



AMERICAN UNIVERSITY OF BEIRUT

EXPLORING THE INTERFACE  
BETWEEN THE SEA AND THE CITY:  
THE CASE OF THE BAY OF JOUNIEH

by  
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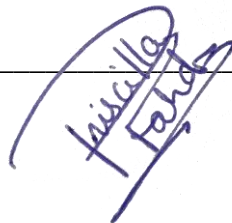
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Priscilla

# ABSTRACT OF THE THESIS OF

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for Master of Urban design  
Major: Urban Design

Title: Exploring the interface between the sea and the city: the bay of Jounieh, Lebanon

The bay of Jounieh is a valuable natural asset of the Mediterranean Sea. Historically, the bay was mainly affected by two major eras; the Fouad Chehab era and the civil war.

The Chehab era was the era of visioning and planning that transformed the bay from a quasi-rural area into a touristic hub. The civil war on the other hand, was marked by a lack of planning and a massive unregulated urban growth.

Nowadays, the bay of Jounieh suffers from various coastal problems. The lack of provision of public spaces along the waterfront due to the development of privatized and gated coastal developments stands out as a prominent issue. Several of these coastal developments present illegal coastal encroachments on the Public Maritime Domain and have disfigured the shoreline of the bay. Moreover, most of these privatized developments are serving touristic functions and are making the access to the beach exclusive and limited. This lack of access has led to a disconnection between the coastal cities of the bay with their seafront.

Besides issues of beach access, the bay suffers from a discontinuity of character in terms of land use and visual cohesiveness between its historic souk and its northern part. Lack of visual connectivity with the sea, lack of walkability are additional factors that strengthen the difference between the southern part and northern part of the bay.

This thesis builds on the hypothesis that an integrated sustainable design strategy can restore the integrity and continuity of the coast by drawing its method from a multidisciplinary approach, which combines a landscape design, and an urban design approach via identification of character zones across the waterfront.

This thesis aims at articulating a holistic urban design strategy for the bay of Jounieh by reintroducing pedestrian and visual connections along the coastline of the bay and by reconnecting the cities of the bay with their seafront. It aims at capitalizing on the bay's natural asset and at developing design solutions to facilitate access to the sea, by rethinking the city's relationship with the sea.

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## ABBREVIATIONS

AAA: Atelier des Architectes Associés

DGUP: Directorate General of Urban Planning

EEA: European Environment Agency

EIA: Environmental Impact Assessment

FAR: Floor to Area Ratio

HLC: Historic Landscape Character

IUCN: International Union for Conservation of Nature

IUCN: International Union for Conservation of Nature

LCA: Landscape Character Zone

NCSR: National Council for Scientific Research

NPMPPLT: National physical master plan of the Lebanese territory

UNEP: United Nations Environment Program

UNWTO: United Nations World Tourism Organization

# CHAPTER I

## INTRODUCTION

### **A. Problem statement**

Landscapes are known to be characterized by the action and interaction between the natural and/or human elements (ELC, 2000). Seascapes add to that definition the water component where the fundamental action and interaction stands between the human element; land; and sea (Hill et al., 2001). In fact, seascapes present an essential spatial ecological interface, which is a particular and valuable natural asset and activator of the city's economy (Lindrgren, 2011). Therefore, coastal cities are known to be one of the major centers of economic and touristic activity that attract working citizens as well as tourists whether local or international visitors. Due to these factors, coastal cities around the world are facing several challenges and pressures due to excessive urbanization and environmental degradation (Nobre, 2011). This is especially the case if no appropriate regulatory measures that ensure sustainable practices and sustainable tourism are applied.

The bay of Jounieh has been suffering from various coastal problems. Throughout the years, this coastal city suffered from a lack of provision of public spaces along the waterfront due to the development of privatized and gated coastal developments. Several of these coastal developments present illegal coastal encroachments on the Public Maritime Domain. Most of these privatized developments are serving touristic functions and are making access to the beach exclusive and limited. Moreover, the bay suffers from severe environmental degradation due to the presence of

these encroachments that have threatened the quality of terrestrial and marine habitats along its coast.

In an attempt to mitigate and seek solutions to current coastal challenges facing the bay of Jounieh, this thesis investigates the different factors affecting the condition of the coast of the bay of Jounieh and establishes design strategies, and guidelines and presenting an alternative scenario for the coast of the bay that opens the door for rethinking the city's relationship to the sea.

## **B. Research question and hypothesis**

This thesis builds on the hypothesis that an integrated sustainable design strategy can restore the integrity and continuity of the coast of the bay by drawing its method from a multidisciplinary approach. The aforementioned approach combines a landscape and urban design approach in order to identify character zones across the waterfront. Design strategies and guidelines are suggested and are tailored to each character zone identified.

Following this framing, my research investigates the following:

How can an integrated landscape and urban design approach enhance access to the coastline and connectivity between the coastline and the city in the face of small scale, gated, private and illegal coastal developments along the bay of Jounieh?

## **C. Research objectives**

This thesis seeks to understand the current coastal assets of the bay as well as the opportunities and threats that the bay of Jounieh is facing. It aims to identify the various factors that are affecting the bay by elaborating a comprehensive study with

regards to existing urban, regulatory, cultural, socio-economic and environmental framework of the studied area.

The urban design intervention suggested seeks to reintroduce sustainable practices to the bay of Jounieh. It also aims to restore an interactive interface between land and water and to reconnect the citizens of the bay with their waterfront by providing open and vital public spaces along the waterfront for different target users. The intervention also aims at reestablishing the continuity of the coastline of the bay:

- A. - From city to coast: by improving access to the sea by reconnecting coastal cities of the bay with their seafront.
- B. - Across the bay: by improving the pedestrian connectivity between the different coastal neighborhoods along the waterfront of the bay.

#### **D. Research significance**

Many geography theses solely study Jounieh (Mansour,1993), (Chammas, Hanna, & Rahme 2001) or Tabarja (Merhi, 2003) or tackle the evolution of beach resorts (Al Khoury, 1999) on a national scale. However, no research tackles the whole bay in its physical entity while highlighting the public right of accessing the beach. Thus, this research aims to contribute to knowledge in assessing the bay of Jounieh in its whole entirety while addressing issues of waterfront access and disconnection with the sea (in terms of walkability, visual cohesiveness and disruption of character and land use).

It is also worth noting that while many activists and organizations have rallied for the protection of Beirut's coast, the coastline of the bay of Jounieh does not appear to be at the forefront of the public debate.

This research follows a similar methodology that was adopted by the Beirut Zone 10 (2018) report which was elaborated by the Issam Fares Institute for Public Policy and International Affairs at the American University of Beirut (AUB). It aims to reclaim the social value of the beach and the waterfront as well as emphasizes the strong social links between the waterfront and the community (Domínguez-Tejo, Hedge, Johnston, & Metternicht, 2018).

The research also provides an important insight about the bay and aims to be a part of a national holistic framework that tackles the Lebanese coastline in its entirety, by restoring the integrity and continuity of the coastline and by reconnecting coastal cities with their seafront. This study contributes in setting coastal character zones for the Lebanese seafront, tailored according to the specificities of the Lebanese coast. This research has a descriptive, explanatory as well as emancipatory value (Du Toit, 2015). By emancipatory, we mean that this research is an advocacy act that raises awareness on a public issue related to social justice. It aims to sensitize the public to protect and reclaim what is defined as accessible natural beach. Therefore, this research seeks to find solutions for the coast of the bay by reclaiming the right to access the beach via creating public spaces along the seafront and by regenerating and enhancing the condition of the seafront of the bay.

## **E. Thesis structure**

This thesis starts with an introduction that covers the research question; objectives and significance.

The second chapter presents an overview of the problems facing coastal cities on a global scale. It further elaborates on the notion of beach resorts; their typologies, their



evolution and highlights how the lack of sustainable practices in beach resort cities can lead to environmental degradation and socio-economic repercussions. This chapter further explains the notion of sustainable coastal tourism and how it can be implemented as an approach for improving decayed touristic coastal areas. The second chapter also inspects various tools, principles and strategies that can achieve sustainable coastal development in touristic coastal cities.

The third chapter presents the methodology adopted for this research and further explains the method of landscape character assessment (LCA) and historic landscape character (HLC) from which the methodology of this thesis was inspired.

The fourth chapter, which is the case profile analysis, presents an in-depth description of the different urban, regulatory, cultural, socio-economic, as well as environmental components and characteristics of the coast of the bay of Jounieh. This section inspects how the historic events that the bay has witnessed along with the lack of sustainable practices and appropriate regulatory measures have led to a privatized deteriorated coastal environment with illegal coastal developments that exacerbated the disconnection between the city and its waterfront. Following this section, the fifth chapter defines the current character zones of the bay, based on the components surveyed in chapter four.

The fifth chapter also traces the evolution of character zones throughout history based on aerial photos and historic data. Moreover, this chapter provides an assessment outlining the vulnerabilities and distinctions of each character zone with a SWOT analysis and a star model assessment based on the components mentioned above.

Consequently, the sixth chapter provides a design strategy at the city-scale based on the identified character zones. Urban design principles and guidelines are suggested

to better achieve sustainable coastal development as well as hybrid solutions in order to enhance the condition of natural habitats in urbanized coastal environments such as the bay of Jounieh. Finally, the last chapter concludes with a detailed urban design intervention for the chosen character zone at the district-scale.

## CHAPTER II

### LITERATURE REVIEW

This chapter is divided into two parts. The first part is focused on the problematic challenges that coastal cities face on a global scale from a touristic, environmental and planning perspective in the context of Mediterranean coastal cities. The first part of the chapter elaborates on the notion of beach resort cities, their typologies, evolution as well as life cycle to better understand how they can lead to the degradation of the natural environment and how they can cause social repercussions if they are not planned appropriately.

The second part of the chapter focuses on solutions and approaches to tackle beach resort cities that have deteriorated throughout time. This section looks into solutions at the urban and landscape design level. It focuses theoretically on the notion of sustainable coastal tourism, its tools and strategies. It seeks ways of applying and translating sustainable principles in designing sustainable waterfront cities. Moreover, it elaborates on the notion of nature-based solutions and hybrid infrastructure as a practical tool to achieve sustainability through coastal regeneration in highly urbanized coastal areas.

#### **A. Challenges and threats facing coastal cities**

Coastal ecosystems are known to provide goods and services for human activities with a high ecological and economic value (Drius et al., 2019). Hence nearly half of the global population are living within less than 100 km strip along the coastline (Krishnamurthy, 2018). Due to growing urbanization, pressure on coastal

resources is expected to increase exponentially. Thus, constant and rising human pressure on coastal areas is leading to the loss of biodiversity as well as the degradation of coastal ecosystems. On the long term, this issue hinders the provision of benefits that stem from coastal ecosystems.

The European Environment Agency (EEA) in 1999, listed seven driving forces that are threatening coastal ecosystems and resources in Mediterranean cities. These driving pressures are land-based activities and are listed below:

1. Excessive urbanization: The rise in population density in coastal cities along the Mediterranean basin has overloaded the labor and housing markets and the related public services (e.g. water supply, sanitation and transport)
2. Unregulated agricultural practices: Intensive agricultural activities in coastal plains combined with the unregulated use of fertilizers, can lead to water pollution and soil erosion.
3. Intensive fishing: Mediterranean fisheries if not regulated can threaten the environment and the availability of the fish stock.
4. Intensive aquaculture: Although the marine aquaculture is a new sector that was recently introduced to the Mediterranean Sea, a careful selection of sites as well as a study of the carrying environmental capacity of each site needs to be conducted to prevent the disturbance of the existing marine ecosystems.
5. Industry: Although industrial hot spots are mostly concentrated in northern west part of the Mediterranean basin, industrial discharges as well as emissions of contaminants constitute an environmental threat to all coastal Mediterranean cities.

6. Maritime transport: High traffic as well as accidents of maritime transport (with regards to oil and chemical spills) can cause severe water pollution.
7. Over tourism: it is worth to note that Mediterranean cities are one of the world's leading tourist destinations, accounting for one third of international tourism.

The rise of coastal tourism, if not regulated can lead to the misuse of the natural resources. According to Drius et al. (2019), excessive touristic activities in coastal cities can lead to several environmental repercussions such as:

1. Intensive use of water and energy due to high levels of energy consumption required to operate hotels and beach resorts
2. Land intake and the alteration of the landscape character and landform due to the rectification of the seashore. This involves large areas of land reclamation and the use of grey infrastructure for shoreline protection
3. Water pollution due to excessive activities of boating and other watersports
4. Disturbance of fauna and flora due to noise and light pollution
5. Excessive consumption of seafood and fishing stock
6. High levels of waste and littering

Moreover, social impacts of excessive touristic activities along waterfronts if not regulated and managed properly are known to induce gentrification, social disruption due to cultural clashes, cultural commodification and loss of character of the coastal city (Dumbraveanu, 2017).

Furthermore, worldwide problems of privatization challenge the allegory of the beach-as-democracy. In Greece, for instance the issue of coastal privatization got more exacerbated after the recent debt crisis (Chrysopoulos, 2019). In other countries, private

appropriation of common assets goes back to colonial times (Ávila-García, Furio, & Luna Sánchez, 2012).

In Lebanon, the monopolization of beach access started in the second half of the twentieth century, when coastal resorts began to develop along the Lebanese coast, in the aftermath of the Lebanese independence (Rowbotham, 2010). The situation culminated during the civil war, and is still an ongoing issue.

### ***1. Beach resorts cities***

In order to better understand the private nature of access to the beach in Lebanon, one must grasp the general notion of beach resort cities. As such, there is a need to understand how beach resorts emerged historically; how they evolved over time as well as how they are classified and studied. Given that the case study is a beach resort city, the work conducted by researchers (such as Pearce (1978), Meyer-Arendt et al. (1992) and Smith (1991, 1992) who brought forward a comprehensive framework for studying typologies of beach resort cities is very relevant to this thesis.

#### **a. Definition of beach resorts**

Resorts are recreational and relaxation places that primarily attract holidaymakers (Rodrigues, 2017)<sup>1</sup>. Coastal resorts are usually centered around the presence of a beach or a port (Pearce 1978). They are located at the most strategic places, in small bays or estuaries taking advantage of sandy beaches and sceneries of

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<sup>1</sup> Taken from the book: Lohmann, G. & Panosso Netto, A., (2017). *Tourism Theory, Concepts, Models and Systems*. Section 5.4

rich landscapes (in terms of landform, vegetation etc.). In European countries, resorts are perceived as resort towns and as tourist destinations. However, in North America the notion of resorts is narrower in terms of scale and function (accommodations with services of food and beverages) and indicates tourist facilities that are under one ownership or one management (Liu & Wall, 2009).

#### b. Categories of studies

According to Liu & Wall (2009), Resort morphology studies can be divided into three categories. The first category focuses on the spatial model of the resort in terms of morphology and land-use. Liu & Wall (2009) refer to it as “Static Models” given that these studies do not mention the notion of time and do not take into consideration the socio-economic context of the place studied. The second category focuses on the evolution of beach resorts and emphasizes on the temporal axis. This category was called by Liu & Wall (2009) the “Historical models”. Studies that fall into this category are more comprehensive by combining morphological factors with the evolutionary notion of time. Moreover, these studies are often linked to the cycle of tourism that was elaborated by Butler in the 80s<sup>2</sup>. The third category is known as the “Integrated Models”. This category takes into account many factors such as the socio-economic, the cultural and the political context, in order to study resorts morphology and their evolution.

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<sup>2</sup> The cycle of tourism is explained extensively later on, in this chapter. This model shows evolutionary stages that a tourist destination will go through; from exploration, involvement, development, consolidation and stagnation.

It is noteworthy that the case profile of this thesis will be inspired by the various aforementioned frameworks that were conducted for beach resort cities, tackling the historical and morphological evolution of the site in relation to the socio-economic, cultural, regulatory as well as political contexts.

### c. Typologies of beach resort cities

#### i. Static models

Starting with the first category (Static Models) as defined by Liu & Wall (2009), Pearce (1978) classified French resorts cities in terms of their spatial morphology which were as follows: beach resorts, “cites lacustres”, marinas and large resorts<sup>3</sup>. According to Pearce, beach resorts are the resorts that developed spontaneously and parallel to the waterfront or “front de mer” (Fig. 1). The best and most expensive hotels, accommodations and shops are usually placed at the front of the beach and are sometimes found to be next to a casino. Pearce argues that a linear or ribbon development presents several disadvantages. First, the line of buildings that are in front of the beach may present a visual and physical barrier. Given the high profit that these buildings generate, these buildings might be designed with a massive scale in terms of bulk and height. Second, the flow of pedestrians is disrupted due to the presence of a coastal road that serves these beach accommodations.

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<sup>3</sup> Pearce (1978) also mentions ski resorts as part of the typologies of French resorts. However, ski resorts are not mentioned in this study because the research is focusing on coastal resorts.



Barrett's (1958)<sup>4</sup> talks about this classic model and illustrates it as the most basic morphology of a beach resort city. This model has a business core which is usually perpendicular to a recreational strip that is parallel to the beach. Other typologies mentioned by Pearce (1978) have ports as the heart of these developments such as the marinas and the "cités lacustres". The model of "cités lacustres" was defined by Pearce as a system of artificial islets that combine the vacationer's residence with his boat (Fig. 2).

As described by Pearce (1978), this typology is characterized by the interpenetration of the sea with the dwellings and provides comfort for the vacationers by reducing distances. However, this type of resorts does not respect the natural landform of the seascape, requires large areas of land reclamation and artificialization, and provides a space which is highly privatized and exclusive to the vacationer. Marinas on the other hand, have a similar function such as the "cite lacustres" by providing services of yachting and recreational boating. However, and according to Pearce (1978), accommodations for the vacationers are not that proximate in marinas.

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<sup>4</sup> Barrett, J. A. (1958). The seaside resort towns of England and Wales. PhD thesis, University of London, London, UK; reference found in Liu, J. & Wall G. (2009). Resort Morphology Research: History and Future Perspectives. *Asia Pacific Journal of Tourism Research*, 14 (4), p.345

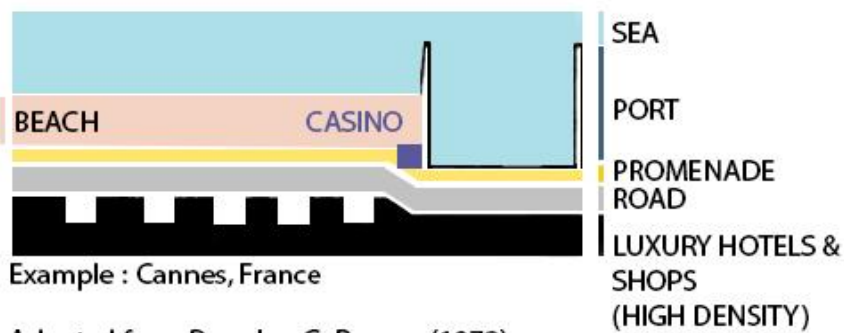
SCHEMATIC REPRESENTATION  
OF WATERFRONT IN FRENCH RESORTS AREAS



Example : Carron, France



Example : St Jean- de - Monts, France



Example : Cannes, France

Adapted from Douglas G. Pearce, (1978)

Figure 1: Schematic representation of waterfronts in French resort areas

Source: Adapted from Pearce, D. (1978) Form and function in French resorts, *Elsevier Ltd*, 5, p.145.

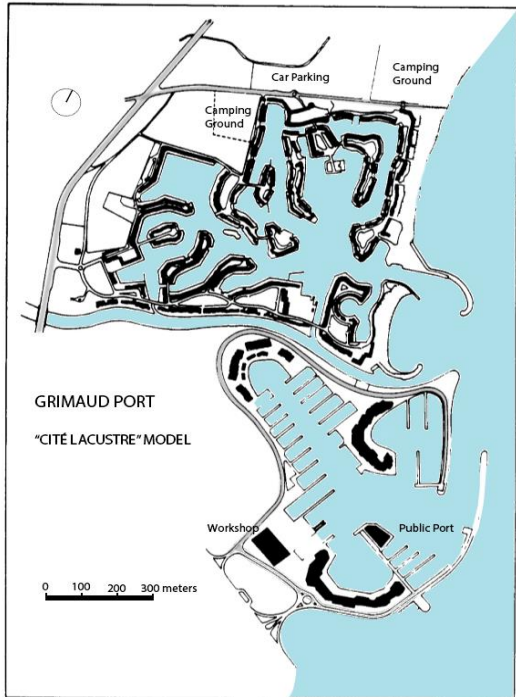


Figure 2: Port Grimaud, France- Cité Lacustre.

Source: Adapted from Pearce, D. (1978) Form and function in French resorts, *Elsevier Ltd*, 5, p.146.

Pearce further discussed another typology known as the **large resort typology** which is characterized by its large scale and its distinctive architectural character (Fig. 3).

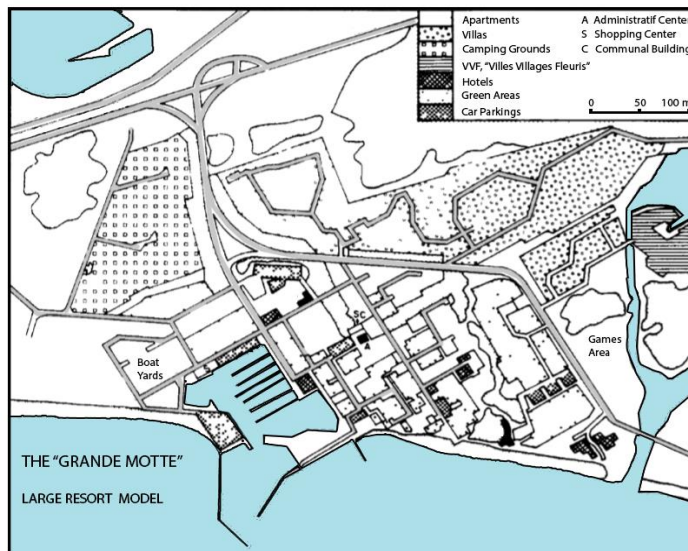


Figure 3: The Grande Motte, France.

Source: Adapted from Pearce, D. (1978) Form and function in French resorts, *Elsevier Ltd*, 5, p.151.

This typology described above, usually extends inwards towards the coast and presents several sport amenities and other services (cinemas, cafes etc.). As explained by Pearce (1978), large resorts are isolated and seek autonomy by providing diverse and multiple amenities. Pearce also notices that even inside these types of resorts spatial segregation exists between the individual chalets which have their own gardens and the small chalets that are part of large, high-rise buildings.

## ii. Historic models

Another study of seaside resort typology, conducted by Meyer-Arendt, Sambrook & Kermath, (1992) listed five different beach typologies while researching the seaside resorts of the Dominican Republic. Each one of these typologies is classified according to its distinctive urban morphology and has their own type of tourist clientele<sup>5</sup> (Fig. 4). It is worth noting that the study of Meyer-Arendt et al. (1992) can fall into the second category of “Historic models” defined by Liu & Wall, (2009). This is mainly because the study considers the notion of time and admits that these typologies are dynamic and might evolve from one type to another. The typologies listed by Meyer-Arendt et al. (1992) are the following: first; the urban “balneario” or urban bathing resort, second; the domestic destination resort, third; the “integrated” domestic/international destination resort, fourth; the “interactive” enclave resort, and fifth; the “self- contained” enclave resort.

According to Meyer-Arendt et al. (1992), the first typology called “urban balneario”, which means urban spa, consists of a little bathhouse with small and modest cafes and shops (Fig. 4, A). These beaches are used during the day and few family-owned

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<sup>5</sup> Ranging from domestic tourists to international tourists and from allocentric tourists who prefer individual exploration to psychocentric tourists who prefer collective organized tours.

accommodations are provided for the visitors. These beaches are not usually frequented by foreign tourists given the absence of appropriate tourism services and infrastructure.

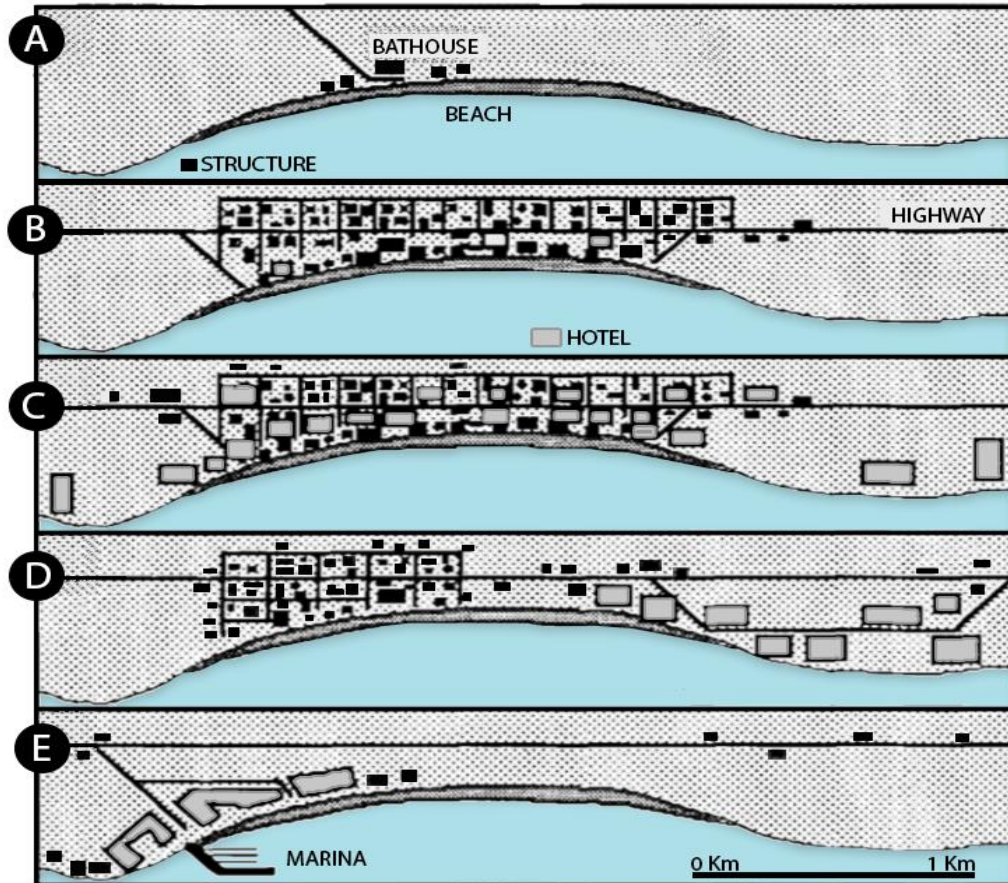


Figure 4: The five seaside resort typologies of the Dominican Republic

Source: Adapted from Meyer-arendt, K. J., Sambrook, R. A.; Kermath, B. M. (1992).

When this typology expands further, it transitions to become the second typology that Meyer-Arendt et al. (1992) talk about which is the domestic destination resort. The above typology presents more infrastructural developments and services that cater for the beach goers (Fig. 4, B). While the first typology seems to be more focally centered, the second typology presents beachfront establishments and amenities that are continuous along the coastline. As mentioned by Meyer-Arendt et al. (1992), this typology caters for the local middle-class community. Therefore, luxurious resorts in these types of areas seem to be rare.

The third typology listed is the “integrated” domestic/international destination which is a resort typology that has grown inside a settlement and is in transition. By calling it an “integrated” model, Meyer-Arendt et al. (1992) refer to the social mixing set between the foreigners and locals. Most of these resorts have a middle-sized scale thus a large portion of these resorts is locally managed. However, the international tourism infrastructure that starts to emerge in this model might be isolated and might be located at the fringes of the urban center. This can lead to the formation of what Meyer-Arendt et al. (1992) call a “tourist ghetto” (as cited in Meyer-Arendt et al., 1992, p.233) (Fig. 4, C).

The fourth typology listed is the “interactive” enclave resort. Between the fourth and third typology the word “integration” is replaced by Meyer-Arendt et al. (1992) by the word “interaction” which means a much more limited level of contact between visitors and locals. According to Meyer-Arendt et al. (1992), this fourth typology is targeting the international clientele. Thus, local communities are no longer involved in the management of these large-scale resorts and corporate investors are in charge instead. Furthermore, this model usually develops at the fringes of the urban centers, at

the expense of agricultural lands and presents multiples “semi-insular enclaves” and such enclaves are gated and fenced (Fig. 4, D).

The last resort typology listed by Meyer-Arendt et al. (1992) is the “self-contained” enclave resort. These enclave resorts are completely isolated from the rest of the coast and are usually not in proximity of the existing urban centers. Furthermore, this model of beach resorts, is dependent and self-sufficient with regards to all the services that might be needed by the tourist. Given this autonomy, the contact between the local community and the visitors is avoided and not much needed. This lack of integration creates a situation of what Meyer-Arendt et al. describe as self-isolation (Fig. 4, E).

As said earlier, these typologies were defined as being dynamic. Thus, models of beach resort cities might go through several stages. The more integrated a beach resort city is, the more resorts of the city are in contact with their surroundings and community. The more foreign tourist developments exist in beach resort areas; the more Meyer-Arendt et al. (1992) emphasizes on interaction instead of integration.

### iii. Integrated models

Moving unto the third category of studies called “Integrated Models” that was defined by Liu & Wall (2009), Smith in 1991 and 1992 presented a comprehensive study of resort typologies that took into consideration the physical, social, economic, political and environmental context of the studied areas. He based his findings on the analysis of

several resort cities which most of them are located in the South Pacific (Pattava and Hua Hin in Thailand, Batu Feringgi in Malaysia, and Surfers Paradise in Australia)<sup>6</sup>.

While focusing on the case of the city of Pattaya in Thailand, Smith came up with eight stages that defined his Tentative Beach Resort Model (TBRM) (Fig. 5, 6). His concept claims that beach resort cities evolve and go through a sequence of phases that are development stages. Moreover, he further explains that the period of time in which a beach resort city transitions from a phase to another can never be standardized. The rate of evolution is triggered by several external factors that are specific to the studied area and that are in relation to socio-economic, cultural and environmental and political factors. Thus, Smith argues that each resort area develops and go through these stages at its unique pace.

Smith called the first stage; pre-development (Smith, 1991) or pre-tourism datum (Smith,1992)<sup>7</sup>, meaning that this phase does not present any tourist activities. At this stage, Smith describes an existing settlement with a rural character where fishing and agricultural activities prevail. Usually this settlement has a rudimentary infrastructure that connects the area to the rest of the country (Fig. 5A, 6A).

The second phase is called by Smith explorative tourism (Smith, 1991) or second homes (Smith,1992) (Fig. 5B, 6B). It refers to the beginning of tourism. According to Smith, tourism at this stage can take the form of second homes, spatially organized in a strip pattern between a coastal road and the beach. He further states that

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<sup>6</sup> The paper written in 1991 by Smith (Beach resorts: A model of development evolution) explore these sites (Pattava and Hua Hin in Thailand, Batu Feringgi in Malaysia, and Surfers Paradise in Australia). However, the paper written in 1992 by Smith focuses on the site of Pattaya, Thailand.

<sup>7</sup> Although the nomenclature of the stages that Smith defined (stage 1, 2, 4, 7 and 8) between the two papers that he wrote in 1991 (Beach resorts: A model of development evolution) and in 1992 (Beach resort evolution: Implications for planning) are different, the definition regarding each stage is similar.



this stage is characterized by a high contact between the locals and visitors. As a result, a negative social effect to the host community might emerge. According to Smith (1991), it is worth noting that the attitude of the host community towards tourism can vary from euphoria and move through apathy and irritation, to antagonism according the stage in which the area is going through. Smith argues that positive attitudes are usually guaranteed from both parties when there are common interests.

The third phase is called by Smith the first hotel (Smith, 1991 & 1992) (Fig. 5C, 6C). It is accompanied by a major improvement in infrastructure. This phase defined by Smith, refers to the construction of a high class project which serves as a driver or urban catalyst that attracts more tourism and creates more job opportunities. According to Smith, this phase heralds the beginning of large- scale tourism but is still controlled by the private sector.

The fourth stage is called by Smith the resort established (Smith, 1991) or strip development pattern (Smith, 1992) (Fig. 5D, 6D). As described by Smith, the first hotel acts like an urban catalyst and initiates the construction of several similar hotels. Therefore, the pattern of a strip development that began to take shape since stage two expands further. This proliferation of hotels creates more job opportunities for the host community.

The fifth stage is when a business center is established (Smith, 1991&1992) (Fig. 5E, 6E). As explained by Smith, this center revolves around providing tourism services. Residents are displaced away from the seafront with the rise of these services developed at the front of the beach. The residential area expands further inwards as a result of the increase of job opportunities. At this stage, Smith points out that the

carrying capacity of the area is reached, allowing only a limited access to beach. The environment of the resort begins to deteriorate as issues of pollution and congestion rises<sup>8</sup>.

The sixth phase is called the inland hotels (Smith, 1991) or hotels away from beach (Smith, 1992) where hotels begin to appear away from the immediate vicinity to the beach, mainly because adjacent land to the beach is no longer available (Fig. 5F, 6F). Smith states that this phase is characterized by a surge of environmental problems (erosion and accretion of beach, loss of habitats, pollution) that begin to threaten the viability of the resort city. He also claims that at this phase, governmental entities begin to be fully aware of the importance of controlling development by providing a master plan or initiating infrastructural projects. However, the power still remains in the hands of the private sector.

The seventh stage which is called transformation (Smith, 1991) or second road (Smith, 1992) is where the resort areas become intensively urbanized and lower-grade hotels begin to spread as average tourist spending starts to decline (Fig. 5G, 6G). Smith argues that the intensity of physical developments causes a loss of character of the resort given the inevitable loss of the natural land cover. Therefore, efforts of rehabilitating and restoring the natural ambience in critical areas are initiated. Attempts at recapturing the natural character is reflected by the application of what Smith (1991, p.203) calls “cosmetic planting”. These actions of beautification may reestablish some of the former natural ambience however, wildlife habitats that were damaged because of

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<sup>8</sup> These problems remain through the final stage (stage 8).

the massive emergence of physical developments cannot be restored with such measures.

The last eighth phase is what Smith calls it the city resort (Smith, 1991) or separation of CBD and RBD (Smith, 1992). This is where the recreation business district (RBD) becomes clearly separated from the commercial business district (CBD) with a commercial infill between the two districts. As described by Smith, the beach is rarely used during this phase due to severe problems of pollution. He further states that alternative circulation is usually implemented at this stage due to high levels of congestion.

It is worth to noting that Smith did not limit his study to the morphological evolution of the resort city. Instead, he traced the stages of developments according to contextual physical, environmental, economic, socio-cultural and political aspects of the site. That is why his study can be regarded as a comprehensive and integrated study.

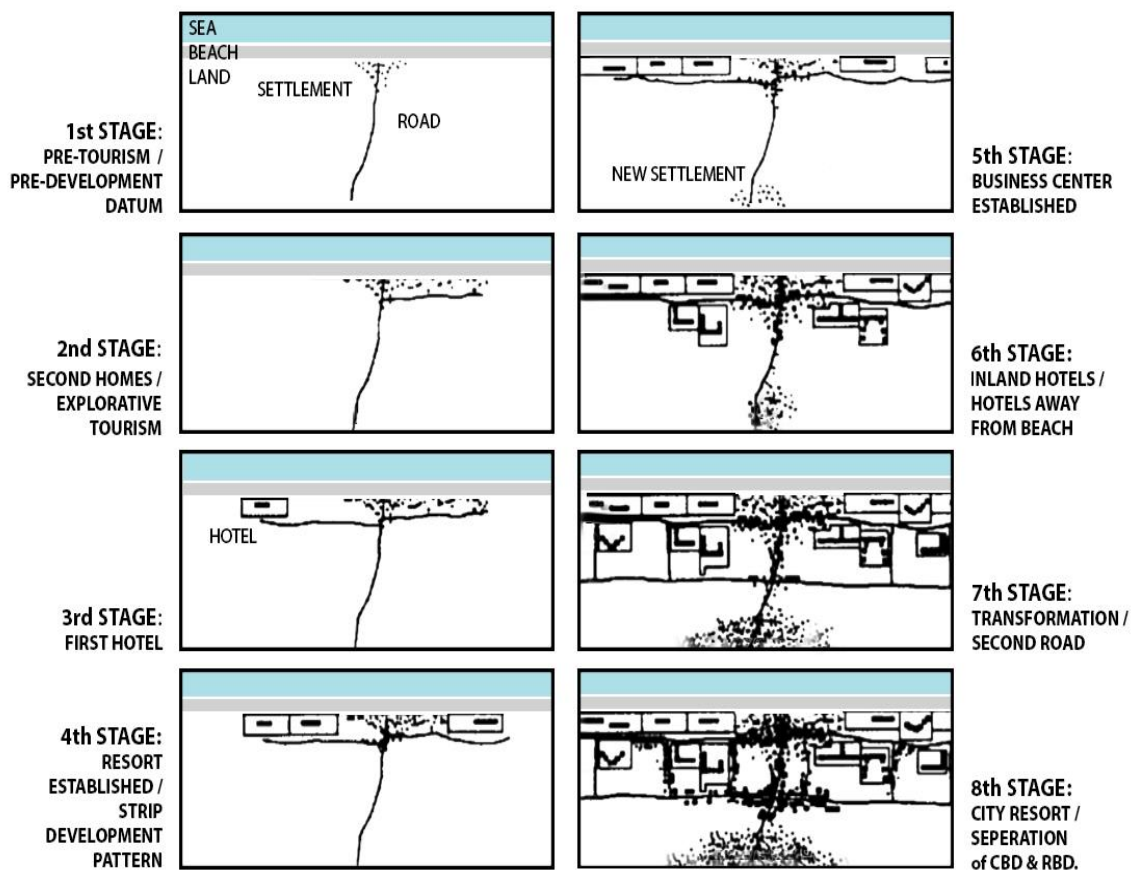


Figure 5: The beach resort model, summary of stages 1 to 8.

Source: Adapted from Smith, R. A. (1992). Beach resort evolution: Implications for planning. *Annals of Tourism Research*, 19, p.307.

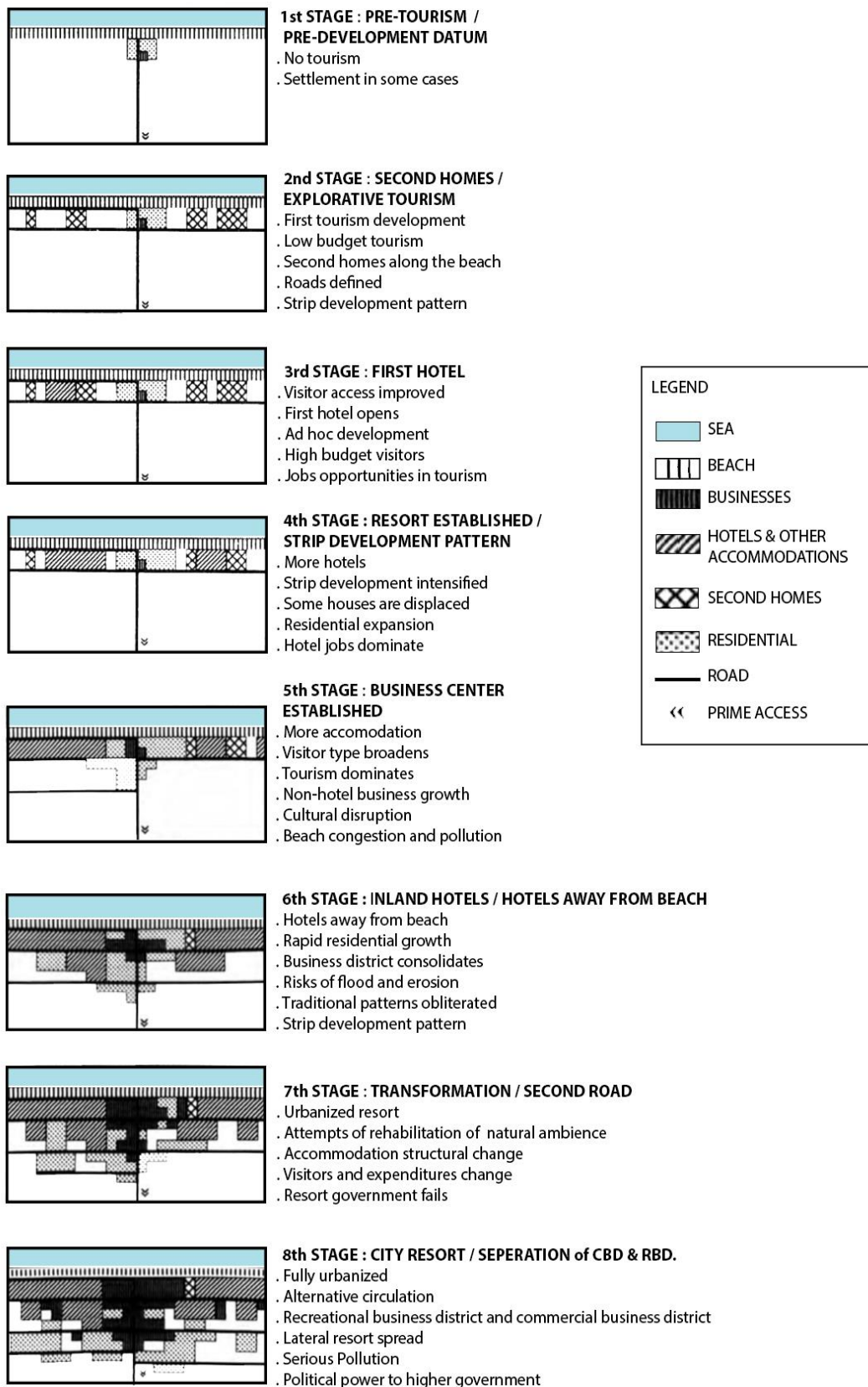


Figure 6: The beach resort model, summary of stages 1 to 8 (second version).

Source: Adapted from Smith, R. A. (1991).

#### iv. Quantitative models

Beside the aforementioned categories defined by Liu & Wall (2009), Vaz, Williams, Pereira da Silva & Aysen (2016), explored a different quantitative framework of typology for the Portuguese beaches. This typology classifies the beach on a spectrum that varies between the natural and urban (from natural, semi-natural, semi-urban to urban). This study works on a much macro level and does not take a closer look at the urban morphology of each beach resort. This classification uses quantitative indicators (e.g. building and population density, number of tourist facilities etc.) that work on three levels of analysis; municipal, borough and local level.

#### v. Concluding remarks

Looking at similarities between the typologies listed above we can conclude that the more the typology is large scale and self-sufficient (such as large enclave resort areas) the more excluded these projects are and require less community participation. With the evolution of these resort areas and their expansion, we notice that issues of privatization of the seashore become more apparent. This is mainly because no restrictions were made prior, with regards to developments on the immediate sea-side. As a result, less accessible sea-side areas are being available to the community and are left untouched.

We can conclude also that resort areas, as they develop and expand through time, experience an increasing degeneration of environmental quality. Likewise, issues of pollution, congestion and environmental degradation are proportionate to the scale of the physical development of the resort area. At the first stages of the development, a

resort area does not suffer from intensified urbanization. Thus, at first, the quality of the natural environment (clean beaches, rich green cover, rich wildlife and coral reefs) constitutes an essential attractive feature that further appeals to international and national visitors. As an effect of the unregulated growth which resulted from this appeal, negative consequences are inflicted which threaten the attractiveness and viability of these resort areas on the long term. As elaborated by Smith (1992):

“Urbanization of beaches is an intervention which in time disrupts and destroys much of the natural environment.” (As cited in Smith, 1992, p.203)

By looking at these stages of development, we can also note that these developments always start from an individual project which serves as an urban catalyst (which is the case of the bay of Jounieh where the inauguration of the Casino du Liban in 1959 contributed in activating the bay as a touristic destination). Nevertheless, individual approaches cannot guarantee the success of the total resort destination. This is due to the fact that individual approaches are always fragmented and never holistic and consistent (Smith, 1991). Moreover, individual approaches that are mostly driven by the private sector tend to prioritize their own economic growth at the expense of other long-term collective interests (Smith, 1991). It is worth noting that private initiatives along the coast of touristic Lebanese cities, particularly Jounieh, are a major factor that have led to the fragmentation and privatization of the Lebanese seafont.

#### d. The tourist area life cycle

In 1980, Butler proposed a model describing the evolution of touristic destinations. While the model of Butler is not specific to beach resorts, the notion of decline through time is relevant to resort destinations. As seen in the figure below (Fig. 7), the model shows five stages, showcasing the life cycle of a tourism destination (Rodrigues, 2017)<sup>9</sup>

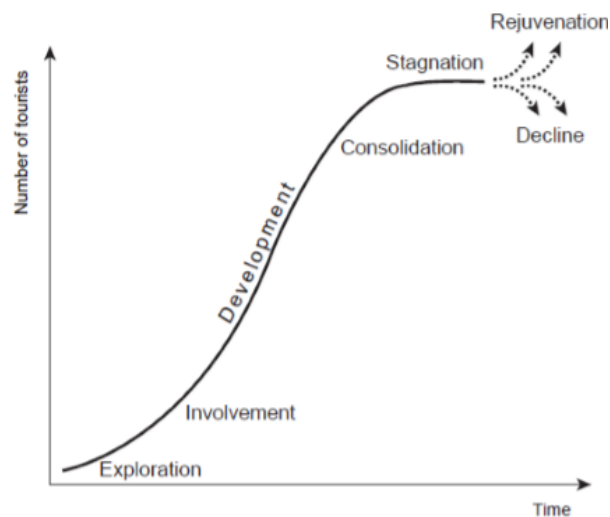


Figure 7: Butler's tourism model

Source : [https://www.researchgate.net/figure/Butlers-Tourism-model\\_fig4\\_47716304](https://www.researchgate.net/figure/Butlers-Tourism-model_fig4_47716304)

Rodrigues (2017),<sup>10</sup> explains each stage as follows:

The first stage, called “exploration”, is a stage of discovery where the destination did not accommodate for tourists yet and did not have the appropriate

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<sup>9</sup> Taken from the book: Lohmann, G. & Panosso Netto, A., (2017). *Tourism Theory, Concepts, Models and Systems*. Section 5.5

<sup>10</sup> Taken from the book: Lohmann, G. & Panosso Netto, A., (2017). *Tourism Theory, Concepts, Models and Systems*. Section 5.5.



infrastructure for tourism. The second stage is “involvement” which is marked by the involvement of the local community and by the presence of few tourist services. The third stage, is called “development” and evokes the involvement of other entities outside the local community who are investing in tourism infrastructure and services. This phase is a period of growth where tourism becomes set in a more organized structure. The fourth stage is called “consolidation” which refers to the stage in which the destination is maintaining its position and is competing with other touristic destinations. The fifth stage is the stage of “stagnation” and economic struggle. The occurrence of the fifth phase is due to several factors listed below. The touristic facilities might begin to deteriorate or might go out of trend. The natural environment might also show signs of deterioration due to the misuse of natural resources and due to the disuse of sustainable approaches. After this stage, various scenarios are possible and can direct the future of the touristic destination. These scenarios might be ongoing stagnation, decline or rejuvenation.

It is worth noting that this tourism model was criticized by several researchers. Smith (1991) described this model as being too generic and not specific to resorts. Butler (2009)<sup>11</sup> recently stated that the future of touristic destinations can no longer be foreseen due to the constant and rapid changes as well as strong competitiveness of the global market. However, the evolution of many resort cities follows this model, such as the resorts cities of the Mediterranean island of Mallorca in Spain (Royle, 2009) where resorts developed during the 1980s and the use of sustainable approaches was not yet prevalent (refer to appendix 1). As Smith (1991) argues, the inevitable decline of

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<sup>11</sup> Taken from the book: Lohmann, G. & Panosso Netto, A., (2017). *Tourism Theory, Concepts, Models and Systems*. Section 5.5.

touristic destinations is not necessarily true. Suitable policies that act on rejuvenating the destination are possible and are more effective if they are applied in advance and have an anticipatory approach. Smith stresses on the idea that policies and urban planning should always act “within the context of resort evolution” (as cited in Smith, 1991, p.209).

The rejuvenation of the destination requires a serious change in urban policies and a serious involvement from the government and concerned entities (private sector and other organizations). Thereby, Rodrigues (2017)<sup>12</sup> claims that rejuvenation requires a restructuring process. In order to reach rejuvenation, one must think of alternative ways in seeking economic success while considering other priorities such as the quality of the environment and the community well-being and welfare (Dodds, & Graci, 2010). Based on the above mentioned, sustainable coastal tourism stands out as one of the appropriate approaches to tackle touristic resort cities that have deteriorated throughout time.

## **B. Sustainable tourism (ST), in beach resort cities**

### ***1. Definition of sustainable tourism***

Coastal zones, and especially the areas of interface between land and water, are known to have numerous natural assets and development opportunities. They are a vital dynamic ecological edge, as well as a valuable resource of the city’s economy (Lindgren, 2011). They present strong strategic attractions in relation to social,

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<sup>12</sup> Taken from the book: Lohmann, G. & Panosso Netto, A., (2017). *Tourism Theory, Concepts, Models and Systems*. Section 5.5.

economic and touristic activities and thus are densely populated. That is why these zones are more vulnerable and their protection is highly needed.

Coastal development is defined as the human-induced alteration of the coastal landscape through the construction of structures that support economic and social activities (Krishnamurthy, 2018). These activities (ranging from industrial, commercial, agricultural to touristic and recreational) can have positive or negative impacts on coastal ecosystems (Krishnamurthy, 2018) with severe impacts on the environment if not implemented appropriately. Among these impacts we note the following: degradation of the coral reef's quality, beach erosion, land retreat, sedimentation, sewage discharges, changes in water flow, rise in water and air pollution, reduction of fish populations, degradation of vegetation and habitat destruction. These impacts can be mitigated via effective sustainable land-use regulations (protection of coastal habitats, construction setbacks, waste management etc.) as well as through regenerative coastal design and planning.

With regards to coastal tourism, it is important to understand that this type of tourism was and still is inextricably linked to the notion of the 3S; Sea, Sand and Sun (Lins-de-Barros, Sauzeau & Guerra, 2019). This notion led to massive artificial alterations of coastal properties in the late 1960s, early 1970s with the advent of large scale mass tourism. High levels of shoreline alterations, combined with massive urbanization, increased the vulnerability of coastal areas. With such severe repercussions, new discussions regarding sustainable development gained a lot of importance over the years.

The UNEP (United Nations Environment Program) along with the UNWTO (United Nations World Tourism Organization) (UNEP-UNWTO) in the year 2005 presented a comprehensive policy document titled “making tourism more sustainable, a guide to policy makers”. This report described extensively three “pillars” of sustainability: economic, social and environmental sustainability explained below.

1. Economic sustainability, refers to the generation of profit and economic prosperity. It also refers to the viability and durability of enterprises in the long term and tackles the cost effectiveness of all economic activities.

2. Social sustainability, refers to the respect of human rights and the provision of equal opportunities for all members of society with an emphasis on local communities. It entails an equitable distribution of profit by acknowledging the rights and representation of different cultures and by avoiding any form of abuse and exploitation.

3. Environmental sustainability, tackles the conservation and management of renewable and non-renewable resources. It acknowledges the dangers of air, land and water pollution and aims at protecting biological diversity and natural heritage.

As we can notice, sustainable development aims at reaching a certain equilibrium between economic, social, and environmental sectors given its integrated approach that involves several disciplines (Lan, 2008).

While sustainable development is a big umbrella that contains multiple ramifications, sustainable coastal tourism in particular can be defined as a sub-set of sustainable development. Tourism holds a special position in sustainable development due to its economic contribution and due to the distinctive relationship that exists

between the consumer/ visitor, the industry and the environment as well as the local / host community (UNEP-UNWTO, 2005).

As the UNEP-UNWTO (2005) defines it in their report, sustainable tourism should:

. Benefit from the environmental assets and resources without threatening their existence, by protecting the ecological processes, the natural resources and biodiversity and by maintaining the physical integrity and enhancing the quality of the landscape.

. Consider and acknowledge with tolerance as well as respect the socio-cultural identity of the local host community by preserving their tangible and intangible heritage and authentic values along with finding a balance between community well-being and visitor fulfillment.

. Offer equitable socio-economic benefits for all stakeholders and provide fair employment opportunities fairly distributed to the local community and strive for the mitigation of poverty. Additionally, sustainable tourism seeks economic viability on the long term while generating local prosperity by making sure that the profit is retained locally.

Acknowledging the environmental impact of tourism is a major key for understanding the principles of sustainable tourism. In fact, Wong (1993) explains that tourism is always environmentally dependent. Thus, without the continuous presence of good quality coastal ecosystems, tourism and other related economic activities cannot be sustained in the long term (Drius et al.,2019). Drius et al, schematizes this complex relationship in the following figure (Fig.8).

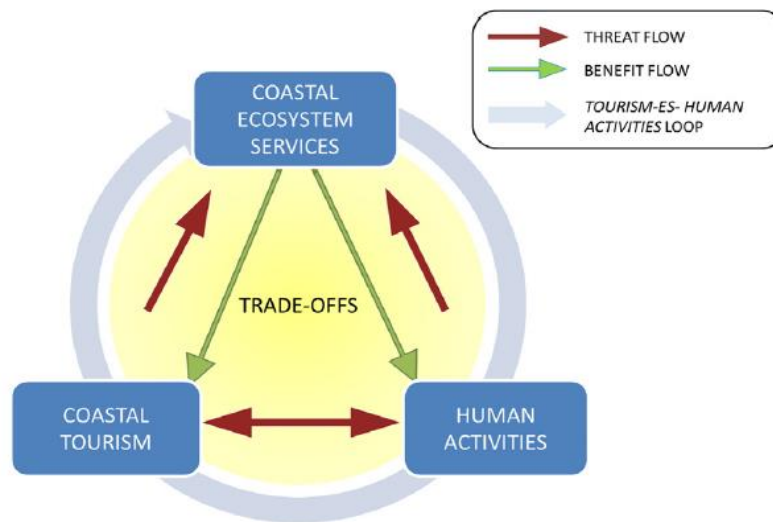


Figure 8: Coastal ecosystem services.

Source : M. Drius et al. (2019). *Science of the Total Environment* 652, 1302–1317, p.1304.

As shown in figure 8, coastal ecosystems give several benefits for sustaining human and coastal touristic activities such as providing clean bathing water and providing good quality of seafood. However, human and touristic activities can cause severe damage to coastal ecosystems if not carefully planned (e.g. water and noise pollution, fish overexploitation etc.)

According to Marafa (2008), coastal cities present two separate and co-evolving ecosystems; one artificial and human centered and the other is natural with its elements and resources. While tourism generates considerable socio-economic benefits, it can also be a source of irreversible damage to the environment. That is why sustainable tourism works on preventing irreversible damage caused from over-exploitation and over-development of touristic activities.

In order to achieve healthy coastal environments for tourism purposes, Owen et al., (1993) talks about the implementation of the 4 Cs which are: compromise, commitment, control and cooperation. While compromise refers to the equilibrium that should be set between economic prosperity and environmental conservation, commitment on the other hand means less focus on the theoretical part of the approach and working more on effective action plans in the short and long terms. Control means setting a regulatory framework by an authoritative body. Lastly, cooperation refers to the ability of coordination and partnerships between different scales and sectors.

Butler (1993) also supports Drius et al. (2019) and argues that a touristic area can be maintained and developed while staying viable over an indefinite period of time if its environment (human and physical) is not being degraded or altered in a way that prohibits the successful development and well-being of other activities and processes.

In conclusion, in order to achieve sustainability, touristic projects should comply with six factors (Krishnamurthy, 2018). These factors are the commercial suitability of the project; the respect of a stringent legal framework; the visual integration of the project with the landscape by having an appropriate scale and form; the respect of the natural value and natural heritage of the area; the respect of the cultural heritage and social context of the site; and finally; the study of the consequences of the project in terms of land-use and other factors.

## ***2. Principles and requirements***

Sustainable tourism requires the participation of all concerned stakeholders. As the UNEP-UNWTO (2005) state in their report, it requires a strong political leadership

and an inclusive participation. Given that touristic activities are primarily initiatives coming from the private sector, government involvement seems crucial in order to incentivize sustainable approaches. Without the contribution of the government ( in providing suitable infrastructure; setting appropriate urban regulations; managing relevant resources and coordinating between different concerned entities and setting collective objectives) private initiatives will remain individually fragmented. Among the principles of sustainable tourism, Dumbraveanu (2017) mentions the importance of local control where the community becomes an important contributor to decision making.

In order to strive for sustainable tourism, continuous monitoring, evaluation and life-cycle assessment is also essential while introducing corrective measures, when it is required. Thus, sustainable tourism should be adaptive according to the changing conditions. Risk assessments for precautions and for minimizing threats of possible scenarios should always be adopted (UNEP-UNWTO, 2005).

Moreover, sustainable tourism should pay equal attention to the supply side and consumption side. As said earlier, the quality of the environment should prevail over the visitor's satisfaction. Therefore, short-term benefits (such as the satisfaction of the visitor's needs) cannot be sustained in the long term if these benefits entail severe impacts on the quality of the environment. Preference should be given to activities that bring less impact on environment and the social fabric of the local community. Dumbraveanu (2007) states that the aim of sustainable tourism is to limit the negative and disruptive impact of tourism activity on the environment and on the customs and culture of the local community in order to reach ecological, social and cultural



sustainability. These principles should also take into account economic sustainability by boosting the economic benefits of sustainable tourism to the local community.

The recognition of the limit and capacity of the development is crucial to the approach of sustainable tourism in order to avoid irreversible damage on many levels (such as the physical and visual degradation of the environment). Dumbraveanu (2007) defines four types of carrying capacity: first, the ecological carrying capacity in which negative ecological impact begins to appear; second, the economic carrying capacity where the local economy is solely or largely dependent from tourism; third, the social carrying capacity in which tourists become irritating to locals and start to harm local culture; and finally the psychological carrying capacity of tourists which is the threshold of feeling uncomfortable and dissatisfied due to overcrowding.

Sustainable tourism should also adopt also a holistic approach and be acknowledged as part of a larger concept which is sustainable development. Thus, tourism should not be taken in isolation with no consideration to other vital sectors. Planning strategies for sustainable tourism should always be focused on the long term goals and objectives while addressing global and local issues (UNEP-UNWTO, 2005).

The UNEP-UNWTO (2005) listed twelve aims that sustainable tourism should account in its policies. These aims are listed below (Fig.9): economic vitality, local prosperity, employment quality, social equity, visitor fulfillment, local control, community wellbeing, cultural richness, physical integrity, biological diversity, resource efficiency and environmental purity.

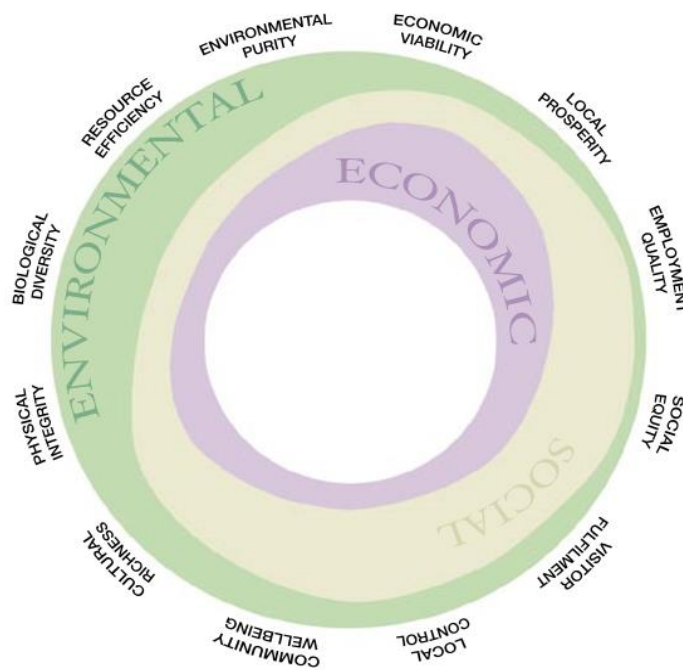


Figure 9: Relationship between the 12 aims and the 3 pillars of sustainability.

Source: United Nations World Tourism Organization (UNWTO), 2005, p 20.

Some aims are worth to be further elaborated upon given their relevance to the context of this research. Regarding the 7<sup>th</sup> aim which targets the community well-being, the report mentions that tourism in some cases might cause disruption in social practices and socio-cultural behaviors in host communities. For instance, these behaviors can be extreme and induce for example an increase in women and child sex trafficking and drug use. That is why policies with sustainable approaches should work on avoiding any form of social degradation and exploitation.

Regarding environmental degradation, the 9<sup>th</sup> and 10<sup>th</sup> aims (titled respectively: physical integrity and biological diversity) clearly state that policies with sustainable approaches should avoid visual and physical degradation and should minimize the damage of natural areas and habitats. Maintaining the quality of the landscape means maintaining the physical attractiveness of the destination which is a key element for

guaranteeing the success of tourism in the long term. This requires the consideration of many elements such as the protection of the landform, avoiding drastic changes in the land cover and marine infrastructure that can cause coastal erosion, giving particular attention to the built and natural environment in rural and urban landscapes. Moreover, policies should address the scale and nature of the new developments, their impact in long term future, the extent of urbanization that they can induce, along with their coherence and integrity with the existing fabric.

Speed (2008) adopted a scheme <sup>13</sup>that integrated the notion of ethics in sustainable tourism (Fig. 10). He further states that ethical tourism is not a type of tourism on its own and instead should be considered in all forms of tourism. Ethics should involve all stakeholders and be present in all the sectors of sustainability (environmental, social and economic issues). The notion of ethics comes from the fundamental rule ‘Do not do unto others what you would not have them do unto you’ (Taken from Mello, 2017)<sup>14</sup>. Thus, being ethical revolves around the idea of assuming each one their own responsibility. In planning, good ethics implies that all concerned stakeholders (public and private entities) should have a respectful and soft approach towards the environment and should be socially and economically responsible (Speed, 2008). Besides policies, visitors should also be well aware of ethics and should respect the codes of ethical conduct of the host community. Appropriate education and information is needed for tourists in order to be highly aware and considerate of the

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<sup>13</sup>Taken from the book titled: *Tourism Theory, Concepts, Models and Systems*, Lohmann, G. & Panosso Netto, A., (2017) p.50

<sup>14</sup>Taken from the book titled: *Tourism Theory, Concepts, Models and Systems*, Lohmann, G. & Panosso Netto, A., (2017) p.49

impact generated by them and in to order to improve personal attitude towards the environment and the host community (Dumbraveanu, 2007).

In fact, each society and social group has its own codes of ethical conduct. It can be exemplified with the following; while sex tourism is widely acceptable and regulated in some countries, it violates a society’s ethical principles in other conservative countries.

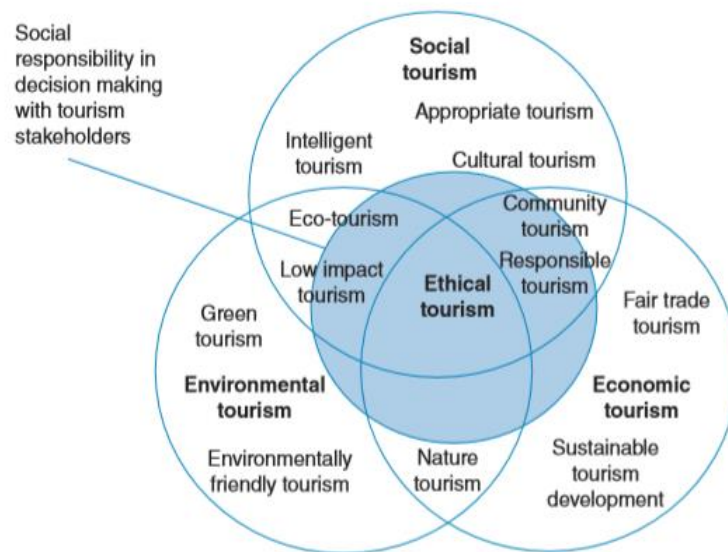


Figure 10: The ethical tourism model.

Source: (Speed, 2008, p. 60.)

Being responsible citizens is the key principle for sustainable development goals (Krishnamurthy, 2018). Raising responsibility requires a collective effort from governance, an appropriate education and awareness as well as a good use of technology.

In conclusion, all the principles listed above should be taken into consideration when adopting a sustainable development strategy for the site of study. Moreover, the codes and ethical values of the local community should be acknowledged before

suggesting any reformative urban policy and/or design intervention. The latter measures should also involve a participatory process.

### ***3. Tools for sustainable coastal tourism***

In order to implement the principles mentioned above, appropriate tools and practical measures are needed. According to the report made by UNEP-UNWTO in 2005, the necessary tools for achieving sustainable coastal tourism are the following:

Control instruments: They have an authoritative aspect and require the direct intervention of governmental bodies. These instruments include the following:

. Regulations or enforceable requirements can lead to sanctions and penalties if not respected. These regulations help control the direction of development and influence the behavior of concerned parties. Regulations should be clear, direct and relevant to the existing issue, practicable in terms of compliance and are easy to be implemented. It is important that these legislations are harmonized and do not present any conflict with other existing laws. Some sensitive environments or sensitive communities or some particular activities require specific regulations that can be more stringent or more focused such as dealing with issues of access, qualifications and standards, frequency of visits in relation to the limit of acceptable change.

. Licensing is used to identify the parties that are in compliance with legislations on issues of sustainable management and environmental protection. The purpose of licensing is to enforce specific standards and exert control.

. Land use plans are important given their power in controlling not only tourism but other forms of development. These land use plans should be linked to spatial tourism strategies with a wide coverage and an effective development control. While master

plans were historically top-down urban planning tools, the current trend for achieving sustainable tourism is to have a bottom-up approach based on local consultations and inclusive participation. Therefore, national/ regional spatial planning with tourism and transport strategies should be linked with local community-based land use planning. In order to be effective, land use plans should have development control processes. These processes require capacity building in local administrations and an enforcement of penalties when instructions are not respected.

. Planning briefs are used for particular sites and written by governmental bodies or local authorities. They are written to ensure compliance with specific standards. Their purpose is to improve sustainability (linkage to sewage, distance from the coastline, density and location of development, percentage of biotopes and vegetation cover etc.) and to ensure visual attractiveness (building heights, setbacks etc.).

. Environmental Impact Assessment (EIA) is an internationally acknowledged approach that studies the potential impact of a physical development. This assessment is used in decision making for granting the permission of construction of new developments. Large scale development, that are at risk of causing environmental damage, require by law to be assessed by the EIA. Small scale projects do not require the EIA, however they may present a cumulative negative effect over time.

. Economic instruments: They have a financial aspect and are by nature influencing measures rather than being authoritative. These instruments include the following:

. Taxes and Incentives defined as economic instruments; they influence the decisions of the consumers and concerned enterprises in order to direct them towards more sustainable choices. Taxes collect revenue that can be directed towards supporting

sustainable causes. For better outcomes, transparency, communication and awareness should follow the process of taxation. Moreover, it is important to point out that these revenues should at a certain percentage remain retained locally.

Incentives on the other hand also influence the decisions and behavior of the consumers and concerned parties in order to direct them towards more sustainable choices. They provide financial support or involve tax breaks or concessions in order to encourage adopting more sustainable approaches. It is worth noting that financial support should help the concerned parties to reach self-sufficiency and should not create a pattern of dependency.

#### Voluntary instruments:

These instruments are non-mandatory and aim at enhancing civic engagement. They include the following:

. Guidelines and codes of conduct: These guidelines of do's and don'ts rely on voluntary actions. They should be clear, short and direct and should encourage positive actions and discourage negative behavior. These codes are self-regulating tools that aim to spread positive awareness. They can be policy guidelines, specific codes for operating in sensitive locations, or visitor codes of conduct.

. Reporting and certifications: These measures can ensure the compliance with sustainability standards. They can be conducted by the private sector or by public organizations. Reporting is a useful tool for monitoring and improving progress towards indicated social environmental policies and goals. Reporting and certifications give recognition and can raise the market profile and image of a destination or private

tourism entity. Therefore, tourism enterprises can use certifications and reporting as a tool for their branding image.

Besides tourism enterprises, destinations can have certifications related to sustainable tourism. The Blue Flag<sup>15</sup> for instance is an eco-label for beaches and marinas that comply with a series of rigorous environmental, educational, safety, and accessibility criteria.

Supporting instruments: These instruments include the following:

. Infrastructure provision and management: These instruments are mostly provided by the government or by public-private partnerships. The provision of infrastructure (integration of a public transport network, bike lanes), and public utilities (provision of clean energy, sewerage and waste disposal etc.) are considered to be very important supporting tools for the development of sustainable tourism.

. Marketing and information services: When linked to sustainable objectives, they can influence the performance of different tourism entities as well as the behavior of tourists. They ensure a communication link between destinations, offered products and tourists and promote particular sustainable forms of tourism. These tools seek to give a certain kind of exposure and image branding of the destination. They should convey a clear, accurate and authentic image of the destination in order to be effective.

In conclusion, it is worth noting that all the tools listed above should be implemented by governmental and non-governmental bodies to ensure the sustainable development of the site of study<sup>16</sup>.

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<sup>15</sup><https://www.blueflag.global/>

<sup>16</sup> These measures will be further elaborated upon in Chapter 6 for the city scale strategy of the site.



#### ***4. Challenges and limitations of sustainable tourism***

According to Dangi & Jamal (2016), the optimum integration of all sectors (economic, social and environmental) can be overwhelming and over ambitious. This requires high efforts of coordination and harmonization across all sectors. Compromises are inevitable especially to find a balance between economic development and sustaining the ecological characteristics of a coast. Besides issues of finding equilibrium, monitoring and evaluation in sustainable development use primarily quantitative indicators, with little consideration for intangible socio-cultural aspects. The approach usually works on a macro-level with a scale that varies from a global to a regional scale. Therefore, societal aspects such as community-based approaches and community participation are sometimes not well addressed. Issues of governance, such as accountability, transparency, direct participation, community empowerment to enable voice in decision making, ethical principles related to justice and equity can also not be well addressed (Dangi & Jamal, 2016).

#### ***5. Sustainable urban design in coastal cities***

Waterfronts are by nature natural assets given that they represent an interface between two systems: land and water. They also form an integral part of the urban structure of cities (Niemann and Werner, 2016). Hence, waterfronts have a particular sense of value and their quality of their design and level of attractiveness are crucial to the vitality of cities.

According to the Toronto Waterfront Revitalization Cooperation (2005), sustainable waterfronts are inviting places where communities from all age groups and

backgrounds can visit, reside in, work, play, and learn from. Thus, sustainable waterfronts celebrate diversity identity and heritage, protect the natural ecosystems and bring back economic vitality to the city.

Niemann and Werner (2016) listed eight urban design criteria that are crucial for developing sustainable waterfronts. When designing sustainable waterfronts, ecological social and economic goals have to be combined and considered equally. These urban design criteria are listed as follows:

- . Sustainable waterfronts should place a high value on the preservation and restoration of green spaces and the protection of the environment. Hence, sustainable waterfronts should always seek to find balance between the natural and the built environments.
- . Sustainable waterfronts should be integrated with the city's structure and should not be designed in isolation.
- . Sustainable waterfronts should respect the historical identity of a city and its character.
- . Besides recreational activities, sustainable waterfronts should offer a mix of diverse uses such as cultural, commercial, and other types of services.
- . In addition to these uses, sustainable waterfronts should host public spaces such as public parks, public gardens and promenades to guarantee equal access to all citizens .
- . Active citizenship is a major social component in achieving and designing sustainable waterfronts. It guarantees access to information and civic participation in the process of planning and design, and it enhances civic engagement and sense of belonging.

. Designing sustainable waterfronts should be a process of long-term planning in. This refers to an incremental process that is implemented step by step, and is consistent over time.

. Given that waterfronts are long-term urban design projects, masterplans of sustainable waterfronts should always offer a level of flexibility in their designs in order to respond to short-term changes that can occur throughout the years of implementation.

In an attempt to link sustainability with the urban design practice, Carmona (2009) lists seven tenets of sustainable development and associates each tenet with urban design principles that can spatially translate the notion of sustainability. Referring to Carew-Reid et al. (1994), Carmona (2009) lists the seven tenets of sustainable development as follows:

First is listed the tenet of futurity which considers future generations in decision making and advocates for the preservation of the current natural resources and for energy sufficiency. Environmental diversity is also listed and is defined as the maintenance and growth of various systems and forms of natural capital. Another important factor in sustainable development needs to be considered which is acknowledging the carrying capacity of coastal cities. Moreover, it is said that sustainable development should work based on the precautionary principle to avoid considerations of mitigation and adaptation on the long-term. It should also respond to the needs of the people, by working with the principle of equity and by providing a quality of life available to all citizens. Another important tenet lies in the local empowerment which advocates for the active engagement of communities. The last

tenet mentioned refers to the principle of accountability in case of endangering nature and polluting the environment.

All of these tenets are linked to urban design principles. But before delving into the sustainable urban design principles, Carmona (2009) defines each principle according to several spatial scales from building scale to settlement and city scale.

The first design principle is called stewardship and involves a process of integrated planning focused on sustainability. It requires long-term visioning and a governance that supports stakeholder participation.

The second design principle is defined as resource efficiency. This principle involves efficient designs and smart use of infrastructure which limits the use of non-renewable energy. For instance, investing in public transport infrastructure, ensuring local access to public transportation, defining layouts for settlements that allow light penetration and ventilation are all urban design measures that aim for energy efficiency.

The third urban design principle is called diversity and choice. It tackles the freedom of choice in movement and especially in public spaces by providing a wide variety of public facilities and amenities available to all people. This principle advocates for public access and fights against privatization of the public realm which can lead to the exclusion and deprivation of societies from their public right. Diversity signifies the provision and protection of bio-diversity in a natural setting and the provision of mixed-use services in a built setting. The word diversity for this principle connotes several meanings such as the mixture of character, the variety of the social structure of the city and the mixture of types of tenure.

Carmona (2009) also discusses the notion of responding to human needs as a sustainable urban design principle. Hence, urban design projects should be created according to human scale, they should induce social contact, foster a sense of belonging, ensure safety and provide legible high quality public spaces.

Another design principle discussed by Carmona (2009) is about the notion of resilience which means designing with a certain level of flexibility that ensures the ability to adapt over time to changing patterns of life.

Pollution reduction is another aim that should be accounted for in urban design. This principle relates back to resource efficiency and can be applied through waste reduction, tree planting, investing in public transport, beach cleaning and maintenance of public spaces.

Concentration and compactness according to density standards is another design principle that was defined by Carmona (2009). This notion increases urban vitality via concentration of activity in urban centers and reduces high levels of carbon dioxide emissions by reducing distances. Moreover, the notion of concentration reduces the percentage of land take and the environmental footprint of buildings.

Distinctiveness of architectural character, heritage and/or landscape character is also considered as a major design component for sustainable urban design given that it acknowledges identities of cities, as well as it builds and preserves a sense of place and belonging. Moreover, it advocates for the protection and valorization of buildings with high architectural value, specific landmarks and natural landscapes.

