around.
- The system of Construction: bearing walls with stone cladding and cyclopean blocks acting as edifice base.
- Height being more than 4.5 m
- Slabs (beams and ribs)
- Inclined roof with slate
- Steel portal and railings
- Foreign and imported features influenced them.

The small/middle size houses had these features in common:

- Flat roof with one direction structure of straw and wet earth
- Bearing walls with niches that are constituted of two layers of stones separated by earth's residues.

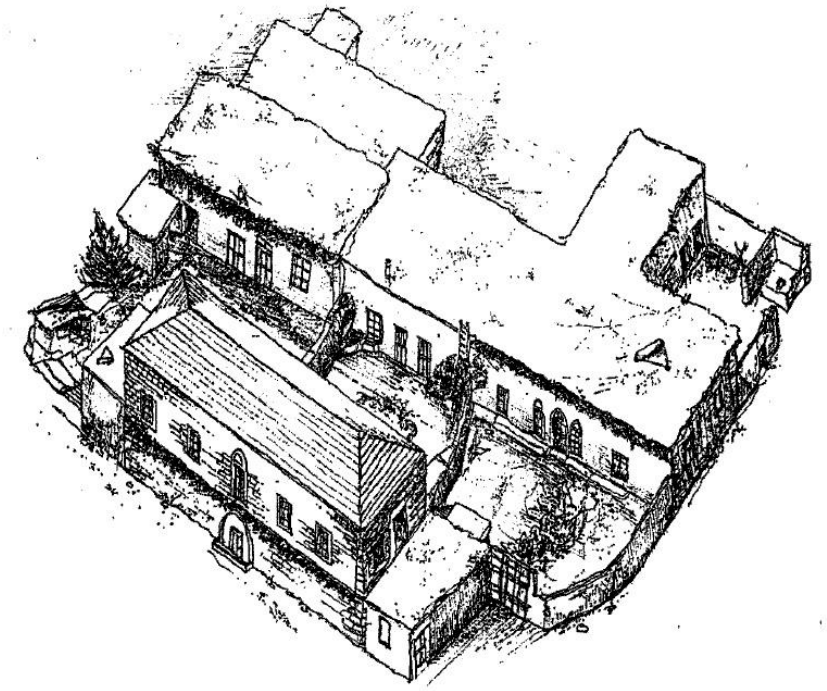

Figure 38. Jezzine fabric .The sketch represents set of attached rectangular peasant's houses with a liwan house in front of them, similar to what exists in Jezzine core. Photo taken from Shwayri.S.1994 thesis.

Figure 39. Jezzine fabric .This photo illustrates a triple arches house in Jezzine core. Photo taken by Neaimeh, R.2015

Figure 40. Jezzine fabric .This photo illustrates a gallery house in Jezzine core. Photo taken by Neaimeh, R.2015.

- Souks: Shops and groceries were built during this period in Hay Al-Daya, before moving to the lower area next to the waterfall. The first Souk to be ever built in Jezzine was « Rostom Bacha » souk which consisted of multiple shops and groceries that used to sell mainly dried fruits and cutlery Emerged in 1880 as a result of the several houses that have been built on a vacant land, the souk was primarily a vacant space. Therefore, locales found in this open space a suitable place for socializing and selling their products such as clothes, foods, and artisanal, where foreigners and traders used to come for trade. Today, nothing remains from this souk: only a bakery that is still working there. The remaining place became a parking space for cars. The souk moved later to the upper part of Hay Al dayaa to Said Wehbe road. There it took a more urban

layout, which remained to date with shops, laid in a linear way on both sides of Al Dayaa street (fig.41) (Helou, 2012).

Figure 41. Jezzine fabric. This photo illustrates the location of souks in Jezzine core going from the oldest to the newest going from left to right in Jezzine core(Rostom Bacha Souk ,Daya Souk,street Said Wehbe). Map produced by Neaimeh, R.2015.

- Mills:The main mills were located in this section of the town near Al-Daya main spring Al Naba, in which the work stopped two decades ago. Some of them ran more than a cornerstone, including Mill Mar Maroun built in 1861, Mill El Helou, and Mill El Kenaan 1878 (Rahal, 2006). The mills used to be visited by locals that needed flour since people prepared their daily bread at the time. Currently, one of these mills is transformed into a shrine (figure28) while the remaining are still kept as touristic sites. These mills locations, along the river bed illustrate how locales used to benefit from natural resources and especially water in an efficient way.

Figure 42. Jezzine fabric .This photo illustrates one mill in Jezzine core. Photo taken by Author. 2015.

- Circulation/Escaliers: A narrow circulation pattern differentiates this section of the town because, initially, these arteries were not made for cars. These network link the neighborhood's fabric together from one side and the neighborhood to the rest of the village from another side. This tight circulation pattern goes back to the steep hillside nature in this area of the village. Therefore, to make commuting easier and to make shortcuts, people built these tight stairs and narrow passages between buildings (figure42). These passages mainly link residents' houses to the souk, thus leading people from their private space to the public space, the souk**.** These narrow stairs create kind of a maze since pedestrians cannot always see the endpoint where the stairs lead to.

However, their public nature these public networks are managed and controlled by the private (figure43). These links are mainly found in this area of the village, and they diminish as long as we go towards the west of the village. The boundaries of this circulation network here are defined by buildings borders, in contrast to what happens in the rest of the village, where circulation networks pave the way for buildings and define their borders (fig.44).

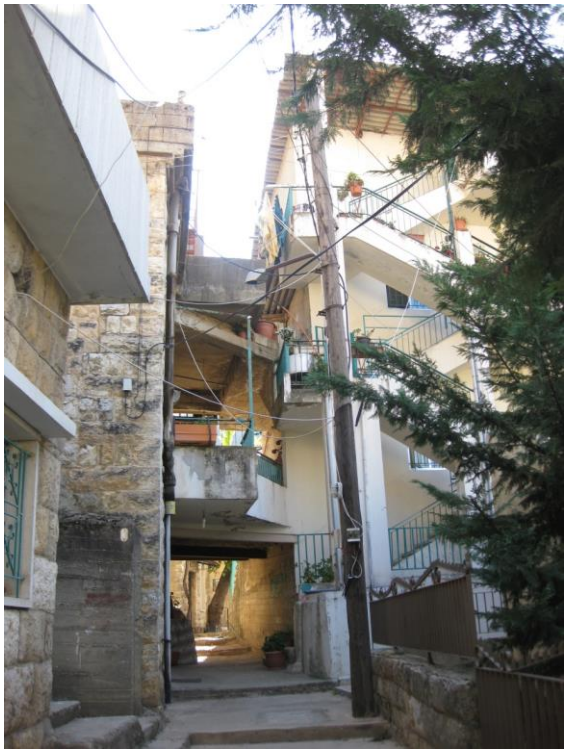

Figure 43. Jezzine fabric .This photo illustrates the narrow circulation network in Jezzine core. Photo taken by Neaimeh, R.2015.

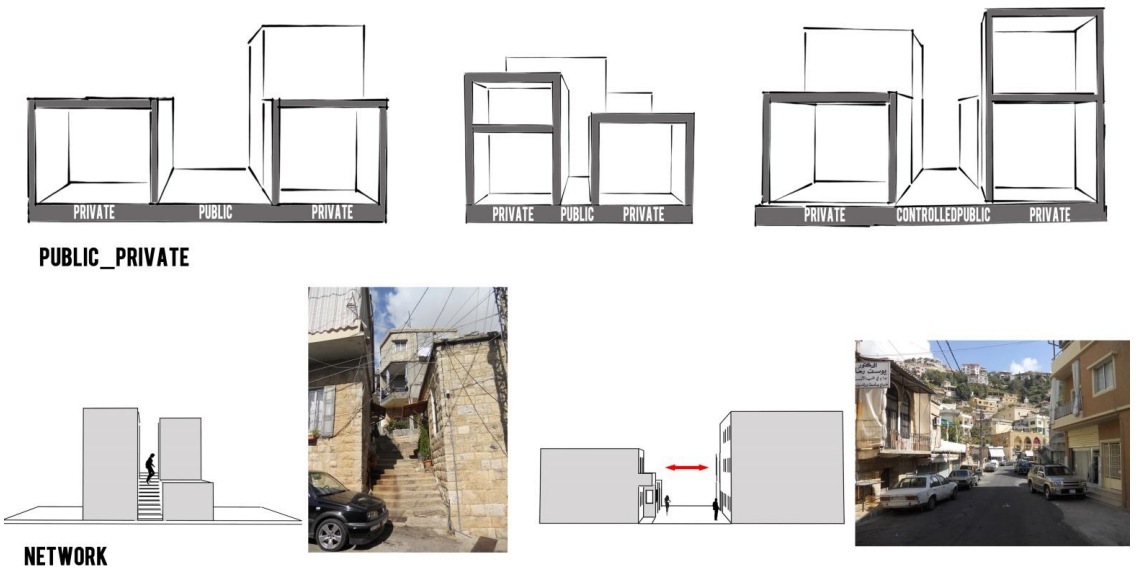

Figure 44. Jezzine fabric .These diagrams illustrate the relation between the private and public spaces in Jezzine core and how these narrow networks facilitate social interaction. Map produced by Neaimeh, R.2015.

Figure 45. Jezzine fabric.This photo illustrates the abundance of stairs and narrow links in Jezzine core. This diagram was produced during the planning and design workshop at the American University of Beirut. Spring 2013.

b. Second Pattern of Jezzine's Fabric (1960-2000)

i.Historical Overview

With time, the old core became overcrowded. Growing business and changing lifestyles needed to be backed by new habitats and new working places. This need led locales to build new building typologies and to move towards the center of the city along the river basin that divided the town into two parts all the way to the waterfall in the north. That is why we can find here a mixture of old and new building typologies, especially from 1958 and on when the reconstruction phase took place after the earthquake.

This pattern of Jezzine became a mix between the old fabric that was regulated by a social code and the new fabric which is governed by specific written laws and defined land use zones.

ii.The Distinctive Elements of this Pattern Are as Follows

- Houses:Building typologies at this part of Jezzine are four types (fig.47):

  - Traditional houses (Gallery houses(fig.48), Liwan houses, and Triple arches houses)

  - Post-Traditional buildings (New buildings mimicking traditional houses appearance)

  - Early modern houses (Early individual houses that were made of concrete)

  - Modern buildings (Buildings with multiple stories made with concrete with different uses)

- Mix (layering of different typologies)

The traditional houses, early modern houses, and mix typologies are mainly found in the eastern part of the city center of Jezzine. However, as we go towards the west-southern part of Jezzine city center, these typologies begins to disappear in favor for early and modern buildings. The densification in this part took a vertical direction and not a horizontal one as it used to happen in the old core (fig.46). That is why we can see that most of the buildings in this section have commercial shops in their lower parts, and residential units above them were setbacks began to be applied.

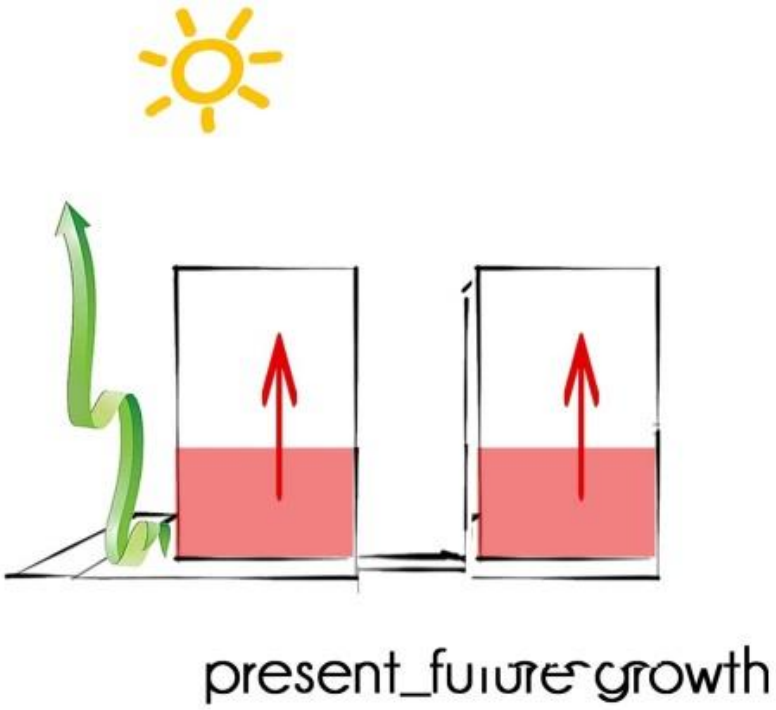

Figure 46. Jezzine fabric .This photo and diagram illustrate the new vertical densification in Jezzine second pattern. Map produced by Neaimeh, R.2015.

Figure 47. Jezzine fabric.This photo illustrates the mixed fabric in Jezzine city center. Photo was taken by Neaimeh, R.2015.

Figure 48. Jezzine fabric.This photo illustrates a traditional gallery type hotel in Jezzine city center. Photo was taken by Neaimeh, R.2015.

- Le Souk/Hotels:The need for a broad horizontal plane, in order not to fatigue trader's camels and horses, while being able to unload and store goods, in addition to being able to receive visitors, traders and tourists, made from the town city center a first choice for the new souk, since it secured these qualifications(fig.49). Accordingly, with time, traders and artisans began moving from the old core souk towards this area where the new souk was built. The new souk expanded from Boulevard Suleiman Bek Kanaan towards the North West where Souk Al Sad is currently located (fig.50). The buildings at AL Sad Souk mainly consist of three to four floors. Ground floors are primarily used for commercial purposes such as clothes shops and groceries, while upper floors are mainly used as homes for shop owners mainly (Helou, 2012).

Figure 49. Jezzine fabric .This photo illustrates the old fabric in Jezzine core. Photo was taken from the digital collection of Dr.Serhal,G .2015

Figure 50. Jezzine fabric.This photo illustrates the old fabric in Jezzine core. The photo was taken by Neaimeh, R.2015.

- Circulation:The fact that roads began to become qualified and valid for the cars passage since 1906, has contributed to the emergence of tourism sector where cafes, hotels, and hostelries became remarkable. This reality led to the appearance of a sort of fusion between the planned coarse grain pattern and the remaining dispersed fine grain pattern in this section. That is why, we can see beside the broad circulation network that fragments the built fabric and makes social interaction less frequent (fig.51), a valuable number of footpaths and stairs. These pedestrian links connect residential houses located in the west part of Jezzine below the cross hill to the Souk, similarly to the east of Jezzine (Hay El Dayaa). These narrow links render social interactions more frequent and alleviate the public space while leading the private to the public (figure 52), in contrast to the new circulation pattern which fragments the public space and imposes a distant pattern of settlements.

Figure 51. Jezzine main highway .This photo illustrates Jezzine main highway that became 14m wide by 2004. Photo was taken from the digital collection of Dr.Rahal.G.2015.

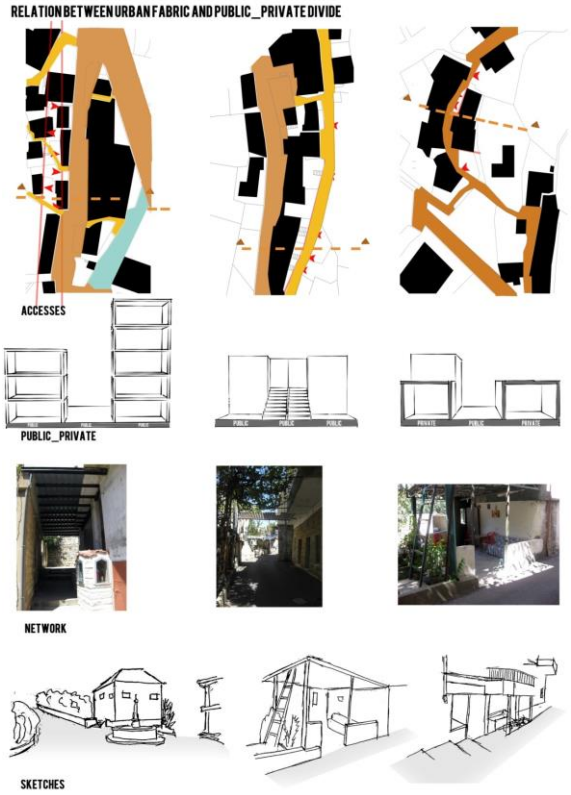

Figure 52. Jezzine fabric .This photo illustrates the relation between the public and private space in this section of Jezzine, where the public is sometimes totally controlled by the private. Map produced by Neaimeh, R.2015

c. Third Pattern of Jezzine's Fabric (2000-2015)

i.Historical Overview

The third and final pattern is mainly located in the southern part of the village. Here, almost all the lots are deserted; agricultural fields where sprawl is taking place. Densification took a vertical direction to satisfy developers' profits from real estate speculation, regardless of the natural setting characteristics such as topography, sun orientation, riparian areas, and land use. Therefore, the built environment here became mainly an outcome of the outdated building code and the outdated zoning master plan that we will elaborate on its evolution in the following section.

Therefore, and based on the previous zoning master plans from 2000 till 2009, we can see that this pattern of Jezzine became a result of the zoning master plan codes.

ii.The Distinctive Elements of this Pattern Are as Follows

- Houses:Modern construction techniques, in addition to current building law, have created a contemporary unique building typology that is not homogeneous with the past, hence leading to the monotony of townscape, anarchy of forms, and violence of contrasts. These new buildings are becoming isolated entities all over the landscape (fig.55).These buildings are of two types:
    - *Modern Buildings* (early elevated residential buildings in this area)
    - *Contemporary buildings* (recently built and compound like residential projects (fig.53,54).

Figure 53. Jezzine fabric .This photo illustrates a sample of the compound like fabric in Jezzine West side. Photo was taken by Neaimeh, R.2015

Figure 54. Jezzine fabric .This photo illustrates the new fabric in Jezzine West side. Photo was taken by Neaimeh, R.2015.

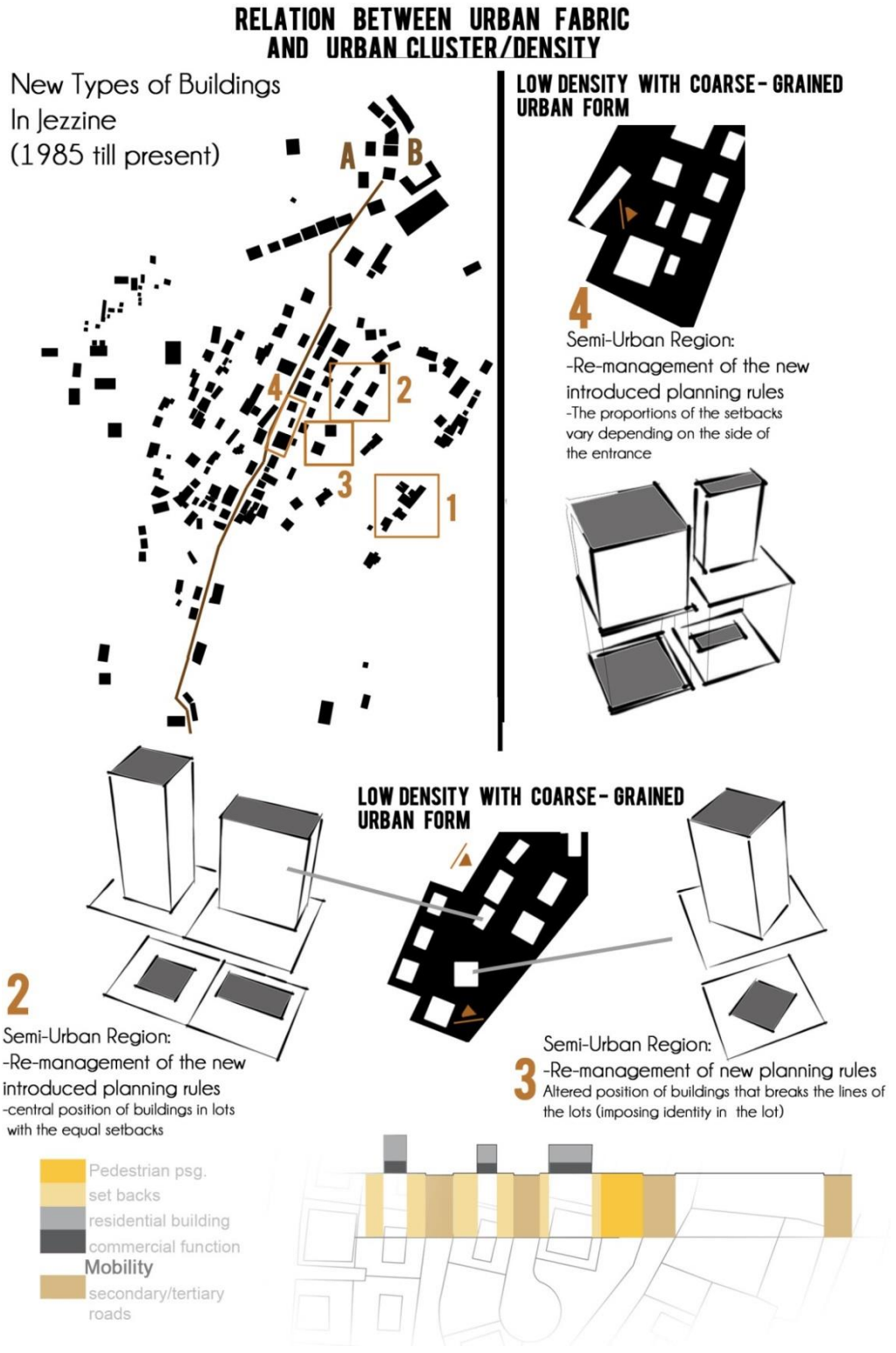

Figure 55. The relation between the existing urban fabric and density. It illustrates the relation between the first fabric, density in Jezzine and how buildings are isolated from their surroundings. Produced during planning and design workshop. 2015.

- Circulation: The circulation network in this section of Jezzine is composed of broad roads with almost total absence of footpaths and stairs. This area has almost no public space, and social interactions are minimal, especially in the lack of a commercial space and fine circulation patterns for pedestrians. However, a new type of circulation exists in this part that did not exist in the previous two patterns; this kind of circulation is the result of reparcelization of large agricultural lots into smaller buildable lots. These smaller lots, once built, are forming a compound like developments, sort of introverted, gated communities that may look like villages inside the city on long term (fig.56).

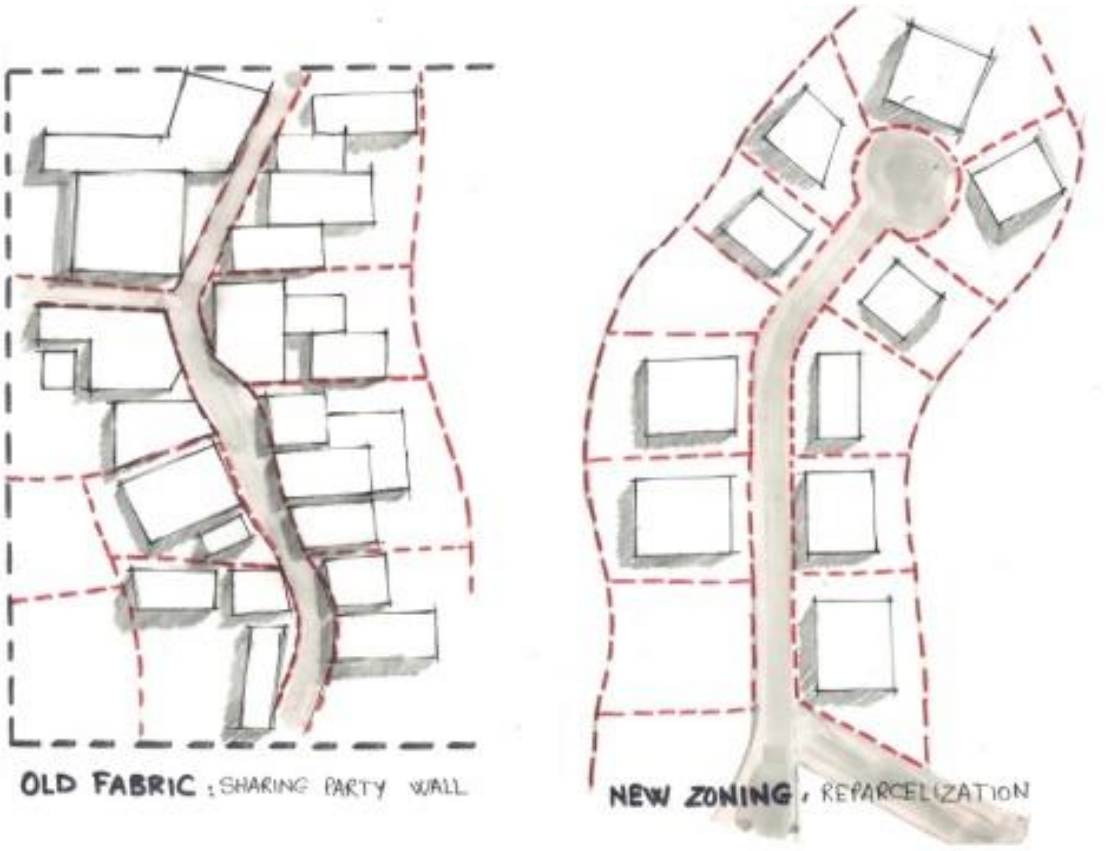

Figure 56. Jezzine fabric. It illustrates a comparison between the old fabric lots and the new parceled lots. In the new parceled lots, setbacks are respected, whereas in the old fabric it's not. Map produced during planning and design workshop.2013.
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B.Landscape Analysis

1.The Abiotic Components of Jezzine Landscape

a.Topography, geology and geomorphology

Jezzine is located in Casa Jezzine South of Lebanon, on the Western flank of Taoumat Niha on longitude 35°34 (Est G) and Latitude 33°33 (North of the equator)(fig.57). Jezzine is part of Al Shouf Cedar Nature Reserve (fig.58). The topography of Jezzine is part of the western chain of Mount Lebanon that stretches parallel to the eastern coastline of the Mediterranean Sea. Jezzine altitude varies between 905m and 1690m, but it's urban fabric is mainly located at an altitude of 940m(fig.59). Jezzine is just before the highest point of Taoumat Jezzine where the topography slopes down again descending towards the Bekaa Valley. The town stretches linearly on an east-west axis with a northern cliff and waterfall overlooking the magnificent Jezzine Valley, towards Wadi Jezzine and Bkassine pine forest.

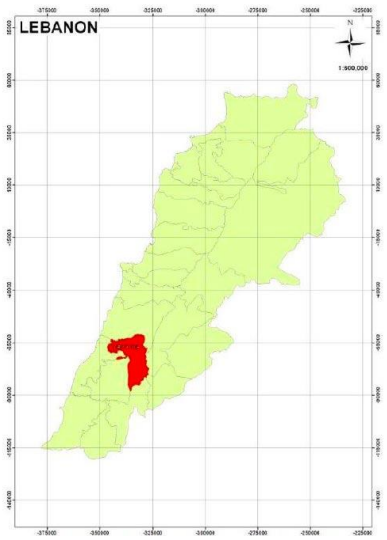


Figure 57. Jezzine Caza.This map shows Jezzine Caza marked in red with respect to diffrnet Lebanese region .Retrieved from the strategic development plan for Jezzine. November 2015.

Figure 58. Shouf Reserve map. This map shows Jezzine location on the southwest of Shouf reserve.Retrieved from www.ShoufCedar.org. November 2015.

From a morphological point of view Jezzine city is a combe located along a monoclonal Valley, while being protected by four mountains : Taoumat Niha (1700m,east), Taoumat Jezzine (1647m South), Jal El Aali (1212m West), Toura (1390m south-west)(fig.59) (Rahal, 2006). Cliffs and steep slopes are located at the east and north side of Jezzine with a percentage of inclination that ranges between 60 and 80 degrees. However, these percentages become almost null at the center of the city and the head of the waterfall with a value that varies between 0 and 5 degrees. Then, this value begins to increase gradually towards the West with a value of 5 to 20 degree(fig.60,62). Besides the cliff, hillsides and the already mentioned surrounding four hilltops, Jezzine features one major internal hilltop the cross hilltop that overlooks all Jezzine(fig.61) (Aoun, 1997).

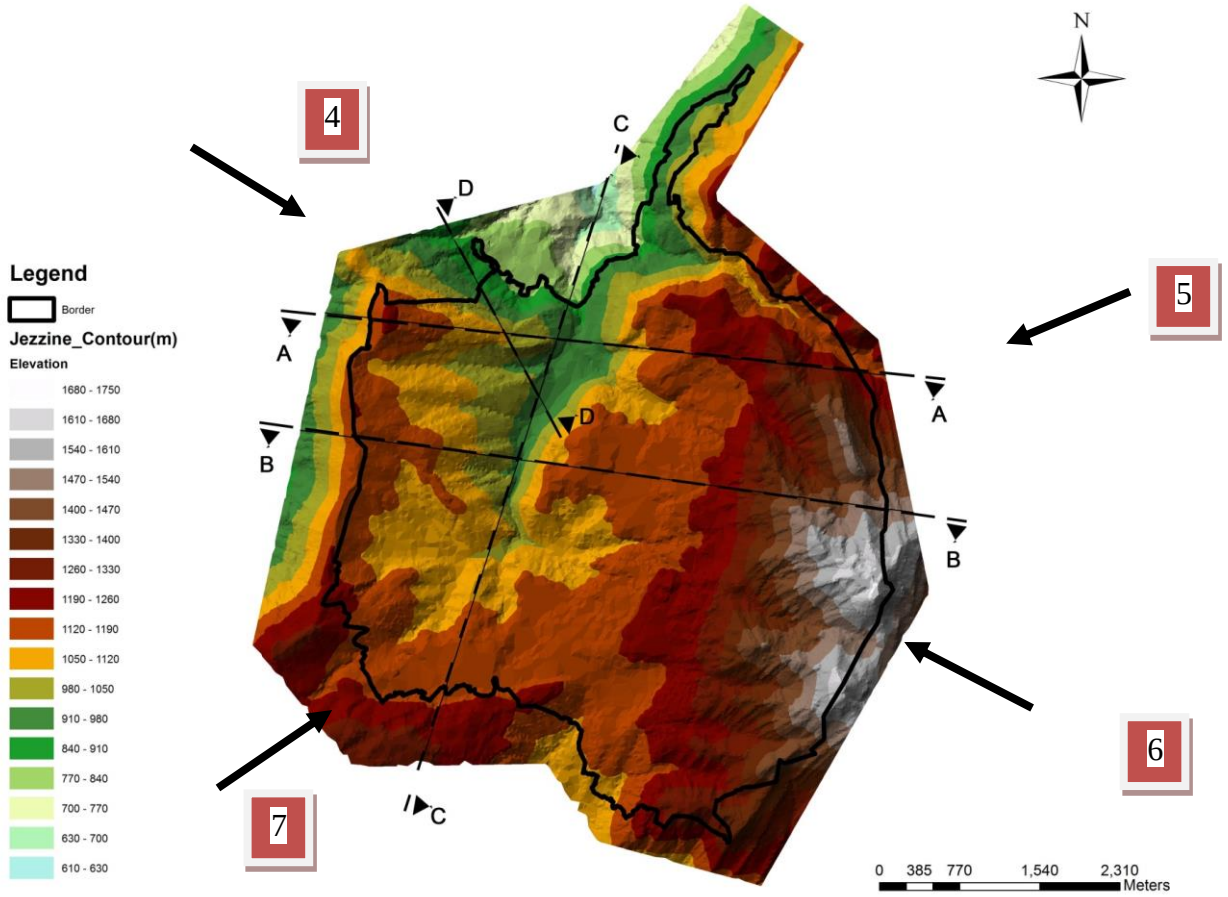
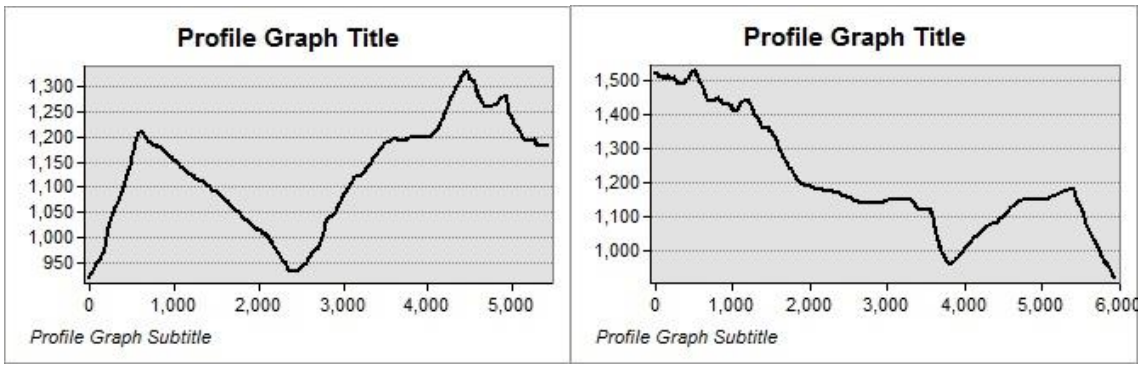


Figure 59.Topography of Jezzine.This map was produced by Roger Neaimeh while being based on army topographic map of Jezzine. 1-Jal El Ali.2-Taoumat Niha,3-Taoumat Jezzine,4-Toura. Fall 2015.



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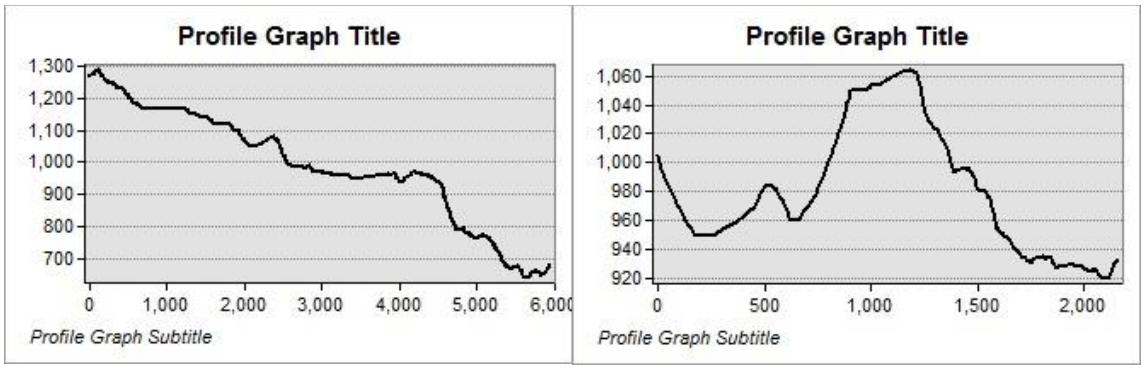


Section CC Section DD(cross hill)

Figure 60. Topography of Jezzine.This map was produced by Roger Neaimeh while being based on army topographic map of Jezzine. Fall 2015.

Figure 61. Jezzine fabric.This photo illustrates the cross hill in Jezzine core. The photo was taken by Neaimeh, R.2015.

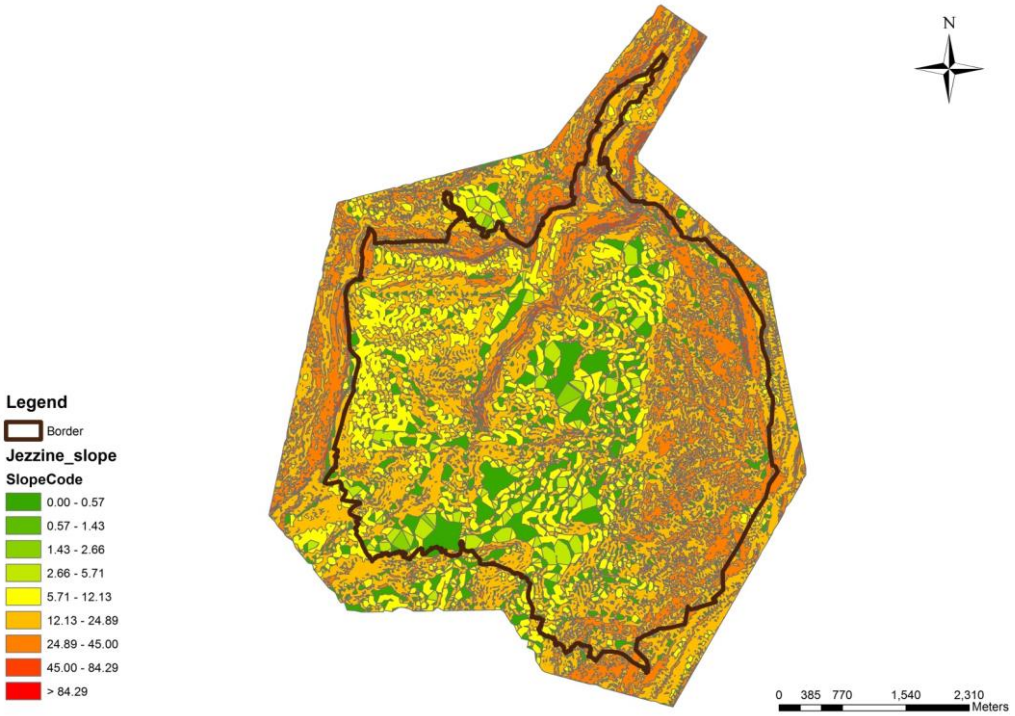


Figure 62. The slope of Jezzine in degree.This map was produced by Roger Neaimeh while being based on Army topographic map of Jezzine. Fall 2015.

This topography had major influences on the structure of Jezzine and its survival during different periods. This influence can be seen clearly in the city fabric where the neighborhoods located on the east side of Jezzine are built on steep slopes. This fact obliged people to create narrow roads and terraced houses and to have a higher density of individuals. In contrast, the neighborhoods located on the West side of Jezzine are built on gradual slopes, which permitted people to build wider roads and to have houses surrounded by gardens, thus lower density of population. In the center where the slope is almost 0, lands are all irrigated and fertile which led people to build fewer houses to preserve the cultivated lands. However, in the north part of the city center, the presence of the waterfall transformed the area into a touristic destination along with the parallel two neighborhoods into commercial and service neighborhoods. This natural

morphology also formed a natural defensive barrier around the city. This obstacle made it impossible and difficult for foreigners to access the city before the opening of Al Maabour. This barrier could also explain for us why people would have chosen the steep eastern slope to settle first since it overlooked the surrounding landscape and would have helped people in defending their territories while being protected by the eastern cliff from behind.

In addition to these geographical and topographical characteristics, Jezzine presents a distinct geological formation. The various geological layers of Jezzine go back to the Cretaceous (145 to 70 million years)(fig.63). The geological formation of these topographical components consists mainly of sedimentary rocks. Limestone constitutes the basis of the mountainous region stretching almost linearly from the west Kfarhouna up to the east till Niha. The north side of this stretch sedimentary consists of the waterfall cliff, which is formed mainly of limestone and sandstone (Fig.64).These geological characteristics can explain for us why Jezzine contains several grottoes. The well known Grotto of Fakhredine is one , that is part of a regional and national cave system in Lebanon.The grotto of Fakherdine lies 3 km northeast of Jezzine and is developed in Cenomanian limestones near their contact with impermeable sandy argillaceous Albian-Aptina Beds. Similarly, in this regional area, the grotto of Niha exists, which is relatively small and lies on the west flank of Jabal Nia, 4 km northeast of Jezzine (Khalil, 2014).

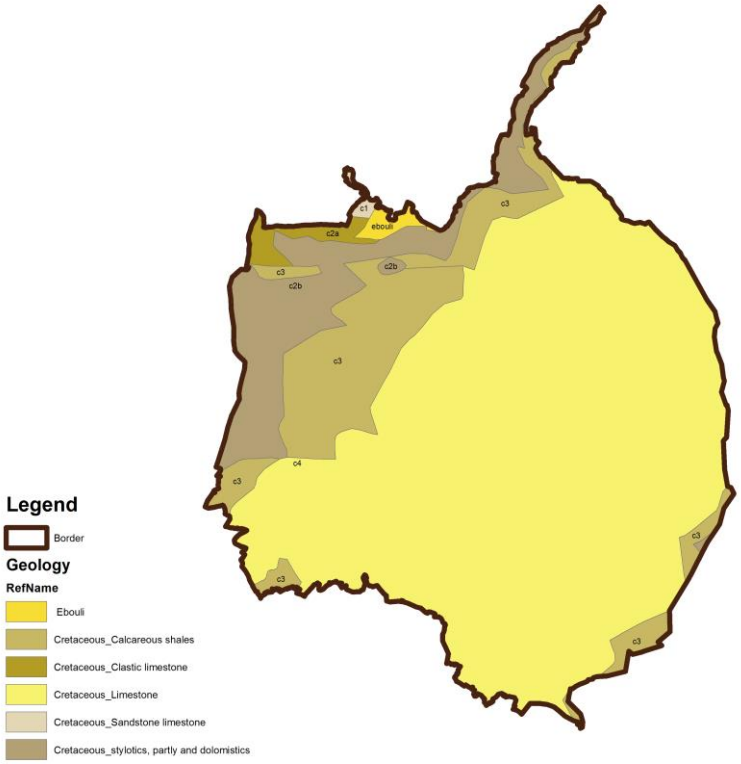


Figure 63. Geology of Jezzine.This map was produced by Roger Neaimeh while being based on CRNS Lebanese territory geology map. Fall 2015.

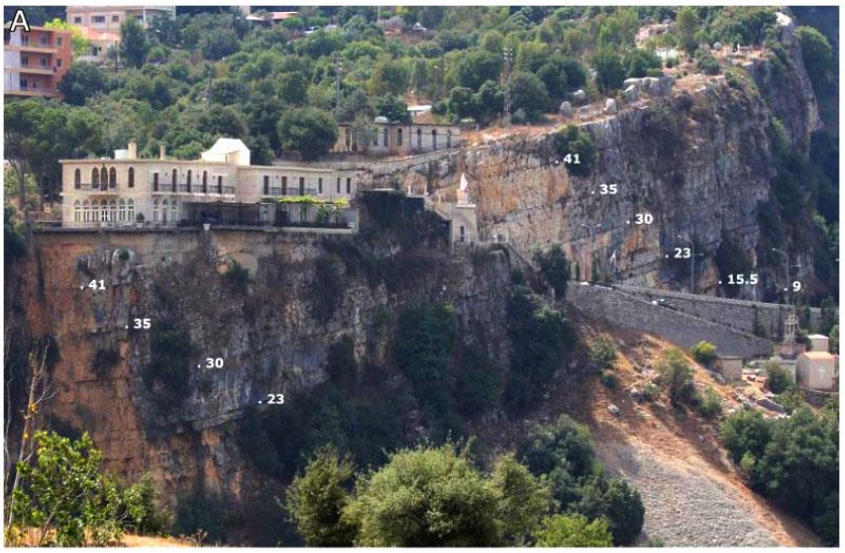


Figure 64. The waterfall with the road section. This number labels refer to the metrics from the road. Retrieved from http://paleopolis.rediris.es/cg/1418/CG1418.pdf. Fall 2015.

Furthermore, Jezzine is located inside the zone where the active fold of Mount Lebanon happens. One of these faults along the Western part of Mount Lebanon is the Roûm‟s fault. This fault goes through Jezzine, Lebanese coast and then comes back to the mainland through the city of Tripoli. Other minor faults, apparent and hidden, are perpendicular to the regional western slopes of Jabal Niha and Barouk (Khalil, 2014). Therefore, these faults raise concerns that any new master plan for Jezzine should take into consideration, specifically that any possible movements and earthquakes along the Roum fault system would cause destruction in buildings and infrastructure and may trigger landslides.

The interaction of these topographical and geological characteristics of the region over time produced four distinct geomorphological features in the landscape of Jezzine: the hilltops, the hillsides, the plains and the cliffs(fig.65).

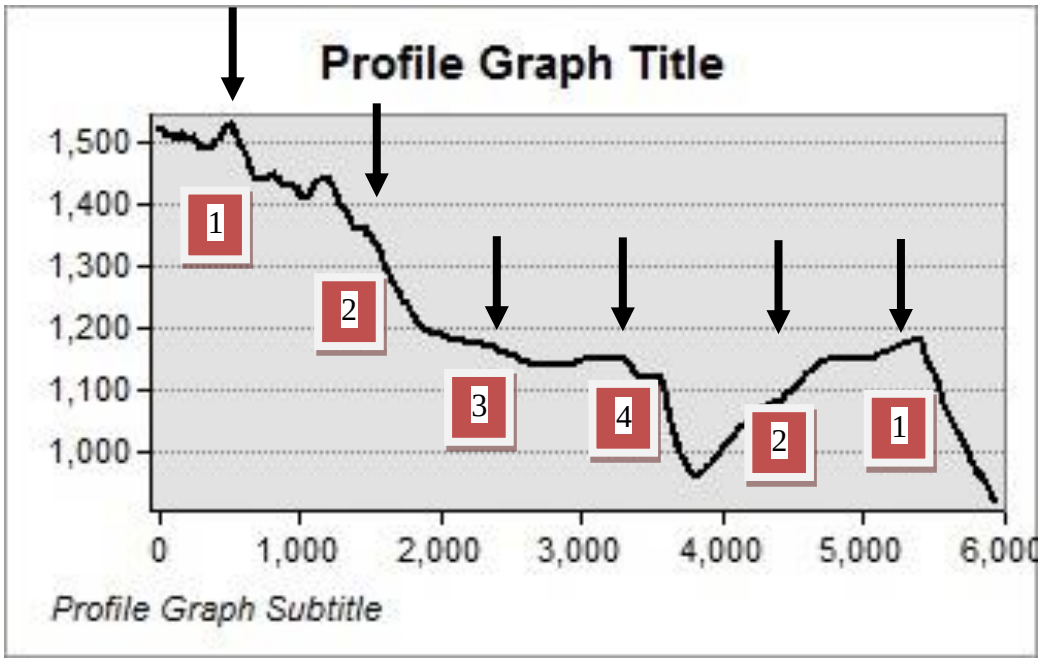


Figure 65. Geomorphological features in Jezzine. 1-Hilltop,2-Hillside,3-Plain,4-Cliff. This graph was produced by Roger Neaimeh while being based on army topographic map of Jezzine. Fall 2015.

b.Climate, Soil and Hydrology

Jezzine's climate is similar to the rest of the Lebanese villages located on the western Mountain chain of Mount Lebanon. This means that Jezzine have a cold winter and a mild summer. The temperature varies between 23°C and 30°C at summer, and between 2°C and 10°C at winter. Accordingly, the humidity ranges from 60% during summer and 18% during winter.This reality made Jezzine a good summertime destination, for locales as well for tourists since it had a mild and dry summer with cool breezes, especially with the presence of the waterfall(fig.66).The average of rainy days in Jezzine is 70 days with an annual average of 900 to 1100 mm (Bechara, 2000).

Precipitation in the watershed is the source of both surface stream flow and groundwater. The major portion of this occurs as rain. Snowfall often occurs at the upper elevations, but snow seldom persists more than a few days and disappears before the end of the rainy season. Normally snow has a little overall direct effect on streamflow within the watershed. However, on rare occasions, warm rains falling on the snowpack may result in rapid melting and release of large quantities of water at a time when the soils are already fully saturated. These conditions lead to rapid runoff and floods. A large proportion of the exposed surface rock in the Barouk and Jezzine region is cavernous, fissured and broken limestone, and its porous condition makes it very permeable. This results in much of the precipitation infiltrating with minimum surface runoff despite the often-shallow soils and sparse vegetative cover. Water percolates downward through the various formations and feeds the many large springs found on lower slopes in the area. Such springs help maintain stream-flow during April to November dry season (Khalil, 2014).

However, this watershed constitute only a section of a regional bigger network. This network consists of Shouf natural reserve in The East, Awali river in North, Litani River and Qaraoun Lake in South and Kfar Houne in West. The mountains of the reserve and Jezzine such as Barouk ,Taoumet Niha, , Taoumet Jezzine and Toura are full of water that abounds in natural springs (Nabe) and artificial ones (Ain). Some zones are richer than others, for instance, in the village of Niha, we can find about a hundred waterholes although most of them are dry today. One explanation is that the Mount Lebanon is characterized by a large number of springs at a certain altitude. Varying from a region to another, this altitude often starts beyond 1000 meters and usually corresponds to the level where the layer Cretaceous C1 (basic sandstone) and Cretaceous C2, C3, C4-5 differs from the Jurassic (mainly limestone). This means that the entire limestone rock mass (located more or less at an altitude of 1000 meters or higher) soaks up the rainwater and the melting snow. Through their significant permeability and capacity to store water, the limestone become real water towers. This retained water gushes out abundantly at the point of intersection between the sandstone and the limestone. Thus, that explains why the majority of the springs arise at similar points of intersection and Jezzine isn’t an exception (Khalil, 2014).

Also,in the region of Jezzine and Kfar Houne, there is localized aquifer in the Cenomanian Sannine Limestone between the Jurassic core of Jabal Niha and the Roum Fault.This aquifer C V exists to the west in Nabaa Jezzine, which is a boundary spring, and along numerous small springs associated with the Roum Fault .

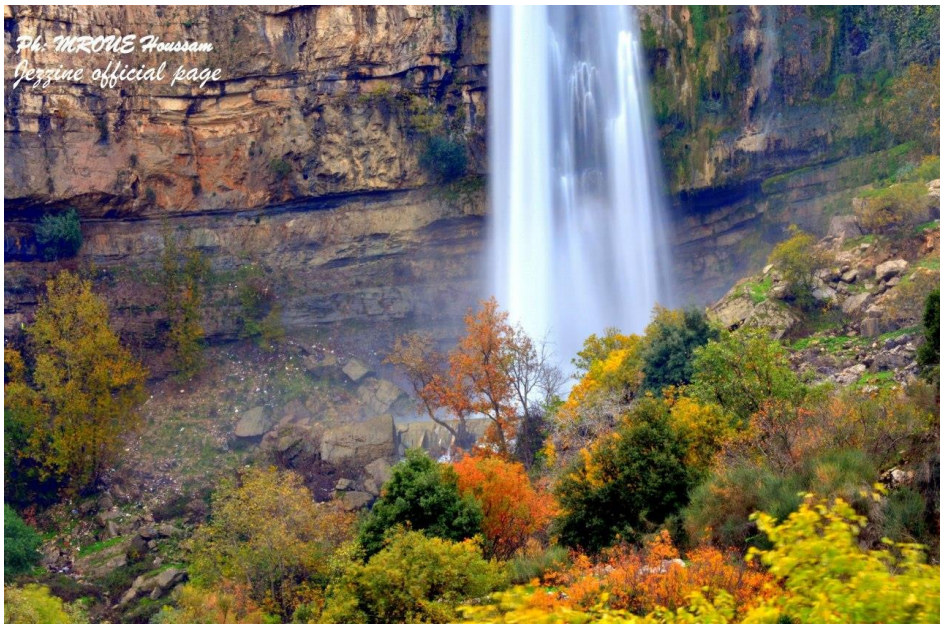


Figure 66. Jezzine fabric.This photo illustrates the Jezzine Chalouf waterfall. Photo was taken by Mroue, H.2015.

The surface water that flows on the slopes is mostly seasonal, but some are perennial. These constant flows are based on underground water that outflow rivers and springs such as Nabaa Azibe, Nabaa Jezzine, Nabaat El Mdauara, Ain Bou Najem, Ain Darje, Aun El Bayad, Ain El Khaoukh, Ain El Toghra, Ain Jbaa, Ain Majdalaine, Ain Qbais, Azibe El Faouqa… Nabaa Jezzine and Nabaa Azzibe are the most abundant in water, and both of them create waterfalls along their trajectory (fig.68). However, Nabaa Jezzine is the most known because it's trajectory(fig.69) ends in Jezzine's North cliff, therefore creating the biggest waterfall in Lebanon, nicknamed « Chalouf », a symbol of the village called « Aarous lchellel » which means the spouse of the waterfall(fig.66). During its passage through the village old core, through the mills, the city center till the waterfall in Jezzine, the water creates a beautiful riparian area. This zone and the waterfall are attractive elements for tourism in Jezzine, where restaurants and cafes are

already built around them. During summer, an amount of the water is reserved for agriculture and the damn before the waterfall. This damn supplements the waterfall with water during the dry season, because the Nabaa of Jezzine is no more sufficient alone to keep the waterfall running in a scenery way during summer, due to the excess use of its water in the upper part of the town that is leading to the depletion of the river (Helou, 2012).

Once below Jezzine the water continues its flow in wadi Jezzine valley, with Azzibe water till they join a regional river: Al Awali river.Al Awali River is the result of the meeting of two rivers, Barouk river that originates from mountain Barouk and Nahr Aray that originates from Jezzine torrents and Azzibe spring from Taoumet Niha . The river is also called Bisri River while passing by Marj Bsri before rejoining the sea in the north entrance of Saida city. The river basin constitutes the natural limit between Mountain Lebanon and South Lebanon and the major source for agriculture irrigation. It supplies a dozen of Jezzine;s villages with domestic water and some of the Eastern villages of Saida such as Kitaleh, Qarieh, Baysour, Lebaa, Abra, Majdelyoun (fig67)….

Moreover, a Special mention must be made for the Litani-Awali generating system. This hydro-electric generating system uses both the Litani and the Awali Rivers. On the way, this flow is supplemented by the flow from the Jezzine area where the water is led to a holding basin before being directed by pressurized pipe to a second generating station. After that, the water is released into the Mediterranean (fig.67).

Figure 67. Jezzine-Saida irrigation network. The pictures illustrate the irrigation network and irrigated fields. Retrieved from: www.litani.gov.lb. Fall.2015.

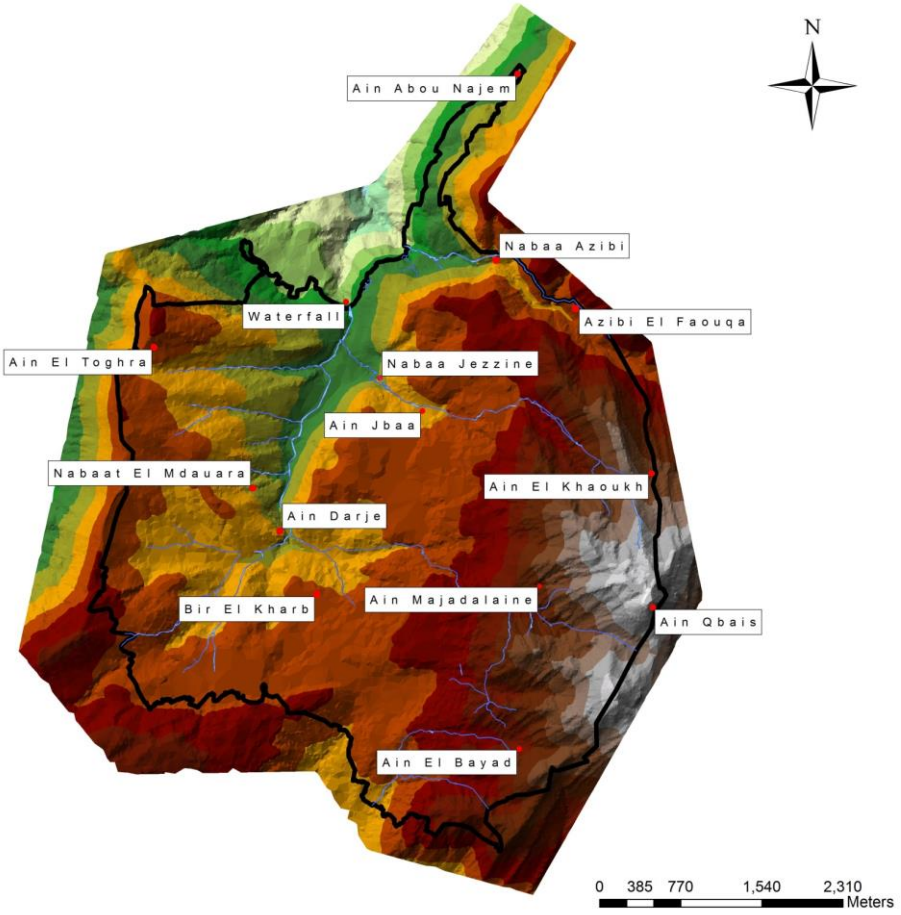


Figure 68. Jezzine Watershed. This map was produced by Roger Neaimeh while being based on site surveys and old French army site map. This map illustrates springs and rivers along Jezzine. Fall 2015.

Figure 69. Jezzine fabric.This photo illustrates r Jezzine core. Photo was taken by Neaimeh, R. 2015.

This hydrological brief has shown us the abundance of water in Jezzine and its significance on a local and regional level in sustaining social practices, agricultural practices as well as natural habitats for wild species. However, to understand more the ecology of this area, special attention must be given to soil typology.

The soils of Jezzine are made mainly from red-brown Mediterranean soils that lay over limestone formations. These soils have high permeability, good vegetative

cover and good drainage.Jezzine soil is mainly formed from five types: Calcaro_Hortic Anthrosols, Areno_ Eutric Leptosols, Eutric Gleysols, Eutric Leptosols and Eutric Regosols(fig.70). The Gleysols type is found on the northern cliff and west part of Jezzine. The Eutric Leptosols are located in the center and stretch towards the south part of the town. The remaining three types of soils are located at the center of Jezzine and stretch towards the northern part of Jezzine. These latter three are fertile soils and have been a reason for the prosperity of the agriculture of vineyards and deciduous fruit trees in Jezzine. Nowadays, a lot of the remaining agricultural farms and fields are still located in this zone of Jezzine, especially in the Kroum area (Talal, 2006).

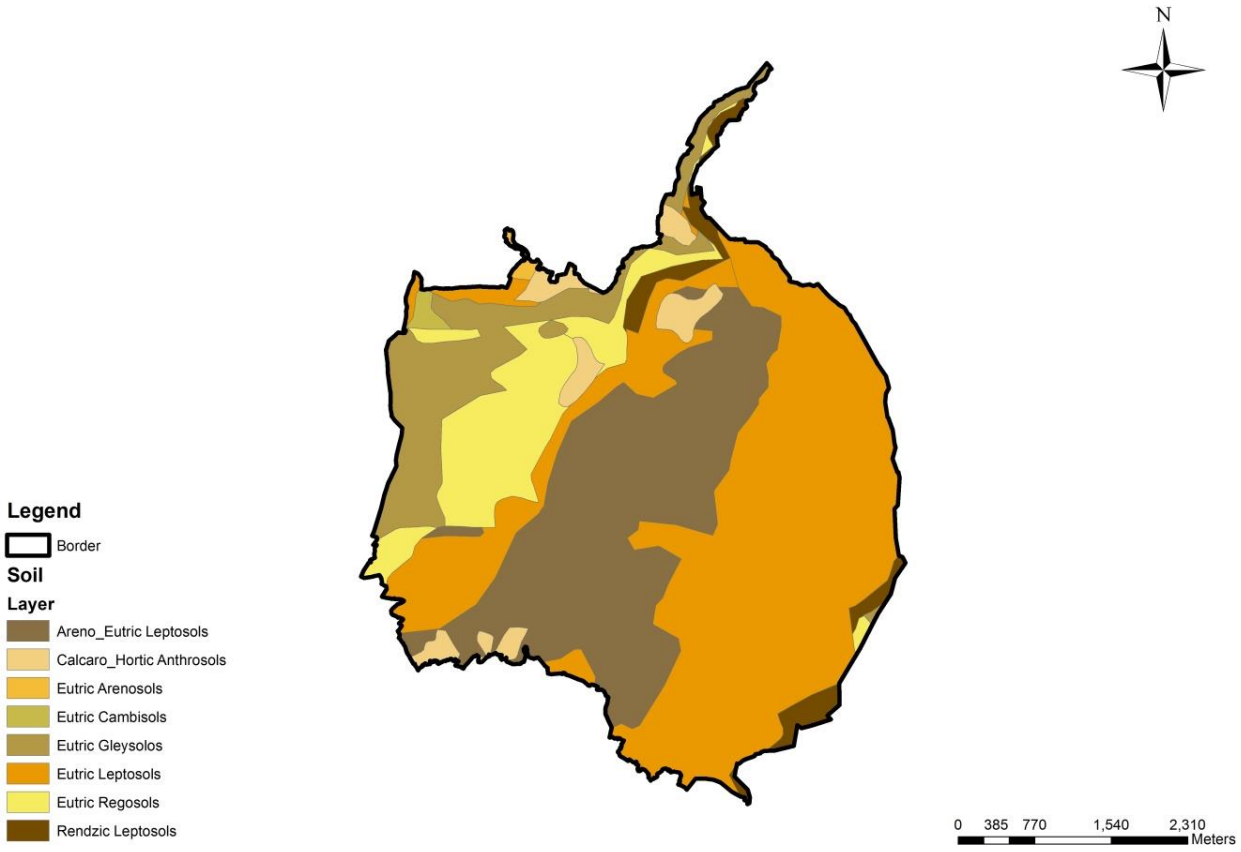


Figure 70. Pedology of Jezzine.This map was produced by Roger Neaimeh while being based on CRNS Lebanese territory soil map. Fall 2015.

2.The Biotic Components of the Landscape of Jezzine

a.Vegetationn Cover

The landscape of Jezzine is originally part of regional grassland, with some types of plants and flowers that endure the dry summer season. The variety in Jezzine land cover and land use goes back to its distinct geology, pedology, topography and hydrology. Today, in Jezzine two main zones of distinct land cover can be detected:

The East Mountains: These Mountains are mainly composed of scrubland, grassland, wooded land and the main agricultural fields in Jezzine. The scrubland and grassland are found primarily at the mountains borders and stretch towards Niha; that's why we can see animal pasturage a very common practice here(figure71). The agricultural fields and woods are found to the South of Ain Majdalayn, and to the West of Jezzine old core(Kroum area), because of soil fertility and abundance of water.

Figure 71. Jezzine Eastern Mountain. The picture illustrates pasturage practices. Retrieved from : https://www.facebook.com/Jezzine/photos/.