'Biotic supports' is another principle which refers to the maintenance and restoration of environmental diversity and to the provision of good quality of fauna and

flora. In urban design terms this involves provision of more green areas and encouraging green practices, respect of natural features, support native species and provide minimum standards for open spaces.

The last principle that Carmona (2009) elaborates is called self-sufficiency which refers to self-sufficient lifestyles of communities within their locality.

It is important to note that all these design principles are key concepts that need to be taken into account when designing sustainable coastal cities. As Carmona (2009) previously argued, these key concepts can be applied at all spatial scales from building scale to settlement and city scale. Thus, they can be applied to a section of the studied site (limited to piazzas and streetscapes) or to the entire bay and coastal city.

### **C. Nature-based and hybrid solutions for sustainable seascapes**

Besides urban design criteria and considerations that should be taken into account when designing sustainable waterfront cities, coastal environments require specific actions and management tools to better achieve sustainability. Nature-based and hybrid solutions are an innovative tool that seek sustainable solutions and deliver sustainability and coastal resilience (Frantzeskaki, 2019).

Since the 19th century, the development of the beach-bathing economy brought new actors into play such as developers, engineers and investors. These actors were driven by a logic of maximum economic exploitation and by the ideology of human control over nature. Thus, projects involving alterations of the configuration of the natural environment of the coastline followed responding to the trend of “littoralization” (Lins-de-Barros, Sauzeau & Guerra, 2019).

As beaches became an important touristic place for sea and sun-bathing, coastlines became increasingly artificial to respond to the market demand. The market disregarded the value of salt marshes and mangroves and was more interested in wide artificial areas made for beaches and sand dunes (Lins-de-Barros, Sauzeau & Guerra, 2019).

With the prosperity of the beach-bathing economy, intensified urbanization followed. Consequently, issues of beach erosion and environmental degradation became alarming especially with the growing concern of climate change.

While comparing two case studies in Rio de Janeiro in Brazil and in Bay of Biscay in France, Lins-de-Barros, Sauzeau & Guerra (2019) trace a clear connection between “balnearization” or the culture of sun-bathing and the alterations of coastal landscapes. Following a chronological study of the development of beach tourism in both cities, Lins-de-Barros, Sauzeau & Guerra (2019) link the geomorphological changes of the coastline to the intensity of storm surges hitting these coastal cities.

As argued, the concept of “artificialization” or coastal rectification caused serious threats to the native ecosystems and increased the level of vulnerability of beaches to storm surges. By stopping the natural reciprocal sedimentary exchange due to coastal rectification and intensified urbanization, beaches were eventually more at risk of coastal erosion.

In conclusion, Lins-de-Barros, Sauzeau & Guerra (2019) argue that waterfronts should not be considered solely for their real-estate value and should not be only perceived as land available for artificial expansion. Waterfronts should be considered,

however, as valuable ecosystems and as landscapes with important ecological utilities that should be integrated within the city as well as enhance the touristic experience.

As Moller (2019) argues, the options to be adopted to counter the risks of coastal flooding and erosion, should incorporate nature-based solutions. In fact, nature-based solutions operate with natural processes in order to minimize risks and integrate ecosystems into natural defense mechanisms (Moller, 2019).

### ***1. Definition of nature-based and hybrid solutions***

According to the final report of the Horizon 2020 Expert Group on ‘Nature-based solutions and the report titled re-naturing cities written by the European commission in 2015, nature-based solutions are solutions that seek to help societies in order to deal with diverse environmental, social and economic challenges (e.g. climate change, food and water security, water pollution, human health or natural disasters etc.) using sustainable methods in order to foster human well-being and enhance biodiversity benefits (Fig 11). These sustainable methods are actions that are inspired by or copied from natural processes. They do not rely on conventional engineering solutions to respond to the forces of nature and do not artificially alter nature. Nature-based solutions include methods that range from entirely natural solutions, human-managed natural solutions, hybrid solutions all the way to environmentally-friendly structural engineering solutions (Segura, Thibault & Poulin, 2018). Given that nature-based solutions deal with diverse challenges, it is by nature a concept that is strongly associated with all dimensions of sustainable development (economic, social and environmental). In fact, nature-based solutions broaden the concept of biodiversity and



nature conservation to include the human and social components. Thus, the notion of nature-based solutions incorporates societal factors such as human well-being, socio-economic development and tackles appropriate models of governance. Furthermore, it enhances the synergies between nature, society and economy.



Figure 11: Defining Nature-based Solutions.

Source: <https://www.iucn.org/theme/nature-based-solutions/about>

## 2. Goals and principles

In 2015<sup>17</sup>, The European Commission defined four major goals that can be achieved by nature-based solutions (Fig. 12):

<sup>17</sup> Horizon 2020 Expert Group on 'Nature-based solutions and re-naturing cities report

. Enhancing sustainable urbanization via urban regeneration and improving the environment of cities and enhancing human well-being in urban areas. This goal can be achieved by increasing the provision of greenspaces and urban parks, as well as by increasing street greenery and green roofs through greening interstitial spaces and by improving recreational facilities.

. Restoring degraded ecosystems and improving coastal resiliency. The restoration of degraded ecosystems focuses on afforestation, the restoration of watersheds; wetlands; dunes and marine habitats etc. The notion of restoring degraded ecosystems also deals with coastal protection from sea level rise and storm surges.

. Dealing with climate change adaptation and mitigation by increasing the sustainable use of energy. This goal can be achieved by introducing a network of green and blue infrastructure that ensures a comprehensive range of services (e.g. use of renewable energy, sustainable urban drainage systems, and sustainable agricultural practices with sustainable irrigation systems etc.).

. Improving risk management and resilience via several approaches such as carbon sequestration, improving the quality of the existing ecosystems etc.

The notion of resilience refers to the ability to anticipate, to be prepared, to adapt to possible changes and to withstand and recover from eventual disruptions. Resilience should be approached according to three pillars; socially, environmentally and economically. These three pillars must all be robust in order for the community to be resilient (Sutton-Grier, Wowk & Bamford, 2015).

Goals	Research & Innovation Actions
Enhancing sustainable urbanisation	 Urban regeneration through nature-based solutions  Nature-based solutions for improving well-being in urban areas
Restoring degraded ecosystems	 Establishing nature-based solutions for coastal resilience  Multi-functional nature-based watershed management and ecosystem restoration
Developing climate change adaptation and mitigation	 Nature-based solutions for increasing the sustainable use of matter and energy  Nature-based solutions for enhancing the insurance value of ecosystems
Improving risk management and resilience	 Increasing carbon sequestration through nature-based solutions

Figure 12: Goals and research innovation actions for nature-based solutions.

Source: Horizon 2020 Expert Group on ‘Nature-based solutions and re-naturing cities report (2015)

### ***3. Requirements for nature-based and hybrid solutions***

In order to implement nature-based solutions, certain requirements have to be met. According to Schueler (2017), these requirements are the following:

. Appropriate policies to apply nature-based solutions such as the integrated coastal zone management approach which is a holistic and multi-disciplinary planning approach that promotes sustainable practices and seeks coastal resilience to climate change.

. Policies should stress more on protecting existing natural habitats given that preserving existing habitats is often less costly than restoring lost or degraded habitats. Examples of policy reforms include coastal setbacks, change in land-use policies and implementing new management frameworks.

. Applying nature-based solutions requires robust data and information from multidisciplinary (natural and social) sciences. This data should be up to date and accessible. Moreover, nature-based solutions require capacity building and specialized technical skills. According to Schoonees, Mancheño, Scheres, Bouma, Silva, Schlurmann and Schüttrumpf (2019) nature-based solutions requires multidisciplinary knowledge and consistent cooperation between engineers and ecologists.

Schueler (2017) further states that for a guaranteed success, projects with nature-based solutions need participatory processes that involve several stakeholders from different sectors and engage the local community. This increases awareness and educates coastal communities about the importance and urgency of introducing nature-based solutions.

Monitoring and evaluation frameworks are also crucial for implementing nature-based solutions in order to transfer knowledge from one project to another and to highlight lessons learned.

Besides these requirements, Frantzeskaki (2019) stresses on the importance of trust in the local government and the need of collaborative governance in order to guarantee success in experimenting in nature-based solutions. Moreover, Frantzeskaki (2019) highlights the importance of co-creating and collaborating in designing new approaches of nature-based solutions given that they require multidisciplinary knowledge. According to the report made by the International Union for Conservation of Nature, (IUCN) in 2018<sup>18</sup>, Nature-based solutions should always be context-driven, seek innovative and efficient solutions and should consider cities as eco-systems.

It is important to highlight that all of the above requirements need to be taken into account when implementing nature-based solutions for the coast of the bay of Jounieh coast. However, this will require multidisciplinary expertise that might not be locally available and most importantly is challenged by the lack of effective governance on a national and local scale.

#### ***4. Nature-based and hybrid solutions for shoreline protection***

The interface between land and sea are often subject to overdevelopment, to alterations and encroachments. This causes the degradation of coastal ecosystems and

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<sup>18</sup> [https://www.iucn.org/sites/dev/files/content/documents/rapid\\_assessment\\_med\\_nbs\\_cities\\_jan19v2.pdf](https://www.iucn.org/sites/dev/files/content/documents/rapid_assessment_med_nbs_cities_jan19v2.pdf)

puts the shoreline at higher risk to storm surges and erosion. Hard-grey infrastructure may be the most used approach in many urban contexts to deal with such risks.

However, the use of hard infrastructure has negative impacts on coastal and marine habitats and may cause fragmentation of ecosystems leading to sterile landscapes (Segura, Thibault & Poulin, 2018). Moreover, hard infrastructure is often more expensive to build and maintain compared to nature-based solutions. According to Schoonees et al. (2019), green infrastructure can be categorized into three types: first, environmental-friendly grey infrastructure where the built infrastructure is designed to mimic ecosystem functions and to preserve connectivity of natural systems; second, hybrid infrastructure known as combining coastal habitats with hard infrastructure; and third, soft infrastructure. It is worth noting that projects that use green infrastructure techniques and coastal ecosystems possess societal, environmental, and economic benefits in addition to enhancing coastal resiliency, protecting biodiversity and managing hazards (Schueler, 2017).

According to Schueler (2017) coastal habitats are known for providing breeding, nursery and feeding grounds for important fish stocks and other marine species. They consume carbon dioxide from the atmosphere and filter toxins for better water quality. They dissipate wave energy, attenuate water flow and flooding and can restore and regenerate coastlines by trapping and distributing sediments along shorelines. Moreover, they can provide appropriate places for recreation and tourism (Schueler, 2017). Compared to grey infrastructure (breakwaters; groynes and jetties grouped as foreshore structures, and seawalls; levee and dikes grouped as onshore coastal structures), techniques that use nature-based solutions (e.g. salt marshes, coral and oyster reefs, mangroves, seagrasses, sand dunes and living breakwaters) might provide a

stronger coastal protection as they mature over time. It is worth noting that the role of built/grey infrastructure is solely limited to a single benefit which is coastal protection during storm events. On the other hand, projects using natural infrastructure that are built for the purpose of reducing coastal vulnerability can achieve multiple benefits such as environmental, societal and economic benefits other than shoreline protection from storm events (Sutton-Grier, Wowk & Bamford, 2015). Besides the negative impact on existing ecosystems, grey infrastructure is rigid and does not adapt with changing conditions such as sea-level rise. Unlike grey infrastructure, projects using natural infrastructure have the potential to self-recover, as well as keep pace with sea-level rise and also be self-maintaining.

Nevertheless, not all coastal areas especially the ones that present highly urbanized locations or high wave energy areas, or the ones that do not present historically mangroves or coral reefs, are suitable for projects that solely use techniques of natural infrastructure. In these conditions, the use of hard infrastructure can be combined with nature-based solutions. This technique is called hybrid infrastructure. It is worth noting that natural infrastructure on its own requires a substantial amount of space, and might take a long time to be established (Sutton-Grier, Wowk & Bamford, 2015). Therefore, hybrid approaches were created to capitalize on the best characteristics of both approaches, built and natural, and are suitable for urbanized areas. Hybrid approaches can help coastal communities to have better assurance in natural infrastructure since grey infrastructure can offer coastal protection benefits all while natural infrastructure establishes. Hybrid infrastructure improves coastal protection while delivering additional ecological benefits. Even if hybrid systems offer less habitat and diversity than natural systems, hybrid approaches, if designed

appropriately and responsively, deliver more benefits than grey-built infrastructure and provide a number of ecosystem services (Sutton-Grier, Wolk & Bamford, 2015) (refer appendix 2). Examples of hybrid techniques can be either combining or constructing natural and built approaches from scratch (e.g., constructing seawalls with flood gates along with implementing saltmarshes, oyster reefs and barrier islands) or working on existing built infrastructure.

Methods of working on existing infrastructure are diverse. They focus on the idea of retrofitting artificial habitat features in order to allow the growth of microhabitats. Examples of these methods can be listed below (Fig 13):

- . Planting vegetation in front of sea dikes and seawalls (Fig .13 a)
- . Enhancing natural habitats on surfaces of seawalls by enhancing the roughness and texture of the seawall and by incorporating complex tiles with nooks and crannies to provide a suitable environment for intertidal habitats (Fig. 13 b)
- . Incorporating rock pools into seawalls or flower pots that can mimic the role of rock pools (Fig. 13 c,d)
- . Hanging reef ball units below light penetrating mesh decks (Fig. 13 e,f)

Other methods involve the inclusion of saltmarshes or mangrove benches behind the sloping riprap<sup>19</sup>, or the adjustment of the slope of the riprap to make it more gradual in order to increase the opportunities for colonization of surfaces (Fig. 13 g).<sup>20</sup>

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<sup>19</sup> Riprap are known to be loose stones and are used to form a foundation for a breakwater or other structure.

<sup>20</sup> These examples are listed and illustrated in the website below:  
<https://www.fishhabitatnetwork.com.au/environmentally-friendly-erosion-protection-seawalls-fish-friendly-marine-infrastructure>



According to Schoonees et al., (2019) adopting a diverse set of ecosystems rather than a single ecosystem is more recommended in order to provide a more resilient coastal protection. It is worth noting that these hybrid methods will be later on used as tools for regenerating the coastline of the site study tailored according to the existing shoreline typology.

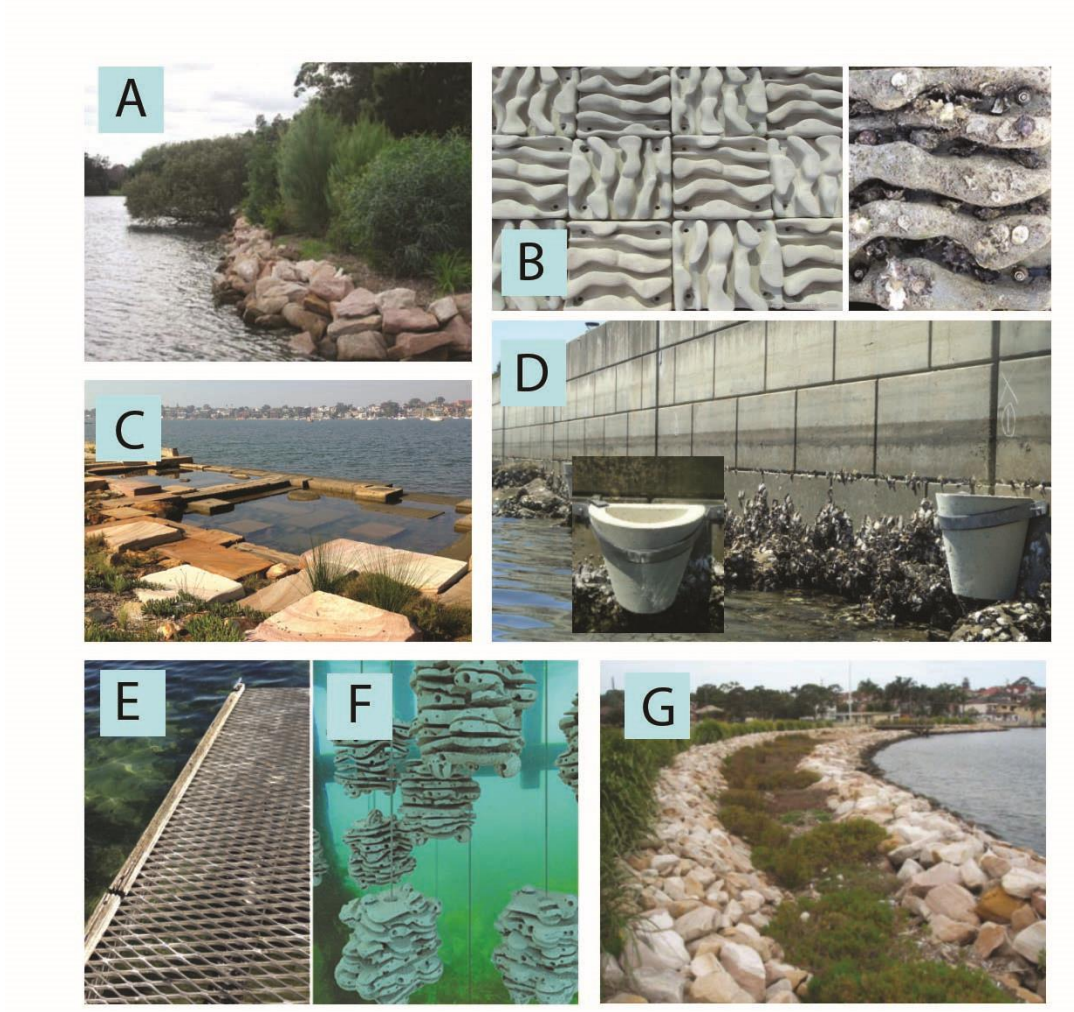


Figure 13: Examples of nature-based and hybrid solutions

Source:[https://www.hornsby.nsw.gov.au/\\_\\_data/assets/pdf\\_file/0017/41291/Environmentally-Friendly-Seawalls.pdf](https://www.hornsby.nsw.gov.au/__data/assets/pdf_file/0017/41291/Environmentally-Friendly-Seawalls.pdf) . Edited by author.

## ***5. Challenges and limitations of nature-based solutions***

According to Sutton-Grier, Wowk and Bamford, (2015) nature-based solutions is a notion recently applied in coastal protection. Therefore, more research is needed to better understand how it functions and what the ultimate scenarios for better coastal protection and restoration of ecosystems would be. Methods involving natural and hybrid infrastructure are newer or not as well tested and as well-known as built infrastructure. Thus, there is limited expertise regarding which is the most effective natural approach to use (where and when). General guidelines for nature-based solutions are provided, however there is a need for more exhaustive design guidelines in terms of effectiveness and performance of these techniques especially that they relate to different geographic and climatic contexts (Schoonees et al. 2019).

Moreover, little data is provided regarding the cost-benefit ratio for projects using nature-based solutions. New regulations are also needed in order to ensure permits for these types of projects. Sutton-Grier, Wowk and Bamford (2015) also highlight the lack of data and awareness on the negative effects of built infrastructure. This can trick coastal communities into thinking that applying built infrastructure is better than nature-based solutions. As previously mentioned, lack of space for implementing natural systems constitute a real challenge in highly urbanized areas where impervious surfaces such as roads are very close to the shoreline. This can lead to a phenomenon called coastal squeeze where coastal ecosystems are unable to move inland in case of rising sea levels (Sutton-Grier, Wowk & Bamford 2015). To avoid such situations, many cities are implementing a coastal setback or are adopting hybrid techniques for retrofitting existing grey infrastructure. Other coastal cities are moving

major infrastructure projects such as highways or housing developments inland, in order to have the necessary space for natural infrastructure.

#### **D. Landscape character assessment as a tool to support sustainable development of coastal cities**

Prior to implementing any urban design and landscape solution with a sustainable approach, one must study coastal cities following a certain methodology that would assess their threats and vulnerabilities in order to enable sustainable development. Given that landscapes are relentlessly bound to change, assessment of landscapes is essential for guiding change and achieving a sustainable outcome.

Developing people's understanding of landscape and seascape character is a quintessential method that leads us to rethink and re-evaluate our landscapes. Consequently, this revaluation prevents harmful and unsustainable measures from being implemented to our coastal cities. Landscape character is defined as a distinct and recognizable pattern of components that shape the landscape (Vogiatzakis, Griffiths & Morse, 2007). Based on this notion, the landscape character assessment method (LCA) was conceptualized as a character-based approach that maps landscape character and assesses the differences and similarities between landscapes based on their physical characteristics and their evolution. This method also relies on indicators that measure and monitor sustainability and environmental quality such as the environmental impact assessment (EIA), the quality of life (QoL), as well as landscape capacity and landscape sensitivity<sup>21</sup>. In fact, LCA defines landscape typology with a set of discrete

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<sup>21</sup> Taken from Landscape Character Assessment: Guidance for England and Scotland (2002) – Topic paper 2 Links to other sustainability tools

characteristics for each landscape type. This classification of landscapes, which is translated into a series of maps, provides the spatial context within which sustainable indicators are derived. For instance, developing policies to restore ecosystems and deal with other coastal threats are directly related to the defined character of the landscape, its sensitivity and capacity.

Hence, landscape classification provides a strategic outline to develop policies for landscapes where conflicting pressures (such as over development, over tourism and the need for recreation as well as the urgent necessity for nature conservation) need to be solved (Vogiatzakis, Griffiths & Morse, 2007).

According to Kamarudin (2016), there are five principles that make landscape character assessment a tool for sustainability. First of all, LCA provides a better understanding of landscapes and seascapes because it includes an integrated spatial framework that studies the cultural and natural component of a landscape, as well as combines the study of terrestrial and marine ecosystems in seascapes. Secondly, it is a flexible framework that works on both scales; national and regional. Besides scale, LCA extends the notion of best landscapes to a broader concept of environments and by that, the methodology can be applicable to all types of landscapes. Moreover, this methodology entails a thorough understanding of how landscape is perceived and valued. And lastly and most importantly, the methodology of LCA can provide evidence based decision-making for a better sustainable future. In fact, LCA assesses the landscape quality to prioritize policies and actions. This method will be further explained in the methodology section under Chapter 3.

## **E. Main findings**

In conclusion, it can be said that coastal cities face tremendous challenges; specifically, if these cities are by nature beach resort cities. Excessive touristic developments, if not planned appropriately, can lead to environmental degradation in the future. For these reasons, sustainable tourism was conceptualized in order to make sure that coastal touristic cities can sustain their natural and cultural assets on the long term in order to keep the level of their attractiveness checked.

Besides adequate policies, achieving sustainability in coastal touristic cities can be reached as seen via urban design considerations and landscape solutions such as nature-based and hybrid solutions. But prior to implementing any urban-design and landscape intervention that seeks sustainable change, one must have a thorough diagnosis of the designated coastal city. Therefore, it is highly important to adopt a methodology that works following a sustainable approach as well as assesses the potentials and vulnerabilities of coastal cities following a multi-dimensional and integrated framework.

Therefore, this framework (Fig.14) will be based on integrating the principles of sustainable tourism and development for coastal cities. It utilizes landscape character zones as a method of assessment which is adjusted according site specificities. Most importantly, the aim of this adopted framework is to achieve a landscape and urban design regeneration of the shoreline and coastal city .

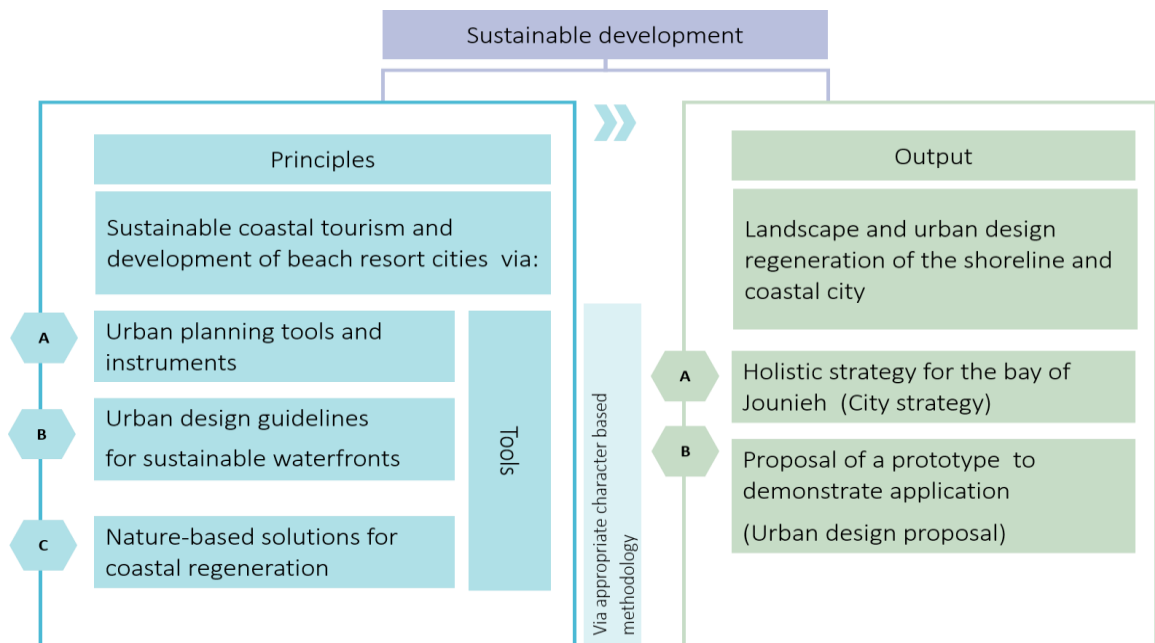


Figure 14: Adopted framework for thesis

Source: Author.

## CHAPTER III

### METHODOLOGY

This chapter further explains the adopted methodology for this research. The chapter is divided into two parts. The first part explains the adopted methodology for the research and its tools. The second part elaborates each step of the research, its purpose, its tools as well as its outputs.

#### **A. Adopted methodology**

This research is inspired by character-based approaches which are the landscape character assessment (LCA) and the historic landscape character (HLC). These approaches emerged at first in the United Kingdom and later transferred to other Mediterranean areas such as Cyprus, Portugal, Spain and France (Griffiths, 2018). Both approaches aim for a comprehensive coverage and come from the idea of extending the notion of best landscapes to a broader concept of environments. While landscape character assessment works on the natural and cultural components of a landscape, historic landscape character focuses on the human activity and its impact on the landscape. In fact, landscape character assessment is an approach that integrates several meanings for a specific landscape (mental, spatial, temporal) and perceives the landscape as a connection between nature and culture (Griffiths,2018). At the natural level, the landscape character assessment takes into account physiography such as the landform and the geology structure and the ground type with regards to soils and lithology. At the cultural level, this approach considers the settlement and farm type as well as the land cover and tree cover (Table 1).

Thus, this research is inspired by the framework of the landscape character assessment

Table 1: Table showing the framework of Landscape Character Assessment

	Regional	District
Natural	Physiography	Landform
		Geology structure
	Ground type	Geology rock type
		Soils
Cultural	Settlement	Settlement
		Farm type structure
	Land cover	Farm type cover
		Tree cover

Source: Taken from the report Landscape Character Assessment: Guidance for England and Scotland, (2002)

Both approaches of landscape character assessment and historic landscape character are complementary. In fact, the approach of historic landscape characterization adds to the landscape character assessment the notion of time-depth which reveals how cultural forces are relentlessly shaping the landscape over time (Griffiths, 2018). The notion of time-depth evokes the long-term interaction between human activity and the natural processes. It reveals humans' perceptions, understanding and appreciation for a specific landscape. This approach offers an explanation of the processes that have made the landscape what it is today. The commonalities between landscape character assessment and this current research are that they both rely on characterization. Characterization covers the identification of areas with distinctive character, the categorization and mapping of those areas and the definition of their characteristics (Symons, Vogiatzakis, Griffiths, Warnock, Vassou, et al., 2013). Moreover, this research also revolves around the natural and cultural (human-induced) components. Its data collection and analysis can be categorized into several layers or



components. These layers can either fall under the category of cultural/ human-induced systems or natural system. The two categories are further elaborated in the diagram below:

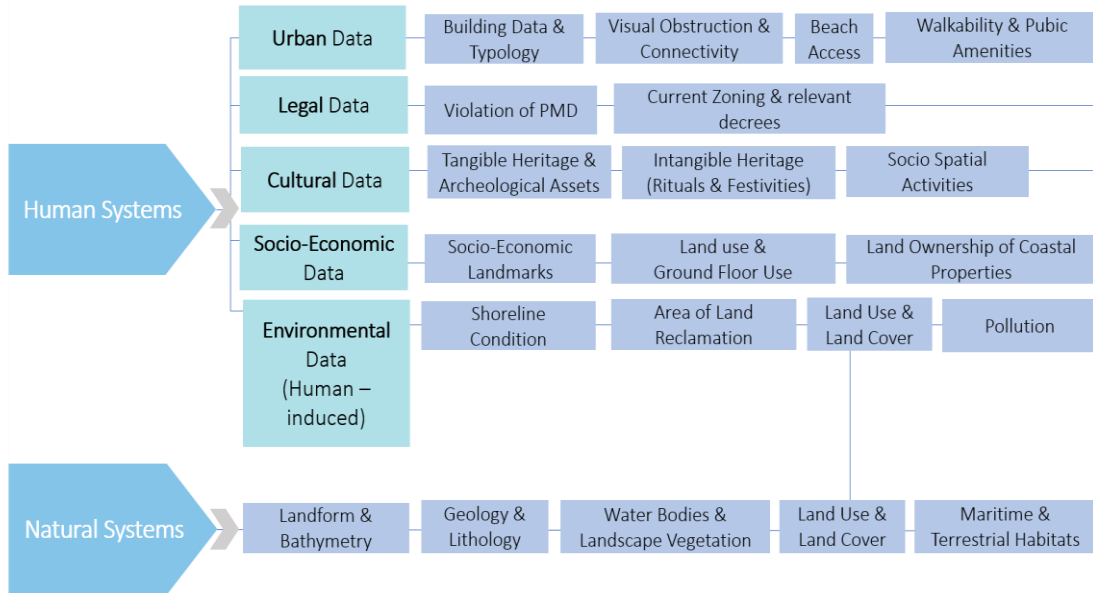


Figure 15: Matrix of the methodology adopted.

Source: Author.

While this research and the landscape character assessment approach entail the same main components (cultural/human-induced, natural-induced), each approach is expanded on differently.

Besides landscape character assessment, the commonalties between the historic landscape character and this current research are that they both rely on historic aerial photos in order to analyze how areas with distinctive character and settlement patterns evolved or were created throughout time.

The main differences between both approaches and the research lie in the scale and the different context-based components for mapping. The scale adopted for the

landscape character assessment and the historic landscape character is mostly national and regional. However, this research works on a much smaller and local scale. Moreover, the layers and categories of data for this thesis are more site-specific to coastal Mediterranean postwar cities with illegal encroachments on the public maritime domain and illegal coastal developments. It is worth to note that this thesis is inspired from the report titled Beirut Zone 10 published by the Issam Fares Institute for Public Policy and International Affairs at the American University of Beirut. Similarly, to the report of Beirut Zone 10, this research adds to the components of the landscape character assessment context-based layers that are specific to post-war Lebanese coastal cities. These additional layers tackle coastal violations, ownership of coastal properties at the social and regulatory level as well as beach access, walkability, visual obstruction and scale of land reclamation at the urban and physical level.

## **B. Tools adopted for the research**

The research methods involve both qualitative and quantitative methods for better cross-checking of resources and triangulation of evidence (Yin, 2014). Mapping remains the central method for data collection supported by secondary data (Du Toit, 2014) from archives, scholarly research, as well as public records. Informal discussions with professionals, experts and concerned stakeholders is also a major part of the primary data.

## C. Steps for research

### 1. Literature review

#### a. Literature on beach resort cities, sustainable coastal tourism and urban design principles for sustainable waterfronts

. Purpose: It is necessary to position the case study within relevant literature. By having an urban design dimension, this research explores all the necessary criteria for a sustainable well-designed and integrated waterfront city. This literature tackles specifically beach resort cities as well as their urban morphology and evolution throughout time in relevance to the case study of the bay of Jounieh. It elaborates on the notion of sustainable tourism as a solution for resort cities that are facing decay and seeks tools for achieving sustainability.

. Tools and process: This phase is based on documentation from various sources; journals, peer reviewed articles and books.

. Output: This literature elaborates a set of urban design and landscape criteria for sustainable waterfront cities and provides guidelines for the future urban design intervention.

Table 2: Type of data adopted for the literature review

Type of Data	Source of Information
Literature review on beach resorts, their morphology, categorization and evolution throughout time	Peer reviewed articles – Books
Literature review on sustainable coastal tourism and urban design principles for sustainable waterfronts	Peer reviewed articles – Books
Literature review on nature-based and hybrid solutions for sustainable waterfronts	Peer reviewed articles – Books

Source: Author

b. Literature on landscape character assessment and historic landscape character

. Purpose: Literature reviews on landscape character assessment and historic landscape character help to establish a methodology that could be adopted to the coast of Jounieh. The challenge remains in tailoring this approach to landscapes /seascapes with a smaller scale and a Mediterranean postwar context while including an urban design dimension.

Table 3: Type of data for the adopted methodology

Type of Data	Source of Information
Literature review on landscape character assessment and its principles	Peer reviewed articles – Books
Literature review on historic landscape character and its principles	Peer reviewed articles – Books

Source: Author

. Tools and process: This phase is based on documentation from various sources; reports, peer reviewed articles and books.

. Output: This literature helps to elaborate the main components that should be mapped for the fieldwork. It helps to elaborate a set of guidelines for defining landscape character zones. It also helps define local characteristics for protection and management.

**2. Worldwide case studies**

. Purpose: Case studies that address the same issues, with a preferably comparable Mediterranean and particularly with a historic/ touristic context, are evaluated according

to the type of intervention and recommendations. These case studies are found in the Appendix section.

Table 4: Type of data for case studies

Type of Data	Source of Information
Case studies of waterfront revitalization and regeneration with similar socio- economic context, and with similar historic/ touristic context focused on the Mediterranean Sea	Peer reviewed articles – Books
Examples of shoreline protection with nature-based and hybrid solutions	Peer reviewed articles – Books

Source: Author

. Tools and process: This phase is an iterative process; it solely relies on documentation from various academic sources.

. Output: This research is presented in the appendix section. It is represented via tables classifying the different case studies according to their concept, design strategy, planning tools and principles, as well as levels of success and transferability. This step helps in setting relevant examples and assessing what works and what does not work for the future development of the bay of Jounieh.

### ***3. Data collection***

As mentioned previously, a multidisciplinary research framework inspired by the methodology of the landscape character assessment is adopted. Data collection methods are found in chapter. This step contributes to a deeper understanding of the urban, socio-economic, as well as the environmental characteristics of the site.

In order to propose a strategic urban intervention on the bay of Jounieh, character zones that combine a landscape and urban design approach are defined according to specific sets of layers/categories. These layers comprise of cultural or man-made systems (urban, legal, cultural, socio-economic, as well as environmental data) and natural systems (Fig.15). Priority is given to these specific layers (Fig.16) (landform, land use/land cover as well as shoreline typology) in order to define character zones. These specific layers are one of the major components that differentiates a site from another. Starting with the landform, it impacts the type of land use and land cover that exist which is also a base layer that significantly defines character. The shoreline typology and scale of encroachments is also taken into consideration given that the studied site is coastal city, which represents an interface between land and water.

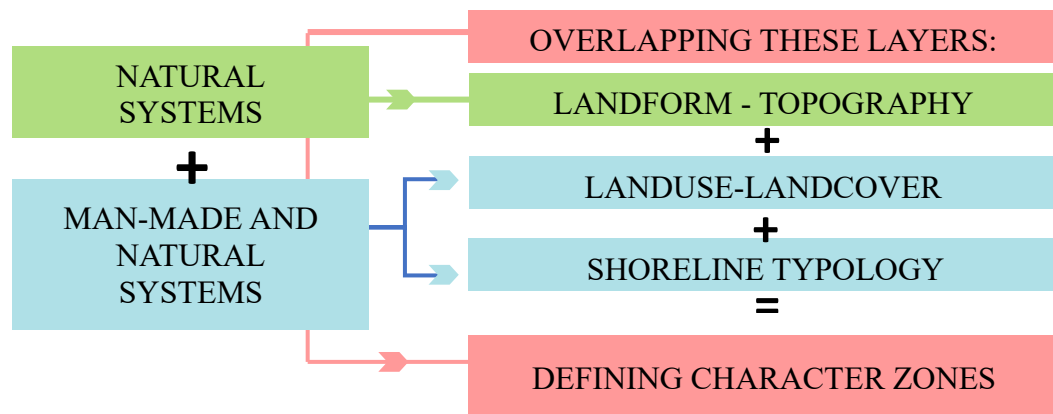


Figure 16: Schematic representation of the methodology adopted.

Source: Author.

These overlaid layers are highlighted in a series of maps (Table 5). The purpose of this mapping is to show the evolution of the existing urban fabric of the coastline over the years and depict the socio-economic and the environmental condition of the coast.

Data	Type	Maps
Urban data	Interface between land and water	Access
		Walkability
		Visual connectivity
	Coastal area	Building height
Regulatory data	Interface between land and water	Beach resort typology
	Per edge	Violations of PMD
Cultural data	Coastal area	Current zoning
	Interface between land and water	Socio-spatial activities
Socio-economic data	Coastal area	Built and natural heritage
	Interface between land and water	Ownership patterns
		Construction dates of beach resorts
	Coastal area	Socio-economic landmarks
		Building use
Ground floor use		
Environmental data	Coastal area	State of neighborhood
	Coastal area	Geology and lithology
		Landform and water bodies
		Landform ,water bodies and landscape vegetation
	Per edge	Land use and land cover
	Shoreline condition	
	Land reclamation	

Base layers

Table 5: Schematic table showing the different layers mapped  
Source: Author.

a. Urban profile

Purpose: The purpose of this data is to assess the current physical condition of the bay.

Table 6: Type of data for mapping the urban profile

Layer / Category	Type of Data	Source of Information
Physical data / man-made systems	AutoCAD updated base map	Municipality of Jounieh, Ghazir, Adma and Tabarja Kfaryassine, updated with fieldwork

Physical data / man-made systems	Road network	Municipality of Jounieh, Ghazir, Adma and Tabarja Kfaryassine, verified with fieldwork
Physical data / man-made systems	Access of the seashore (fences, gates and main entrances to the beach)	Fieldwork mapping
Physical data / man-made systems	Building heights and visual obstruction analysis	Fieldwork mapping
Physical data / man-made systems	Mapping sidewalks/ assessment of walkability + assessment of public spaces	Fieldwork mapping

Source: Author

Tools and process: This data collection uses fieldwork mapping as a central method and is based on existing base maps which are GIS files and CAD files.

Output: This research shows the current situation of the studied site and assesses the physical condition of the coastline in terms of visual connectivity, access and walkability. Maps assessing the visual disconnection between the city and the seashore, the access of the seashore as well as the walkability and provision of sidewalks and public spaces are traced accordingly.

#### i. Urban history brief

. Purpose: This phase includes tracing the history and cultural evolution of the bay by examining the different historical factors that have affected the development of the bay of Jounieh. This step helps in having a better understanding of the effect of human activity on the landscape/seascape of the bay.



Table 7: Type of data for historical overview

Layer / Category	Type of Data	Source of Information
Historical data	Reviewed and published thesis and books	Thesis about Jounieh and Tabarja consulted at the Institut Français du Proche Orient (IFPO)
Historical data	Heritage listed buildings and sites	AAA - report (1998)
Historical data	Historic books about the site	Archival books and records from Dr. Wakim Bou Lahdo and other researchers
Historical data	Aerial photos dating from 1956 till now	Directorate of Geographic affairs and Google Earth.
Historical data	Historic zoning maps starting from the 1960s	Directorate of General Urban Planning (DGUP)
Historical data	Land use maps 1963/1964 and 2003/2004	Directorate of Geographic affairs

Source: Author

. Tools and process: The data collection regarding the history of the site is based on documentation from several sources. It uses old aerial photos, archival maps along with academic thesis, books and reports for better cross-checking of resources. The evolution of the coastline throughout history is retraced after overlaying several aerial photos.

. Output: This research shows the evolution of the existing urban fabric of the coastline over the years through retracted maps, graphs and timelines.

#### ii. Regulatory profile, urban planning and urban morphology of the bay

. Purpose: This section is included as part of the urban profile section in chapter 4. The purpose of this data is to look at the violations and the legal status of the plots located at

the waterfront of the bay of Jounieh. This data is elaborated in parallel with exhaustive research on the existing laws, decrees on the international, national and local scale, which is elaborated in chapter 2. By highlighting the major discrepancies in these old/existing and national/local decrees, this analysis helps to understand the current situation of the violations on the public maritime domain and the basis of their formation.

Table 8: Type of data for the regulatory profile

Layer / Category	Type of Data	Source of Information
Legal data / man-made systems	Violations of the Public Maritime Domain	Report made by the Ministry of Public Works and Transport, Directorate General of Land and Maritime Transport (2012)
Legal data / man-made systems	The different zoning maps and decrees of the Bay of Jounieh throughout the years	Directorate of General Urban Planning (DGUP)
Legal data / man-made systems	The Current Zoning of the Bay of Jounieh	Directorate of General Urban Planning (DGUP)
Legal data / man-made systems / international scale	The Madrid Protocol, signed by the Lebanese State.	Le “littoral” Book written by Majal -Alba and other online sources.
Legal data / man-made systems / national scale	National laws related to the Lebanese coast.	Le “littoral” Book written by Majal -Alba.

Legal data / man-made systems / local scale	Local laws on coastal development and municipality laws	Directorate General of Urban Planning -Keserwan.
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Source: Author

. Tools and process: This data collection solely relies on documentation from official sources and records.

. Output: The gathered data is translated into tables and maps showing the types of violations committed and their distribution along the bay.

### iii. Proposed projects for the bay of Jounieh (Past & Current).

. Purpose: This section is also included as part of the urban profile section in chapter 4. This part explores all the imagined visions of the bay of Jounieh. Moreover, it compares between the previous projects (applied or not applied) and the on-going projects to better understand the positive and negative outcomes of these interventions.

Table 9: Type of data for the previous and on-going projects regarding the bay of Jounieh.

Type of Data	Source of Information
Information about on-going projects and existing development efforts for the bay of Jounieh	Informal discussions with concerned parties and municipality members Reports and newspapers articles
Information about previous proposed projects regarding the bay of Jounieh	Informal discussions with concerned parties, historians and municipality members Reports and newspapers articles

Source: Author

. Tools and Process: This phase relies on documentation regarding previous and on-going projects for the bay of Jounieh.

. Output: Data regarding when these projects occurred and what were their impact and their intentions is provided.

### b. Cultural profile

Purpose: The purpose of this data is to find out more about the cultural assets of the bay. This data informs us about the tangible and intangible heritage of the bay, as well as the socio-spatial activities centered around beach activities.

Table 10: Type of data for mapping the cultural profile

<b>Layer / Category</b>	<b>Type of Data</b>	<b>Source of Information</b>
Cultural data / man-made systems	The socio-spatial practices along the sea throughout history	Articles, books, reports and newspapers
Cultural data / man-made systems	Current festivities and current socio-spatial practices	Observation, coupled with information taken from articles and books Informal discussions with municipality members
Cultural data / man-made systems	Archeological assets along the coastline of the bay	Articles, books, reports and newspapers
Cultural data / man-made systems	Built and natural heritage	Fieldwork mapping based on observation supported by articles, books and reports

Source: Author

Tools and process: This data collection relies on several types of sources.

Documentation regarding heritage sites is gathered from varied sources. Documentation regarding festivities and rituals are gathered from historic books and articles and

reports. Fieldwork mapping and recurrent observation are also used to define the socio spatial practices of the community.

Output: This research assesses the state of the cultural assets of the bay if they are valued or neglected. It also assesses the opportunities as well as the threats that the bay is facing with regards to heritage. Maps regarding the current socio-spatial practices and built and natural heritage assets are traced accordingly.

c. Socio-economic profile

Purpose: The purpose of this data is to explore the current socio-economic condition of the adjacent urban fabric of the bay. It provides a better understanding of the socio-economic structure of the coastal community of the bay.

Table 11: Type of data for mapping the socio-economic profile

<b>Layer / Category</b>	<b>Type of Data</b>	<b>Source of Information</b>
Socio-economic data / man-made systems	Current stakeholders	Informal discussions with municipality members and state officials as well as newspaper articles and documentaries
Socio-economic data / man-made systems	Ownership patterns	Records from the Directorate General of Real Estate Affairs
Socio-economic data / man-made systems	Technical reports on the socio-economic structure of Jounieh and the real estate sector	Reports and data collected from professionals in the real estate and tourism sector
Socio-economic data / man-made systems	Socio-economic landmarks	Observation – fieldwork mapping
Socio-economic data / man-made systems	Ground floor and building use	Fieldwork mapping
Socio-economic data / man-made systems	Neighborhood condition	Fieldwork mapping

Source: Author

Tools and process: This data collection relies on several types of sources. Official records regarding ownership are gathered from official sources. Documentation regarding economic and social aspects of the site are gathered from articles and reports. Fieldwork mapping and recurrent observations are also used to define the socio-economic landmarks, the condition of the neighborhood as well as the social practices of the community.

Output: This research analyzes the current socio-economic status of the site. Via explicative tables and graphs, it assesses the opportunities and assets of the bay as well as the socio-economic threats that the people of this community are facing. Maps regarding the ground floor and building use, the ownership of the seaside plots, the socio-economic landmarks as well as the neighborhood condition are traced accordingly. Moreover, diagrams and/ or tables are established in order to better understand how power is shared among stakeholders.

d. Environmental profile

i. Natural systems

. Purpose: The purpose of this phase is to understand the natural components of the site in terms of landform, geology as well natural habitat.

Table 12: Type of data for mapping the environmental profiles (natural systems)

<b>Layer / Category</b>	<b>Type of Data</b>	<b>Source of Information</b>
Spatial data / natural system	AutoCAD / GIS topography map.	Directorate of Geographic affairs.
Spatial data / natural system	Geology and soils	Thesis, scholarly articles and reports

Spatial data / natural system	Marine Fauna and Flora	scholarly articles and reports
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Source: Author

. Tools and process: This data collection is based on existing GIS maps as well as reports and scholarly articles. The information regarding the land cover of the site is verified via the fieldwork.

. Output: This step is translated into a series of readapted / retraced maps.

## ii. Man-made systems

. Purpose: This segment involves looking at the environmental issues that are at stake and are threatening the well-being and health of the community.

Table 13: Type of data for mapping the environmental profile (man-made systems)

Layer/ Category	Type of Data	Source of Information
Environmental data / man-made systems and natural systems	Land use and land cover	Fieldwork supported by reports and land use maps collected from the Directorate of Geographic affairs
Environmental data / man-made systems	Levels or pollution, sewage network, air and water pollution	Reports, news and articles
Environmental data / man-made systems and natural systems	Shoreline condition. (concrete, pebbles, rocks)	Fieldwork
Environmental data / man-made systems	Areas of land reclamation and encroachments	Report made by the Ministry of Public Works and Transport, Directorate General of Land and Maritime Transport (2012)

Source: Author

. Tools and process: This data collection relies on documentation from various sources. The shoreline condition is mapped after assessing recent aerial photos and after taking several pictures of the waterfront and maritime façade.

. Output: This step is translated into a series of maps. These maps show the distribution of the most environmentally sensitive areas across the bay.

#### ***4. Defining character zones***

. Purpose: This step involves identifying and analyzing the character zones according to the overlaying of specific criteria from the mentioned framework (human systems and natural systems). All of the previous gathered data are critically assessed and narrowed down in order to come up with a final characterization of the different zones of the coast. Character zones are explored in chapter 5.

. Tools and process: This analysis is based on the process of overlapping maps that were produced for the case study on chapter 4.

. Output: a SWOT analysis as well as a star model assessment are produced to assess the threats and opportunities for each character zone identified.

#### ***5. Design guidelines and spatial strategies***

. Purpose: This step involves setting planning and urban design guiding principles that tackle the studied site holistically. It also proposes spatial strategies for each character zone. Design guidelines and spatial strategies are explored in chapter 6.



. Tools and process: spatial strategies are established based on the fieldwork mapping that was done with regards to natural and cultural assets that need valorization and preservation.

. Output: A table with general recommendations and guidelines are elaborated for each character zone in order to come up with a holistic strategy for the bay.

### ***6. Detailed urban design intervention***

. Purpose: This final step focuses on one character zone for a proper strategic urban design intervention. The urban design intervention is found in chapter 7.

. Tools and process: The tools for this phase are urban design tools for rendering and making the intervention more comprehensible and explicit. (CAD, Photoshop software)

. Output: An urban design intervention is provided for a specific character zone along with urban design guidelines.

## CHAPTER IV

### CASE STUDY PROFILE: THE BAY OF JOUNIEH

This chapter tackles the case study of the bay Jounieh which is a Mediterranean post-war beach resort city. This coastal city started to emerge as a tourist hub in the late 1950s, early 1960s, following a western model anchored in private beach resorts and hotel development (Maasri, 2016). During the 1970s, the civil war caused unregulated urban growth and allowed these coastal developments to expand at the expense of the sea. Until now, this beach resort city is still dealing with the aftermath of the Lebanese civil war alongside the multi-dimensional challenges that emerged consequently.

This chapter starts with an overview on the coastal challenges of the Lebanese coastal cities then focuses on the case study of the bay of Jounieh. It explores an integrated study for the site according to several dimensions; urban and regulatory, cultural, socio-economic as well as environmental from an urban design and landscape point of view. It brings to the fore the main issues of the site that are raised in relation to the research question (e.g. lack of access to the seafront, lack of visual and physical connectivity between the sea and the coastal city) which are also addressed in the urban design intervention.

#### **A. National challenges of Lebanese coastal cities**

According to the book titled “Le littoral” (Bou Aoun & Lamy, 2017), a major part of the Lebanese population does not recognize their right to access the beach although the beach was officially part of the public domain of the Lebanese state since 1925. The law number 144/S of 1925 included the seashore with the highest winter flow along with the sandy / pebbled beaches, the rivers or sea dikes, as well as the ports and

harbors, as part of the maritime public domain. This law also defines the maritime public domain as imprescriptible and inalienable. This means that the public maritime domain cannot be revoked or taken away as well as it cannot be sold or owned over time. However, the following decree 17614 established in 1964 was a starting point for allowing the exploitation of the public maritime domain<sup>22</sup>. Moreover, the happening of the civil war created a situational context that allowed for several violations on the public maritime domain where developers took advantage of the absence of state (Hall, 2018).

It is worth to note that Lebanon is among the countries that have signed the Madrid Protocol in 2008. The protocol entails the protection of the coastline, the limitation of the linear development of agglomerations along the coast by imposing a 100 m unbuildable setback, and the provision of free access to the public (Bou Aoun & Lamy, 2017). Nevertheless, recent seaside projects of beach resorts and hotels do not respect any setbacks and do not provide access to the public.

Hence, human practices and behaviors that do not respect the public right to access the beach are still ongoing. This highlights a problem of lack of public ethics entrenched in the current political culture of Lebanon. Many leaders of the civil war that are still in power are linked to these illegal coastal developments. For these reasons, Lebanon did not witness so far, any strict measures that order the immediate removal of these illegal constructions (Hall, 2018). In fact, the law 64 issued in 2017 that ordered the settlement of the violations regarding the maritime public domain was not firm and did not command the immediate removal of the violations except those that were built

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<sup>22</sup> By tracing the difference between the law 144/S of 1925 and the decree 17614 of 1964, we can note that the word “occupation” “اشغال” of the public maritime domain was substituted by the word “exploitation” “استثمار” which involves other connotations.

after 1994. In fact, this law is indirectly legalizing infringements in exchange for money to serve a state at the verge of economic collapse. According to the Legal Agenda (2021), the government is keeping on extending the deadline for payments. This reveals an attitude of laxity which is in deep contrast with the current public discourse which advocates social justice and the public right to reclaim stolen public assets.

Consequently, considering the legal system of the state as a reference is questionable especially given that some decrees were only put to allow the occupation of the maritime public domain such as the decree 7464 approved in 1995 which is an amendment of decree 4810 for Ramlet el Bayda (Bou Aoun & Lamy, 2017).

Besides violations of the public maritime domain, the majority of lands adjoining the Lebanese public maritime domain are by nature private properties (Bou Aoun & Lamy, 2017) which threatens the public practice of the beach and exacerbates social inequality.

Seashores are supposed to promote the understanding of intrinsic notions such as; the “public”, the “shared”, and the “common” (Nahnoo, 2018). However, given that the waterfront is a substantive part of most of Lebanese cities, and most of coastal properties are private, the right to access urban resources such as the beach is threatened. Lack of public access to the beach is due to excessive privatization and to the practices that revolve around privatization which entail visual and physical obstruction, exclusiveness of paid services falling under the category of leisure and touristic activities. According to the head of the syndicate of seaside resort operators in Lebanon, the emergence of private beaches is due to the neglect and lack of governmental investment in public beaches (Hall, 2018). Lack of public access remains a result of lack of appropriate regulations that stress on respecting the right of way to the beach in private properties.

Besides violations and privatization, Lebanese coastal cities suffer from high levels of water pollution and a lack of sustainable practices that protect its seashore. Lebanon suffers from an ongoing environmental crisis regarding rubbish disposal and sewage networks that are not treated and that pour directly into the sea (Jay, 2017). This leads to the destruction of marine life, and the degradation of coastal habitats including fish stocks. Moreover, water pollution is a leading factor that hinders public access to the beach. In fact, high levels of water pollution forbid citizens from accessing the beach given the health repercussions that it can cause to its beach goers. Similar to several Lebanese coastal touristic cities, the bay of Jounieh appears to suffer from complex issues of privatization, beach access, environmental degradation and decay as well as loss of attractiveness. The following sections will elaborate an in-depth diagnosis of the site to better understand these issues at stake.

## B. The bay of Jounieh, location and administration

The bay of Jounieh is located in the middle of the coast of Mount Lebanon and is situated at a distance of 21 km from down-town Beirut (Fig. 17). The bay of Jounieh includes the neighborhoods of Sarba, Ghadir, Haret Sakher, Sahel Alma, falling under the administration of the Jounieh municipality; Maameltein under the administration of the Ghazir municipality; a small part of the Adma municipality protrudes on to the coast, and the neighborhoods of Kfaryassine as well as Wata el Slem within the municipality of Tabarja – Kfaryassine (Fig. 18). The bay stretches for about 7.5 km of length. Regarding the road network, the seaside road was the road that connected Jounieh to the south and the north up until the construction of the highway. It is worth to note that the highway bridge that connected Beirut through Jounieh to the North was built in 1965 (Fig. 19).



Figure 17: Location of Jounieh in relation to Beirut.

Source: (Google Earth, 2018 edited by Author).

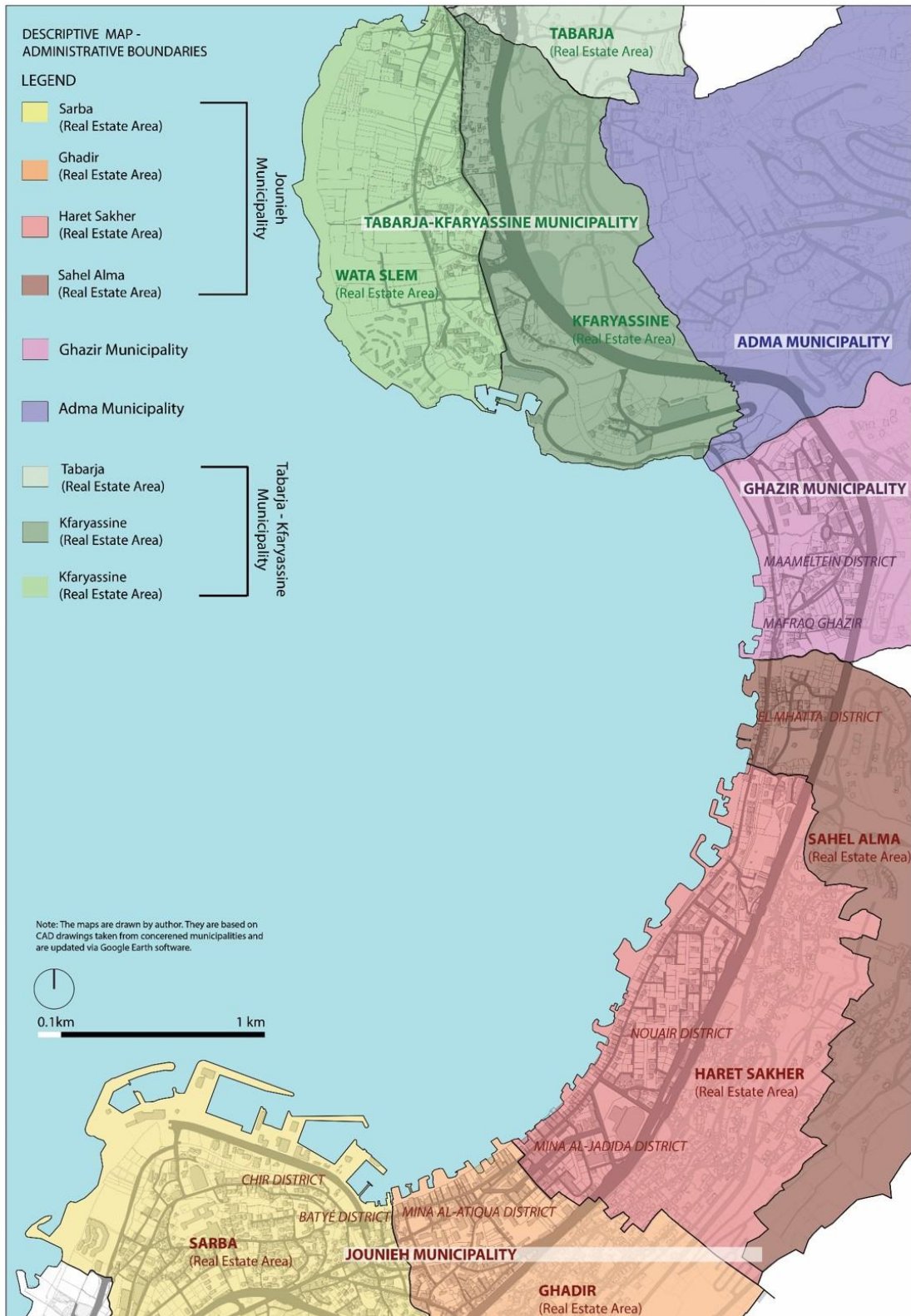


Figure 18: Administrative boundaries of the bay of Jounieh.

Source: Edited by author.



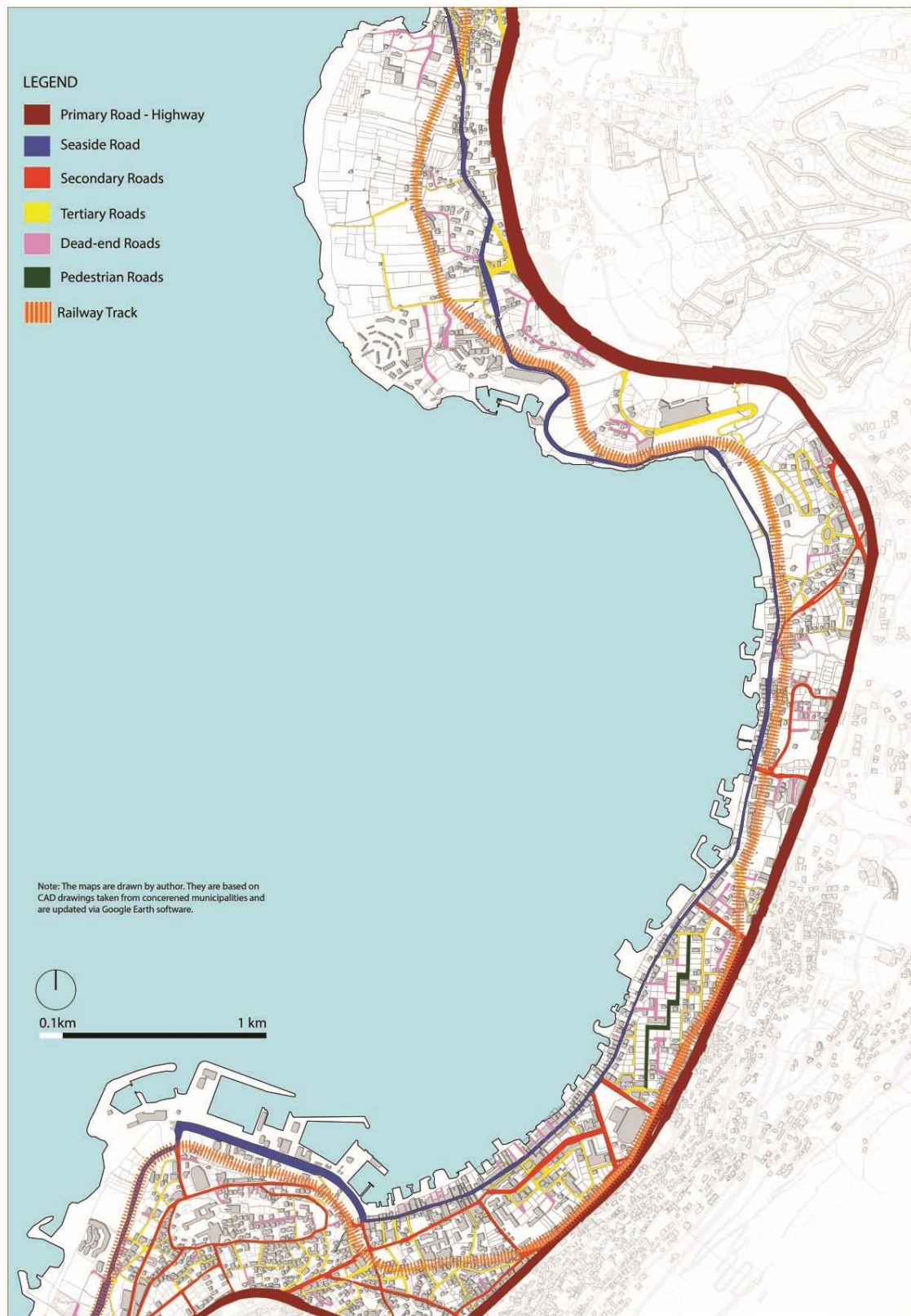


Figure 19: Road hierarchy of the studied area.

Source: Edited by author.



## C. Urban profile

### 1. Urban history brief

Since the Ottoman period, the role of Jounieh has evolved from being a quasi-rural area to becoming a secondary pole and administrative center for the caza of Keserwan. During this change, the coast of Jounieh witnessed several mutations that have altered its character from rural to an almost saturated waterfront.

It is worth noting that the modern city of Jounieh practically did not exist before the end of the 18<sup>th</sup> century. The Lebanese coastline was almost deserted due to insecurities caused by the Ottomans. This situation of insecurity changed during the Moutassarifiya era (1861- 1918). During that time, many strategic roads were constructed at that period (Jounieh to Bkerkeh, Jounieh to Ghazir, Jounieh to Beirut and Jounieh to Batroun) and in 1892 a railway connecting Jounieh with the Vilya of Beirut was inaugurated with three stations located in Jounieh (Sarba, Jounieh, Maameltein) (Chammas, Hanna, & Rahme, 2001) (Fig. 20).



Figure 20:Jounieh station in the early twentieth century.

Source: (Yaacoub, 2003, p.643).

Grain trade was very popular at that time and Jounieh had storage rooms and small shops with few boats transporting goods and crops (Bou Lahdo, 2000).

Around the port and the coastal road, traders constructed stone houses with red tiles roof. These houses held commercial and storage uses on the ground floor and residential uses on the upper floor. At the end of the 19<sup>th</sup> century, Jounieh counted five silk factories, and a series of small workshops for small sailing vessels (Bou Lahdo, 2000). The official port of the Moutasarrifiya of Mount Lebanon was opened in Jounieh in 1913 and was used for commercial vessels.

Jounieh at that time was still a small town close to a small fishing port, with little to no urbanization in its coastline. The coast of Jounieh had more of a commercial / industrial use with regards to silk factories and grain trade than a residential use. This era witnessed the construction of many infrastructural projects (railway, port and many strategic roads) predicting an urban growth of the city. However, the coming of the French Mandate period entailed a different story.

During the French Mandate (1920 - 1943) Jounieh witnessed a severe recession and famine due to many factors; the events of the First and Second World War, the stock market crash in 1929 and the obsolescence of the silk industry. After Greater Lebanon was declared in 1920, Beirut took the administrative role of Jounieh. The city lost its courts and its customs. Displacement occurred during this era from Jounieh to Beirut. The area only witnessed a development in its education and agriculture sectors on its coast (e.g., citrus fruits, sugarcane, and vegetables) (Bou Lahdo, 2000). Thus, this historic period did not bring any major changes with regards to the coastline of the bay of Jounieh.

The decline of Jounieh changed when Fouad Chehab, a native of Ghazir and a resident in Jounieh, came into power. Before his presidential election, as the commander-in-chief of the Lebanese army, Chehab recommended that Jounieh should become the headquarters of military barracks. This proposal was adopted by the government in 1955 and launched the building industry in this locality (Mansour, 1993) (Fig. 21).

The election of President Fouad Chehab (serving from 1958 till 1964) was a major factor to the development of Jounieh. The president launched the construction of several projects, such as the construction of the Casino du Liban (1959), and the construction of Jounieh Stadium in 1963. In 1965, Jounieh was connected to the North by a bridge. Hence, a highway linking Beirut to Tripoli and passing by Jounieh was established (Yaacoub, 2003) (Fig. 22,23,24, 25).

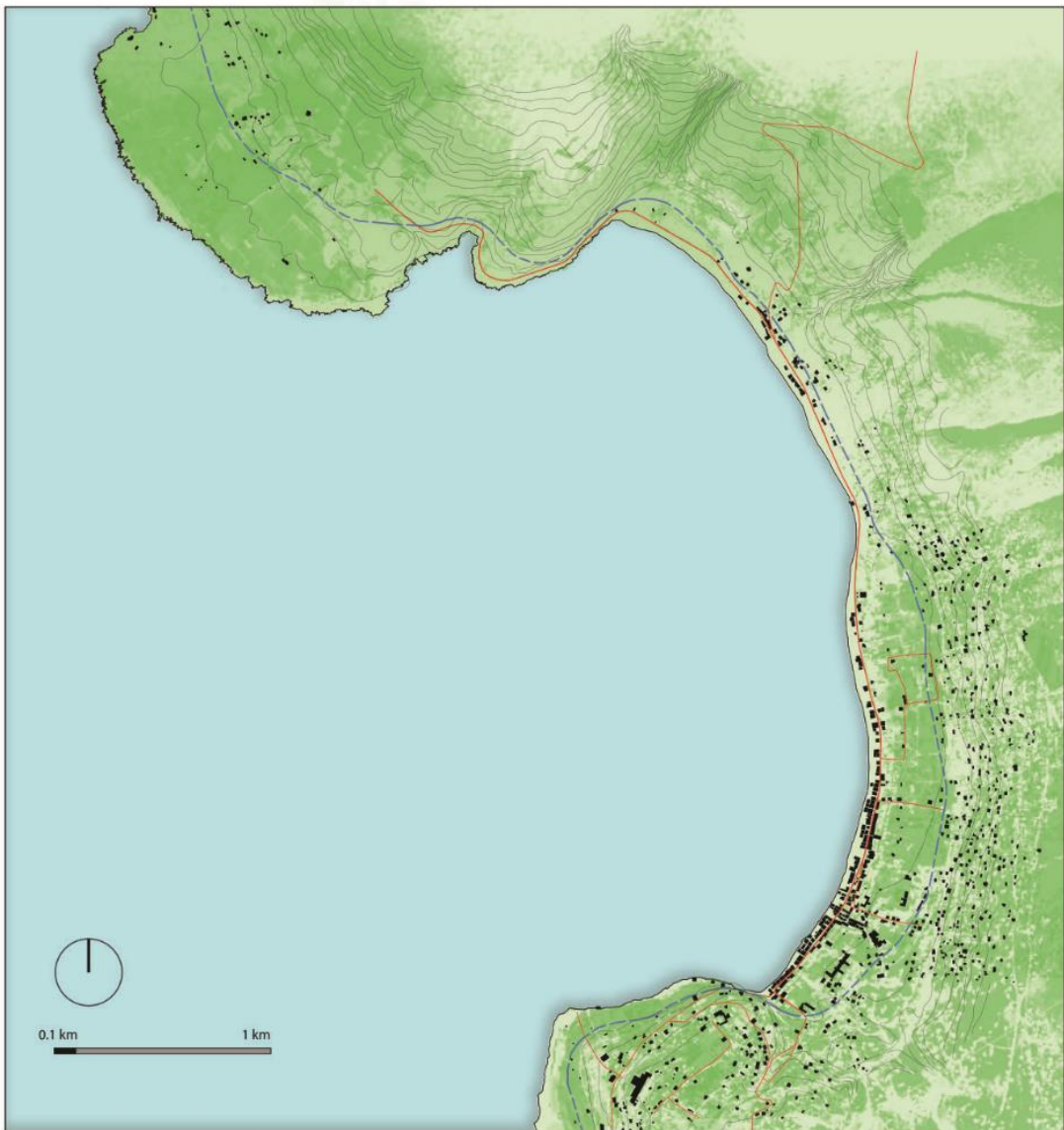


Figure 21: Aerial Photo Edited - 1956.

Source: Directorate of Geographic Affairs, edited by author.

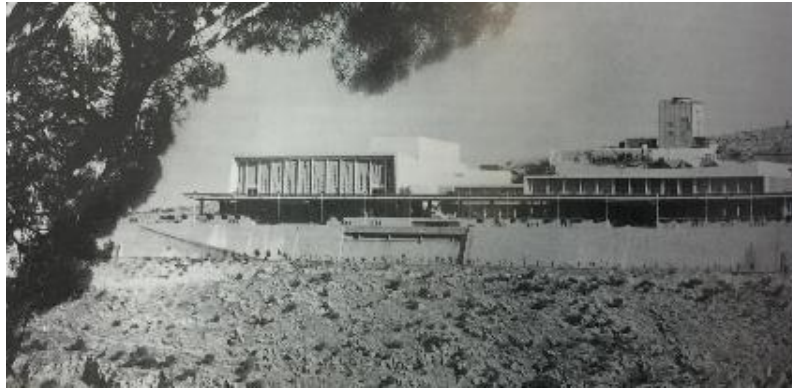


Figure 22: View of the Casino du Liban., built in 1959.

Source: (Yaacoub, 2003, p.724).



Figure 23: The road network in the 1960s.

Source: (Yaacoub, 2003, p.85)



Figure 24: Jounieh Stadium built in 1963.

Source: (Yaacoub, 2003, p.646)

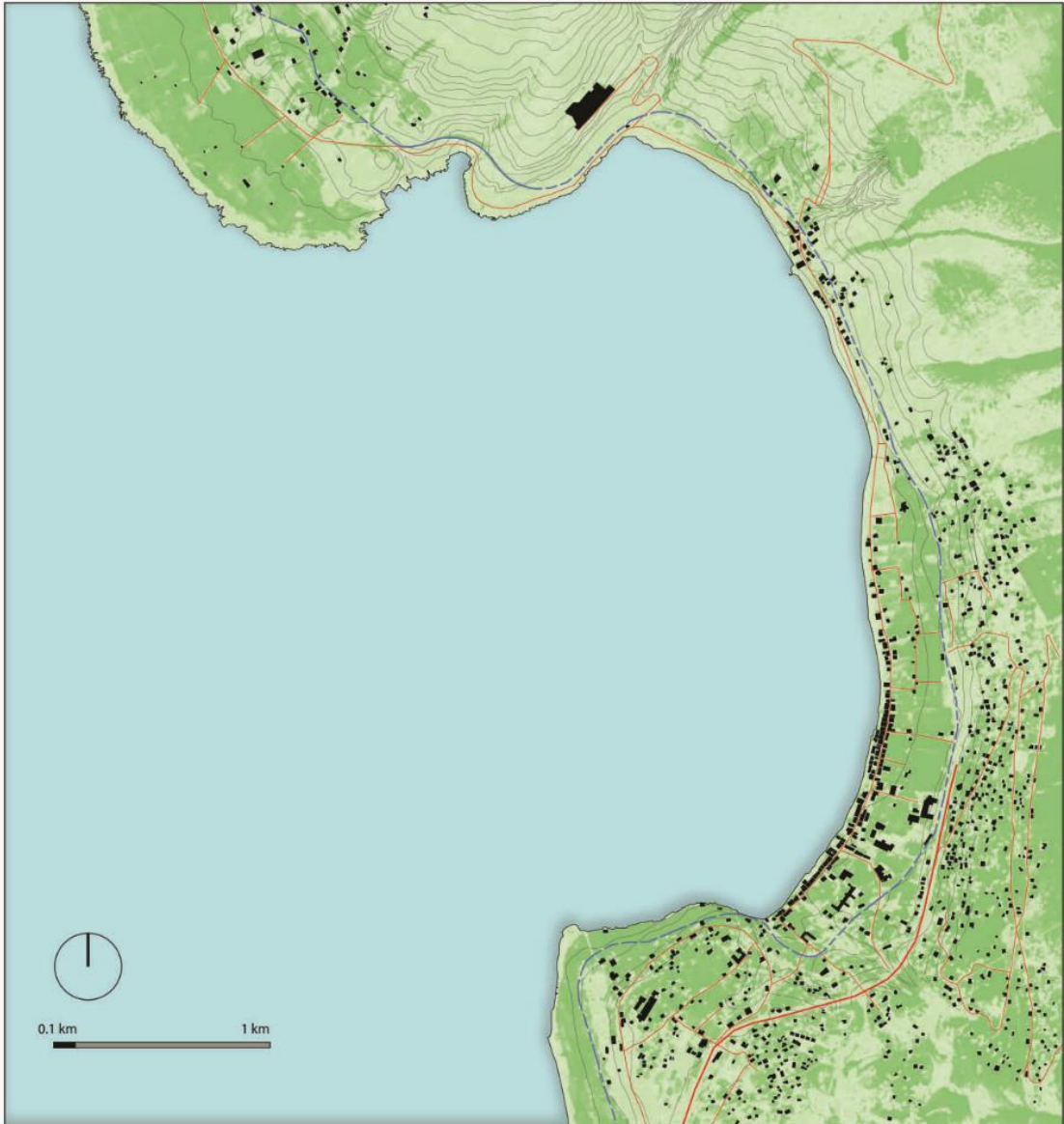


Figure 25: Aerial Photo Edited - 1962.

Source: Directorate of Geographic Affairs, edited by author.



After Chehab's presidency other tourism projects were inaugurated such as the cable car to the Harissa pilgrimage in 1966 (Fig. 26) and the Automobile and Touring Club of Lebanon project (A.T.C.L) project in 1969. The area of the A.T.C.L project revolves around 5 hectares and includes a military base along with a fishing port adjoined to a commercial touristic port (Yaacoub, 2003) (Fig. 27).