The West Mountains: These Mountains are mainly composed of grassland, bare rocks and urban fabric expansions. This area used to be cultivated in the past that's why

we can still see the deteriorated terraces in this part(fig.73,74). However, the absence of water, fertile soils and abandonment of peasant lifestyle, turned this area into uncultivated. The grassland can be found mainly on the western edges and stretches towards Kfar Houne. The urban expansion can be found in the northern part of this section. However, towards the south of this part, we can find mainly the bare rock, which explains the presence of mineral extraction sites primarily in this section of Jezzine.

Figure 72. Western Mountains. The picture illustrates Jezzine deteriorated terraces. The photo was taken by Neaimeh, R.2015.

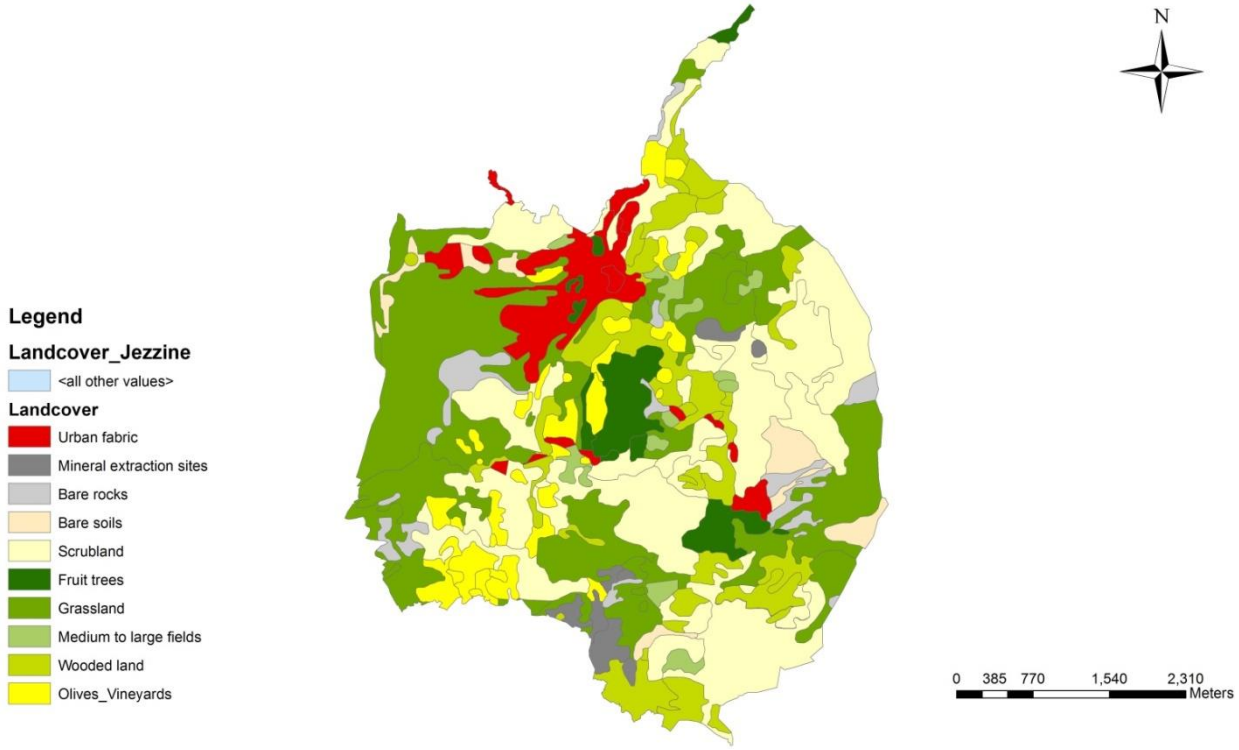


Figure 73.Landcover of Jezzine. This map was produced by Roger Neaimeh while being based on CRNS Lebanese landcover map. Fall 2015.

Regardless of the importance of pedology, geology and hydrology in defining land uses, and vegetation's zones in Jezzine, however, sun exposure and aspects of landscape zones in respect to sun path are also of fundamental importance. That's why we can see based on the following two maps (fig.74,76) that the east_south part of Jezzine is the most exposed to sun rays in contrast to the north-west area which is more oriented towards the north. Therefore, it is less exposed to sun rays which explain the wide presence of the agricultural fields in the eastern part of Jezzine. Also, the higher mountains and the steep cliffs located in the east part of Jezzine create shaded areas in the west once exposed to sun rays, while the sun is going through its path from the east towards the west(fig75,77).

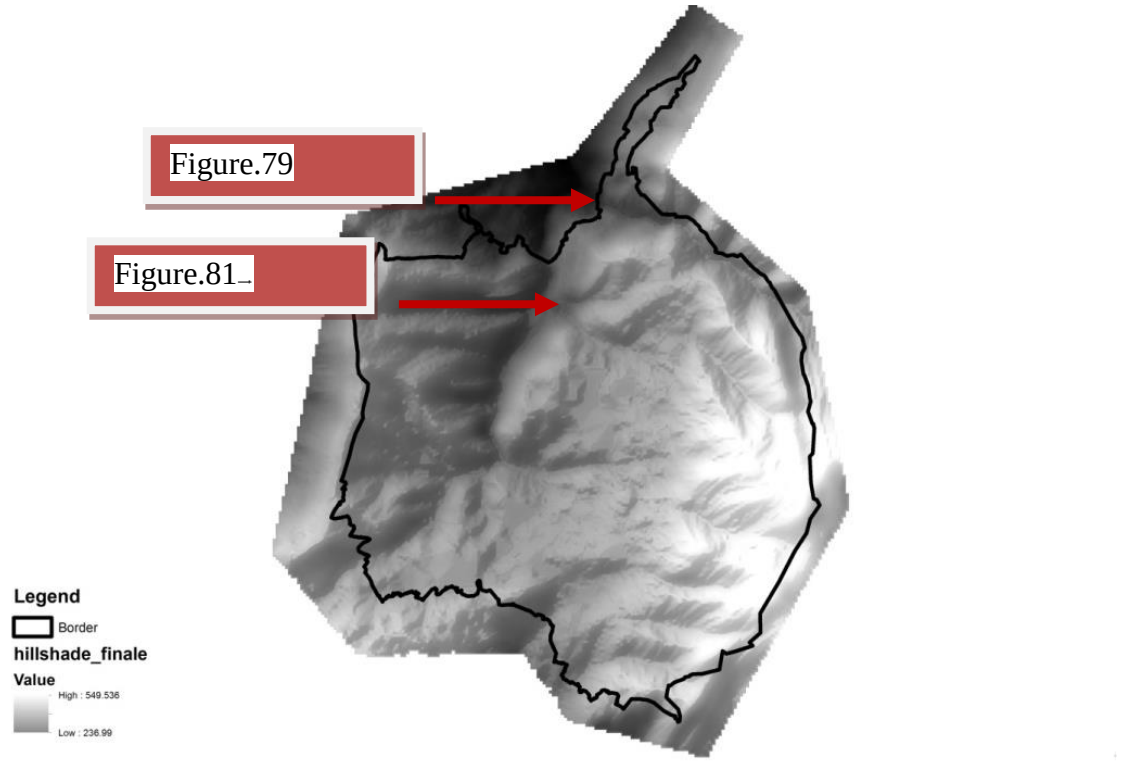


Figure 74. Jezzine hill shade map. This map shows how the areas located to the west and north of the cliffs are shaded during the day. This map was produced by Roger Neaimeh. Fall 2015.

Figure 75. Jezzine northern cliff. The picture illustrates how the area located to the west north of the waterfall cliff is shaded during the day. Photo was taken by Neaimeh, R.2015.

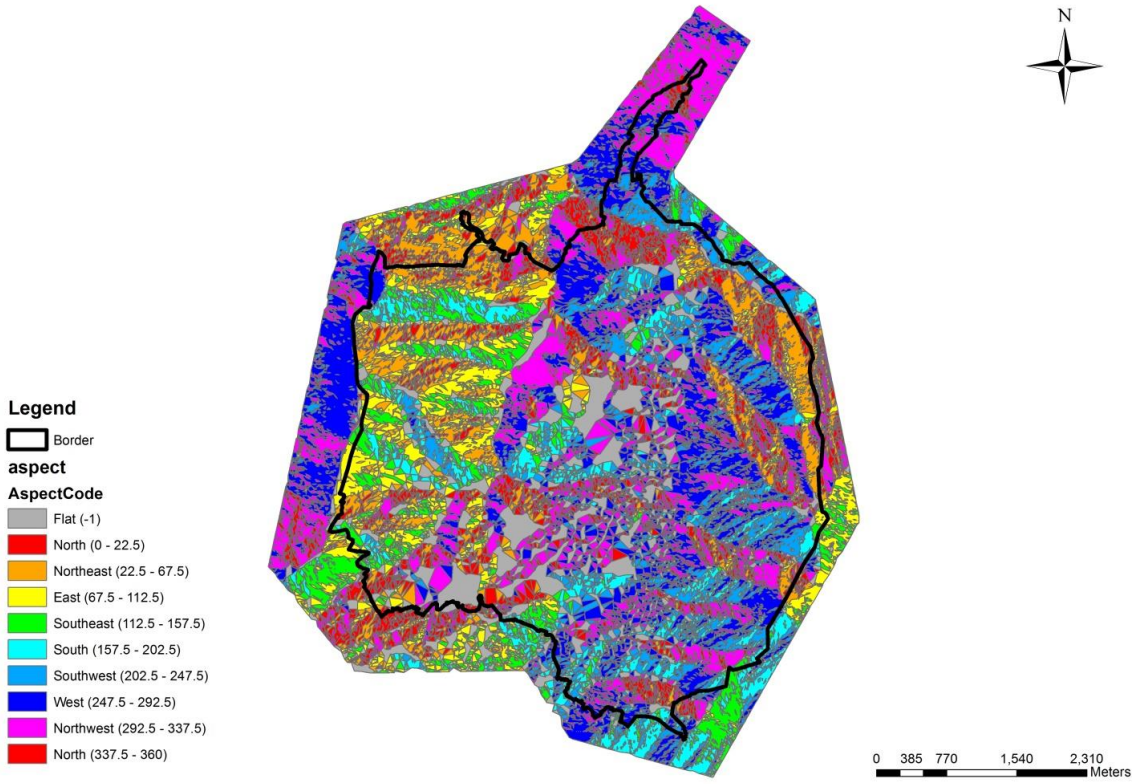


Figure 76. Jezzine aspect map. This map was produced by Roger Neaimeh while being based on Lebanese army Jezzine topography map. Fall 2015.

Figure 77. Jezzine center cliff. This picture illustrates how the hills located west of Jezzine and below the central cliff are shaded during the day. The photo was taken by Neaimeh, R.2015.

As an outcome of these different layers, vegetation in Jezzine today is categorized into three different types:

i.Semi-Natural/agricultural landscape (Vegetation's that people plant, and where most of them can live without people care):

Jezzine has been counting on agricultural and pastoral practices for long decades. At first, people used to plant wheat and mulberry for trade and to produce silk. They also used to raise cattle and cut wood for heating. This peasant lifestyle lasted for three hundred years, however, with time, things changed and the silk production has declined in particular. Therefore, people altered their agricultural practices and began replacing mulberry and wheat by more profitable and suitable vegetations to the area such as apple, olives, grapes, pear, almond, pines, chestnuts, cherry… Although this sector has been badly affected during the last civil, this sector is currently recovering slowly in association with eco-tourism. Today the trees that landowners are cultivating for trade and production are grapes to produce wine(fig.78), pine to produce pine nuts(fig.79), olive to produce oil and soap and apples(fig.80). The remaining vineyards and orchards are part of private initiatives for personal consumption and have almost no economic return.

Figure 78. Jezzine vineyards. This picture illustrates vineyards, these grapes are planted by people and can survive without people care. Photo was taken by Neaimeh, R.2015.

Figure 79. Jezzine pine trees. This picture illustrates pine trees that are planted by people and can survive without people care. Photo taken by Neaimeh, R.2015 .

Figure 80. Ain Majdalayn apple orchards. This picture illustrates apple trees; these trees are planted by people and cannot survive without people care. The photo was taken by Neaimeh, R.2015.

ii.Natural landscape (Vegetation's that people did not initially plant and can survive without people's care):

Natural vegetation in Jezzine is important for its biodiversity, beautification and even for ecotourism(fig.81,82). Of the most visible types and species of natural vegetation are (fig.83): Three-lobed apple, Hairy thorny-broom, Rionfetti's knapweed, Wild carrot, Musky archangel, Cedar of Lebanon, Drupe - bearing arceuthos, Calabrian pine, stone pine, Korshinsky's almond, Bear plum, Brant's oak, Kermes oak, Cyprus oak, Chestnuts, Kotschy's milfoil, Crown anemone, Sage-leaved cistus, Oriental strawberry-tree , cypress trees, Plane tree ,Walnut tree .

Figure 81. Natural landscape in Jezzine. Photo was taken by Neaimeh, R.2015

Figure 82. Natural landscape in Jezzine. Photo was taken by Neaimeh, R.2015.

Brant's oak Calabrian pine Cedar of Lebanon

Cretan cistus Crown anemone Cyprus oak

Bearing arceuthos Hairy thorny-broom Kermes oak

Korshinsky's almond Lebanon barberry Lebanon geranium

Mountain anemone Mountain tulip Prostrate cherry

Stone pine Wild carrot Yellow Horned-poppy

Figure 83. Jezzine natural vegetation. Retrieved from: http://www.shoufcedar.org/.Fall2015.

Among the different types of natural vegetation, the cedar is the unique wild species of specific interest at Jezzine. This species, which consists a continuity of Shouf reserve cedars, is threatened with extinction in Jezzine if not properly taken care of. That's why the municipality since 2002 is replanting Cedars tree in the southern part in

Taoumat Jezzine, which are mainly public properties. Lately, it is also replanting 32000 cedar trees incorporation with Compiègne. Therefore, today we can find from the remaining natural forest in Jezzine 4 forests that are part of a regional network of forests: two pine forests, one cedar forest and one oak and walnut forest. The small pine forest in the north part of Jezzine constitutes an extension to the well-known pine reserve in Bkassine. The remaining cedar trees used to be an extension of the cedar forest of Souf. However, now with the reforestation efforts it will be reconnected one day to the Shouf reserve. Finally, we have the oak forest which stretches east towards Chouf and Niha (Localiban, 2015).

iii.Artificial Landscape(Vegetation's that people did initially plant and cannot survive without people's care):

The remaining artificial fields are of two types. The first type is formed by the urban fields located mainly in the northern part of Jezzine in the populated area such as Parc Georges et Juliette Aziz, Stade Georges et Juliette Aziz and mini foot(figure 84).The second type is formed by the agricultural fields in Kroum area which are planted by locals during summer by different vegetables such as tomatoes, cucumber, beans, etc

Figure 84. Parc Georges et Juliette Aziz. This photo illustrates one of these artificial landscapes in Jezzine.The photo was taken by Neaimeh, R.2015.

In addition to the distinct features of this landscape mentioned already, Jezzine is well known for its amber, which constitutes part of a larger national network. The Lebanese amber is well known as the oldest amber (120-135 My.) with insect inclusions; it is found in various outcrops in Lebanon. More than forty-six Lebanese localities are known having amber in their geological layers: Jezzine, Daher El Baidhar, Bireh, KfarNiss, Hammana, etc (Azar, 1997).

However, the amber that was excavated in Jezzine in Jaour El Sous is the oldest. This amber contained DNA from the age of Dinosaurs; that was preserved in the

body of weevil that became stuck in tree resin 120 million to 135 million years ago. The resin eventually hardened to amber(fig.85).

Figure 85. Professor Aftim Acra(1922-2007), with his well-known collection from the outcrop of Jouar E-Souss(Jezzine).Retrieved from the book titled " Biodiversity of Fossils in Amber from the Major World Deposits". November 2015.

b.Fauna

Because of its altitude and location that forms a transition between the coast and the Beqaa Valley, Jezzine houses a diversity of animals and insects similar to those

classified in the Cedars Natural Reserve. Therefore, one can find different types of animals such as(fig.86):

i.Mammals:

Jackal, Wolf, Striped Hyena, Hedgehog, Striped Hyaena, Porcupine, Badger, Squirrel, Wild Boar, Common red fox.

ii.Reptiles:

Common Toad, Green Toad, Mediterranean Chameleon, Large Whip Snake, Serpent fouet, Dwarf Snake, Dwarf Snake, House Gecko, Common Green Frog, Greek Tortoise, Palestinian viper, etc.

iii.Mountain birds

Chukar, Short-toed Lark, Cuckoo, Jay, Blue Rock Thrush, Great Tit, Rock Sparrow, Syrian Serin, Wren, etc.


Wolf


Hedgehog


Striped hyaena



Porcupine Squirrel Wild boar

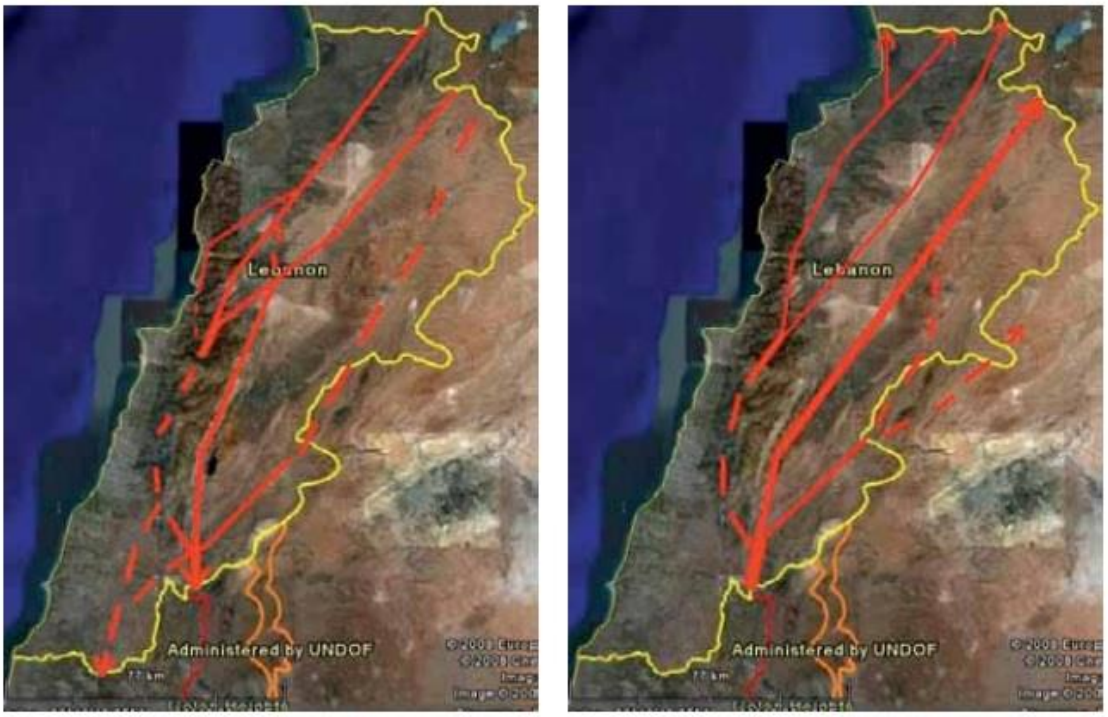


Mediterranean Chameleon Large Whip Snake Jay

Figure 86. Jezzine wild animals. Retrieved from: http://www.shoufcedar.org/.Fall2015.

c.Avifauna

The western part of Jezzine lies along a major route of migration birds as classified by SPNL(fig.87) since Jezzine is a part of Al-Shouf Cedar Nature Reserve. Different types of common and endangered species of birds including (fig. 88): White Stork, Corncrake, Common Crane, Booted Eagle, Swallow, Bee Eater, Golden Oriole, White Pelican, Honey Buzzard, etc.



Autumn Migration *Spring Migration*

Figure 87. Major routes for bird's migration along Lebanon.Jezzine is located along these routes of migration. Retrieved from: http://www.spnl.org/. Fall2015.

Swallow Bee Eater Common Crane

Figure 88. Jezzine migrating birds. Retrieved from http://www.spnl.org/. Fall2015.

d.Biodiversity In Jezzine and the Region

Today, biodiversity in Jezzine and the surrounding region is threatened by urban sprawl and by the shortage of zoning master plans to recognize the value of the native biodiversity and to protect it. These abiotic and biotics characteristics constitute for Jezzine various advantages, but also different concerns, that any newly planned master plan for Jezzine should take into consideration. These concerns are summarized in what follows:

i. Soil Erosion

Hastened by the careless building sprawl and quarries, which are often badly sited and poorly designed, soil erosion in Jezzine endangers biodiversity. This erosion state may lead to the loss and decrease of natural habitats of wild lives and ecological balance of the landscape. In addition to fragmenting the ecological zones while blocking the ecological transport corridors, these practices are also affecting agricultural practices. The unplanned clearings of the soil during construction, removes the rich topsoil that accumulated over hundreds of years.

ii.Contamination of the Underground Water

The pollution and contamination of the underground water supplies in Jezzine is amplified due to poor waste disposal practices. Also, the complex network of underground fissures that makes up the main aquifers means that pollutants can circulate rapidly and unpredictably.

iii.Hunting:

Knowing that Jezzine is part of Shouf reserve, local and migrant birds are endangered due to hunting, especially when it occurs during the migration season.

Accordingly, the challenge for any planning framework in Jezzie today is twofold. First, protecting and promoting wildlife as a moral and environmental responsibility; and second maintaining a fair ecological balance between the natural and cultural assets of the place to secure a stable and sustainable future.

C.Analysis of Jezzine's cultural landscape

1. Sense Of Place (interviews)

a.Method/process

Exploring the Sense of Place of Jezzine on a town scale as Informative for Spatial Planning Guidelines was accomplished by translating the needed information into a questionnaire that can be assimilated by people to get their positions and experiences of this cultural landscape. The process followed is summarized in what follows:

i.Participants:

Participants were obtained through random sampling from all over Jezzine and consisted of the following individuals and groups who shared their experiences and interaction:

- Six people with vested interest in the area (either as local investors or investors from nearby villages that own businesses and shops)

- 4 participants from different cultural backgrounds visitors of Jezzine for entertainment. (Summer tourists, regional tourists that come from nearby towns such as Nabatiyeh and Sayda)
- Five people related to administrative paperwork in Jezzine (Since Jezzine is the administrative center for Casa Jezzine)
- Five people of different ages (workers and permanent residents of Jezzine from various neighborhoods).

Although more citizens from Jezzine had been in touch with me and gave me responses regarding different issues from the year 2014 to date, however and due to time limitation, the above-mentioned participants were the ones that I was able to obtain to fulfill the questionnaire but confirmed with the general point of views I have heard all over Jezizne.

ii.Data Gathering:

Data gathering was conducted through personal contact with people that filled the questionnaire. It was a valuable source of real life data, high face value, and immediate results, and it allowed me and the participants to have immediate follow-up questions and clarification. The questionnaire had two types of questions:

- The first was a multiple choice type of questions, where each question contained multiple answers. Therefore, the participant had to select the closest answers to what he/she believed. Also, almost all issues had an open-ended type, since

participants had the choice to add an answer to “other”, in case they had an alternative answer from the one supplied.

- The second type of questions included visual methods where various photographs taken by the author (me) has been added for people to analyze. A map of Jezzine has been attached for people to point out their places of interest in Jezzine. These types of observations and visual methods were appropriate because they involved decisions and choices about the kind of information supplied in visual manners.

The questionnaire expressed my aim to analyze this sense of place and considered the relationship between people and their settings, experiences, and meanings where the sense of place derived from the structural pattern of this particular place and the association to the human activity and spatial use. Therefore, the Questions were structured around the following themes:

- First, social data as well as the human activity, spatial use, and the duration of time spent in the area were included.
- Second, an experience profile was determined by identifying areas where the intensity of place experience as well as the location of spots/zones where the sense of place is experienced strongly, moderately or not at all.
- Third, the questionnaire tackled the main natural and visual characteristics of the site. Choices mainly included Kevin Lynch’s five cognitive features of areas, namely landmarks, routes, edges, districts, and nodes.
- Fourth, attitudes and opinions on conservation and development issues were tested. Data collected included the identification of respondents of areas/zones and

specific aspects/features to be considered for conservation. Options were also given concerning the type of development necessarily and the best location for these.

- Fifth, preferences for specific architectural features and planning aspects were tested by presenting photographs of various architectural styles and spatial characteristics, where participants had to choose one option for each question.

b.Analyzing Textual Interviews

Classifying the emerged themes: from the Qualitative Investigation of the sense of place:

i.Economic Indicator

There are high financial considerations in Jezzine: interviewed people that visited or stayed at Jezzine year-round consisted the majority of participants. Primarily, they related to agricultural (fig,89) sector and touristic sector, and the rest worked in diversified businesses inside and outside Jezzine. Therefore, tourism and agriculture are of fundamental importance as main incomes for people in this area, which sustain their contemporary presence in Jezzine. Therefore, these sectors should be enhanced and upgraded.This should be done by protecting and managing their principal components and zones in Jezzine, especially the natural landscape that the majority considered as the main feature that makes Jezzine unique. Hence, the protection and management of this natural landscape is of key importance. If the landscape became so fragmented, it will badly affect eco-tourism and agriculture which is quite detected in people's answers regarding how enhancing Jezzine could be accomplished was by

sustaining and creating incentives for touristic and agricultural sectors, and by updating building regulations.

Figure 89. Agricultural field in Jezzine.This photo illustrates some remaining agriculture practices in Jezzine. Photo Taken by Moukanzah, J.

ii.Social Connection

The physical context in Jezzine based on its two components the cultural and the natural allows for meaningful social interactions to take place, especially in the old core and the souks where houses are adjacent, and footpaths are narrow which facilitates interactions. These community interactions can be spotted all over Jezzine and between its diverse social groups. This reality has been reflected in people's answer that no place can be compared to the town for them, due its natural landscape as well as personal memories and social ties (fig.90).

Figure 90. Buildings in the old core of Jezzine .This photo illustrates how the context allows for meaningful social interactions due to the adjacent fabric. Photo Taken by Neaimeh, R.2014.

iii.Non-negotiable/ Personal symbolic meanings

The cultural and natural heritage Jezzine has materialized through the years is considered as sacred for interviewees, and therefore, its conservation is a necessity. This conservational approach is grounded on their personal experience of space that is associated with the place and personal memories which have been reflected clearly in their answers to the question regarding what zone relates more to their collective memory in Jezzine. The participants' answers were so much diversified based on each

individual experiences where the two answers that took the highest percentages are the Kroum area and El dayaa neighborhood. This goes back to multiple reasons:

- First, neighborhood El Dayaa is considered to be the oldest in the village which resulted in the existence of the Kroum zone at that time also. People used to live in the neighborhood but planted the Kroum zone which was the nearest fertile land next to the neighborhood(fig.91).
- Second all people relate to these two zones because all new generations have had a root house in this neighborhood or had a childhood or youth memories there. They used to play in these narrow alleys, stairs, and house roofs near the prominent church in the town Mar Maroun.
- In addition, almost all the people that lived in this historical core or derived from it are likely to own a land in the Kroum. These landowners are still cultivating the Kroums similar to what their ancestors used to do. Therefore, this practice is somehow creating this emotional bond that connects them to their roots through this landscape. That's why we can see that this connection between this neighborhood and this landscape is different to what is happening in the remaining neighborhoods and agricultural fields and natural landscapes that are decaying.

These particular symbolic meanings tangled to the environment ranged between the natural, social, historical, and cultural processes in the area. Some of the qualities that were appreciated embraced understanding spiritual well-being, serenity, openness, and fascination with nature. Although their conservational attitudes towards this cultural landscape , however, the majority of participants anticipated damages in favor of future

developments, and, therefore, preserving these two zones was considered of the non-negotiable for most of them.

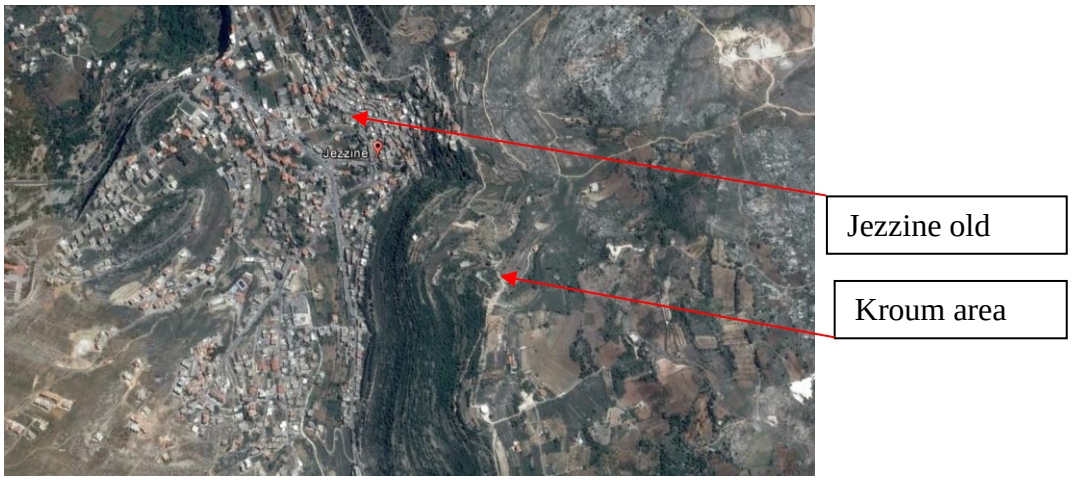


Figure 91. Jezzine .This photo illustrates, the location of the old core of Jezzine Al Daya and the Kroum agricultural fields. Photo Taken from Google Earth. 2015.

iv.Contextual Description/Visual characteristics

Visual characteristics that were reported to be the most prominent were, in order of significance:

- *landmarks* : participants indicated that religious landmarks are the prominent ones , although certain prominent hills and natural features were indicated such as the Cross hill, the waterfall… as well as some pointed to buildings such as Municipality, Saray, Al Kanaan Mansion…;)
- *paths:* (Rue George Aziz, Rue Assad, Rue Sleiman Bak Kanaan, Rue Al Daya)

- *edges/borders:* (Rue Sleiman Bak Kanaan that separates the historical core from the rest of Jezzine, the cliff near the waterfall, the cliff between the old core and the Kroum area);
- *Nodes* (Al Saha, Al Maabour)
- *Districts* were not high on the list of visual dominant features only some of them such as district Said Wehbe located in the old core along Daya street, Souk Asad(figure 92) at the entrance of Jezzine from Saida

In addition to these prominent elements already mentioned and that people have referred to as visual markers, they also mentioned the elements that they considered as perturbations for this cultural landscape. This can be detected in their answers in what follows:

- Participants answered that routes are between the main elements that are fragmenting the landscape. Moreover, regarding what mainly defines the neighborhoods in Jezzine, participants answered roads although that this reality is questionable since neighborhoods are defined in Jezzine by a mixture of natural features, circulation patterns, and social ties than by roads only.
- In addition, participants considered that new development types are the most disturbing components in this cultural landscape and failure of urban planning schemes while the major failure of urban planning schemes for them are their incapacity to regulate building form. On the other hand, most of them considered that building typologies are what differentiates the old core from the new built fabric where height, materials, and compound like designs are considered the most incongruent features in the new typologies.

Figure 92. Jezzine Assad Souk .This photo illustrates one of the socially vibrant souks in Jezzine . Photo Taken by Neaimeh,R.2015.

v.Suggestion for future developments

Developments should not threaten the sense of place and should stick to firm regulations. As a tourist attraction, it is recommended that various zones of involvement be identified, regulated and the type of recreational activities to be supervised. Regarding the conservation of specific zones, most of people considered that the old core should be conserved. Moreover, Kroum agricultural buffer zone is also important to be conserved because it is threatened by the development that is being allowed in this area, knowing that the area does not reflect the same environmental value and character as the core. The key micro areas that have been indicated for conservation are the surrounding hills and edges and the river banks although some of them are already

conserved in the previous master plans. In addition, Al Maabour was mentioned as micro area for conservation and enhancement because it gives a sense of arrival for people. The most appropriate locations of new developments, and where the sprawl should take place, as indicated by the participant, was the Tiyab area, since it has the availability of land and has no built fabric or forest or agricultural fields that can be harmed as 70% of them answered.

vi.Choices with Regard to Architectural Design

Respondents also preferred architectural style which is compatible with the historical building structures in Jezzine, while private housing should be designed in the typical rural Lebanese architectural style and the new eco-touristic projects should be eco-friendly as Maison De La Foret which is their favorite example for sustainable and integrated tourism that should be maintained. In case this was to be applied, they preferred developments rights to be transferred to Tiyab which should have the highest exploitation factors (fig.93).

Figure 93. Jezzine Residential houses. This photo illustrates, the contrast between an old and a newly built residence in Jezzine. Photo Taken by Neaimeh,R.2015.

c.Classifying the Emerged Spatial Guidelines

i.Sense of Arrival

The sense of arrival denotes the clear identification of when one is inside the case study cultural landscape. It embodies the visual legibility of the area and adds to the feeling of orientation and hospitability at a place. Eventually, this aim enhances the accessibility for tourists and the feeling of space. An appropriate way to recognize this is to establish visible entrance point(s) as well as an appropriate zoning that can produce and preserve an integrated and homogenous natural and built landscape at the core of Jezzine as well at its outlying zones. This consideration in planning was lacking at the time of the survey and was reflected in participants' incapability to locate themselves in accordance to Jezzine's outlying and inlaying landscape zones. This incapacity was attributed to newly built typologies that are blocking viewpoints and especially key landscape markers that made the town unique such as the waterfall at the entrance of Jezzine from Saida that one cannot locate or see from inside Jezzine, without locales help instead of being validated (figure.94).

- Spatial Planning Proposals: It must identify the location of reception zones and specify design guidelines to them .In addition, they must identify the different built and natural zones and also specify design guidelines to them in order to manage the townscape.

- Design Implications: It includes the design of gateways zones as well as design guidelines for the remaining zones, which would create the feeling of transition from outside to inside. In this case, these design guidelines should be informed by:

    - Landscape study of what constitutes natural landscape components.

- Typology study of what constitutes typical architectural forms, scales and building materials of Jezzine .

- Traffic study of the patterns of flow to and from Jezzine should be considered.

Figure 94. Jezzine Aerial view. This photo illustrates the three main entrance to Jezzine :1- From Saida, 2- From Chouf and from 3- Niha and South. Photo Taken by Ghammashi,C. 2015.

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ii.Sense of Orientation

It includes spatial structure of a place. This includes all movement systems (roads, footpaths etc.) ,public places (souks, squares, social facilities, nodes etc), visual landmarks (waterfall, hills etc.), natural landscape patterns and land uses. Therefore, the creation of special zones and networks/trails with unique features that connect places which are focus points for community life is central to place-making.

- Spatial Planning: Proposals to reinforce the sense of orientation include consideration of the road network layout and the inclusion of nodes, edges and souks as special places and focal points in different zones.
- Design Implication: Sleiman Bek Kanaan Street is proposed as suitable for the integration of social, economic, educational, cultural and information-based functions/facilities. Asad Street and Al Dya3a Street are proposed for the upgrading of existing facilities, but no further development is to be allowed. The character of nodes (Al Saha node and Al Maabour figure95) and souks, however, should essentially maintain the rural character. The edges and borders in Jezzine, if they were natural or artificial, should also be put in value as landscape markers and view corridors all over Jezzine. Their presence strengthens the sense of orientation of people as well as their cognitive mapping of the area.

Figure 95.Jezzine Al Maabour view. This photo illustrates, the main entrance from Sauda to Jezzine where we can see Al Maabour statue of Virgin Marry: Photo Taken byAoun,F.2015.

iii.Sense of Experience

Strong sense of place is memorable, and can be easily distinguished; this allows for a city or neighborhood to be recognized and easy to connect with. These connections can foster love and a higher sense of belonging for locales and livability for visitors because a place without a strong sense of place is not memorable; it can be lost and often forgotten. Therefore, this won't help to sustain tourism and economics at all in Jezzine.Therefore, it is proposed that the sense of experience in Jezzine be maximized through two principles:

- Revealing and integrating those natural and built features that establish and magnifies the site sense of place: This would be attained by pinpointing the key spots in Jezzine where the spirit of Jezzine is experienced intensely; these spots can be major viewpoints, meeting points and major nodes.... Therefore, once linked these spaces, would enhance future accessibility for people while developing a higher sense of experience, orientation and arrival. These spaces can be linked to each other in different

ways such as in the form of trails, physical structures, urban architectural concepts…However, such approach can only become viable if a public-private partnership would take place, where issues of management, feasibility, incentives.. would be negotiated between authorities, landowners and people.

- Reducing exposure to detrimental human interventions in terms of planning and design actions.In this perspective two proposals are made: The development of detailed hilltops and cliffs policy to safeguard the horizon line against sprawl. The development of zoning policy that directs and manages development, land uses and conservation in the area. Accordingly, and based on participants answers about Jezzine, their experience, and vision of this space, five zones were deduced:

- *Lal Himaye (Preservation zone)* (Mainly Kroum and core area in Jezzine and surrounding natural hills fig.97).
- *La Tonzim (Enhancement zone)* (touristic zone in Jezzine and the buffer around them) .
- Lal Bena (Expansion zone) (Tiyab fig.96) .
- Kharaj Jezzine (Green buffer zone) (outlying area) .
- *Maabour (Reception zones)* (Main access points to Jezzine) .

Accordingly, these socially deduced zones would found the platform for future development and planning amendments, for example, increasing developments and densification won't be allowed in the preservation zone, but strategic day and night facilities and tourist accessibility would be supported in the core and agricultural practices in the Kroum. In parallel, the enhancement and expansion zones should be

treated as areas where new developments and renovation permits should abide by specific architectural regulations in order to blend with the surroundings and enhance the sense of place.

Figure 96. Jezzine Tiyab area. This photo illustrates sprawl direction in Jezzine/expansion zone : Photo Taken by Neimeh,R.2015.

Figure 97. Jezzine Mar.Maroun Church, stairs and surroundings area. This photo illustrates, the core area in Jezzine, that plays a central role in the collective memory of people in the area: Photo Taken by Rahal,G.2015.

d. Producing Mental Maps

Several mental maps have been produced based on the previous questionnaire. These mental maps showed the different character zones locals has referred to and how they relate to them. These mental maps would be later overlaid and considered with the different produced maps in order to produce the new master plan (see appendix III for more information on the produced mental maps and questionnaire).

2. Cultural landscape Regional Analysis

a.Socio-Economic Landscape:

The socio-economic landscape in Jezzine can't be understood in isolation from what is happening on a national and especially on a regional scale. In order to better identify these connections and how they are shaping this socio-economic landscape, this stage of the analysis will expand upon the themes of economy while analyzing: Real estate, agriculture sector, tourism sector, industrial and educational sector, and social networks while analyzing stakeholders analysis.

This analysis concludes that the large lots of unexploited land provide an opportunity if well managed to revive and expand agriculture and tourism in Jezzine, especially that large portion of these lands fall into public ownership.

i.Land Development:

The story of Jezzine's land development is roughly the tale of two evolutions, where the western and eastern portions unofficially operate as separate regions. The

western urbanized portion, where Lebaa largely serves as the regional center, maintains closer ties to Saida and retains a larger proportion of a year-round population. Conversely, the eastern portion looks to Jezzine and the Union of Jezzine municipalities as the regional authority, here we see greater portions of seasonal residence, where the home is only occupied on weekends and in the summer. The majority of the population in this section of Jezzine consists of the Christian population. Nonetheless, the region as a whole historically safeguards a Christian dominance in land ownership. While looking at current trends in land development, most official governing bodies will quickly tell you that there are no sales to outsiders. This statement originates from decades of watching Jezzine's residents leave the area and sell their land to the highest taker. The strongest pressure on sales Jezzine stems from Saida's urban expansion and increasingly high land prices, sometimes as high as 400/sq. mt., which results in residents looking for less expensive homes in Jezzine. Additionally, large urban growth in Kfar Houna, in Jezzine's southern region - but not included in the Union of Jezzine's municipalities - has increased pressure toward real estate development in the city of Jezzine. Although residents of the town have been emigrating from the region since the early days of the civil war, the end of Israeli occupation in 2000 saw a spike in land sales. Whereas the region was seen as a relatively dangerous place, it now presented itself as a land of opportunity. Exacerbating this, as sales increased, so did land prices. As an example, Lebaa's land prices saw an increase from roughly $30/sq. mt. to now $200/ sq. mt. Landowners who had long since left the region and were simply holding their land as an investment started selling to benefit from the huge returns. New developers in the region sought to maximize profit by building large housing complexes, which disrupted the

look and sense of a “village.” In response to this, many municipalities began establishing zoning regulations that reduced exploitation factors and designated much of the residential land as zoned for villas. In this scenario, even if the land was sold to an “outsider”, the village look remained intact. The fist of this kind was Lebaa in 2000. In a later response to this trend, the Union of Jezzine Municipalities (UJM) was formed in 2005 to provide regional guidance and control development. At present, all building and sales permits are approved at the level of the UJM.

An additional layer of governance that is aimed at facilitating sales control came from the Maronite Patriarch Beshara Rai who urged both Lebanese Christian and Muslim communities in 2012 to maintain ownership of their land as a way to preserve Lebanon as a model of coexistence in the East. This also entails a sectarian fear for some Christian locales from this land development since the lack of an urban code, and a common master plan is causing haphazard expansion in some areas from a Muslim population. That is because they are closer to Saida and are becoming its suburbia. Khalil Harfouche stresses that the ‘village identity’ must be preserved in the region (Harfouche,2013).That is why, land sales have almost stopped to outsiders, especially those from Saida and Nabatieh since they usually develop land for large real estate projects. (fig.98).

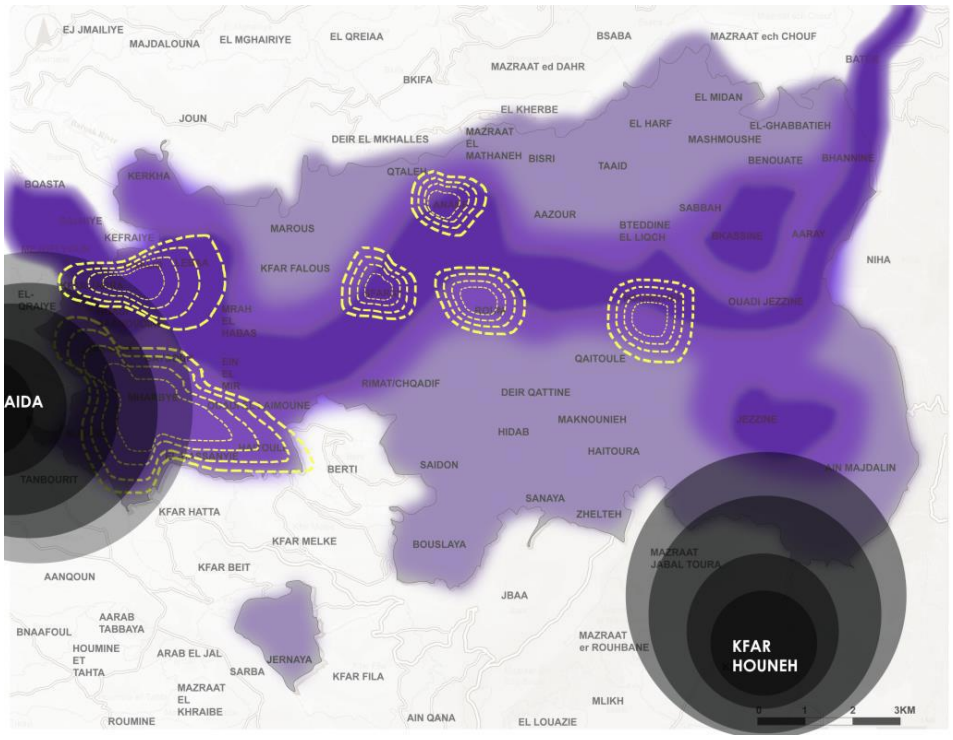


Figure 98. Jezzine land prices. This info graph illustrates land prices going from dark colors from the most expensive to light colors for the least expensive. This diagram was produced during planning and design workshop. 2015.

ii.Agriculture

In keeping with national trends, Jezzine does not rely on agriculture as a major means of income. Despite relatively low levels of urbanization and large amounts of open spaces, and although the remaining residents lament a lost past before the civil war, where the region thrived on agriculture, there is no substantive evidence that this was ever a profit generating industry, in the modern sense term. Rather, what is taking place is small-scale family farming where owners of large lots cultivated the land, relied on subsistence agriculture, and sold the surplus to nearby towns. The period of isolation during the civil war increased this sense of self-reliance, and we see this trend continue today as the few remaining people who engage in farming largely look to the immediate region as their client-base. However, the mass migration during this period has taken the

biggest toll on what existed of an agricultural industry; as people left, as did the practice. Thus, although the region has massive open spaces and potentially profitable land, there are not enough locals willing to stay and revive the industry.

The single greatest blockage to agricultural production in Jezzine operates side by side with the patterns we see in land tenure. As mentioned, land owners have left behind their former homes and chosen to seek employment elsewhere, rather than to assume the risk of investing in agriculture. This migration, coupled with the overall lack of support from national ministries, makes the choice to invest in the land for farming undesirable. Compounding the aversion to farming, the increasing value of land prices further propels the assessment of the land as a commodity for sale.

Furthermore, the social perception of agriculture is not seen as a prestigious career, leaving it as lower-class work that is then outsourced to foreign migrant workers. This foreign presence offers a large workforce willing to work at the very low wage. However, they have no ties to the land, and their sense of investment is weak as the worker is subjected to unequal distribution of the wealth generated from their work. As landowners move farther away from the practice, and younger generations pursue work in the seemingly more lucrative field, the tradition and know-how of farming is lost.

iii.Tourism

There are many important historical monuments and natural sites in the region. However, the bulk of touristic visits to the region is concentrated into day trips. Travel to the area is largely isolated to the summer months. The area benefits from large amounts of foreign funding aimed at developing a profitable tourism sector. This is seen clearly

in the new eco-touristic hotel, la Maison de la Foret, the pine grove house and the new olive house that are a result of the UJM planning scheme. However, what limits Jezzine's potential at present narrows down to a limited number of activities and reasons to stay beyond a daytime visit. Furthermore, as the neighboring Shouf reserve currently serves as the regional center for eco-tourism, Jezzine's few trails are at a disadvantage to this well established touristic location. That being said, this relationship also provides an opportunity for mutually beneficial gains if managed strategically. Additionally, due to continual political instability in the region, the topic of tourism is sometimes treated with skepticism in Lebanon. Beyond the projects already in the works under the guise of the UJM, the area presents a few interesting examples of untapped potential, including niche activities such as wine tasting tours, farmers markets, agro-tourism, olive oil tastings, rural marathons, or hiking-paper recreation, etc…

As we can see the environment is an important sector to consider for any development plan especially if the region is to become an eco-touristic site. However, no environmental protection plan or guidelines exist until now. In addition to water and forests, limestone is an abundant resource in the region, which is utilized for the stone cutting and carving industry. However, the stone quarries cause pollution and the owners are not following the Ministry of Environment guidelines for exploitation. Khalil Harfouche was able to stop two operational quarries until a system can be established to regulate their work (Harfouche, 2013).

iv.Light Industry and Local Crafts

The productive industry sectors in Jezzine Region include the public administrative sector, tourism, agriculture, and trade. Light industries prominent in the region include the cutlery craft as well as stone cutting and carving. The main problem identified in this sector is the limited investment and employment opportunities. This is causing the migration of youth as mentioned earlier.

v.Education

Jezzine has four public schools and two privates' schools.Some are still operating while others are closed. This closure goes back to the sequence of events during the last decades, on the national and regional level (civil war, migration, invasion…). Also, this negative influence can be seen in the alteration of student numbers as such:

- Between 1975 and 1980: An increase in student's numbers due to clashes in Beirut city.
- Between 1980 and 1985: A decrease in student's numbers after the return of locales to Beirut.
- Between 1985 and 1991: An increase in student's numbers with the arrival of refugees that fled the battles of East Saida and later the battle of liberation in 1989.
- Between 1992 and 2000: A notable reduction in student's numbers after the return of refugees to Beirut and East Saida after they fled once again the bombardments and attacks in Jezzine. Also, the opening of Kfarfalous checkpoint led this transition and commuting easier.

- Between 2000 and 2016: The number of students is stable with minimal increase or decrease in each annual year due to stable politics conditions.

Another problem in the educational system is the absence of a university, thereby causing youth, and eventually their families, to leave the region. This is one of the main reasons behind the demographic change and the threatened social fabric that is the main area of concern in the Jezzine region since most of the youth who leave don't come back causing a demographic void.

b.Identification and Analysis of Stakeholders:

The stakeholders for each of the sectors were identified and analyzed. According to the actors' power and interest, magnitudes and hierarchies were created for all involved. Power signifies the amount of resources available and the ability to mobilize those resources. It is also concerned with the decision-making the ability of the actor. Interests are related to a specific issue or the region as a whole. Some actors will appear in certain issues but not others, each according to their interests. Through identifying the power and interest of each stakeholder, the magnitude is then derived from the graph below(figure100). An actor in 'category A' is a key player and must be managed closely. Such actors are strong decision-makers and can directly affect certain planning policies or interventions. UJM and its head, Khalil Harfouche, fall in this category. Actors in category B' are not interested at all, but they are high in power. These must be kept satisfied. Even if they are not interested, they might negatively affect a project just because they can! The different ministries in Lebanon fall in this category. In 'category C', actors are not in power but have a high interest in the region or certain issues. Planners must keep those actors involved since they might

have great thoughts and ideas to share. An example of a stakeholder that fits this category is a local business owner. Actors are forming ‘category D’ are the least important. Their involvement is dedicated to them, and they must be monitored. The DGU falls in this category.

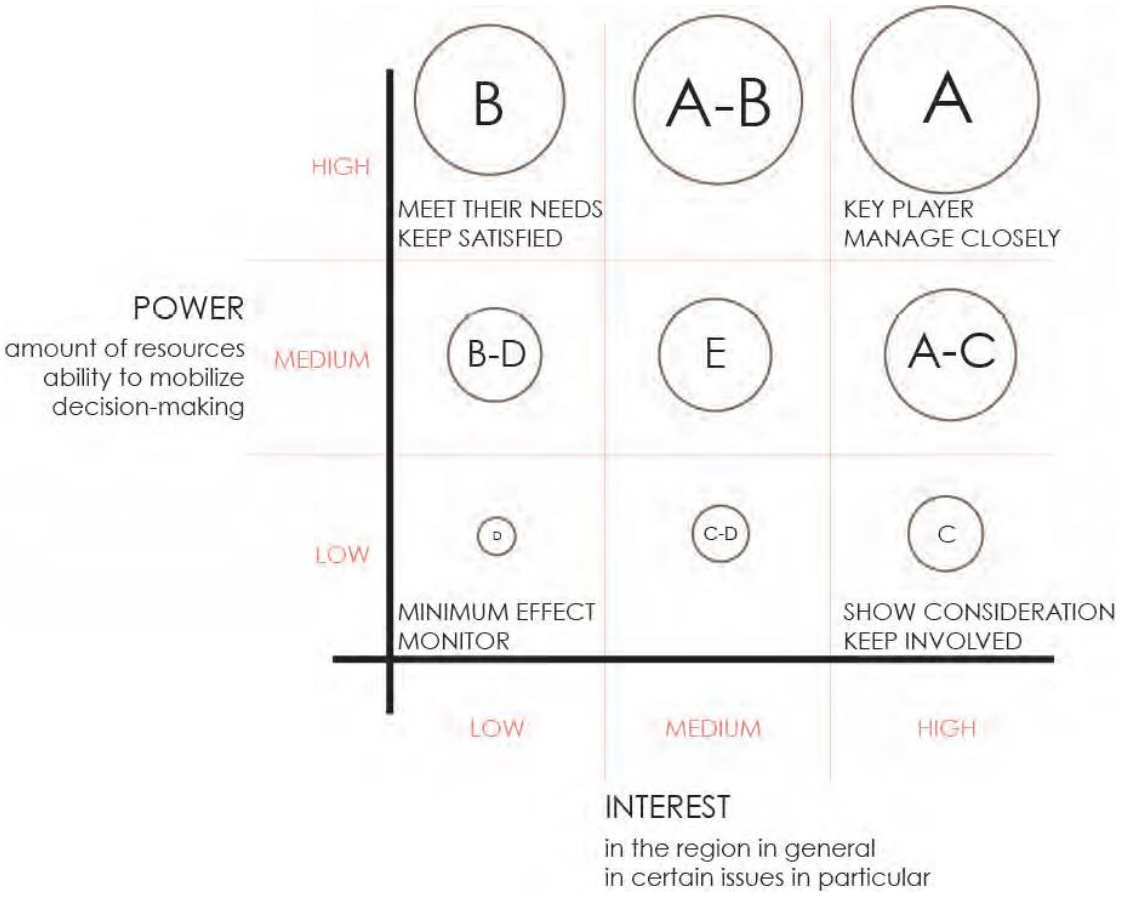


Figure 99. Stakeholder analysis. The figure shows stakeholders in Jezzine and their influences on the planning process in Jezzine Produced during planning and design workshop.2013.

After analyzing the stakeholders about each of the issues in Jezzine Region, the information was compiled into a final stakeholders map. The following map shows the different connections and relationship that exist among the stakeholders of the Jezzine Region(fig.100).

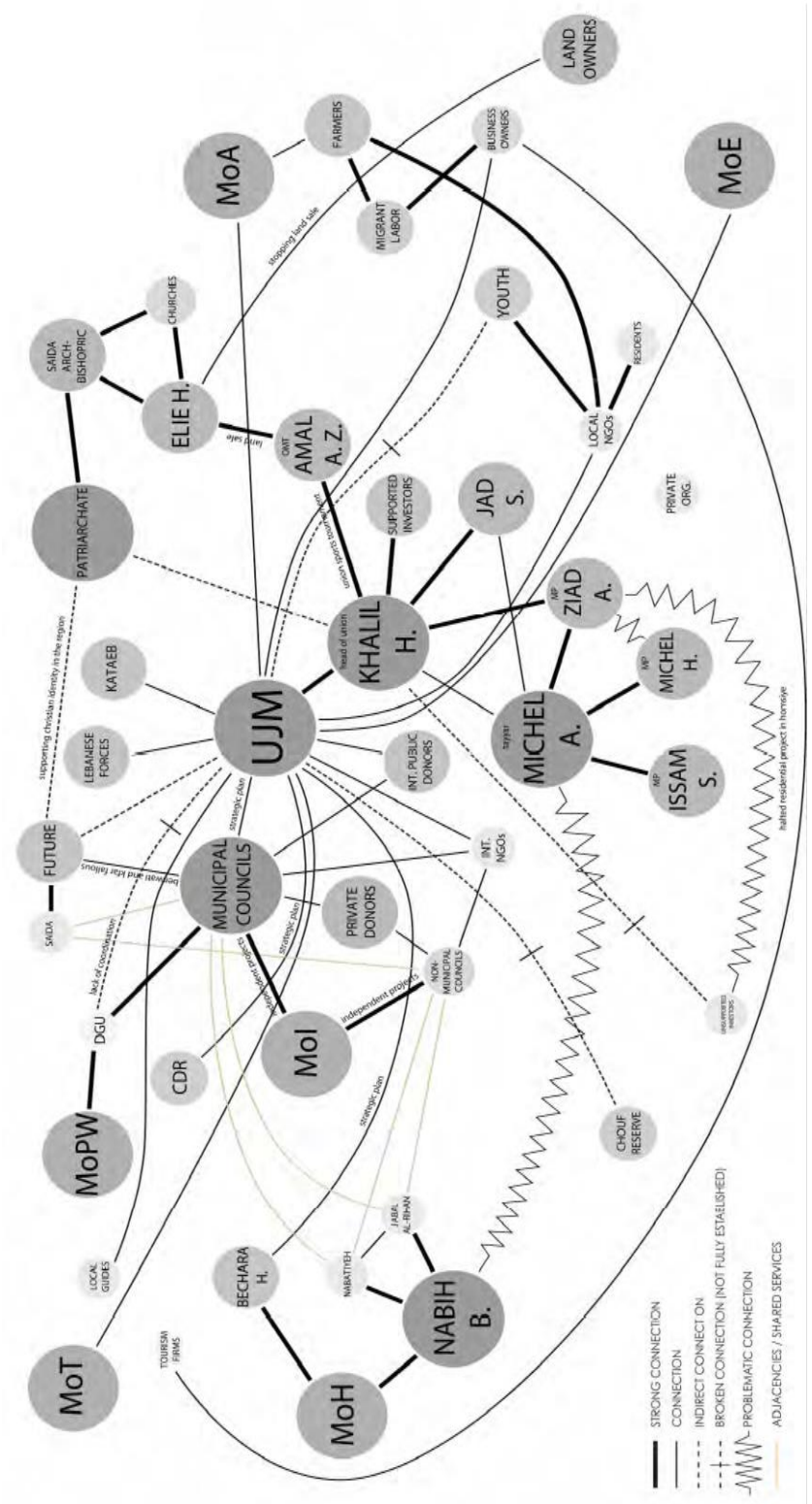


Figure 100. Stakeholder analysis. The figure shows the connections between the different stakeholders in Jezzine and how they overlap in roles, conflicts, and cooperation, and what is missing. Produced during planning and design workshop.2013.

In tracing through the different themes of land development, agriculture, and tourism, we have identified that over time and migration, Jezzine has seen the residents' connection to their land shift from that of "home and income" to "homeland and asset." This has resulted in an overall lack of investment in wanting to populate the land or utilize it for income generation. As such, the vast open spaces have effectively been reduced to barren lands that hold little value outside of an asset for future sale. That's why any future master plan for the area must identify successful businesses in the region that maximize the potential of the land while maintaining green spaces, and preserving the cultural landscape of Jezzine. However, any proposed master plan to be successful in achieving such aims must coordinate with public bodies such as the municipality and the needed governmental bodies because:

- Although the legal framework is the reference in the interaction between the municipalities and the governmental bodies listed, however, the interaction taking place, in reality, is much complex and does not necessarily conform to the legal framework and thus much more significant.
- The rationale behind the municipal elections in Jezzine (based on familial and political competition) gives an idea of how municipal councils function. However, the familial and political backgrounds of the candidates work hand in hand with one of them overcoming the other in certain situations.
- The municipal funds are not enough always to invest in the public domain, donors (whether international or local organizations, or wealthy families, businessmen, etc.) get the chance to interfere in municipal decisions hence entering as stakeholders in the development of the region. This phenomenon weakens the municipal decision and

providing a venue for some wealthy people interested in politics for entering the political scene as MPs of Jezzine through appealing public participation, as donors in this example.

- Some stakeholders have a low interest that must be increased through community work and involvement with the region's development. For example, the Youth of Jezzine is an important stakeholder. However, they lack the required interest in the region to affect positive change. It is important to address the youth and raise their interest and awareness.

CHAPTER V

RESULTS: A NEW ZONING PLAN

After delving into the analysis and reading of Jezzine landscape layers, and after uncovering the ecological landscape design theoretical framework and its adequacy for achieving sustainable development for such a Mediterranean landscape in the previous chapters. In the following chapter, the ELA methodology will be applied for the Jezzine case study, to define the different landscape character zones. This chapter will be divided into six sections. The first section will start by identifying the ELA'S. The second section will entail combining the urban elements identified in the questionnaire, while being based on the physical theory of place of Kevin Lynch, and the ecological model based on T.T. Forman ecological model. In the third section, these elements will be combined with the produced ELA'S to move from landscape blocks to landscape character zones. In the fourth section, these landscape character zones will be overlaid with the deduced zones from the questionnaire that were based on people experiences, meanings, memories and ownership patterns. Therefore, in the end, this combination will result in having Landscape character zones that reflect the cultural, social, physical and natural landscape features of Jezzine. These units will found the platform that this study will be based on to define the new zoning master plan and its guidelines. This chapter concludes by stressing the importance of ecological landscape design in providing solutions that could help altering the deficiencies of the conventional zoning master plans.

A.Ela's for Jezzine

The significance of applying the ELa's investigative tool for Jezzine goes back for its capacity to provide us with a dynamic, responsive, intuitive and holistic framework for reading this landscape different components.Therefore once applied, it will generate an ecological understanding of this landscape while identifying its associations and their distribution patterns. Accordingly, these associations will help us to recognize the dynamics occurring between the natural, cultural and urban landscapes in this setting, to generate later creative solutions and guidelines for an integrated ecological zoning model for this case study(fig.101).