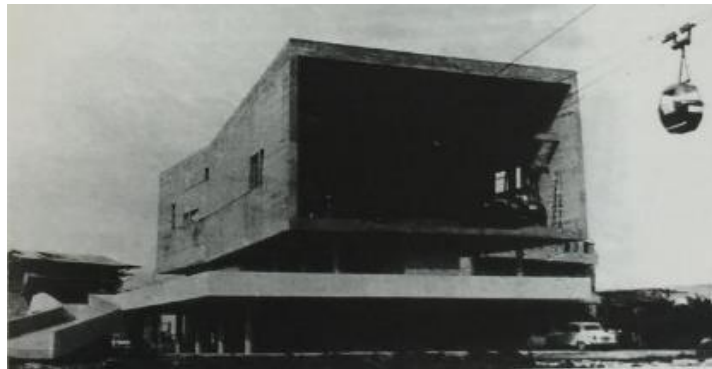


Figure 26: The cable car station built in 1966.

Source: (Yaacoub, 2003, p.85)



Figure 27: The A.T.C.L built in 1969.

Source: (Yaacoub, 2003, p.839)

As it shows, Jounieh at that time witnessed rapid urban development and planning. These listed projects above, transformed the coast of Jounieh into a touristic hub. The interventions changed the vocation and character of the city from quasi-rural to a lively touristic city, bustling with life. While there were no important encroachments on the public maritime domain, the establishment of the A.T.C.L project

with a very large embankment area was a leading example in the modification of the landform of the coastline (Fig. 28).

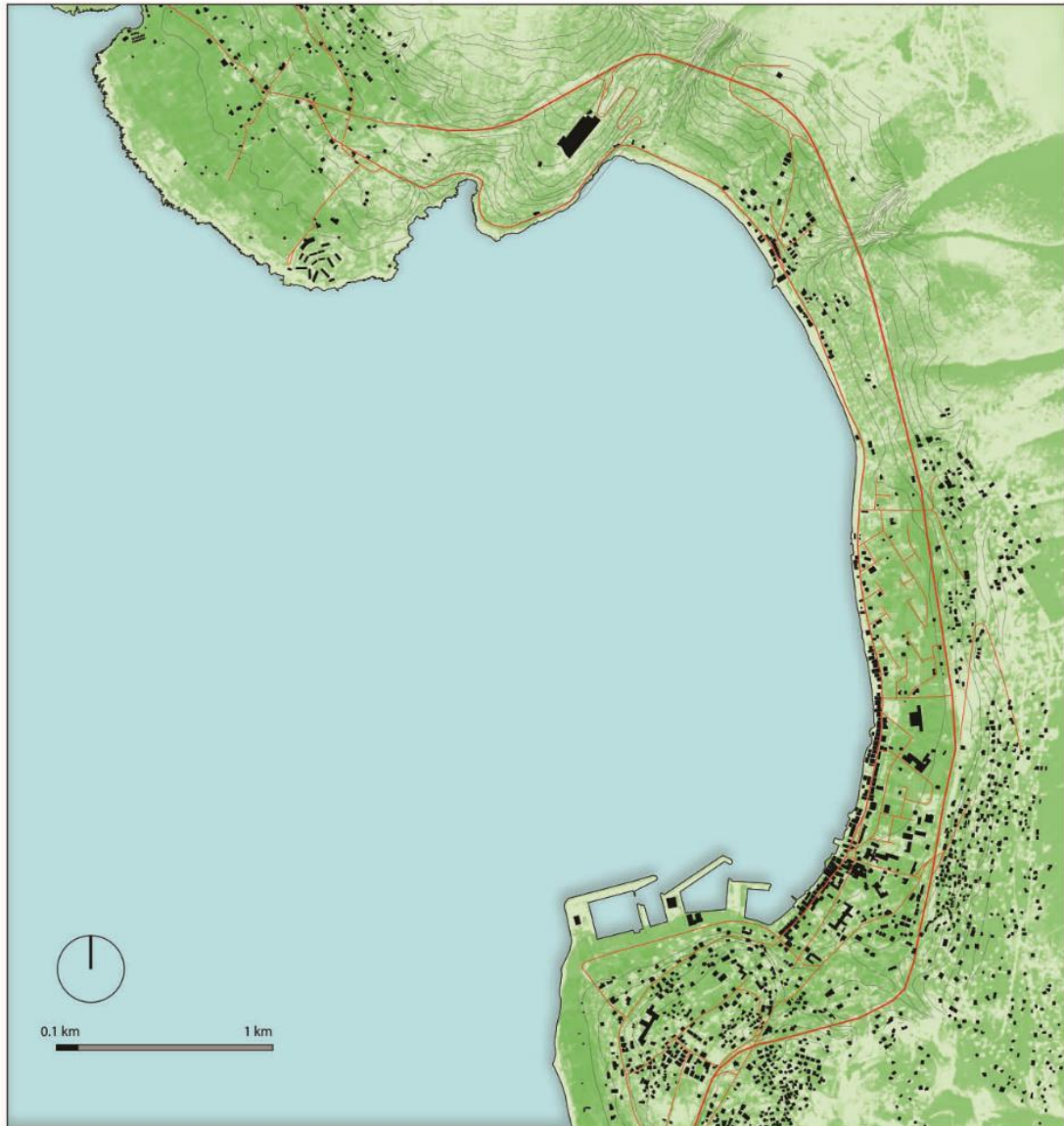


Figure 28: Aerial Photo Edited - 1971.

Source: Directorate of Geographic Affairs, edited by author.



During the Lebanese civil war (1975-1991), the area was spared relatively from bombing and destruction, consequently the city witnessed a massive arrival of the Lebanese Christian community escaping from conflict areas. This period witnessed an increase in building permits. Many displaced citizens were seeking refuge in hotels and beach resorts. Greater Jounieh spread to Zouk, Adma and Tabarja. This displacement caused economic prosperity with the opening of several stores, restaurants, night-clubs, and cinemas. The port of Jounieh replaced the port of Beirut. The role of the port shifted from being a touristic port into being a commercial one. Moreover, the port served as an immigration starting point for the Christian community. After the bombing of the large ships that used to transport Lebanese citizens from Jounieh to Cyprus, smaller boats were used in order to reach larger ships waiting offshore. Additionally, the waterfront of the bay had few strategic locations where weaponry and basic essential products were smuggled in.<sup>23</sup>

Jounieh was affected by few bombings between year 1983 and 1989 (Bou Lahdo, 2000). It was only at the end of the civil war in 1989-1990 that Jounieh witnessed heavy war tensions between the Lebanese army led by General Michel Aoun and the Lebanese Forces led by Samir Geagea. The war was called the Abolition War (حرب الإلغاء). The fight between the two sides revolved around who would take control of the city and major landmarks such as the port of Jounieh and the power station in Zouk Mosbeh.

Subsequently, the civil war implicated drastic mutations on the coastline of the bay. The massive arrival of displaced citizens was translated into an irreversible boom

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<sup>23</sup> This information was not found in written sources. This narrative is a part of the oral history of the community. It was taken from informal discussions with people from Tabarja and people who have immigrated during the war via the port of Jounieh.

in construction that threatened the identity of the historic core of the city and degraded the environmental assets of the coast and nearby mountains (Fig.29). The lack of state supervision prevailed during this time and more than fourteen seaside complexes were being modernized with additional extensions without any effective urban regulations (Table 14).

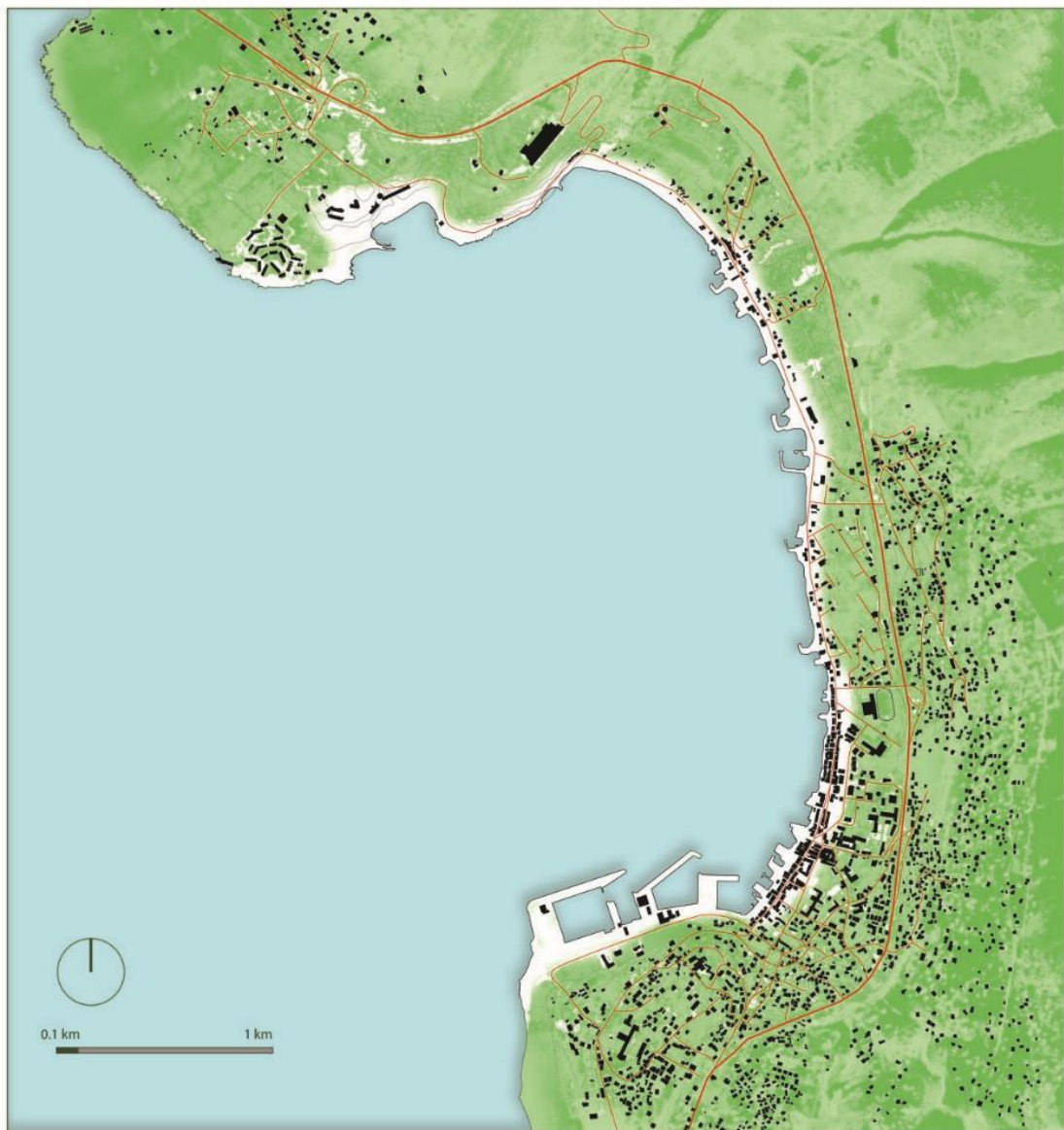


Figure 29: Aerial Photo Edited - 1983.

Source: Directorate of Geographic Affairs, edited by author.

Table 14: Timeline of beach resorts – date of establishment and expansion.

Name of the Beach	Region	Inauguration	Extension or Modernisation	Notes
St Jean	Jounieh - Chir	1952		Closed in 1959
Tamaris	Maameltein	1958		New chalets
St Antoine	Maameltein	1958	1977	Chalets + Hotel
Mouaarkache	Maameltein	1958		
Middle Beach	Maameltein	1958	1980	Chalets + Hotel
Abna' el Khalige	Jounieh - Chir	1959	1977	
Beyrouthy	Jounieh - Chir	1959	1986	Became Bel Azur
St Paul	Safra	1966	1984	Beach complex
Lagon	Jounieh - Ghadir	1963	1974 & 1986	
St Gilles	Maameltein	1964	1977	Beach + Chalets
The Beach	Maameltein	1965	1979	Chalets + Hotel
La Medina	Jounieh - Haret-Sakher	1966	1973	
Chez Sami	Maameltein	1968	1974	
A.T.C.L.	Ras el-Tair	1969		Public Sector
Horizon	Jounieh - Haret-Sakher	1970	1981	Chalets + Hotel
Siréna Playa	Jounieh - Ghadir	1973		
St Malo	Jounieh - Ghadir	1974		
St Jade	Maameltein	1974	1984	Chalets
Summer-Time	Maameltein	1974		Chalets
Canarias	Jounieh - Ghadir	1975	1977	
Plage el Khaimé	Jounieh - Haret-Sakher	1975		
Tabarja Beach	Tabarja	1965		
Montémar	Maameltein	1968		
Arcada Marina	Jounieh - Haret-Sakher	1974		

Source: Adapted from Merhi, 2003, p.33.

After the war, as Samir Kassir (2003) described it, Jounieh became “une cité dortoire”; a dormitory city. Beirut regained its economic and administrative role and many businesses and refugees left Jounieh. This resulted in the decline of the city’s economy. In terms of retail, the souks of Jounieh and Kaslik began to regress gradually as new malls were being constructed in other cities. A boom of pubs and restaurants in the souks of Jounieh took place in the late 2000s and early 2010s. However, this trend did not last for too long and is now limited to a few pubs still in operation. Restaurants located at the souks of Jounieh and at Batyé Boulevard are now closing down due to a national economic crisis. On the other hand, the education sector which serves the city and the nearby villages continues to prosper with 22 operating educational institutions (ICMA, 2008). With regards to tourism, it remains famous for its strong religious character (e.g. the cable car leading to Lady of Harissa) and conversely, as an unregulated sex work destination (e.g. super nightclubs of Maameltein).

To conclude, Jounieh is being transformed into a transit city with no clear and efficient strategies that protect its character. The city is facing competition especially now that many cities on the Lebanese coast have worked more on their city branding such as Byblos and Batroun. Moreover, the waterfront of the city is currently saturated by gated beach complexes, making the possibilities of new developments difficult and limited (Fig.30).

Upon closer inspection, it would appear that throughout Lebanon’s history, the economic growth of the city of Jounieh has always been linked to the crises that Beirut experienced such as the civil war. Respectively, the decline of the city of Jounieh was also relative to the prosperity of Beirut and reclaiming its position as a capital city as during the French mandate and after the end of the civil war.

Summing up the urban history of the bay of Jounieh highlights two important eras: The Chehab's era and the civil war during which the city witnessed a very rapid unregulated urban growth. On one hand, the Chehab period was marked by an elaborate work of planning and visioning while on the other hand, the war period was marked by a lack of visioning as well as a lack of regulations. Moreover, it is important to note that the establishment of the port along with the A.T.C.L. project in the late 1960s was a leading example that paved the way to the alteration of the landform of the coastline (Fig.31).

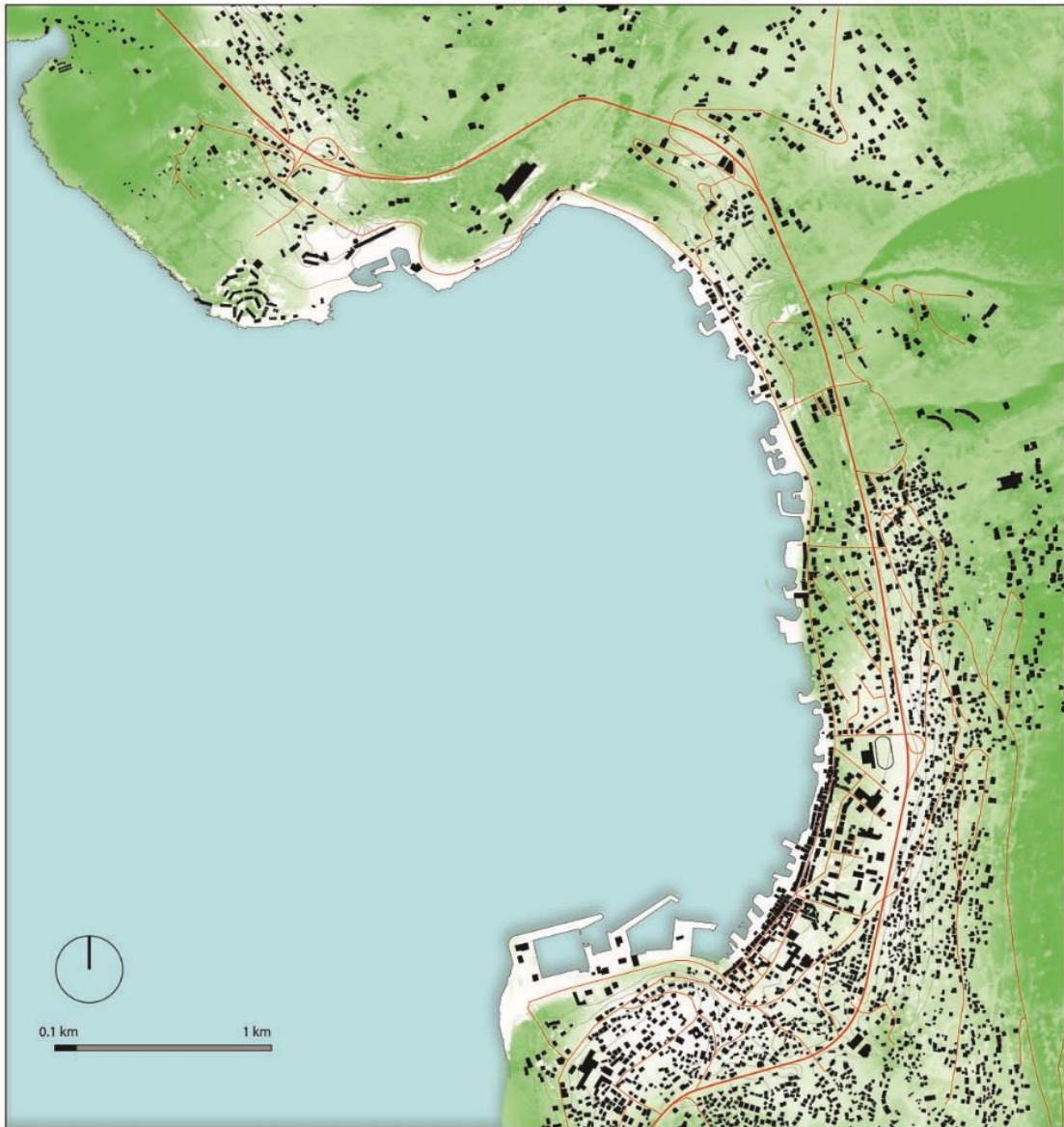


Figure 30: Aerial Photo Edited - 1994.

Source: Directorate of Geographic Affairs, edited by author.





Figure 31: Aerial photos edited 1956- 1962 – 1971 – 1983 – 1994 -2018.  
 Source: Directorate of Geographic Affairs, Google Earth, edited by author.

## 2. Planning and urban morphology

During the Mutasarrifiyya era, the types of buildings built were either Venetian houses occupied by the bourgeois families (e.g., stone houses with red roof tiles, commercial or storage uses on the ground floor, and residential uses on the upper floor) or rectangular rural houses (Fig. 32).



Figure 32: Land use in Mina al Jadida in 1896.  
 Source: Adapted from Chammas, Hanna, & Rahme, 2001, p.17, edited by Author.

A new cadastre and land tenure system was established during the French mandate. At that time, the parcel network presented small parcels at the coastline due to the process of parcelization between descendants. The divisions were made vertically so that all the new parcels had a sea view (Fig. 33).

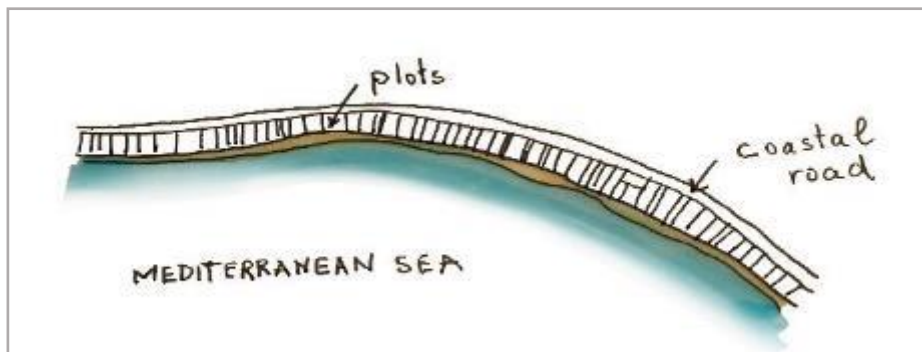


Figure 33: Shape of parcels at the coastline.

Source: Adapted from Chammas, Hanna, & Rahme, 2001, p.20, edited by Author.

This form of parceling would change during the 1960s with the advent of Michel Ecochard (Fig. 34), in order to modernize the land fabric which, he perceived as unfit for construction and to solve disagreements arising from co-ownership (Chammas, Hanna, & Rahme, 2001). Ecochard was a reputable French urbanist who developed a master plan for Jounieh upon the request of President Fouad Chehab.



Figure 34: Shape of parcels at the coastline.

Source: Adapted from Chammas, Hanna, & Rahme, 2001, p.21, edited by Author.



The master plan divided the coastline into three zones; a rural zone in Sarba<sup>24</sup>, a commercial zone for the souk of Jounieh with a high exploitation ratio<sup>25</sup> and a beach zone in part of Haret Sakher and Sahel Alma (Fig. 35 and table 15).

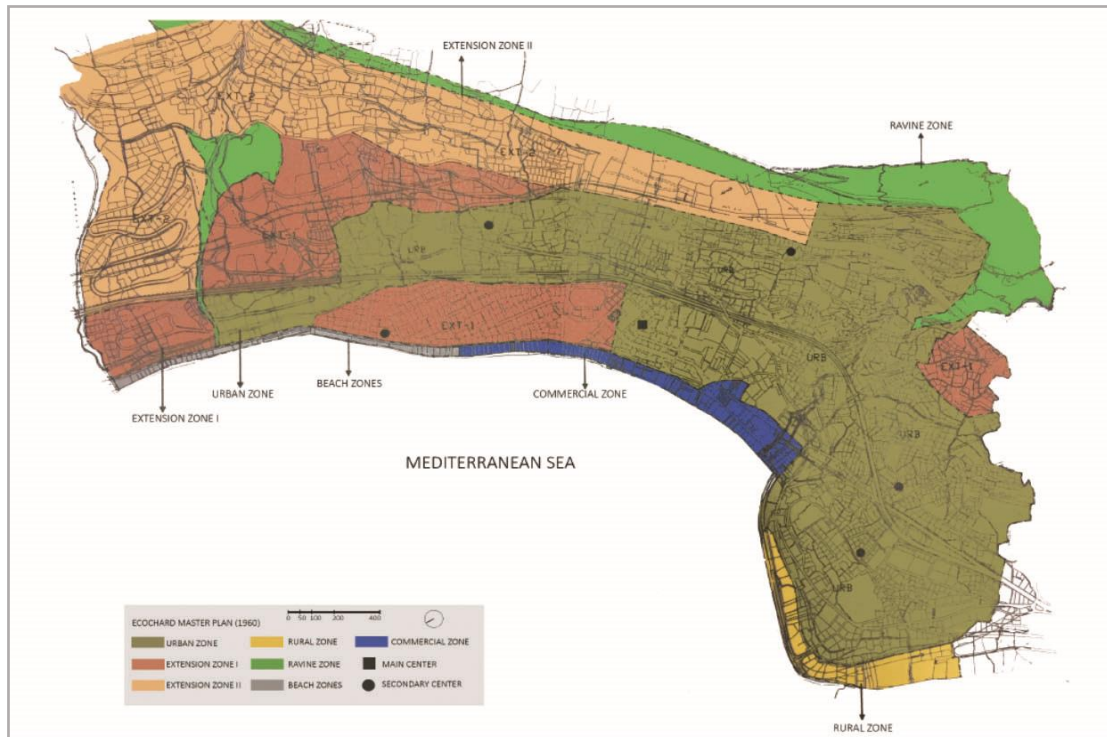


Figure 35: Master Plan of Jounieh by Ecochard 1960.

Source: Adapted from Chammas, Hanna, & Rahme, 2001.

<sup>24</sup> The rural zone had a lot coverage of 30% and a floor to area ratio of 0,7.

<sup>25</sup> The commercial zone had a lot coverage of 80% and a floor to area ratio of 3 which is relatively high. Ecochard did not impose protective measures for the historic fabric.

Table 15: Zoning table of Jounieh 1960.

Use	Minimal area for parcel		Setbacks		Exploitation ratios		Notes
	Subdivided (SQM)	Existant SQM)	Alignment	Sides setbacks (M)	Maximum lot covergae (%)	Maximum general exploitation ratio (%)	
Urban zone	500	200	according to the classification of the road with a minimum of 3m in all the zones except the one where the setback is 3.5 m for the ground floor	3	50	2	For residential use, the use of red tiles is obligatory with a minimum percentage of 20% of the roof area
Extension zone I	600	400		4	50	1.5	
Extension zone II	1000	500		4	40	1.5	
Commercial zone	300	200		4	80	3	For commercial use, bars restaurants, hotels and non-harmful crafts
Secondary Commercial centers	500	250		4	50	2	
Rural zone	1000	500		x	30	0.7	Destined for agricultural use except for plot 700 & 701
Quazi-rural zone	1000	500		4	40	1.5	Destined for residential use in relation to the agricultural lands
Ravine zone	2000	600		x	20	0.4	Woodlands
Protection zone	1500	500		x	20	0.5	concerns the zone beyond Casino du Liban
Casino zone	1000	600		4	30	1	Bars restaurants and hotels
Beach zone I	3000	3000		4	10	0.15	Beaches, Sand removal and backfilling are prohibited
Beach zone II	3000	3000		4	15	0.5	Bars and Hotels are as well authorized
Beach zone III	2000	2000		4	30	0.4	residential and touristic buildings are allowed
Reserved	currently one part in the city center follows the regulations of the urban zone while the other part follows those of the extension zone I						

Source: Adapted from Chammas, Hanna, & Rahme, 2001.

The beach zone was divided into three subcategories and had low lot coverage percentages and low floor to area ratios <sup>26</sup>. The first subcategory concerned the natural beaches where sand removal and backfilling were forbidden. The second subcategory allowed the construction of hotels, bars and cafes. The third subcategory allowed the construction of touristic and residential buildings with a maximum height of 10 m. The master plan of Ecohard did not take into consideration the integration of the new fabric with the historical old core. Consequently, the 1960s and 1970s were marked by a

<sup>26</sup> The beach zone had 3 subcategories with a lot coverage ranging from 10% to 30% and a floor to area ratio ranging from 0.15 to 0.5. It is worth mentioning that these subcategories were not found in any archival map.

shift in the volumetric envelope of new constructions where the buildings' height tripled from 3 floors to 9 floors.

It is also worth noting that the mid-1960s involved several operations of land parceling in Jounieh (especially in Ghadir and Haret Sakher) where the intention was to develop a new local center at the expense of agricultural lands (Verdeil, 2009). After involving Ecochard, President Fouad Chehab charged the urbanist and architect Jaques Liger-Belair in 1965 to revise the masterplan with the objective of regulating excessive urbanization and to give the city a touristic vocation. The study proposed the re-appropriation of the seaside by the government and the creation of a pedestrian zone along with small beaches, terraces, cafes and hostels. The plan aimed to initiate maritime touristic activities along the bay. The municipality council rejected the project which was focused on a heritage preservation approach. They stated however, that their desire was aligned with a much more modern approach (Yaacoub, 2003).

In 1973, another master plan was approved<sup>27</sup>. The master plan kept the same divisions of the coastline. The lot coverage and floor to area ratios of these coastline divisions did not change. Only minimal changes occurred regarding the delimitations of these zones (Fig. 36 and table16). It was only until 1995 that protection measures for the historic fabric took action. Ninety-six historical buildings, mainly located nearby the seafront of Jounieh, were designated for preservation (Fig. 37). Then in 2002, Jaques Liger-Belair who was the leading architect of the Atelier des Architectes Associés (AAA) team presented another proposal for the bay of Jounieh.

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<sup>27</sup> This master plan did not involve a decree.

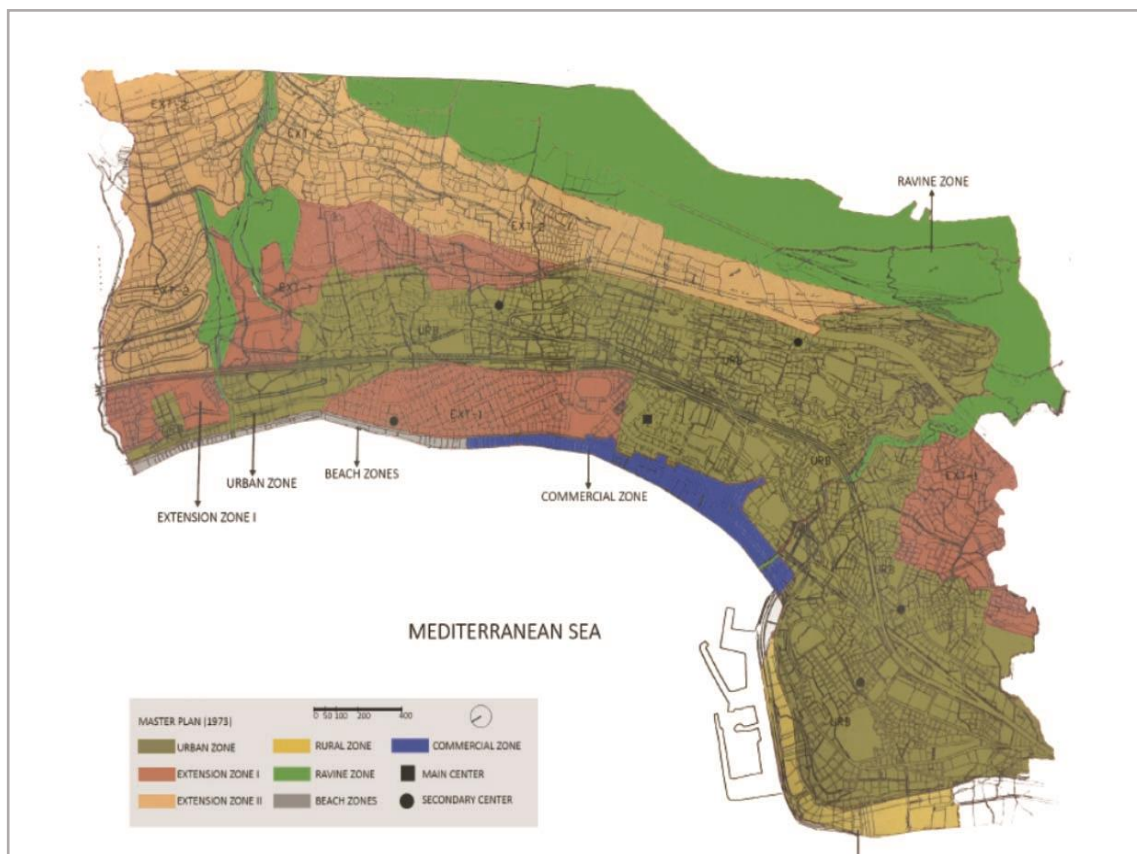


Figure 36: Master Plan of Jounieh 1973.  
 Source: Adapted from Chammas, Hanna, & Rahme, 2001.

Table 16: Zoning table of Jounieh 1973

Use	Constructible plots			Subdivisions			Setbacks			Maximum lot coverage (%)	Maximum general exploitation ratio (%)	Number of Floors	Maximum height without counting the red tile roof
	Minimum area after planning (SQM)	Minimum façade after planning (M)	Minimum depth after planning (M)	Minimum area (SQM)	Minimum façade (M)	Minimum Depth (M)	Setback from road or planning borders	Sides setbacks (M)	Setback from back (M)				
Commercial zone	200	10	10	300	12	12	Follows the general regulation of the construction law with a minimum setback of 3m from the road limits	x	x	80	3	x	26
Urban zone	200	10	10	500	15	15		3	3	50	2	x	26
Extension zone I	400	15	15	600	16	16		3	3	50	1.5	x	26
Extension zone II	500	15	15	1000	20	20		3	3	40	1.5	x	26
Rural zone	500	15	15	1000	20	20		4	4	30	0.7	x	13.5
Casino	1000	25	25	1000	20	20		4	4	30	1	x	17
Ravin Zone	600	16	16	2000	30	30		6	6	20	0.4	x	13.5
Beach zone	Following the decree N° 17702 (1964)						Following the decree N° 17702 (1964)						

Source: Adapted from Chammas, Hanna, & Rahme, 2001.

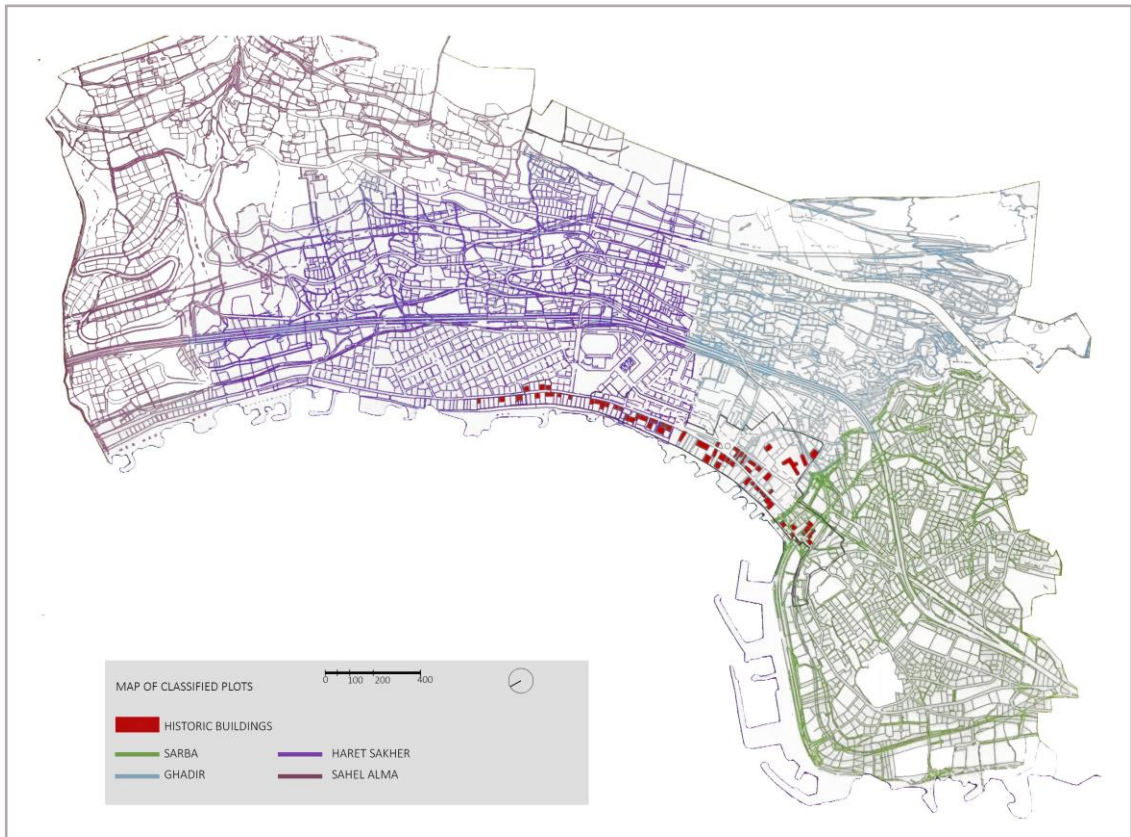


Figure 37: Map of the historical classified buildings.

Source: Adapted from Chammas, Hanna, & Rahme, 2001.

However, this study received criticism concerning the use of land reclamation and the disregard of the needs of the fisherman and the project was not implemented.

(Fig.38,39)

The latest zoning decree 6526 was published in 2011. It categorized the seafront of Jounieh as zone A and A1 and E1 for the port. While Zone A follows the decree 18093 (2006), any request for construction, subdivision or parceling, destruction or restoration, reconstruction or investment in zone A1 should be studied by the Directorate of General Urban Planning (DGUP) Regarding the seafront of Kfaryassine-Tabarja, it was classified as A1<sup>28</sup>, E and E1. Zones E and E1 are touristic zones with

<sup>28</sup> Same as zone A1 in Jounieh.



respectively 20 and 30% lot coverage. In Maameltein – Ghazir, the plots located between the coastal road and the sea are also classified as A1 (Fig.40, Table 17)

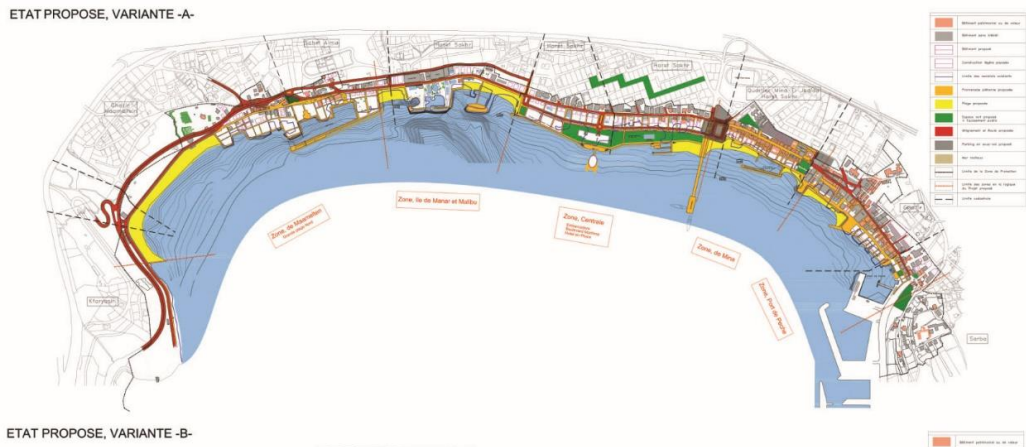


Figure 38: Rehabilitation of the Shoreline of the bay of Jounieh by AAA, option A.  
Source: <http://www.aaa-arch.com/en/master-plan-valorization-bay>.



Figure 39: Rehabilitation of the Shoreline of the bay of Jounieh by AAA, option B.  
Source: <http://www.aaa-arch.com/en/master-plan-valorization-bay>.

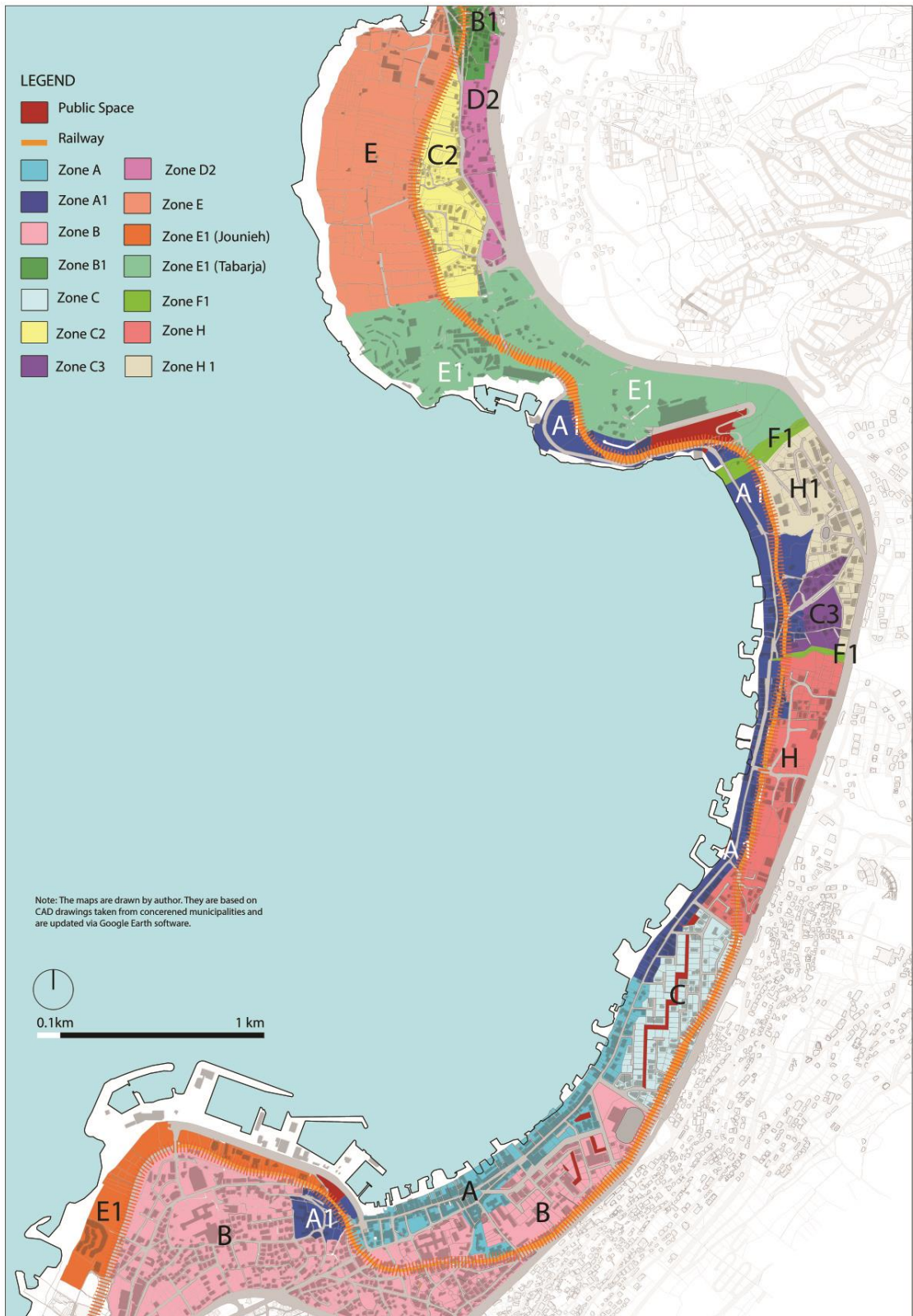


Figure 40: Current zoning of the studied area.

Source: Edited by author.

Table 17: Current zoning of the studied area.

Name of Zone	Use	Constructible plots			Subdivisions			Setbacks			Maximum lot coverage (%)	Maximum general exploitation ratio (%)	Number of Floors	Maximum height without counting the red tile roof
		Minimum area after planning (SQM)	Minimum façade after planning (M)	Minimum depth after planning (M)	Minimum area (SQM)	Minimum façade (M)	Minimum Depth (M)	Setback from road or planning borders	Sides setbacks (M)	Setback from back (M)				
Jounieh	A	SUBJECT TO DECREE N° 18093/ 2006						According to the decree of setback from the axis with a minimum of three meters from the boundaries of the road or from the boundaries of the planned road	SUBJECT TO DECREE N° 18093/ 2006					
	A1	SUBJECT TO APPROVAL IN ADVANCE FROM DGUP							SUBJECT TO APPROVAL IN ADVANCE FROM DGUP					
	B	400	12	12	600	16	16		3	4	50	2	6	23.5
	C	NOT SUBJECT TO SUBDIVISION							4	4	50	1.5	6	22
	H	600	18	18	1200	25	25		4	4	40	2	5	18
	E1	1000	25	25	1500	35	35		3.5	3.5	30	1	4	14
Maameltein Ghazir	A1	SUBJECT TO APPROVAL IN ADVANCE FROM DGUP						According to the decree of setback from the axis with a minimum of three meters from the boundaries of the road or from the boundaries of the planned road	SUBJECT TO APPROVAL IN ADVANCE FROM DGUP					
	C3	750	20	20	1200	25	25		4	4	40	1.2	4	14.5
	H1	800	20	20	1500	30	30		4	4	40	1.2	4	14.5
	F1	5000	40	40	10 000	50	50		10	10	2	0.02	1	3.5
Tabarja - Kfaryassine	A1	SUBJECT TO APPROVAL IN ADVANCE FROM DGUP						According to the decree of setback from the axis with a minimum of three meters from the boundaries of the road or from the boundaries of the planned road	SUBJECT TO APPROVAL IN ADVANCE FROM DGUP					
	E	1300	25	25	2000	35	35		6	6	20	0.4	2	7.5
	E1	1000	25	25	2000	35	35		3.5	3.5	30	1	4	14
	B1	300	12	12	600	16	16		3	3	50	1.5	3	13.5
	C2	400	15	15	800	20	20		3	3	30	0.9	3	13.5
	D2	600	16	16	1200	25	25		3	3	20	0.4	2	10

Source: Municipality of Jounieh, Ghazir and Tabarja Kfaryassine

The approval of zone A1 by the DGUP does not indicate if this measure is more restrictive or is subject to unclear law deregulations. This remains essential to investigate given that the report made by the Ministry of Public Works and Transport and by the Directorate General of Land and Maritime Transport in 2012 lists only five projects that legally occupy the public maritime domain, in accordance to issued decrees in the respective area (from Sarba to Wata Slem).

This report also mentions that fifty-three violations of the decree N 4810 (1966) were committed regarding seaside projects built on plots adjacent to the public maritime domain.<sup>29</sup> Most of these violations concern beach resorts and seaside restaurants that

<sup>29</sup> Moreover, two other seaside projects were given permits but have violated the law and exceeded the allowed area. Four squatting violations were mentioned regarding plots that are adjacent to the public maritime domain. Another violation in Kfaryassine was mentioned as occurring in 2011-2012 in a separated category.



have evolved during the civil war from ephemeral installation into multi-functional clusters including large pools, sports fields, gardens, large parking areas and marinas (Fig. 41). It is worth noting that these establishments are not squatters. Most of the parcels are owned by their respective businesses.

Many of these violations are attributed to powerful families with strong political affiliation such as Al Khazen, Kanaan, Azar, Beiruty and Azzi.

According to municipality members of Jounieh many of these violations started during the civil war as permits for sea protection. However, they expanded incrementally throughout the years by adding cumulatively around 3 meters of concrete and rocks for sea protection each time.

The analysis of the current violations of the Public Maritime Domain shows that the bay can be divided into four categories or types (Fig. 42, 43). The first category refers to areas that include several violations. It is found in the south of the bay and in the middle section of the whole bay. The second category refers to coastal areas that are utilized by the military and is located in Sarba. The third category refers to areas that occupy the Public Maritime Domain in accordance with issued decrees that allow this occupancy. This category is found in the upper part of the bay, in Maameltein Ghazir reaching Kfaryassine-Tabarja. The last and fourth type or category involves the agricultural fields of Wata Slem and do not present any violations so far.

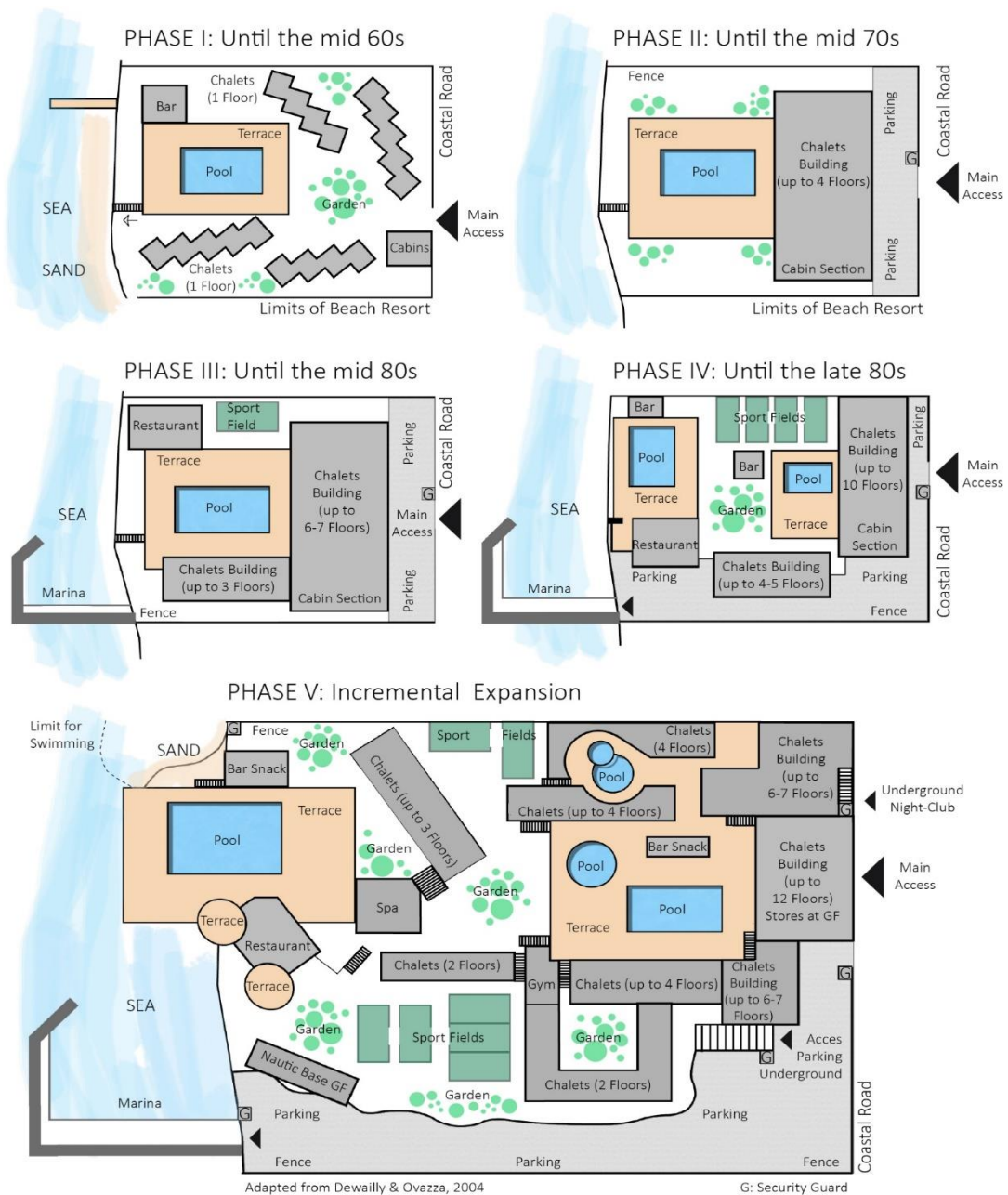


Figure 41: Evolution of seaside resorts in Lebanon.

Source: Translated and adapted from Dewailly & Ovazza, 2004, p.6.

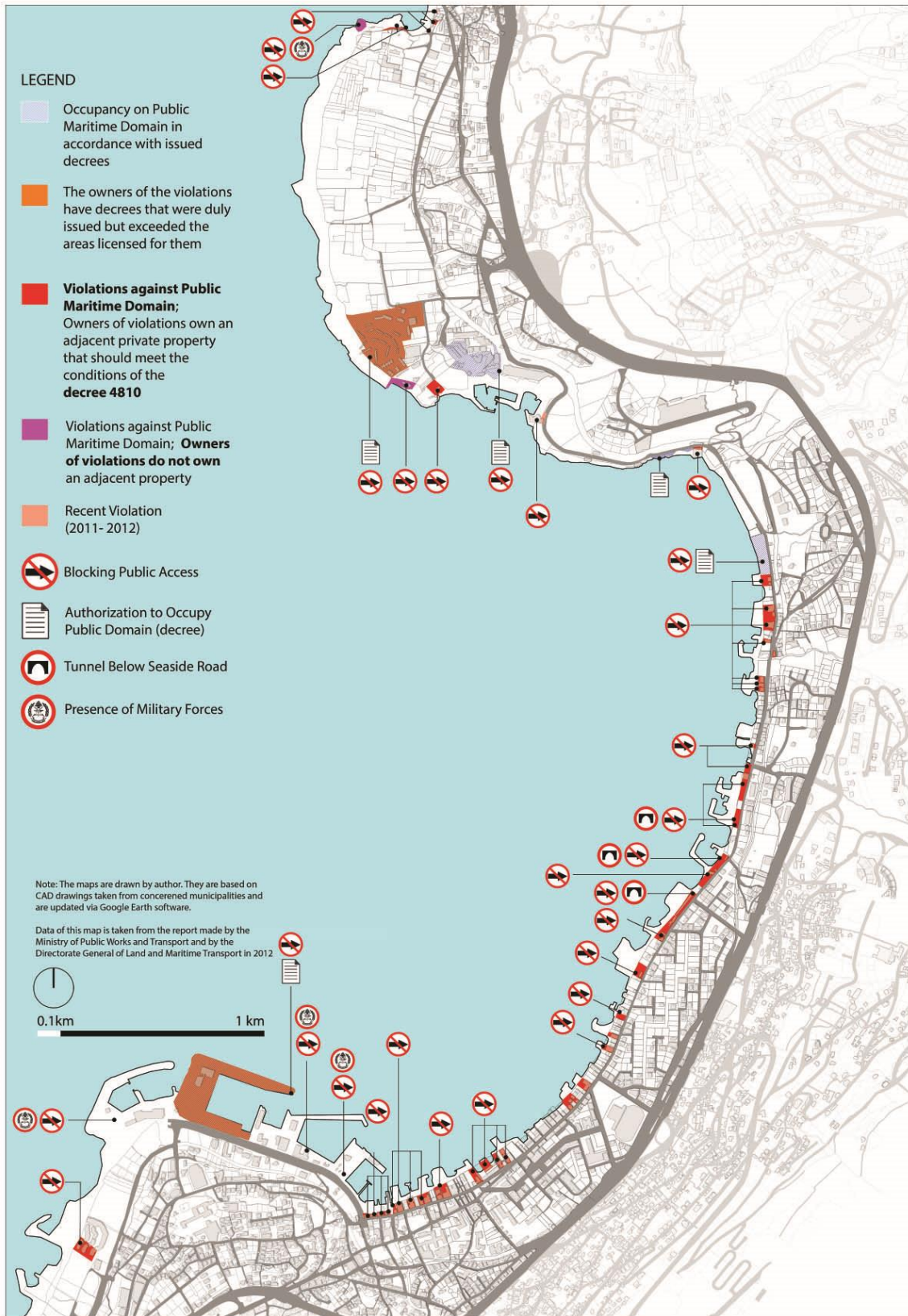


Figure 42: Violation of the Maritime Public Domain in the studied area.

Source: Edited by author.



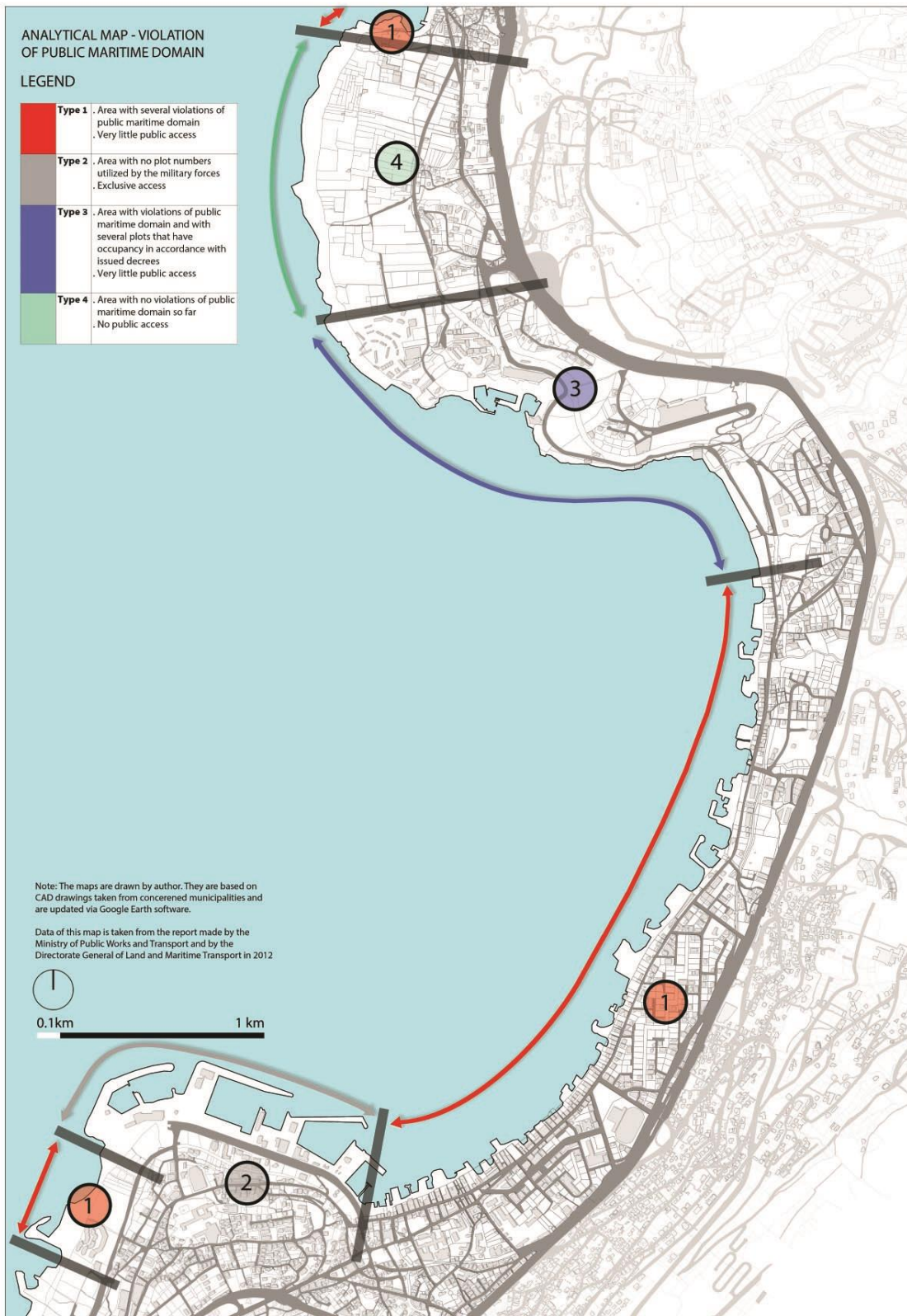


Figure 43: Analysis of the violations of the Maritime Public Domain in studied area.

Source: Edited by author.

In terms of holistic visions and planning strategies that target the national scale, two main studies refer to Jounieh.

The first study was elaborated by the “Institut de recherche et de formation en vue de développement” (IRFED) during the 1960s. This study adopted a decentralization approach and labeled Jounieh as a secondary pole; as the urban center of the Keserwan Caza (Verdeil, 2009).

The second study was developed in 2005 and was called the national physical master plan of the Lebanese territory (NPMPLT). The map of NPMPLT which was titled *Organization of the Territory* defined Jounieh as an intermediate city or *ville relais* in French. The blue and green network map of this study depicted the natural state shoreline that should be kept preserved and it stretches from Maameltein to Wata el Slem (Fig. 44).



Figure 44: National physical master plan of the Lebanese territory (2005).  
Source : (<http://www.cdr.gov.lb/study/SDATL/Carre/orgafinal.pdf>)

In summary, even if the Chehab era was the height of planning of the bay, this period did not take into consideration the historical asset of the bay and did not provide protective measures for the remaining agricultural activities. This is mostly due to the predominant school of thought which was based on modernization and human control over nature. Preventive actions to protect the historical asset did not operate until the mid-1990s. Moreover, the low FAR and lot coverage ratios of the assigned beach zones in the master plan of the early 1970s were not respected during the civil war. This has created a saturated waterfront with several encroachments on the public maritime domain.

As noted below, throughout history, Jounieh used to compete with the capital Beirut. Now the real question that arises and would help Jounieh prosper is how can the bay of Jounieh stand out and compete with other neighboring historic cities on its cultural and historic assets.

### ***3. Proposed projects for the bay of Jounieh***

According to the municipality of Jounieh<sup>30</sup>, a sea restitution project limited to the souks of Jounieh was awaiting approval by the Council of Ministers for the second time. However, after the change of the council of Ministers in 2019 no progress was made with regards to the project. The company SEATEC<sup>31</sup> established a design proposal of the site. The project will consider sea violations as de-facto without removing them and will use acropodes as a method for beach restitution.

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<sup>30</sup> Informal discussions with members from the municipality of Jounieh and the DGUP were conducted.

<sup>31</sup> SEATEC SARL is a private company located in Byblos that operates as a technical consultancy company for coastal and harbor engineering. The company was established in 2000 and is owned by Mr. Patrick Sleiman.

SEATEC is also the consultant of the touristic port that was initiated in 2008. The port has reached phase two and is pending completion. Forty million dollars were spent already on the project. The government estimates that it will cost 100 to 120 million dollars to finish (Fig. 45)<sup>32</sup>.



Figure 45: The master plan of the new port of Jounieh

Source : [https://almashareq.com/fr/articles/cnmi\\_am/features/2017/09/27/feature-03](https://almashareq.com/fr/articles/cnmi_am/features/2017/09/27/feature-03)

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<sup>32</sup> [https://almashareq.com/fr/articles/cnmi\\_am/features/2017/09/27/feature-03](https://almashareq.com/fr/articles/cnmi_am/features/2017/09/27/feature-03)  
<https://www.lorientlejour.com/article/978636/le-projet-de-nouveau-port-a-jounieh-relance-.html>

According to the head of the DGUP of Keserwan, another decree (1773) will be implemented that orders the removal of gates and fences from the public pathways in the old souks of Jounieh (Fig. 46).

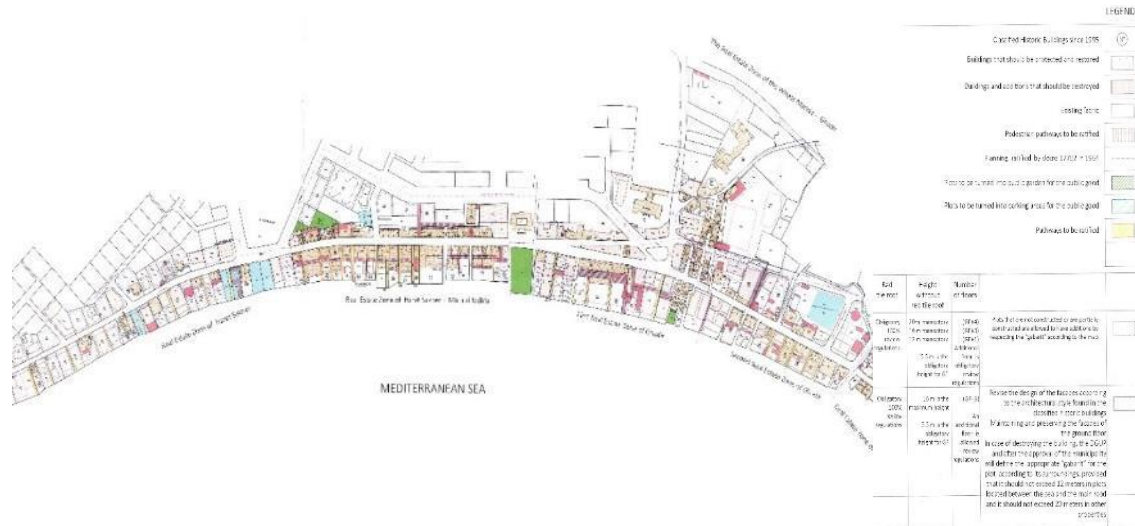


Figure 46: Decree 1773 which orders the removal of gates and fences from the public pathways in the old souks of Jounieh, Translated.

Source: (DGUP)

Another project that was approved by the municipality and by the trader's committee of Jounieh is the pedestrianization of a part of the souks of Jounieh (the section of Mina al Jadida from Fouad Chehab stadium till the roundabout next to St. Famille Francaise school). The project is awaiting for funding and is estimated to cost 12 million dollars. The project includes a bike lane, a food court, a water fountain, and an exhibition lane on the streets. The piazza in front of the Serail which used to be occupied by the municipal police, will be opened to the public and to the sea. The project will integrate a historical museum which is an old house on a plot next to the sea, which was recently bought by the municipality.



Regarding free beach access, the municipality of Jounieh has been recently involved. The head of the municipality has sent a request to the Director General of Land and Maritime Transport to have a place for a public beach next to the fishing port (Fig. 47).

The municipality of Kfaryassine -Tabarja on the other hand does not have any on-going projects for the bay. However, a sewage treatment plant for Tabarja is under study.

It is worth noting that all the projects that are launched by the municipality of Jounieh are only limited to the souks of Jounieh and the port. The waterfront of Sahel Alma and part of Haret Sakher are excluded from these interventions. Moreover, the seafront of Kfaryassine – Tabarja does not have any on-going intervention. Thus, we can notice that these parts of the bay are somewhat disregarded. The neglect of this part of the bay adds to the visual disconnection between the neighborhoods of the bay. Other than neglect throughout time, zoning policies have accentuated the physical disconnection between these neighborhoods.



Figure 47: Municipality members working on setting a public beach next to the fishing port of Jounieh.




Source: (Facebook page of the municipality of Jounieh).




#### 4. Beach access

Mapping beach access (Fig. 48) is quintessentially relevant to this thesis given that it relates to social justice and is by nature a universal right. This layer grants insight into the well-being of the community and about the level of the public's enjoyment of the beach. Most importantly, it brings to the fore the issue of physical connectivity between the city and its sea.

Assessing the type of access along the studied area, the bay shows six types/ categories (Fig. 49). These types are listed in the table below (Table18):

Table 18: Categorizing the bay of Jounieh in terms of beach access

Type	Description	Location	Photos (Source: Author - 2019)
Type 1	<ul style="list-style-type: none"> <li>. Dominance of private entrances with security guards and mechanical gates</li> <li>. No free open access points, exclusive access</li> </ul>	Found in south Sarba Jounieh and in Kfaryassine Tabarja	
Type 2	<ul style="list-style-type: none"> <li>. Dominance of private entrances with security guards, mechanical gates and security cameras.</li> <li>. Presence of barbed wire</li> <li>. No free open access points, exclusive access</li> <li>. Area occupied by the military</li> </ul>	Found in coastal Sarba	
Type 3	<ul style="list-style-type: none"> <li>. Dominance of private entrances for restaurants, cafes, hotels and beach resorts (No mechanical gates)</li> <li>. No free open access points</li> </ul>	Found in Ghadir (Mina Al Atiqua district), in Haret Sakher reaching Maameltein Ghazir and in Al Minah in Tabarja	

Type 4	<ul style="list-style-type: none"> <li>. Area with few open access points in direct pathways leading to the sea.</li> <li>. Some of these access points are hindered by cars parking in these pathways</li> </ul>	Found in the souks of Jounieh (Ghadir and Haret Sakher, Jounieh)	
Type 5	<ul style="list-style-type: none"> <li>. Area with few open access points coupled with hazards</li> </ul>	Found in Maameltein, Ghazir and in Kfaryassine, Tabarja	
Type 6	<ul style="list-style-type: none"> <li>. Areas with high vegetation and large agricultural fields between seaside road and the sea. Most of these agricultural fields are fenced and do not offer direct access to the sea</li> </ul>	Found in the coast of Wata Slem, Tabarja	

Source: Author

We can conclude that no free and open access points are found in the upper part of the bay except in Kfaryassine, Tabarja where they are coupled with hazards. The open access points are mainly found in the lower part of bay, specifically in the historic souks of Jounieh due to the existence of direct pathways between the plots leading to the sea. With regards to security, military guards are found along the fishing port, A.T.C.L. club and military clubs. Security staff are also present at the entrances of large-scale beach resorts, hotels and restaurants.

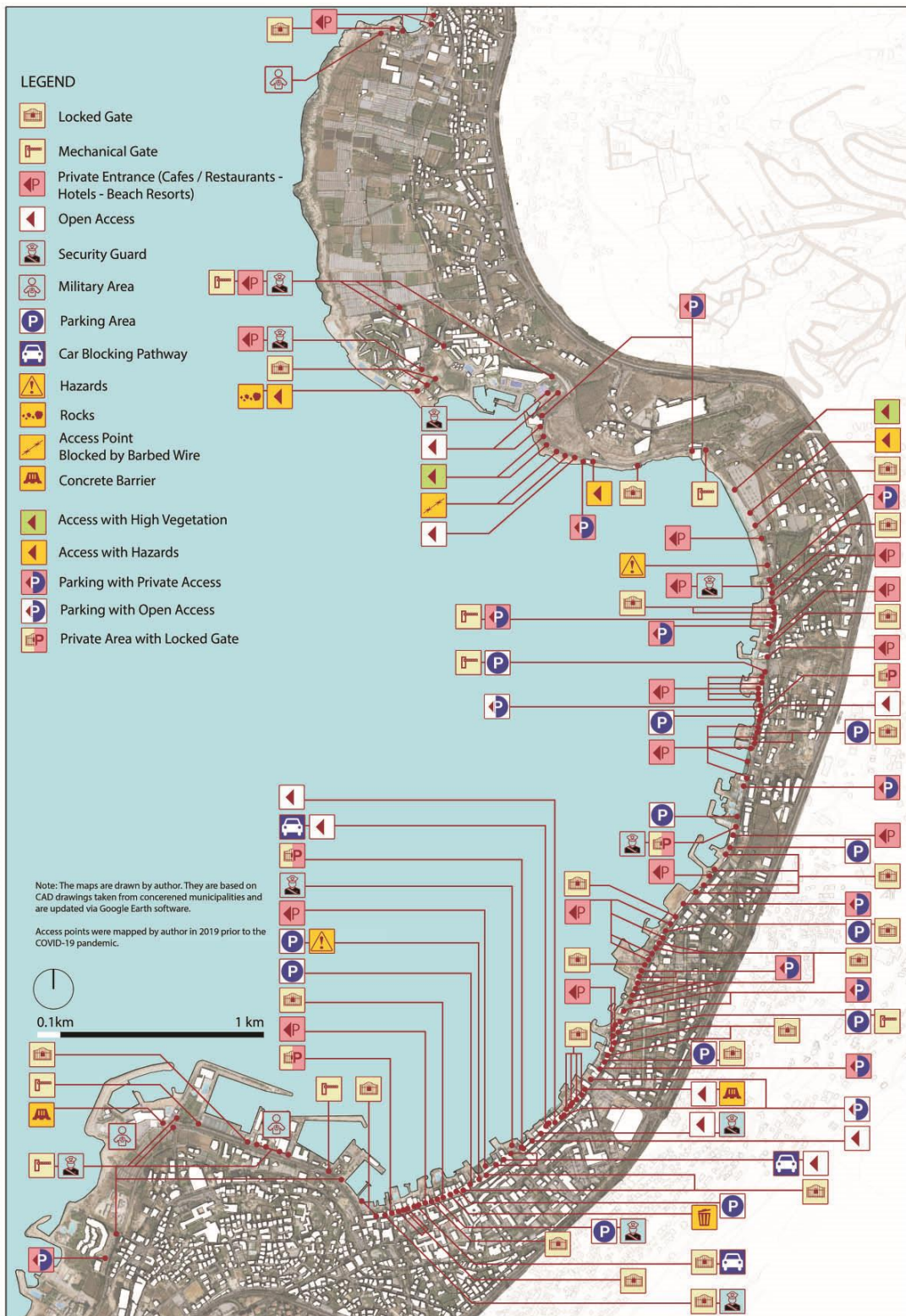


Figure 48: Mapping access points along seaside road.

Source: Edited by author.



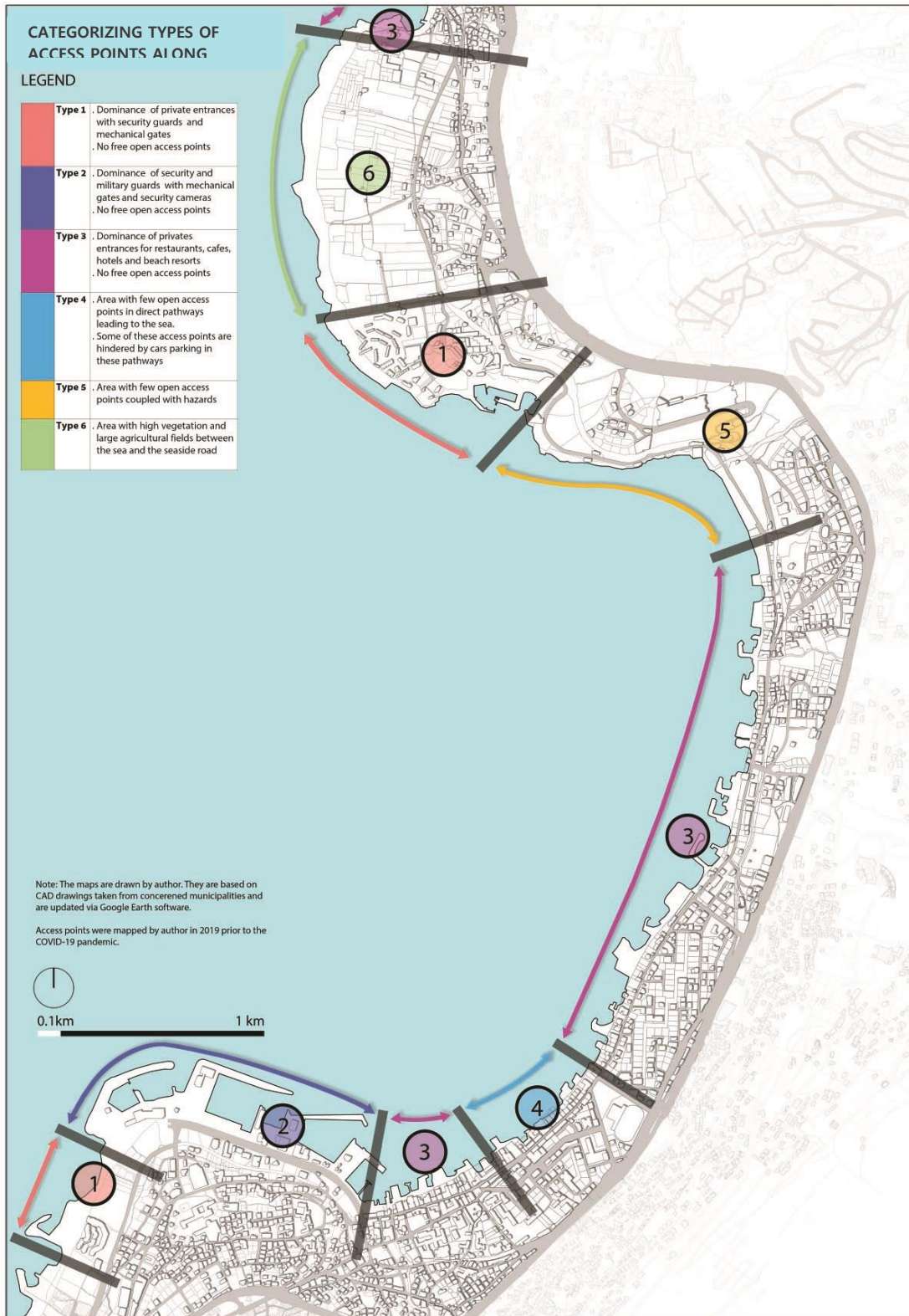





Figure 49: Categorizing types of access along seaside road.





Source: Edited by author.