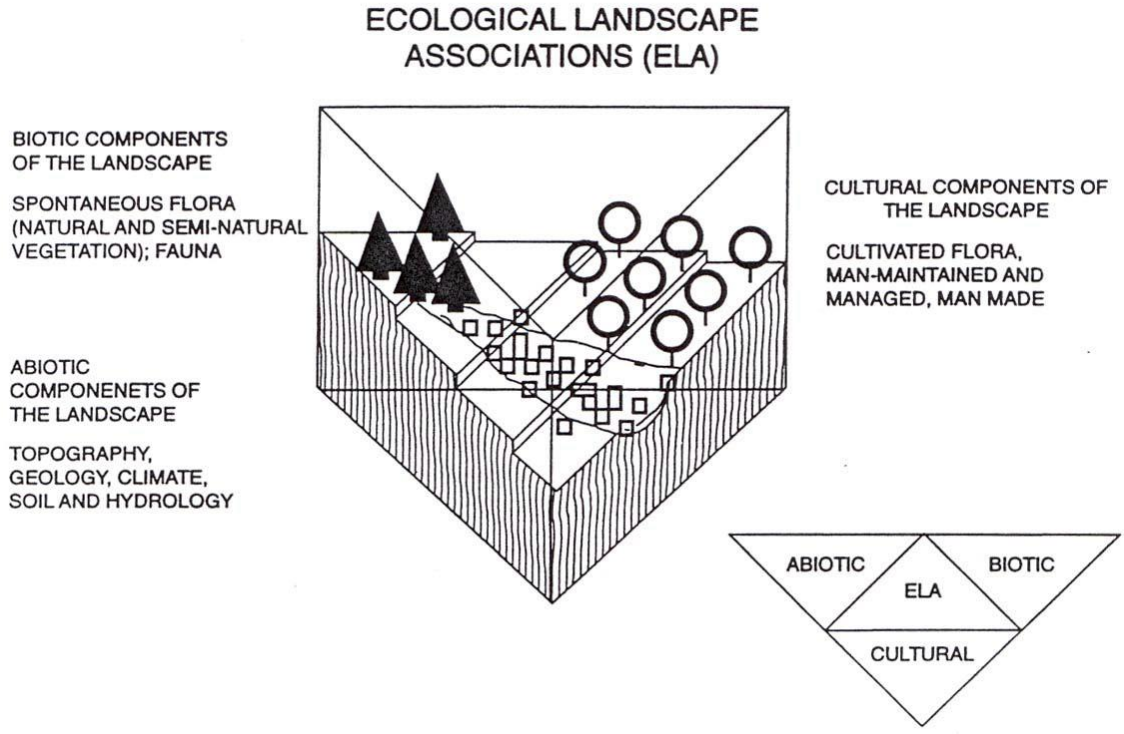


Figure 101. Schematic illustration of ecological landscape associations. Source: Makhzoumi, 1999

Once applied in Jezzine, the ecological landscape methodology allowed categorizing the different interactions between geomorphology, land use and land cover into a set of 22 ELA's(see figure 102 and appendix IV).

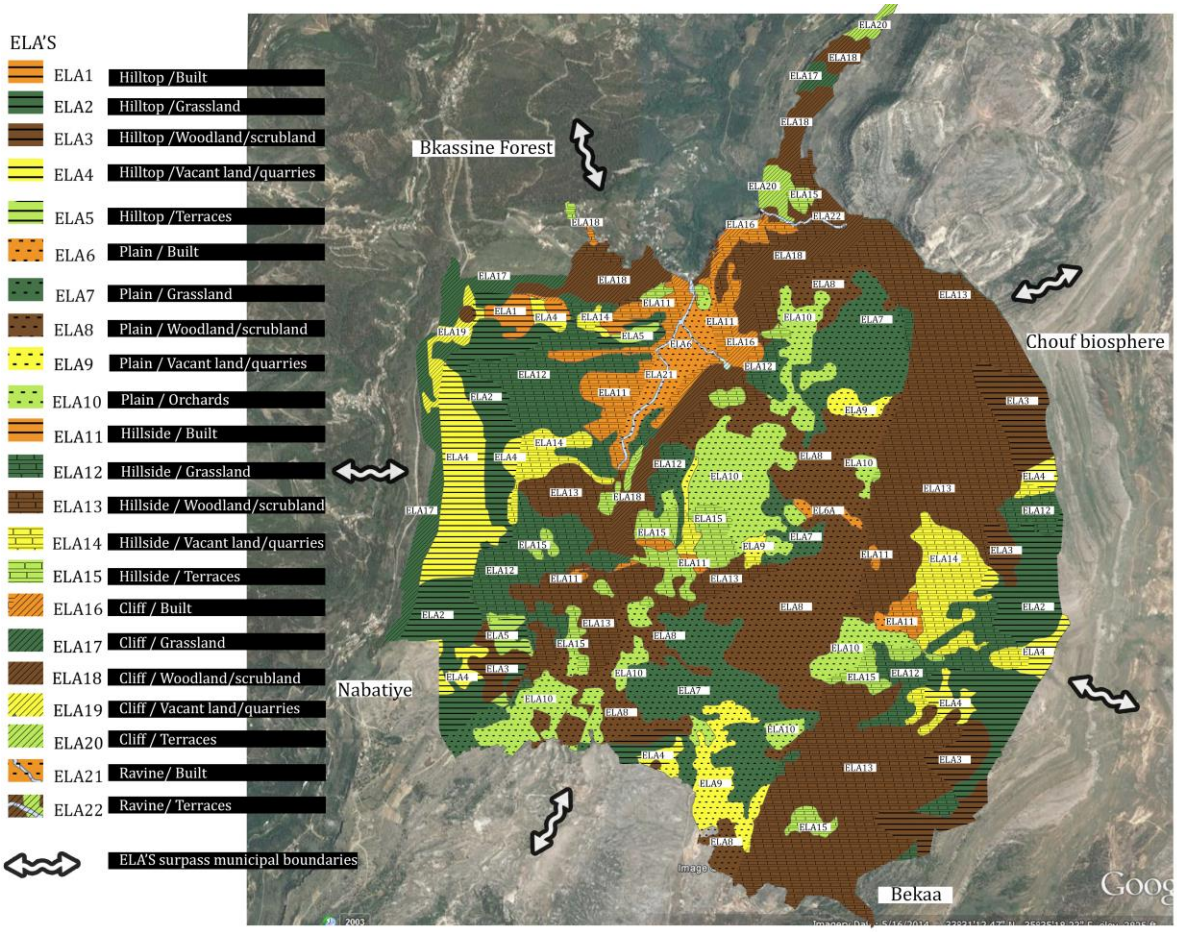


Figure 102. Jezzine Ela's.This map illustrates the spatial distribution of Ela's in Jezzine.Map produced by Neaimeh, R.2016

The following table summarizes the different Ela's attributes and their significance:

ELA'S	Attributes of Ela Model	Significance of Attributes
ELA1: Hilltop/built	Urban landscape connectivity The hilltop landscape is witnessing disturbing human interventions that are resulting from Jezzine city's core expansion.	Guidance of sprawl and distribution of built-up/green spaces is needed while considering physical permeability.
ELA2: Hilltop/grassland	Urban landscape connectivity Green space that overlooks Jezzine.	The significance of this association that it can embrace future sprawl while maintaining open spaces.
ELA3: Hilltop/Woodland	Natural landscape connectivity It designates a fragment of the natural Mediterranean landscape of scrubland and woodland hills.	Strategies need to be studied to recognize and protect its biodiversity; This association constitutes an important visual and ecological heritage
ELA4: Hilltop/vacant land	Natural landscape connectivity It designates the remaining vacant hilltop areas, between the surrounding built environments that are expanding.	Guidance of sprawl and detailed distribution of built-up/green spaces in needed.
ELA5: Hilltop/terraces	Natural landscape connectivity It illustrates the traditional rural landscape, the outcome of human alteration and management of natural resources and environmental surroundings.	This association constitutes an important cultural, visual, economic and ecological heritage.
ELA6: Plain/built	Urban landscape connectivity	Containment of sprawl is needed to preserve the landscape heterogeneity in

	It illustrates new built agglomeration and patterns of sprawl on greenfields.	future.
ELA7: Plain/Grassland	Natural landscape connectivity Repository of genetic diversity and illustrates natural vistas, open spaces and greenways.	Soil Conservation.
ELA8: Plain/Woodland	Natural landscape connectivity Repository of genetic diversity. Wildlife habitat for plants and birds.	This association constitutes an important visual and ecological heritage.
ELA9: Plain/ vacant land	Natural landscape connectivity Repository of genetic diversity and disturbing stone quarries.	Soil Conservation.
ELA10: Plain/ Orchards	Natural landscape connectivity These orchards provide recreational ultimate spaces. They are part of the collective memory and the livelihood of locals and tourists.	Strategies to recognize and, preserve and upgrade the Agricultural practice needs to be studied.
ELA11: Hillside/Built	Urban landscape connectivity It illustrates new built agglomeration and pattern of sprawl due to city expansion. In addition of entailing much of the architectural cultural heritage.	Guidance of sprawl is needed in addition to densification strategies in order to maintain legibility.

ELA12: Hillside/Grassland	Natural landscape connectivity Open space	The significance of this association that it can embrace future sprawl while maintaining open spaces.
ELA13: Hillside/Woodland	Natural landscape connectivity Repository of genetic diversity. Wildlife habitat for plants and birds	This association constitutes an important visual and ecological heritage that must be preserved and reforested to play as a windbreaker for agroforestry.
ELA14: Hillside/Vacant Land	Urban landscape connectivity Overlooks Jezzine.	The significance of this association that it can embrace future sprawl while maintaining open spaces
ELA15: Hillside/Terraces	Natural landscape connectivity It illustrates the traditional rural landscape, the outcome of human alteration and management of natural resources and environmental surroundings.	This association constitutes an important cultural, visual, economic and ecological heritage. Therefore, its conservation is a must.
ELA16: Cliff/Built	Urban landscape connectivity It illustrates the traditional built urban fabric. In addition to the touristic fabric with its scenic views toward Wadi Jezzine.	Guidance of sprawl and the conservation of heritage are two indispensable actions as part of sustaining tourism in Jezzine.
ELA17: Cliff/Grassland	Natural landscape connectivity Repository of genetic diversity. With scenic views toward Wadi Jezzine.	This association constitutes an important visual and ecological heritage that must be preserved
ELA18:	Natural landscape	This association constitutes

Cliff/Woodland	connectivity Repository of genetic diversity. Wildlife habitat for plants and birds With scenic views toward WadiJezzine.	an important visual and ecological heritage that must be preserved
ELA19: Cliff/Vacant Land	Natural landscape connectivity Open space that overlooks Jezzine.	Soil conservation
ELA20: Cliff/Terraces	Natural landscape connectivity It illustrates the traditional rural landscape, the outcome of human alteration and management of natural resources and environmental surroundings.	This association constitutes an important cultural, visual, economic and ecological heritage.
ELA21: Ravine/Built	Urban landscape connectivity Riparian areas in the urban context are badly managed. Although their key importance in defining the image of Jezzine through its waterfall and greenways.	This association must be preserved and well managed which will affect positively tourism and agricultural in Jezzine as well as its surroundings.
ELA22: Ravine/terraces	Natural landscape connectivity This association designates the Waterways crossing the agricultural areas.	Water resource management is needed, to preserve these natural corridors as wildlife corridors as for nature enjoyment.

Table 1. Jezzine Ela's. The following table summarizes the different Ela's attributes and their significance.Table produced by Neaimeh, R.2016.

The patterns of the natural, rural and urban cultural landscape of Jezzine can be categorized by the dominant features of landscape heterogeneity. Heterogeneity is apparent in the range of natural components like the vegetative cover, fauna and avifauna, and the variety of cultural components like rural agriculture and terraces, historical urban core, neighborhoods, new development and the transportation network. The heterogeneous character of this landscape is the result of dynamic evolutionary processes, mainly since the mid-19 th century: transportation network attracted investment; investment attracted tourists; tourists attracted labor and agriculture, and the new town was formed and attracted more development and residents. This heterogeneous interaction responded to an intricate geomorphology of hilltops, hillsides and cliffs, a composite transportation network of carriage road, railroad, car road and speed highway, and a complex economy of some agriculture (vineyards, deciduous fruit trees), passenger services (khans, Hotels,), summer residences, real-estate market, and development projects.

Therefore, it is vital to understand, critically assess and realistically build on these patterns of heterogeneity and responsiveness since these patterns reflect the intrinsic values and assets of Jezzine landscape. In addition, they represent significant potentials to enhance and sustain the continuity Jezzine various landscapes for a long term

1. From Ela's to Landscape Character Zones

The previous section gave us a temporal dynamic and holistic reading of Jezzine through the association's made. In this section, the ELA method will be

employed as a tool for planning and design. However, to come up with new interventions and strategies that could guide the final zoning master plan, the ELA ecological blocks must be refined into character zones that can be used as the basis for future interventions and strategies. To achieve this aim, the Ela's must be combined with site-specific elements. In our case, these elements will be categorized into two sets of spatial attributes. The ecological landscape elements will be deduced based on T.T.Forman (Forman, 1995)patch-corridor-matrix model, and the urban design elements will be deduced based on Lynch place-based model (Lynch, 1960).

These two models were chosen because they complement each other and can form a foundation to combine multidisciplinary perceptions of a given landscape. This is clearly stated by T.T.Forman, who declares that "key spatial attributes are so readily understood. The patch-corridor-matrix model has become a spatial language, enhancing communication among several disciplines and decision makers. The patch-corridor-matrix model has analogs in other disciplines such as the Kevin Lynch five spatial elements, which are "a similar and unusual feature as he states." (Forman, 1995).

a.Landscape Ecology Reading

Following Forman method that turns down the composition of landscape mosaic to patches, corridors, and edges.The following section will highlight these elements in Jezzine's landscape(figure.103).

i.Patches

Landscapes are founded on a mosaic of patches. These patches according to Forman symbolize nonlinear spatial domains that have homogeneous environmental

conditions where the patch boundaries are distinguished by discontinuities in environmental character from their surroundings. Patches are dynamic and occur on a variety of spatial and temporal scale(McGarigal, 2015).Accordingly, the identified ELAs such as the Terraced hillside, the built-up plain and built fabric are considered as patches. These patches are of key importance and reflect the richness of this landscape with its multiple patches and its heterogeneity that should be reflected in any future landscape planning for the area that should maintain this mosaic of patches.

ii. Green / Ecological Corridors

Corridors are linear landscape elements that can be defined by structure or function. They differ from the adjacent land on both sides. Corridors are often attached to a patch that has to some similar extent vegetation. As a result of their form and context, structural corridors could function as habitat, dispersal conduits, or barriers (Forman, 1995). Three types of corridors are of special interest for us in this research and that are so distinct visually:

- The wooded and stream corridors that ensure wildlife movement and ecological continuity of species and are considered ecological corridors.
- The trough corridors or greenways that provide landscape connectivity of green spaces in an urban setting by mean of the right of ways. These linear corridors create linkages between natural and urban settings.

For Jezzine, ecological corridors are defined by the Al Nabaa and Azibe watercourses, while the Sleiman Bek road axis illustrates the green corridor that links

Jezzine to its surroundings villages. These corridors contribute positively to the living quality and environment by providing recreational areas for people as well as natural vistas while being, at the same time habitat and movement channel for different wildlife ecosystems.

iii. Edges

According to Forman, edge is the portion of an ecosystem near its perimeter, where influences of the surroundings prevent the development of similar interior environmental conditions. Each two edges combined compose a boundary (Forman, 1995).

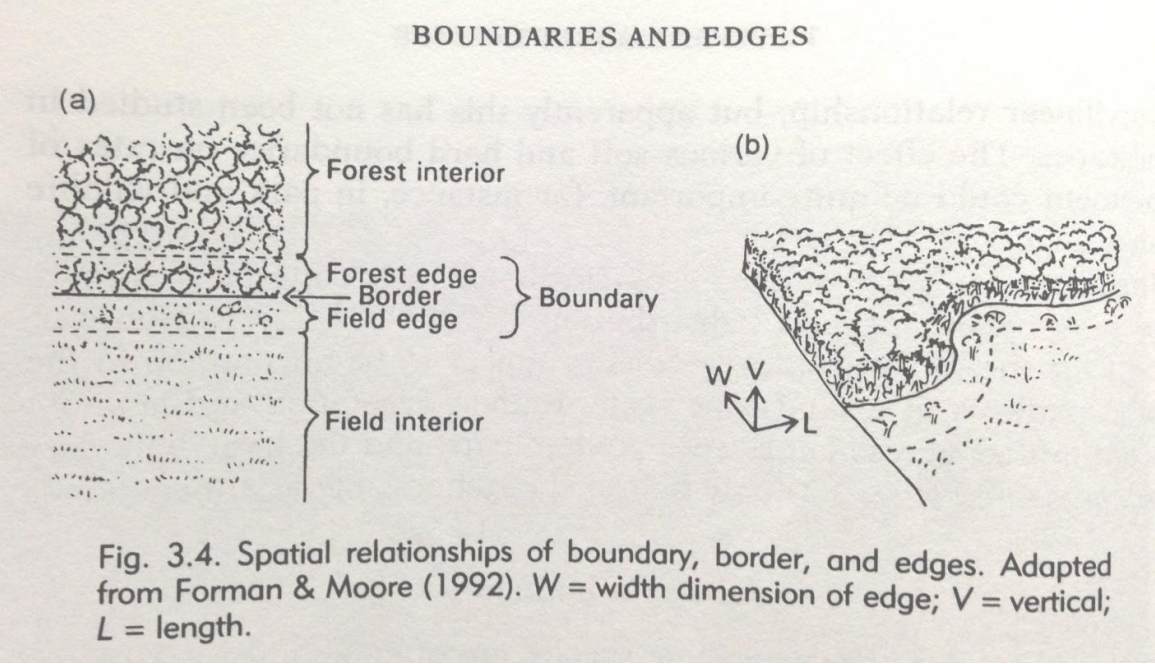


Figure 103. Jezzine Ela's.This map illustrates the spatial distribution of Ela's in Jezzine.Map produced by Neaimeh, R.2016.

In Jezzine, two main edges can be detected, and they are mainly composed of cliffs. The edges usually create a transitional area between the elements that are behind the cliff and the elements that are below it. The first edge is located between Jezzine, Wadi Jezzine, Maknouniye and Haitoura that is materialized by the cliff, the second edge is located between the Kroum area and the Sleiman Bek axis, then the third axis is located between Jezzine.

b. Urban Design Reading

The qualitative reading of Jezzine that we tackled in the questionnaire considered the relationship between people and their settings, experiences, and meanings. Accordingly, one of the analysis divisions tackled the sense of place as a derivative from the structural pattern of this particular place and its urban value. It was based on Kevin Lynch five elements that he mentioned in his book images of the city in 1960 as elements that should be integrated into place making. These elements are paths, nodes, districts, landmarks, and edges (Lynch, 1960). Based on the questionnaire, the correspondent elements in Jezzine are:

i. Paths

Paths are "the channels along which the observer customarily, occasionally, or potentially moves" (Lynch, 1996, p. 99). Therefore, Rue George Aziz, Rue Assad, Rue Sleiman Bek Kanaan, and Rue Al-Daya are considered main paths for citizens in Jezzine. However, paths do not only means channeling movement, but also channeling

the observers through vistas and scenic views that this cultural landscape offers. In this case, many paths can be defined in Jezzine:

- The visual corridor from the waterfall cliff towards Jezzine and Wadi Jezzine that channel the view towards the green forest in Bkassine and the stream below.
- The visual corridor from the cross hill towards Jezzine old core and the surrounding eastern hills.
- The visual corridor from old core towards the rest of Jezzine
- The visual corridor from Towamat and Kroum towards the western part of Jezzine.

ii.Edges

"Edges are the linear elements used as the path by the observers. They are the boundaries between two phases, linear breaks in continuity: shores,railroad,cuts,edges,walls" (Lynch, 1996, p. 99). Accordingly First edge is located between Jezzine and Wadi Jezzine that is materialized by the cliff, the second edge is located between the Kroum area and the Sleiman Bek axis, and the third axis is located between Jezzine, Maknouniye and Haitoura. We can see that the edge definition in this place based method to complement the Forman ecological definition wherein both cases there is a breaking in continuity with surrounding areas.

iii.Nodes

Nodes are "strategic spots in a city into which an observer can enter and which are the intensive foci (…) they may be primarily junctions" (Lynch, 1996, p. 99). In

Jezzine, two nodes can be spotted. First we have Al Maabour node, which is located at the center of Jezzine while reaching it from Saida. It is considered to be an intensive foci at the entrance of Jezzine and a break point in transportation and circulation. Then, we have Al Saha node at the center of Jezzine, which is a junction between the different networks and districts.

iv.Landmarks

Landmarks are external reference points. Jezzine contains several landmarks that can be classified in different categories. First, we have the predominant religious landmarks such as St Maroun Church, St Joseph Church, Al Maabour shrine, St Mary Church. Then we have natural landmarks such as the Cross Hill, the waterfall, Azibe spring, and Al Dayaa spring.Then at the end, we have the architectural heritage landmarks such as the municipality building, Al-Saray, Al-Kanaan mansion.

v.Districts

Districts are “the medium-to-large section of the city (...) recognizable as having some common identifying character” (Lynch, 1996, p. 99). *Districts* were not high on the list of dominant visual features in Jezzine: Only some of them such as district Said Wehbe district located in the old heritage core and Asad located at the entrance of Jezzine from Saida.These two districts are of defined characters that combine physical architectural features as well as the commercial functions. These districts can overlap with patches, identically defined through the Forman model.

2.Combined Reading Benefits and Shortages

As we have already seen, the ecological landscape reading and the urban design reading complement each other and could turn with a defined strategy and in combination with the already deduced ELA in the landscape into character zones that would form tools for design future strategies and guidelines implementations. The combination of these different elements is illustrated in (figure 104 and APPENDIX IV). The selected features have been chosen due to their significant importance as cultural, rural and ecological elements, in defining the distinctive as well as the richness of this place. Therefore, the integration of these elements in any new planning or design is a must to have an adequate place-based ecological landscape strategy.

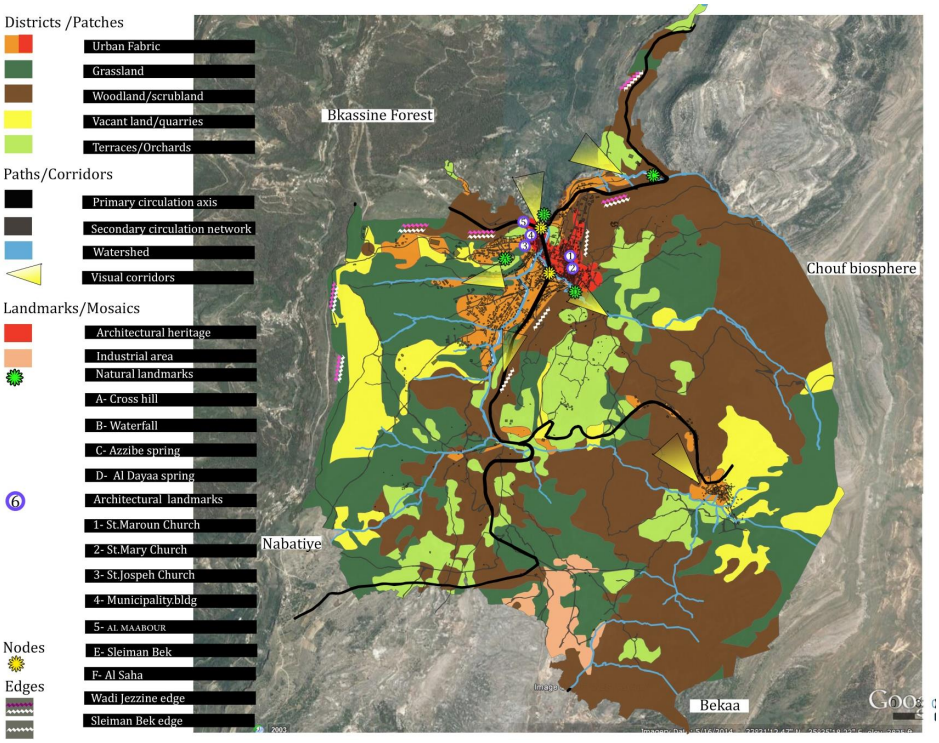


Figure 104.Jezzine Ela's. Combination map.Map produced by Neaimeh, R.2016

B.Landscape Character Zones

After defining the different ecological and urban elements, combining them with the ecological landscape associations of Jezzine becomes possible. The conceptual model of combination while highlighting the different components and key elements to consider is illustrated in (figure 105 and APPENDIX IV).

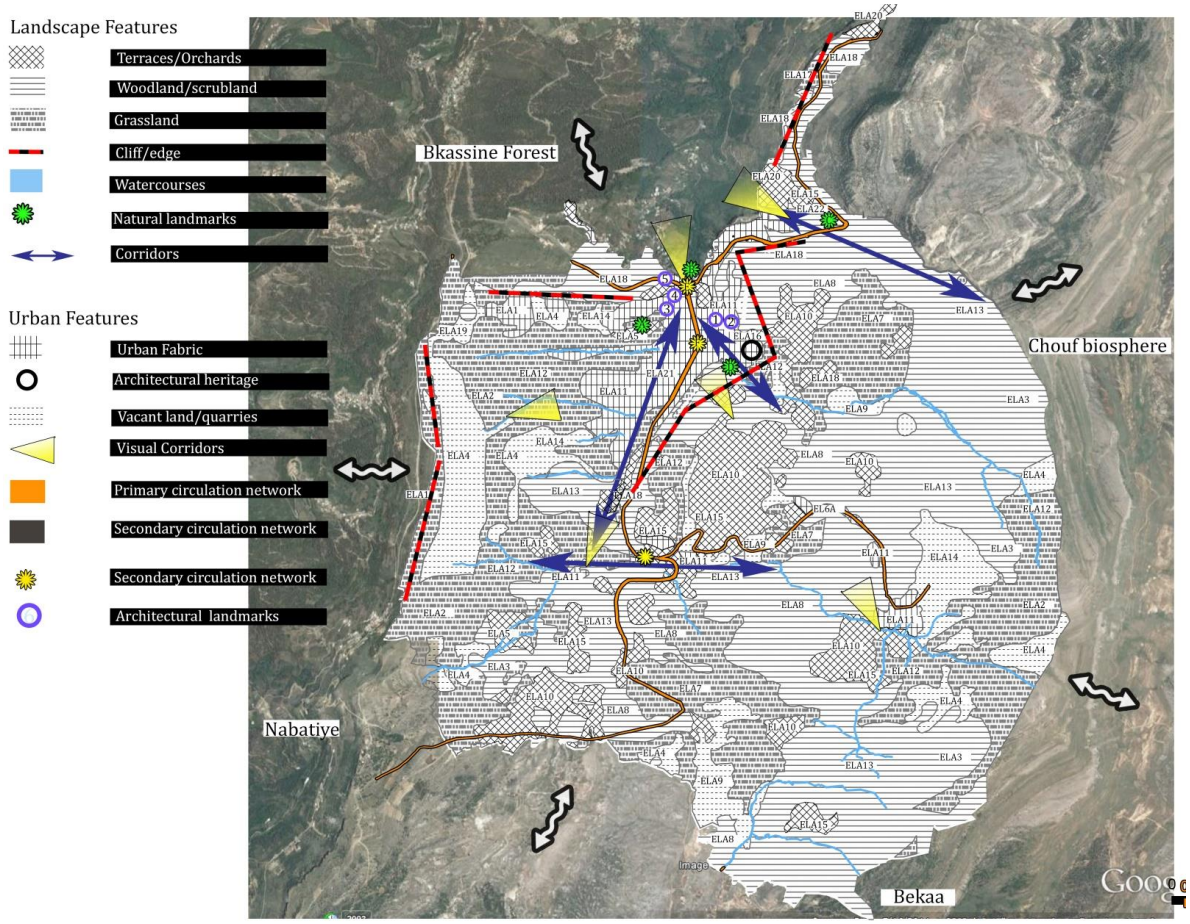


Figure 105.Jezzine conceptual model.This map illustrates the conceptual model of combination. Map produced by Neaimeh, R.2016.

After combining these different ecological and urban elements and defining the conceptual composite model for Jezzine, transferring them into the spatial model is

needed. However; strategies should guide this transfer first. Accordingly, the following strategies were taken into consideration while defining the different landscape character zones:

- Protecting the cultural and natural heritage
- Safeguarding land mosaics and heterogeneity
- Protecting agricultural zones of distinct characters
- Safeguarding visual corridors, ecological corridors, and riparian areas
- Respecting connectivity, continuity, and legibility
- Protecting and connecting distinct elements and green spaces

The produced LCZ's are not finale yet because we still need to combine them with the social layer, they are illustrated in (figure 106 and APPENDIX IV).

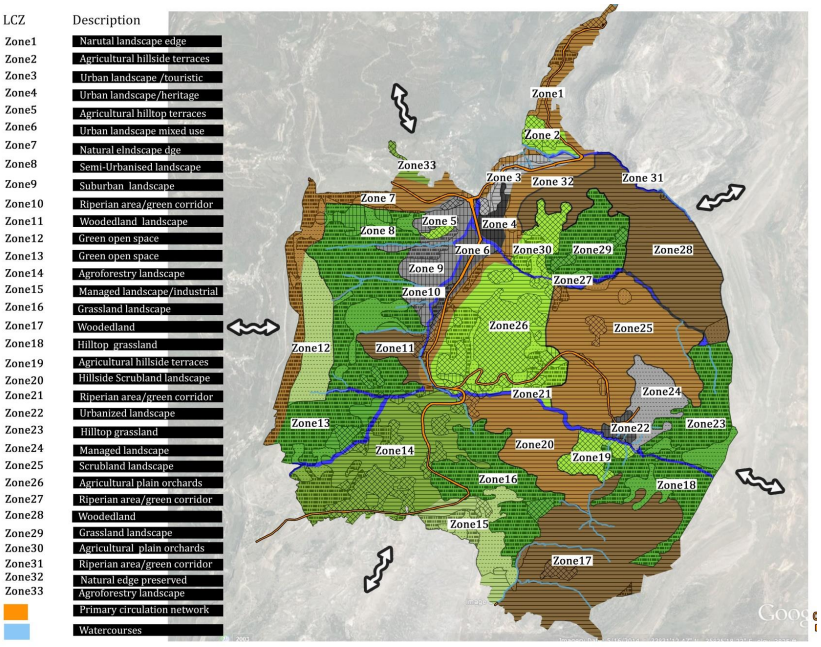


Figure 106. Jezzine LCZ.LCZ.Map produced by Neaimeh, R.2016

1.Combination of LCZ with Socially Deduced Zones and Ownership Patterns

The previous reading gave us a dynamic and holistic reading of the natural, rural, and urban landscapes of Jezzine through Ecological Landscape Associations (ELA). Therefore, now it is possible to combine them with the socially deduced zones and ownership patterns. This combination would direct the master plan process to reflect and respond to the urgent challenges in Jezzine within the temporal and spatial evolutionary continuity of the Landscape for reference see figure 107 and APPENDIX IV.