## 5. Visual connectivity with the sea

Mapping visual connectivity remains an important layer in relevance to this study. It showcases the visual relationship and the level of communication between the coastal city and the sea. It is important to note that visual obstructions were mapped from seaside road (Fig 50). By assessing the bay in terms of visual connectivity and obstruction, the studied area can be categorized into seven types (Fig. 51). These types are listed in the table below (Table 19):

Table 19: Categorizing the bay of Jounieh in terms of visual connectivity

Type	Description	Location	Photos (Source: Author - 2019)
Type 1	. Visual obstruction due to the presence of high-rise buildings that are mostly chalets buildings of beach resorts	Found in south Sarba, Jounieh and in Kfaryassine, Tabarja	
Type 2	. Unhindered view to the sea due to the presence of low balustrades along seaside road . Areas mostly recognized as sites for sightseeing	Found in south Sarba where the new port will be implemented, in Kfaryassine below Casino du Liban and in Al Minah, Tabarja	
Type 3	. High visual disconnection due to the presence of high fences combined with high trees	Found in A.T.C.L. area, in Sarba Jounieh	

Type 4	<ul style="list-style-type: none"> <li>. Visual permeability due to the urban morphology of the area and the presence of visual corridors hindered in few places by the presence of gates</li> </ul>	Found in the souks of Jounieh (Ghadir and Haret Sakher, Jounieh)	
Type 5	<ul style="list-style-type: none"> <li>. Hybrid area mostly visually disconnected from the sea</li> <li>. It presents very few buildings that are below seaside road and few places with low balustrades</li> </ul>	Area that stretches from Haret Sakher reaching Maameltein, Ghazir	
Type 6	<ul style="list-style-type: none"> <li>. Dominance of see through fences allowing for some visual permeability</li> </ul>	Found in the coast of Maameltein, Ghazir	
Type 7	<ul style="list-style-type: none"> <li>. Mild visual permeability, seaside road not close to the sea</li> <li>. Speaks of agricultural fields that are mostly closed with see-through fences</li> </ul>	Found in the coast of Wata Slem, Tabarja	

Source: Author

As seen in these figures and table 19, the bay presents several parts that are visually disconnected with the sea. Overall, the middle southern part of the bay which consists of the souks of Jounieh is more visually connected than the edges of the bay. Unhindered views of the bay can only be found in some parts of Kfaryassine. Severe visual disconnections with the sea are located in Sarba in A.T.C.L area, as well as in many parts of Haret Sakher and Sahel Alma due to the use of high fences that separate beach resorts from seaside road. High-rise chalets buildings found in southern Sarba and in Kfaryassine also play a pejorative role in creating a disconnect between the coastal city and the sea.



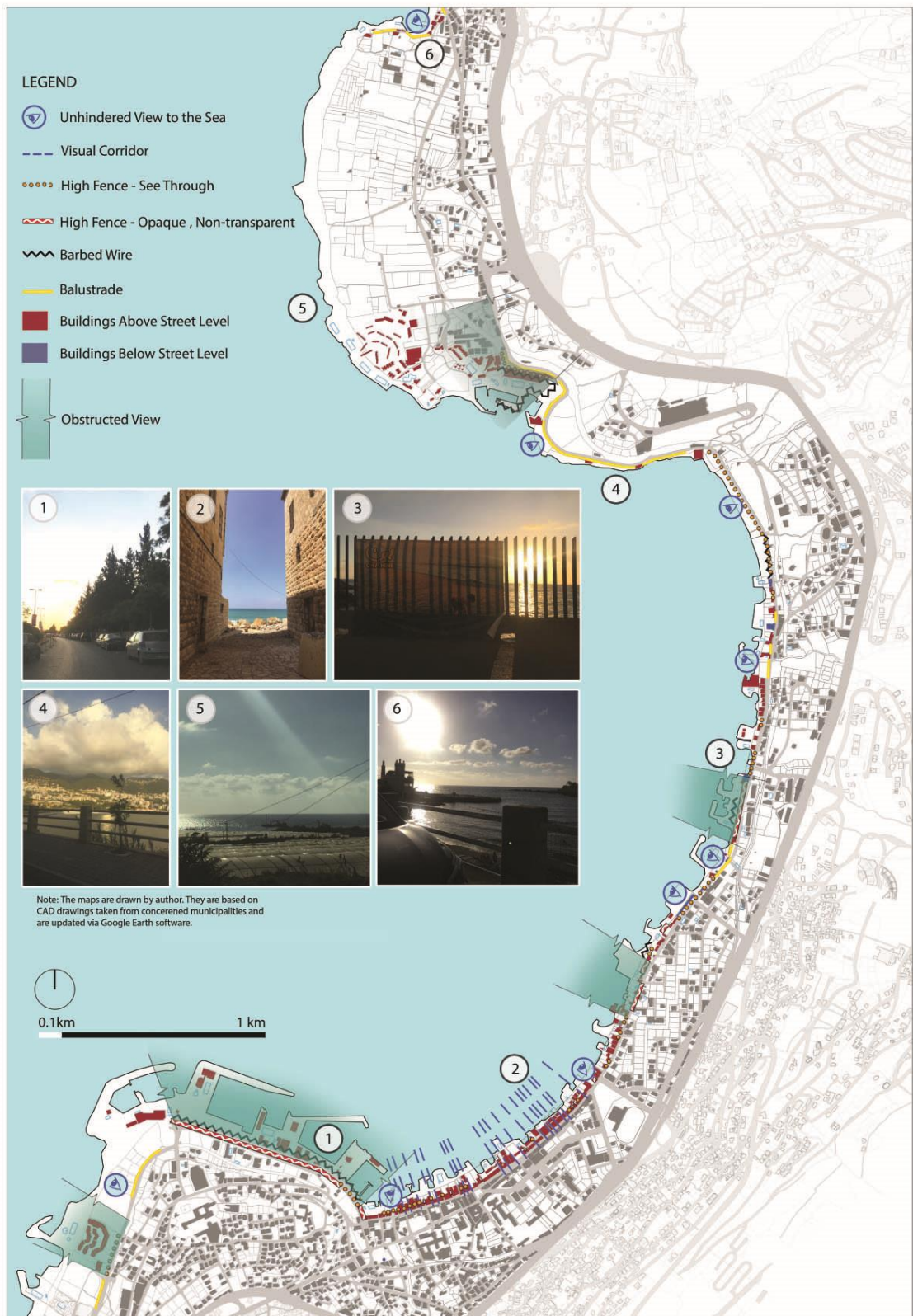


Figure 50: Mapping visual connectivity and visual obstruction along seaside road.

Source: Edited by author.



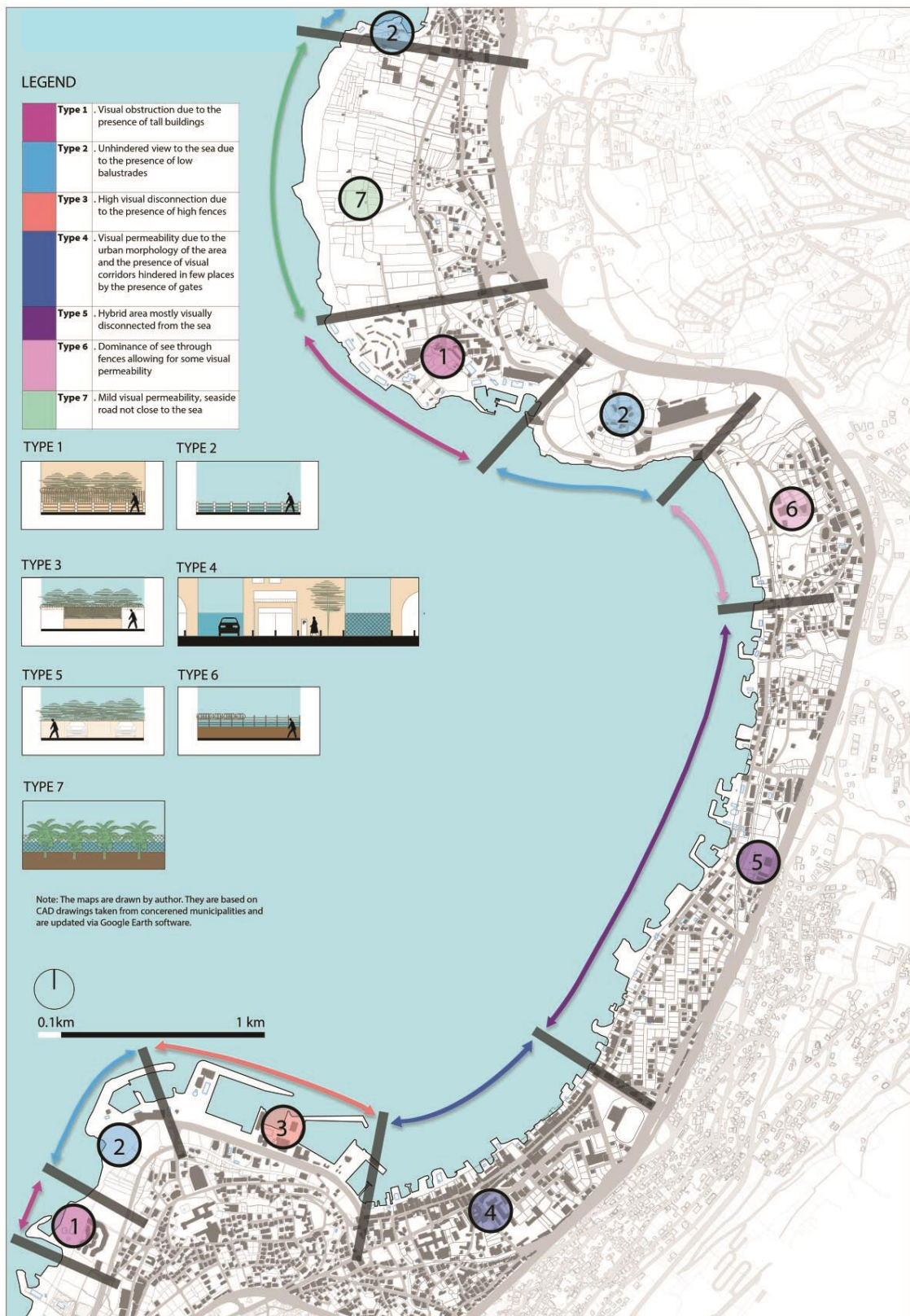





Figure 51: Categorizing the bay in terms of visual connectivity and visual obstruction





Source: Edited by author.

## 6. Density and building height

The Density and building height of the surrounding coastal fabric remain the two layers that affect the visual connectivity to the sea. For instance, the presence of high-rise towers along the waterfront affects the character of the coastal city very differently than the presence of seaside low-rise buildings. For these reasons, it is important to map these layers (Fig. 52) to better understand the nature and character of the coastal city and its relationship with its sea. Upon closer inspection, it appears that the coastline of the bay can be categorized into seven types/ categories (Fig. 53). These types are listed in the table below (Table 20):

Table 20: Categorizing the bay of Jounieh in terms of building height

Type	Description	Location	Photos (Source: Author - 2019)
Type 1	<ul style="list-style-type: none"> <li>. Dominance of mid to high-rise buildings</li> <li>. High density</li> </ul>	Found Sarba, Jounieh	
Type 2	<ul style="list-style-type: none"> <li>. Dominance of low-rise buildings</li> <li>. Low density</li> </ul>	Found on the west side of seaside road in coastal Sarba and in Haret Sakher reaching Maameltein, Ghazir	
Type 3	<ul style="list-style-type: none"> <li>. Dominance of low-rise buildings</li> <li>. High density</li> </ul>	Found mainly in the souks of Jounieh (Mina al Atiqua in Ghadir and Mina al Jadida in Haret Sakher )	

Type 4	<ul style="list-style-type: none"> <li>. Mid to low-rise buildings</li> <li>. Medium density</li> </ul>	Found in inner Ghadir, Haret Sakher and inner Kfaryassine	
Type 5	<ul style="list-style-type: none"> <li>. Dominance of mid to high-rise buildings</li> <li>. Medium density</li> </ul>	Found in the middle part of the bay, from inner Haret Sakher reaching Maameltein, Ghazir	
Type 6	<ul style="list-style-type: none"> <li>. Duality between high rise buildings and low-rise buildings (Presence of low rise villas with high rise hotel buildings, as well as the presence of different chalets typologies such as the presence of chalets bungalows and cabins next to high rise chalets apartment buildings)</li> <li>. Low density</li> </ul>	Found in Kfaryassine, Tabarja	
Type 7	<ul style="list-style-type: none"> <li>. Very few buildings (low rise)</li> <li>. Very low density</li> </ul>	Found in the agricultural fields of Wata Slem, Tabarja	

Source: Author

Looking at the building height of the fabric of the studied area it is noticeable that both sides of seaside road are mostly dominated by a low density and low-rise fabric. However, few exceptions of individual projects are found in Ghadir, Haret Sakher and Kfaryassine involving large scale, high-rise chalets buildings.



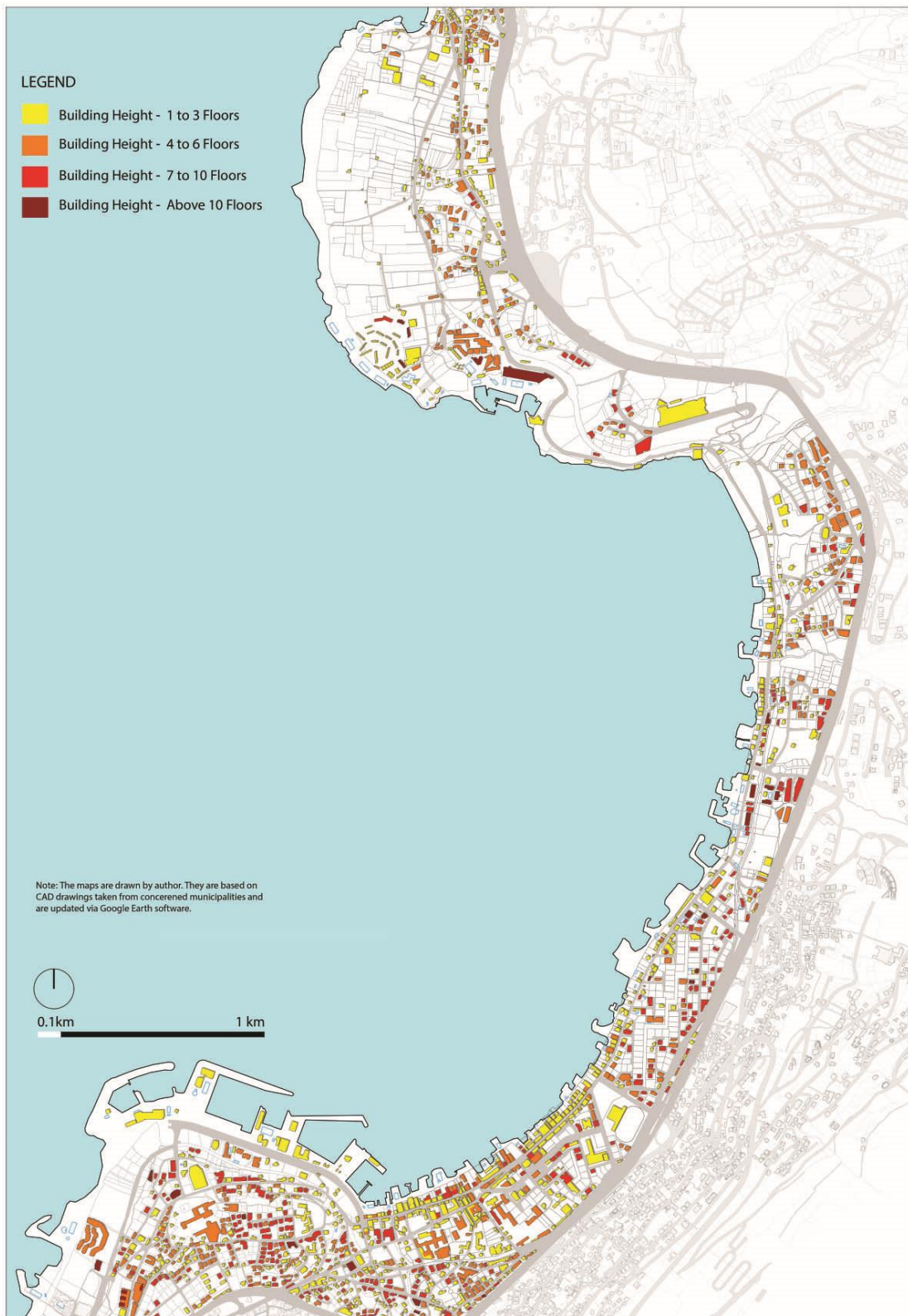


Figure 52: Mapping building height along the coast of the bay.

Source: Edited by author.

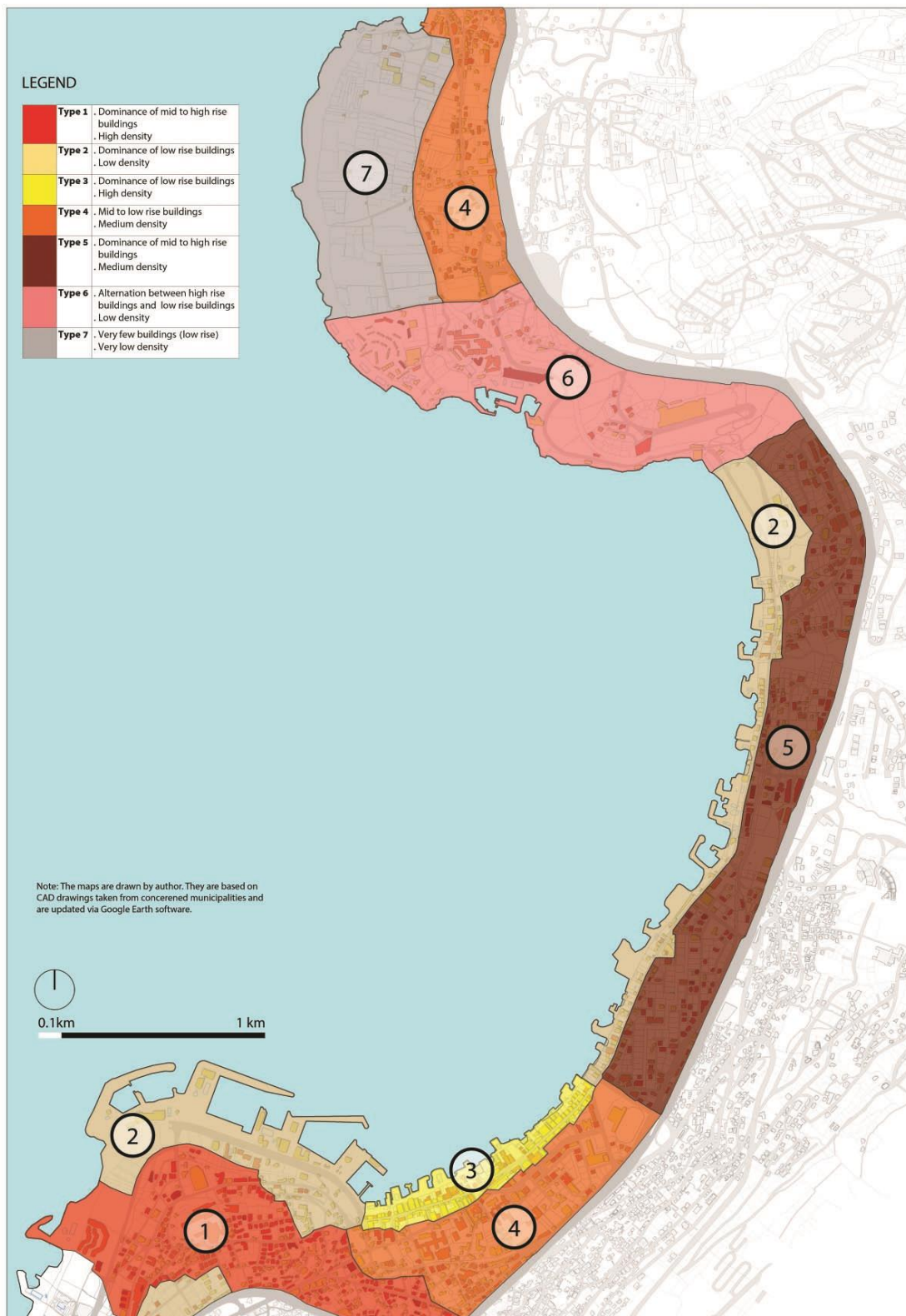






Figure 53: Categorizing the coast of the bay in terms of building height along the coast of the bay.



Source: Edited by author.

## 7. Walkability assessment and provision of public amenities along seaside road

Assessing walkability (Fig.54) is quintessential to understand the level of access to the waterfront and the level of pedestrian connectivity and ease of mobility along the coast of the bay. Mapping walkability was based on mapping the sidewalks along the seaside road. Upon closer inspection, it appears that the coastline of the bay can be categorized into six types/ categories (Fig. 55). These types are explained in Table 21.

Table 21: Categorizing the bay of Jounieh in terms of walkability

Type	Description	Location	Photos (Source: Author - 2019)
Type 1	<ul style="list-style-type: none"> <li>. Area with no provision of sidewalks</li> <li>. Area with no public amenities</li> </ul>	Found in south Sarba, Jounieh and in in Haret Sakher Jounieh reaching Maameltein, Ghazir	
Type 2	<ul style="list-style-type: none"> <li>. Provision of large and continuous sidewalks on each side of the seaside road</li> <li>. No provision of benches on sidewalks</li> <li>. Presence of one public garden (St. Georges Grotto in Batye)</li> </ul>	Found in Sarba, Jounieh in A.T.C.L area	
Type 3	<ul style="list-style-type: none"> <li>. Provision of continuous mid width to small width sidewalks</li> <li>. Presence of several benches on sidewalks</li> <li>. Presence of public gardens with limited access inside public facilities</li> </ul>	Found along the souks of Jounieh (Mina al Atiqua in Ghadir and Mina al Jadida in Haret Sakher )	
Type 4	<ul style="list-style-type: none"> <li>. Area with no sidewalks</li> <li>. Presence of a cul-de-sac public garden trail with public amenities like benches and public toilets</li> </ul>	Found in inner Haret Sakher, Jounieh in Nouair district	

Type 5	<ul style="list-style-type: none"> <li>. Presence of a continuous Sidewalk, narrow and mostly on one side</li> <li>. Area with no public amenities</li> </ul>	Found in Maameltein, Ghazir and in Kfaryassine, Tabarja	
Type 6	<ul style="list-style-type: none"> <li>. Area with a discontinuous network of narrow sidewalks on both sides of seaside road</li> <li>. Area with no public amenities</li> </ul>	Found in Kfaryassine and Wata Slem, Tabarja	

Source: Author

In conclusion, by assessing the walkability of the seaside road we can find a clear cut at the Jounieh main road, next to Fouad Chehab stadium. At this location, it is noticeable that the southern part of seaside road (the souks of Jounieh and A.T.C.L. area) is characterized by the provision of medium to large sidewalks along with benches, while the northern part of seaside road, which leads to Maameltein, does not include wide nor continuous sidewalks.



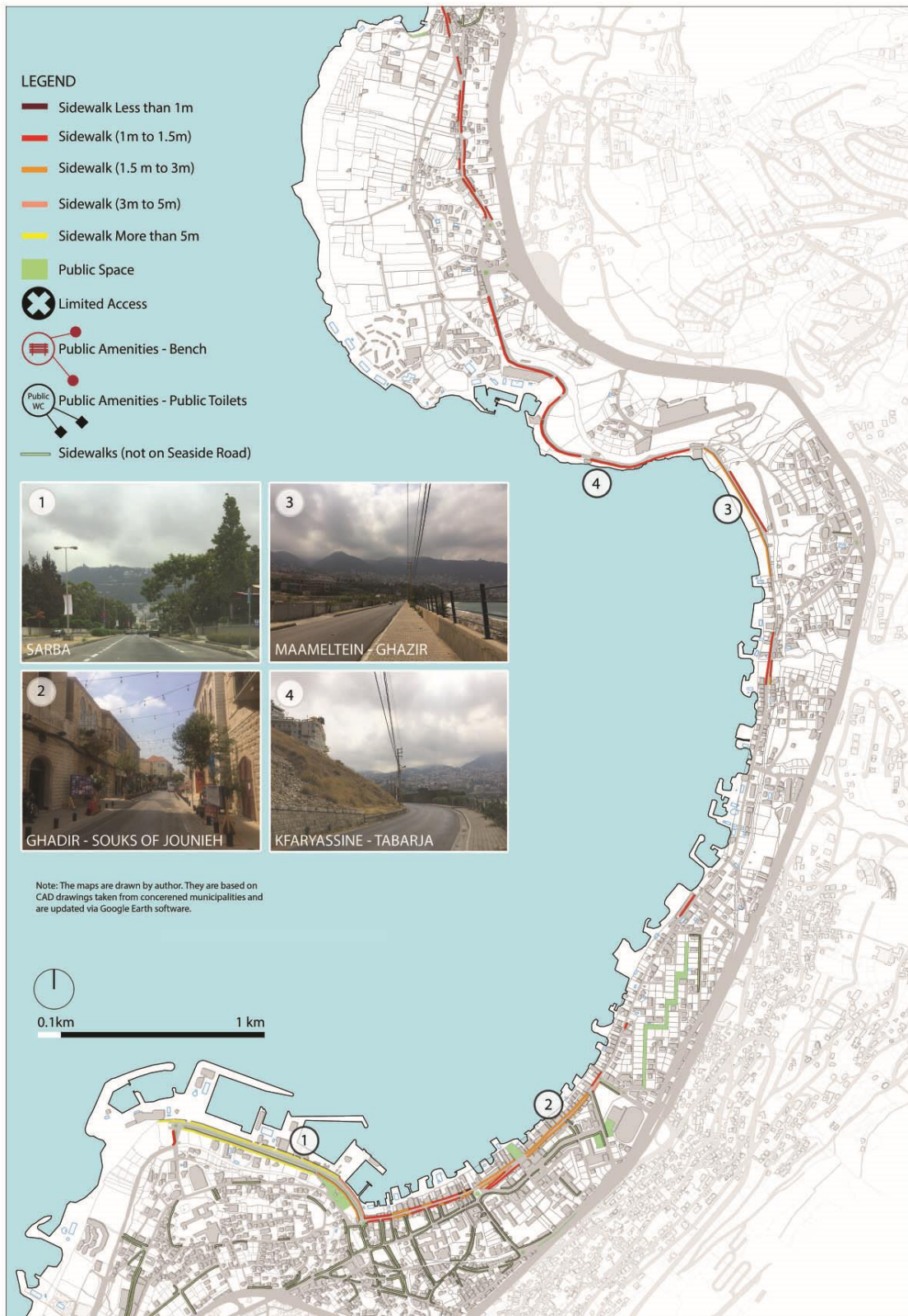


Figure 54: Mapping levels of walkability along the coast of the bay.

Source: Edited by author.



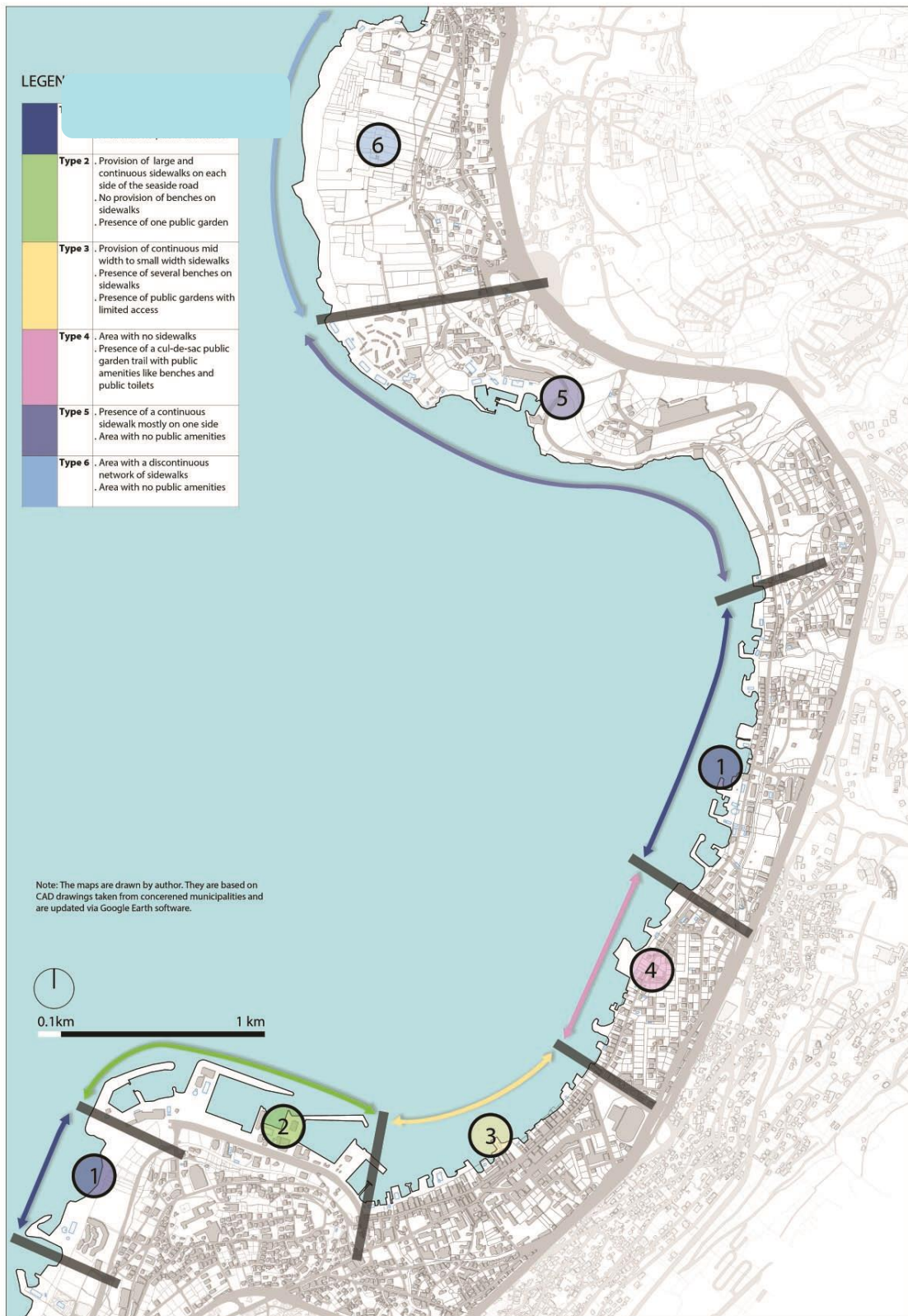


Figure 55: Categorizing the coast of the bay according to levels of walkability along seaside road.

Source: Edited by author.

## **8. Beach resorts typologies**

Based on the literature elaborated in Chapter 2, typologies of beach resorts along the bay were classified according to their urban morphology. (Fig. 56-57). The results showcase that beach resorts found along the bay are very site specific. The criteria of classification are the following: the date of inauguration; the architecture typology; the scale of the beach resort; the program (whether it is on the west side of seaside road or on the east side of seaside road); the presence of encroachments on the Public Maritime Domain and the scale of land reclamation (table 22).

Typology A is the most environmentally friendly typology. It does not involve pools nor areas of land reclamation and includes ephemeral structures.

Typology B includes a small program, a pool and a restaurant with no chalets. Typology B' is similar to typology B however the pool in this typology is not located inside the boundaries of a coastal property and is encroaching on the Public Maritime Domain.

Typology C has a program distributed on both sides of seaside road. Pools and chalets apartments are on the east side of seaside road while marinas and cafes are on the west side of seaside road. Typology C' includes pools on both sides of seaside road.

Typology D is similar to typology C and C' given that the program is also distributed on both sides of seaside road. Nevertheless, typology D includes sports fields and pools not on the east side of seaside road but on the west side of seaside road, thus encroaching on the Public Maritime Domain. The three typologies C, C' and D include a tunnel below seaside road that links the program from the east side to the west side of the road.

Typology E evokes large scale, mid to high rise apartment chalets buildings that are located west of seaside road along with several pools.

Typology F refers to enclave beach resorts which are large scale, high rise gated complexes with diverse supply of services. The difference between typology E and F lies within the scale of beach resorts. Typology F has a larger scale and more diverse program and seeks autonomy in its supply of services.

Typology G refers to military clubs. These clubs do not offer chalets for clients in their program. However, they involve a varied program and the service that they provide is diverse (e.g. hairdresser, cafes, gym, shops, few military residences).

Typology H refers to chalets buildings that are not directly next to the sea. Thus, this typology does not involve violations of the Public Maritime Domain nor includes areas of land reclamation.

Table 22: Existing beach resort typologies found along the bay of Jounieh.

Typology		A	B	B'	C	C'
Example		Tamaris beach	Makhlouf sur mer	Don Castillo, Beach	Green Beach	Blue Beach
Date of construction		1950s	19 <sup>th</sup> century	1970s -1990s	1970s	1970s
Location of project	West of seaside road	Yes	Yes	Yes	Yes	Yes
	East of seaside road	No	No	No	Yes	Yes
Program, west side of seaside road		Cafe, showers no pool, (small program)	Restaurant + pool (small program)	Restaurant, with pool (small program), few chalets and cabins	Restaurant, with marina	3 pools

Program, east side of seaside road	No	No	No	Chalets building, cabins and pool	Chalets building, cabins, pool
Architectural typology	Ephemeral construction	Low rise construction Traditional house	Low rise building (2 to 3 floors)	High rise chalet building (9 floors)	High rise chalet building (9 floors)
Type of Subscription	Daily entrance fee	Daily entrance fee	Daily entrance fee	Seasonal or permanent subscription with daily entrance fee	Seasonal or permanent subscription with daily entrance fee
Scale of land of reclamation	No reclaimed areas	No reclaimed areas	Small scale	Small scale	Medium scale
Violation of Public Maritime Domain (PMD)	. No free public access . No violation of PMD	. No free public access . No violation of PMD	. No free public access . Violation of PMD	. No free public access . Violation of PMD . Tunnel below seaside road	. No free public access . Violation of PMD . Tunnel below seaside road
Compliance with Zoning	Area designated as A1 with no clear regulations				

Typology	D	E	F	G	H
Example	Samar resort, Manar resort, Malibu Bay	Amwaj Beach Resort, Bel Azur	Aquamarina, Tabarja Beach, Portemilio	Military clubs, A.T.C.L club	Dona Maria
Date of construction	1970s -1990s	1950s -1980s	1960s -1990s	1960s -1990s	1990s

Location of project	West of seaside road	Yes	Yes	Yes	Yes	No
	East of seaside road	Yes	No	No	No	Yes
Program, west side of seaside road	Olympic pools, sports fields, restaurant, gardens with marina	Chalets buildings, cabins, pool, cafes, shops, gardens	Chalets buildings, Olympic pools, sports fields, Indoor gym, restaurant, shops (self-sufficiency), usually with a marina	. No rented chalets, cabins + lockers instead . Indoor pools, gym, outdoor pools, restaurant s/cafes, shops, sports fields, marinas + residences for military members	No	No
Program, east side of seaside road	Chalets building	No	No	No	. Strip of chalets buildings with pool and restaurant	
Architectural typology	High rise chalets buildings (10 floors to 15 floors)	High rise chalets buildings (7 to 10 floors)	Duality between strips of chalets (4 to 6 floors) or bungalows (1-2 floors) with high rise chalets buildings (14 to 20 floors)	Low rise buildings around 3 floors	mid to high rise 6 to 9 floors chalets buildings	

Type of Subscription	Seasonal or permanent subscription with or without daily entrance fee	Seasonal or permanent subscription with or without daily entrance fee	Exclusive; Seasonal or yearly/permanent subscription	Exclusive (military members or others)	Exclusive; seasonal or permanent subscription
Scale of land of reclamation	Medium scale	Small scale	Large scale	Large scale	No reclaimed areas
Violation of Public Maritime Domain (PMD)	. No free public access . Violation of PMD . Tunnel below seaside road	. No free public access . Violation of PMD	. No free public access . Violation of PMD	. Exclusive access . Public domain	No violations – resort not directly next to the sea
Compliance with Zoning	Area designated as A1 with no clear regulations	Area designated as A	No	-	Area designated as A1 with no clear regulations

Source: Author

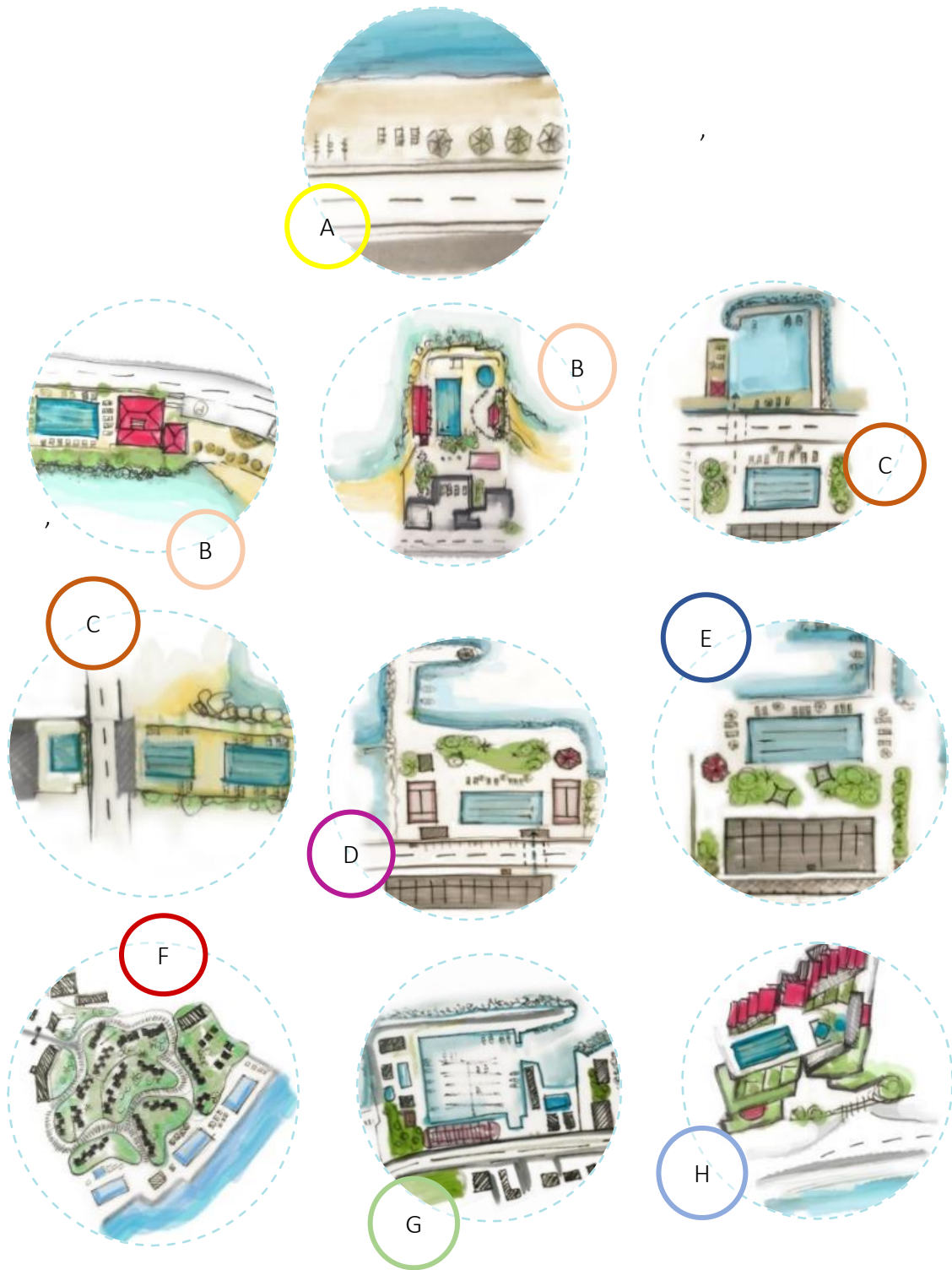


Figure 56: Existing beach resort typologies

Source: Author.



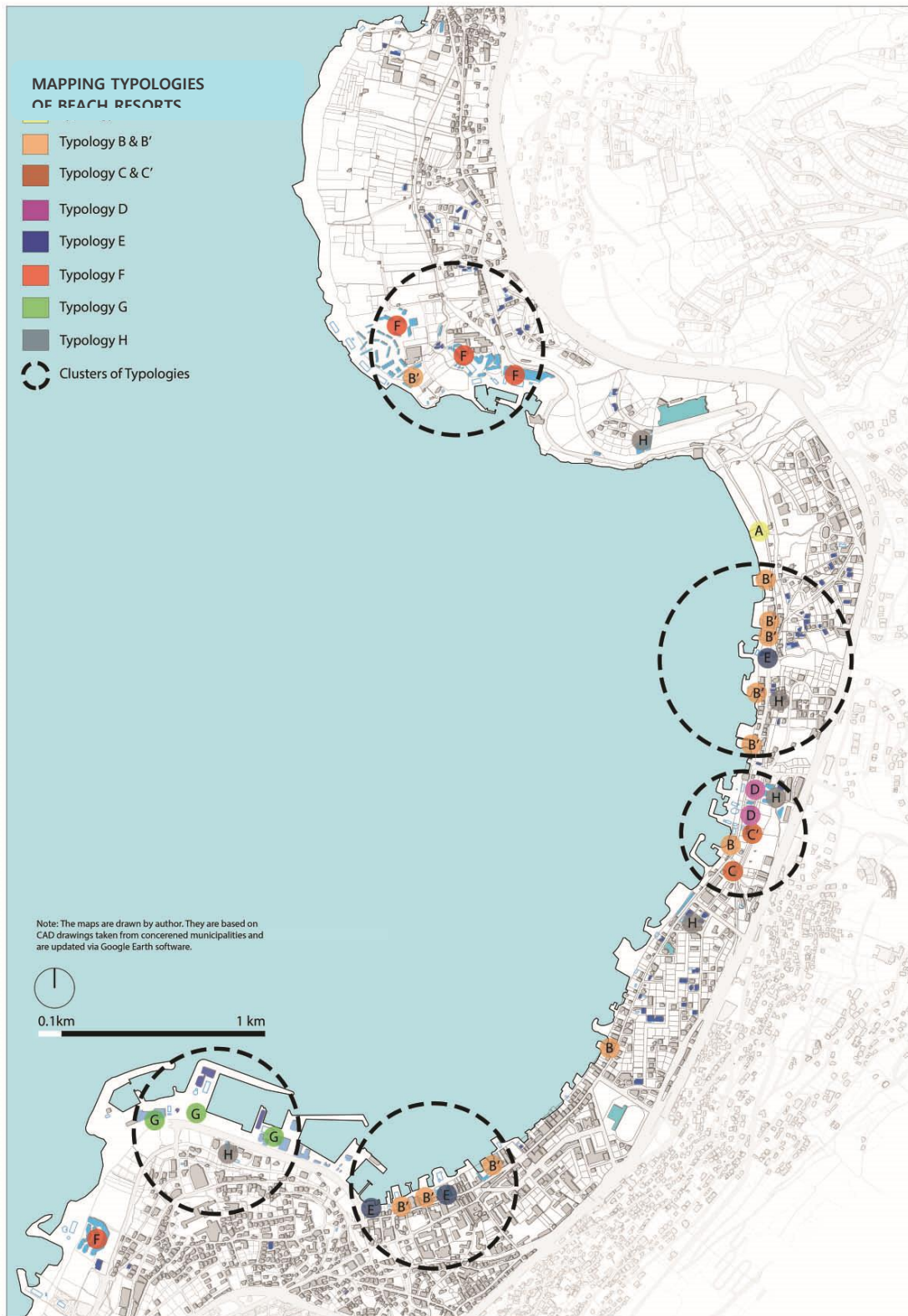


Figure 57: Mapping beach resort typologies

Source: Edited by author.



## **D. Cultural profile**

### ***1. Socio-spatial practices along the sea throughout history***

When the state of Greater Lebanon was declared in 1920, the coast of Jounieh along with Tabarja was a rural and agricultural area. The people at the time used to have conservative values; therefore, swimming and bathing in the sea, whether it was during the day or at night, was perceived as a taboo. During the 1930s, some men introduced swimming as an activity during the night and in the 1940s the people of Jounieh started to spend their afternoon at the sea. They used to set up huts and go swimming with their clothes on. Men were separated from the women at the time (Bou Lahdo, 2013). The area of Chir in Sarba, characterized by the presence of high cliffs, where the actual port of Jounieh is located today, was the ideal place for diving. The swimming season used to start on the 24<sup>th</sup> of June with the celebration of St. John the Baptist. During that day, people used to go to St. Georges grotto next to the Chir area to bathe in the holy waters, then head to the beach for cruising. The swimming season used to end on the 14<sup>th</sup> of September with the celebration of the holy cross during which the people of Jounieh used to plunge three times into the sea. One of the most important myths related to the grotto of St. Georges is the story of the barren women coming in masses to bathe in the waters believing that this act would heal them from infertility. The grotto was not exclusive to women, many handicapped and sick children used to go to the grotto asking to be healed. Sailors also used to put their vows inside the grotto praying for the saint and hoping to come back home safe and sound (Fig. 58).



Figure 58: The Grotto of Batye in 1854.

Source: (Bou Lahdo, 2013).

These activities of bathing and setting up huts next to the sea would be prohibited by the French during the Second World War for security reasons (Merhi, 2003).

After the Lebanese independence, the ‘golden age’ of Lebanese tourism arrived, bringing with it a new breed of Western tourists. As Rowbotham (2010) describes it, the tourist gaze was firmly centered on the coastal dimension of Lebanon with the advantage to retreat towards the mountains. The tourist activity started in Beirut, and spread out to other areas on the coast. Thus, in 1952, the first beach complex in the coast of Keserwan emerged and named Saint Jean in the Chir area, referring to St. John the Baptist.

At the end of the 1950s, the development of seaside resorts in the coast of Keserwan was due to several political and economic factors<sup>33</sup>. Beach resorts in Kfaryassine - Tabarja didn't appear before the mid-1960s. The coastal area, which at

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<sup>33</sup> The construction of Casino du Liban which started in 1957, the event of 1958 in Beirut which caused the displacement of several Beirut residents to Keserwan, and most importantly the election of President Fouad Chehab, who encouraged the economic and touristic development of Jounieh in particular.

the time, was an agricultural/fishing area witnessed the construction of the beach resort of Tabarja Beach in 1965 and St. Paul in 1966 (Merhi, 2003).

This popular bathing and diving activity that was known in the Chir area would be disrupted once the new port and A.T.C.L. project was established in 1969 (Fig. 59).



Figure 59: The Batye during the festivity of St. John before the construction of A.T.C.L.

Source: (Bou Lahdo, 2013)

Furthermore, the coastal touristic activity that had started in Beirut and spread towards Jounieh would have a drastic turn during the civil war. Christians coming from Beirut were moving to Jounieh. They were seeking security and refuge away from the demarcation line. Thus, beach resorts were being transformed into enclosed and secured village-clubs for the Lebanese Christian citizens with their own supply system of electricity and potable water. This caused the emergence of a coastally oriented generation of residents in contrast to previous generations (Rowbotham, 2010).

This development of beach resorts declined in the late 1980s, due to the battles that reached Keserwan at that time. The situation did not progress even after the end of the civil war, given the reconstruction of Beirut and the re-emergence of its beach resorts.

It is notable that the swimming activity in Jounieh was linked to Christian rituals and events. This religious identity would have major implications during the civil war and Jounieh would become a safe haven for Christians fleeing Beirut.

Today, Jounieh's strong Christian identity is also still present and expressed through several popular religious festivities.

## ***2. Current festivities and current socio-spatial practices***

The celebration of St. John the Baptist on the 24<sup>th</sup> of June is still a famous religious event in Jounieh. Nowadays, this event is associated with watersports activities. A religious mass along with a dinner (عشاء قروي) at the fishing port are held where the fishermen end the celebration by throwing their fishnets into the sea. Moreover, a triathlon<sup>34</sup> at the A.T.C.L is organized by the municipality of Jounieh on the same day.<sup>35</sup>

Other than the celebration of St. Jean Baptiste, Jounieh is known for other festivities on its coast. In the past years, the Jounieh Chamber of Commerce along with the Keserwan Development Council<sup>36</sup> started to organize a music festival titled “تمشي و سهار” during summers, which usually begins with a firework display that stretches along

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<sup>34</sup> According to municipality members, the triathlon starts from the A.T.C.L and continues till Tabarja and is accompanied by a running race from Tabarja back to A.T.C.L.

<sup>35</sup> This data was gathered from a semi-structured interview with members from Jounieh's municipality.





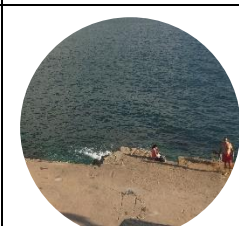
<sup>36</sup> Nowadays the committee called “friends of the city” headed by Mr. Georges Efreem is responsible for the organization of the event.



the whole bay and hosts national and international artists and activates the souks of Jounieh at night (Bou Lahdo, 2013).

With regards to the current socio-spatial practices, they were mapped based on recurrent observations that were conducted prior to the pandemic along the seaside road. Mapping these socio-spatial practices gives an insight into the use of the seafront and showcases how the interface between land and water is shaped by human activities. The figure below showcases the distribution of activities along the bay (Fig 60). The bay is known for hosting three diving sites and several activities along its seaside road. Some of these activities are accessible such as jogging, sightseeing, and some the activities are informal such as fishing and swimming in few open spots. Several activities are exclusive and are not free of charge such as boating, swimming and practicing water sports in private beach resorts, cable car riding, paragliding and dining in restaurants and pubs. It is worth to note that several parts of the bay witness activities of street soliciting due to the presence of several nightclubs and hotels and due the prevalence of sex work.

Hotels and nightclubs are present in the northern part of the bay, starting from Haret Sakher Jounieh and reaching Wata Slem, Tabarja. No nightclubs are found in Sarba and in Ghadir, in the southern part of the bay. Moreover, only few hotels (less than five) are found in these respective districts. The analysis of the socio-spatial activities shows that the bay can be divided into seven categories/ types (Fig.61). They are listed from south to north in this table below (Table 23).

Table 23: Categorizing the bay of Jounieh in terms of socio-spatial activities

Type	Description	Location: Seaside road	Photos (Source: Author - 2019)
Type 1	<ul style="list-style-type: none"> <li>. Area with no rich socio-spatial activities on seaside road</li> <li>. Activities of diving, swimming and other sports inside private beach resorts and military clubs</li> </ul>	Found in south of Sarba Jounieh	
Type 2	<ul style="list-style-type: none"> <li>. Activities of jogging, boating, fishing, diving and dining</li> <li>. Vibrant day life and nightlife due to the presence of a strip of restaurants on one side of the seaside road)</li> </ul>	Found in Sarba, Jounieh in A.T.C.L area	
Type 3	<ul style="list-style-type: none"> <li>. Activities of shopping, jogging and dining/drinking along the souks of Jounieh, as well as sunbathing and swimming inside private beach resorts</li> <li>. Vibrant day life and nightlife (presence of pubs and few restaurants)</li> </ul>	Found along the souks of Jounieh (Mina al Atiqua in Ghadir and Mina al Jadida in Haret Sakher)	
Type 4	<ul style="list-style-type: none"> <li>. Area with no rich socio-spatial activities on seaside road except for activities inside private facilities (paragliding, cable car riding, diving, swimming, water sports inside private beach resorts)</li> <li>. Vibrant nightlife due to the presence of several night clubs</li> </ul>	Found in seaside road and starting from Nouair district in Haret Sakher, Jounieh reaching Maameltein Ghazir	
Type 5	<ul style="list-style-type: none"> <li>. Mix of a rich and diverse socio-spatial activities like jogging, informal swimming, informal fishing and sightseeing in accessible spaces</li> </ul>	Found in Kfaryassine, Tabarja	

Type 6	<ul style="list-style-type: none"> <li>. No rich socio-spatial activities</li> <li>. Prevalence of agricultural practices</li> <li>. Vibrant nightlife (presence of many night clubs on seaside road)</li> </ul>	Found in the flatlands of Kfaryassine and Wata Slem, Tabarja	
Type	<ul style="list-style-type: none"> <li>. Small hub of diverse socio-spatial activities (presence of seafood restaurants, and activities of sightseeing and fishing)</li> </ul>	Found in Al Minah, Tabarja	

Source: Author



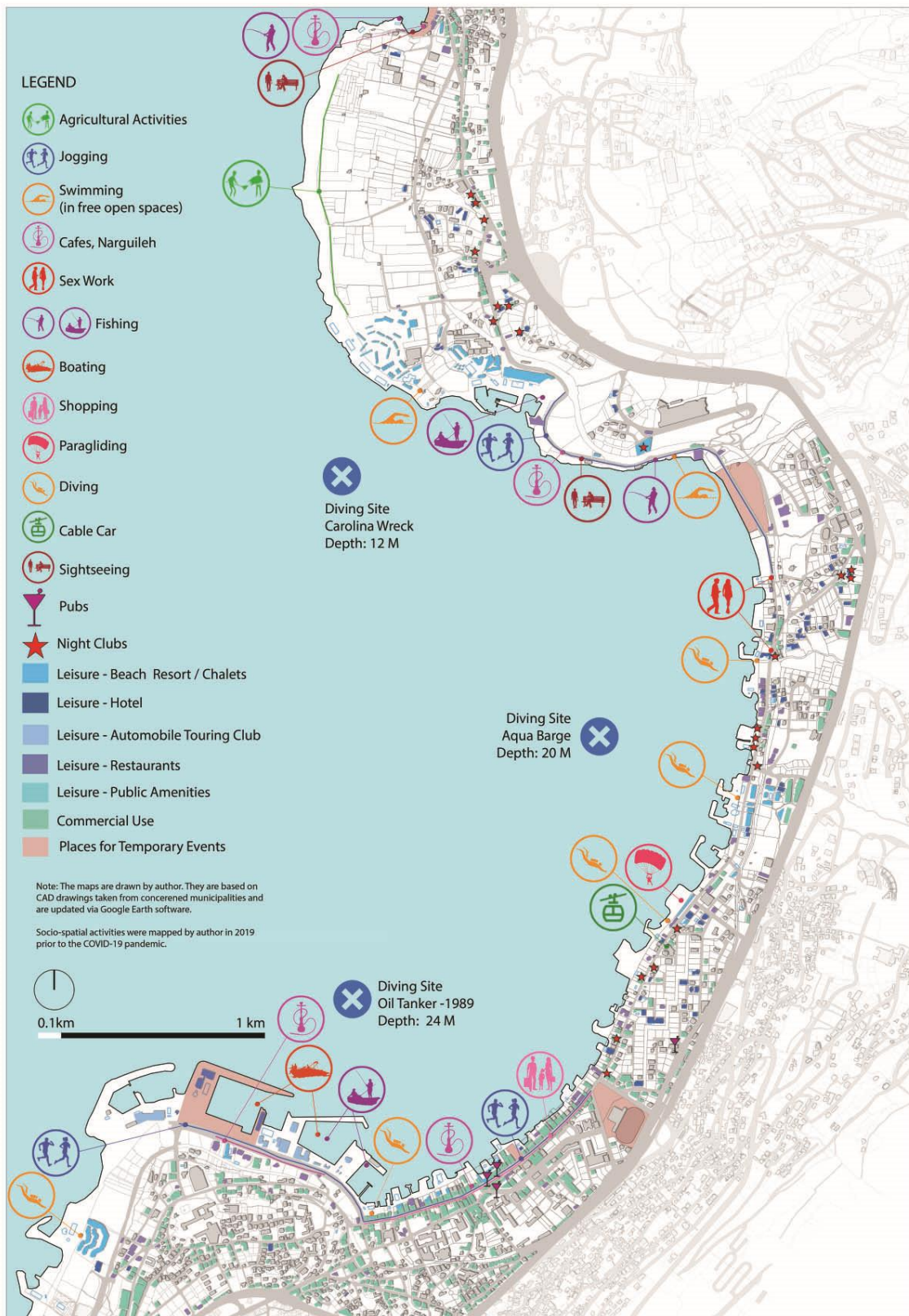


Figure 60: Mapping current socio-spatial activities along seaside road.

Source: Edited by author.



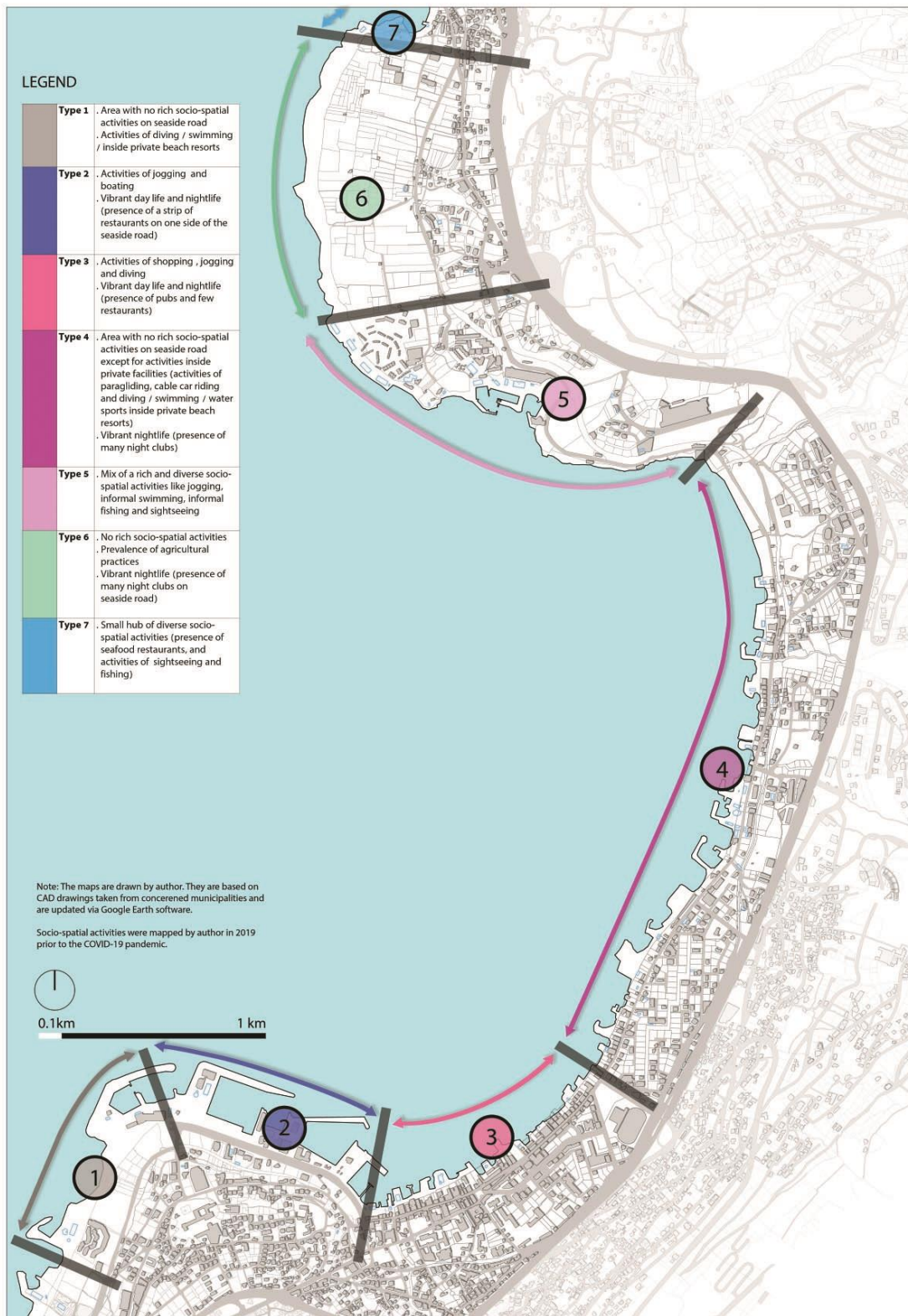


Figure 61: Categorizing the bay according to the current socio-spatial activities along seaside road.

Source: Edited by author.

### *3. Archeological assets along the coastline of the bay*

Among the archeological sites that are found at the coast of the bay of Jounieh are the following:

The Saint Sauveur Convent in Sarba (Fig. 62) which was built over an existing fortress. The foundations of the convent contain engraved rocks with Greek and Roman inscriptions. During the restoration works of the convent, a secret tunnel was found that leads directly to the grotto of St. Georges in Batye, next to the sea (Bou Lahdo, 2013).



Figure 62: The convent of St. Sauveur

Source: <https://twitter.com/IWPCHI/status/1252166900412485632>

The grotto of St. Georges was a funerary cave that goes back to the Phoenician era and was later on used as a worship space for Christians in the Middle Ages (Fig.63). The grotto includes a shrine dedicated for the Phoenician God Adonis. A tale narrates that St. Georges visited the place in order to clean his weapon after fighting the dragon near Beirut (Bou Lahdo, 2000).



Figure 63: The grotto of St. Georges, Chir Batye

Source : <https://www.wanderleb.com/blog/el-batiyeh-funerary-site?categoryId=182089>

Another historical landmark by the sea is the Maameltein bridge which was built during the Roman Empire (307 B.C.). The Roman road used to pass by the bridge reaching to St. Georges church in Batye heading towards Beirut (Bou Lahdo, 2013) (Fig. 64).



Figure 64: The roman bridge, Maameltein Ghazir

Source : <http://mountoflebanon.blogspot.com/2007/03/jounieh-maameltein.html>

Regarding Tabarja, it includes an important Christian landmark which is the fishing port. It was reputedly the place from which St. Paul set sail on his last missionary journey (Rowbotham, 2010). Tabarja also includes a medieval watch tower dating from the 13<sup>th</sup> century. It was under the authority of the Assaf Turkmen Emirs of Ghazir (Fig. 65). The tower is in a private property and is not open and accessible for the public<sup>37</sup>



Figure 65: Burj Tabarja, medieval watch tower

Source : [www.wanderleb.com](http://www.wanderleb.com)

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<sup>37</sup> [https://www.wanderleb.com/blog/burj-tabarja?fbclid=IwAR3VQMI6xnvs3M74M9uANOi\\_IUb7r4hadFXbXabhATtU6diJJIRGAGhcfg](https://www.wanderleb.com/blog/burj-tabarja?fbclid=IwAR3VQMI6xnvs3M74M9uANOi_IUb7r4hadFXbXabhATtU6diJJIRGAGhcfg)

The bay and its heritage landmarks such as the Roman Bridge and the medieval tower and other tangible heritage of Jounieh, Maameltein and Tabarja are not valued enough. For example, no signage and infographics narrate the history of these landmarks and the history of the city for the visitors. Moreover, no urban chain links these landmarks between each other. With regards to the intangible heritage of the area, Christian rituals still take place, but due to the limited availability of urban space for the community certain aspects have changed. For example, the celebration of St. John the Baptist used to start at the church and end at the open beach, but now the event is restrained in A.T.C.L. club.

It is noticeable that the Christian identity (Maronite in particular) is one of the major cultural components of the community of the bay. It is also translated physically by the connection of Jounieh with Bkerkeh, as well as its close proximity to Our Lady of Lebanon in Harissa overlooking the bay.

#### ***4. Built and natural heritage***

Mapping the built and natural heritage of the bay brings to the fore the time-depth of the site and gives an insight about the use of the waterfront and the role of the coastal city throughout history.



As seen in figure 66, the historic souks of Jounieh spreads from the seaside area of Sarba reaching Haret Sakher. It is worth noting that the souks are protected by the law since 1995. However, a rich historic fabric located outside the souks and mostly dating from the Ottoman period is not put in value and is not protected by any decrees or laws. Moreover, five heritage sites are found along the coast of bay; the St. Sauveur Convent that has roman inscriptions, the funerary site and St. Georges Grotto in Batye

Sarba, the wheat souk arcade along with the souks of Jounieh, the roman bridge in Maameltein Ghazir, and Al Minah along with the medieval tower in Wata Slem, Tabarja.




The remaining agricultural practices are found mainly in Wata Slem. Few orchards are still found in Sarba, in Nouair district Haret Sakher and in Maameltein. Most of these orchards are found next to traditional houses scattered between new building apartments.

Referring to figure 67, it appears that the coastline of the bay can be categorized into five types/ categories with regards to the built and landscape heritage. These categories are listed in the table below (Table 24).

Table 24: Categorizing the bay of Jounieh in terms of natural and built heritage.

Type	Description	Location: Seaside road	Photos (Source: Author - 2019)
Type 1	. Area with no historic fabric with no or only one heritage site	Found in parts of Sarba, Sahel Alma and Kfaryassine	
Type 2	. Area with few orchards and traditional residential houses scattered between apartment buildings with orchards around them or are concentrated in one cluster . Not protected by law	Found scattered in parts of Sarba, Ghadir in Jounieh and in Kfaryassine and Wata Slem, Tabarja Found as one cluster in Maameltein, Ghazir	



Type 3	<ul style="list-style-type: none"> <li>. Area of the historic souks of Jounieh which is enlisted and is protected by the law by the Ministry of Culture and Higher Education</li> </ul>	<p>Found along the souks of Jounieh (in Sarba, in Mina al Atiqua in Ghadir and in Mina al Jadida in Haret Sakher)</p>	
Type 4	<ul style="list-style-type: none"> <li>. Area with large areas of orchards and very few traditional residential houses</li> <li>. Few of the traditional houses are protected by law, others are not</li> </ul>	<p>Mainly located in Nouair district in Haret Sakher Jounieh</p>	
Type 5	<ul style="list-style-type: none"> <li>. Area of agricultural fields</li> <li>. Presence of natural rocks protected by the Ministry of Environment</li> </ul>	<p>Found in the flatlands of Wata Slem Tabarja</p>	

Source: Author

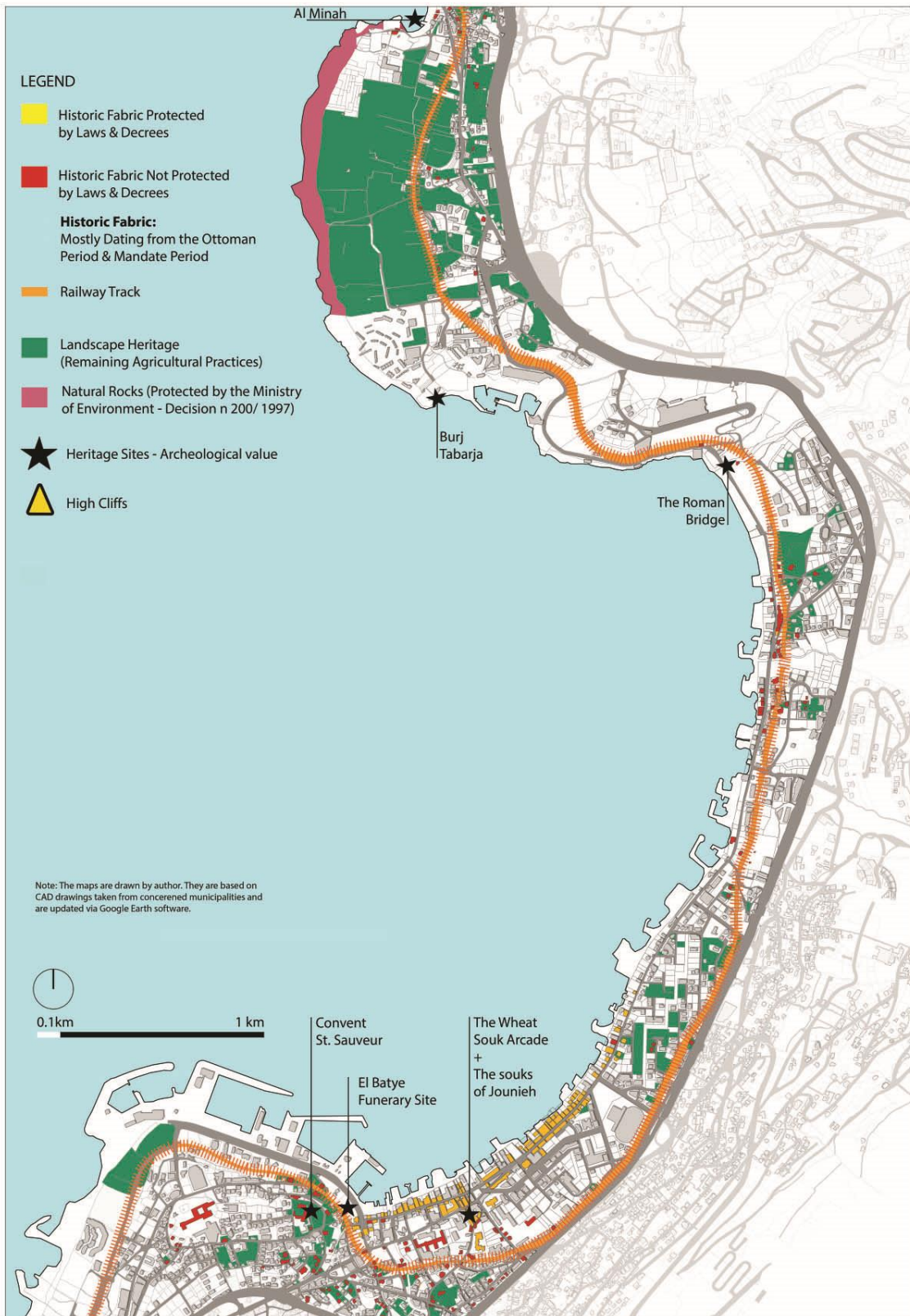


Figure 66: The built and the natural heritage of the bay.

Source: Edited by author.

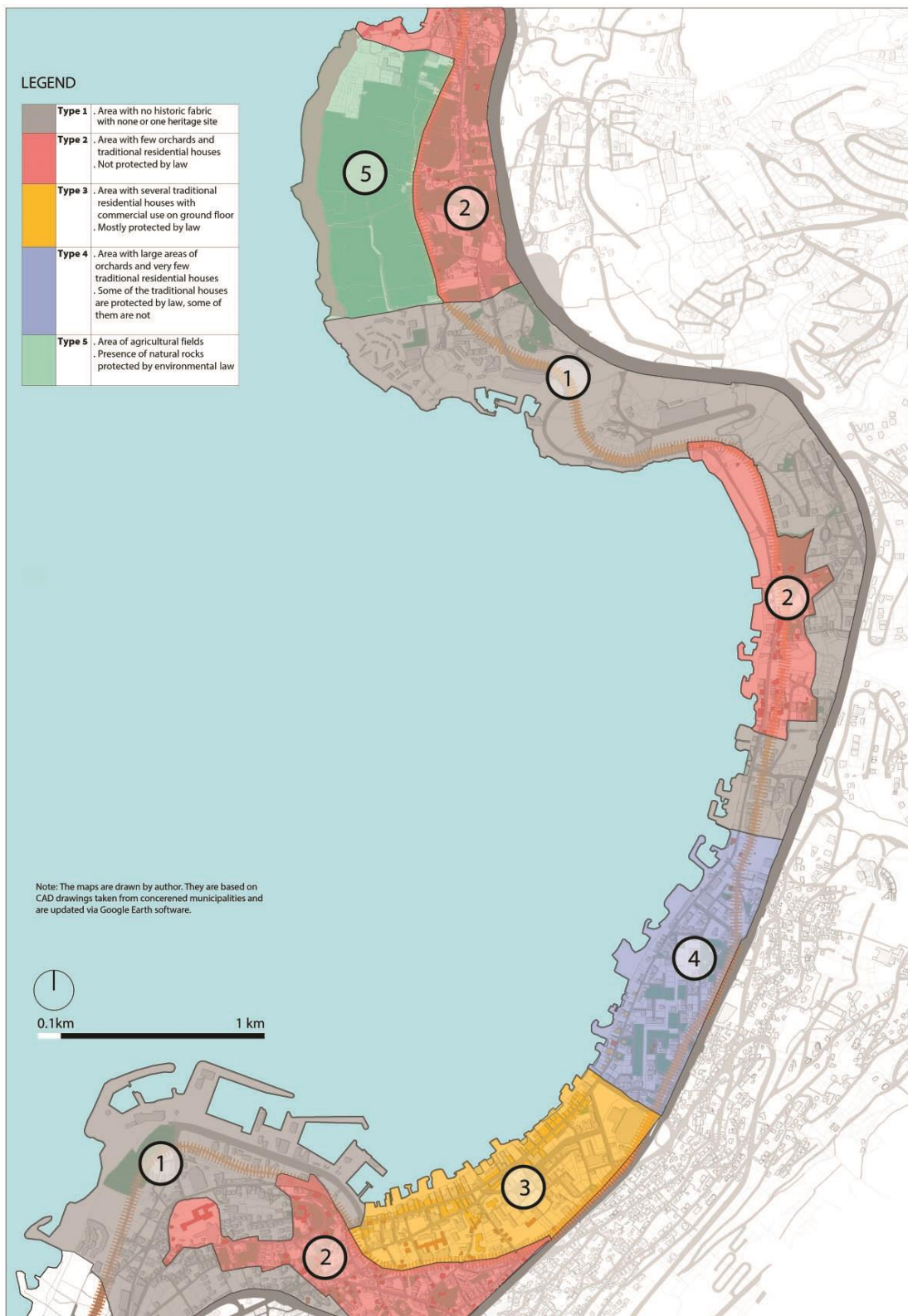


Figure 67: Categorizing the bay according to the built and the natural heritage.

Source: Edited by author.



## **E. Socio-economic profile**

### ***1. Social structure throughout history***

During the early 19<sup>th</sup> century, The Al-Khazen family were in control of the fishing port. Most of the population resided in the villages because the coast was controlled by the Ottomans and the coast did not offer a lot of agricultural opportunities. The Moutasarrifiya era witnessed the emergence of a new commercial class<sup>38</sup> that used the port of Jounieh to avoid taxes imposed in Beirut (Chammas, Hanna, & Rahme, 2001). The demographic growth would halt during the French mandate only to rebound and quadruple in the span of 20 years during the Lebanese civil war (Chammas et al. 2001). The rapid urbanization that hit the coastal area was not caused by foreign tourists, but by the displaced Christian community instead. In fact, hotels were transformed into places of refuge. Regarding the ownership of coastal resorts, all the owners of the hotels and chalets were not from Jounieh specifically, but most of them were from Keserwan (El-Khoury, 1999). Due to the real estate boom that occurred during the civil war, the construction market shifted from high-end to commercial housing. In 1993, Jounieh's community counted 86.63% Maronites, 7,13% Greek Catholics and 5.16% Greek Orthodox (Mansour, 1993).

Tabarja-Kfaryassine on the other hand is mainly inhabited by Maronite families. According to the municipality's website, the area also contains a significant amount of Russian, Roman and other Slavic populations who have been victims of human trafficking during the civil war.

Looking at the current real estate attestations of seaside properties from the General Directorate of Land Registry and Cadastre, the Al-Khazen family is still a

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<sup>38</sup> (Families such as Boustany, Boueiri, Adaimi, Massaad, Finianos, Abou Chabké).

prominent family that owns several seaside properties in Jounieh, other families with strong political influence such as Azar and Kanaan family also appear as owners of few seaside plots along the bay of Jounieh. In Maameltein Ghazir, the family Zoueïn appears as an owner of a large seaside property. In Tabarja-Kfaryassine however, the families of Azzi, Boueiri appear as prominent stakeholders.

## ***2. Ownership patterns of seaside properties***

Mapping ownership patterns of seaside properties gives an insight into some of the major stakeholders and their level of power. Moreover, ownership patterns can trace the level of privatization along the seafront and can define the facility or the hindrance in creating public design interventions that ensure access to the sea.

Regarding the current ownership patterns of the seaside properties of the bay, most of the seaside properties are private properties owned by individuals and private companies (Fig. 68). No municipal public plots are found except in Haret Sakher (two plots are owned by the municipality of Jounieh). Thus, the bay is highly privatized with 86.4 % of its seaside properties owned by the private sector.

Analyzing the ownership patterns of the studied area, the bay can be divided into four categories (Fig. 69). The first type/ category concerns a hybrid area with a strong presence of religious entities “Wakf”. It is found in Sarba, in Minah Al Atiqua (in the town of Ghadir) and in Minah Al Jadida (in the town of Haret Sakher) and in Wata Slem. The second type concerns large areas used by the military forces that do not have plot numbers. This area is mainly located in Sarba and concerns the military clubs. The third category is recognized by the dominance of owners who are private individuals. This concerned area stretches from Haret Sakher reaching Maameltein, Ghazir. The

fourth and final category is recognized by the dominance of owners under private companies. This category is located in Maameltein, Ghazir and in Kfaryassine.

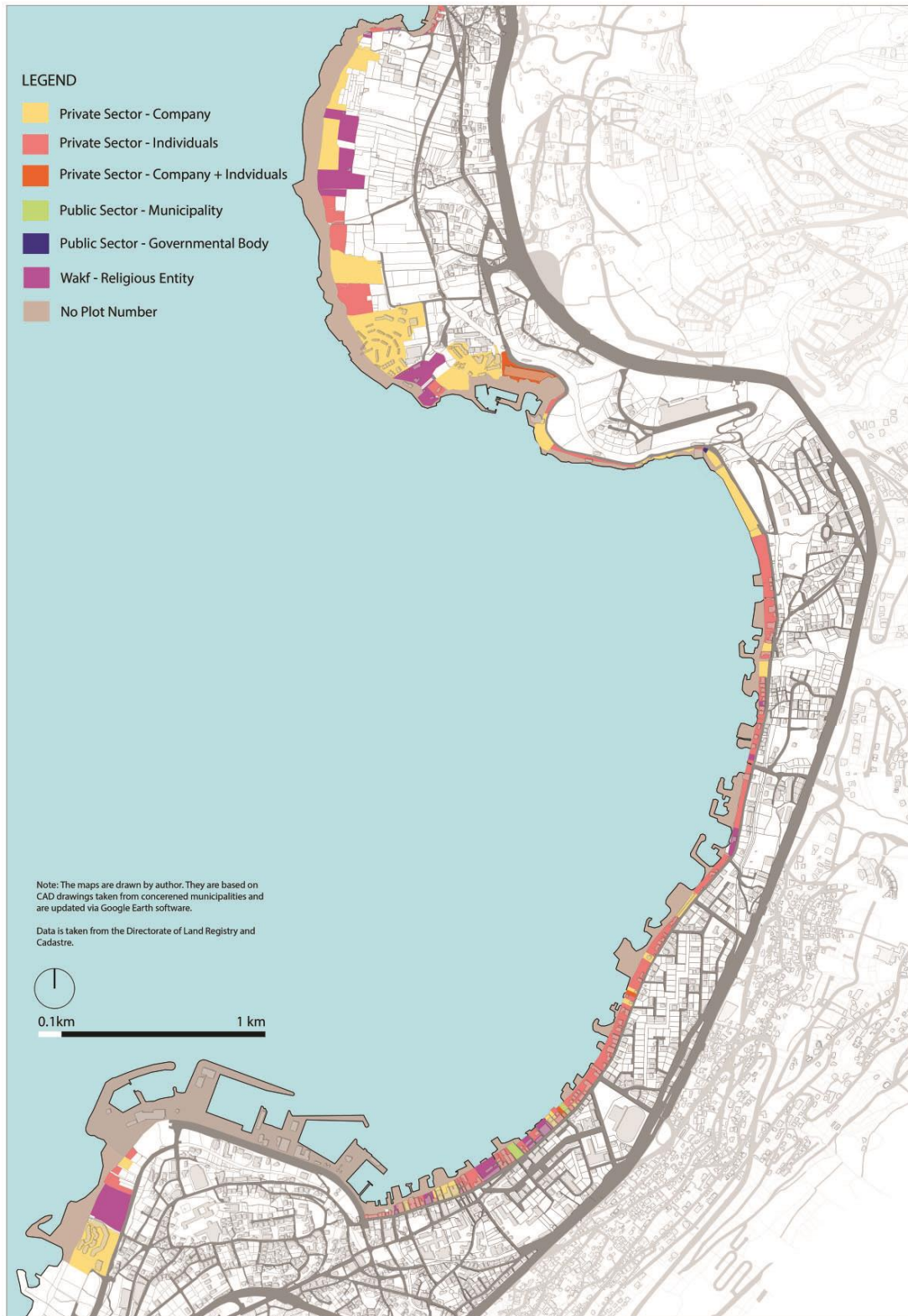


Figure 68: Mapping ownership patterns along the coast of the bay of Jounieh.

Source: Edited by author.

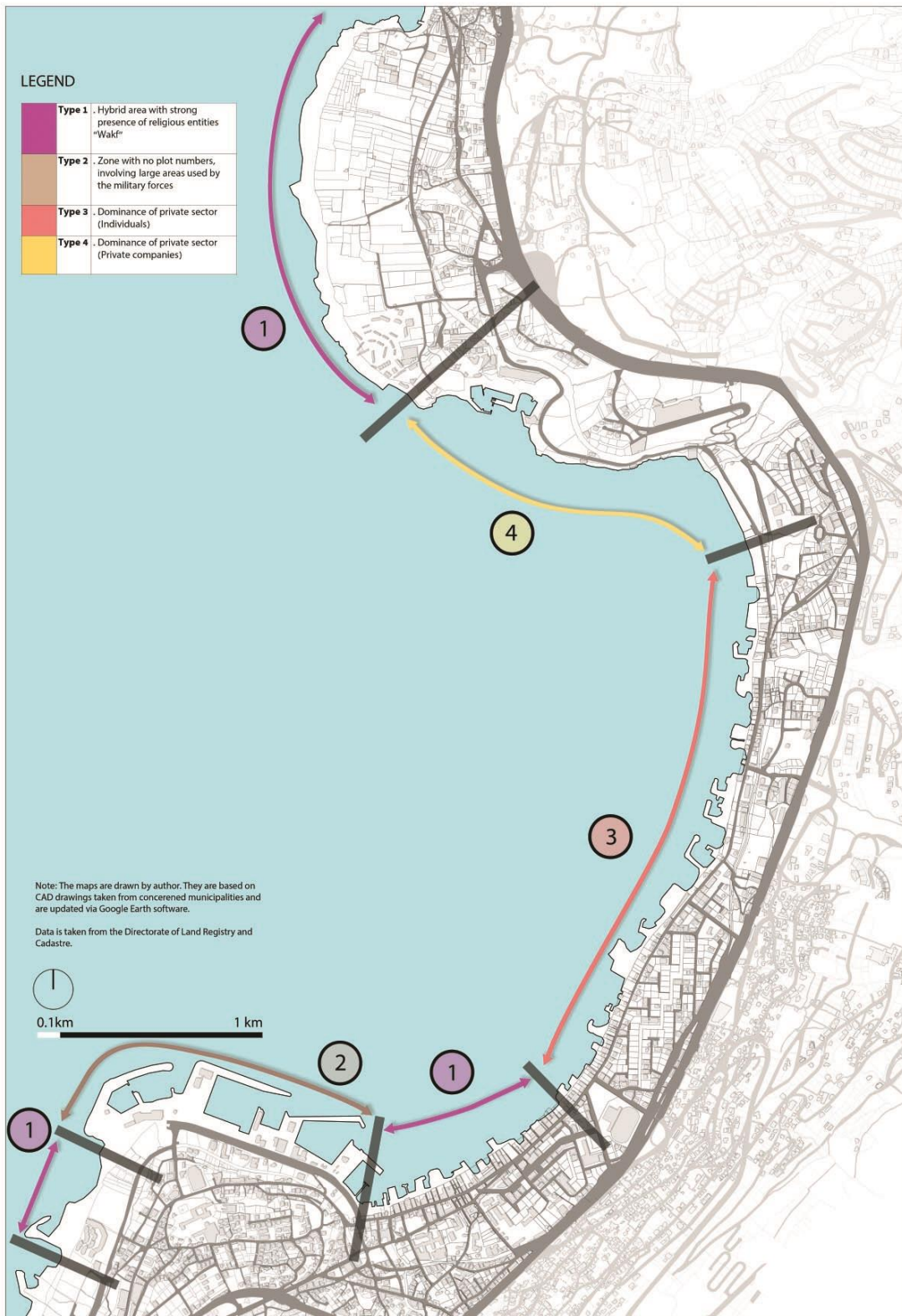


Figure 69: Categorizing the bay according of ownership patterns along the coast of

Source: Edited by author.

### **3. Current stakeholders**

. The Ministry of Tourism: they collaborate with the municipality of Jounieh in order to organize the summer festivals featuring music concerts with cultural and theatrical events.

. The Ministry of environment: the ministry of environment is in charge with the proceeding of the environmental impact assessment (EIA) of large scale developments. They are also responsible for the establishment, protection and management of protected areas. It is worth to note that they are collaborating with other partners to implement a natural marine reserve in the deep sea of the bay of Jounieh. Moreover, they are collaborating with the NGO called friends of nature to implement an artificial reef next to Haret Sakher coastal area.

. The concerned municipalities (Jounieh, Ghazir, Adma and Tabarja-Kfaryassine):

It is worth to note that historically, the first municipal entity included members from Jounieh and Tabarja in 1878 (Bou Lahdo, 2000). Thus, the municipal entity was more inclusive and had representative members from different districts of the bay.

In 1914, the municipality of Jounieh was reestablished with four entities as we currently know it (Haret Sakher, Sarba and Ghadir and with the inclusion of Sahel Alma).

The municipality of Tabarja-Kfaryassine is currently more focused on the infrastructural projects (e.g. roads and sidewalks) rather than concerned about interventions along the waterfront<sup>39</sup>.

On the other hand, the head of the municipality of Jounieh, Juan Hbeish, is putting efforts in order to upgrade the waterfront of Jounieh. In fact, the municipality is intervening and launching several projects regarding the pedestrianisation of the souks,

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<sup>39</sup> This information was deduced from an informal discussion I conducted with the head of the municipality of Tabarja-Kfaryassine Mr. Nabil Nacuzzi.

opening a public beach as well as the removal of some gates along the souks that block the access to the sea. However, these projects are limited to the Southern part of the bay in Sarba, Ghadir and the southern part of Haret Sakher.

. The Traders Association of Jounieh and Keserwan- Ftouh: the association was formed in 1979 (Bou Lahdo,2000). It plays an important role in reviving the economic activity of the area. The association recently approved the pedestrianisation of a part of the souks of Jounieh.

. The syndicate of seaside resort operators: The Syndicate is a non-political and non-governmental organization that supports private beach resorts spread throughout all Lebanon. It is currently headed by one of the owners of a beach resort and hotel in Sarba.

. The religious entities or “Wakf”: The church holds a big influence on Jounieh especially through Bkirkeh and because of its ownership of a significant percentage of seaside properties. In fact, the religious entities own 12,3% of all seaside properties along the bay from Sarba to Wata Slem. (Fig.70)



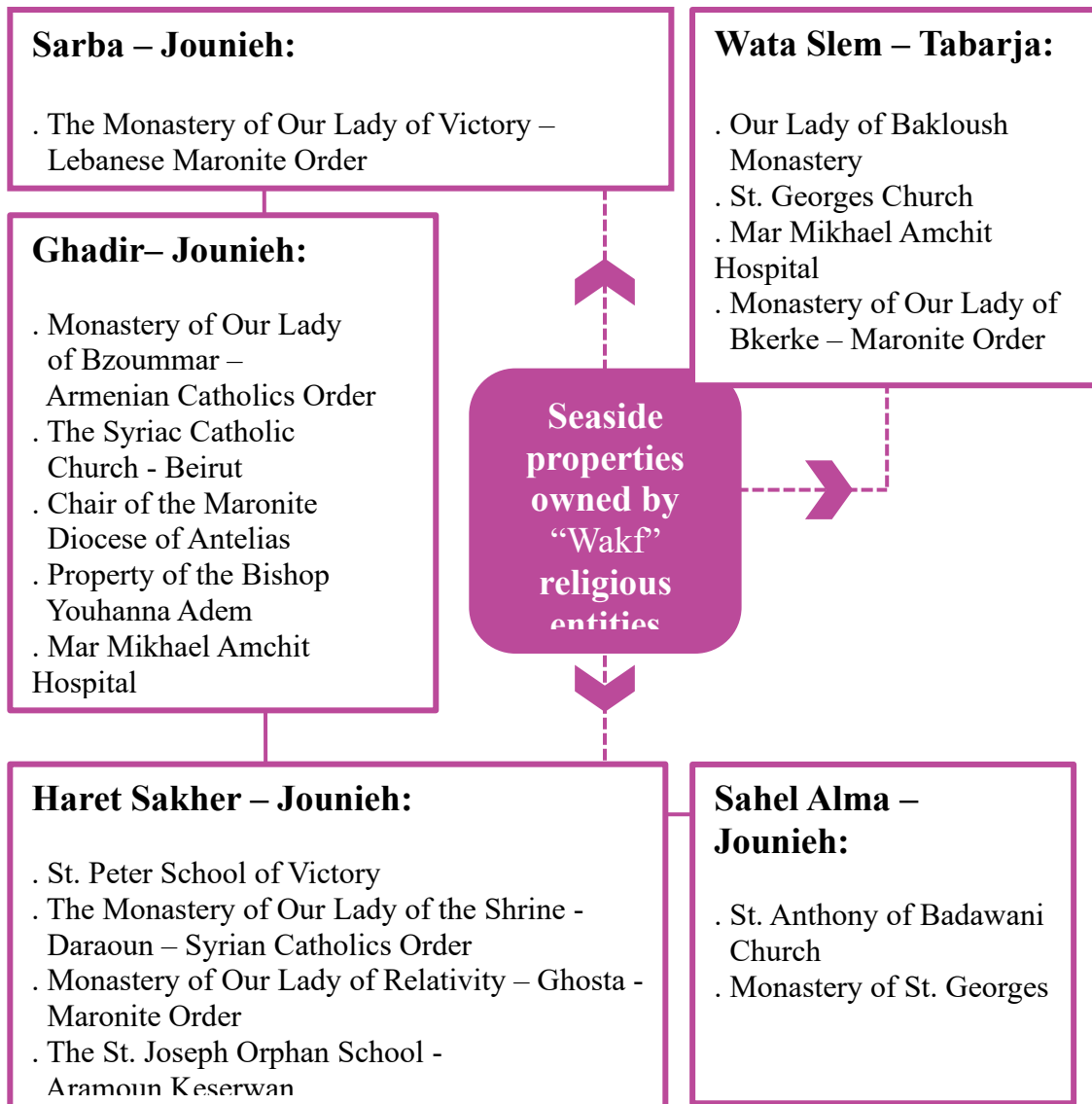


Figure 70: Seaside properties owned by religious entities.

Source: General Directorate of Land Registry and Cadastre, edited by author.

. The Private owners of seaside properties: they are private individuals and private companies who own properties along the seafront of the bay. In fact, the bay is highly privatized given that 86.4 % of its seaside properties are owned by the private sector. The figures 71 and 72 show the prominent families and private companies that own seaside properties.



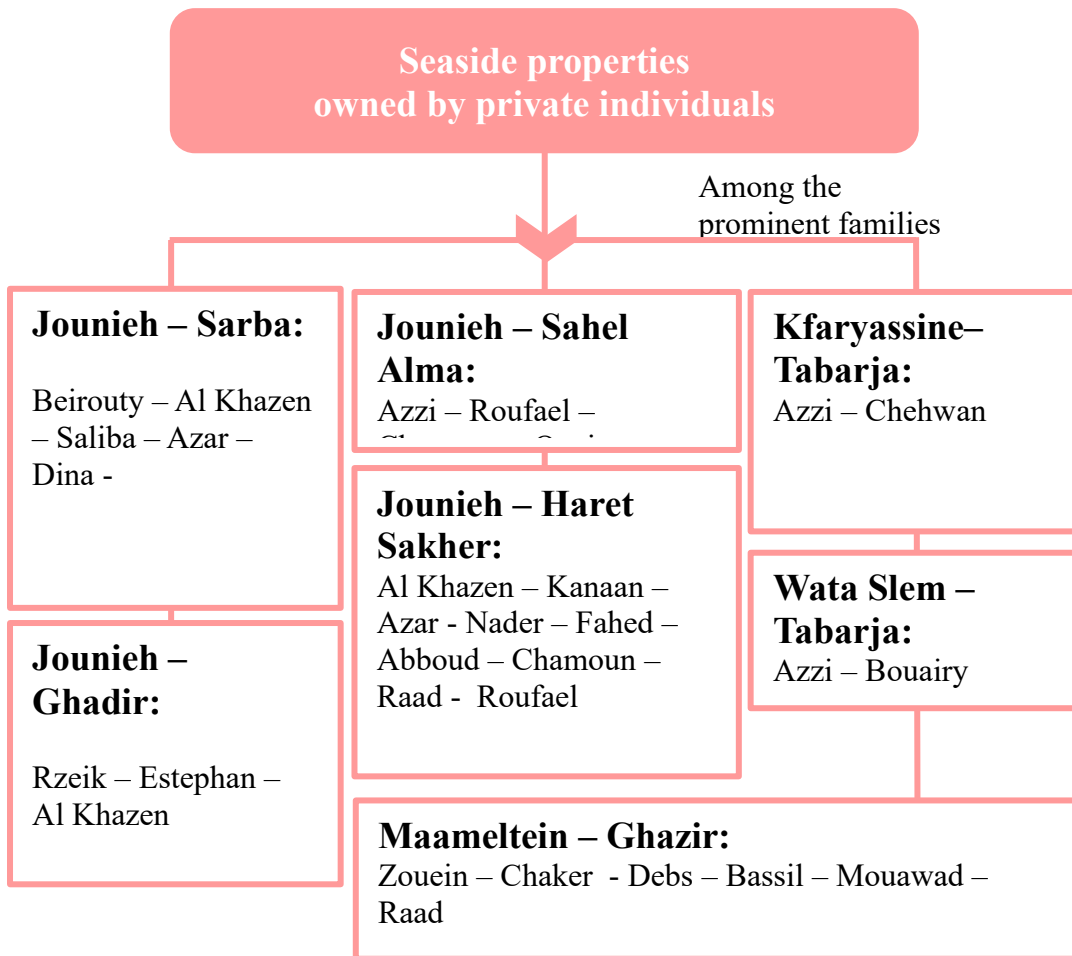


Figure 71: Seaside properties owned by private individuals.

Source: General Directorate of Land Registry and Cadastre, edited by author.

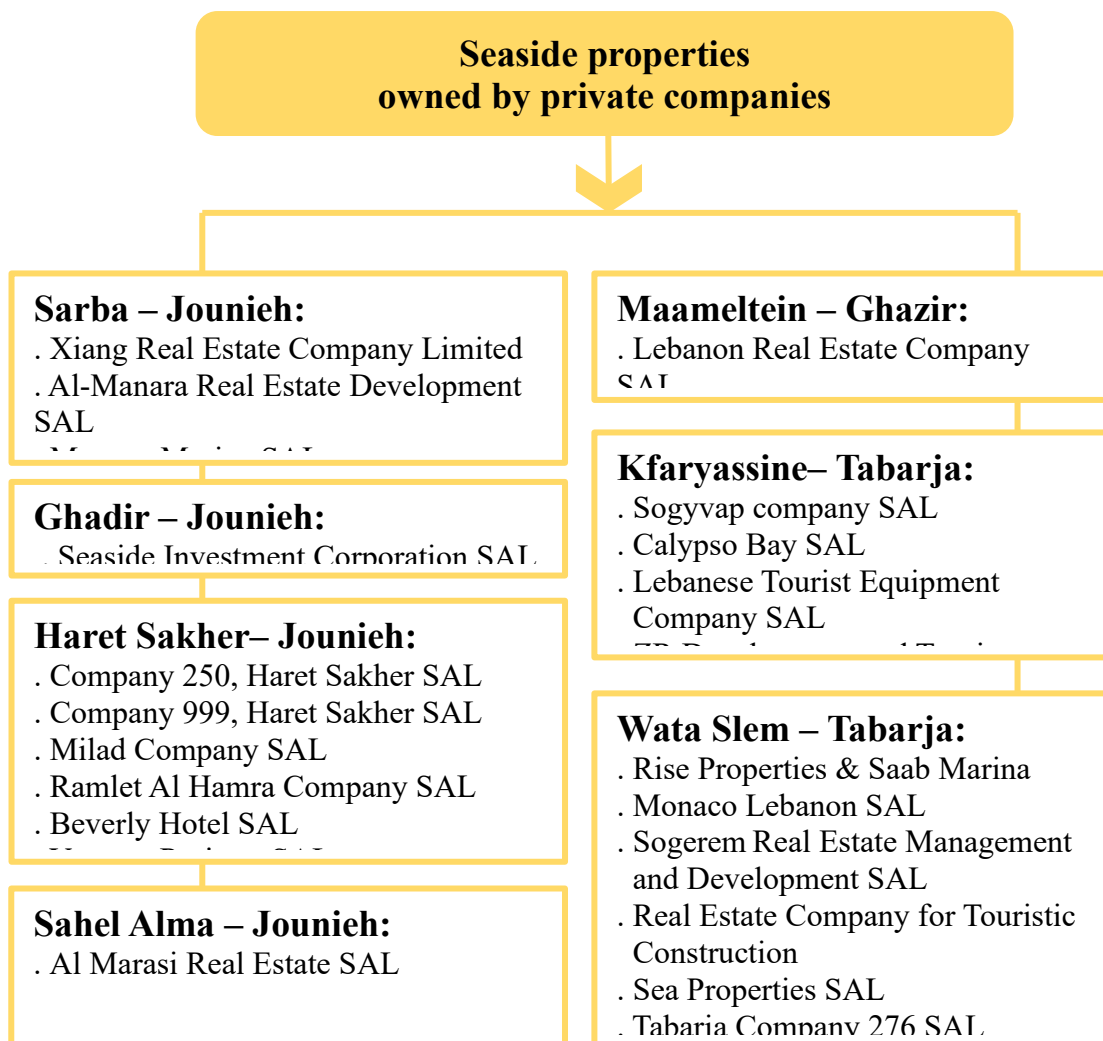


Figure 72: Seaside properties owned by private companies.

Source: General Directorate of Land Registry and Cadastre, edited by author.

. The Fishermen community: Jounieh has a fishing center located in Sarba. According to Majdalani S. (2004), Jounieh contained in 2002, 250 fishing vessels along with 1500 Leisure vessels & ski jets. Jounieh has a small community of fishermen which was around 400 registered fishermen back in 2002.

. Non-Governmental Organizations: several NGOs are active in the fields of culture and environment and their work involve Jounieh and the caza of Keserwan. For instance, the NGO called friends of nature is working on installing an artificial reef to host marine biodiversity in Haret Sakher.

. Other stakeholders: these are the business owners (whether they live in Jounieh or not), the residents who do not vote and are not originally from Jounieh, Ghazir and Tabarja-Kfaryassine, and the tourists (whether they are local visitors or foreign tourists). These entities are considered as stakeholders with limited power.

#### ***4. Leisure and economics***

During the civil war, several factors contributed to the prosperity of the leisure economy in the bay of Jounieh. These included: the natural asset of the bay, the relative security that the area provided during the civil war, the inaccessibility of West Beirut's beaches to the Christian customers, the bombing of Metn (Beit Mery, Baabdate, Broumana) during the Lebanese civil war, the high living standard during the 1980s coupled with a low demand for mountain summer houses during that time, the aim for profit by the real estate developers as well as the bank facilities that were offered for tourist promoters (Mansour, 1993).

Looking at the history of beach resorts and other leisure facilities that are still operating, it is noticeable that most of these facilities date from the 1970s and 1980s (Fig. 73).

The oldest beach resorts dating from the 1950s and that are still operating are: Al Beiruti Beach which is now called Bel Azur which is located in Sarba, and Al tamaris located in Maameltein, Ghazir. The newest beach resort, which is still under construction, is located in Wata Slem.

In fact, the coast of Wata Slem remains the only section that is not altered completely by encroachments serving beach resorts and other touristic utilities. Other parts of the bay are currently saturated by gated beach complexes as well as seaside restaurants and hotels, making the possibilities of new developments difficult and limited.

At the moment, the city is witnessing economic decline that has affected most businesses and particularly retail and tourism. The operating leisure and tourism businesses that are still standing are the sex tourism in Maameltein, the gambling activities and festivities of Casino du Liban and the pilgrimage activity via the cable car reaching to Harissa.

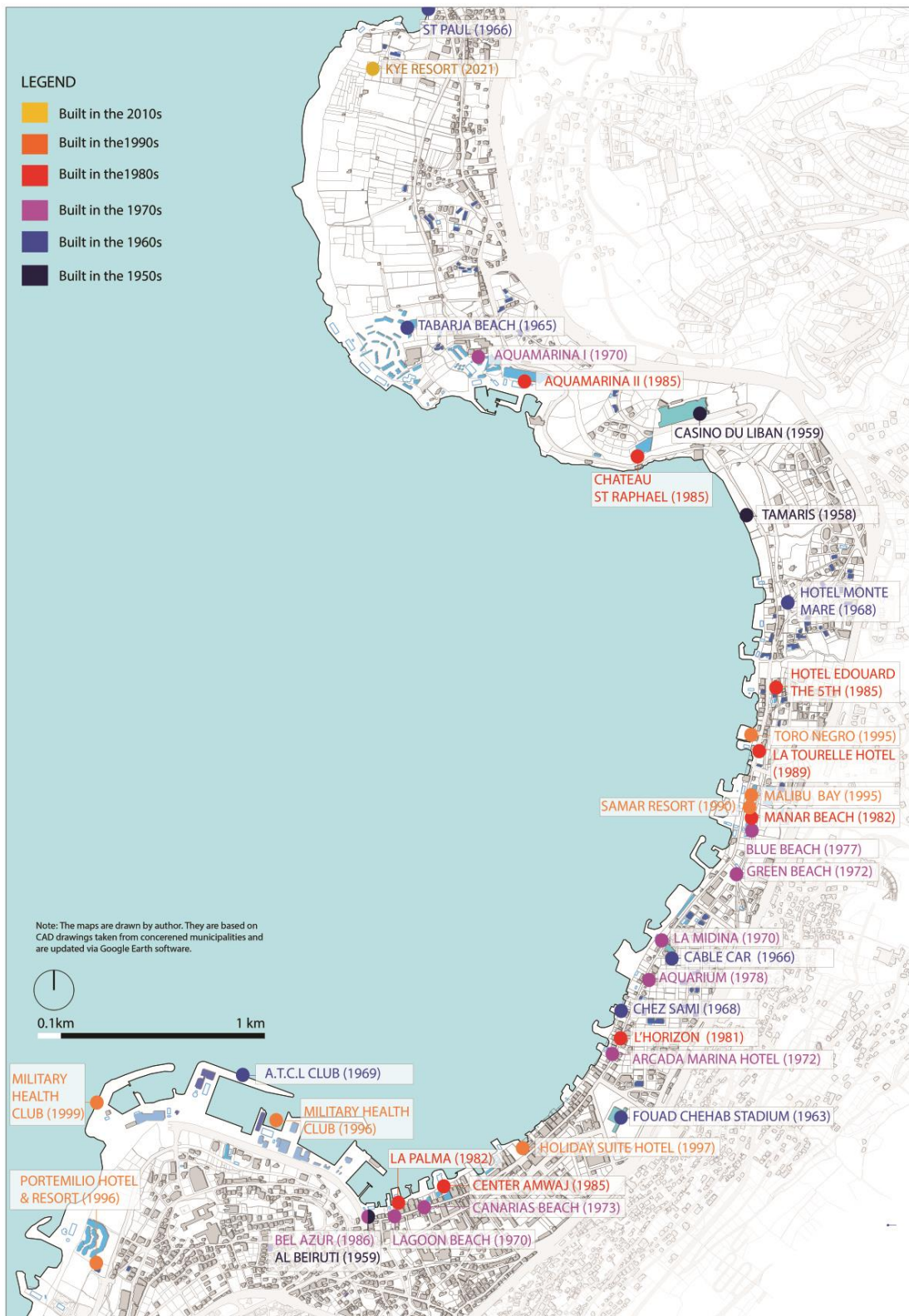


Figure 73: Construction dates of leisure facilities.

Source: Edited by author.

## 5. Real estate market along the bay of Jounieh

According to informal discussions made with real estate agents, Jounieh and Tabarja witnessed a normal inflation rate from 2015 and 2019. While the prices of coastal lands in 2015 were around 5000\$ per sqm in Jounieh and 3000\$ per sqm approximately in Tabarja, they witnessed approximately 20% to 30% raise and became in 2019 around 6000\$ per sqm and 4000\$ per sqm respectively. With regards to chalets apartments that have property records, the prices shifted from 6000\$ per sqm in 2015 to 8000\$ per sqm in 2019 approximately. However, in 2020 prices shifted according to the terms of payment (whether it is cash in dollars or via bank check) due to an unprecedented economic crisis that hit the country and the devaluation of the Lebanese Lira. With regards to prices of hotels along the bay, they witnessed a consistent decline from 2012 to 2020 (Fig. 74). It is worth to note that prices in 2020 were affected by the devaluation of the Lebanese Lira and by the pandemic crisis. This decline of hotel prices along the years can be attributed to the competition with other coastal cities along the Lebanese coast, and/ or to the lack of demand and/or the economic crisis that is hitting the country on a national scale.

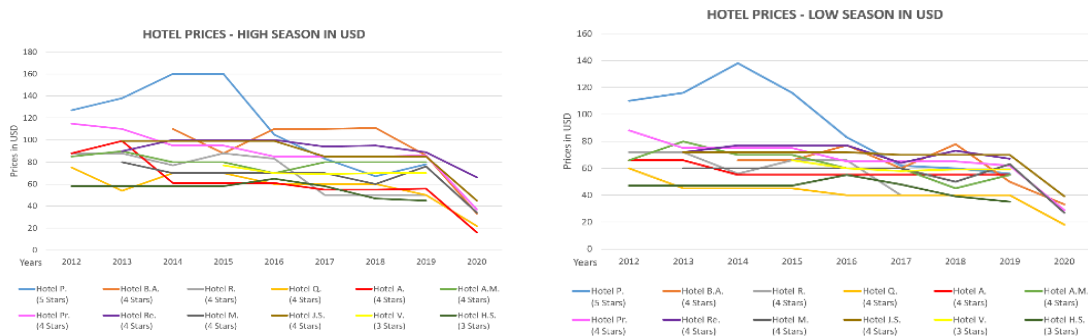


Figure 74: Hotel prices from 2012 to 2020 (High season) in comparison to Hotel prices from 2012 to 2020 (Low season).


Source: Edited by author, data taken from e-booking center Antelias.




## 6. Socio-economic landmarks

According to Mansour (1993), 85.6% of the leisure economy (Hotels, chalets, seaside complexes, restaurants, night-clubs, and theaters) is located near the waterfront. This highlights the importance of the waterfront as a main asset for the installation of these types of projects (Mansour, 1993). In fact, by looking at the current socio-economic landmarks (Fig. 75), it is noticeable that most of the socio-economic landmarks with a touristic vocation are located along the coastline while other types of landmarks such as administrative, educational, cultural are located inwards. Thus, mapping the type of landmarks found along the coast of bay showcases the vocation and use of the coastal city and gives an insight into the main activities and spatial references that are set by the community.

By mapping the landmarks of the bay, the coastline can be categorized into three types or areas (Fig. 76). These types are listed in the table below (Table 25).

Table 25: Categorizing the bay of Jounieh in terms of type od landmarks.

Type	Description	Location: Seaside road	Photos (Source: Author - 2019)
Type 1	<p>. Hybrid area, concentration of several types of landmarks (socio-economic, educational, religious and administrative)</p> <p>In Sarba reaching Haret Sakher Jounieh: 4 administrative landmarks (e.g. The municipality of Jounieh, the courthouse and Serail of Jounieh, the central Bank of Lebanon), 6 religious landmarks, 5 educational landmarks, 5 cultural landmarks,</p>	<p>Found in Sarba Jounieh and stretching to Haret Sakher Jounieh, reaching specifically the Fouad Chehab stadium</p> <p>Also found in Al Minah, Tabarja</p>	

	<p>12 socio-economic landmarks, (e.g. the souks of Jounieh counted as one entity, the military clubs, other beach resorts and seaside restaurants)</p> <p>In Al Minah Tabarja: (The municipality of Tabarja-Kfaryassine, few seaside restaurants along the coast of Al Minah and a small church called St. Georges church.)</p>		
Type 2	<p>. Dominance of socio-economic landmarks (12 socio-economic landmarks mainly located along the coastline with a touristic and leisure vocation)</p>	<p>Area stretching from Jounieh main road (Fouad Chehab stadium) in Haret Sakher reaching Tabarja beach in Wata Slem</p>	
Type 3	<p>. Area with scarcity of landmarks Area with large agricultural fields on its coast with a mix of a residential fabric with hotels located inwards</p>	<p>Found in the agricultural fields of Wata Slem Tabarja</p>	

Source: Author





Figure 75: The socio-economic landmarks along the bay of Jounieh.

Source: Edited by author.

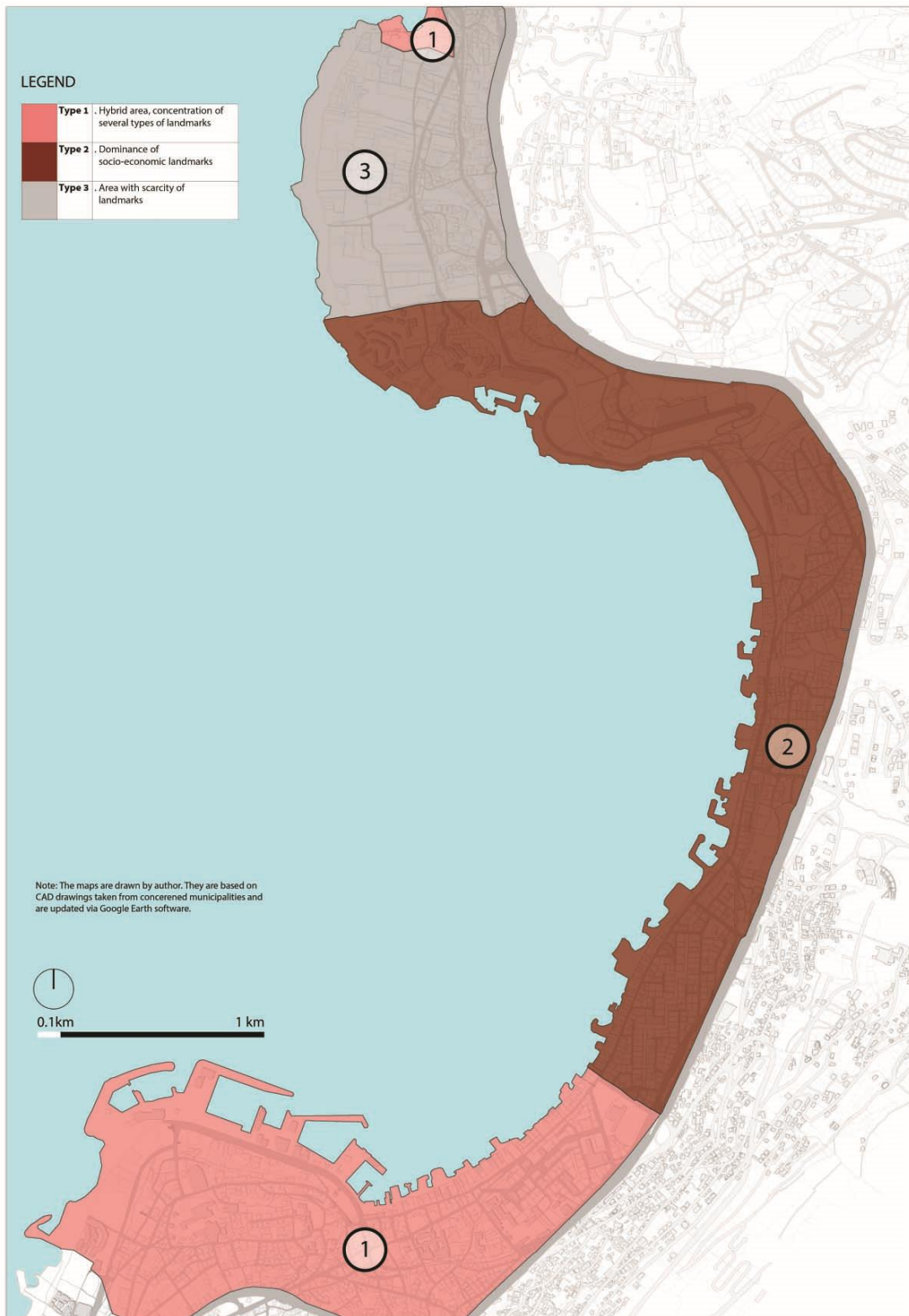


Figure 76: Categorizing the bay of Jounieh according to its socio-economic landmarks along its coast.

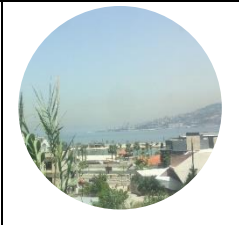
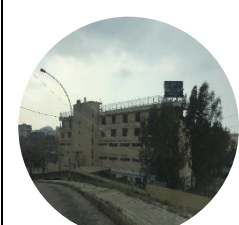
Source: Edited by author.


## 7. Building use and ground floor use

The economic development of Jounieh was and is still mostly reliant on the city's role as a regional center of tourism and service provision (ICMA, 2008). Thus, mapping the building use of the fabric along the coast of the bay reveals that the bay offers a mix between a residential fabric and a touristic fabric with a small business hub in Minah Al Jadida in Haret Sakher and in Minah Al Atiqua in Ghadir stretching to Sarba along the souks of Kaslik (Fig. 77, 78). Therefore, mapping the use of building fabric reveals about the main vocation of the coastal city and its economy.

Analyzing the building use of the fabric along the bay, the studied area can be divided into six types or categories (Fig. 79). These categories are listed in the table below (Table 26).

Table 26: Categorizing the bay of Jounieh in terms of building use

Type	Description	Location: Seaside road	Photos (Source: Author - 2019)
Type 1	. Area with beach resorts and military clubs on the coastline and a commercial spine (souk of Kaslik extension)	Found in Sarba Jounieh	
Type 2	. Residential area with few educational facilities	Found in the upper hill of Sarba reaching Ghadir Jounieh	

Type 3	. Business and administrative facilities along with educational facilities and a commercial spine on seaside road	Found in Ghadir and part of Haret Sakher, Jounieh	
Type 4	. Mix between hotels and a residential fabric	Located in Haret Sakher, Jounieh reaching Maameltein Ghazir and in north of Kfaryassine, Tabarja	
Type 5	. Area with large scale touristic facilities such as Casino, hotels, large scale beach resorts and restaurants	Found in Maameltein Ghazir reaching south of Wata Slem Tabarja	
Type 6	. Agricultural fields with few small residential houses and cabins	Wata Slem Tabarja	

Source: Author



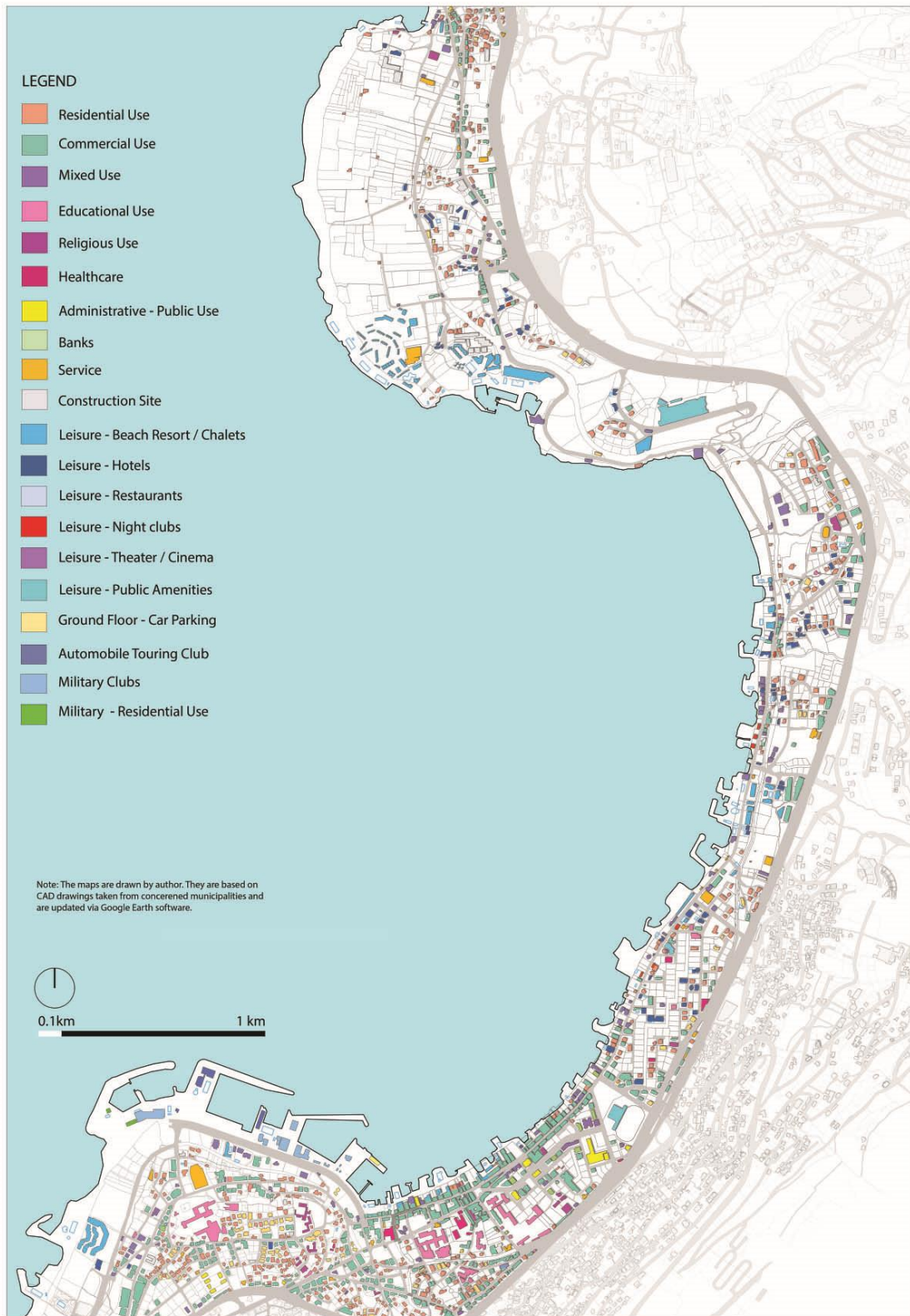


Figure 77: Mapping ground floor use of the studied area.

Source: Edited by author.

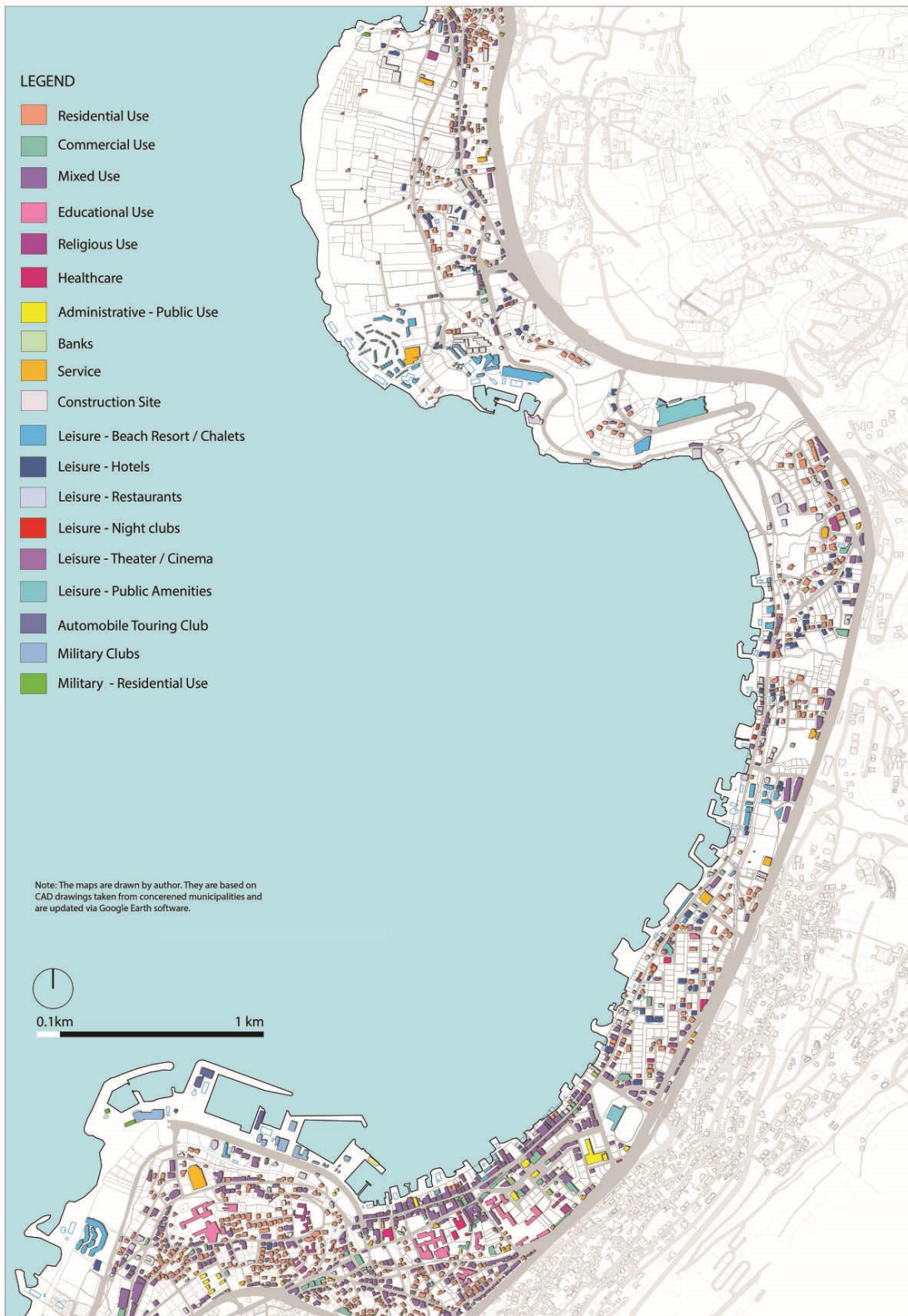


Figure 78: Mapping the building use of the studied area.

Source: Edited by author.



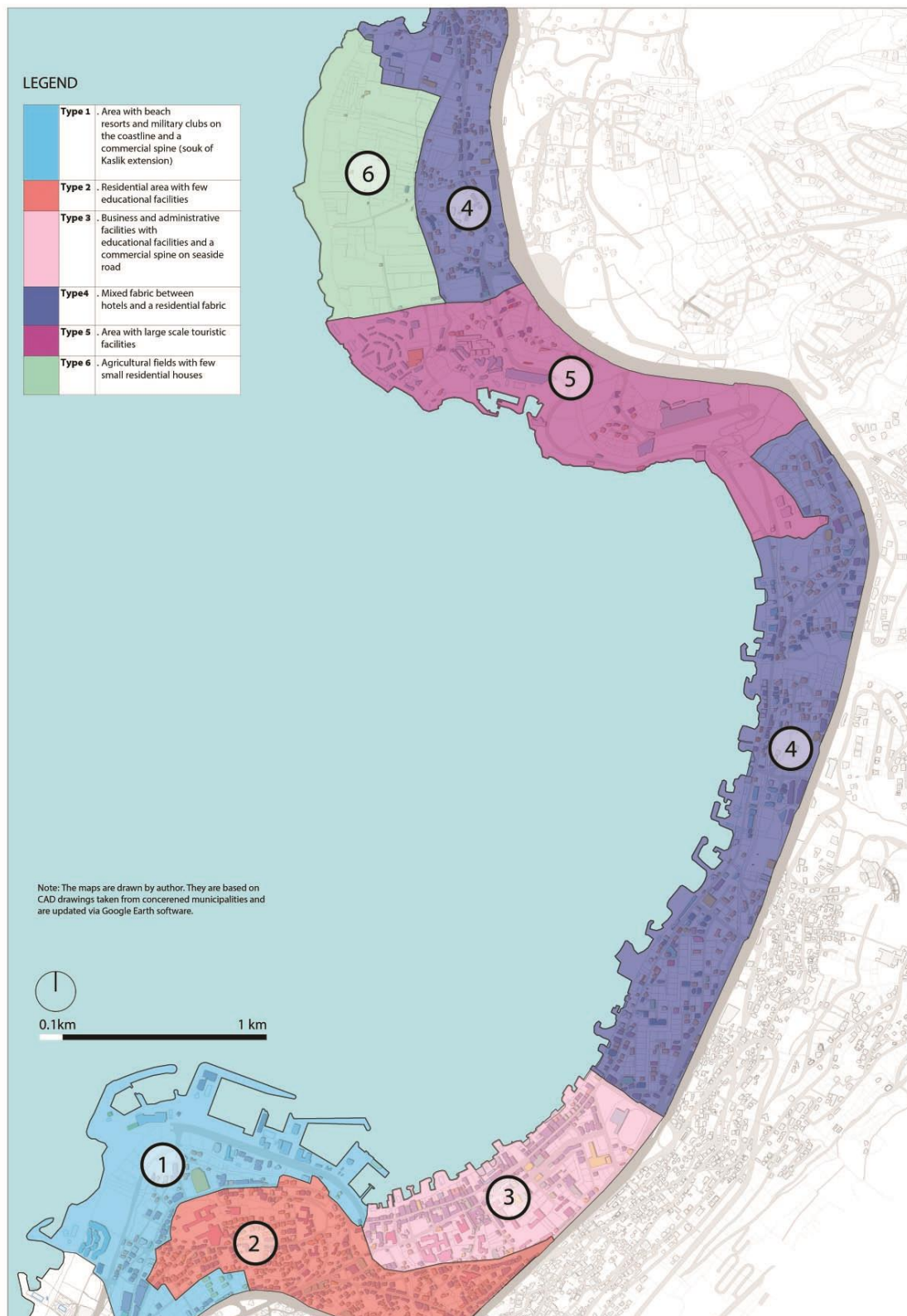


Figure 79: Categorizing the coast of the bay according to the building use.



Source: Edited by author.

## 8. Neighborhood condition



Regarding the condition of neighborhood, assessment was done to each building of the studied area in addition to assessing the state of streets and public spaces (Fig. 80). Mapping the neighborhood condition reveals the socio-economic status of the coastal city and the presence or absence of neglect from private as well as public authorities. The results of the mapping reveal that the overall condition of the coastline of the bay is hybrid. It is in a good state in the southern part of the bay and in some parts of Kfaryassine. However, areas showing neglect are located in the middle section of the bay, starting from Haret Sakher in Nouair district reaching south Maameltein, Ghazir. Neighborhoods that are in a bad state are located in Wata Slem, and in north Haret Sakher specifically the St. Elie chalet buildings.

Analyzing the state of the studied area, the bay can be divided into four types or categories (Fig. 81). These categories are listed in the table below (Table 27).

Table 27: Categorizing the bay of Jounieh in terms of neighborhood condition

Type	Description	Location: Seaside road	Photos (Source: Author - 2019)
Type 1	. Neighborhood in good state in terms of building state, condition of roads and quality of public areas	Located in coastal Sarba, Ghadir, inner Nouair district in Jounieh Found in Kfaryassine and in Al Minah in Tabarja	
Type 2	. Neighborhood in average state in terms of building state, condition of roads and quality of public areas	Found in Haret Sakher and Sahel Alma in Jounieh Found in Maameltein in Ghazir and found in inner Kfaryassine Tabarja	



<p>Type 3</p>	<ul style="list-style-type: none"> <li>. Neighborhood in average state in terms of building state</li> <li>. Narrow roads, with high density of buildings</li> </ul>	<p>Found in inner Sarba towards the highway</p>	
<p>Type 4</p>	<ul style="list-style-type: none"> <li>. Neighborhoods in a bad condition in terms of building state, and in terms of provision of asphalted roads</li> </ul>	<p>Found in the agricultural fields of Wata Slem</p>	

Source: Author

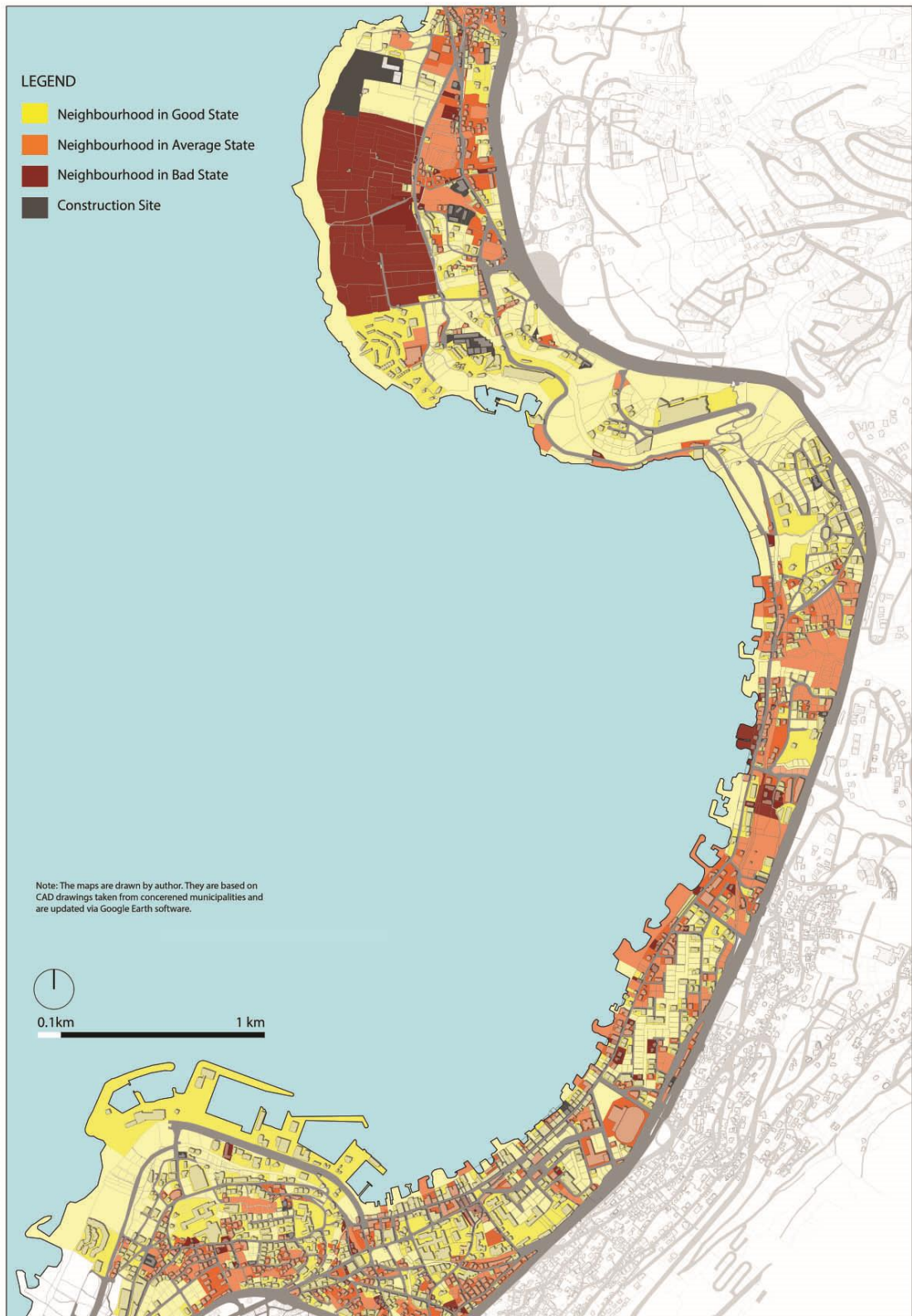


Figure 80: Mapping the neighborhood condition of the studied area.

Source: Edited by author.

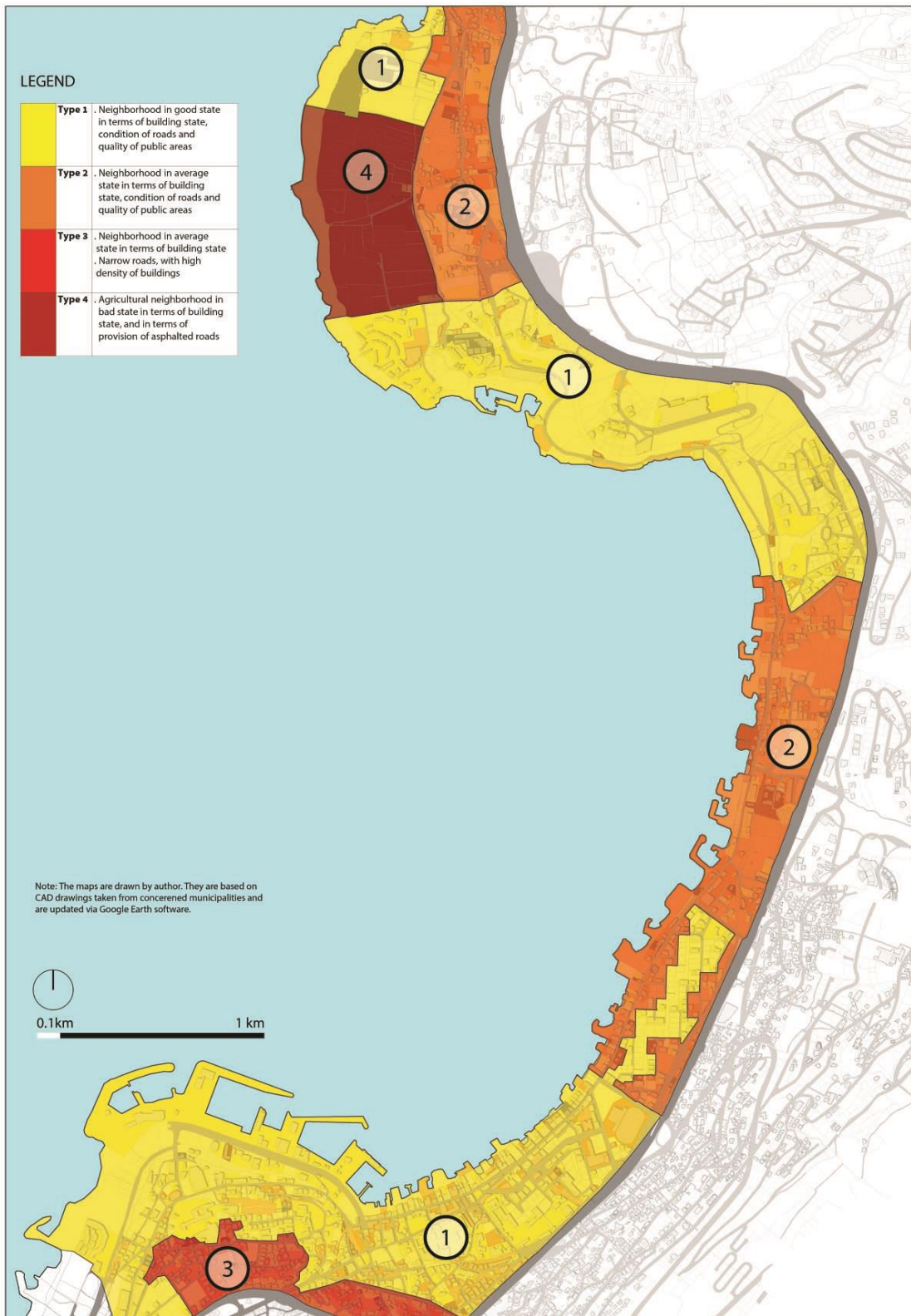


Figure 81: Categorizing the bay according to the neighborhood condition.

Source: Edited by author.

## **F. Environmental profile**

### *1. Natural systems*

#### a. Geology and soils

According to the Prasith (2004), the bay presents a dissymmetry between the northern part and southern part which is purely structural. The steep slopes located in the northern part of the bay reveal a sudden plunge of the Cenomanian-Turonian limestone layers due to the great western flexure. The Maameltein glacis is also carved in the Turonian limestone. The flat lands of the bay date from the Quaternary. The heights overlooking the bay are composed of various superimposed layers dating from different periods. The Sarba promontory corresponds to an outcrop of weakly deformed Miocene limestone which has been preserved to the west of the great flexure. This Miocene block may once have extended further north and has been altered by erosion or collapsed by the fault (Fig. 82).

From the coast to the hinterland, layers of limestone alternate with green marl and limestone beds, both dating from the Middle Cretaceous. One finds below layers which date from the lower Cretaceous and which are alternations of clay-sandy grounds and limestone banks superimposed on sandstone.

In terms of lithology, the bay is formed from different types of limestone which has a low level of water absorption and low porosity and is compact, grained with a sedimentary nature. As shown in the figure below (Fig. 83), the upper part of Wata Slem and Kfaryassine is made from dolomitic limestone. The northern middle part of the bay is made from marly limestone and the mid-to-lower part of the bay, from Haret Sakher reaching Sarba to the south, is made from conglomeratic limestone.

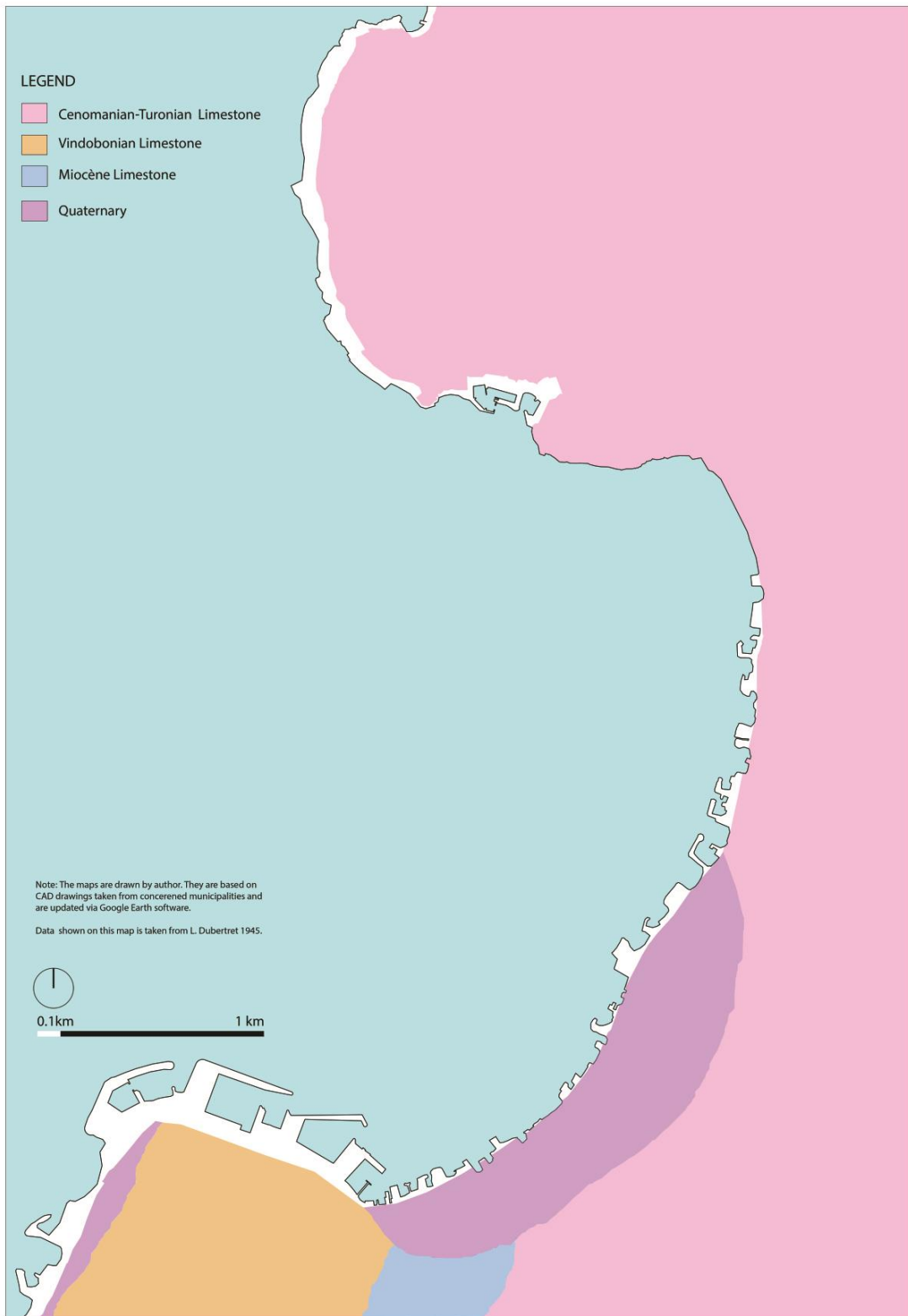


Figure 82: Landform and water of studied area.

Source: Edited by author taken from L. Dubertret 1945.



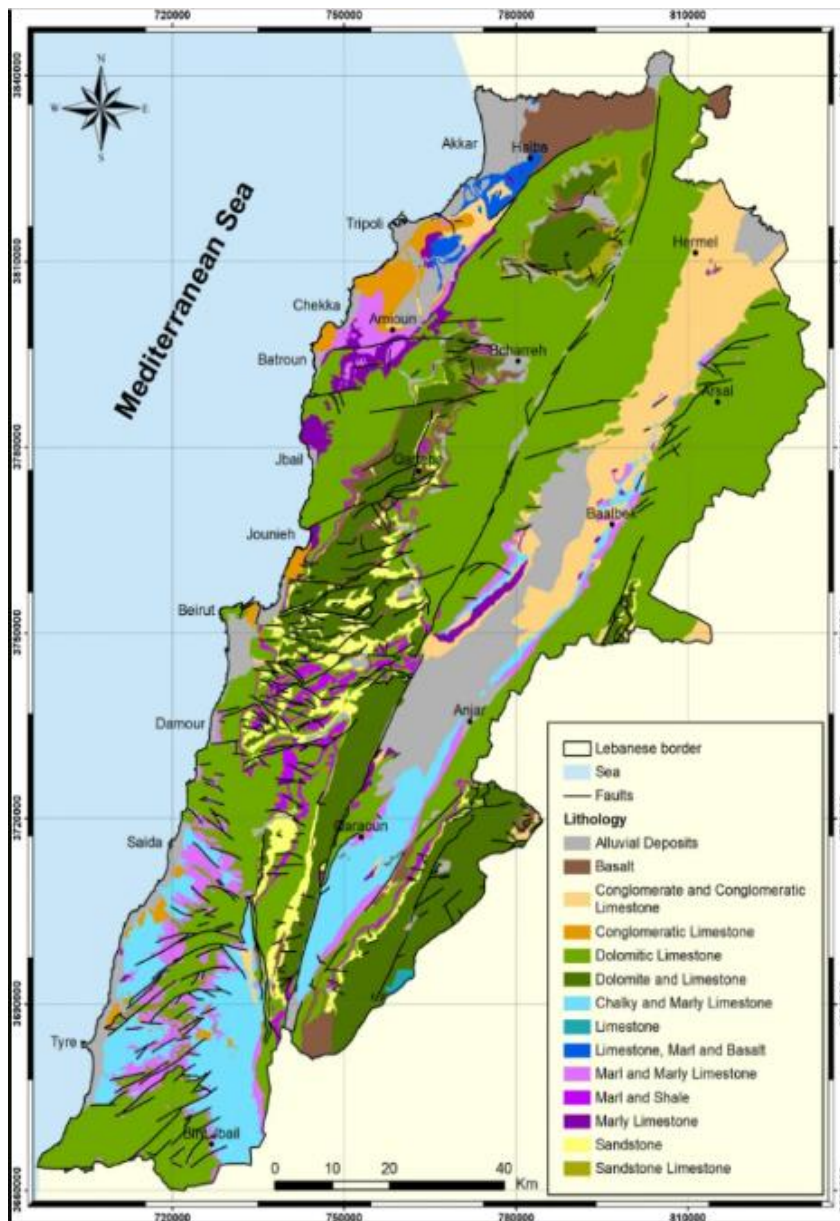


Figure 83: Types of rocks in Lebanon

Source : <https://link.springer.com/article/10.1007/s12517-020-05565-7>

### b. Landform

The topography lines of the studied area show that the bay presents narrow flatlands in the middle of the bay and is located in between two hills. These hills are found in Sarba towards the south and in Kfaryassine towards the north (Fig.84). Large flatlands are present in the coast of Wata Slem towards the north of the bay.

Analyzing the topography of the studied area, the bay can be divided into five types (Fig. 85). The first type refers to the hill of Sarba which include high cliffs that were directly next to the sea. The landform in this category was altered by large flat areas of land reclamation.

The second type is a flat coastal area with an average width and is located in Ghadir reaching Nouair district in Haret Sakher. The third category is a narrow flat coastal area and is located in Haret Sakher reaching Maameltein. The fourth category is a mild hill next to sea and refers to the hill of Kfaryassine. The fifth category involves wide flat coastal areas with cliffs on the south and refers to the flatlands of Wata Slem and inner Kfaryassine.

#### c. Landform and landscape vegetation

Adding the landscape vegetation layer to the topography (Fig. 86), the bay is now divided into six types (Fig. 87). The aforementioned second category explained above is split into two. The first category still refers to the hill of Sarba and is known for having several orchards. The second category still refers to a flat coastal area with an average width but with minor vegetation. However, this category does not reach Nouair district in Haret Sakher. It does include Ghadir (Minah Al Atiqua district) and stops at the end of Minah Al Jadida in Haret Sakher. Nouair district on the other hand constitutes a category on its own, given that it does include few orchards and agricultural areas. The fourth category constitutes a narrow flat coastal area known for its natural vegetation. This category stretches from north Haret Sakher reaching Maameltein. The hill of Kfaryassine constitutes the fifth category and has natural vegetation. The sixth category is known for its large flatlands with agricultural fields and is located in Wata Slem and inner Kfaryassine.

#### d. Marine Fauna and Flora

With regards to the bathymetry of the site, the waters of the bay are considered deep given that the 1,000 m bathymetric line is located 8 km offshore. Moreover, bathymetric lines indicate the presence of a canyon in the bay. The head of the canyon is located at approximately 1,800 m from the coast (Deep-Sea Lebanon Project, 2018)<sup>40</sup>. The sea bottom of the top of the canyon is mostly sandy or sandy-muddy. These soft bottoms appeared to be relatively abundant in fauna presence. Submarine canyons are known to boost the abundance and diversity of marine life and they can support fauna with diverse habitat requirements (Deep-Sea Lebanon Project, 2018). The group of species that were recorded within the area of the canyon are; Polychaetes, Gastropods, Bivalves, Crustaceans, Brachiopods and Echinoderms. With regards to fish species and macro algae found in diving sites, they correspond to a typical Mediterranean marine environment. Lionfish, Parrotfish, Sea bream, Octopus, Rainbow bass as well as Scallop shells are the most prominent species that are found in these diving sites<sup>41</sup>.

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<sup>40</sup> [https://www.racspa.org/sites/default/files/doc\\_deep\\_sea\\_lebanon/jnmr\\_management\\_plan.pdf](https://www.racspa.org/sites/default/files/doc_deep_sea_lebanon/jnmr_management_plan.pdf)

<sup>41</sup> Informal discussions were made with manager and scuba diving instructor Mrs. D. Boghossian at Stingray Divers- Lebanon about the species found in the diving sites of Jounieh.



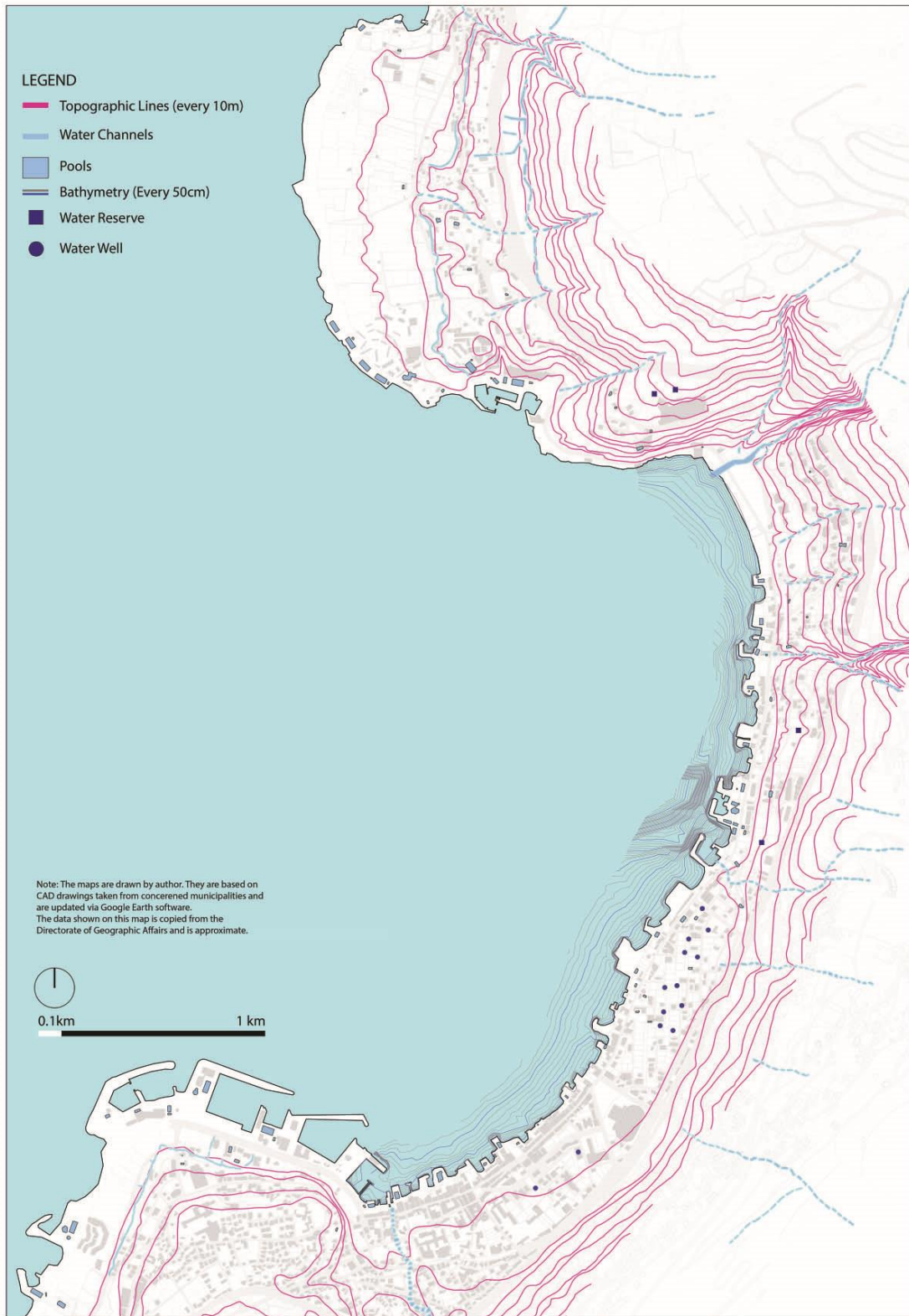


Figure 84: Landform and water bodies in studied area.