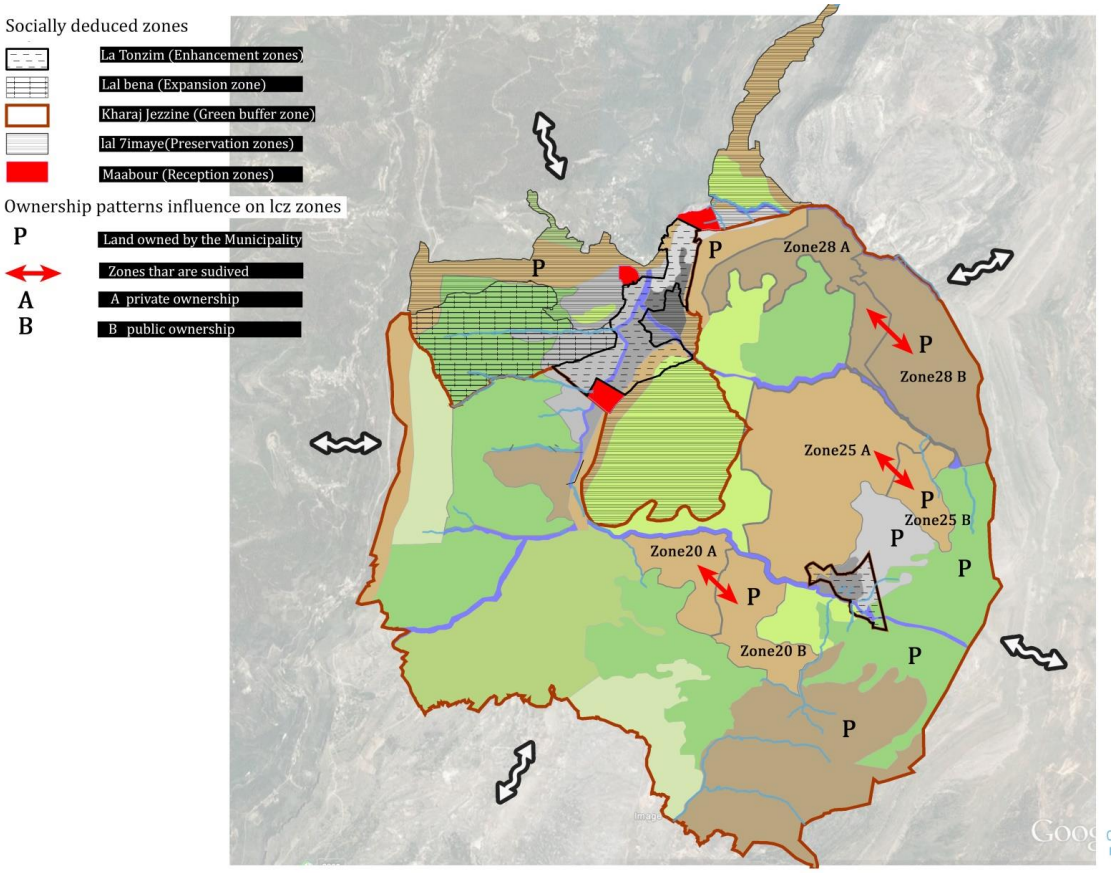


Figure 107.Jezzine conceptual model. This map illustrates the combination of LCZ+Ownership patterns+Socially deduced zones.Map produced by Neaimeh, R.2016

Therefore, we can see based on the previous map, that the socially deduced zones based on people experiences and meanings mainly overlap with landscape character zones .

The places that people designated for preservation are the ones that have mainly urban and ecological value such as heritage architecture and agricultural terraces and orchard. The areas that were designated for enhancement are the ones where the built fabric is violent, and natural resources are not well managed. The zones that were designated for expansion are the areas that had least dense natural lands cover as well as land uses. What remains from the zones were designated as a green buffer for the town because people considered these areas as remote and they did not have too much exposure to them due to lack of connectivity or land uses and trails. Therefore, the finale LCZ map that my study will be based on for future strategy and intervention implementation is completed by now for illustration see figure 108 and APPENDIX IV.

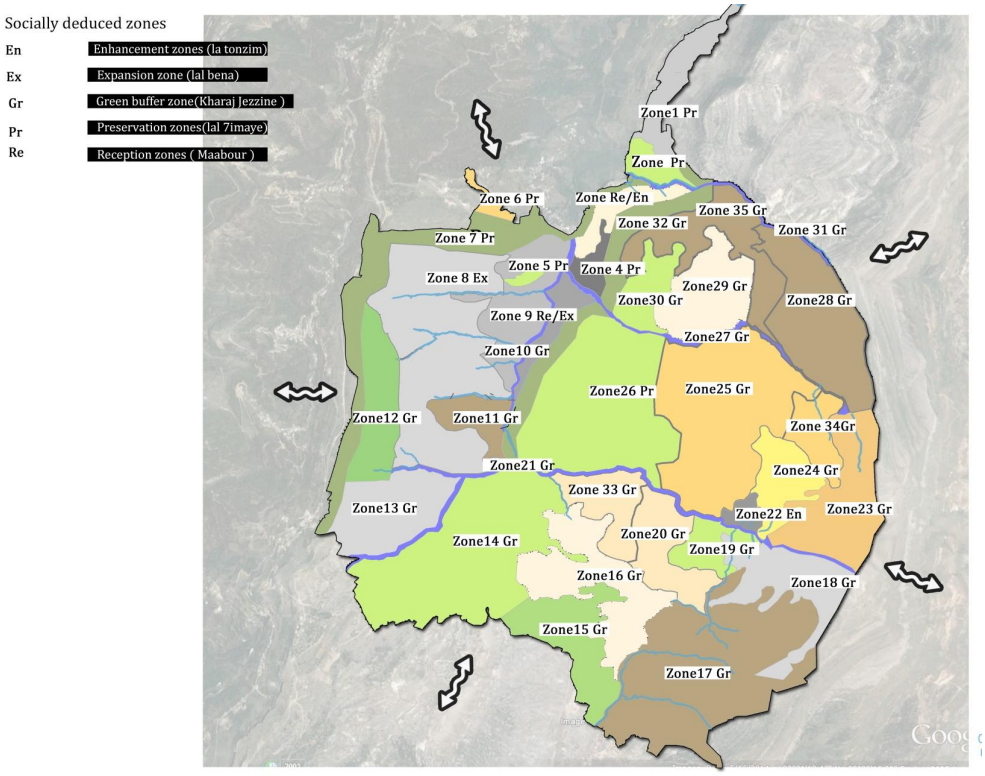


Figure 108.Jezzine LCZ.finale LCZ for Jezzine.Map produced by Neaimeh, R.201

2.From LCZ to Planning Guidelines and Urban Design Strategies

In the previous section, we produced the ecological landscape zones that embodied a holistic reading of Jezzine's landscape dynamics temporalities, ecological, social as well as cultural features. In this section, we're going to apply and transform the landscape character zones into planning guidelines and design strategies. Therefore, this chapter will be divided into four sections. The first section will set our main objectives regarding planning in Jezzine. In the second section, we will state the significance of each character zone, its planning potentials, and its planning guidelines that could be generated from this ecological landscape model. Then in the last part, we will conclude by showing the significance of this method in comparison to the existing functionalist zoning master plans and exemplify its applicability based on the workshop developed the case.

a.Main Objectives

- Identify and protect the natural landscape heritage of Jezzine while considering:
    - Ecological corridors inside Jezzine and with the outlying region especially with Chouf natural reserve and Bkasine pine forest.
    - Protecting and managing hilltops for their ecological importance.
    - Managing and protecting cliffs for their touristic potentialities.
    - Protecting avifauna.
    - Identifying and connecting ecological lands.

- Protecting and connecting the isolated riparian area with surrounding patches.
- Reconnecting fragments of the landscape that would positively affect agriculture and Eco- tourism and sustainable rural developments.
- Creating green buffer between the industrial areas and outlying region
- Protecting existing natural reserves and the existing waterfall
- Ensuring varieties of open green spaces

- Safeguard the rural and urban cultural landscape heritage of Jezzine while considering:
  - Mediterranean nature-culture co-evolution
  - Enabling physical, visual and ecological connectivity between built-up areas of the city and surrounding natural areas and green spaces, through physical and cultural exposure of these areas.
  - Ensuring physical permeability, adaptability, and accessibility of the public to open spaces.
  - Enhancing community livelihoods
  - Planning for sustainable urban growth/development and densification.
  - Protecting heritage urban fabric
  - Considering time-based planning and processes
  - Ensuring varieties of open spaces
  - Integrating different land uses
- Considering the socio-economic continuity between Jezzine and its surroundings while considering:

- Political issues
- Influential stakeholders
- Common goods
- Economical networks and social bonds

LCZ significances and planning guidelines:

LCZ	Significance	ELA	Stakeholders evolved	Planning recommendations
Zone1 Ain Bou Najem Neighborhood	Peri-urban landscape	Cliff/terraces and scrubland	Municipality, Ujm and property owners	Urban continuity through a compact-fine, coarse fabric of villas typologies, within gardens and enhancing landscape heterogeneity while respecting the Wadi Jezzine edge vistas.
Zone 2 Farmland	Rural Landscape: Ecological, cultural and economic importance	Cliff/vineyard terraces	Municipality, Ujm and property owners	Agricultural Reserve, ensuring the continuity, with the Azzibe ecological corridor to its south.
Zone 3 Chalouf Touristic fabric	Cultural landscape, economic and ecological importance	Cliff /built and terraces	Municipality, Ujm and touristic business owners	Urban continuity through ensuring additional mixed-use touristic developments, inviting townscape and economic developments in connection with the surrounding Al Nabaa, Azzibe ecological corridors, and Wadi Jezzine edge and waterfall.
Zone 4 Dayaa fabric	Cultural landscape, residential character, ensuring urban continuity, landscape connectivity and social interaction	Hillside/ built	Municipality, Ujm and property owners	Integrated and conserved urban fabric in continuation with existing morphology of traditional residential clusters and shared common spaces. Low density residential individual/ multistory houses. Land pooling or subdivision is not allowed. Connection with Al Nabaa ecological corridor is highly valued by ensuring varieties of open spaces along its trajectory.
Zone 5 Cross hilltop	Rural Landscape: Ecological, cultural and economic importance	Hilltop/vineyard terraces	Municipality, Ujm and property owners	Agricultural Reserve, ensuring landscape continuity, landmark protection and cultural asset to the city, by improving the quality of the surrounding built environment.

Zone 6 Wadi Jezzine edge	Peri-urban landscape	Hillside/ built and terraces	Municipality, Ujm and property owners	Urban continuity through low density residential individual/ multistory houses within productive orchard gardens, keeping on the cultural and green identity of the site.
Zone 6 Al Saha neighborh ood	Urban landscape, residential and commercial character ensuring urban continuity and social interaction	Plain/Built	Municipality, Ujm and property owners	Urban continuity through compact mixed used residential/commercial buildings ensuring economic diversity and public amenities in Jezzine. Active fronts are to be ensured as well as a variety of open spaces in connection with Sleiman Bek Greenway in addition to having aligned perimeter blocks.
Zone 8 Tiyab one	Urban Landscape, Residential village character is insuring continuity and development.	Hillside/bu ilt and grassland	Municipality, Ujm and property owners	New Suburban neighborhoods are ensuring urban continuity. Characterized by medium density residential buildings. Semi collective, mono block typologies are suggested while considering existing site ecology and the general time frame based zoning for this zone (see APPENDIX IV).
Zone 9 Bayadr neighborh ood	Urban Landscape, Residential village character ensuring continuity and development	Hillside /built	Municipality, Ujm and property owners	New urban zone to complement existing educational, health and services that would serve the economic diversity. Urban continuity through compact mixed used residential/commercial buildings ensuring economic diversity and public amenities in Jezzine. A variety of public open spaces is to be ensured connection with Sleiman Bek greenway.
Zone 10 Sleiman Bek axis	Ecological connectivity, Cultural importance	Ravine/Bu ilt	Municipality	Sleiman Bek green corridor, hub to connect open green spaces while ensuring recreational and economic benefits, part of the riparian network and pedestrian trails.
Zone 11 Communa l garden	Natural landscape, Ecological connectivity	Hillside/sc rubland	Municipality	Green space, important environmental recreational and cultural asset to the city, improves quality of built environment
Zone 12	Natural landscape, ecological	Hilltop/vac ant land	Municipality, Ujm and	New urban zone is adopting a compact fabric of villas typologies, within

New developments	connectivity		property owners	gardens, enhancing landscape heterogeneity and the general time frame based zoning for this zone (see APPENDIX IV).
Zone 13 New developments	Natural landscape, ecological connectivity	Hilltop/grassland	Municipality, Ujm and property owners	Urban continuity through Integrated urban fabric with common spaces. Low density residential individual/ multistory houses
Zone 14 Agroforestry	Rural Landscape: Ecological, cultural and economic importance	Hillside/terraces, orchard and scrubland	Municipality, Ujm and property owners	Urban continuity through low density residential individual/ multistory houses within productive orchard gardens, keeping on the cultural and green identity of the site, within the-the general time frame based zoning for this zone(see APPENDIX IV)..
Zone 15 Industrial zone	Economic importance	Hillside/ vacant land and quarries	Municipality, Ujm and property owners	Industrial developments are to be approved and integrated into the site, after a general assessment of their impact on Jezzine ecological and urban network.
Zone 16 Green buffer	Natural landscape, ecological connectivity	Plain/grassland	Municipality, Ujm and property owners	Landscape continuity and green buffer for the industrial area, reducing its pollution and perturbation's
Zone 17 Natural reserve	Natural landscape, ecological connectivity	Hillside/woodland and scrubland	Municipality	Natural reserve is providing open spaces and protecting the ecological corridors that go beyond Jezzine towards Chouf natural reserve.
Zone 18 Communal garden	Natural landscape, ecological connectivity	Hillside/grassland	MuniARRU Pcipality	Natural landscape providing open spaces and recreational spaces for people, and ecological corridors with the outlying region such as Chouf cedars reserve.
Zone 19 Agricultural Reserve	Rural Landscape: Ecological, cultural and economic importance	Hillside/ terraces	Municipality, Ujm and property owners	Agricultural Reserve, ensuring the continuity, with the green ecological corridor.
Zone 20 New developments	Natural landscape, ecological connectivity	Plain/woodland and scrubland	Municipality, Ujm and property owners	Urban continuity through low density residential individual/ multistory houses within natural wooded gardens, keeping on the cultural and green identity of the site, within the-the general time frame based zoning for this zone. Land pooling or subdivision is not allowed.

Zone 21 Sleiman Bek axis	Ecological connectivity, Cultural importance	Ravine/Built and scrubland	Municipality	Green corridor, with cultural Recreational, amenity and economic importance, part of the riparian network and pedestrian trails.
Zone 22 Ain Majdalayn fabric	Cultural landscape, architectural heritage, ensuring urban continuity, landscape connectivity and social interaction	Plain and hillside built	Municipality, Ujm and property owners	Integrated and conserved urban fabric in continuation with existing morphology of traditional residential clusters and shared common spaces. Low density residential individual/ multistory houses. Land pooling or subdivision is not allowed. Connection with Al Nabaa ecological corridor is highly valued by ensuring varieties of open spaces along its trajectory.
Zone 23 Natural reserve	Natural landscape, ecological connectivity	Hilltop/woodland and vacant land	Municipality, Ujm and property owners	Natural reserve is providing open spaces and protecting the ecological corridors that go beyond Jezzine towards Chouf natural reserve.
Zone 24 New developments	Natural landscape, ecological connectivity	Hillside/vacant land	Municipality, Ujm and property owners	Urban continuity through low density residential individual/ multistory houses within productive orchard gardens, keeping on the cultural and green identity of the site, within the-the general time frame based zoning for this zone(see APPENDIX IV).. Land pooling or subdivision is not allowed.
Zone 25 New developments	Natural landscape, ecological connectivity	Hillside/scrubland	Municipality, Ujm and property owners	Urban continuity through low density residential individual/ multistory houses within productive orchard gardens, keeping on the cultural and green identity of the site and ensuring the continuity, with the green ecological corridor, within the general time frame based zoning for this zone(see APPENDIX IV).. Land pooling or subdivision is not allowed.
Zone 26 Agricultural Reserve	Rural Landscape: Ecological, cultural and economic importance	Plain / terraces and orchards	Municipality, Ujm and property owners	Agricultural Reserve, ensuring the continuity, with the green ecological corridor.
Zone 27 Al Nabaa	Ecological connectivity, Cultural importance	Ravine/orchards and grassland	Municipality	Green corridor, with cultural Recreational, amenity and economic importance, part of the riparian

ecological corridor				network and pedestrian trails.
Zone 28 Natural reserve	Natural landscape, ecological connectivity	Hillside/woodland and scrubland	Municipality	Natural reserve providing open spaces and recreational spaces for people, and ecological corridors with outlying region such as Chouf and Niha biospheres
Zone 29 New developments	Natural landscape, ecological connectivity	Plain/grassland	Municipality, Ujm and property owners	Urban continuity through low density residential individual/ multistory houses within productive orchard gardens, keeping on the cultural and green identity of the site, within the general time frame based zoning for this zone(see APPENDIX IV)..
Zone 30 Agricultural Reserve	Rural Landscape: Ecological, cultural and economic importance	Plain / terraces and orchards	Municipality, Ujm and property owners	Agricultural Reserve, ensuring the continuity, with the green ecological corridor
Zone 31 Azzibe ecological corridor	Ecological connectivity, Cultural importance	Ravine/scrubland	Municipality, Ujm and property owners	Green corridor, with cultural Recreational, amenity and economic importance, part of the riparian network and pedestrian trails.
Zone 32 Mtol	Ecological connectivity, natural and ecological significance	Cliff/scrubland	Municipality, Ujm and property owners	Natural reserve is providing open spaces and recreational spaces for people, and ecological corridors with the outlying region.
Zone 33 New developments	Natural landscape, ecological connectivity	Plain/woodland and scrubland	Municipality	Urban continuity through low density residential individual/ multistory houses within natural wooded gardens, keeping on the cultural and green identity of the site, within the-the general time frame based zoning for this zone(see APPENDIX IV).. Land pooling or subdivision is not allowed.
Zone 34 New developments	Natural landscape, ecological connectivity	Hillside/scrubland	Municipality	Natural reserve providing open spaces and recreational spaces for people, and ecological corridors with outlying region such as Chouf and Niha biospheres
Zone 35 Natural	Natural landscape, ecological connectivity	Hillside/woodland and	Municipality	Urban continuity through low density residential individual/ multistory houses within productive orchard

reserve		scrubland		gardens, keeping on the cultural and green identity of the site and ensuring the continuity, with the green ecological corridor, within the-the general time frame based zoning for this zone(see APPENDIX IV).. Land pooling or subdivision is not allowed.
Zone 36 Jwar El sous	Ecological connectivity, natural and ecological significance	Cliff /scrubland and grassland	Municipality	Natural Reserve is providing greenways and ecological corridors with the outlying region, especially with Bkassine forest.

Table 2. Jezzine LCZ.This table illustrates LCZ significances and planning guidelines. Map produced by Neaimeh, R.2016.

CHAPTER VI

CONCLUSION

A.LCZ vs Functionalist Zoning Master Plan in Jezzine

The landscape character zones produced for Jezzine, proved to be able to sensitively inform any future zoning master plan for similar cases. This dynamic attitude draws back to these character zones' capacities in considering and integrating multiple aspects into the master plan design process in comparison to the existing static zoning master plan. In what follows is a deductive comparison between the two approaches based on Jezzine case study:

The produced LCZ for Jezzine represent an inclusive attitude towards urban planning. This attitude has been materialized through the civic engagement in the planning process, which embedded participant's urban values, sense of place, future needs, and future visions for managing this place. In contrast, the existing zoning master plan reflects social exclusion, where people are marginalized in favor of other stakeholders mainly: technocrats, politicians and developers in the area.

The produced LCZ reconsidered natural processes, natural networks, and sustainable resource management in guiding urban development and management of natural resources, while highlighting their importance as means to reconnect the city with nature. In contrast, the existing master plan has superficially tackled the issue of natural resources and has dealt with these networks and elements as isolated units in this landscape, without any consideration for sustainability issues, energy consumption, etc... Also, they tackled the

issue of paths and circulation networks in correspondence with transforming mobility and work patterns. Therefore, the paths were tackled as visual corridors, greenways, and public open spaces to connect the different landscape elements. In contrast, the existing master plan has overlaid the circulation network scheme over the existing social, natural and cultural layers regardless of their urban values, since the aim was a functionalist city where planning had to ensure traffic channels and motorized movement for efficient production.

The produced LCZ balanced between urban developments and urban conservation schemes, through considering the town as a living society, where the conserved urban and natural elements were integrated in city life and formed a platform for building a collective memory. Instead, the current master plan with it is regulatory, restrictive and unresponsive tools turned the conserved urban and natural zones of values, into conserved deserted monuments. As well, they balanced between the different existing land uses while respecting the heterogeneity of the landscape and the fact that each patch has its rules of composition. In contrast, the current zoning master plan has been founded on the segregation of land uses , where each zone has been considered homogenous regardless of its natural and cultural diverse components. Accordingly, these character zones defined flexible zones boundaries based on the overlap between cultural, ecological, and social elements, which reflected this cultural landscape distinctiveness. In contrast the, the current zoning master plan zone rigid borders reflect socio-political divisions that do not reflect the cultural landscape there designated for. Instead, these divisions fragment, whenever policies are bounded to them.

Finally, the produced LCZ form a platform for intuitive design proposal that can generate design strategies, guidelines and detailed suggestions based on the uniqueness of each character zone. In contrast, the existing zoning master plan restrictive and generalized

codes those are limited to development rights ratios, regardless of site particularity and twenty-century dynamics.

B. Critical assessment of Jezzine study, distinctiveness

This paper discussed the value and usefulness of the ecological landscape design within the Mediterranean rural cultural context of urban growth, and, in particular, considered the conventional zoning master plan deficiencies based on Jezzine case study.

The significance of this research is that it has demonstrated the validity of ecological landscape design as a valuable method that can manage the Lebanese rural town's growth, if it was well integrated into the Lebanese design and urban planning framework. The validit of this method can be mainly attributed to its dynamic, holistic, and intuitive characteristics, which can enhance and manage any Mediterranean rural cultural landscape by generating place-specific guidelines. This approach to planning and design embraced ecology, urban values and social inspirations, that transcend the existing rigid and predictable zoning, because spatial practices, meanings and natural landscapes are attached to the form of development as well as community life. This fact is not materialized through the existing regulative zonings.

Additionally, the significance of this thesis is that it demonstrates that the method of ecological landscape association can be enriched by a place based method as a means to an end, through which community can organize and mediate its context-specific interests.

The Concern about the influence of the concept of ecological landscape design, its relevance, and its legitimacy as a vision for guiding and managing the growth of cities is

gaining more interest lately, but it still misses concrete examples, where this model could be evaluated based on the generated outcome, especially that time evaluates.

C. Limitations of this study

1.Further detailing

ELA is an adequate planning modeling language and inclusive to non-professionals. However, if all the elements of a landscape are included, the model can become highly complex. Although the success of this case study to overcome this complexity and its particular success in translating participants community voices into spatial guidelines that guided the production of the final master plan, however a higher level of success would have been achieved, if this generated lcz and guidelines would have been passed into the realm of a high-tech simulation tools and detailed design strategies as a means to stimulate participation and exchange among participants for design impact.This has not been achieved due to the thesis time limitation.

2. Difficulty to achieve impact

The concept of ecological landscape design has been attractive, and several case studies have been associated with it .As a result, its language has been appropriated, interpreted, and exchanged in several contexts such as in the Mediterenean context. What has been of especial intrested for us in this study is the Saida's casestudy, since this study represents a geographical continuity for Casa Jezzine from the West, and, therefore, ecological corridors, natural networks, greenways and waterways could be better connected

and managed in future, if a new regional study could link these two cases studies while being based on the ecological landscape design method .

However,in order to achieve success in similar cases , time is a determinant factor, since changing the way in which people think is a slow and difficult process. Also, the implementation of LCZ to achieve impact would become difficult, if it was not accompanied in future with complementary studies such as feasibility studies and applicability studies. Therefore, from here steams another limitation for this study due to time limitation, since these complementary studies were not produced and combined with the produced LCZ guidelines to improve the understanding and applicability of this dynamic planning basic system.

D. Recommendation, future aspirations

Recently, the exploitation of natural resources is outstanding as one of the most serious ecological problems. This ecological problem mainly generates from the wrong understanding of city planning. In Lebanon, the existing local planning schemes were prepared without thorough consideration of the existing natural resources in context of future growth. Accordingly, and in this perspective natural areas in our country are being continually damaged, since “Ecologically-Based Landscape Plans” have not been included in the legal processes while at the same time the urban planning law and construction law remain oudated.Our country is not at an irreversible point of natural damages yet. Therefore the prevention of improper land uses and the allocation of the necessary place to Ecological Landscape Planning studies in the planning hierarchy are as urgent as ever. This reality places the Lebanese governing body, in front of a major responsibility to endeavor on the

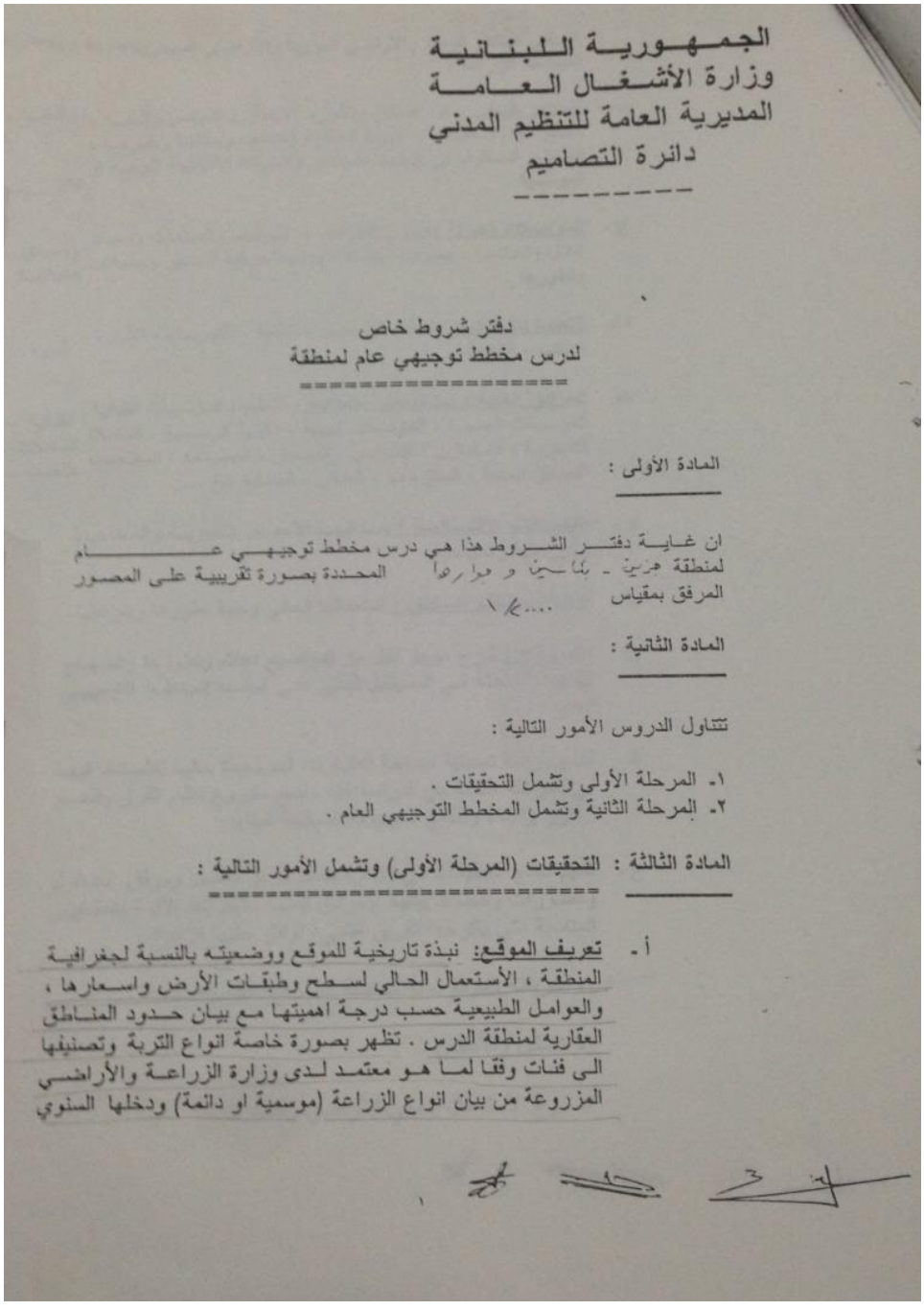
full inclusion of “Ecological Landscape Planning” in the Lebanese planning hierarchy in order to achieve sustainable city planning. In the process of searching for their approaches to creating solutions grow from the place, where urban values and ecological accounting could inform designs to address their local ecologies and cultural histories. The Lebanese government planning body may gain inspiration from developed countries, which have long and rich histories of ecological network planning and design that can now provide well-established models. In addition, the phenomenon of “Ecological Consciousness” must be descended to the public by planning authorities, through adopting an inclusive approach while tackeling urban issues. This inclusive approach toward urban planning has not been adopted yet, and to a large extent due to: multiplicity of culture landscapes analysis layers, enchain effects, diverse consequences of single actions, and growing number of stakeholder affected by decisions.

Accordingly, the development of new instruments and tools while using digital information and communication technology and its increasingly affordable access to larger groups, has the potential to stimulate and improve local governance as well as to produce and implement ecologically based master plans. Therefore, urban planners and managers should benefit from such instruments and tolls to enable a better production of knowledge, improved presentation of data, enhanced communication with stakeholders, and a better implementation measures for these ecologically based master plans. Therefore, future considerations and case studies must tackle and exemplify: How these ecologically, place based master plans can be effectively implemented on the ground, without falling into the zoning game of local urban governances?

APPENDIX I

BOOK OF TERMS AND CONDITIONS

A. Cover page of book of terms and conditions assigned by the DGU for Jezzine masterplan 1998 .



الجمهورية اللبنانية
وزارة الأشغال العامة
المديرية العامة للتنظيم المدني
دائرة التصاميم

دفتر شروط خاص
لدرس مخطط توجيهي عام لمنطقة

المادة الأولى :

ان غاية دفتر الشروط هذا هي درس مخطط توجيهي عام لمنطقة جزين - بلاطين و ضواحيها المحددة بصورة تقريبية على المصور المرفق بمقياس ١/٢٥٠٠٠.

المادة الثانية :

تتناول الدروس الأمور التالية :

١- المرحلة الأولى وتشمل التحقيقات .
٢- المرحلة الثانية وتشمل المخطط التوجيهي العام .

المادة الثالثة : التحقيقات (المرحلة الأولى) وتشمل الأمور التالية :

أ - تعريف الموقع: نبذة تاريخية للموقع ووضعيته بالنسبة لجغرافية المنطقة ، الأستعمال الحالي لسطح وطبقات الأرض واسعارها ، والعوامل الطبيعية حسب درجة اهميتها مع بيان حدود المناطق العقارية لمنطقة الدرس . تظهر بصورة خاصة انواع التربة وتصنيفها الى فئات وفقا لما هو معتمد لدى وزارة الزراعة والأراضي المزروعة من بيان انواع الزراعة (موسمية او دائمة) ودخلها السنوي

الجمهورية اللبنانية
وزارة الأشغال العامة
المديرية العامة للتنظيم المدني

محضر استلام موقت . ~~نهائي~~

إسم المشروع : المخطط التوجيهي لمناطق جزين وجوارها
المكتب المكلف : المهندس حياة ثابت
تاريخ عقد الإتفاق: ٢٠/١٧ تاريخ ٢٠/٥/١٩٩٦
قيمة العقد الإجمالية : ٣٢٣٧٥٠٠٠٠/ل.ل
تاريخ أمر المباشرة للمرحلة الأولى : ٢٠/٦/١٩٩٦
المهلة المحددة لهذه المرحلة: ستة أشهر ~~أشهر~~ جددت المرحلة الأولى حتى ٢٠/١/١٩٩٧ (بموجب قرار مرسل لمدير الأشغال بناء لطلب المكتب المكلف في ٢٠/١٢/١٩٩٦)
تاريخ تقديمها : ١/٣/١٩٩٧
تاريخ إستلامها : ٢٤/٦/١٩٩٧ (تأخير ٩ أيام).
تاريخ أمر المباشرة للمرحلة الثانية : ٢٧/١٠/١٩٩٧
المهلة المحددة لهذه المرحلة : اربعة اشهر
تاريخ تقديمها : ١٦/٤/١٩٩٨ (تأخير ٤٧ يوماً (سبعة واربعون يوماً))
تاريخ إستلامها : ٩/٦/١٩٩٨
تاريخ أمر المباشرة للمرحلة الثالثة : ....
المهلة المحددة لهذه المرحلة: ....
تاريخ تقديمها : ....
تاريخ إستلامها : ....