Source: Edited by author.

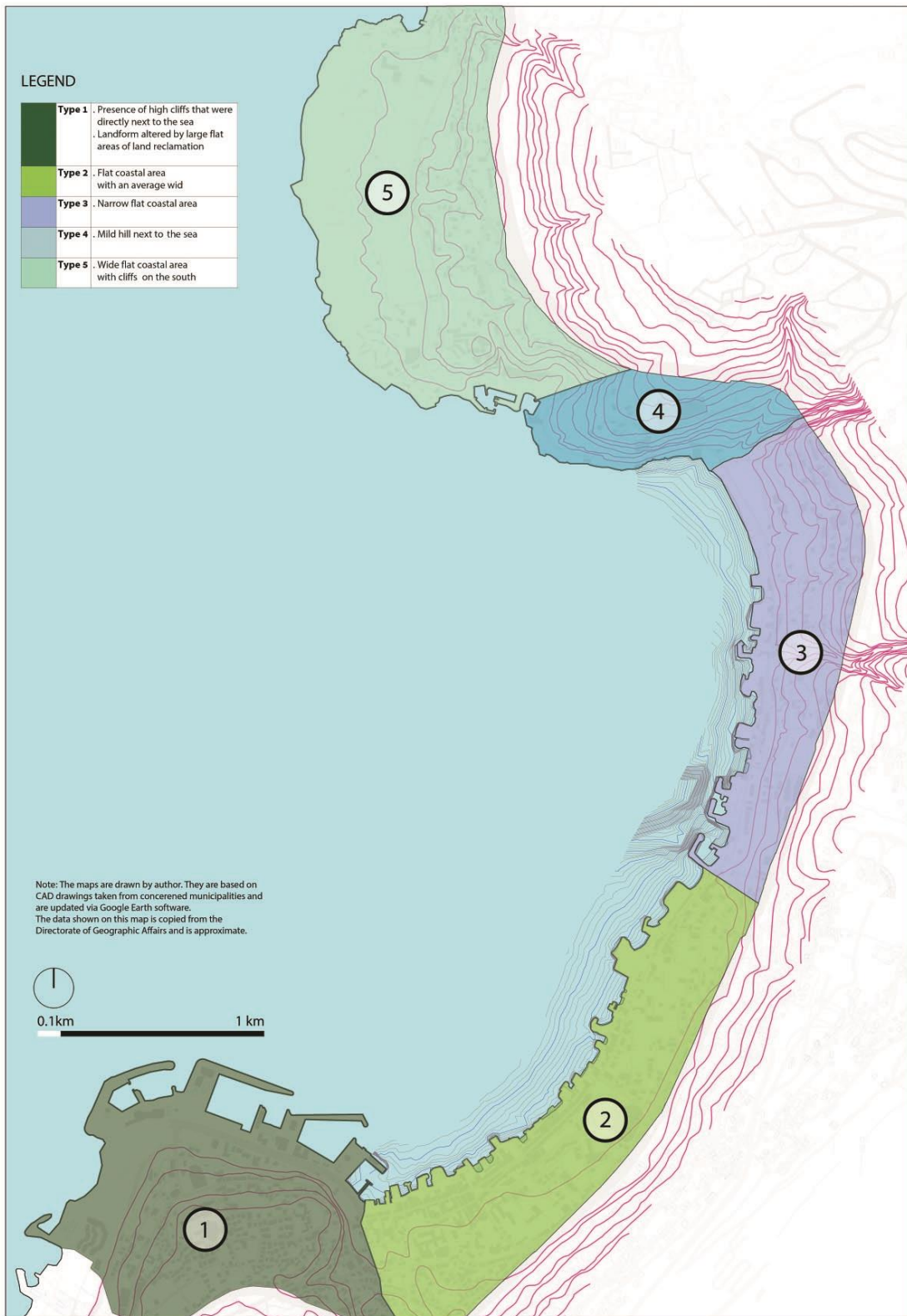


Figure 85: Categorizing the bay in terms of landform and presence of water bodies.

Source: Edited by author.

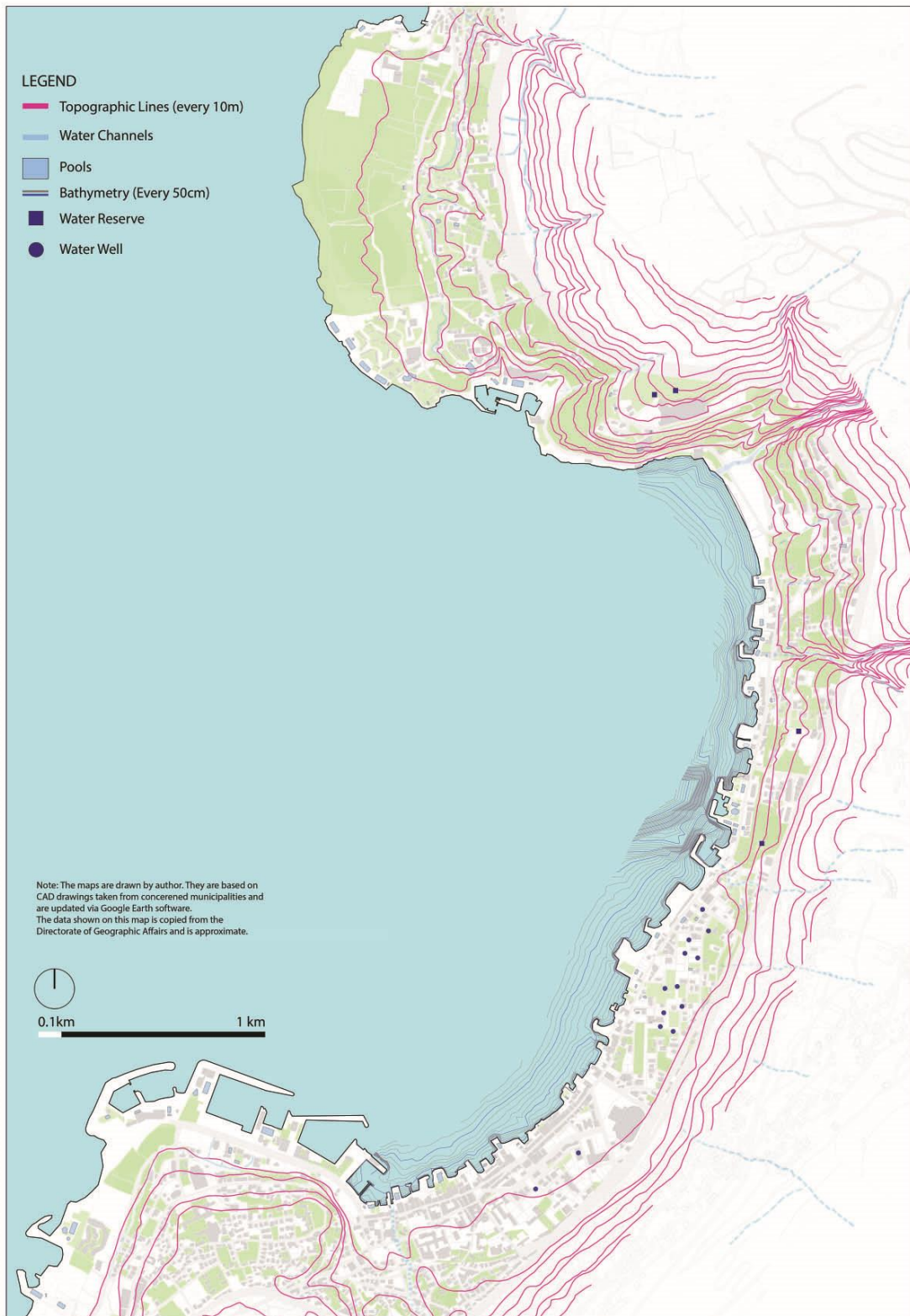


Figure 86: Landform, water bodies and landscape vegetation of studied area.  
Source: Edited by author.



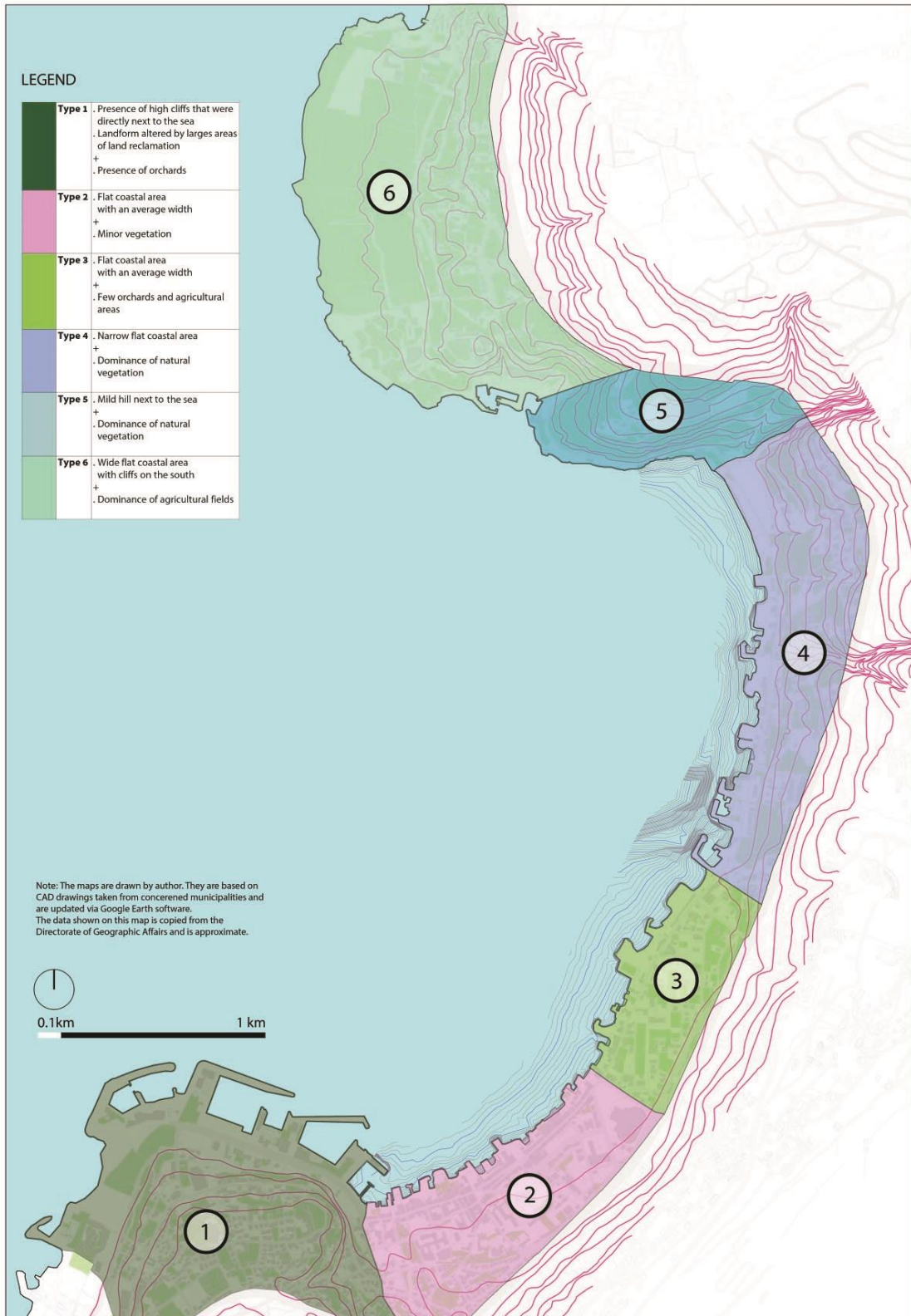


Figure 87: Categorizing the coast of the bay according to its landform, water bodies and landscape vegetation.

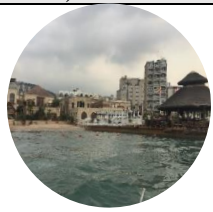

Source: Edited by author.







## 2. Human systems

### a. Land use and land cover

Mapping the land use and land cover of the studied area gives insight about to the character of the bay and its neighborhoods. The result of the mapping show (Fig. 88) that the town of Sarba presents the densest urban fabric. Few orchards are found around old houses and convents in Sarba and in some parts of Ghadir. The back of Minah Al Atiqua in Ghadir and Minah Al Jadida in Haret Sakher presents several parking spaces. The train trail can be traced by the presence of a narrow strip of natural vegetation along the bay. Natural vegetation is mostly found in the northern part of Haret Sakher reaching Kfaryassine. Moreover, the town of Wata Slem is mostly covered by agricultural fields along with greenhouses. Upon closer inspection, it appears that the bay can be classified into eight types or categories (Fig. 89). These categories are listed in the table below (Table 28).

Table 28: Categorizing the bay of Jounieh in terms of land use and land cover

Type	Description	Location: Seaside road	Photos (Source: Author - 2019)
Type 1	. Presence of several terraces, pools, sports fields and grass fields for beach resorts and restaurants	West side of seaside road from Sarba reaching Maameltein, Ghazir and in Kfaryassine, Tabarja	
Type 2	. Dominance of parking areas with natural vegetation in a commercial and business fabric (The extension of the souks of Kaslik)	Found in inner Sarba, Jounieh	

Type 3	<ul style="list-style-type: none"> <li>. Dominance of parking areas with few private gardens serving a residential fabric</li> </ul>	Found in inner Sarba, Jounieh	
Type 4	<ul style="list-style-type: none"> <li>. Dominance of orchards around an old residential fabric (presence of traditional houses)</li> </ul>	Found in Sarba and in Ghadir, Jounieh	
Type 5	<ul style="list-style-type: none"> <li>. Presence of sports fields and playgrounds around educational facilities</li> <li>. Presence of large parking areas around commercial and business fabric</li> </ul>	Found in Ghadir and Haret Sakher, Jounieh reaching the Fouad Chehab stadium.	
Type 6	<ul style="list-style-type: none"> <li>. Mix between parking areas, orchards and few agricultural fields.</li> <li>. Mix between hotels and a residential fabric</li> </ul>	Nouair district, in Haret Sakher, Jounieh and in inner Kfaryassine, Tabarja	
Type 7	<ul style="list-style-type: none"> <li>. Dominance of natural vegetation</li> <li>. Mix between hotels and a residential fabric</li> </ul>	Found in Haret Sakher, Jounieh reaching Kfaryassine, Tabarja	
Type 8	<ul style="list-style-type: none"> <li>. Agricultural fields</li> <li>. Shy residential fabric</li> </ul>	Found in Wata Slem, Tabarja	

Source: Author

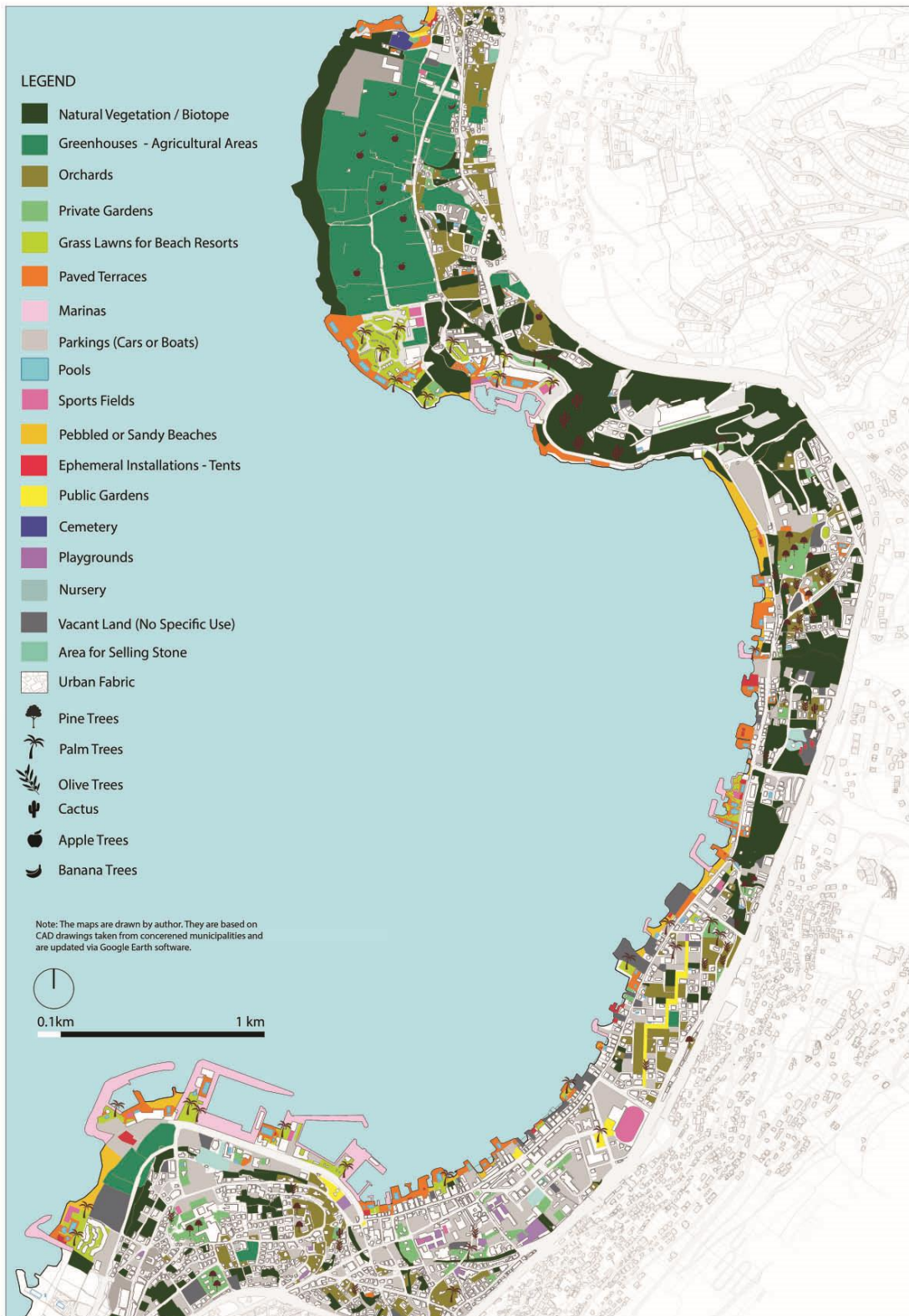


Figure 88: Mapping land use and land cover of studied area.

Source: Edited by author.



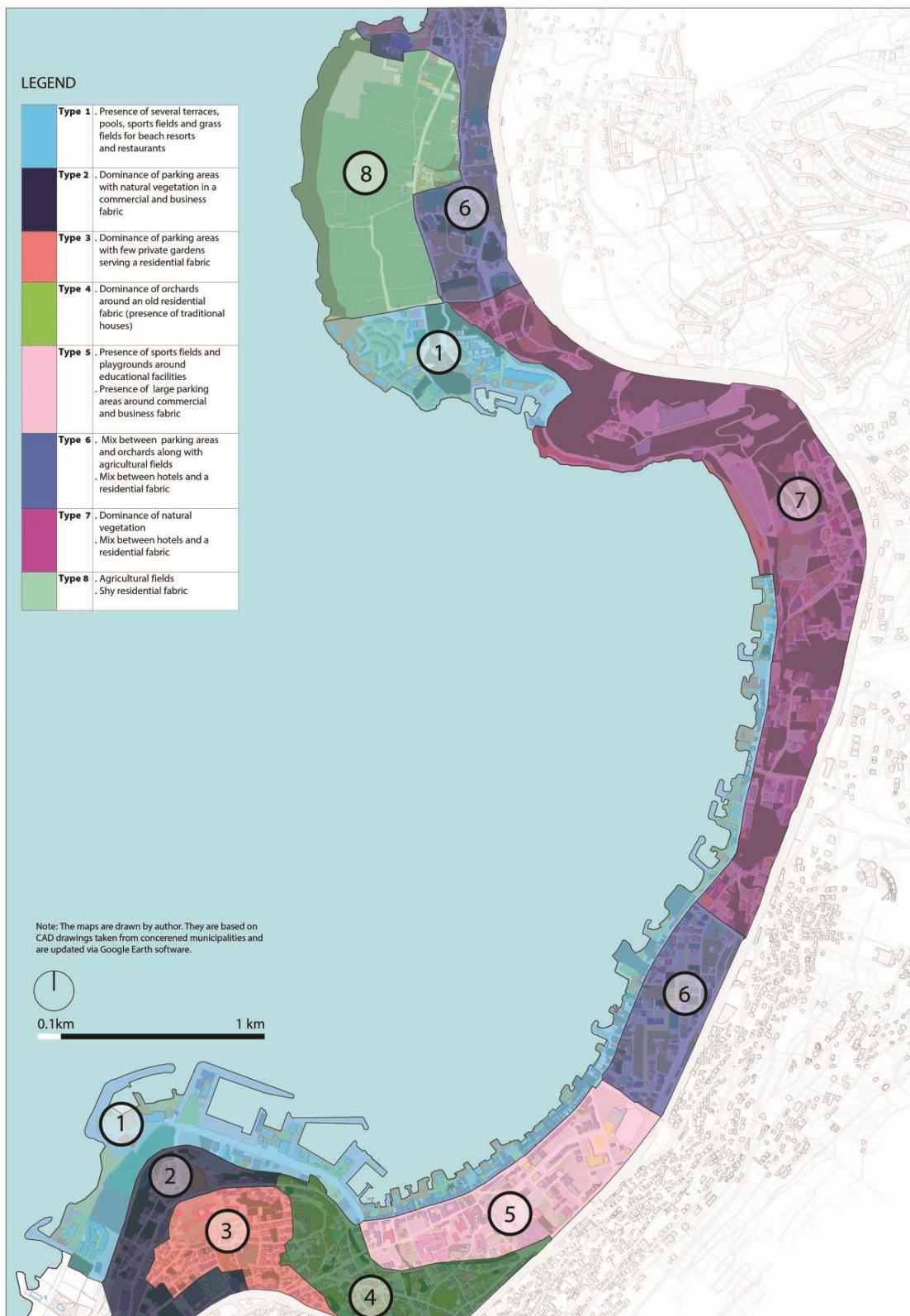


Figure 89: Categorizing the coast of the bay according to its land use and land cover.

Source: Edited by author.



## b. Air and water pollution

With regards to the environmental condition of the bay, Jounieh suffers from maritime and air pollution. In fact, various embankments along the shoreline have caused negative effects on maritime fauna and flora and caused the silting up of some of the beaches. Furthermore, water pollution has been aggravated due to untreated sewage pipes located in Tabarja and Zouk Mosbeh pouring sewage directly into the sea (Fig.90). According to the National Council for Scientific Research (NCSR), a study published in 2020<sup>42</sup> indicates that Maameltein beach in Jounieh is safe for swimming. However, Jounieh was marked as unsafe or critical for swimming due to moderate levels of bacterial contamination ratios that are subject to sporadic or circumstantial contamination. Regarding air quality, according to Greenpeace, the city recently ranked fifth in air pollution in the Arab world (Azar, 2018).

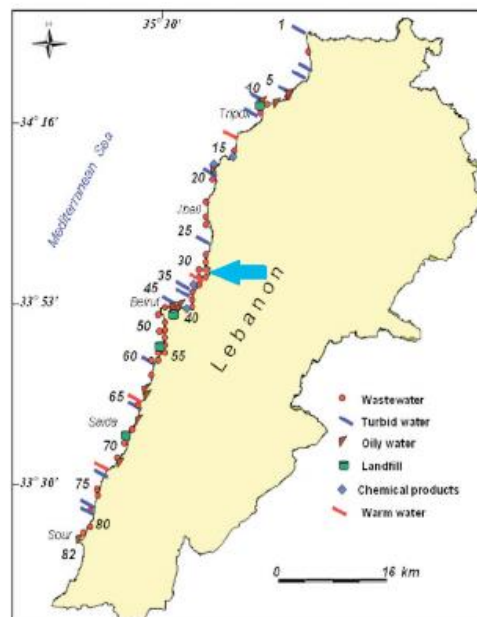


Figure 90: Map of the distribution of different aspects of marine pollution along the Lebanese coast.

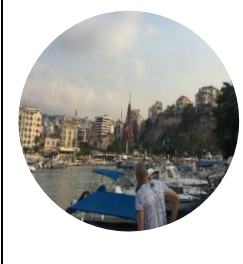
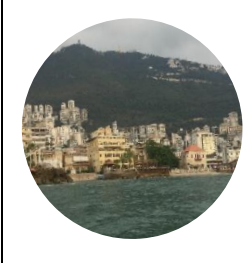
Source : [https://www.rac-spa.org/sites/default/files/doc\\_deep\\_sea\\_lebanon/jnmr\\_management\\_plan.pdf](https://www.rac-spa.org/sites/default/files/doc_deep_sea_lebanon/jnmr_management_plan.pdf)




<sup>42</sup> <https://www.annahar.com/english/article/1219055-only-17-out-of-31-beaches-in-lebanon-are-safe-for-swimming>

c. Shoreline typology

Mapping the shoreline typology reveals about the nature of the interface between land of water whether it is altered or kept natural. Thus, it is an important component for mapping that reveals the character of the coastal city. It is worth noting that this kind of mapping was done via a collage of photos of the façade maritime taken from a boat in 2019. The mapping results reveal that the only parts of the shoreline that are kept untouched are found in Maameltein (pebbled beach) and in Wata Slem (natural rocks). All the other parts of the shoreline are altered by the presence of several areas of land reclamation made of concrete embankments and coupled with riprap (Fig. 91). Upon closer inspection, it appears that the bay can be classified into five types/ categories (Fig. 92). These categories are listed in the table below (Table 29).

Table 29: Categorizing the bay of Jounieh in terms of shoreline typology.

Type	Description	Location: Seaside road	Photos (Source: Author - 2019)
Type 1	. Area with large areas of concrete and riprap with the presence of few sandy beaches (Large scale)	Coast of Sarba, Jounieh	
Type 2	. Alternation between sandy/pebbled beaches and concrete/riprap embankments (Small scale)	Stretches from Sarba, Jounieh reaching Maameltein, Ghazir	

Type 3	. Natural condition, area with pebbled beach	Coast of Maameltein, Ghazir	
Type 4	. Dominance of concrete embankments and riprap	coast of Kfaryassine, Tabarja	
Type 5	. Zone with natural rocks with high ecological value	Found in Wata Slem, Tabarja	

Source: Author

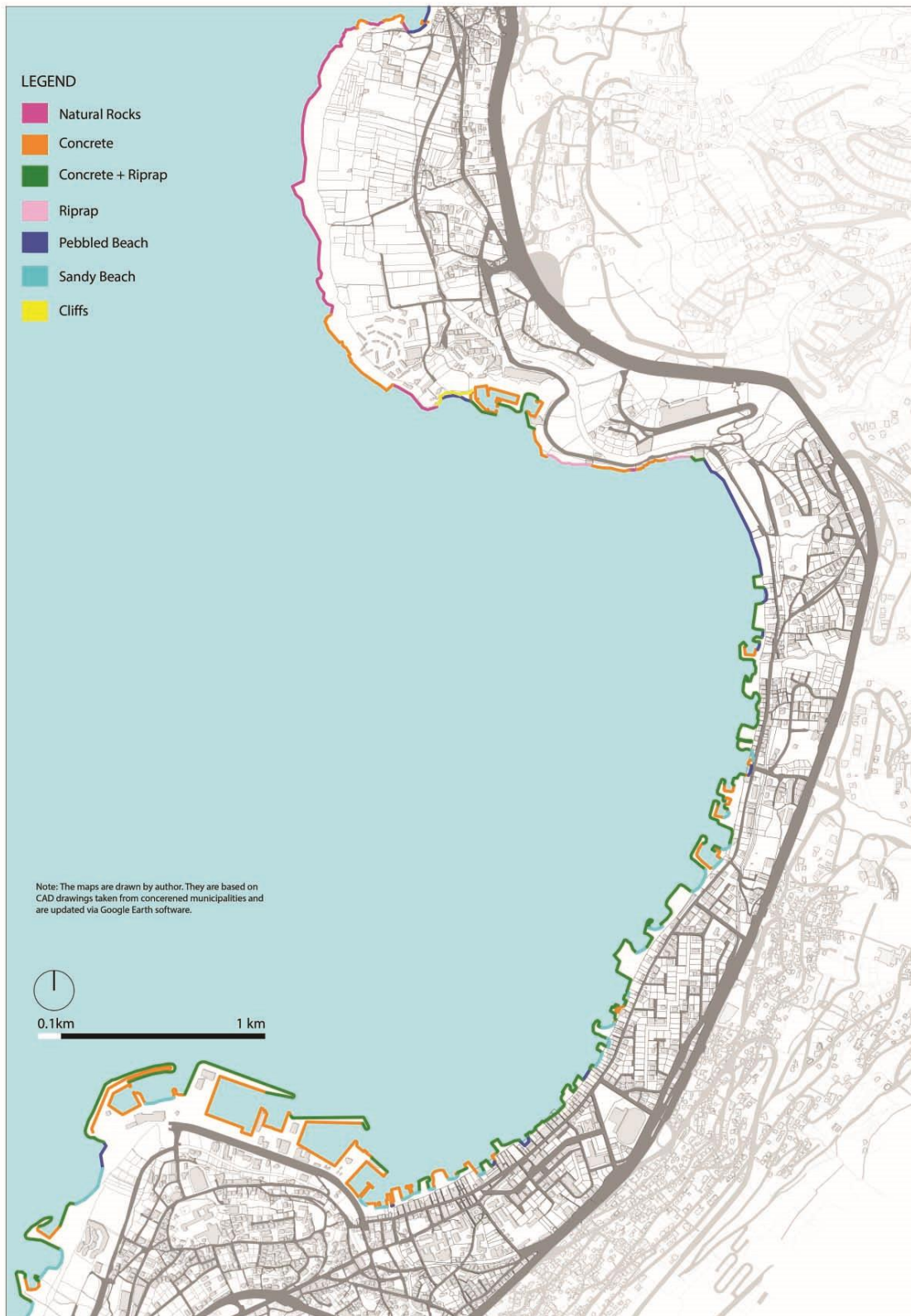


Figure 91: Mapping shoreline typology of studied area.

Source: Edited by author.



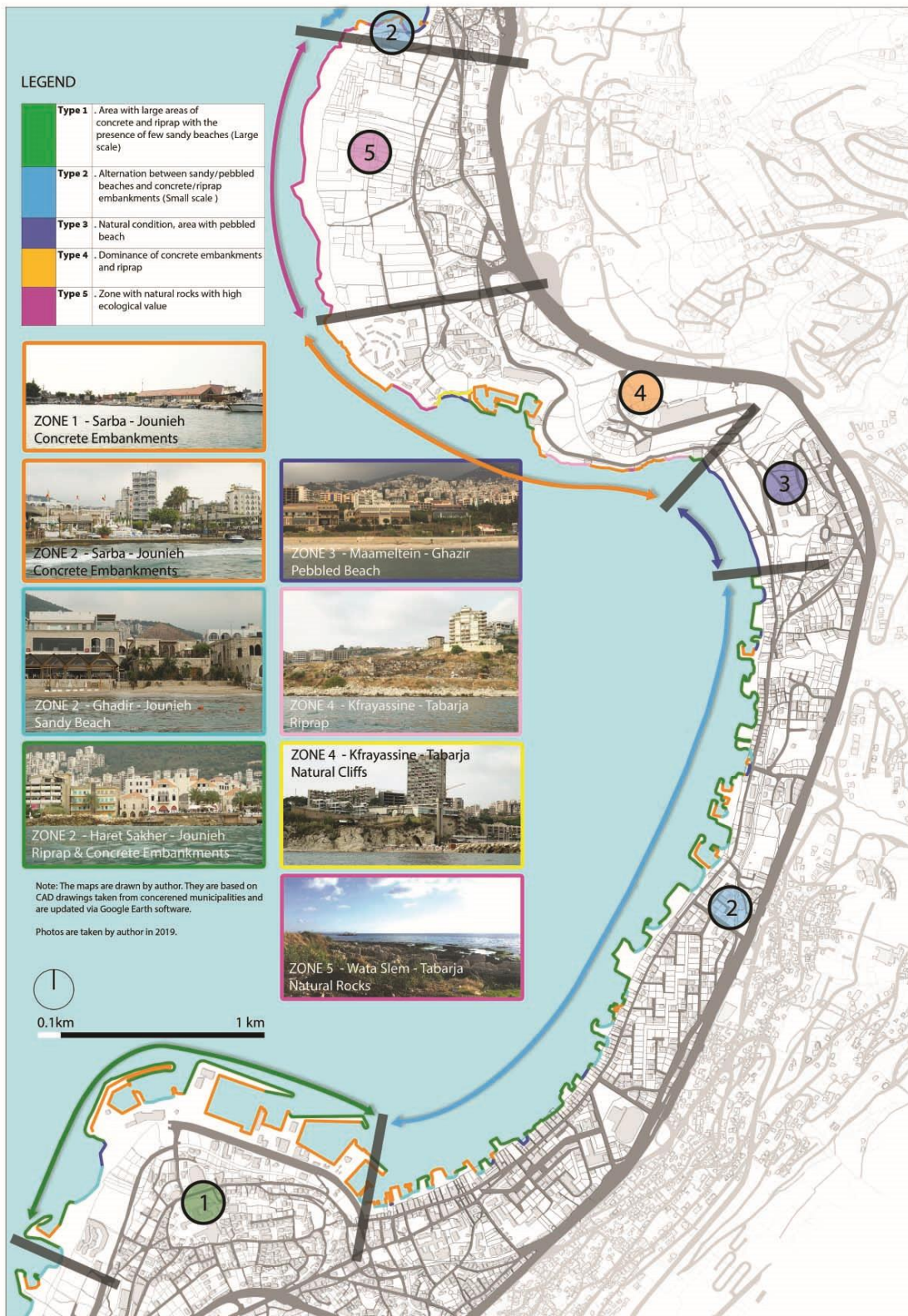


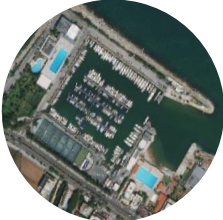

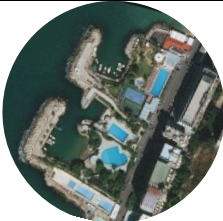
Figure 92: Categorizing the bay according to its shoreline typology.

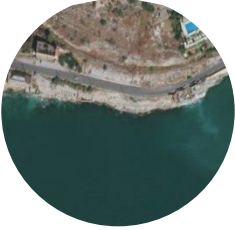

Source: Edited by author.

d. Areas of land reclamation

Regarding areas of land reclamation, their mapping reveals which coastal areas witnessed to most drastic change of its interface and character. With regards to the results of this mapping, the biggest reclaimed lands are found in Sarba serving military clubs, and the A.T.C.L. club along with the fishing port. This is followed by reclaimed lands that serve beach resorts found along the coast of Kfaryassine (Aquamarina I& II then Tabarja beach resort), and along the coast of Sarba (Portemilio beach resort) (Fig. 93). Analyzing the bay in terms of scale of land reclamation, the bay can be categorized into five types (Fig. 94). These categories are listed in the table below (Table 30).

Table 30: Categorizing the bay of Jounieh in terms of areas of land reclamation.

Type	Description	Location: Seaside road	Photos (Source: Google earth - 2019)
Type 1	. Zone with very large areas of land reclamation (> 5 ha per project)	Coast of Sarba, Jounieh	
Type 2	. Zone with small scale areas of land reclamation (1000 to 5000 sqm)	Coast of Ghadir reaching Nouair district in Haret Sakher, Jounieh coast of Sahel Alma, Jounieh reaching Maameltein, Ghazir and in Al Minah, Tabarja	
Type 3	. Zone with medium size areas of land reclamation (5000 to 10 000 sqm)	Coast of Haret Sakher, Jounieh	

Type 4	. Natural area with minor alterations in terms of scale	coast of Maameltein, Ghazir reaching Kfaryassine, Tabarja and found in Wata Slem Tabarja	
Type 5	. Zone with large areas of land reclamation (1 to 5 ha per project)	Found Kfaryassine, Tabarja	

Source: Author





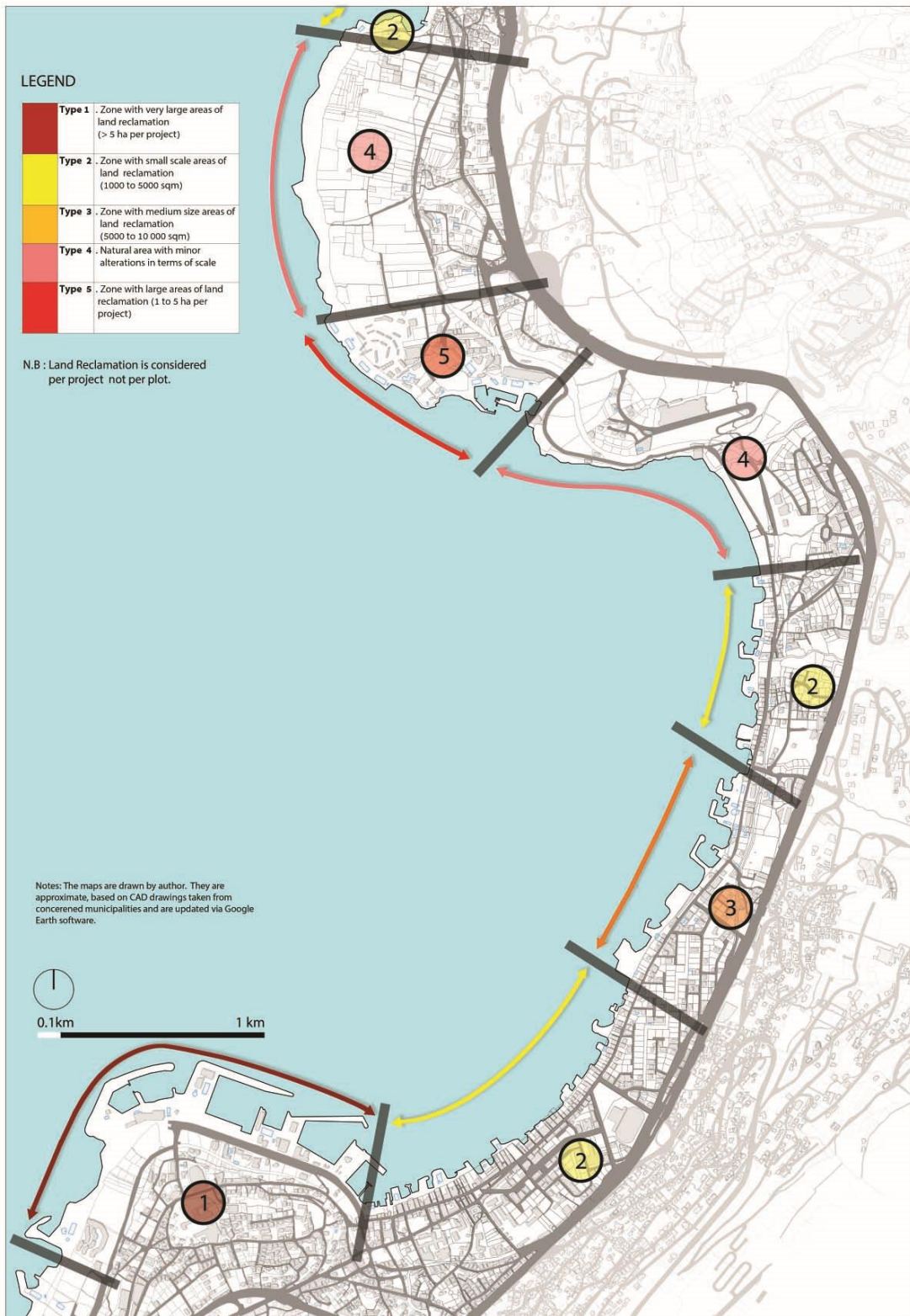


Figure 94: Categorizing the coast of the bay according to the areas of land reclamation.

Source: Edited by author.

## CHAPTER V

### COASTAL URBAN CHARACTERIZATION OF THE BAY OF JOUNIEH

This chapter is inspired by the methodology of the historic landscape character (HLC) and the methodology of the landscape character assessment (LCA). It defines the character zones of the bay, the criteria for each character zones, as well as traces their evolution throughout time. A SWOT analysis and a star model assessment is followed in order to assess each character zone in terms of potential and vulnerabilities.

#### **A. Coastal urban landscape character zones throughout history**

Based on the aerial photos taken since the 1950s, information was collected regarding the density of the built fabric, the existing roads and the level of existing landscape vegetation. This data was overlapped with the topography of the studied site in order to come up with a historic character assessment of the bay. These aerial photos show the evolution of the bay and the process of its urbanization.

In the 1950s, the bay shows five character zones (Fig.95). These character zones were based on the geomorphology of the bay. Character zone A is the hill of Sarba that is known for its pine trees and its large-scale educational facility. Character zone B was the densest zone at that time and it included educational facilities as well as the souks of Jounieh as we currently know it, stretching from the coast of Sarba to the coast of Sahel Alma in Jounieh. Character zone C was an area with narrow flatlands next to the steep mountains of Keserwan. It is located in Sahel Alma reaching Maameltein, Ghazir and it had a small dispersed built fabric with low density. Character zone D was known to be the mild hill of Kfaryassine and it had no built fabric at that time. Character zone E

represented on the other hand the wide flatlands of Wata Slem, with agricultural fields and a low density built fabric.

The aerial photo taken in the 1960s shows the same number of character zones.

However, the 'Casino du Liban' does appear in the character zone D, on the upper hill of Kfaryassine (Fig.96).

The aerial photo taken in the 1970s shows two additional character zones (with a total number of seven character zones) (Fig.97). Character zone A is the hill of Sarba that now hosts a dense residential fabric. It represents large scale encroachments and alterations on its coastline. Character zone B is now smaller and is limited to the souks of Jounieh as we currently know it stretching from the coast of Sarba and reaching Haret Sakher. The new assigned character zone C refers to an area with several orchards and it was newly subdivided via a grid. It is now currently known as Nouair district and is located in the town of Haret Sakher in Jounieh. Character zone D shows little urbanization and represents narrow flatlands juxtaposed to the steep mountains of Keserwan. It includes the coast of Sahel Alma and the coast of Maameltein, Ghazir. Character zone E is now the area known as the hill of Casino du Liban in Kfaryassine. Another new character zone is assigned as character zone F and it shows the establishment of a large-scale beach resort complex on the flatlands of Wata Slem. Character zone G includes the remaining agricultural fields of Wata Slem and it still had a low density built fabric.

The aerial photo taken in 1980s shows several small scale alterations on most of the coastline and a total number of eight character zones (Fig.98). A new character zone E displays a small section of a natural beach that is located in Maameltein with steep hillsides inwards. This area shows very little urbanization.

The aerial photo taken in the 1990s, shows the same divisions of character zones of the previous photo (Fig.99). Given that the aerial photo covers a larger area of the bay and shows Al Minah Tabarja, an additional character zone (character zone I) was designated for this specific area. This is mainly because of the different geomorphology that constitutes Al Minah which represents a small bay.



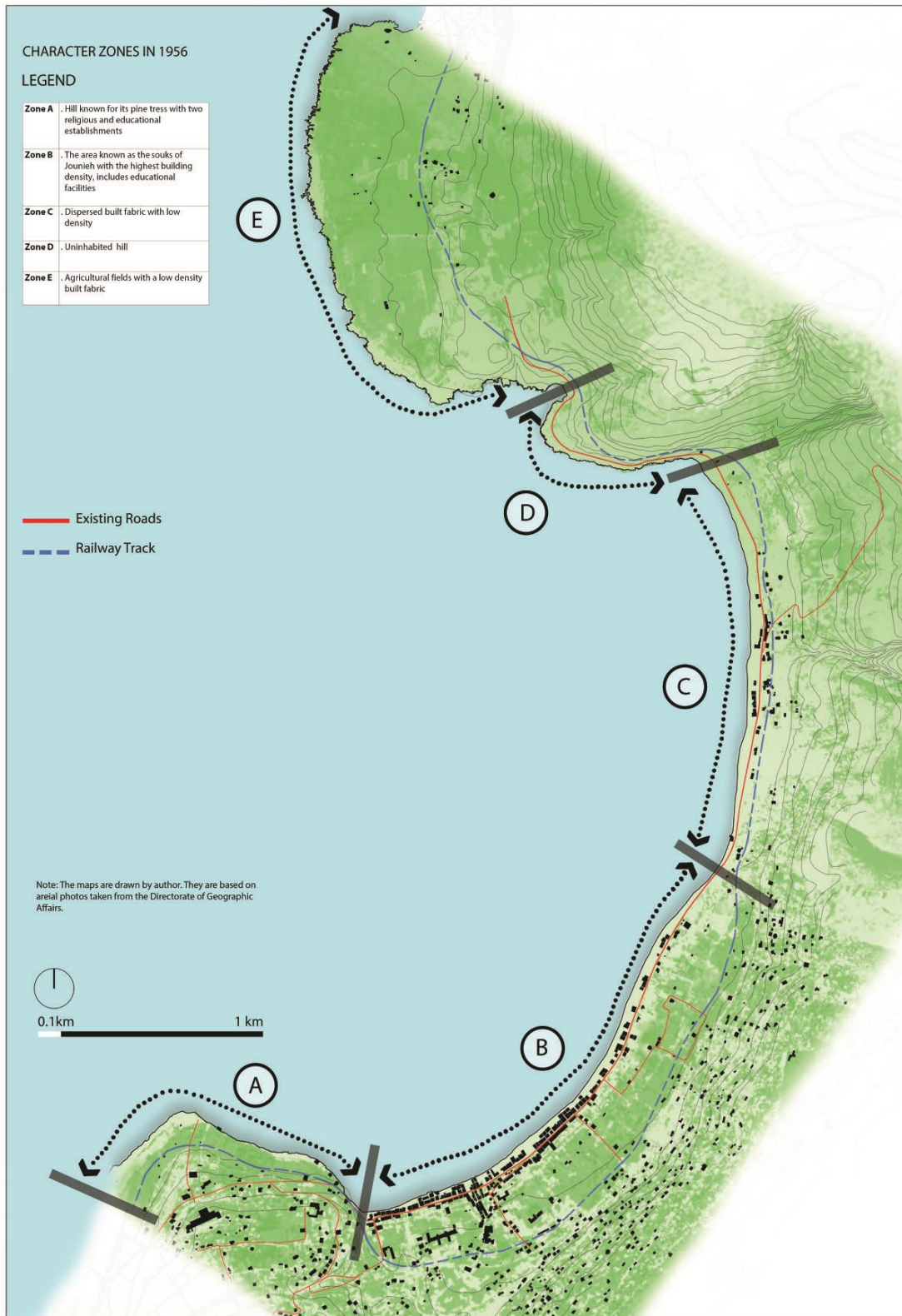


Figure 95: Character zones in the 1950s - Aerial photo edited - 1956.

Source: Directorate of Geographic Affairs, edited by author.

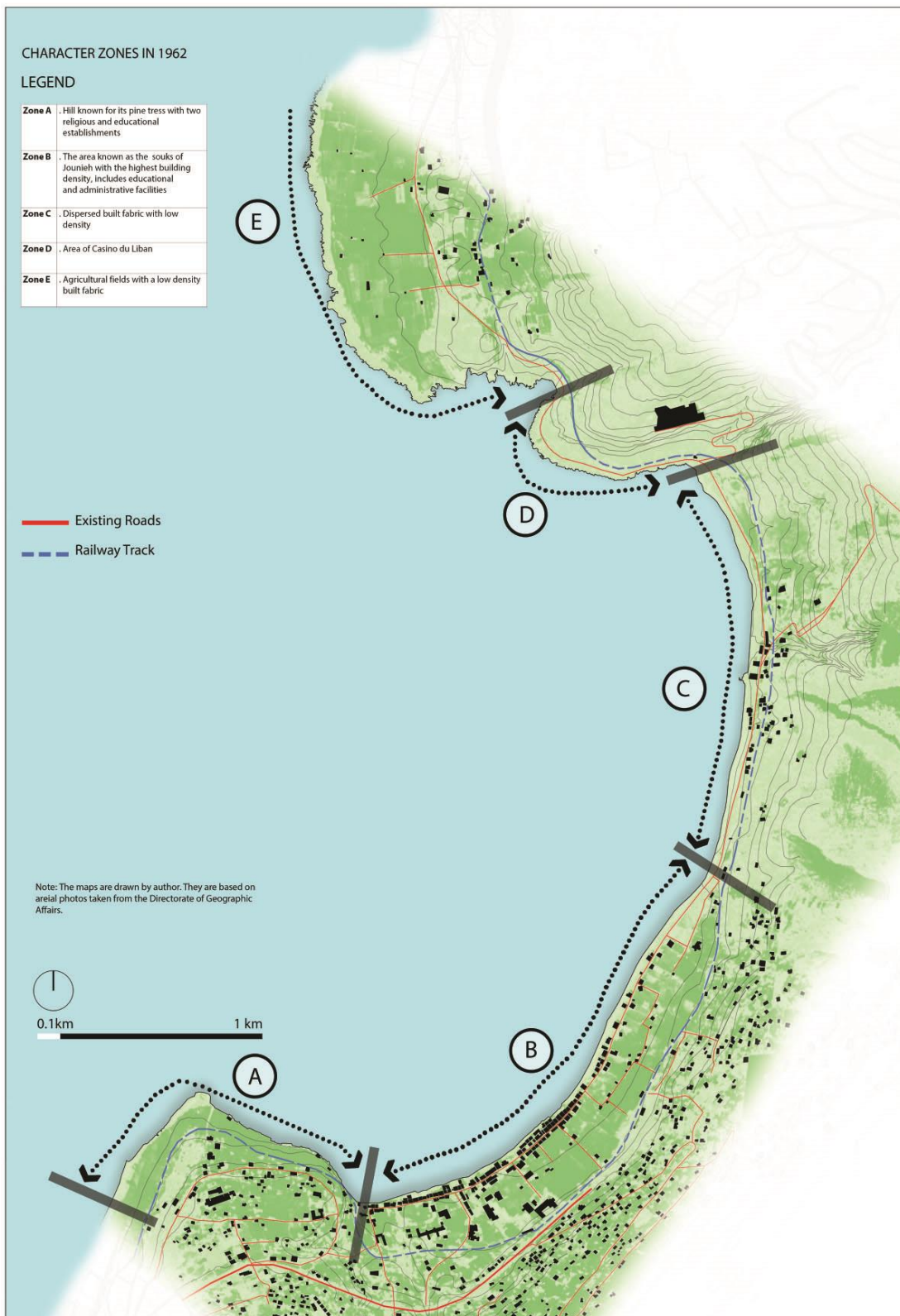


Figure 96: Character zones in the 1960s - Aerial photo edited - 1962.

Source: Directorate of Geographic Affairs, edited by author.



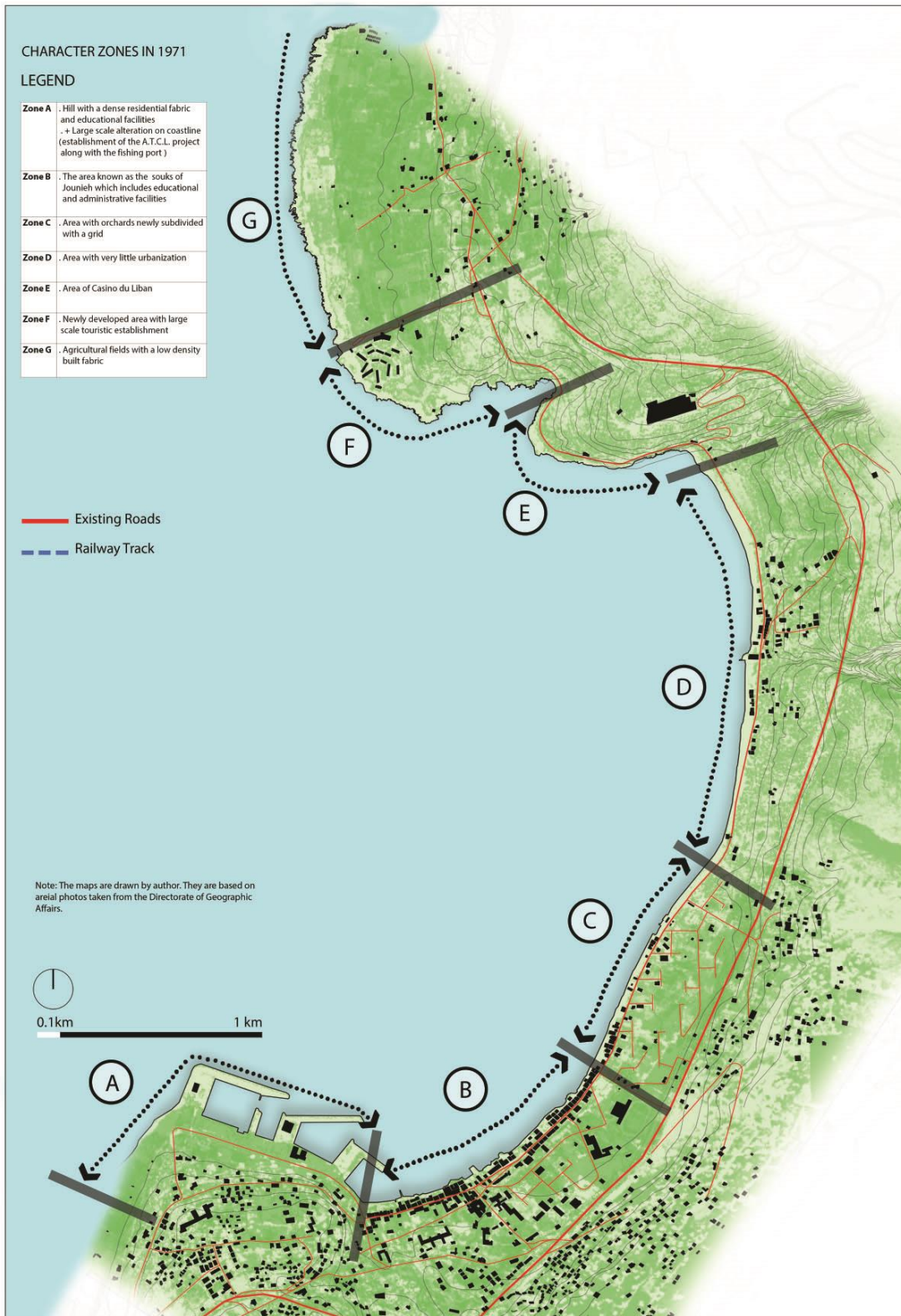


Figure 97: Character zones in the 1970s - Aerial photo edited - 1971.  
 Source: Directorate of Geographic Affairs, edited by author.



Figure 98: Character zones in the 1980s - Aerial photo edited - 1983.  
 Source: Directorate of Geographic Affairs, edited by author.



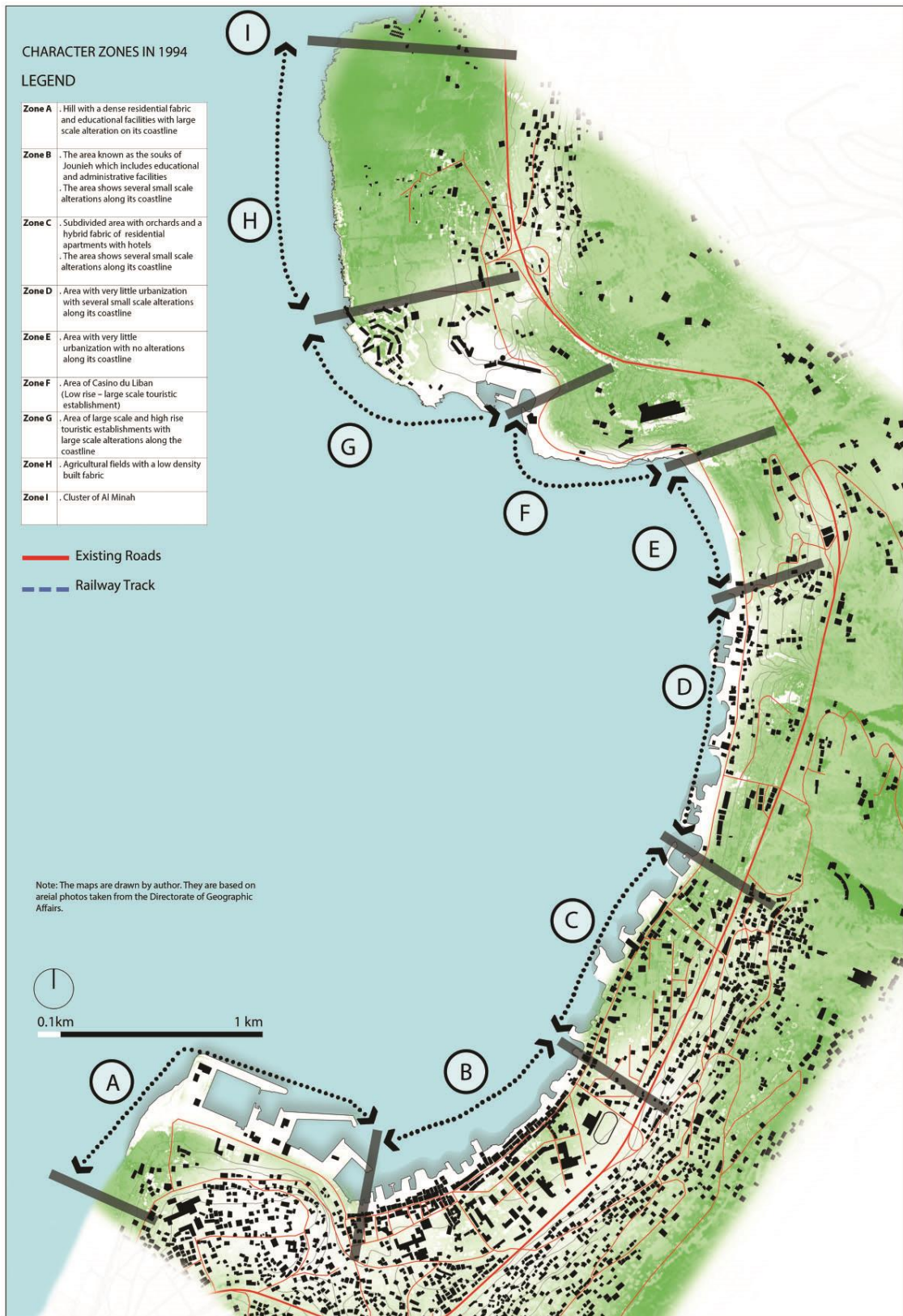


Figure 99: Character zones in the 1990s - Aerial photo edited - 1994.  
 Source: Directorate of Geographic Affairs, edited by author.

## **B. Characteristics of current coastal urban landscape character zones**

For defining the current character zones of the bay, all the layers that were mapped in Chapter 4 were overlaid. However, priority was given to specific base layers. These base layers are: the geomorphology of the bay, the land use/land cover as well as the shoreline typology.

While the landform of the bay is a natural-made system; the land use/ land cover and the shoreline typology are hybrid systems that are both human-made and natural-made systems (Fig 100). These layers were given priority, due to their importance in defining character of landscapes. Starting with the landform, it is one of the major components that differentiate a site from another. It also affects the type of land use and land cover that exists which is also considered as a base layer that significantly defines character. Shoreline typology along with the presence and/or absence of encroachments is also taken into consideration given the fact that the studied site is an interface between land and water.

It is worth to note that the current character zones of the site in terms of their spatial delineation and number is mostly still the same since the 1980s. This can be linked to the major events and development measures that happened during the civil war that culminated especially during the 1980s.

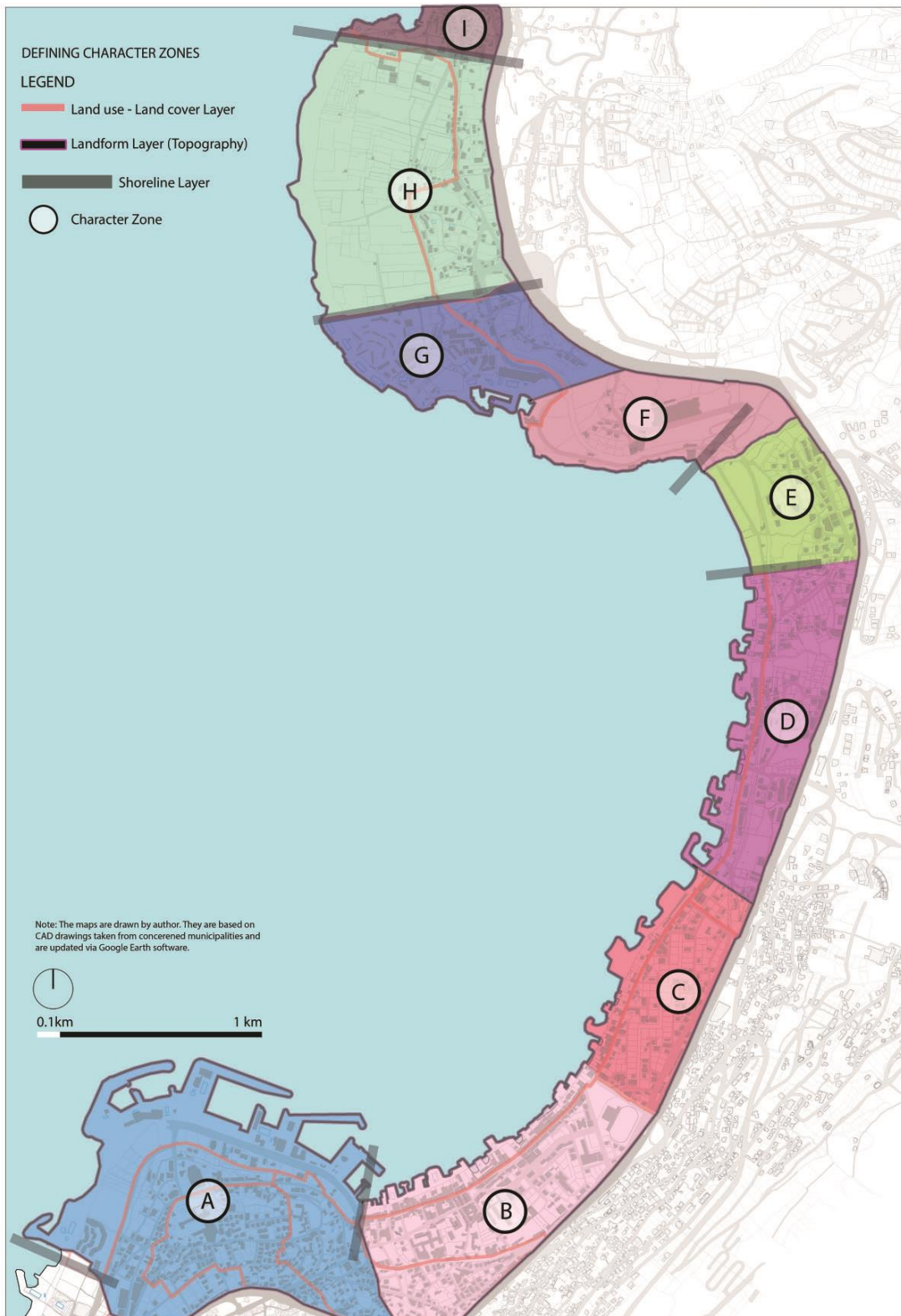


Figure 100: Current character zones  
 Source: Edited by author.

### 1. The A.T.C.L. and port area- Character zone A

Character zone A (Fig.101) is named the A.T.C.L. area. It is known for its military clubs, seaport as well as strip of restaurants on seaside road. Character zone A is also known for its high sense of security on its seaside road and as a safe space for jogging due to the presence of cameras and military guards. Characteristics of this character zone classified according to its urban, cultural, socio-economic, regulatory and environmental layers are listed below.



Figure 101: Aerial map and maritime facade of Character zone A  
Source : Edited by author, 2019

#### a. Urban profile

Table 31: Urban profile of character zone A

URBAN PROFILE	Access	<ul style="list-style-type: none"> <li>. Private entrances for military clubs and private beach resorts</li> <li>. Presence of military guards, mechanical gates</li> <li>. Presence of security cameras and barbed wire on fences in military clubs</li> <li>. No free open access points</li> </ul>
	Walkability	. Hybrid area



	Public amenities	. No sidewalks towards the south of character zone . Large continuous sidewalks on both sides of seaside road towards the military clubs
		. Presence of one public garden facing the fishing port . Sidewalks with no benches or other amenities
	Visual connectivity	. Hybrid area, mostly visually disconnected (high fences with high vegetation and presence of high-rise buildings)
	Coherence of character	. Lack of visual coherence of the maritime facades in terms of character and the built fabric . Old traditional houses are shown in the upper hill dispersed between mid to high-rise apartment buildings
	Building height	. Low rise buildings (1 to 3 floors) with low density on both sides of seaside road . Medium (4 to 6 floors) to high rise buildings (7 to 10 floors) with high density located inwards, in upper hill
	Typology of beach resorts	. Cluster of typology G (refer to Chapter 4 section C.8.)

Source: Author

b. Cultural profile

Table 32: Cultural profile of character zone A

CULTURAL PROFILE	Cultural assets	. Few traditional residential houses with architectural value . Several Heritage sites (the St. Sauveur Convent and the St. Georges Grotto) . Oil tanker dating from the civil war (1989) used currently as a diving site, several educational facilities
	Socio-spatial activities	. Activities of jogging, exclusive activities inside private beach resorts, restaurants and military clubs . Vibrant day life and nightlife due to the presence of a strip of restaurants on one side of its seaside road

Source: Author

c. Socio-economic profile



Table 33: Socio-economic profile of character zone A

SOCIO-ECONOMIC PROFILE	Landmarks	. Several types of landmarks (religious, educational and socio-economic).
	Building use	. Beach resorts and military clubs with a strip of restaurants on seaside road. . Commercial spine which is an extension of the souks of Kaslik and a residential core in the upper hill of Sarba
	Provision of services	. Exclusive services inside military clubs and beach resorts such as gyms, restaurants and minimarkets . Good provision of services in other areas outside the military clubs and beach resorts
	Condition of neighborhood	. Seaside area in good state. . Hybrid residential neighborhood in average state (narrow roads with high density) with several buildings recently constructed that are in a good state
	Sense of security	. High sense of security (presence of cameras and military guards)

Source: Author

d. Regulatory profile

Table 34: Regulatory profile of character zone A

REGULATORY PROFILE	Ownership patterns of seaside properties	. Mixed area. . Includes plots that belong to the private sector (individuals and private companies) . Includes plots that belong to religious entities “Wakf” . Includes a large section for the public domain with no plot numbers, used by military clubs, the A.T.C.L. club and fishing port
	Violations of PMD and beach access	. Exclusive access, military occupation on public domain . No violations except for A.T.C.L club
	Zoning	. Zone E1 & A1 towards the sea; . Zone B inwards (refer to Chapter 4 section C.2.)

Shoreline protection	. No measures to protect the shoreline
Protection of built and natural heritage	. Includes several traditional residential houses outside the souks of Jounieh that are not protected by law

Source: Author

e. Environmental profile

Table 35: Environmental profile of character zone A

ENVIRONMENTAL PROFILE	Landform	. Presence of a hill with high cliffs that were directly next to the sea . Landform severely altered by larges flat areas of land reclamation
	Land use / land cover	. Includes several terraces, pools, sports fields and grass fields on one side of seaside road belonging to military clubs and beach resorts . Includes parking areas with natural vegetation found around the commercial spine (extension of the souks of Kaslik) . Few private gardens located around a residential fabric and educational facilities. . Orchards found in between an old traditional residential fabric
	Shoreline Typology	. Includes large areas of concrete embankments and riprap alternated by the presence of few artificial sandy beaches
	Areas of land reclamation	. Includes large areas (1 to 5 ha per project) to very large areas (> 5 ha per project) of land reclamation
	Air and water pollution	. High levels of water pollution due to activities of watersports as well as due to high levels of water pollution next to Ghadir river
	Natural assets	. Presence of high cliffs

Source: Author

**2. The souks of Jounieh - Character zone B**

Character zone B (Fig.102) is known as the souks of Jounieh. It is recognized by its historic traditional fabric and by its urban morphology with many direct pathways

leading to the sea. Character zone B is also known to be the educational and administrative hub of Jounieh.



Figure 102: Aerial map and maritime facade of Character zone B  
Source: Edited by author, 2019

a. Urban profile

Table 36: Urban profile of character zone B

URBAN PROFILE	Access	. Few open access points in direct pathways leading to the sea. . Few access points hindered by closed gates or by cars
	Walkability	. Provision of continuous mid width to small width sidewalks
	Public amenities	. Presence of several benches on sides of seaside road . Presence of two public gardens with limited access (garden of the municipality of Jounieh and garden of the Serail of Jounieh.)
	Visual connectivity	. Visual permeability due to the urban morphology of the souks and due to the presence of visual corridors . Some of these visual corridors are hindered in few places by the presence of gates.
	Coherence of character	. Consistence of character with a strong identity interrupted in several places by high rise buildings that are not integrated with the fabric of the souks
	Building height	. Low rise buildings (1 to 3 floors) with high density on both sides of seaside road

		. Mid (4 to 6 floors) to low rise buildings with medium density located inwards towards the highway
	Typology of beach resorts	. Cluster of typology B' and E (refer to Chapter 4 section C.8.)

Source: Author

b. Cultural profile

Table 37: Cultural profile of character zone B

CULTURAL PROFILE	Cultural assets	. The historic souks of Jounieh with high cultural value . Several educational facilities
	Socio-spatial activities	. Activities of shopping and jogging prevalent on seaside road. . Swimming and diving activities present inside private beach resorts . Vibrant day life and nightlife due to the presence of few pubs and restaurants . Several festivities during summer

Source: Author

c. Socio-economic profile

Table 38: Socio-economic profile of character zone B

SOCIO-ECONOMIC PROFILE	Landmarks	. Several types of landmarks (religious, educational and socio-economic and most importantly administrative).
	Building use	. Business and administrative facilities with educational facilities and a commercial spine on seaside road
	Provision of services	. Good provision of services
	Condition of neighborhood	. Area in good state, in terms of building state, condition of roads and quality of public areas
	Sense of security	. High sense of security (presence of the municipal police station in the middle of the souks)

Source: Author

d. Regulatory profile

Table 39: Regulatory profile of character zone B

REGULATORY PROFILE	Ownership patterns of seaside properties	. Hybrid area, privatized (private companies and individuals) with presence of religious entities
	Violations of PMD and beach access	. Area with several violations of PMD . Very little public access
	Zoning	. Zone A towards the sea; zone B inwards (refer to Chapter 4 section C.2.)
	Shoreline protection	. No measures to protect the shoreline
	Protection of built and natural heritage	. The built fabric of the souks of Jounieh is protected by law

Source: Author

e. Environmental profile

Table 40: Environmental profile of character zone B

ENVIRONMENTAL PROFILE	Landform	. Flat coastal area with an average width, located between the shoreline and the highway
	Land use / land cover	. Area with terraces, pools, grass fields in beach resorts . Parking areas in between a commercial and business area . Orchards in between an historic traditional residential fabric
	Shoreline Typology	. Alternation between sandy/pebbled beaches and small scale concrete/riprap embankments
	Areas of land reclamation	. Area with several small-scale areas of land reclamation (1000 to 5000 sqm)
	Air and water pollution	. Traffic and noise pollution, High levels of pollution next to Ghadir river . Unsafe for swimming
	Natural assets	. Presence of Ghadir river

Source: Author

**3. The leisure core of Nouair district - Character zone C**

Character zone C (Fig.103) is known as the Nouair district of Haret Sakher. It is known to be a hybrid area in terms of building use and neighborhood condition. The building use of this zone showcases a duality between hotels and residential apartments.

The seaside road of this area faces severe neglect with many vacant plots and several vacant traditional buildings which are kept in a bad state. However, the core of this area includes hotels that are in a good state in addition to having a public trail/garden that was inaugurated in 2014.

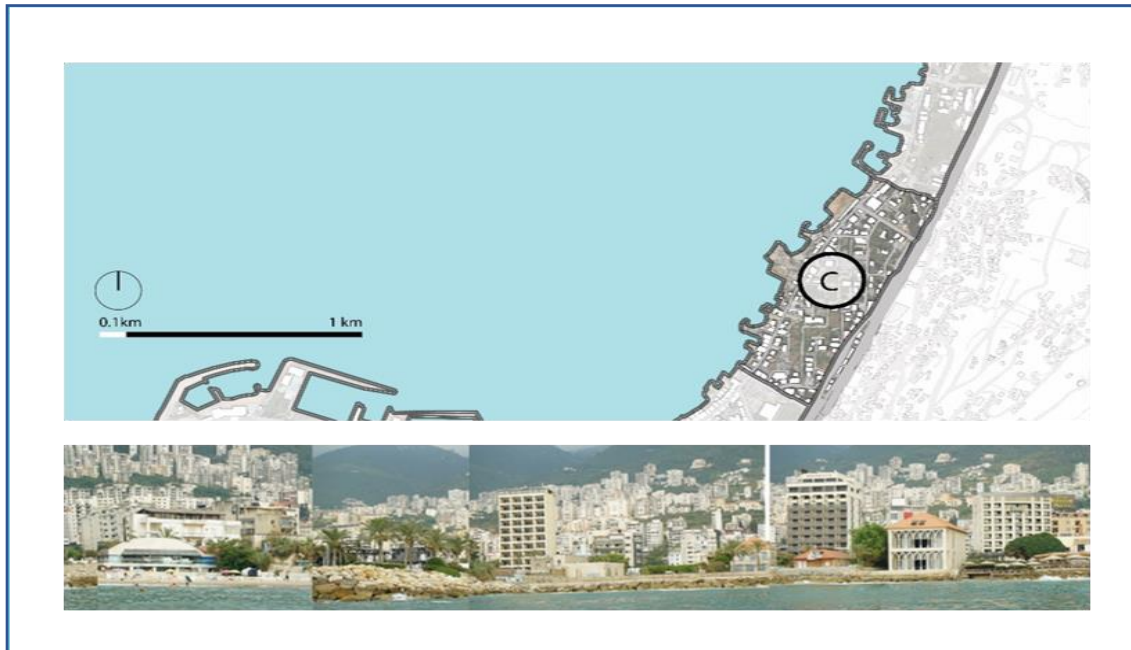


Figure 103: Aerial map and maritime facade of Character zone C

Source: Edited by author, 2019

a. Urban profile

Table 41: Urban profile of character zone C

URBAN PROFILE	Access	<ul style="list-style-type: none"> <li>. Private entrances for restaurants, cafes, hotels and beach resorts</li> <li>. No free open access points</li> </ul>
	Walkability	<ul style="list-style-type: none"> <li>. Area with no sidewalks</li> </ul>
	Public amenities	<ul style="list-style-type: none"> <li>. Zone with one cul-de-sac public garden trail with public amenities (benches and public toilets) located not directly next to or facing the sea</li> <li>. The public trail is not connected to any network of sidewalks and has only one entrance</li> </ul>

	Visual connectivity	. Hybrid area mostly visually disconnected from the sea due to the presence of several fences on private properties
	Coherence of character	. Lack of coherence of character . Deep contrast between character zone C and B (the souks of Jounieh)
	Building height	. Low rise buildings (1 to 3 floors) with low density towards the west side of seaside road . Mid (4 to 6 floors) to high-rise (7 to 10 floors) buildings with medium density between seaside road and highway
	Typology of beach resorts	. No cluster of typologies

Source: Author

b. Cultural profile

Table 42: Cultural profile of character zone C

CULTURAL PROFILE	Cultural assets	. Area with very few traditional residential houses . Several of these houses are abandoned and are neglected
	Socio-spatial activities	. No rich socio-spatial activities on seaside road . Exclusive activities inside private facilities such as activities of paragliding, cable car riding and diving / swimming / water sports inside private beach resorts . Vibrant nightlife (presence of many night clubs)

Source: Author

c. Socio-economic profile

Table 43: Socio-economic profile of character zone C

SOCIO-ECONOMIC PROFILE	Landmarks	. Dominance of socio-economic landmarks that are related to leisure and touristic activities (Nightclubs, hotels, and restaurants).
	Building use	. Mixed area between hotels and a residential fabric
	Provision of services	. Good level of services.



	Condition of neighborhood	. Neighborhood in average state . Includes a public trail/ garden in a very good state that upgraded the neighborhood
	Sense of security	. Lack of security especially at night. . Zone known to be an area for street soliciting of sex workers

Source: Author

d. Regulatory profile

Table 44: Regulatory profile of character zone C

REGULATORY PROFILE	Ownership patterns of seaside properties	. Dominance of the private sector – private individuals
	Violations of PMD and beach access	. Several violations of PMD with no public access
	Zoning	. Zone A, A1, towards the sea; zone C inwards (refer to Chapter 4 section C.2.)
	Shoreline protection	. No measures to protect the shoreline
	Protection of built and natural heritage	. Some of the traditional houses in this zone are protected by law, some of them are not . Agricultural areas and orchards are not protected by law

Source: Author

e. Environmental profile

Table 45: Environmental profile of character zone C

ENVIRONMENTAL PROFILE	Landform	. Flat coastal area with an average width between the shoreline and the highway
	Land use / land cover	. Pools, grass fields and concrete terraces in beach resorts . Orchards and agricultural fields in between a hybrid fabric of hotels and residential apartments
	Shoreline Typology	. Alternation between sandy/pebbled beaches and concrete/riprap embankments (Small scale)
	Areas of land reclamation	. Small scale (1000 to 5000 sqm) and medium size areas of land reclamation (5000 to 10 000 sqm)

Air and water pollution	. Water pollution
Natural assets	. Area with orchards and few remaining agricultural fields

Source: Author

#### ***4. The leisure core of Sahel Alma and Maameltein - Character zone D***

This character zone (Fig.104) is known to have several clusters of beach resorts with several encroachments on the Public Maritime Domain. It is highly privatized and suffers from high visual disconnection from its sea.



Figure 104: Aerial map and maritime facade of Character zone D

Source: Edited by author, 2019

a. Urban profile

Table 46: Urban profile of character zone D

URBAN PROFILE	Access	. Dominance of private entrances for restaurants, cafes, hotels and beach resorts . No free open access points
	Walkability	. No sidewalks
	Public amenities	. No public amenities such as public gardens
	Visual connectivity	. Hybrid area mostly visually disconnected from the sea due to the presence of several fences
	Coherence of character	. Lack of a consistent architectural identity
	Building height	. Low rise buildings (1 to 3 floors) with low density towards the west of seaside road . Mid (4 to 6 floors) to high rise (7 to 10 floors and above) buildings with medium density located inwards between seaside road and the highway
Typology of beach resorts	. Cluster of several typologies mostly B', C, D (refer to Chapter 4 section C.8.)	

Source: Author

b. Cultural profile

Table 47: Cultural profile of character zone D

CULTURAL PROFILE	Cultural assets	. Several traditional residential houses clustered in one area in Maameltein Ghazir
	Socio-spatial activities	. No rich socio-spatial activities on seaside road . Exclusive activities inside private facilities (diving, swimming and water sports inside private beach resorts) . Vibrant nightlife (presence of many night clubs)

Source: Author

c. Socio-economic profile

Table 48: Socio-economic profile of character zone D

SOCIO-ECONOMIC PROFILE	Landmarks	. Dominance of socio-economic landmarks that are related to leisure and touristic activities (Nightclubs, hotels, and restaurants).
	Building use	. Mixed area between a leisure fabric (hotels and beach resorts) and a residential fabric
	Provision of services	. Good level of services.
	Condition of neighborhood	. Neighborhood in average state . Includes a neighborhood in a very bad state (St Elie chalets)
	Sense of security	. Lack of security especially at night. . Zone known to be an area for street soliciting of sex workers

Source: Author

d. Regulatory profile

Table 49: Regulatory profile of character zone D

REGULATORY PROFILE	Ownership patterns of seaside properties	. Dominance of the private sector – private individuals
	Violations of PMD and beach access	. Several violations of PMD with no public access
	Zoning	. Zone A1 towards the sea; H, C3, H1 inwards (refer to Chapter 4 section C.2.)
	Shoreline protection	. No measures to protect the shoreline
	Protection of built and natural heritage	. Traditional residential houses mostly not protected by law

Source: Author

e. Environmental profile

Table 50: Environmental profile of character zone D

ENVIRONMENTAL PROFILE	Landform	. Narrow flat coastal area with steep slopes that shape the mountains of Keserwan
	Land use / land cover	. Terraces, pools, sports fields and grass fields in beach resorts . Natural vegetation in between a hybrid fabric of hotels and residential apartments
	Shoreline Typology	. Alternation between sandy/pebbled beaches and concrete/riprap embankments (Small and medium scale)
	Areas of land reclamation	. Small scale (1000 to 5000 sqm) and medium size areas of land reclamation (5000 to 10 000 sqm)
	Air and water pollution	. Water pollution but presents several water sources
	Natural assets	. Presence of a diving site called Aqua Barge

Source: Author

**5. The Tamaris beach area of Maameltein - Character zone E**

This character zone (Fig.105) is known to be the unaltered section of the bay with no encroachments. However, it is fenced and does not offer public beach access except for a few areas that are coupled with hazards. This area is known to have one the oldest beaches along the bay, called Tamaris beach which was inaugurated in 1950s.



Figure 105: Aerial map and maritime facade of Character zone E

Source: Edited by author, 2019

a. Urban profile

Table 51: Urban profile of character zone E

URBAN PROFILE	Access	. Few open access points coupled with hazards
	Walkability	. Continuous sidewalk mostly on one side of seaside road
	Public amenities	. No public amenities such as benches or public gardens
	Visual connectivity	. See through fences allowing for some visual permeability
	Coherence of character	. Consistence of character of this area interrupted by few exemptions.

	Building height	<ul style="list-style-type: none"> <li>. Low rise buildings (1 to 3 floors) with low density On both sides of seaside road</li> <li>. Mid (4 to 6 floors) to high rise (7 to 10 floors and above) buildings with medium density located inwards between seaside road and the highway</li> </ul>
	Typology of beach resorts	<ul style="list-style-type: none"> <li>. No cluster of typologies, presence of typology A (refer to Chapter 4 section C.8.)</li> </ul>

Source: Author

b. Cultural profile

Table 52: Cultural profile of character zone E

CULTURAL PROFILE	Cultural assets	<ul style="list-style-type: none"> <li>. Presence of the Roman Bridge with high archeological value</li> </ul>
	Socio-spatial activities	<ul style="list-style-type: none"> <li>. No rich socio-spatial activities on seaside road except for jogging</li> <li>. Exclusive activities inside private facilities (activities of swimming and dining inside private beaches and restaurants)</li> </ul>

Source: Author

c. Socio-economic profile

Table 53: Socio-economic profile of character zone E

SOCIO-ECONOMIC PROFILE	Landmarks	<ul style="list-style-type: none"> <li>. Dominance of socio-economic landmarks that are related to leisure and touristic activities (beaches, nightclubs, hotels, and restaurants).</li> </ul>
	Building use	<ul style="list-style-type: none"> <li>. Mixed area between a leisure fabric (hotels and beach resorts) and a residential fabric</li> </ul>
	Provision of services	<ul style="list-style-type: none"> <li>. Good level of services except on its seaside road</li> </ul>
	Condition of neighborhood	<ul style="list-style-type: none"> <li>. Area in good state in terms of building state and density, condition of roads and provision of green areas.</li> </ul>
	Sense of security	<ul style="list-style-type: none"> <li>. Lack of security especially at night.</li> <li>. Zone known to be an area for street soliciting of sex workers</li> </ul>

Source: Author



d. Regulatory profile

Table 54: Regulatory profile of character zone E

REGULATORY PROFILE	Ownership patterns of seaside properties	. Dominance of the private sector – private companies
	Violations of PMD and beach access	. Several plots with occupancy in accordance with issued decrees . Several large scale seaside plots with no violations . Little public access to the sea
	Zoning	. A1 towards the sea; H1 inwards (refer to Chapter 4 section C.2.)
	Shoreline protection	. No measures to protect the shoreline
	Protection of built and natural heritage	. The Roman Bridge is protected by law

Source: Author

e. Environmental profile

Table 55: Environmental profile of character zone E

ENVIRONMENTAL PROFILE	Landform	. Narrow flat coastal area . Presence of a steep valley between character zone E and character zone F
	Land use / land cover	. Dominance of natural vegetation in between a hybrid fabric of hotels and residential apartments . Presence on many pine trees
	Shoreline Typology	. Pebbled beach
	Areas of land reclamation	. Minor alterations,
	Air and water pollution	. Low levels of water pollution, safe for swimming
	Natural assets	. Presence of the En-Naaoura river

Source: Author

## 6. The Hill of Casino du Liban, Kfaryassine - Character zone F

Character zone F (Fig. 106) is known for its Casino du Liban which is the only Lebanese Casino that is governmentally controlled. The Casino stands on a hill alone with very few hotel buildings scattered to the west of the hill. The section of the seaside road in this zone is known to be an area for sightseeing.

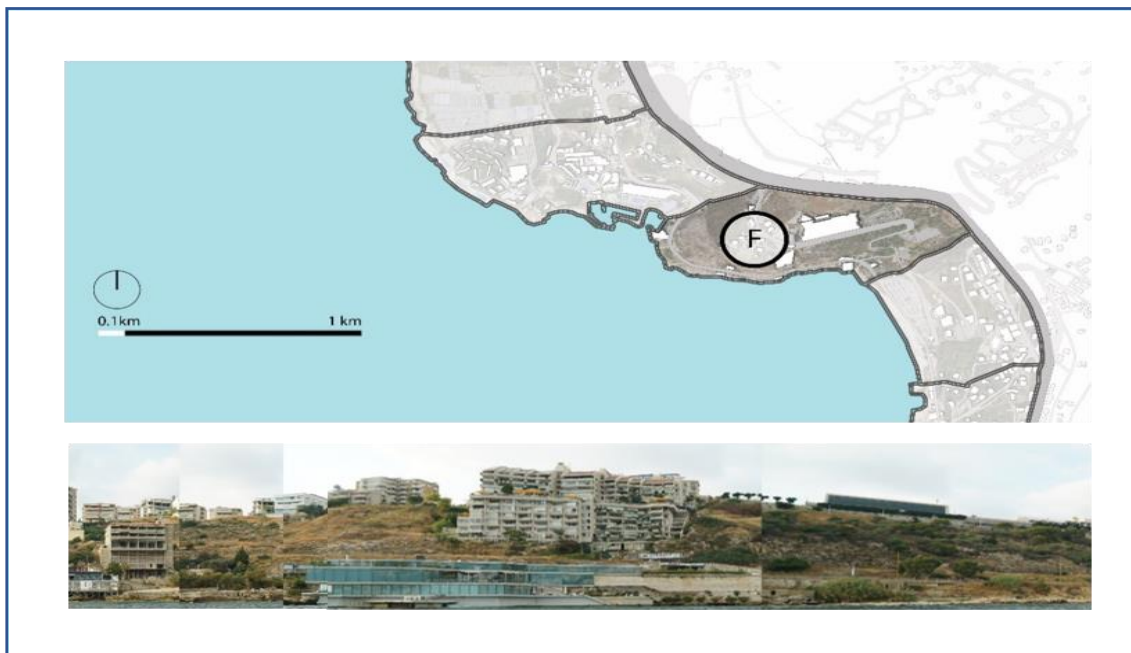


Figure 106: Aerial map and maritime facade of Character zone F

Source: Edited by author, 2019

### a. Urban profile

Table 56: Urban profile of character zone F

URBAN PROFILE	Access	. Few open access points coupled with hazards
	Walkability	. Continuous sidewalk mostly on one side of seaside road
	Public amenities	. No public amenities such as benches or public gardens
	Visual connectivity	. Areas known for sightseeing . Unhindered view to the sea due to the presence of low balustrades

	Coherence of character	. Duality of character, between the Casino du Liban area and the cluster of apartment buildings constructed on the upper hill.
	Building height	. Duality between high rise buildings (7 to 10 floors) and the Casino du Liban with other restaurants that are low rise buildings (1- 3 floors).
	Typology of beach resorts	. No cluster of typologies

Source: Author

b. Cultural profile

Table 57: Cultural profile of character zone F

CULTURAL PROFILE	Cultural assets	. No built historic fabric . Casino du Liban - important cultural and touristic landmark that host several festivities.
	Socio-spatial activities	. Mix of diverse socio-spatial activities like jogging, informal swimming, informal fishing and sightseeing in few open access points

Source: Author

c. Socio-economic profile

Table 58: Socio-economic profile of character zone F

SOCIO-ECONOMIC PROFILE	Landmarks	. Dominance of socio-economic landmarks that are related to leisure and touristic activities ((casino, beach resorts, nightclubs, hotels, and restaurants).
	Building use	. Mixed area of large scale touristic facilities (e.g. casino, hotels) and few residential apartment buildings
	Provision of services	. Absence of basic services, area highly car-dependent
	Condition of neighborhood	. Area in good state in terms of building state and density, condition of roads and provision of green areas
	Sense of security	. Lack of security especially at night due to the absence of services in this area

Source: Author

d. Regulatory profile

Table 59: Regulatory profile of character zone F

REGULATORY PROFILE	Ownership patterns of seaside properties	. Dominance of the private sector – private companies and individuals) with the exception of the domain of the Casino du Liban located at the upper hill of Kfaryassine
	Violations of PMD and beach access	. Several plots with occupancy in accordance with issued decrees . Little violations of PMD . Little public access to the sea
	Zoning	. A1 towards the sea; E1 inwards (refer to Chapter 4 section C.2.)
	Shoreline protection	. No measures to protect the shoreline
	Protection of built and natural heritage	. Protection of the domain of Casino du Liban

Source: Author

e. Environmental profile

Table 60: Environmental profile of character zone F

ENVIRONMENTAL PROFILE	Landform	. Mild hill
	Land use / land cover	. Dominance of natural vegetation in between a hybrid fabric of hotels and residential apartments . Presence on many pine trees
	Shoreline Typology	. Little alterations with areas of riprap and concrete
	Areas of land reclamation	. Minor alterations, small areas of land reclamation
	Air and water pollution	. Low levels of water pollution, and presents little urbanization
Natural assets	. Mild hill with little urbanization	

Source: Author

### 7. The beach enclave model of Kfaryassine, Tabarja - Character zone G

This character zone (Fig.107) is known for its large-scale beach resorts clustered in Kfaryassine, Tabarja. It is known for showcasing a duality between high-rise chalets buildings and low-rise bungalows coupled with large areas of grass fields. These beach resorts offer exclusive access as well as several exclusive services ranging from minimarkets, gyms, sport fields, restaurants and clubs.



Figure 107: Aerial map and maritime facade of Character zone G

Source: Edited by author, 2019

#### a. Urban profile

Table 61: Urban profile of character zone G

URBAN PROFILE	Access	<ul style="list-style-type: none"> <li>. Dominance of private entrances with security guards and mechanical gates</li> <li>. No free open access points</li> <li>. Exclusive access to the clientele of beach resorts</li> </ul>
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	Walkability	. Continuous sidewalk mostly on one side of seaside road
	Public amenities	. No public amenities such as benches or public gardens
	Visual connectivity	. High visual obstruction – High rise buildings
	Coherence of character	. Consistence of character . Duality between tall chalets apartment buildings and low rise bungalows . Character zone in deep contrast with the other adjacent character zones (character zones F and H)
	Building height	. Duality between high rise buildings (above 10 floors) and low-rise bungalows with low density (1 to 3 floors) – Duality of architectural typologies
Typology of beach resorts	. Cluster of typology F (refer to Chapter 4 section C.8.)	

Source: Author

b. Cultural profile

Table 62: Cultural profile of character zone G

CULTURAL PROFILE	Cultural assets	. Exclusive activities inside private facilities (sports, swimming / water sports) . Activities of boating and fishing and informal swimming in few areas
	Socio-spatial activities	. Presence of a medieval tower dating from the 13 <sup>th</sup> century located in a private property

Source: Author

c. Socio-economic profile

Table 63: Socio-economic profile of character zone G

SOCIO-ECONOMIC	Landmarks	. Dominance of socio-economic landmarks that are related to leisure and touristic activities (beach resorts)
	Building use	. Large scale beach resorts.

	Provision of services	. Provision of basic services . Presence of exclusive services provided inside beach resorts (gyms, minimarkets, and restaurants)
	Condition of neighborhood	. Area in good state in terms of building state and density, condition of roads and provision of green areas
	Sense of security	. Lack of security at night . Good sense of security inside beach resorts

Source: Author

d. Regulatory profile

Table 64: Regulatory profile of character zone G

REGULATORY PROFILE	Ownership patterns of seaside properties	. Dominance of the private sector – private companies
	Violations of PMD and beach access	. Area with violations of PMD . Several plots have occupancy in accordance with issued decrees . Exclusive beach access
	Zoning	. Zone E1 (refer to Chapter 4 section C.2.)
	Shoreline protection	. No measures to protect the shoreline
	Protection of built and natural heritage	. Presence of high cliffs and natural rocks that were damaged and were not protected law

Source: Author

e. Environmental profile

Table 65: Environmental profile of character zone G

ENVIRONMENTAL PROFILE	Landform	. Wide flat coastal area with high cliffs on the south
	Land use / land cover	. Several terraces, pools, sports fields, grass fields inside beach resorts
	Shoreline Typology	. Dominance of concrete embankments and riprap



Areas of land reclamation	. Large areas of land reclamation (1 to 5 ha per project).
Air and water pollution	. Agricultural runoff
Natural assets	. High cliffs and few natural rocks with ecological value . Presence of a diving site called Carolina wreck

Source: Author

### ***8. The agricultural fields of Wata Slem – Character zone H***

This character zone (Fig.108) is known for its agricultural fields, its greenhouses and its natural rocks on its shoreline. Many of these agricultural fields are fenced or inaccessible hindering the access to the sea. These fields are known to have very narrow and not asphalted roads with several neglected cabins dispersed in between the greenhouses.

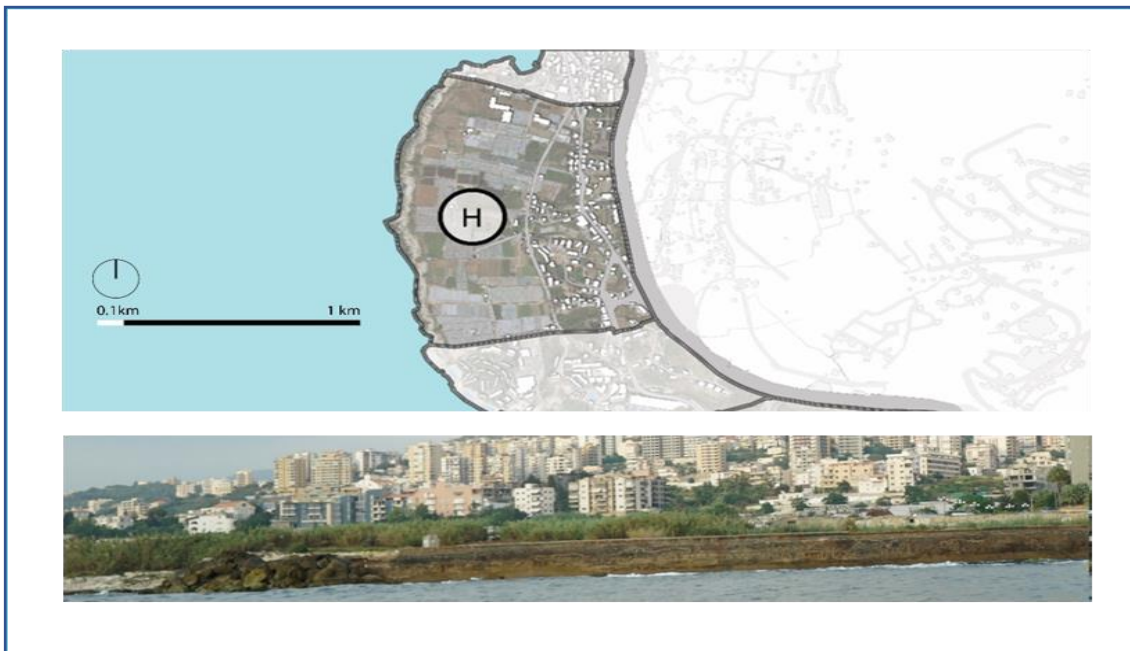


Figure 108: Aerial map and maritime facade of Character zone H

Source: Edited by author, 2019

a. Urban profile

Table 66: Urban profile of character zone H

URBAN PROFILE	Access	<ul style="list-style-type: none"> <li>. High vegetation and large agricultural fields between seaside road and the shoreline</li> <li>. Access is hindered by the presence of gated and fenced agricultural fields.</li> </ul>
	Walkability	<ul style="list-style-type: none"> <li>. Discontinuous network of sidewalks on seaside road</li> </ul>
	Public amenities	<ul style="list-style-type: none"> <li>. No public amenities such as benches or public gardens</li> </ul>
	Visual connectivity	<ul style="list-style-type: none"> <li>. Mild visual permeability; due to the presence of see through fences</li> <li>. Seaside road not close to the sea</li> </ul>
	Coherence of character	<ul style="list-style-type: none"> <li>. Consistence of character</li> <li>. Low levels of urbanization with several agricultural field</li> </ul>
	Building height	<ul style="list-style-type: none"> <li>. Mixed fabric mid (4 to 6 floors) to low rise (1 to 3 floors) buildings with medium density is located on both sides of seaside road and spreads towards the highway</li> <li>. Few low-rise buildings (1-2 floors) with very low density found in between agricultural fields</li> </ul>
	Typology of beach resorts	<ul style="list-style-type: none"> <li>. No cluster of typologies</li> </ul>

Source: Author

b. Cultural profile

Table 67: Cultural profile of character zone H

CULTURAL PROFILE	Cultural assets	<ul style="list-style-type: none"> <li>. Presence of few traditional residential houses</li> </ul>
	Socio-spatial activities	<ul style="list-style-type: none"> <li>. No diverse socio-spatial activities</li> <li>. Prevalence of agricultural practices</li> <li>. Presence of many night clubs on seaside road</li> </ul>

Source: Author

c. Socio-economic profile

Table 68: Socio-economic profile of character zone H

SOCIO-ECONOMIC PROFILE	Landmarks	. Scarcity of landmarks presence of few hotels on seaside road
	Building use	. Mixed fabric of hotels along with a residential fabric on both sides of seaside road . Dispersed residential cabins and houses found in between agricultural fields.
	Provision of services	. Services only clustered around seaside road
	Condition of neighborhood	. Agricultural neighborhood in bad state with no provision of asphalted roads . Built fabric found along seaside road in average state
	Sense of security	. Lack of security especially at night due to the absence of adequate lighting

Source: Author

d. Regulatory profile

Table 69: Regulatory profile of character zone H

REGULATORY PROFILE	Ownership patterns of seaside properties	. Hybrid area, privatized (mostly private companies) with strong presence of religious entities
	Violations of PMD and beach access	. Area with no violations of PMD . No to little public access
	Zoning	. E towards the sea, C2, D2, B1 inwards (refer to Chapter 4 section C.2.)
	Shoreline protection	. No measures to protect the shoreline
	Protection of built and natural heritage	. Presence of natural rocks protected by the Ministry of Environment (Decision n 200/ 1997) <sup>43</sup>

Source: Author

<sup>43</sup> However, this law is not being considered given that a new beach resort in this area is being constructed involving severe alteration of the shoreline. It is also worth to note that there are no protective measures to preserve the remaining orchards and agricultural fields in this area

e. Environmental profile

Table 70: Environmental profile of character zone H

ENVIRONMENTAL PROFILE	Landform	. Wide flat coastal area
	Land use / land cover	. Orchards, agricultural fields found in between a hybrid fabric of hotels and residential fabric on both sides of seaside road . Large agricultural fields on west side of seaside road
	Shoreline Typology	. Zone with natural rocks
	Areas of land reclamation	. Natural area with minor alterations
	Air and water pollution	. Agricultural runoff and industrial discharges detected
	Natural assets	. Presence of a natural rocks with high ecological value and agricultural fields

Source: Author

**9. Al Minah, Tabarja - Character zone I**

This character zone is known to be the bay of Al Minah. It is famously known as a place for seafood restaurants and for sightseeing and is also known as the place from which St. Paul set sail on his last missionary journey. For this reason, a beach resort called St. Paul is built there on the edge between Tabarja and Safra (Fig.109) .

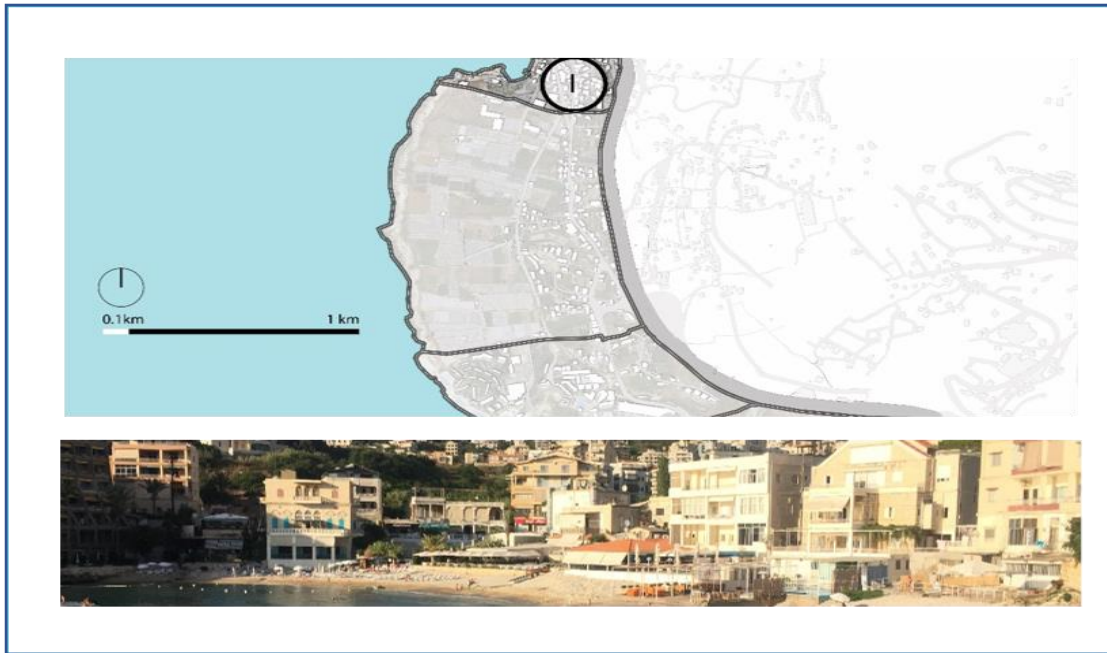


Figure 109: Aerial map and maritime facade of Character zone I

Source: Edited by author, 2019

a. Urban profile

Table 71: Urban profile of character zone I

URBAN PROFILE	Access	. Private entrances for restaurants . No free open access points
	Walkability	. Discontinuous network of sidewalks on seaside road
	Public amenities	. No public amenities such as benches or public gardens
	Visual connectivity	. Unhindered view to the sea due to the presence of low balustrades
	Coherence of character	. Presents a brake of character between large scale chalets apartments and small-scale traditional houses
	Building height	. The fabric of this character zone is mid (4 to 6 floors) to low rise (1 to 3 floors) with medium density
	Typology of beach resorts	. No cluster of beach resort typologies

Source: Author

b. Cultural profile

Table 72: Cultural profile of character zone I

CULTURAL PROFILE	Cultural assets	<ul style="list-style-type: none"> <li>. Diverse socio-spatial activities (activities of sightseeing and fishing)</li> <li>. Vibrant day life and nightlife due to the presence of seafood restaurants</li> <li>. Festivities during summer</li> </ul>
	Socio-spatial activities	<ul style="list-style-type: none"> <li>. High archeological and socio-cultural value of the site</li> </ul>

Source: Author

c. Socio-economic profile

Table 73: Socio-economic profile of character zone I

SOCIO-ECONOMIC PROFILE	Landmarks	. Hybrid area with several types of landmarks (touristic, administrative and religious).
	Building use	. Mix between hotels and chalets apartments and a residential fabric
	Provision of services	. Concentration of services on seaside road
	Condition of neighborhood	<ul style="list-style-type: none"> <li>. Coastal area in good state</li> <li>. Includes a residential neighborhood in average state with narrow roads, and a high density of buildings</li> </ul>
	Sense of security	<ul style="list-style-type: none"> <li>. Sense of security</li> <li>. Area close to municipal police and municipality</li> </ul>

Source: Author

d. Regulatory profile

Table 74: Regulatory profile of character zone I

REGULATORY PROFILE	Ownership patterns of seaside properties	. Hybrid area, privatized (mostly individuals) with strong presence of religious entities
	Violations of PMD and beach access	<ul style="list-style-type: none"> <li>. Several types of violations of PMD (violations of the decree 4810 and squatting violations)</li> <li>. No public access</li> </ul>

	Zoning	. Zone E towards the sea and B1 inwards (refer to Chapter 4 section C.2.)
	Shoreline protection	. No measures to protect the shoreline
	Protection of built and natural heritage	. Traditional residential houses not protected by law . The remaining natural rocks along the shoreline of Wata Slem are protected by the Ministry of Environment (Decision n 200/ 1997)

Source: Author

e. Environmental profile

Table 75: Environmental profile of character zone I

ENVIRONMENTAL PROFILE	Landform	. Wide flat coastal area next to a small bay
	Land use / land cover	. Orchards found in between a residential fabric
	Shoreline Typology	. Alternation between pebbled beaches and small scale concrete embankments
	Areas of land reclamation	. Small scale areas of land reclamation (< 5000 sqm)
	Air and water pollution	. Agricultural runoff
	Natural assets	. Presence of a diving site

Source: Author



### **C. Similarities and differences between the current character zones**

It is important to identify the similarities and differences between adjacent character zones to better understand the connection between these neighborhoods and to detect the presence of brakes of character between them.

The tables below (Tables 76,77,78,79 )show the similarities and differences between each character zone according to four main frameworks (urban, socio-economic, regulatory and environmental frameworks). Within each framework, specific criteria were mapped and were translated into maps (e.g. assessment of public access to the sea and walkability assessment on seaside road etc.). For these criteria, generic types were found and analyzed.

In terms of similarities, the character zones C and D show several resemblances. Regarding the physical framework, the similarities between the two character zones lie in the type of access, the type of visual connectivity and the height of the built fabric. Regarding the socio-economic framework, the similarities between the two character zones resides in the type of landmarks, the building use in addition to the type of socio-spatial activities. The environmental framework also shows similarities between zones C and D in terms of shoreline typology and scale of land reclamation. The differences between the character zones C and D are limited to the zoning, topography, type of landscape vegetation and the provision of public amenities.

In terms of differences the character zones B and C show a lot of dissimilarities. The only similarities found between these two character zones are the topography of both sites as well as the shoreline typology.

**1. Physical/ urban framework**

Table 76: Urban framework of all character zones

URBAN DATA	TYPE	DESCRIPTION OF TYPES	CHARACTER ZONE								
			A	B	C	D	E	F	G	H	I
Access to the sea	1	. Dominance of private entrances with security guards and mechanical gates . No free open access points	X							X	
	2	. Dominance of security and military guards with mechanical gates and security cameras . No free open access points	X								
	3	. Dominance of privates entrances for restaurants, cafes, hotels and beach resorts . No free open access points		X	X	X					X
	4	. Area with few open access points in direct pathways leading to the sea. . Some of these access points are hindered by cars parking in these pathways		X							
	5	. Area with few open access points coupled with hazards					X	X			
	6	. Area with high vegetation and large agricultural fields between the sea and the seaside road								X	
			A	B	C	D	E	F	G	H	I
Walkability assessment of seaside road	1	. Area with no provision of sidewalks . Area with no public amenities	X			X					
	2	. Provision of large and continuous sidewalks on each side of the seaside road . No provision of benches on sidewalks . Presence of one public garden	X								

	3	. Provision of continuous mid width to small width sidewalks . Presence of several benches on sidewalks . Presence of public gardens with limited access		X								
	4	. Area with no sidewalks . Presence of a cul-de-sac public garden trail with public amenities like benches and public toilets			X							
	5	. Presence of a continuous sidewalk mostly on one side . Area with no public amenities					X	X	X			
	6	. Area with a discontinuous network of sidewalks . Area with no public amenities								X	X	
			A	B	C	D	E	F	G	H	I	
Visual connectivity	1	. Visual obstruction due to the presence of tall buildings	X						X			
	2	. Unhindered view to the sea due to the presence of low balustrades	X					X				X
	3	. High visual disconnection due to the presence of high fences	X									
	4	. Visual permeability due to the urban morphology of the area and the presence of visual corridors hindered in few places by the presence of gates		X								
	5	. Hybrid area mostly visually disconnected from the sea			X	X						
	6	. Dominance of see through fences allowing for some visual permeability					X					
	7	. Mild visual permeability, seaside road not close to the sea									X	
			A	B	C	D	E	F	G	H	I	
Building height	1	. Dominance of mid to high rise buildings . High density	X									

	2	. Dominance of low rise buildings . Low density	X		X	X	X				
	3	. Dominance of low rise buildings . High density		X							
	4	. Mid to low rise buildings . Medium density		X						X	X
	5	. Dominance of mid to high rise buildings . Medium density			X	X	X				
	6	. Alternation between high rise buildings and low rise buildings . Low density						X	X		
	7	. Very few buildings (low rise) . Very low density								X	

Source: Author

## 2. Socio-economic framework

Table 77: Socio-economic framework of all character zones

SOCIO-ECONOMIC DATA	TYPE	DESCRIPTION OF TYPES	CHARACTER ZONE								
			A	B	C	D	E	F	G	H	I
Socio-economic landmarks	1	. Hybrid area, concentration of several types of landmarks	X	X							X
	2	. Dominance of socio-economic landmarks			X	X	X	X	X		
	3	. Area with scarcity of landmarks								X	
			A	B	C	D	E	F	G	H	I
Building use	1	. Area with beach resorts and military clubs on the coastline and a commercial spine located inwards	X								
	2	. Residential area with few educational facilities	X	X							
	3	. Business and administrative facilities along with educational facilities and a commercial spine on seaside road		X							

	4	. Mixed fabric between hotels and a residential fabric			X	X	X			X	X
	5	. Area with large scale touristic facilities					X	X	X		
	6	. Agricultural fields with few small residential houses								X	
			A	B	C	D	E	F	G	H	I
Cultural assets	1	. Area with no historic fabric	X					X	X		
	2	. Area with few orchards and traditional residential houses . Not protected by law	X			X				X	X
	3	. Area with several traditional residential houses with commercial use on ground floor . Mostly protected by law		X							
	4	. Area with large areas of orchards and very few traditional residential houses . Some of the traditional houses are protected by law, some of them are not				X					
	5	. Area of agricultural fields . Presence of natural rocks protected by environmental law									X
	6	. Area with natural or heritage site	X	X						X	X
			A	B	C	D	E	F	G	H	I
Socio-spatial activities	1	. Area with no rich socio-spatial activities on seaside road . Activities of diving / swimming / inside private beach resorts	X								
	2	. Activities of jogging and boating . Vibrant day life and nightlife (presence of a strip of restaurants on seaside road)	X								
	3	. Activities of shopping, jogging and diving . Vibrant day life and nightlife (presence of pubs and few restaurants)		X							

	4	. Area with no rich socio-spatial activities on seaside road except for activities inside private facilities (activities of paragliding, cable car riding and diving / swimming / water sports inside private beach resorts) . Vibrant nightlife (presence of many super night clubs)			X	X	X				
	5	. Mix of a rich and diverse socio-spatial activities like jogging, informal swimming, informal fishing and sightseeing						X	X		
	6	. No rich socio-spatial activities . Prevalence of agricultural practices . Vibrant nightlife (presence of many night clubs on seaside road)								X	
	7	. Small hub of diverse socio-spatial activities (presence of seafood restaurants, and activities of sightseeing and fishing)									X
			A	B	C	D	E	F	G	H	I
State of Neighborhood	1	. Neighborhood in good state in terms of building state, condition of roads and quality of public areas	X	X	X		X	X	X		X
	2	. Neighborhood in average state in terms of building state, condition of roads and quality of public areas			X	X					
	3	. Neighborhood in average state in terms of building state (very narrow roads, with high density of buildings)	X								
	4	. Agricultural neighborhood in bad state in terms of building state, and in terms of provision of asphalted roads								X	

Source: Author

### 3. Regulatory framework

Table 78: Regulatory framework of all character zones

REGU- LATORY DATA	T Y P E	DESCRIPTION OF TYPES	CHARACTER ZONE								
			A	B	C	D	E	F	G	H	I
Ownership patterns	1	. Hybrid area with strong presence of religious entities “Wakf”	X	X						X	X
	2	. Zone with no plot numbers, involving large areas used by the military forces	X								
	3	. Dominance of private sector (Individuals)			X	X					
	4	. Dominance of private sector (Private companies)					X	X	X		
			A	B	C	D	E	F	G	H	I
Violations of Public Maritime Domain	1	. Area with several violations of public maritime domain (very little public access)	X	X	X	X					X
	2	. Area with no plot numbers utilized by the military forces (exclusive access)	X								
	3	. Area with violations of public maritime domain and with several plots that have occupancy in accordance with issued decrees (very little public access)					X	X	X		
	4	. Area with no violations of public maritime domain so far (no public access)									
			A	B	C	D	E	F	G	H	I
Zoning	J O U N	A 1	(Subject to approval from the DGUP)	X		X	X	X	X		
		A	(Decree N18093 / 2005)		X	X					
		B	(Floor to area ratio 2 - Lot coverage 50% - 6 Floors)								



	I E H	C	(Floor to area ratio 1.5 - Lot coverage 50% - 6 Floors)			X						
		H	(Floor to area ratio 2 - Lot coverage 40% - 5 Floors)				X					
		E 1	(Floor to area ratio 1 - Lot coverage 30% - 4 Floors)	X								
				A	B	C	D	E	F	G	H	I
	GH AZ IR	C 3	(Floor to area ratio 1.2 - Lot coverage 40% - 4 Floors)				X					
		H 1	(Floor to area ratio 1.2 - Lot coverage 40% - 4 Floors)				X	X				
		F 1	(Floor to area ratio 0.02 - Lot coverage 2% - 1 Floors)				X	X				
				A	B	C	D	E	F	G	H	I
	TA BA RJ AK FA RY AS SI NE	E	(Floor to area ratio 0.4 - Lot coverage 20% - 2 Floors)								X	X
		E 1	(Floor to area ratio 1 - Lot coverage 30% - 4 Floors)						X	X		
B 1		(Floor to area ratio 1.5 - Lot coverage 50% - 3 Floors)									X	
C 2		(Floor to area ratio 0.9 - Lot coverage 30% - 3 Floors)								X		
D 2		(Floor to area ratio 0.4 - Lot coverage 20% - 2 Floors)								X		

Source: Author

#### 4. Environmental framework

Table 79: Environmental framework of all character zones

ENVIRON- MENTAL DATA	T Y P E	DESCRIPTION OF TYPES	CHARACTER ZONE										
			A	B	C	D	E	F	G	H	I		
Topography	1	. Presence of high cliffs that were directly next to the sea, landform altered by large flat areas of land reclamation	X										
	2	. Flat coastal area with an average width		X	X								
	3	. Narrow flat coastal area				X	X						
	4	. Mild hill next to sea						X					
	5	. Wide flat coastal area with cliffs on the south							X	X	X		
			A	B	C	D	E	F	G	H	I		
Topography and landscape vegetation	1	. Presence of high cliffs + presence of orchards	X										
	2	. Flat coastal area - average width + minor vegetation		X									
	3	. Flat coastal area - average width + few orchards and agricultural areas			X								
	4	. Narrow flat coastal area + natural vegetation				X	X						
	5	. Mild hill + natural vegetation						X					
	6	. Wide flat coastal area with cliffs on the south + agricultural fields							X	X	X		
			A	B	C	D	E	F	G	H	I		
Shoreline typology	1	. Area with large areas of concrete and riprap with the presence of few sandy beaches (Large scale)	X										
	2	. Alternation between sandy/pebbled beaches and concrete/riprap embankments (Small scale)		X	X	X							X

	3	. Natural condition, area with pebbled beach					X				
	4	. Dominance of riprap with concrete embankments						X	X		
	5	. Zone with natural rocks								X	
			A	B	C	D	E	F	G	H	I
Land reclamation areas	1	. Zone with very large areas of land reclamation (> 5 ha per project)	X								
	2	. Zone with small scale areas of land reclamation (1000 to 5000 sqm)		X	X	X					X
	3	. Zone with medium size areas of land reclamation (5000 to 10 000 sqm)			X	X					
	4	. Natural area with minor alterations in terms of scale					X	X			X
	5	Zone with large areas of land reclamation (1 to 5 ha per project)							X		
			A	B	C	D	E	F	G	H	I
Land use and land cover	1	. Presence of several terraces, pools, sports fields and grass fields for beach resorts and restaurants (on west side of seaside road)	X	X	X	X				X	
	2	. Dominance of parking areas with natural vegetation in a commercial/business fabric	X								
	3	. Dominance of parking areas with few private gardens serving a residential fabric	X								
	4	. Dominance of orchards around an old residential fabric (presence of traditional houses)	X								
	5	. Presence of sports fields and playgrounds around educational facilities + presence of large parking areas around commercial and business fabric		X							
	6	. Mix between parking areas and orchards along with agricultural fields			X						X

		+ mix between hotels and a residential fabric									
	7	. Dominance of natural vegetation + mix between hotels and a residential fabric				X	X	X	X		
	8	. Agricultural fields + dispersed residential fabric								X	

Source: Author

#### D. SWOT analysis

A SWOT analysis was conducted to assess the current opportunities and threats for each character zone. It is worth noting that most of the threats, that the character zones are facing, are common to all of them. However, the level of gravity of each threat varies from one character zone to another. These common threats remain as follow:

- . Absence of connectivity with the sea in terms of beach access, lack of continuous walkability along the waterfront and visual obstruction of the sea
- . Unregulated urbanization
- . Neglect of the historic fabric except for the souks
- . Contrast of identity between the pilgrimage tourism and the sex tourism
- . Total privatization of the waterfront threatening the free access to the beach
- . Lack of safety especially for women limited to the middle and upper section of the bay
- . Economic decline hitting the touristic sector and exacerbated with the emergence of the pandemic.
- . Shoreline alteration and the resulting destruction of the marine and terrestrial habitats
- . High levels of water and air pollution

- . No protection of agricultural and green practices combined with the lack of sustainable practices along the coast
- . No protection of natural assets (e.g. the existing cliffs of Sarba and Kfaryassine and the natural rocks of Wata Slem)

Concerning opportunities, Jounieh has a strategic location and its bay is by itself a valuable natural asset. The city has a high touristic potential thus its natural and built heritage should be more valorized and protective measures should be put in place to restore and maintain its natural and built assets. (Refer to appendix 3)

### **E. Star model assessment**

The Star model is a pictorial diagram that was used by Varna & Tiesdell (2010) to assess the publicness of public spaces. It is a five-dimensional diagram which includes five criteria of assessment (ownership, control, animation, civility and physical configuration). However, the Star model for this study will have other criteria/subjects as it assesses landscape character zones instead of public spaces. The Star model would enable us to assess each landscape character zone to better understand which part of the bay faces the most neglect and complex issues with regards to urban, socio-economic and environmental matters. Therefore, the assessment was set according these three main axes: the urban; the socio-economic and the environmental framework. Each framework has its own star model. Thus, each character zone will have three star models following the aforementioned frameworks.

Each star model has five criteria that are assessed equally. And each criterion is ranked over five making the total ranking of each star model over 25. Since there are three-star models tackling three main axes (the physical/urban framework, the socio-

economic framework and the environmental framework), the overall ranking for a character zone will be over 75.

### ***1. Criteria for assessment***

The criteria chosen for evaluation are in relation to the fieldwork mapping that was made and assessed in Chapter 4.

For the urban framework, the criteria of assessment used for the star model are: the level of walkability; the provision of public amenities; the coherence of character of the façade maritime; the visual connectivity between the coastal city and the sea and lastly the assessment of public access to the beach.

For the socio-economic framework the criteria of assessment used for the star model are: the presence of cultural assets; the provision and diversity of basic services; the sense of security, the condition of neighborhood as well as the diversity and inclusiveness of the current socio-spatial activities.

For the environmental framework the criteria of assessment used for the star model are: the level of human-made shoreline alterations; the provision of green space; the quality of the natural habitats and the richness of the Fauna and Flora; the level of water and air pollution as well as the presence of natural features.

Tables that show extensively the rating for each criterion of each framework are shown in Appendix 4 via explicative tables.

### ***2. Current assessment***

As seen in the following tables (Table 80, 81, 82.), the character zone C (The leisure core of Nouair district) and D (The leisure core of Sahel Alma and Ghazir) have the lowest general scores (32/75 and 27/75 respectively). Character zone H (The

agricultural fields of Wata Slem) and B (The souks of Jounieh) have the highest scores (49/75 and 47/75 respectively).

Given that the character zones were listed from South to North, comparing the scores between each other can clearly show that the middle section of the bay is facing neglect beside the intricate issues related to all the assessed dimensions (urban, socio-economic and environmental).

Table 80: Star model assessment for character zones A, B and C

		CHARACTER ZONE A	CHARACTER ZONE B	CHARACTER ZONE C
PHYSICAL LAYER / 25		 12	 17	 08
SOCIO-ECONOMIC LAYER / 25		 21	 23	 11
ENVIRONMENTAL LAYER / 25		 08	 07	 13
OVERLAPPING OF LAYERS / 75		 41	 47	 32

Source: Author



Table 81: Star model assessment for character zones D, E and F

		CHARACTER ZONE D	CHARACTER ZONE E	CHARACTER ZONE F
PHYSICAL LAYER / 25		 06	 12	 14
SOCIO-ECONOMIC LAYER / 25		 10	 13	 16
ENVIRONMENTAL LAYER / 25		 11	 15	 15
OVERLAPPING OF LAYERS / 75		 27	 40	 45

Source: Author

Table 82: Star model assessment for character zones G, H and I.

		CHARACTER ZONE G	CHARACTER ZONE H	CHARACTER ZONE I
PHYSICAL LAYER / 25	<p>WALKABILITY PUBLIC ACCESS VISUAL CONNECTIVITY COHERENCE OF CHARACTER PROVISION OF PUBLIC AMENITIES</p>			
SOCIO-ECONOMIC LAYER / 25	<p>CULTURAL ASSETS SOCIO-SPATIAL ACTIVITIES STATE OF NEIGHBOURHOOD SENSE OF SECURITY PROVISION AND DIVERSITY OF SERVICES</p>			
ENVIRONMENTAL LAYER / 25	<p>SHORELINE ALTERATION NATURAL ASSETS POLLUTION FAUNA &amp; FLORA PROVISION OF GREEN SPACES</p>			
OVERLAPPING OF LAYERS / 75				

Source: Author

## **F. Main findings**

Building on the SWOT analysis of the coast of Jounieh, which tackled several components (urban, regulatory, cultural, socio-economic and environmental dimensions); the main problems that the bay is facing are identified and summarized below.

Similar to several beach resort cities, the bay of Jounieh suffers from degradation of its coast due to extensive developments along its shoreline. The current condition of the bay is exacerbated by the lack of effective governance, lack of protective measures of its environment and its shoreline, and by the issue of dominant privatization. These factors are restricting people's access the sea and are threatening the environment of the area.

Economically, the souk of Jounieh is facing a severe economic decline with the hegemony of shopping malls in nearby cities and due to the lockdown measures taken with regards to the pandemic. Compared to the models of Tyr and Byblos, the exclusive model of private-gated beach resorts is not providing much of a sustainable prosperity to the locals. While this model was meant to attract tourists, it is actually hosting the Lebanese diaspora looking for a long summer stay or the old generation of Lebanese upper class (Dewailly & Ovazza, 2004). It appears that new trends of tourism are different from the earlier ones, thus requiring a change in the actual structure of this model. Moreover, the current pandemic severely hit the touristic sector on a global and national scale (Akleh, 2020).

Regarding the pilgrimage tourism (e.g. Lady of Harissa via the cable car), it stands in deep contrast with the dominant sex tourism in the area. Though sex tourism is a million-dollar industry in the northern part of the bay (Rowbotham, 2010), residents

of the area suffer from the social stigmatization of the area. Moreover, not so many available public spaces are available to the residents. Socially, the monopolization of the access to the sea by restaurants and paid beach resorts is depriving the community from its constitutional right of using the sea as a public space. The privatization of coastal properties does not guarantee access along the seafront. As such, the cities along the bay are dealing with a disconnection from their sea where access is defined as an exclusive privilege for the upper class. Besides access, walkability is inadequate along the whole bay due to inexistent continuous sidewalks between the souks of Jounieh and Kfaryassine. In terms of safety, the locals feel safer walking in the A.T.C.L area and along the souks of Jounieh than walking in Maameltein, Ghazir and Kfaryassine<sup>44</sup>. This is especially the case for women, due to the social stigma linked to the Maameltein area, which contains street soliciting activities.

The visual and physical discontinuity between different parts of the bay can be sensed spatially. For instance, there is an evident disconnect when comparing the souk of Jounieh (which is known for its historic fabric) to the Nouair district with its mid to high-rise hotel buildings. This is due to inappropriate and uncoordinated urban regulations.

Environmentally and concerning the shoreline, the civil war allowed for major violations within the bay that involved large areas of land reclamation. Due to the presence of these embankments, maritime fauna and flora are threatened and some of the beaches are silting up. Consequently, the level of coastal pollution is becoming alarming.

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<sup>44</sup> This is based on recurrent observations done in 2019 and in 2020 and on informal discussions with pedestrians walking along the bay of Jounieh.

The star model, on the other hand, shows unequal distribution of public amenities along the bay. While many public amenities such as public gardens and sidewalks are present in the southern part of the bay, the upper part faces severe neglect. This can also be linked to the main findings of chapter 4 where most of the proposed public projects are found to be located at the southern part of the bay.

Moving on to the opportunities and potentials of the site, the bay of Jounieh remains an important natural landmark and presents high cultural and touristic potentials given its rich history and strategic location. However, the bay needs a holistic city-scale strategy to tackle its fragmentation and solve the aforementioned issues along its entire coast.

## CHAPTER VI

### PLANNING AND DESIGN GUIDING PRINCIPLES FOR THE BAY OF JOUNIEH

This chapter applies a holistic design strategy and planning principles that respond to the issues that the bay of Jounieh is facing which were elaborated in Chapter 4 and 5. This chapter is divided into three sections. The first section of this chapter proposes a holistic overall strategy for the bay of Jounieh in its entirety. The second part proposes general guidelines that address the multi-dimensional issues that the bay is facing. These guidelines are inspired from the literature and tools of sustainable tourism listed in Chapter 2 which seek the restoration of the natural ecosystems and revitalize decaying beach resort cities.

The third section proposes design spatial strategies responding to the opportunities, potentials and vulnerabilities of each character zone.

#### **A. Overall strategy**

The main goal of this holistic strategy is to restore an interactive interface between land and water by restoring the ecosystems and retrofitting the artificial habitats of the shoreline. The strategy aims also at reconnecting the coastal city and community with their seafront. The strategy works following two directions: from coastal city to sea as well as along the bay via reconnecting the different neighborhoods of the bay together (Fig.110). With regards to the shoreline, nature-based and hybrid solutions for shoreline protection and enhancement of the environment need to be addressed along the entire bay. With regards to physical and visual connectivity between the coastal city and the sea, pathways that lead directly to the sea would need

to be created with the repurposing of existing seaside vacant lands and illegal vacant encroachments. The connection across the bay between the different neighborhoods will be established by creating a continuous pathway along the waterfront and seaside road that enhance walkability and connects all character zones together.

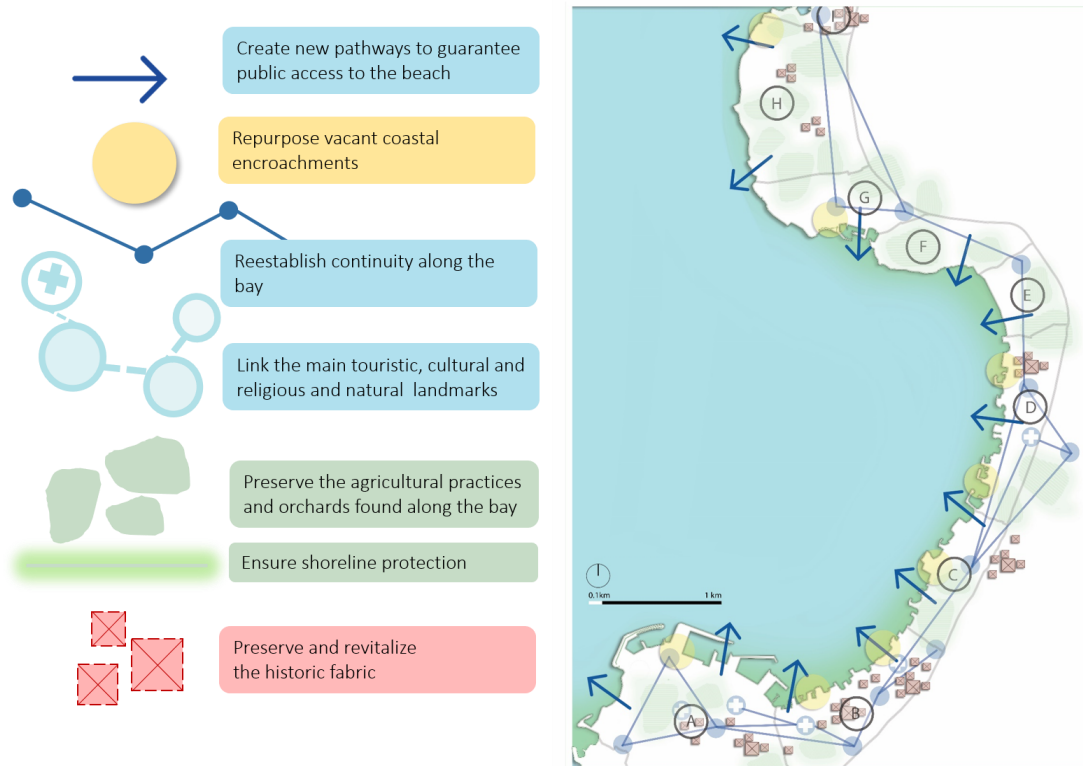


Figure 110: Overall strategy

Source: Author

## B. Design and planning guiding principles

These are the proposed planning principles that the municipality and other public authorities (such the Ministry of public works and transportation and the DGUP) should adopt for the whole studied area in order to address the issues listed above and achieve sustainable coastal development for the bay of Jounieh.



## ***1. Guiding principles at the physical and urban level***

The following guiding principles are categorized into two main axes in relevance to the major and most common urban issues that the bay is facing. These axes are focused on the physical and visual connectivity. The physical connectivity is addressed by stressing on the public access to the beach and on the walkability along the waterfront. As for visual connectivity, it is addressed by stressing on the visual coherence between the different neighborhoods of the bay and the visual connectivity between the coastal city and the sea. Ensuring public access to the beach

- . Revitalization of the souks of Jounieh and opening all existing pathways between plots that lead directly to the sea in order to reconnect the coastal city with its sea
- . Create similar pathways that lead directly to the sea in other areas outside the souks of Jounieh via expropriation to revive and reconnect the coastal city with its sea
- . Enhance streetscaping in these pathways by adding street furniture
- . Equip these pathways with adequate ramps and stairs to ensure direct access to the sea
- . Equip these pathways with adequate lighting to ensure safety
- . Use of the new project of public beach that will be established in Sarba as a model to be replicated in other areas along the bay

### a. Reinforcing walkability along the seafront of the bay of Jounieh

- . Enhance walkability by implementing sidewalks with public amenities along all of seaside road
- . Improve the urban conditions of linkages between existing heritage sites and landmarks.

- . Connect public spaces and public gardens via an integrated pedestrian network. (e.g. connect public garden/trail in Nouair district with a new network of sidewalks)
- . Upgrade existing sidewalks by adding street furniture and adequate lighting. Add sidewalks in areas that have low walkability with street furniture and amenities such as rain shelters, benches, bins, lighting to ensure safety. Add public toilets that serve the souks of Jounieh
- . Create small play areas for kids and the elderly in mid to large width sidewalks in order to make streetscapes more inviting and more meaningful

b. Ensuring visual coherence of character between the neighborhoods

- . Develop and implement regulations and design guidelines that ensure coherence of character of the built-fabric along the bay and reduce fragmentation between the old core and other parts of the bay (regulations regarding street alignment and facade treatment as well as ease of movement via pedestrian connectivity)
- . Ensure a smooth continuity (visual and physical continuity) regarding the interface between the old core (the souks of Jounieh) and other areas of the bay via a pedestrian network and adequate tree planting
- . Enhance the connection between existing touristic nodes (e.g. the souks of Jounieh, the cable car leading to the Lady of Harissa and the Casino du Liban) along the bay via adequate signage, a pedestrian network and other amenities
- . Enhance streetscaping in important vital roads such as the Jounieh Main road next to Fouad Chehab stadium, and Ghazir Main Road
- . Implement a signage design that is integrated and sensitive to the context

c. Ensuring visual connectivity between the coastal city and the sea

- . Change the treatment of existing fences (from opaque to see through) on seaside properties for more visual connectivity with the sea and encourage the use of low balustrades when it is possible
- . Limit urban development in vacant plots that are close to the shoreline in order to maintain visual corridors towards the sea
- . Implement a setback that prohibits construction near the sea to limit new visual obstructions
- . Implement spots for sightseeing in public spaces that are well connected with each other and towards the sea

***2. Guiding principles at the regulatory level***

No effective sustainable measures can be implemented for the bay if they were limited to piecemeal and fragmented actions. Therefore, it is important to stress on the holistic and comprehensive notion that work on centralizing decision-making for the bay in its entirety. For a better holistic approach, the necessary measures are listed below.

- . Create a steering and an executive committee/ board involving all concerned municipalities of the bay (Jounieh, Ghazir, Tabarja Kfaryassine) in order to deal with the issues that were listed above (fragmentation along the bay, physical and visual discontinuity, public access and walkability) and in order to launch public projects that deal with these issues. These projects can be elaborated through PPP public-private partnerships and private sponsorships or other forms of cooperatives

- . Define a holistic and clear master plan for the coast of all the bay in its entirety with defined and clear regulations (e.g. Do not designate areas such as zone A1 that do not have clear and defined regulations and that only deals directly with the DGUP)
- . Create regulations that specifically deal with the shoreline protection and prohibits further alterations
- . Provide incentives for eco-friendly investments along the bay. Furthermore, provide a new regulatory framework that can limit unsustainable and damaging behavior on the built environment
- . Repurpose illegal encroachments along the bay for the service of the public as well as vacant seaside properties when it is possible
- . Re-open vacant existing swimming pools to the sea and reinforce public access in private marinas in existing beach resorts.

### ***3. Guiding principles at the socio-cultural level***

These guidelines focus on branding the bay of Jounieh as a heritage site and cultural destination and on defining the cultural identity of the bay as a place of integration, tolerance and duality between conservatism and liberalism. These guidelines are listed below.

- . Create a branding strategy based on the cultural assets of the bay
- . Promote and highlight existing cultural and religious landmarks
- . Connect existing heritage sites (Al Minah in Tabarja, the roman Bridge in Maameltein Ghazir, St. Sauveur Convent in Sarba) to the souks of Jounieh via a specific accessible trail that has adequate signage and infographics

- . Develop incentives to restore dilapidated buildings with architectural and cultural value
- . Develop a list of buildings that have architectural value and that were not listed in the law #9 that was issued by the Ministry of Culture in 1995 in order to protect them and prohibit their destruction
- . Formulate incentives to rehabilitate vacant buildings with architectural value into cultural active spaces such as exhibitions spaces and art hubs
- . Organize cultural events and competitions attracting locals and visitors in public spaces
- . Promote intangible heritage through oral traditions, religious commemorations, literary competitions and other types of festivities
- . Revive local traditions that are in relation with the sea (rituals regarding swimming season, religious festivities and fishing practices)

#### ***4. Guiding principles at the socio-economic level***

The following guiding principles are targeting four axes in relevance to the current socio-economic issues that the bay is facing. These main axes target the issue of inclusive socio-spatial activities; the lack of place making and absence of belonging; the social stigma with regards to sex tourism as well as the economic decline that is hitting the souks of the bay.

##### ***a. Catering for diverse socio-spatial activities***

- . Strengthen the community ties of the social fabric by creating inviting public spaces and hosting intergenerational activities along the seafront

- . Create a program that hosts several activities along the seafront that are accessible and inclusive to all age and gender groups
- . Create spaces for food kiosks and street vendors in strategic locations along the coast of the bay that can operate during festivities and special occasions in order to encourage local produce and urban farming and animate the street and public life
- . Encourage a mix of uses and services along main axes where basic services are within 15-minute radius on foot or bike

b. Enhancing civic engagement

- . Create awareness campaigns via community workshops and focus groups and encourage activism for better civic engagement with regards to beach access, beach cleaning and sustainable practices etc.
- . Integrate civic involvement in school programs in partnership with the municipality, religious organizations, scouts and other communities for activities of beach cleaning tree planting and other
- . Engage residents and concerned stakeholders in implementing environmental preservation strategies (e.g. activities of planting, urban farming, beach cleaning)
- . Encourage exchange of experiences and skill training between senior citizens, fishermen and the younger generation
- . Establish an interactive platform for sharing information, discussion, co-creation and collaboration

c. Decriminalization of sex work

- . Create awareness campaigns to fight against social stigmatization and empower vulnerable communities to seek help and report abuse in case there is any
- . Regulate and decriminalize sex work for both parties (sex workers and clients) while adopting regulations that protect the rights of vulnerable communities within the bounds of cultural acceptance
- . Regulate brothels to create a collective safe space for sex workers
- . Ensure soliciting on public streets that are safe and well-lit but not on seaside road in daytime in order to keep the waterfront more inclusive to all age groups and gender
- . Enhance legislations that protect human rights, target human-trafficking for children and migrant workers and other vulnerable communities
- . Provide basic services (food market, pharmacy, police stations) in all neighborhoods equally according to adequate catchment areas in order to ensure safety and community outreach

d. Economic revitalization of the souks of Jounieh and other parts of the bay

- . Promote small to medium enterprises and family-run businesses
- . Promote eco-innovative business models
- . Promote domestic tourism and develop an urban marketing strategy that caters for different target users (students, young couples, families, and elderly)



## ***5. Guiding principles at the environmental level***

### **a. Encouraging sustainable practices**

- . Encourage touristic enterprises to adopt sustainable policies through incentives and tax breaks
- . Encourage touristic enterprises to adopt reporting as a tool for meeting sustainable standards
- . Support in creating a branding and marketing strategy for touristic enterprises that have certifications with regards to sustainable practices
- . Create a professional committee that assesses the outcomes and efforts of sustainable management in touristic enterprises
- . Provide training workshops for touristic enterprises and their staff in order to adopt sustainable measures
- . Implement accessible guidelines and codes of conduct for staff, visitors and residents.
- . Adopt sustainable measure for green and blue infrastructure (e.g. provide clean energy, provide a treatment plant for sewerage network in the vicinity etc.)

### **b. Ensuring green and agricultural practices**

- . Ensure a satisfactory level of community-wellbeing and quality of life through provision of accessible green spaces and public areas
- . Encourage urban greening practices for streetscapes (ornamental value) and ecosystem services.
- . Encourage agricultural practices through financial incentives and tax breaks
- . Appropriate (through rent or ownership) and convert abandoned land into public spaces with community gardens managed by municipalities

- . Develop and implement regulations that ensure an increased percentage of urban tree canopy in urban areas to be respected.
- . Expand and protect existing green spaces to encourage biodiversity, preserve the quality of natural habitats and restore degraded ecosystems as well as make them accessible for eco-tourism
- . Create incentives to increase green cover on private properties
- . Map mature trees that should be protected along the bay and in public spaces
- . Designate natural assets to be protected (e.g. cliffs of Kfaryassine, cliffs of al Chir in Sarba)
- . Reinforce the application of the environmental law that protect the natural rocks of the coast of Wata Slem

#### c. Shoreline protection

- . Reconnect citizens with the sea and nature and raise awareness campaigns regarding climate change and the ecological importance of the sea
- . Limit urban development on the coast of Wata Slem to preserve its natural character
- . Implement regulations that prohibit further shoreline alterations along the bay and especially on the coast of Maameltein, Kfaryassine and Wata Slem where there are areas that are still not altered
- . Remove when possible artificial elements along the waterfront to restore landscape vegetation and marine habitats
- . Adopt hybrid engineering options and nature-based solutions on all the shoreline of the bay. This would also need to be adopted by private facilities (hotels, beach resorts and restaurants) to protect the shoreline against floods and beach erosion and to restore and enhance the quality of the terrestrial and marine life

- . Increase areas of recreational green spaces along the sea in urban zones. These buffer zones are coastal barriers that limit the potential damages caused from climate change (flooding, erosion, rise of sea levels, storm surges)
- . Collaborate with environmental organizations for marine ecosystem recovery by implementing artificial reefs to promote coral growth. Thus, creating more diving sites along the bay that encourage tourism, benefit marine wildlife and improve water quality
- . Elaborate a management plan for cleaning coastal public spaces and beaches

#### d. Enhancing soft mobility and limiting traffic

- . Remove parking lanes along the souks of Jounieh and on most of seaside road for less traffic and noise and for less CO2 emissions
- . Provide parklets at the expense of car lanes
- . Provide parking areas behind the souks to pedestrianize the souks according to a specific time schedule
- . Replace parking lanes by small green pockets that host play areas for children and elderly
- . Implement a soft mobility plan that encourage cycling and create spaces for bike parking and bike lanes
- . Integrate a public transport network with bus stops at strategic locations in order to connect the seaside road to the highway

## ***6. Concluding remarks***

It is worth noting that these principles require a favorable political reform and an appropriate context that advocates for transparency, accountability, social justice and

the right to access public goods. It requires a panoply of the instruments mentioned in Chapter 2 to allow for the sustainable development of the bay of Jounieh. In terms of control instruments, new specific regulations are needed, as well as a new land use plan with inclusive participation. New decrees for shoreline protection as well as specific permits for implementing nature-based solutions and planning briefs are also needed. With regards to economic instruments, taxes and incentives need to be adopted to motivate and encourage sustainable behavior. With regards to voluntary instruments, they are crucial to create a sense of civic engagement and belonging among the community. All the aforementioned general guidelines should be taken into consideration in designing any public project for the bay of Jounieh. Thus, for better implementation, these guidelines should be translated spatially via spatial strategies tailored according to each character zone.

### C. Spatial strategies for each character zone

The strategies listed below are translated in figure 111, 112,113 and 114 and the tables listed below (Tables 83,84,85,86) . It is worth noting that all strategies mentioned below are tailored according to the research findings of each specific character zone.