بعد ان تسملنا الملف من قبل الدائرة المختصة وموافقتها ، وبعد التدقيق من قبلنا تبين بان هذه المرحلة قد قدمت وفقاً للمطلوب وفي الوقت المحدد لها . لذلك تقرر إستلامها إستلاماً موقتاً . عطفاً على المادة الثالثة عشرة من دفتر الشروط الخاص بالدراسة ،

المكتب المكلف	عضـــو	عضـــو	رئيس اللجنـــة
٩/٦/٩٨ حياة ثابت	د. عايدة حطيط ٩/٦/١٩٩٨	م. حسن رمضان	المهندس خضر عبد الله

م. نزار الحسن

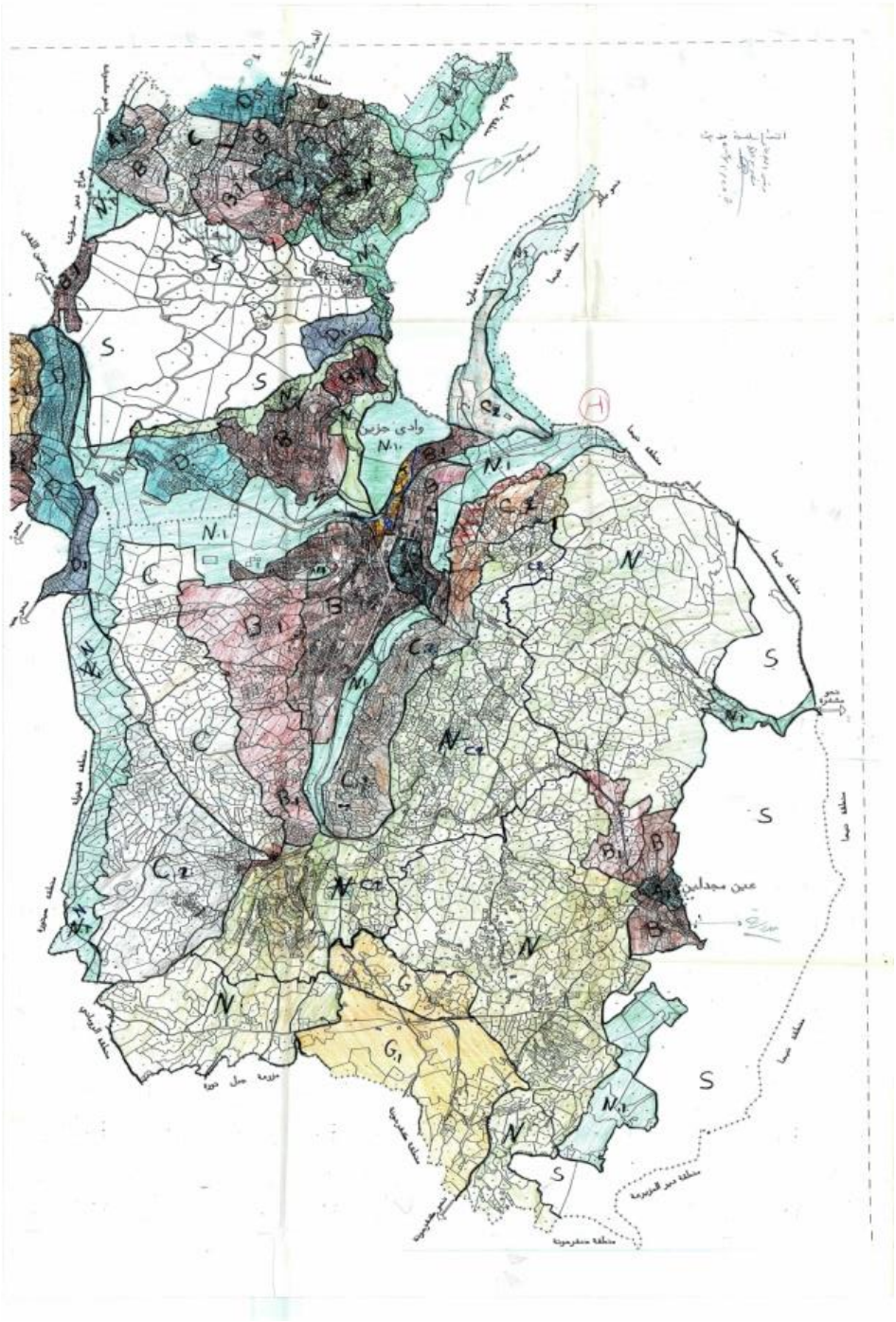
رئيس مصلحة الدروس
المهندس يوزيف عبد الأحد
٩/٦/١٩٩٨

APPENDIX II

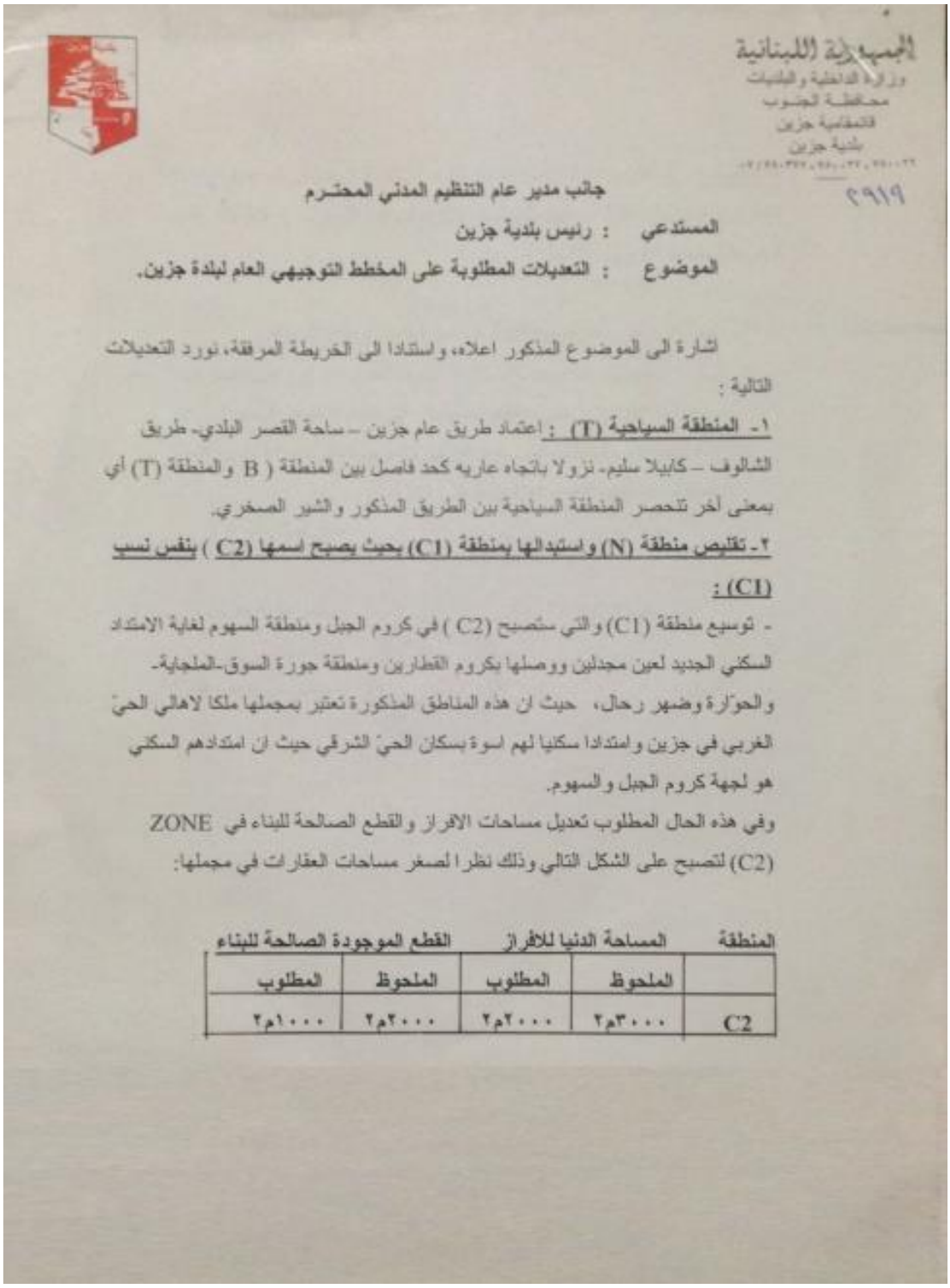
PROPOSED MASTER PLANS

A. Submitted design proposal, for Jezzine Mater Plan in 2000.

B.Submitted design proposal, for Jezzine Mater Plan in 2003-2004.



C.Jezzine fabric .This photo illustrate the municipality demand form for the Dgu to alter zones boundary. Photo was taken by Neaimeh, R.2015.



الجمهورية اللبنانية
وزارة الداخلية والبلديات
محافظة الجنوب
قائمقامية جزين
بلدية جزين

٢٩١٩

جانب مدير عام التنظيم المدني المحترم

المستدعي : رئيس بلدية جزين

الموضوع : التعديلات المطلوبة على المخطط التوجيهي العام لبلدة جزين.

اشارة الى الموضوع المذكور اعلاه، واستنادا الى الخريطة المرفقة، نورد التعديلات التالية :

١- المنطقة السياحية (T) : اعتماد طريق عام جزين – ساحة القصر البلدي- طريق الشالوف – كابيلا سليم- نزولا باتجاه عاريه كحد فاصل بين المنطقة (B والمنطقة (T) أي بمعنى آخر تنحصر المنطقة السياحية بين الطريق المذكور والشير الصخري.

٢- تقليص منطقة (N) واستبدالها بمنطقة (C1) بحيث يصبح اسمها (C2) بنفس نسب (C1) :

- توسيع منطقة (C1) والتي ستصبح (C2) في كروم الجبل ومنطقة السهوم لغاية الامتداد السكني الجديد لعين مجدلين ووصلها بكروم القطارين ومنطقة جورة السوق-الملجاية- والحوّارة وضهر رحال، حيث ان هذه المناطق المذكورة تعتبر بمجملها ملكا لاهالي الحيّ الغربي في جزين وامتدادا سكانيا لهم اسوة بسكان الحيّ الشرقي حيث ان امتدادهم السكني هو لجهة كروم الجبل والسهوم.

وفي هذه الحال المطلوب تعديل مساحات الافراز والقطع الصالحة للبناء في ZONE (C2) لتصبح على الشكل التالي وذلك نظرا لصغر مساحات العقارات في مجملها:

المنطقة	المساحة الدنيا للافراز		القطع الموجودة الصالحة للبناء	
	الملحوظ	المطلوب	الملحوظ	المطلوب
C2	٣٠٠٠م٢	٢٠٠٠م٢	٢٠٠٠م٢	١٠٠٠م٢

D. Submitted design proposal, for Jezzine Mater Plan in 2009.

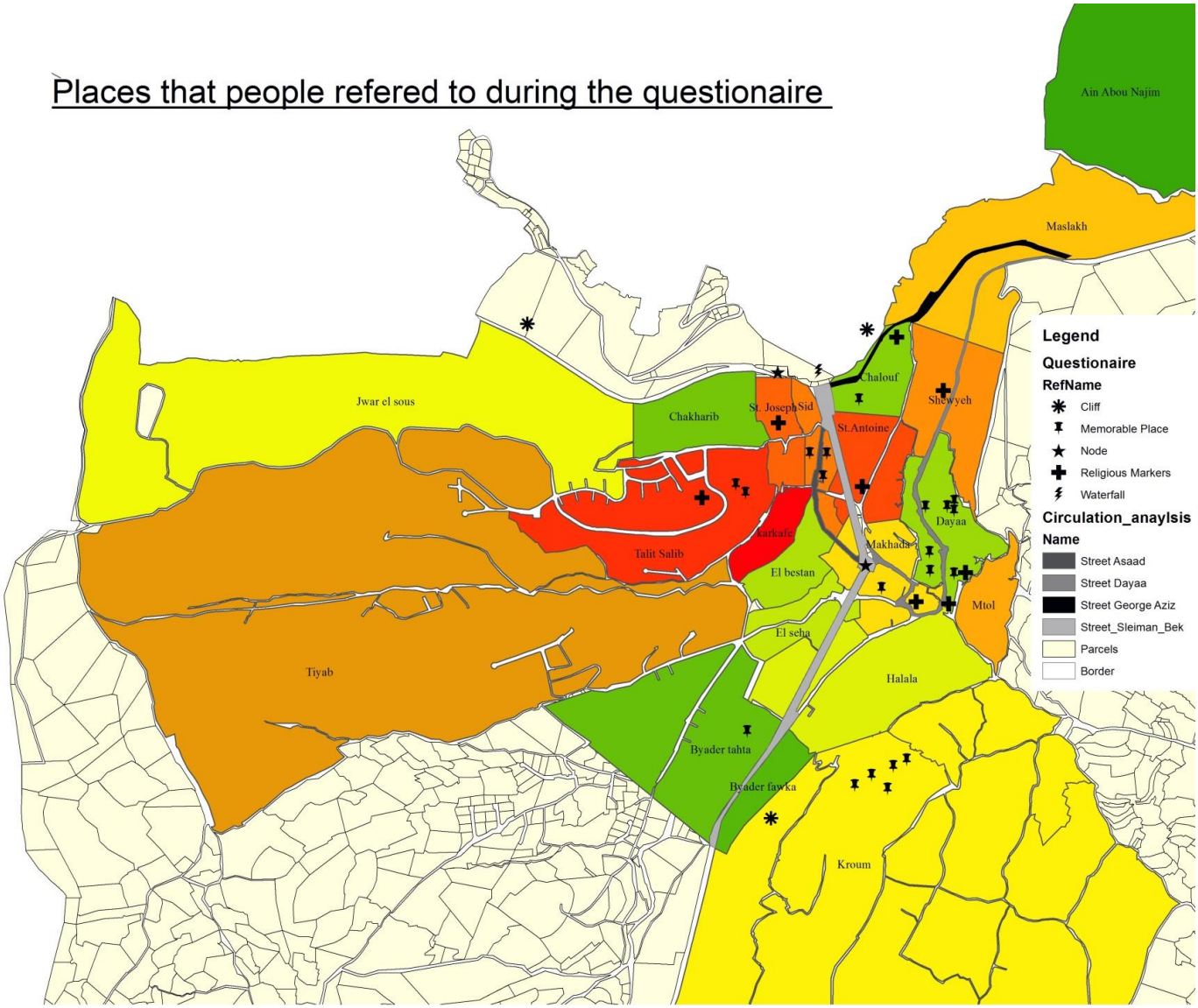
D. Submitted design proposal, for Jezzine Mater Plan in 2015.

APPENDIX III

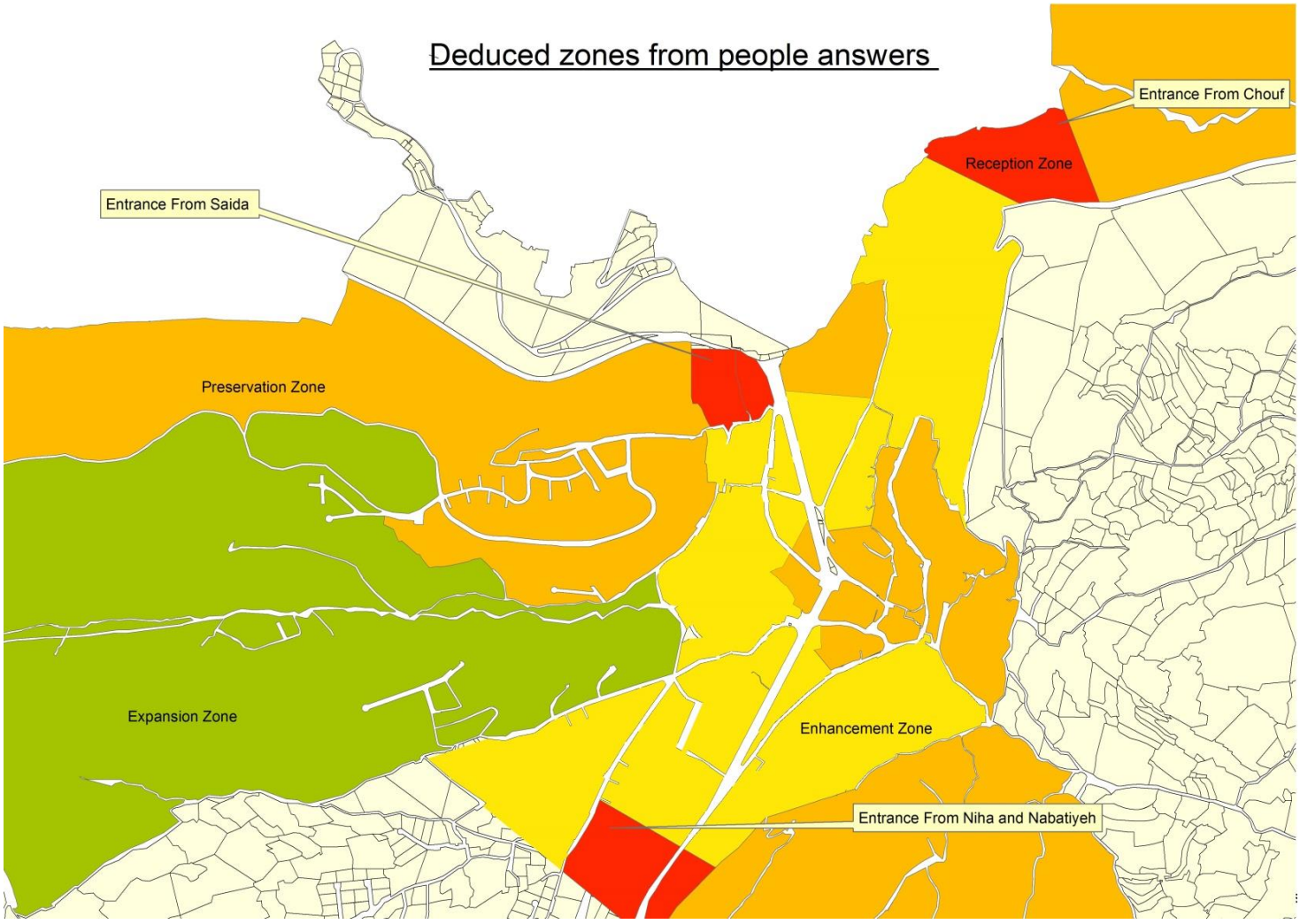
MENTAL MAPS

The following map illustrates the conclusion made from the questionnaire where urban values, elements and socially deduced zones have been located and laid down on a map.

A. Jezzine info graphic Map. This map illustrates the places that people referred to and related to during the questionnaire. Map produced by Neimeh,R.2015.



B. Jezzine deduced zones Map. This map illustrates the zones we deduced based on people answers: Map produced by Neaimeh, R.2015.



C.This table illustrates Jezzine questionnaire and summarized people answers: Map produced by Neaimeh, R.2015.

social dimension

1-the town is the best place for what	tourism 2 10%	investment 8 40%	administrative work 2 10%	relaxation 5 25%	others 3 15%	where
2-what happens in jezzine is important for you:	family ties 8 40%	investment 5 25%	poitical affiliactions 0%	memory 5 25%	others 2 10%	
3-duration spend at jezzine	hours 2 10%	weekends 1 5%	sumer season 2 10%	year-round 15 75%		
4-no place compared to the town due to:	natural landscape 8 40%	built environement 1 5%	personal memories 5 25%	social ties 6 30%	others	where
5- enhancing Jezzine should be through:	protecting the natural landscape 4 20%	updating building regulations 3 15%	creating financial incentives for touristics and agricultural sectors 12 60%	others 1(protecting hand carft) 5%		
6-Do you relate to any of the following sectors?	agriculture 13 65%	tourism 4 20%	others 3 15%			where

spatial dimension

1- what are the landscape visual markers in Jezzine?	religious 7 35%	natural 4 20%	social 4 20%	built 5 25%		where
2-neighborhoods in Jezzine are defined through:	natural boundaries 4 20%	family ties 5 25%	circulational patterns 10 50%	others 1 5%		
3-what differ the old core from the new build fabric?	building typologies 18 90%	circulational patterns 1 5%	density 1 5%	others		
4-what are the threats that are disturbing the cultural landscape in Jezzine?	new development types 6 30%	new building typologies 3 15%	new circulational patterns 4 20%	failure of urban planning schemes 5 25%	others 2 10%	where
5-what are the Incongruent features in the new building typologies?	heights 8 40%	materials 5 25%	density/compound like 6 30%	others 1 5%		
6-what are the failure of the current law and building regulations?	regulating building form 6 30%	regulating land use 4 20%	protecting natural landscape 3 15%	regulating public domain	political influence 3 15%	others 4 20%
7-what direction should the sprawl take place in jezzine? why?	Tryab 13 availability of land 65%	Sawan 1 availability of land 5%	kroum 4 20%	others 1 5%	Shilel 1 5%	
8-If new rules are set to regulate the built form, what should be considered the most?	building typology 16 80%	eco-friendly 2 10%	social dimension 2 10%			

9-Which of the following describes the currently build projects in Jezzine, shown in the flyers?	bulky	irrelevant to the area pattern and materials	block the view	disturb the landscape and agricultural practices	socially introverted anteties	others
	6	3		7	2	2
	30%	15%	0%	35%	10%	10%

10-what factors are changing the townscape and should be altered?	building heights	building materilas	densification	land use	building regulations/zoning	social practices
	3	4	5	1	6	
	15%	20%	25%	5%	30%	0%

11-How the remaining natural lots in the town and the immediate surrounding hills, as sown in the picture, should be managed?	kept as natural reserved	designed for public use	rezoned for agricultural use	rezoned for eco-touristic facilities	others
	4	5	1	9	1
	20%	25%	5%	45%	5%

12-which of the following approaches, shown in the pictures, should be adopted for new eco-touristic projects?	a	b (maison de la foret)
	2	18
	10%	90%

13-where should the building explotation factors be the highest?	Tiyab	Sad el tourathi	Azibe	Shilel
	12	3	2	3
	60%	15%	10%	15%

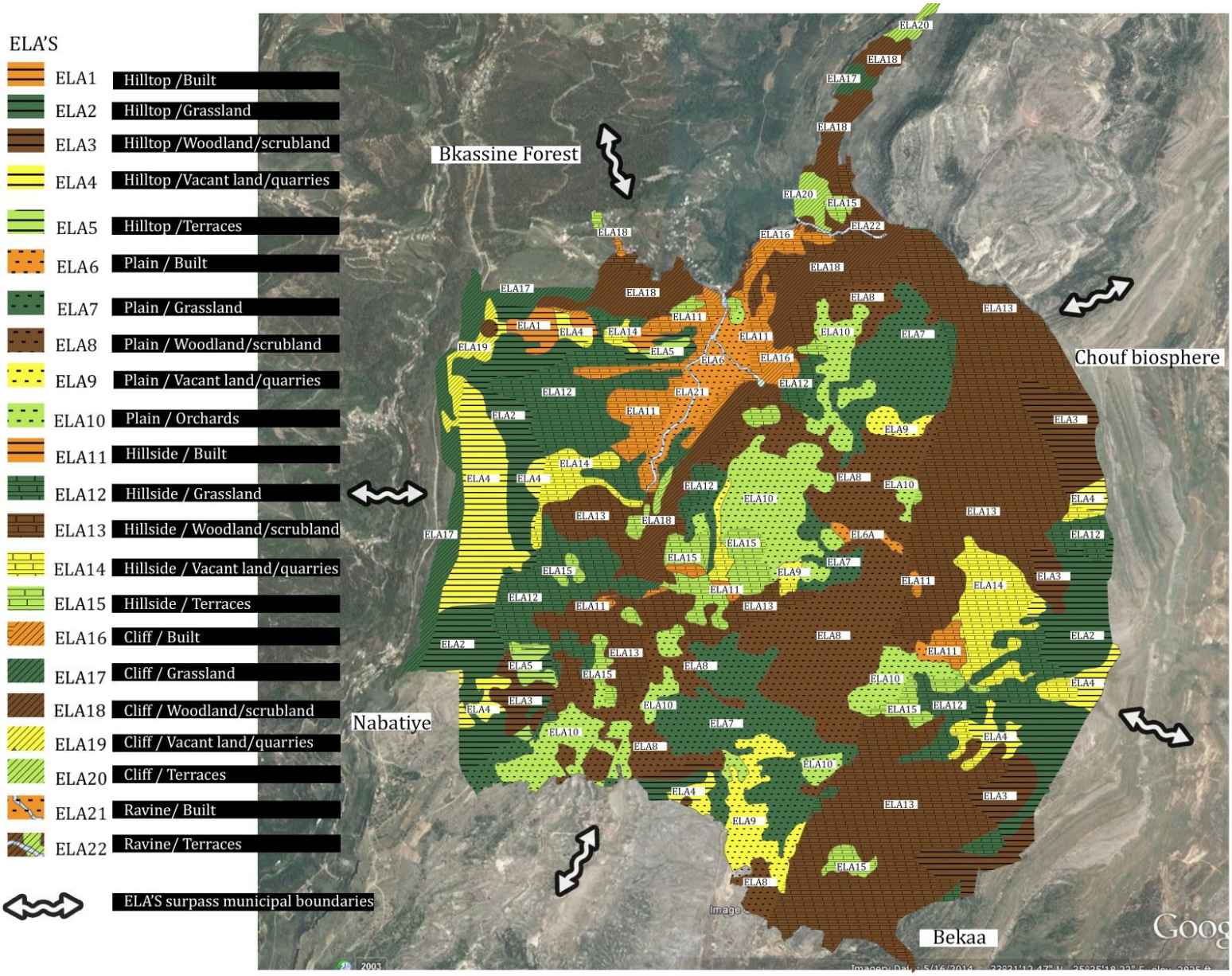
14-in case the transfer of development rigts should be applied; where should it be located?	Tiyab	kroum	Bkesine	Sad el tourathi	Baynz za3rour
	10	3	1	3	3
	50%	15%	5%	15%	15%

15-through daily social interaction, which zone relates most to the locals collective memory and should be preserved?	Talit al salib	7ay el day3a	Sad el tourathi	Mar Youssef	kroum	others
	2	7	3	1	5	2
	10%	35%	15%	5%	25%	10%

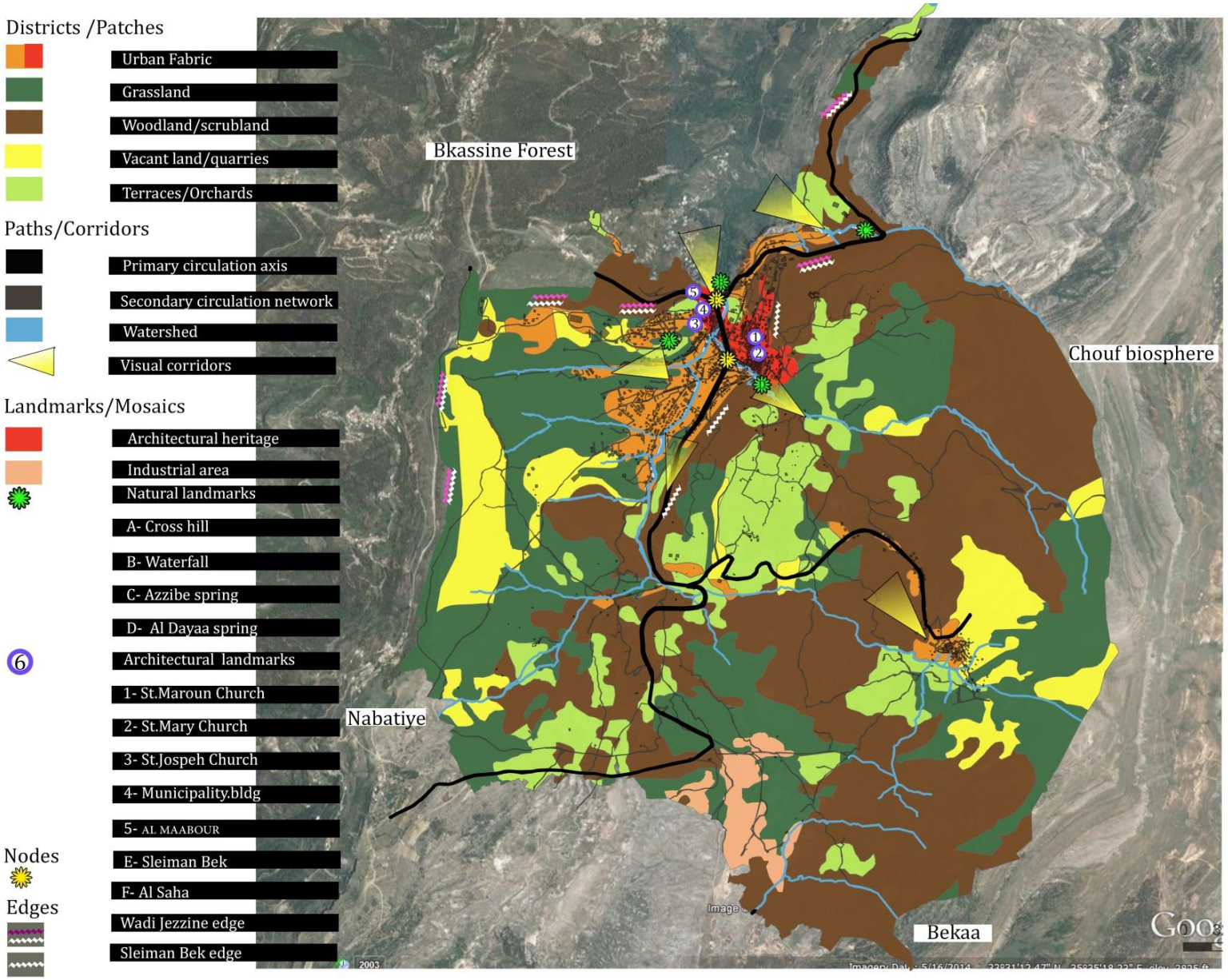
APPENDIX IV

NEW ZONING MAPS

A. This map illustrates the spatial distribution of ELA's in Jezzine. Map produced by Neaimeh, R.2016.

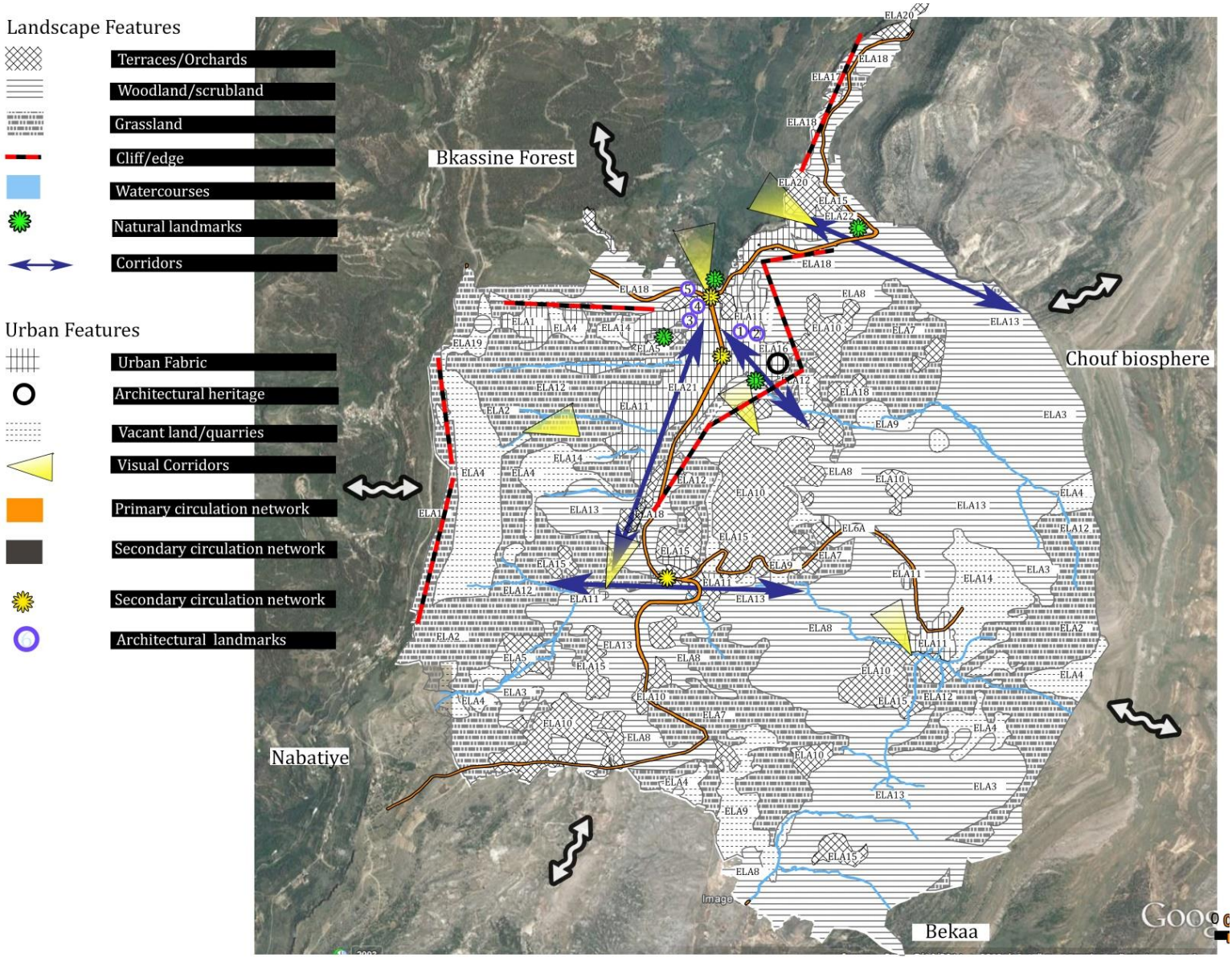


B. This map illustrates the Combination map between landscape elements and urban elements. Map produced by Neaimeh, R.2016.

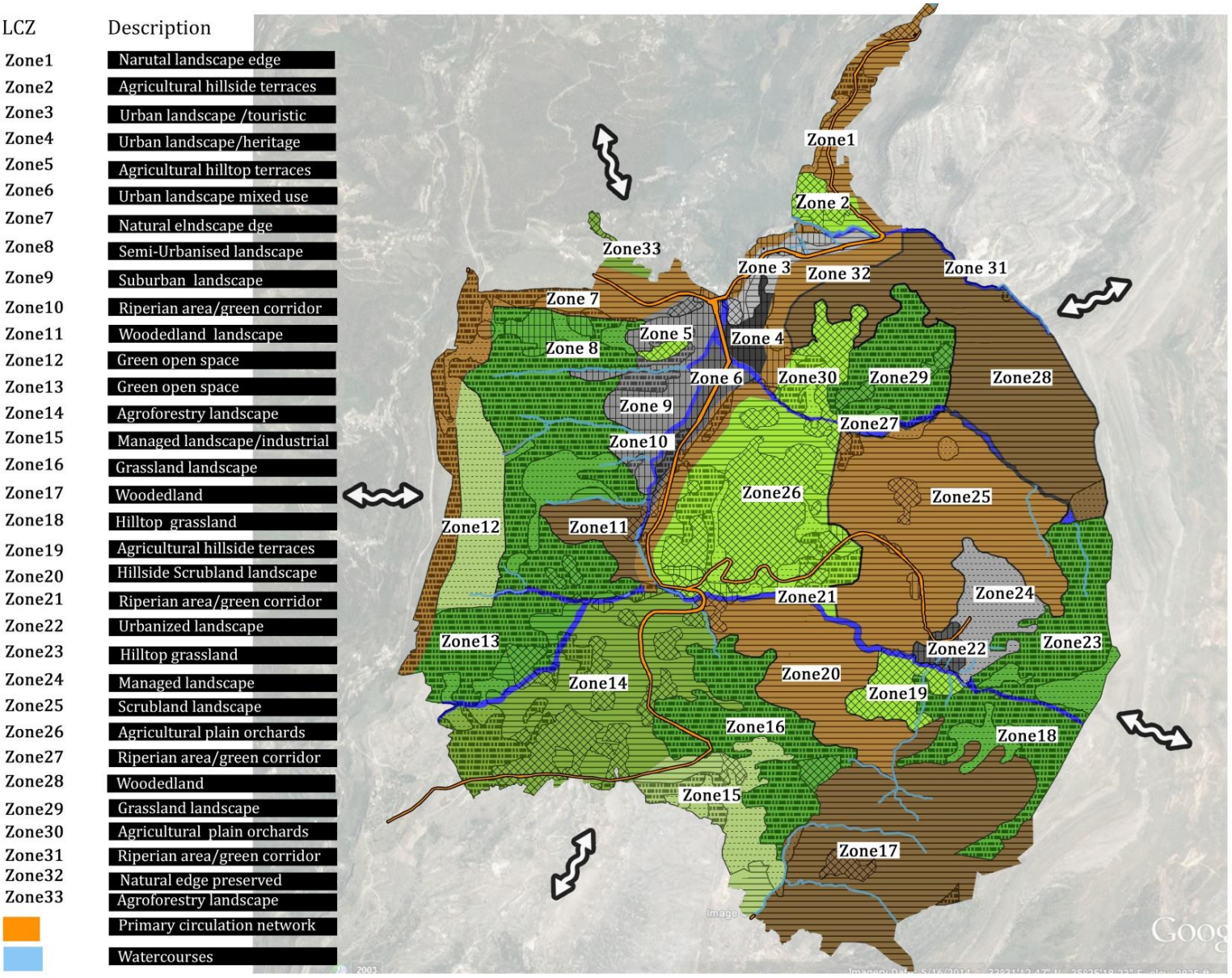


C. Jezzine conceptual model.This map illustrates the conceptual model of combination.

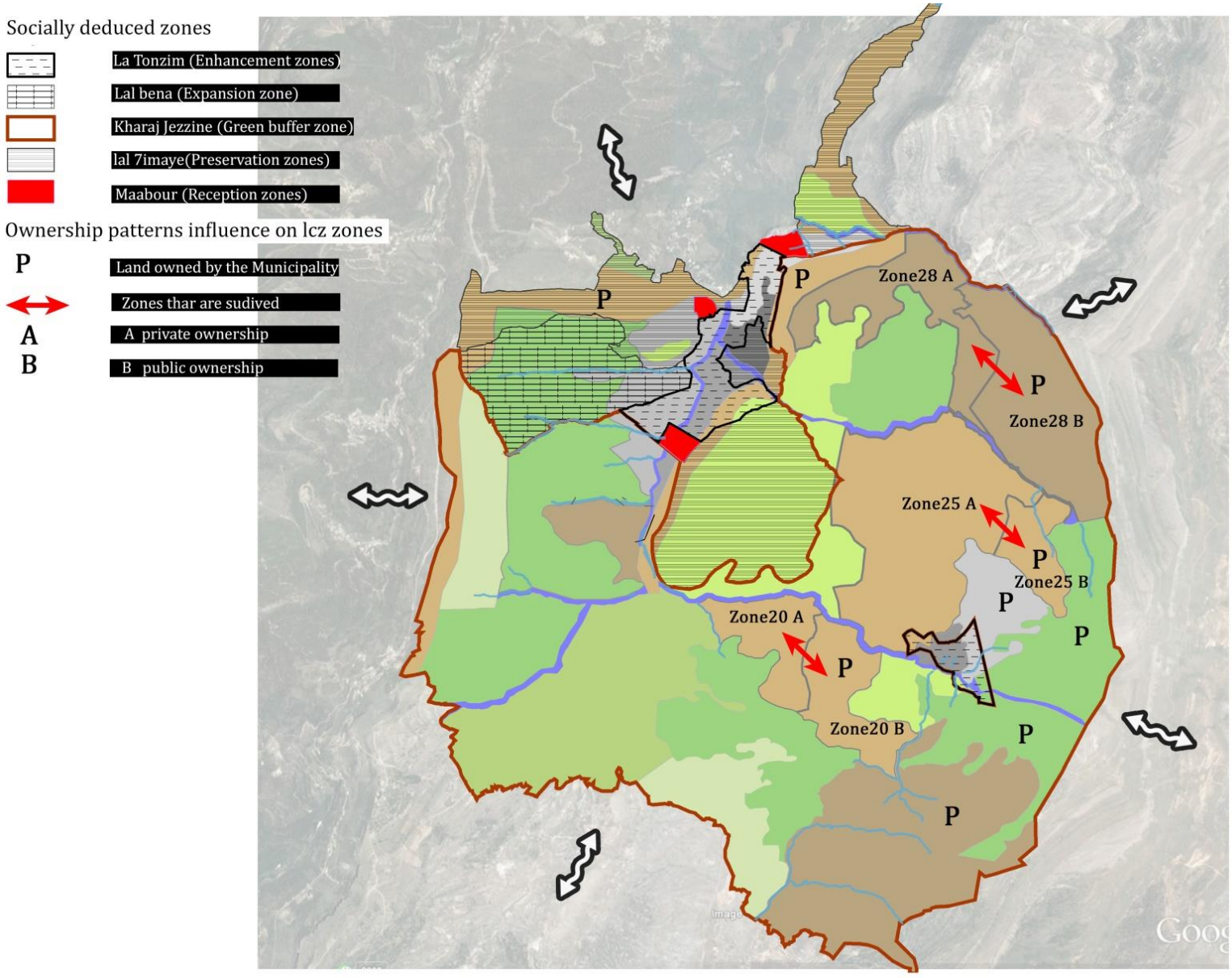
Map produced by Neaimeh, R.2016.



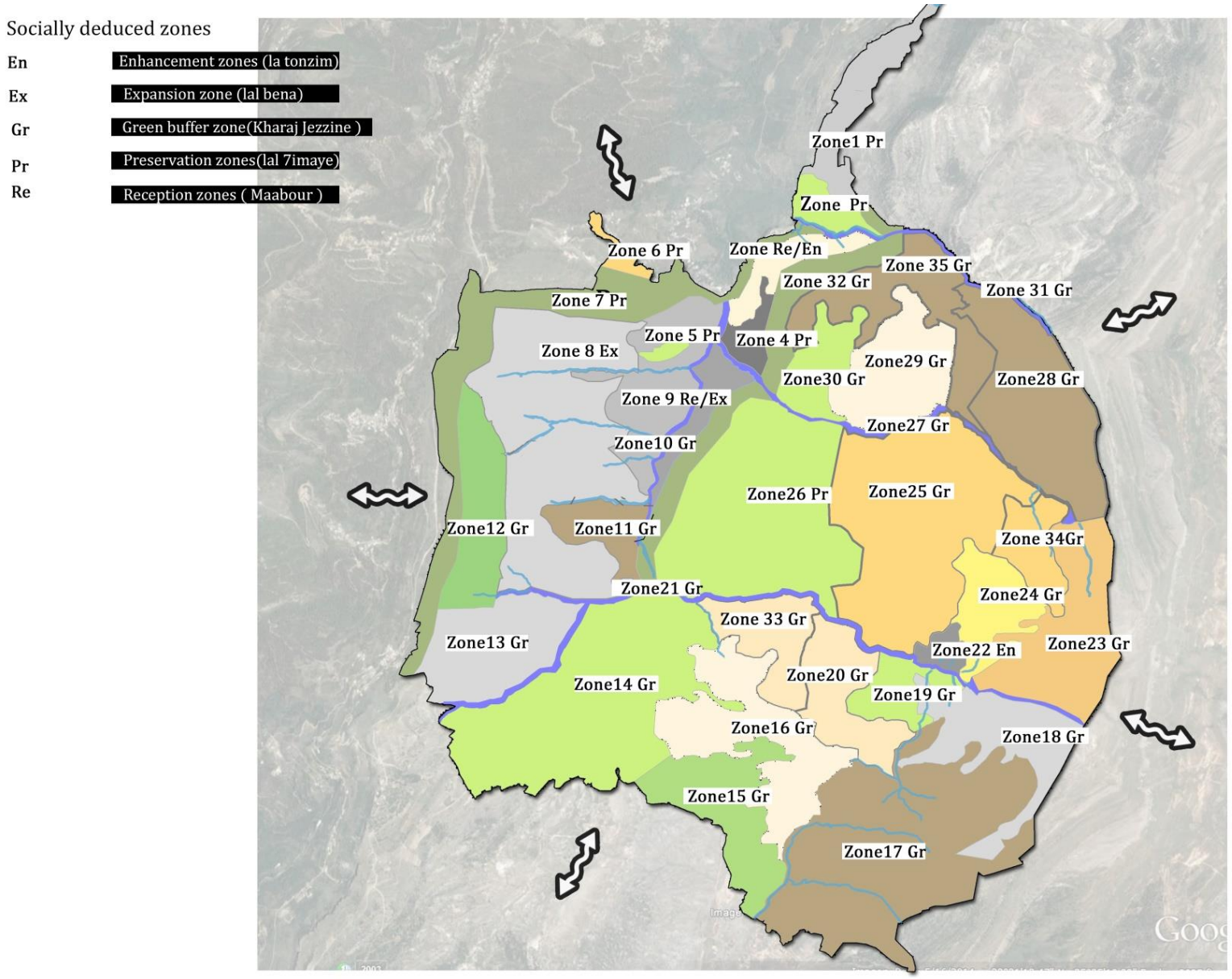
D. Jezzine preliminary LCZ . Map produced by Neaimeh, R.2016.



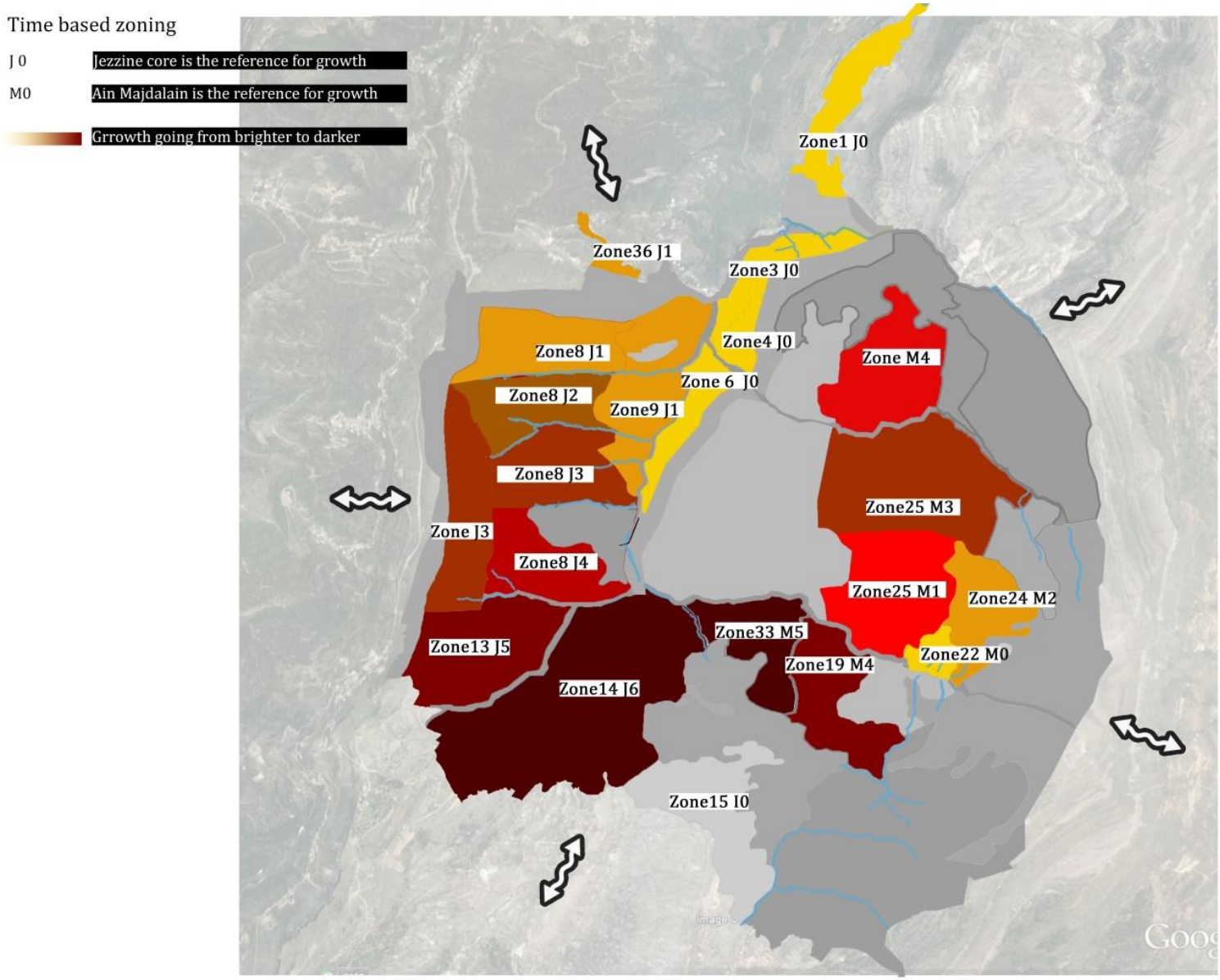
E. This map illustrates the conceptual model for combining LCZ and ownership patterns and the socially deduced zones. Map produced by Neaimeh, R.2016.



F.Jezzine LCZ.finale LCZ for Jezzine.Map produced by Neaimeh, R.2016.



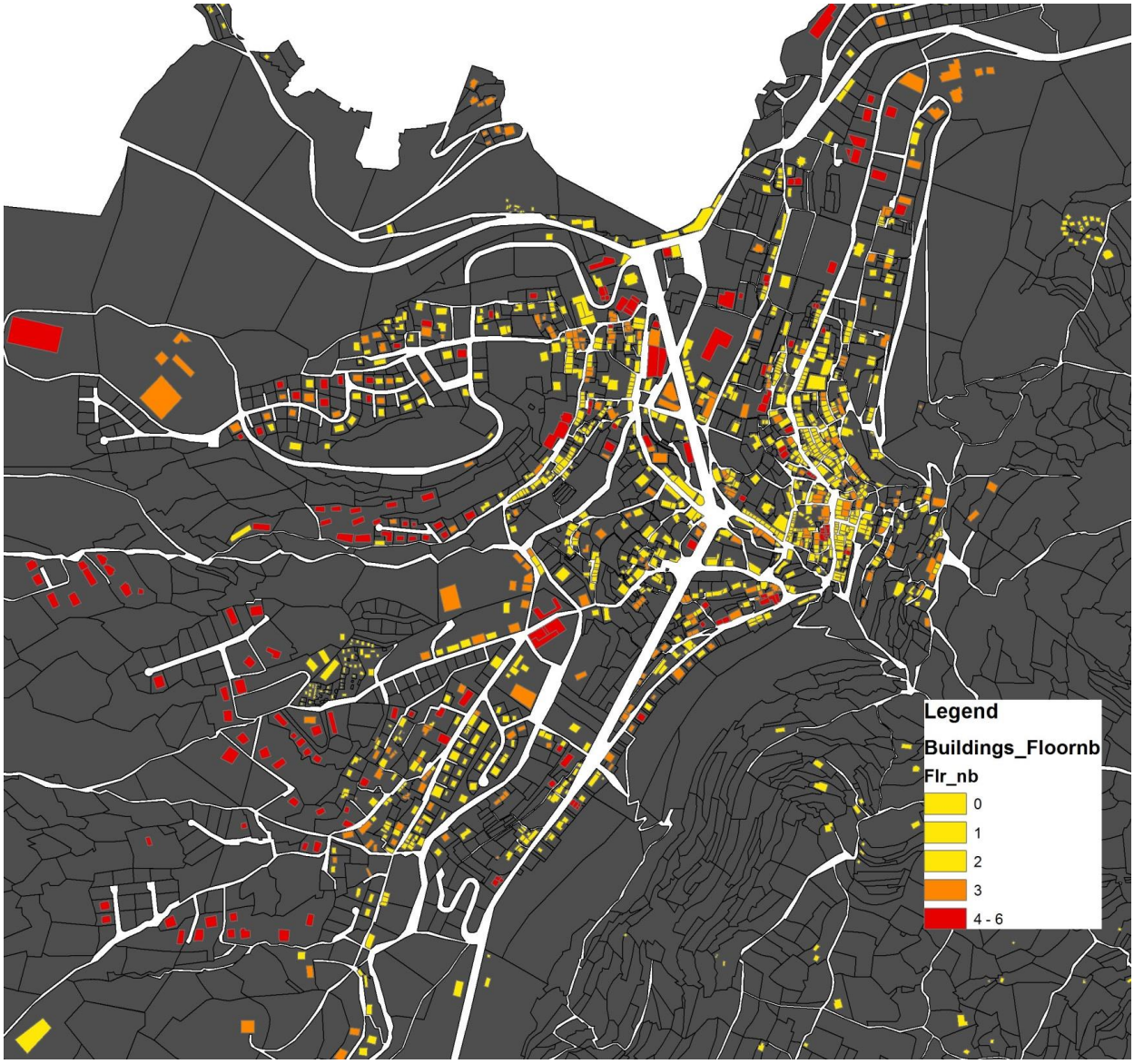
G.Jezzine Time based zoning in accordance with produced LCZ. Map produced by Neaimeh, R.2016.



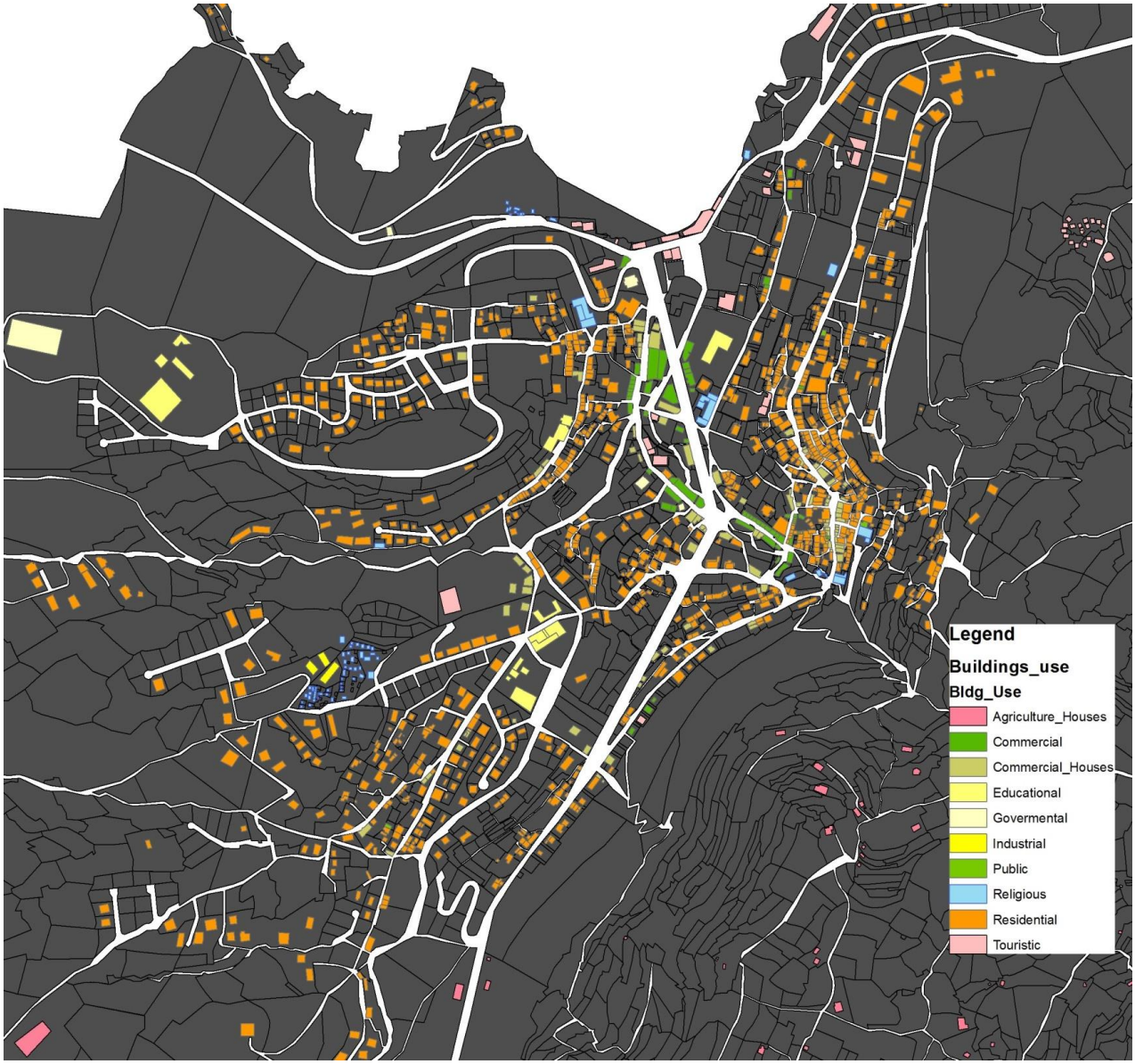
APPENDIX V

ANALYTICAL MAPS

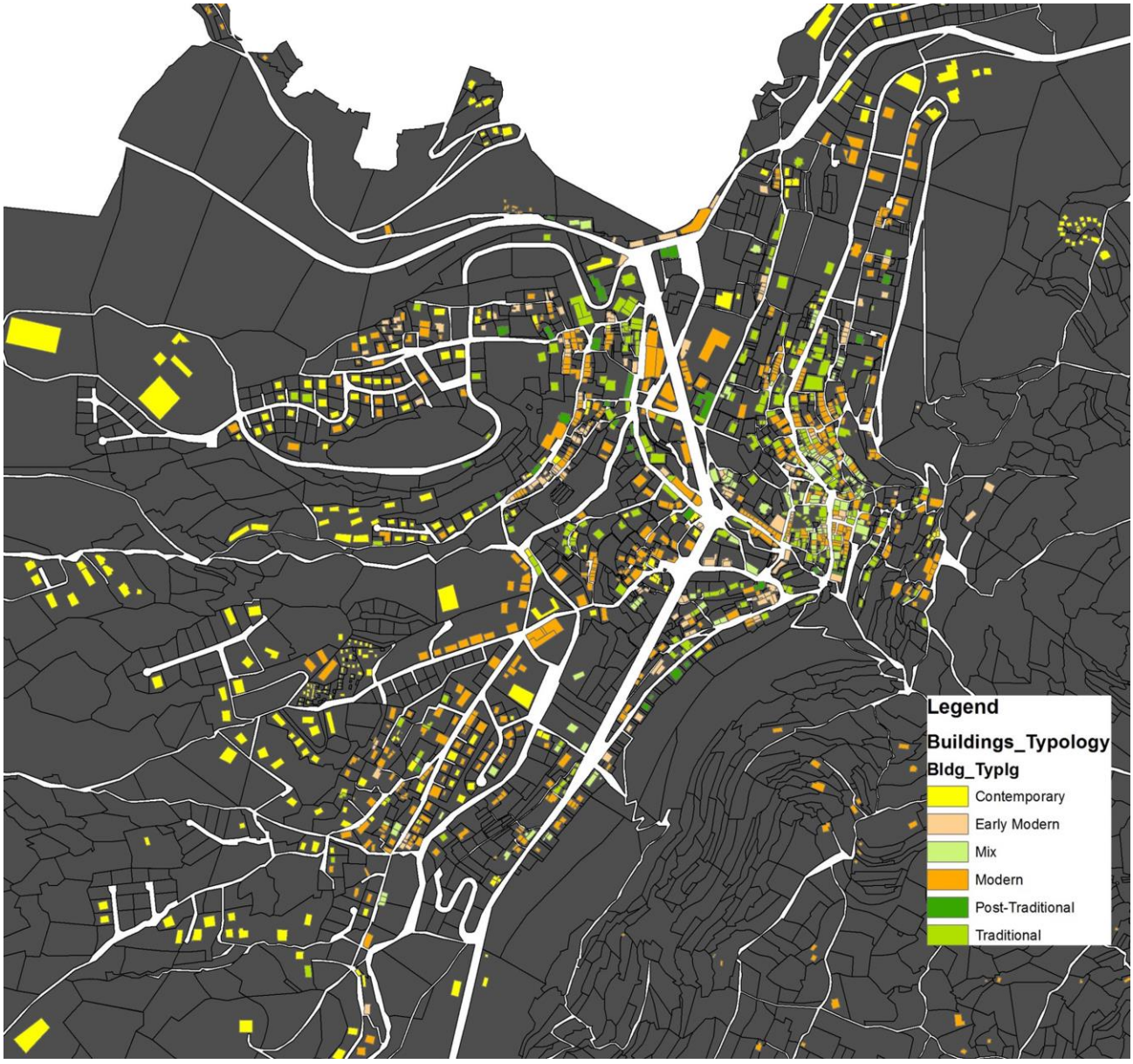
A. Jezzine fabric. This map illustrates buildings floor number. Map produced by Neaimeh, R.2015.



B. Jezzine fabric. This map illustrates buildings use and how they go from mainly residential and commercial on the east and center to only residential in the west. Map produced by Neaimeh, R.2015.



C. Jezzine fabric. This photo illustrates buildings typologies that goes from mainly traditional in the east to mainly modern and contemporary in the west. Map produced by Neaimeh, R.2015



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