#### 1. Strategies at the urban level

Table 83: Spatial strategies for each character zone at the urban level

Urban profile	Character Zone	Spatial strategy
Provision of public spaces	A	<ul style="list-style-type: none"> <li>. Use of the public lands of the railway track in order to implement a pedestrian public trail with resting spaces and recreative activities</li> <li>. Connect the pedestrian public trail of the railway with the existing public garden</li> <li>. Provide benches on sidewalks of seaside road</li> </ul>
	B	<ul style="list-style-type: none"> <li>. Turn the existing public spaces in front of the municipality of Jounieh and in front of the Serail into more open and accessible places</li> </ul>

		. Provide green pockets and parklets with resting spaces and play areas for kids in place of parking lanes along the souks of Jounieh
	C	. Expand the existing public trail in Nouair district and create a community garden on existing orchards that are adjacent to the public trail/ garden . Repurpose vacant lands as public spaces
	D	. Preserve and manage the green spaces along the existing railway track
	E	
	F	. Preserve and manage the green spaces along the existing railway track and around Casino du Liban . Create public spaces on the upper hill for site seeing
	G	. Preserve and manage the green spaces along the existing railway track
	H	
	I	
Public access to the beach	A	. Opening existing marinas inside the fishing port and A.T.C.L area for pedestrians
	B	. Clear out the public pathways between plots to ensure access to the sea . Equip public pathways leading to the sea with adequate ramps and stairs to ensure direct access to the sea and with adequate lighting to ensure safety
	C, D, E, F	. Create new pedestrian pathways between plots (similar to the pathways found along the souks of Jounieh) that lead directly to the sea through expropriation . Provide a pedestrian promenade that is directly next to the beach when it is possible . Equip public pathways leading to the sea with adequate ramps and stairs to ensure direct access to the sea and with adequate lighting to ensure safety
	E, F	. Provide a pedestrian promenade that is directly next to the beach
	G	. Provide pedestrian pathways between beach resorts that have direct access to the sea . Give pedestrian access to the sea by making the marinas of these beach resorts open to the public
	H	. Provide few pedestrian pathways between agricultural lands that have direct access to the sea
	I	Provide a public promenade along the shoreline of Al Minah

Enhancing physical connectivity	A, B, C, D, E, F	. Provide a bike lane along seaside road with bike racks
	C, D, E, F, G, H, I	. Provide sidewalks with adequate street furniture and lighting for safety
	A	. Connect important landmarks such as the St. Sauveur Convent with the existing public garden with the spine of the souks of Jounieh and with the house/ museum of late ex-president Fouad Chehab via a pedestrian network
	B	. Connect important landmarks such as the spine of the souks of Jounieh with the house/ museum of late ex-president Fouad Chehab, with the Municipality Serail and with the Fouad Chehab stadium via a pedestrian network . Pedestrianize the souks of Jounieh according to a specific time schedule and ensure an alternative road for vehicles . Remove parking lanes along the souks of Jounieh to ease traffic and provide alternative parking areas adjacent to seaside road
	C	. Connect important landmarks such as the Fouad Chehab stadium with the cable car via a pedestrian network . Connect the existing public trail/ garden in Nouair district with a network of sidewalks . Enhance streetscaping at Jounieh main road
	D	. Connect important landmarks such as the St. Antoine church to the roman bridge via a pedestrian network . Enhance streetscaping at the Ghazir main road
	E F	. Connect important landmarks such the roman bridge to Al Minah via a pedestrian network
Ensuring visual connectivity	A	. Enhance visual connectivity with the use of see-through fences when it is needed and by setting spaces for site seeing along the pedestrian public trail of the railway (the railway track is at a higher level than the sea level)
	B	. Enhance visual connectivity with the use of see-through fences when it is needed and by providing spaces for site seeing along the public pathways that lead directly to the sea
	C	. Enhance visual connectivity with the use of see-through fences when it is needed and by providing spaces for site seeing along the public pathways that lead directly to the sea
	D	. Enhance visual connectivity with the use of see-through fences when it is needed and by providing spaces for site seeing along the public pathways that lead directly to the sea
	E	. Provide benches and resting areas for sightseeing in the new created pathways
	F	. Encourage the use of low balustrades when it is possible
	G	. Enhance visual connectivity with the use of see-through fences when it is needed

	H	
	I	. Provide benches and resting areas for sightseeing in Al Minah
Enhancing visual coherence	A, B, C, D, H, I	. Preserve the old traditional houses with high architectural value and preserve the green areas and orchards around this fabric. . Ensure that the additions for the old traditional houses are in coherence with the existing old fabric
	B	. Implement regulations regarding façade treatment and street alignment to the new fabric for more integration with the souks of Jounieh
	C	. Implement regulations regarding façade treatment and street alignment to establish a level of visual coherence and harmony between Nouair district and the souks of Jounieh
	D	. Preserve the old traditional cluster with high architectural value found in Maameltein Ghazir
	D, E, F, H, I	. Implement regulations regarding façade treatment and street alignment to establish a level of visual coherence and harmony
	E	. Protect green spaces and prohibit further construction next to the Casino du Liban
	F	

Source: Author

## 2. Strategies at the regulatory level

Table 84: Spatial strategies for each character zone at the regulatory level

Legal profile	Character Zone	Spatial strategy
Ensuring public access to the sea	A	. Clear out public pathways to ensure access to the sea and implement a public beach next to the fishing port
	B	. Prohibit construction in vacant lands that are adjacent to the shoreline and give incentives to these vacant lands to be used as open beaches
	C	. Create new pedestrian pathways between plots (similar to the pathways found along the souks of Jounieh) that lead directly to the sea through expropriation
	D	. Prohibit construction in vacant lands that are adjacent to the shoreline and give incentives to these vacant lands to be used as open beaches



	E	. Prohibit construction in the existing seaside vacant lands that are facing the Roman Bridge and give incentives to these vacant lands to be used as open beaches
	F	
	G	
	H	. Provide few pedestrian pathways between vacant or agricultural lands that have direct access to the sea via expropriation
	I	
Dealing with illegal encroachments on PMD	A	. Repurpose illegal encroachments when possible
	B	. Repurpose illegal encroachments when possible and clear out all illegal encroachments blocking the direct pathways of the souks
	C	. Repurpose illegal encroachments when possible and create a continuous seaside pathway that either cuts through, between the beach resort/ hotel/ restaurant amenities and marinas or detours the existing private development
	D	. Appropriate the plots adjacent to the shoreline that are in violation of the maritime public domain and in which their owners did not pay the settlement fees
	G	. Give pedestrian access to the sea by making the marinas of these beach resorts open to the public
Protection of natural assets	A	. Implement regulations that protect the existing natural cliffs of Al Chir in Sarba
	G	. Implement regulations that protect the existing natural cliffs and remaining natural rocks on the shoreline
Shoreline protection	B, C, D, E, F, G	. Implement regulations that prohibit further shoreline alterations and additional constructions nearby the seafront
	H	. Implement regulations that prohibit further shoreline alterations and additional constructions nearby the seafront . Reinforce the regulations that protect the existing natural rocks on

	I	the shoreline
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Source: Author

### 3. Strategies at the socio-cultural level

Table 85: Spatial strategies for each character zone at the socio-cultural level

Cultural profile	Character Zone	Spatial strategy
Inclusiveness and diversity of socio-spatial activities	A	. Extend temporary events to the seaside road while providing another alternative road for vehicles
	B	. Expand the summer festivities happening inside the souks of Jounieh outside the boundaries of the souks
	C	. Create food kiosks during festivities and special occasions in order to encourage local produce and urban farming . Refurbish and reuse the closed hospital in Haret Sakher as dispensary to provide health services for the community and for sex-workers
	C, D	. Create incentives to rehabilitate existing vacant buildings especially those who have architectural value in order to turn them into space activators for the community
	E	. Create food courts and kiosks during festivities and special occasions in order to encourage local produce and urban farming . Organize events on the beach
	E, F	. Encourage the use of public spaces for diverse and informal socio-spatial activities . Provide basic services for safety and community outreach
	G	. Provide basic services outside beach resorts for safety and community outreach . Encourage festivities and cultural events next to al Burj of Tabarja and negotiate with the owners of the land to open it to the public
	H	. Encourage agricultural practices via workshops and by providing a local food market
	I	. Encourage festivities and cultural events along Al Minah . Revive religious landmarks through religious festivities

Source: Author

#### 4. Strategies at the environmental level

Table 86: Spatial strategies for each character zone at the environmental level

Environmental profile	Character Zone	Spatial strategy
Provision of green spaces	A	. Preserve the green areas and orchards around old traditional houses
	B	. Preserve the green areas and orchards around old traditional houses
	C	. Preserve the green areas and orchards around old traditional houses . Create incentives to preserve existing agricultural lands and orchards
	D	. Preserve the green areas and orchards around old traditional houses
	D, E, F	. Create incentives to preserve existing agricultural lands and orchards . Implement regulations to ensure a percentage of biotope to be preserved
	G	. Implement regulations to ensure a percentage of green areas to be preserved
	H	. Preserve the green areas and orchards around old traditional houses
	I	. Create incentives to preserve existing agricultural lands and Orchards from turning into large scale beach resorts
Shoreline protection	A, B, C, D, F	. Implement nature-based solutions on existing seawalls and revetment via hybrid techniques to restore marine habitat
	E	. Protect the existing pebbled beach
	H, I	. Implement regulations that prohibit further shoreline alterations and additional constructions nearby the seafront . Protect the existing natural rocks on the shoreline

Source: Author

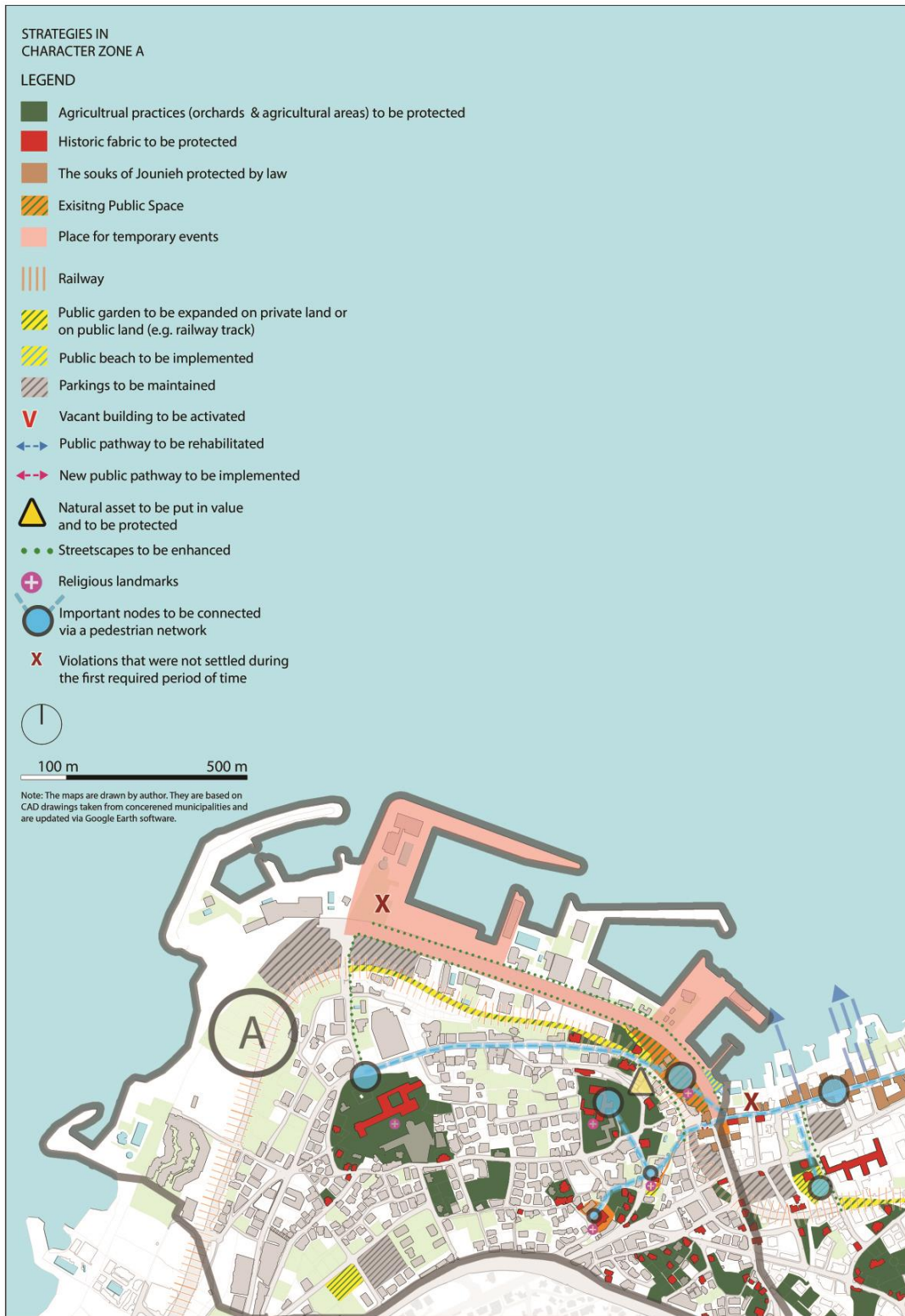


Figure 111: Strategies in character zone A

Source: Author

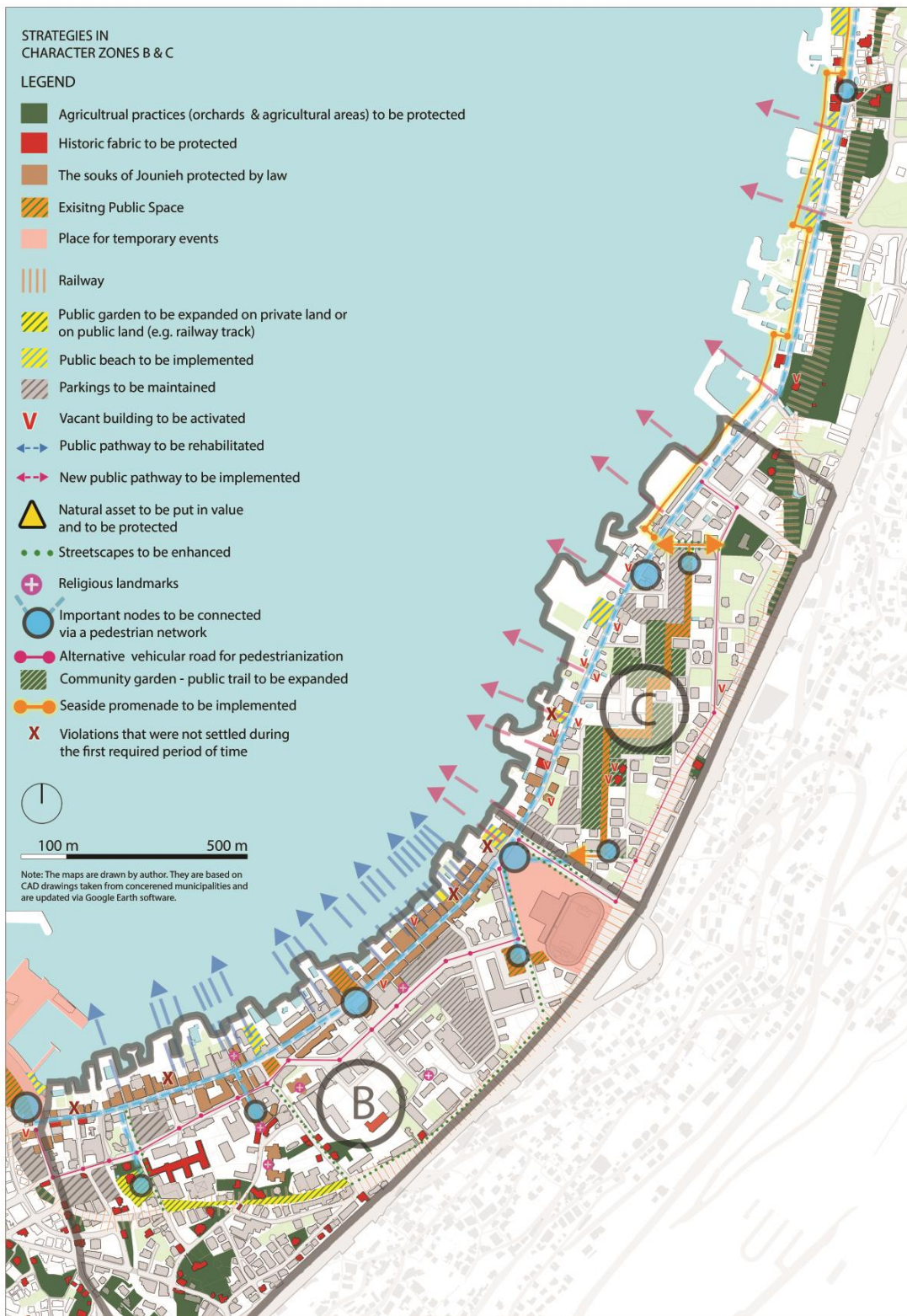


Figure 112: Strategies in character zones B and C

Source: Author



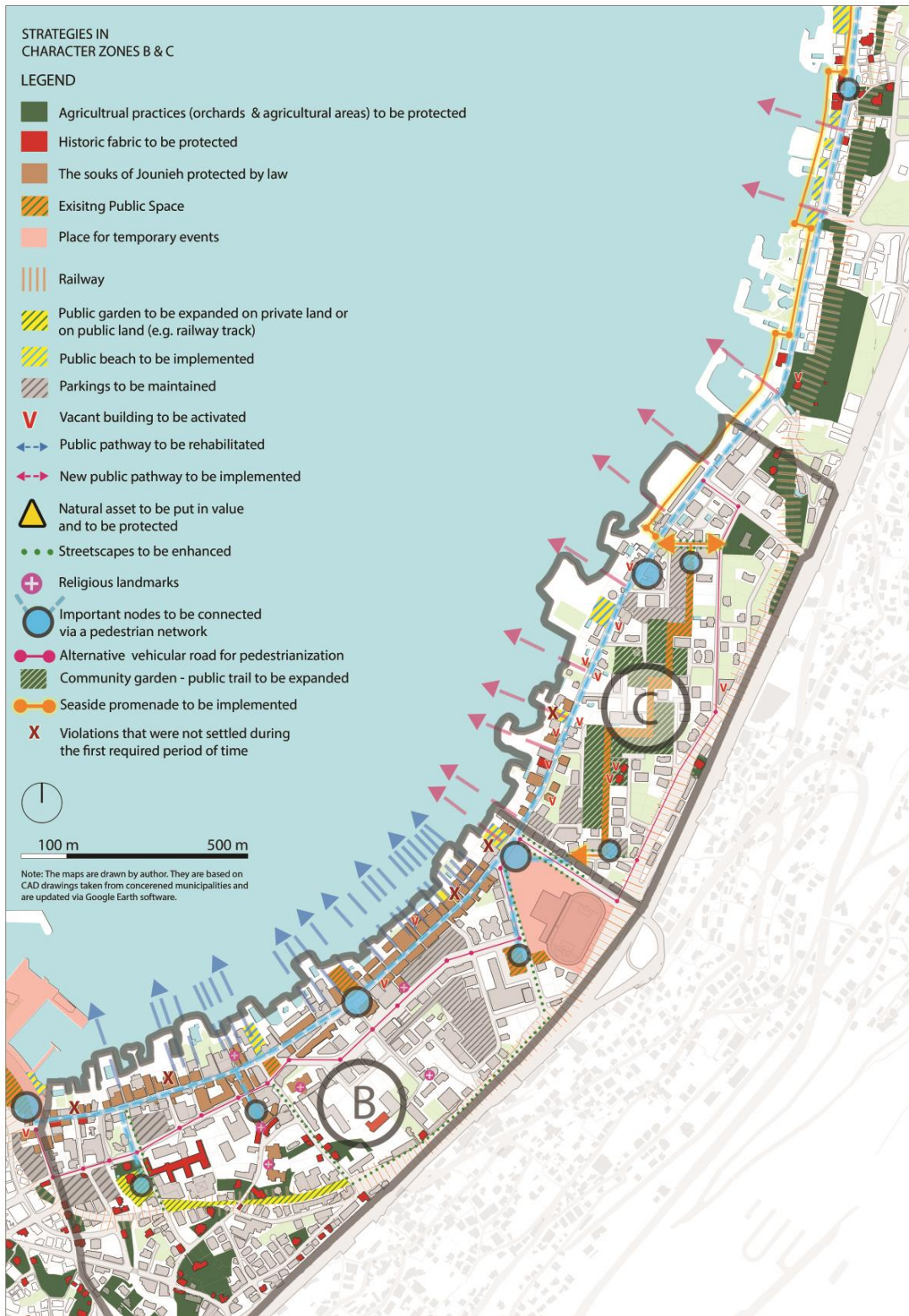


Figure 113: Strategies in character zone D, E and F.

Source: Author



Figure 114: Strategies in character zone G, H and I.

Source: Author



## CHAPTER VII

### A PROTOTYPE OF A REGENERATIVE URBAN DESIGN PROPOSAL IN THE LEISURE CORE OF JOUNIEH

This chapter proposes a detailed intervention for the chosen character zone. The intervention proposed aims to set the grounds for a meaningful conversation with the community of Jounieh. This design prototype demonstrates the applicability of the city-scale principles mentioned above in Chapter 6.

#### **A. Main design intervention- The Leisure core of Nouair district; Character Zone C**

The main intervention will be targeted towards character zone C. This is due to several reasons. Character zone C has one of the lowest scores (32 over 75) on the star model assessment which was elaborated in Chapter 5 (section E). For the aforementioned reason, it suffers from intricate issues at many levels such as lack of walkability, lack of public access and visual obstruction, presence of illegal encroachments deteriorating marine ecosystems. It is highly privatized as well as stigmatized due to the dominance of sex tourism in this area. Moreover, this area suffers from a strong rupture of character and land use with the souks of Jounieh (which is character zone B). It is located in the middle part of the bay. It is facing neglect along with the northern section of the bay, given that no public project is being thought of or being implemented to tackle the aforementioned issues.

However, character zone C has a lot of potential. It is located at one of the major entrances of Jounieh. And thus, holds an important strategic location. Furthermore, it

includes several vacant buildings and vacant properties along its seafront. Many of these vacant buildings are heritage buildings with high architectural value but are facing decay (Fig.115,116).

The main urban design intervention will include mainly the seaside road as well as the remaining vacant coastal property buildings based on the assumption that these properties will be managed by public authorities (Fig.117). The concept is developed based on the principles set in the city-scale strategy in chapter 6. Besides the urban design concept, the project includes a regulatory dimension by suggesting recommendations for zoning; a social dimension by suggesting clusters of activities according to the existing socio-spatial practices, an infrastructural dimension in order to rethink soft mobility and connectivity, an environmental dimension by rethinking other sustainable methods for shoreline protection and coastal resilience. Moreover, the project follows a specific model of theories of change<sup>45</sup> to better achieve the intended goal of sustainable development according to all dimensions mentioned above.

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<sup>45</sup> This model of theories was inspired/adopted from ALIGN and is known as ALIGN's Theories of Change. <https://alignny.org/theory-of-change/>



Figure 115: Vacant buildings mapped in character zone C  
 Source: Photos taken by Author - 2021

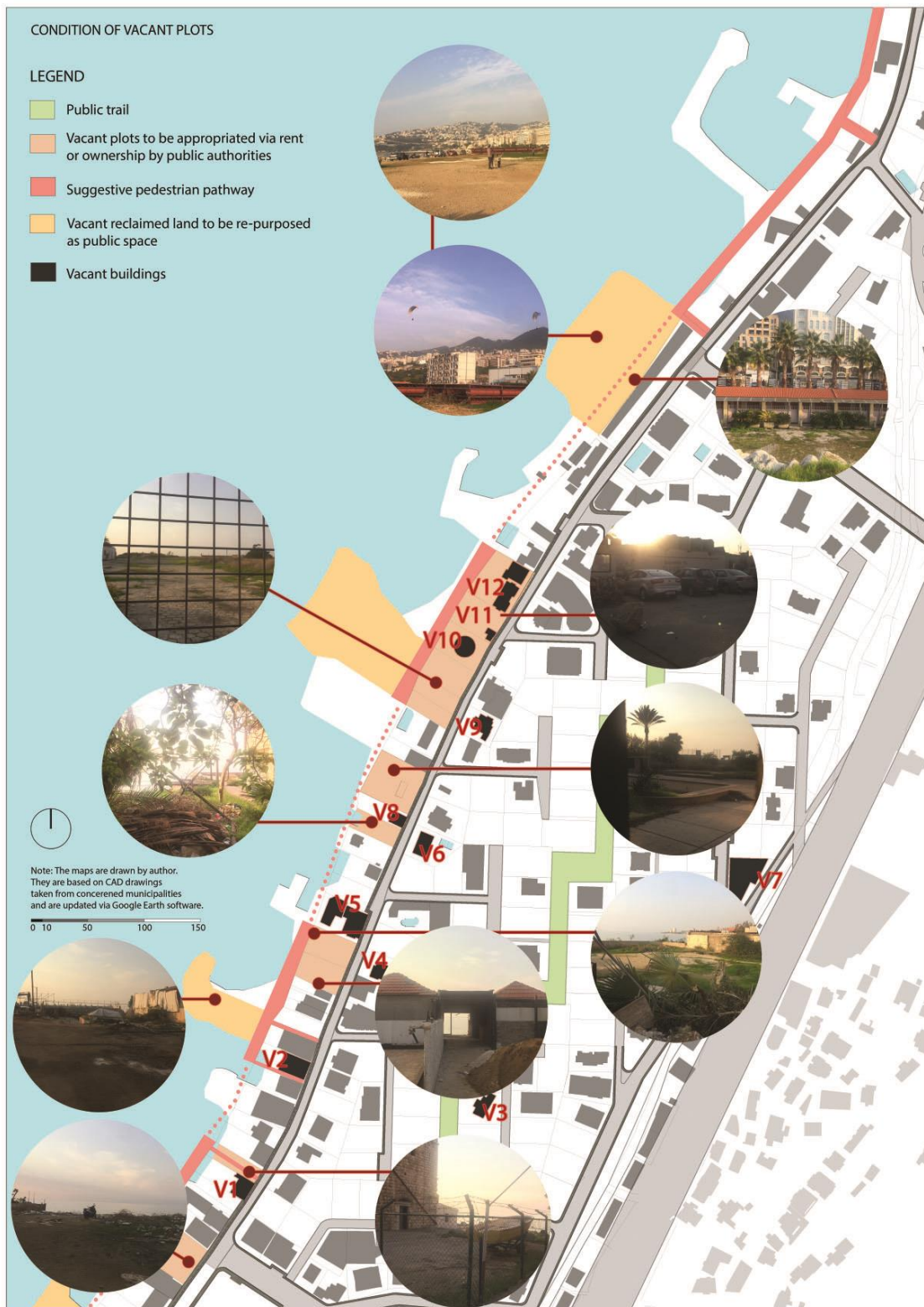


Figure 116: Vacant coastal properties mapped in character zone C.

Source: Photos taken by Author – 2021





Figure 117: Limits of the urban design intervention in character zone C.  
Source: Author

### *1. Urban design strategy*

The design strategy applied in character zone C can be adopted for all other character zones. The strategy is based on implementing a promenade along the waterfront of the bay between coastal properties and areas of reclaimed land to reconnect visually and physically the coastal city to its sea. This public promenade can expand from both sides, taking advantage from vacant coastal properties on its east side as well as from vacant or underused encroachments on the public maritime domain on its west side. The promenade does not add areas of reclaimed land and will be accessed either via the repurposed vacant coastal properties or by pathways between seaside properties. These pathways are especially designed to follow the urban morphology of the existing souks.

This strategy is based on the assumption that the public sector will repurpose existing vacant coastal properties and vacant areas of reclaimed land to offer the community accessible public amenities and piazzas that are directly connected to the sea. However, not all the promenade is directly implemented at the seafront. In few areas where private developments are constructed with pools and amenities encroaching on the public maritime domain, the seaside promenade either cuts through between the amenities and the marina or detours the existing private development and continues as a wide sidewalk next to the seaside road, to the east of the existing seaside properties (Fig. 118). Sidewalks along the seaside road are continuous with a width of 5 meters on the west side of the road and a width of 1.5 meters on the east side. Sidewalks along the west side of seaside road include a bike lane and are narrower than 5 meters in specific areas in order to include one parking lane as well as parklets on one side of seaside road. The sidewalks on the west side of seaside road are narrower in areas where

designed piazzas on vacant coastal properties are adjacent to the sidewalk  
(Fig.119,120).



Figure 118: Design strategy  
Source: Author



Figure 119: Design strategy (Close up)  
Source: Author





Street sections on seaside road



Figure 120: Different proposed street sections.  
Source: Author

## ***2. Recommendations for zoning***

Recommendations for zoning according to reassigned areas in character zone C are proposed as follows (Fig.121):

The coastal strip: it is an area that should be protected from any further development and from any further alterations along the coastline. Restoration works on existing buildings in this area should not include any permanent and solid additions or any additional floors and should respect the identity of the historic area of Jounieh.

Moreover, if a building is demolished, no re-building is allowed. When violating these regulations, an obligation to dismantle and demolish should be planned, with an obligation to restore the premises to the condition they were before.

Given that this strip was defined in the existing zoning plan as zone A and A1, it did not include any defined regulations and was directly subject to the approval of the DGUP. Thus, vacant lands in this strip can become unbuildable given that they did not have defined Floor-to-area ratios nor defined lot coverage percentages. Only ephemeral and removable installations such as kiosks would be allowed for touristic and commercial use. These installations should guarantee free public access. Thus, seaside plots in this area should not be fenced without leaving a 2 m width of free pathway leading to the sea as part of its setback.

Every new project within the coastal strip should be subject to an environmental impact study (EIA) including a public consultation phase. Public authorities should provide the appropriate funding in order to buy the remaining seaside vacant plots to repurpose them as public spaces and guarantee public access to the beach. Public authorities should give incentives such financial support to owners of coastal vacant

lands if they open their property for the public and guarantee free access to the beach. Profit-making in this case is limited to chairs rental and selling food via food kiosks.

In terms of shoreline protection, nature-based solutions and hybrid methods should be introduced in this area with the supervision of the ministry of environment and the ministry of public works. After researching the appropriate nature-based solutions for the bay, each private coastal property (whether it includes an existing building or is a vacant urban land) should use nature-based solutions and hybrid techniques on its existing grey infrastructure.

A set of regulations and guidelines should be elaborated in order to implement these methods. Permits following specific standards should be regulated for this purpose. Tax breaks would occur if these private owners follow these measures. If not, the municipality can impose higher taxes on same owners.

The green buffer: in this area, all vacant plots should be used for agricultural and planting activities while they are still vacant. The municipality should help the owners in providing the right equipment and irrigation infrastructure for planting. When built, owners of these properties still have to consider 20% ratio of their area reserved for orchards. Sustainable eco-friendly approaches incorporated into buildings such as green roofs, green walls and the use of renewable energy are also recommended and incentivized. When these conditions are not met (lack of sustainable methods aforementioned or not respecting the 20% ratio) an increase in property and municipality tax should occur.

Public authorities should ensure the appropriate funding in order to buy or rent few of these remaining vacant plots to guarantee that they stay planted. Hence these

plots can serve as a green buffer and can be used as an extension of the existing public trail in this area. These plots can turn into urban farms and community gardens managed by the municipality.

The residential core: this area is meant to have a residential use. Services such as pharmacies, mini-markets should be available at a radius of 15min-walk in order to serve the residents. Plots in this zone have to consider 20% ratio of their area to be reserved for orchards. Sustainable eco-friendly approaches incorporated into buildings such as green roofs, green walls and the use of renewable energy are also recommended and incentivized. Residential apartments with specific certifications (such as LEED, BREEAM etc.) that ensure the compliance with sustainability standards should be incentivized by property and municipality tax breaks. Specific regulations and design guidelines that ensure the coherence of character and the harmony with the historic existing fabric should be elaborated for this zone.

Leisure core: This area is meant for leisure facilities such as hotels, pubs and nightclubs. Establishments with specific certifications (such as LEED, BREEAM etc.) that ensure the compliance with sustainability standards should be incentivized by property and municipality tax breaks. Public authorities should engage in capacity building and workshops to implement appropriate codes of conduct that comply with sustainable behavior. These codes of conduct should be targeting visitors and tourists as well as workers in the tourist sector.

Specific regulations and design guidelines that ensure street alignment and the coherence of character should be elaborated for this zone. Marketing and information services should also be provided in this area.

The commercial area: this zone is meant for offering commercial and business services. Establishments with specific certifications (such as LEED, BREEAM etc.) that ensure the compliance with sustainability standards should be incentivized by property and municipality tax breaks. Moreover, establishments that offer a percentage of their property to the municipality for it to be used as public gardens can benefit from a density bonus. The density bonus should have specific regulations regarding the gabarit, the setbacks and façade treatment. Specific regulations and design guidelines that ensure street alignment and the coherence of character with the existing historic fabric should be elaborated for this zone especially for the area that is facing the souks, next to the main entrance of Jounieh.

The residential core, the leisure core and the commercial area were zoned in the existing zoning as a commercial and residential area (Zone C) with a lot coverage of 50% and 1.5 FAR making a total height of 6 floors for each building. No changes of the FAR and lot coverage are needed. However, a setback of 2m regarding the “gabarit” or building envelope at the 4<sup>th</sup> floor would be more visually cohesive with the low-rise fabric of the nearby souks and the surrounding traditional buildings.

The railway track: The railway track should serve as a green buffer between the residential area and the highway. When violating and building on the plots that were reserved to the railway track, an obligation to dismantle and demolish should be planned, with a requirement to restore the premises to the condition they were before

occupation. Sex workers can practice street soliciting next to the railway track and the leisure core along the road that is parallel to the highway instead of the seaside road. Services should be provided along that road to cater for the needs and provide a safe space for sex workers. This is based on the assumption that policies with regards to decriminalization of sex work for sex workers and clients are being implemented on a national scale.



Figure 121: Recommendations for zoning for Character Zone C.

Source: Author



### ***3. Recommendations for mobility***

Sidewalks along the seaside road should be implemented with a bike lane on one side of seaside road (Fig 122). Parking lanes on the sides of seaside road should be minimized to ease traffic given the narrowness of seaside road. Enlarging the seaside road is required and should be done at the expense of the east side of seaside road. This is due to the fact that many buildings with historic value are present on the west side of seaside road and should remain intact<sup>46</sup>. It is also worth noting that the road enlargement should not provide additional car lanes but should provide larger sidewalks instead. Additional car lanes can worsen the infrastructural break between the road and the sea. Consequently, access to the sea will be hindered furthermore.

Parking facilities in adjacent areas should be ensured with a minimal fee. These fees can be employed for maintenance. Imagining the best scenario, a pathway between coastal properties and the sea should be implemented continuously along the bay. However, given that many encroachments are occupied by beach resorts and hotels with pools and other facilities distributed evenly between the encroachments and the actual coastal property, a continuous pathway that cuts through these facilities may not be possible. This certainly depends on the negotiations between stakeholders and specifically private owners and the enforcement of a new regulatory system that is stringent and that orders the immediate removal of all violations with no exception or deregulations. However, given the actual scenario where no removal of violations is being enforced, many improvements can still be achieved with the appropriate amount

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<sup>46</sup> It is worth noting that a decree, dating from the 1960s, enlarges the seaside road at the expense of several heritage buildings located on the west side of seaside road. This decree was not implemented so far. According to informal discussions conducted with the head of the DGUP in Keserwan Mrs. Awad, this decree is very unlikely to be implemented because it is an old decree and will be very costly to implement nowadays.

of funding. The municipality should work on buying the remaining vacant properties. The coastal zone marked as A1 in the current zoning plan should have clear regulations and should be no longer constructible. This will facilitate negotiations and will help the public sector to buy the remaining coastal properties assuming that their real estate value will drop. Some of these vacant properties have vacant encroachments and some of them have not. Assuming that these remaining plots will become public, pathways in these areas are feasible. In this case pathways between these coastal properties and the sea can be implemented in continuity with large sidewalks on the west side of seaside road (Fig 123).

During festivities or weekends, the seaside road should be pedestrianized and an alternative vehicular road can be managed. Bus stops should be implemented along the seaside road at the main entrance of Jounieh and at the main links between seaside road and the highway. Bus stops should also be implemented along the designated alternative road and next to the cable car based on the assumption that a bus lane should be implemented next to the Lady of Harissa. It is essentially important to note that the bus lane suggested should not be limited to the bay of Jounieh. It should be linked to a regional transportation strategy

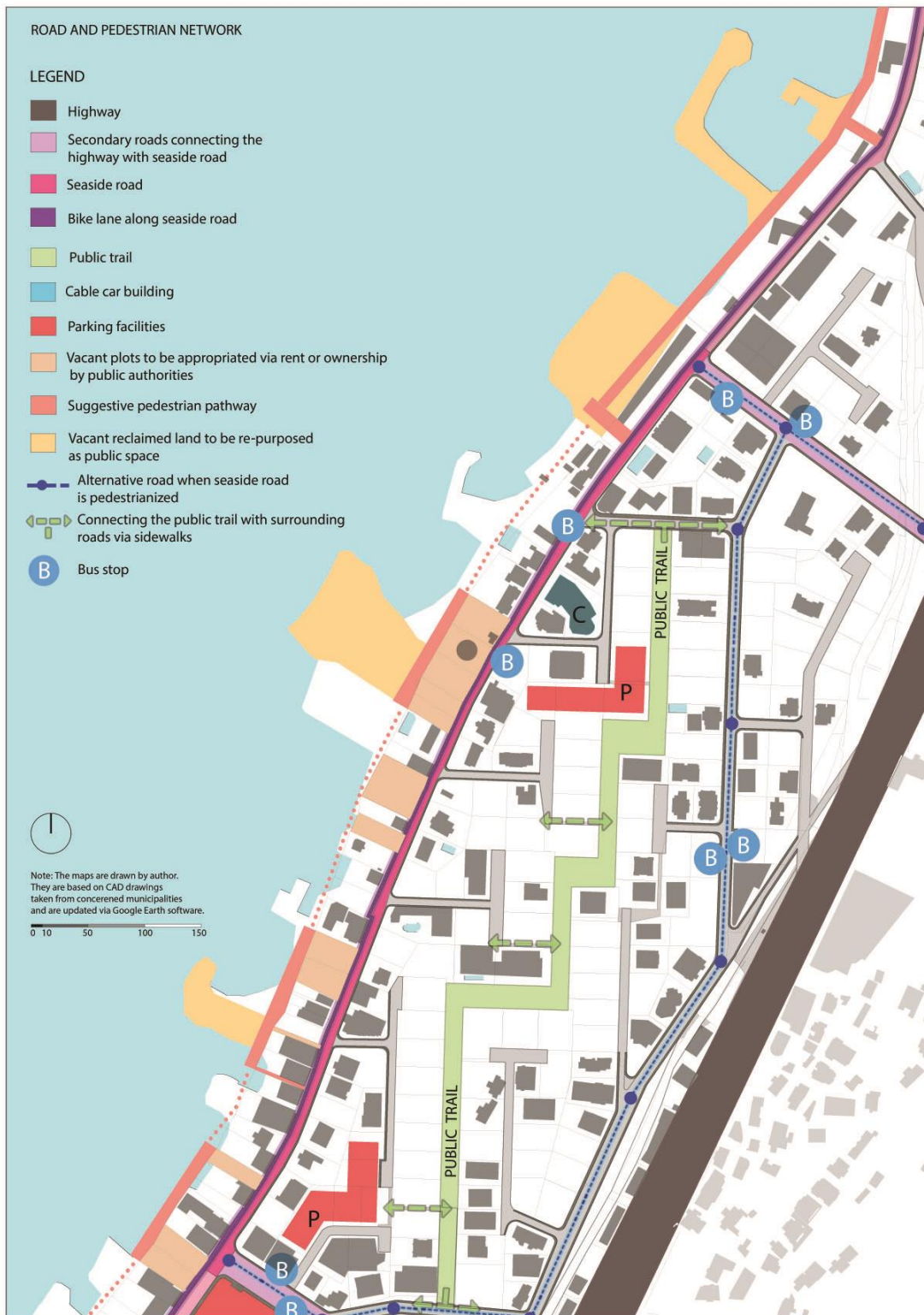


Figure 122: Recommendations for enhancing walkability

Source: Author

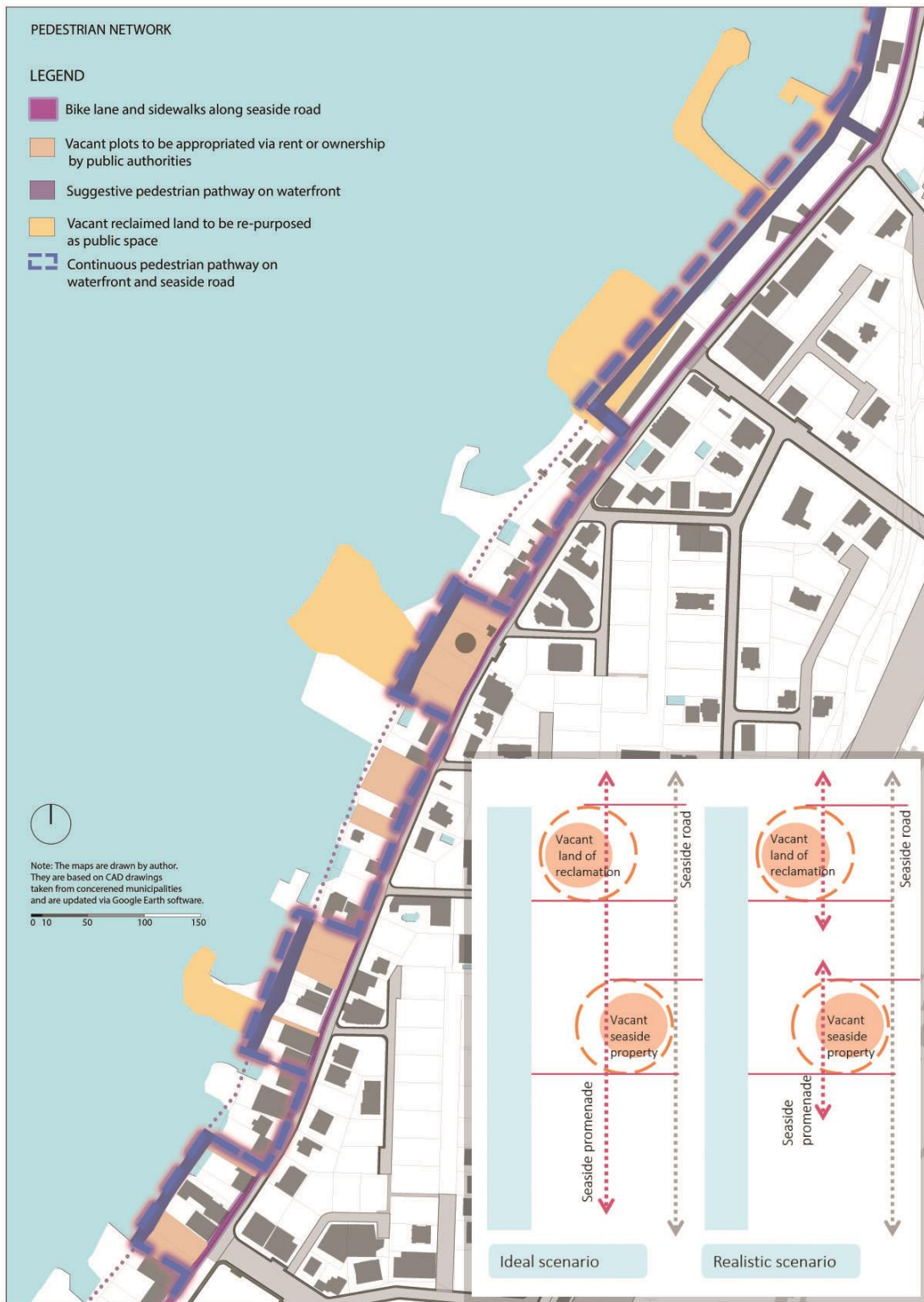


Figure 123: Design of pedestrian loops

Source: Author

#### ***4. Socio-cultural clusters and space activators***

This urban design intervention is a project of cultural-led waterfront regeneration via art, food, sports and leisure. The intervention does not disrupt current socio-spatial practices but on the contrary is inspired by them and aims to satisfy the current needs of the community. The concept stems from creating clusters and re-purposing vacant properties; vacant areas of reclaimed land as well as vacant buildings that are deteriorating. These repurposed components will be transformed into strategic space activators that will serve the needs of the locals and visitors. The location of the specific clusters revolving around food, performing arts leisure and sex tourism is inspired from the existing land use in the character zone.

The activities hosted should be designed to target a diversity of users from different age groups, socio-economic status and gender. Without decriminalization of sex work, the intervention will not be able to provide a safe space for sex workers as well as for the local community.

The problem of social stigma regarding this area should be seriously addressed before delving into any physical intervention. Thus, workshops and awareness campaigns are crucial and should be created to address this issue.

The cluster of arts and education marked in pink on Figure 124 is distributed in strategic locations, at the main entrance of Jounieh and next to existing nurseries and schools. A community library can be managed next to the existing public trail. Moreover, a stage for performing arts is designed at the main entrance of Jounieh facing the Fouad Chehab Stadium. The leisure and sports cluster marked in blue on Figure 124 will be provided facing the Jounieh cable car and at the existing paragliding site. This cluster will include a visitor center facing the Jounieh cable car to serve domestic and

international tourists and a community center for the youth and scouts. The food cluster which is marked in green can be provided next to existing restaurants. This cluster provides kiosks for street food vendors with an open space to all users. Piazzas on vacant areas of land reclamation can also be managed in this cluster for special events and festivities. A community shop that sells local crafts and local “Mouneh” (Canned, pickled and aged food items) products should be created to give exposure to the farmers and craftsmen and to encourage the community to consume its local produce. This area is also known for its sex tourism which is an important part of the culture of the bay. Therefore, a safe space for sex workers marked in red should be ensured along with a dispensary and a security station to protect and provide for the needs of the sex workers. Street soliciting should not be located directly on the waterfront and seaside road in order to keep the waterfront accessible to all age groups and gender and especially families.



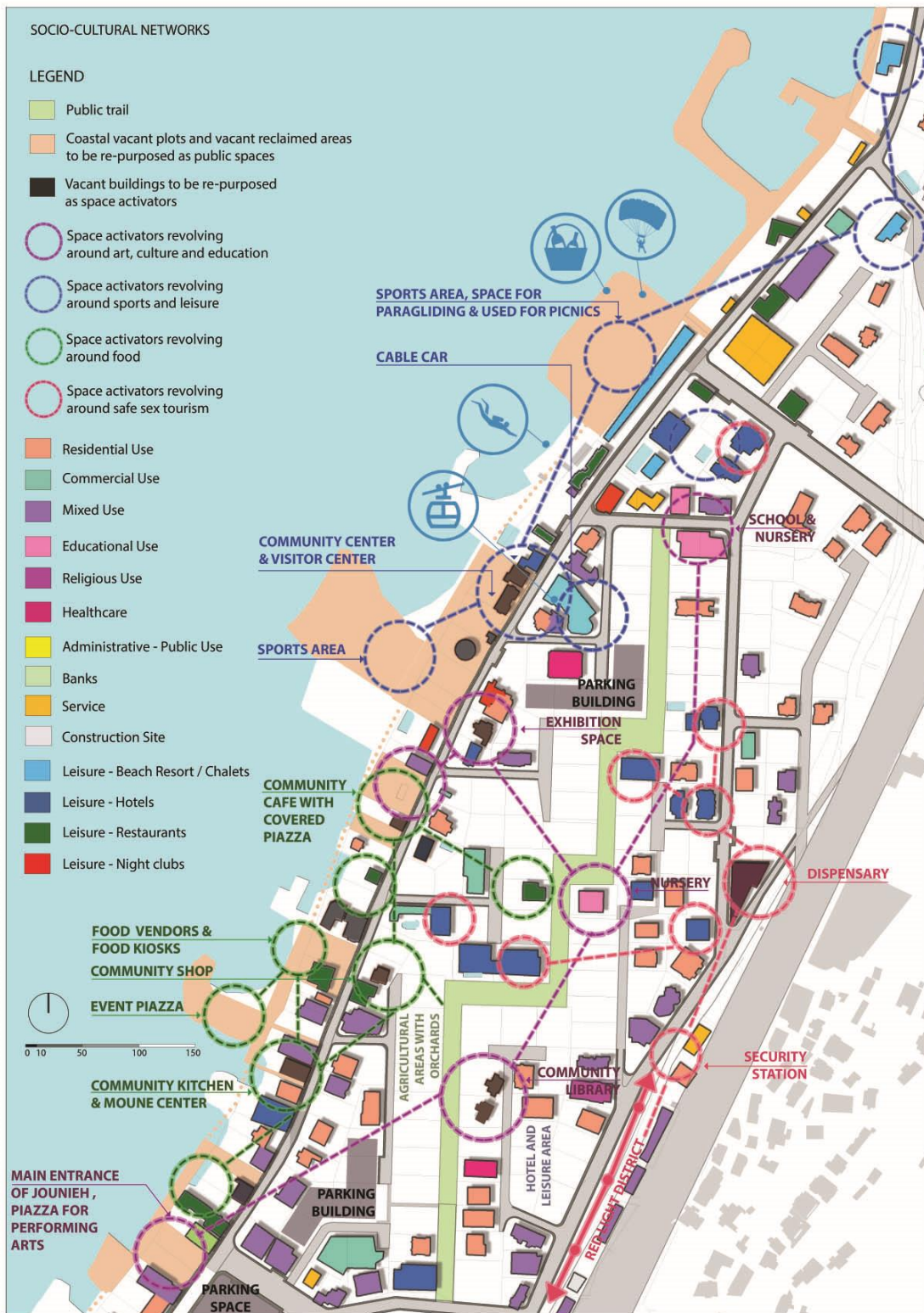


Figure 124: Socio-cultural networks at the spatial level.

Source: Author



## ***5. Coastal regeneration and protection***

The intervention will use nature-based solutions for coastal regeneration and protection via hybrid techniques to retrofit artificial habitat for better growth and diversity of marine and terrestrial habitats. These techniques are illustrated in Figure 136 and will be based on the following (Fig. 125):

A. Creating coastal green buffers to better achieve environmental benefits and community well-being as well as adding foreshore plantations on coastal properties and salt marshes benches behind grey infrastructure

B.1. Adding rock pools with different sizes between the riprap in the intertidal area

B.2. Using light penetrating mech decking for the pathways that will be implemented between coastal properties and the sea

B.3. Hanging reef ball units below pathways in the intertidal area

C. Adding complex tiles with nooks and crannies on riprap rocks with clean cuts and enhancing the roughness and texture of the rocks to create a suitable environment for intertidal habitats

D. Adjusting the size and texture of the revetments as well as the slope of the riprap to make it more gradual in order to increase the opportunities for colonization of surfaces

E. Planting saltmarshes and other foreshore plants on coastal engineered banks when sand dunes are available to minimize beach erosion

F. Treating existing seawalls by either incorporating complex tiles with nooks and crannies on the surface or by installing flower pots that can mimic the role of rock pools

G. Creating artificial reefs in strategic spots to enrich marine habitats

The aim of these nature-based solutions is to restore the natural flows in the bay, and create and/or restore ecosystems in the city. This approach will also create a space

to foster a deep connection between people and nature and between the people and each other for stronger community ties.

Hence, the project can be described as a soft intervention that works from the existing condition and does not alter the coastline. It does not impose any demolition of land reclamation nor adds further areas of land reclamation. With the use of nature-based solutions on existing grey infrastructure, existing coastal ecosystems are enhanced and are not disrupted. Nature-based solutions and hybrid methods should not be limited to public spaces and should be introduced as a method for shoreline protection in all private coastal properties.

With regards to the coastal green buffer it should be located on both sides of the existing public trail and on the remaining vacant coastal properties. Given that the area is highly urbanized, a 100m coastal setback which is recommended by the Madrid Protocol (2008) cannot be applied in this area. However, all remaining vacant coastal properties should be no longer constructible and should include, besides public facilities and urban furniture, several areas of landscape vegetation (Fig. 126). Green roofs should also be used in public parking facilities and should be introduced and encouraged in private projects. Trees and other vegetation are planted to enhance streetscapes along seaside road and other important roads. Enhancing walkability via sidewalks and appropriate street design is crucial to connect the existing public trail with the new waterfront pathways.

## NATURE-BASED SOLUTIONS VIA HYBRID TECHNIQUES

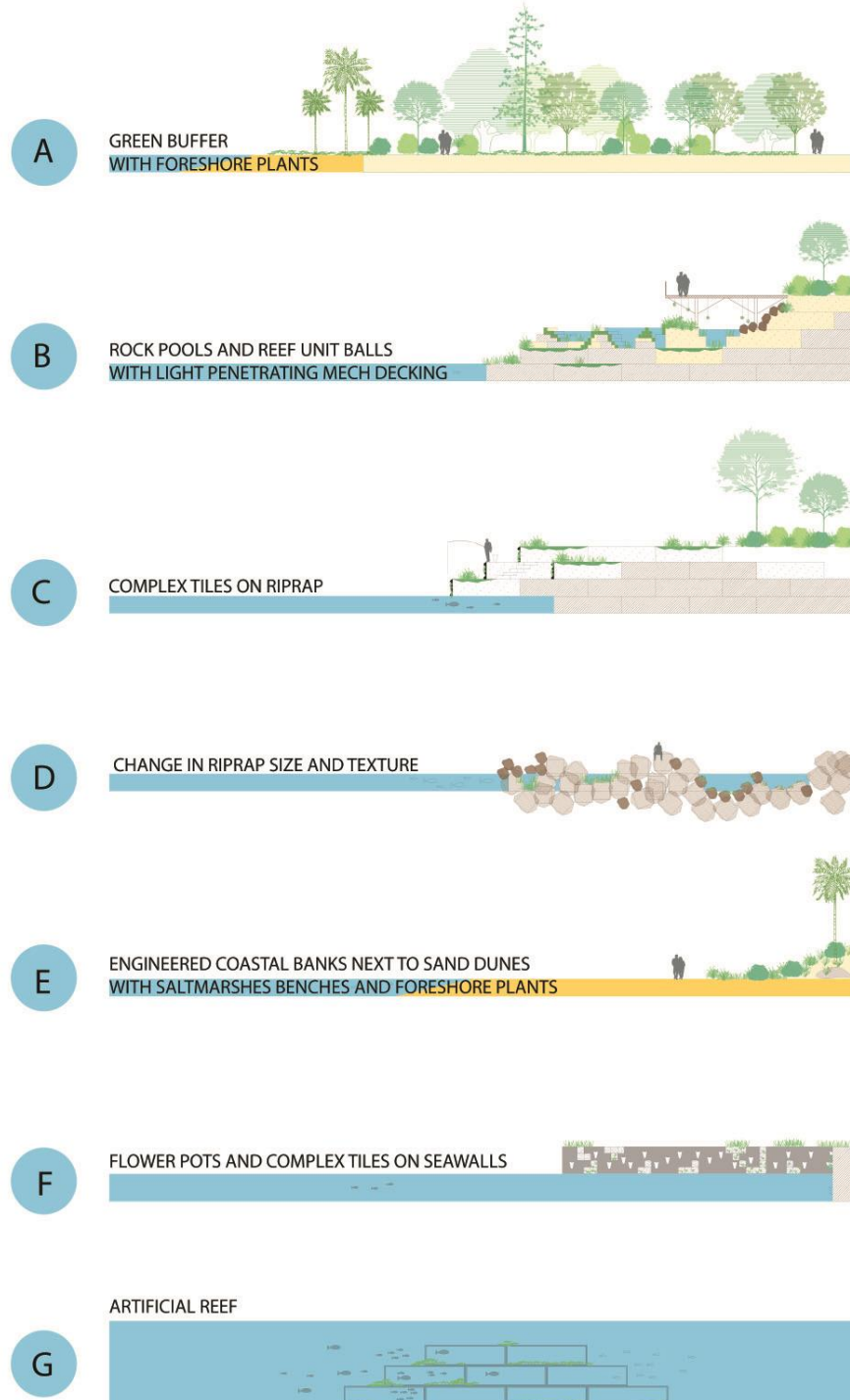


Figure 125: Nature-based and hybrid solutions on existing grey infrastructure.

Source: Author



Figure 126: Green and blue network of Character zone C.

Source: Author

## ***6. Proposed implementation strategy***

For the implementation, the project requires funding. That is why a focused and clear proposal should be written for this project following the theory of change's model (Fig.127,128). The term "Theory of Change" was frequently used by Weiss (1995)<sup>47</sup> as a method that describes a set of assumptions that would explain and expand on the activities that lead up to a long-term goal.

This implementation strategy of this research was inspired by ALIGN's theory of change model. This model is divided into four main axes: current conditions, strategies, actions and desired impacts. The four main titles are taken from ALIGN's Theory of Change. However, the current conditions, strategies, actions and desired impacts, which are specific to this research, are drawn from Chapter 4 and 6. All these axes should follow a common and holistic vision for the bay which is the sustainable development of the bay.

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<sup>47</sup> Weiss, Carol (1995). *Nothing as Practical as Good Theory: Exploring Theory-Based Evaluation for Comprehensive Community Initiatives for Children and Families* in 'New Approaches to Evaluating Community Initiatives'. Aspen Institute.

## Theories of change model

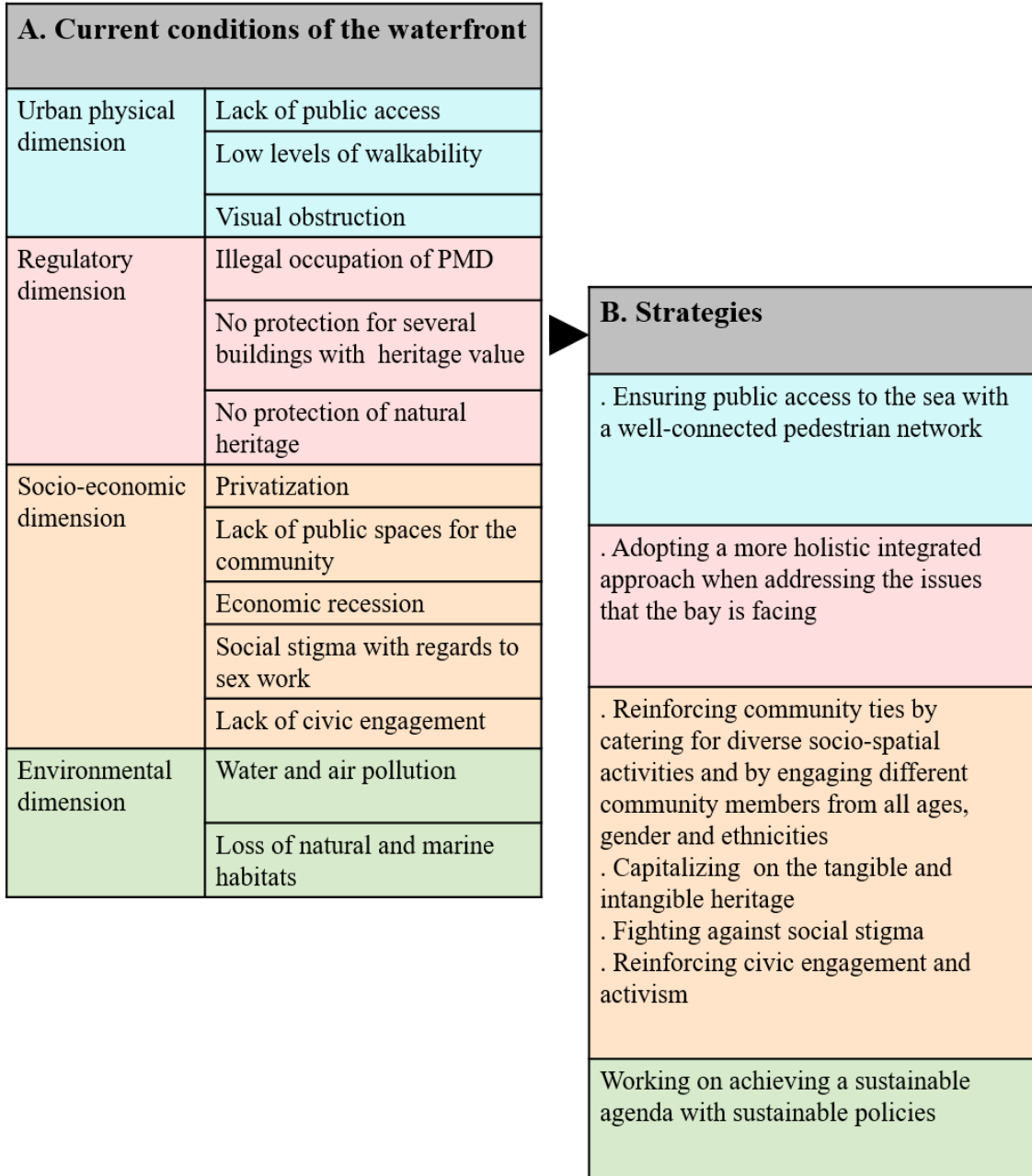


Figure 127: Theories of change model - current conditions and strategies.

Source: Edited by Author.

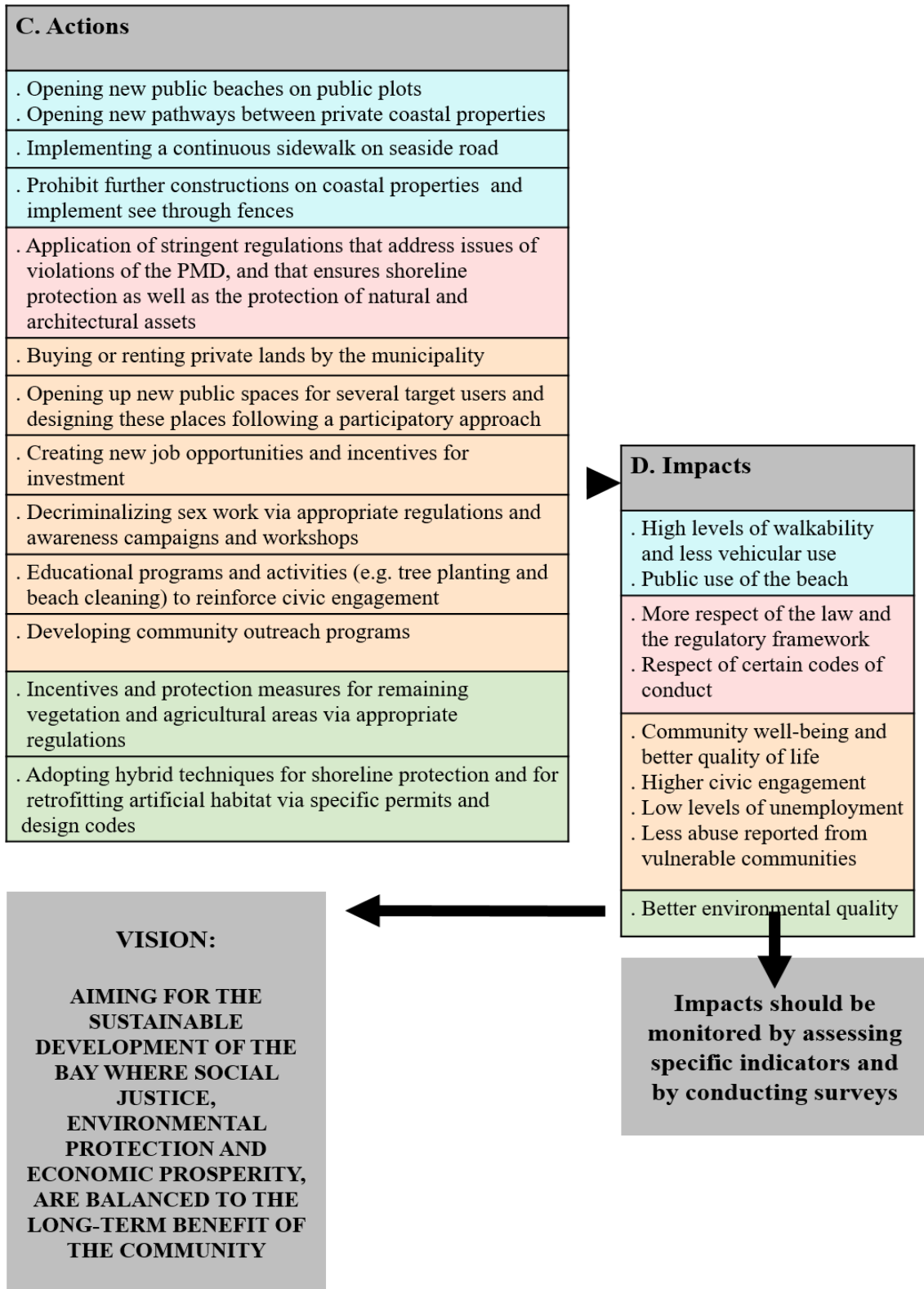


Figure 128: Theories of change model - actions required and desired impacts

Source: Edited by Author.



It is essential to evaluate and assess the project according to what goals were achieved and to what extent. Specific indicators related to the impacts desired should be assessed via surveys and extensive research. The current condition of the bay was deducted from the fieldwork mapping and extensive observations elaborated in chapter four and five. The urban design intervention aims to respond to the issues highlighted above according to its limited capacities. It is worth to note that the issues addressed are divergent and complex and have different dimensions (regulatory, social, environmental etc.). Therefore, it is important to acknowledge the limitations of an urban design intervention. Thus, not all actions required are by nature urban design measures.

With regards to implementation the project should follow this scheme below (Fig.129).

A municipal council involving all concerned municipalities of the bay (Jounieh, Ghazir and Tabarja Kfaryassine) should be established in order to launch the proposal for this public-private project. After collecting the funding needed from sponsors and from other philanthropist members, a financial committee should be assigned from the donors. In addition to that, a monitoring and evaluation committee should monthly reports on the progress of the project.

It is worth noting that the funding required for the project can be international or bottom up. Moreover, the project follows an incremental approach and does not require the implementation of all the suggested design interventions. Priority is given to the sidewalks then the piazzas then linking the piazza with sidewalks via a seaside promenade.

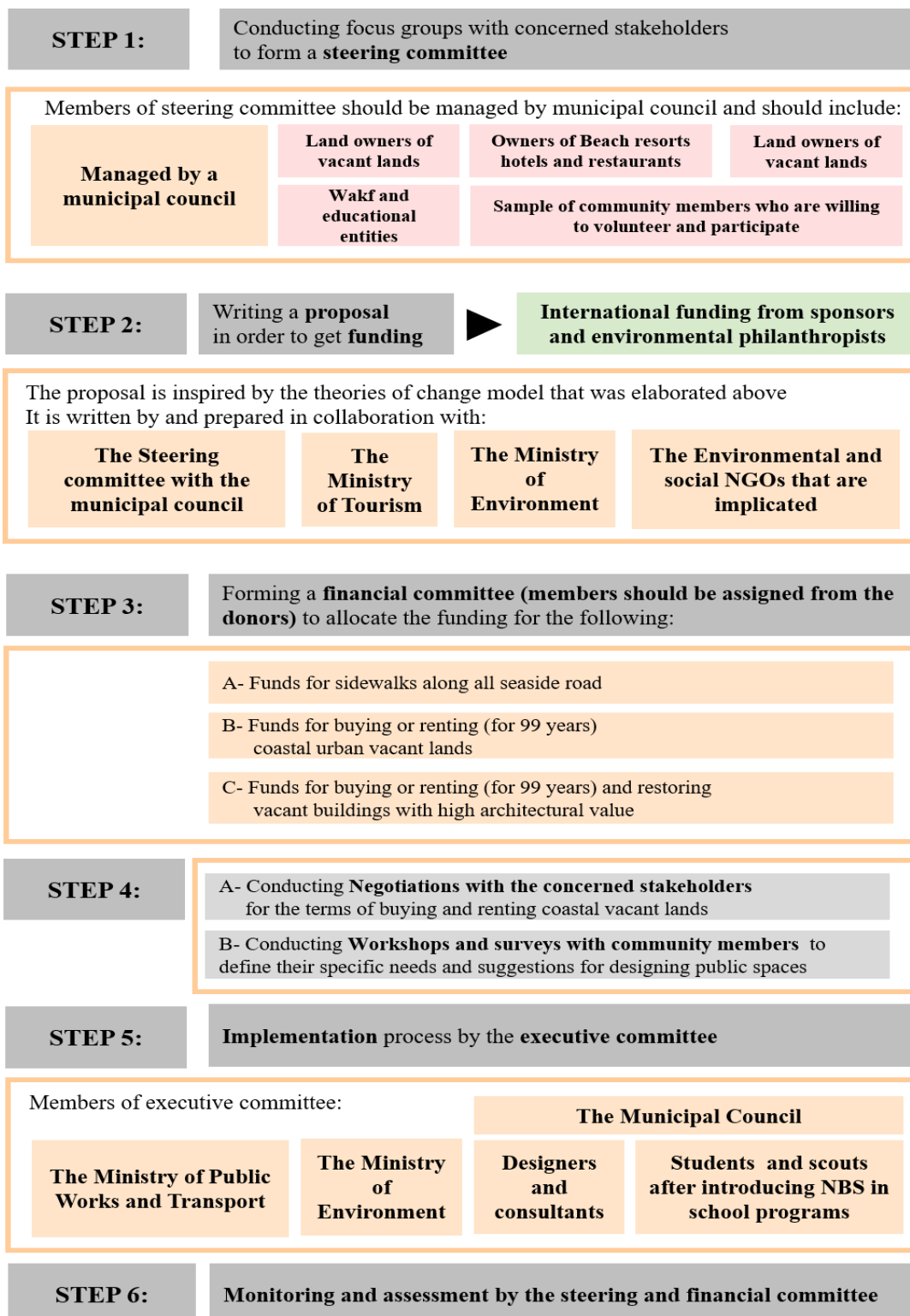


Figure 129: Steps of project implementation.

Source: Author

## **B. Detailed urban design intervention**

The mass plan considers all the aforementioned layers elaborated above (zoning recommendations, mobility strategy, space activation via socio-economic clusters). It includes an entrance piazza at the main entrance of Jounieh, a food piazza next to existing restaurants, a public patio for meditation as well as a sport piazza facing the Jounieh cable car and a piazza for paragliding and picnics. (Fig. 130,131)

### ***1. Responding to the general design principles***

All piazzas are linked to a continuous waterfront promenade and include direct pathways to the sea linking the waterfront with the sidewalk of seaside road. The wide sidewalk on the west side of seaside road offers bus stops and a continuous bike lane in order to enhance soft mobility. These direct pathways reinforce walkability along the bay and reclaim access to the beach.

The waterfront promenade expands in few areas offering resting spaces such as benches and platforms. These spaces guarantee visual connectivity and leverage the community well-being.

This series of piazzas are linked together via the promenade and the sidewalks of seaside road for a continuous waterfront experience along the bay. It is worth noting that each piazza has its own use and identity but displays the same design language for a consistence of character and visual coherence along the bay.

The piazzas cater for diverse socio-spatial activities and for the needs of diverse target users for better inclusiveness. These activities range from jogging, exercising, playing, dining, reading, sightseeing, picnicking, swimming, and gaming etc. Many vacant buildings with architectural and cultural value are being repurposed to function as

community and visitor centers, community shops and cafes. This aims at strengthening the community ties of the social fabric. Green areas are provided in all these piazzas and in streetscaping to serve as coastal green buffer and to provide shoreline regeneration and protection. These areas also offer a pleasant micro-climate with shading areas and aim at enhancing the quality of life of the coastal community



Figure 130: Main concept of character zone C.  
Source: Author

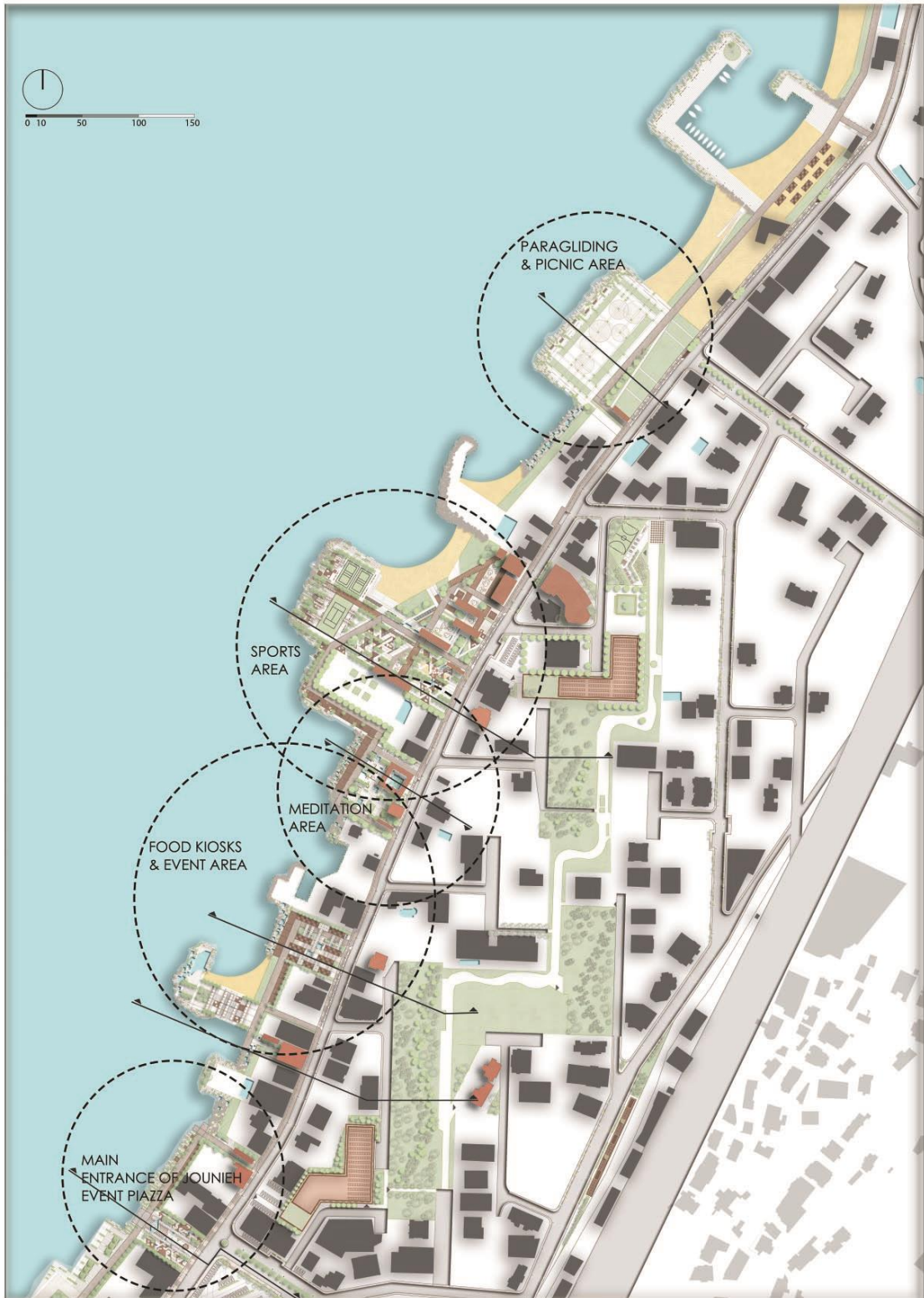


Figure 131: Master plan of Character zone C.  
Source: Author

#### a. The entrance piazza

. Location: The entrance piazza has a strategic location given that it is facing the Fouad Chehab stadium (Fig 132,133). According to municipality members of Jounieh, the municipality is in the midst of negotiations in order to buy the two remaining vacant coastal properties<sup>48</sup>.

. Program: This piazza will include benches that are oriented towards a stage for performing arts. Behind the stage, a sculpture that relates to the history of the bay can be designed and can serve as a spatial landmark for the city. The pathway between the sea and coastal properties includes benches and tower viewers for sightseeing. This piazza provides cultural activities for different target users and can serve as an extension for the Fouad Chehab piazza during festivities.

. Environmental considerations: The flooring of the pathway is covered with tiles that are in continuity with the sidewalks. The pathway includes few areas with a light penetrating mesh deck to allow for light penetration in the intertidal zone. Below the pathway reef balls are suspended. The riprap has a rectangular shape and includes complex tiles with nooks and crannies. Strips of palm trees provide shading and a pleasant microclimate.

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<sup>48</sup> This is based on informal discussions made with the municipality members of Jounieh, the discussion took place in 2019.





Figure 132: Design of the main entrance of Jounieh.

Source: Author



Figure 133: Section and sketches showing the piazza at the main entrance of Jounieh.

Source: Author



### b. The food piazza

. Location: The food piazza is located next to existing restaurants (Fig.134, 135).

. Program: It includes food kiosks for street food vendors. The kiosks are made from ephemeral materials such as wood and wicker. They are demountable and can be on wheels to allow for more space flexibility. A lowered platform is located next to the main pathway to allow for family picnics. The food kiosk piazza communicates with a vacant reclaimed area via the main pathway. This area is repurposed to host events. Minimal furniture with demountable curtains for shading are provided in this event area. These design measures allow for more space efficiency and maximum flexibility to tailor for the needs of the hosted events. Two existing vacant buildings are repurposed next to this cluster. One will be hosting a community kitchen that can serve the food and event piazza and the other one, which is located on the east side of the seaside road, will be repurposed as a community shop. The community shop will sell local produce and local crafts for visitors. The food piazza provides activities for different target users especially families, women and elderly.

. Environmental considerations: this area includes rock pools integrated with the riprap. An existing vacant pool next to the event piazza is opened to the sea. These rock pools can enhance the quality of the intertidal habitats.

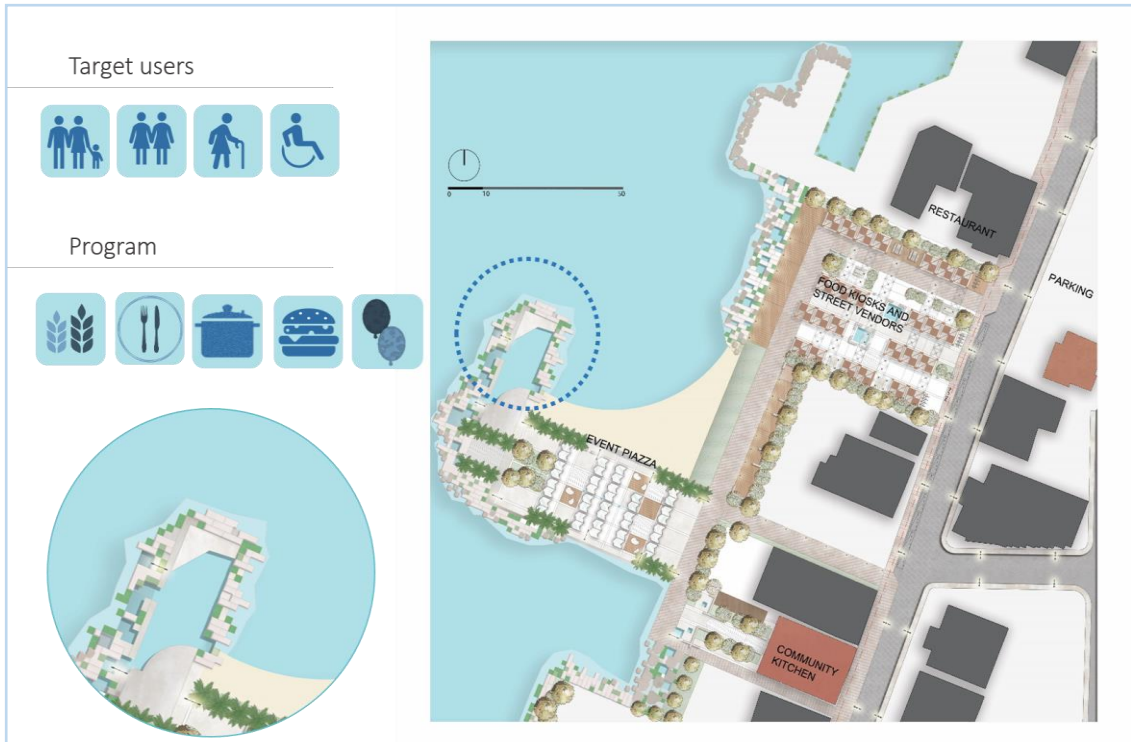


Figure 134: Design of the food piazza.

Source: Author



Figure 135: Sections and sketches of the food piazza.

Source: Author

### c. The meditation patio

. Location: This area is located between the food and sport cluster. It is located on a vacant area and it includes an existing empty pool (Fig. 136,137)

. Program: This area will hold a covered platform with a patio. The pool is redesigned as a pond in the middle of the patio. Benches below the concrete platform are oriented towards the pond. Benches with tables are provided outside the patio to allow for board games and other type of cultural gatherings. A vacant building next to the piazza is repurposed to serve as a community café. This piazza provides cultural activities for different target users especially for youth and elderly. Trees and shrubs with dense branches are used to serve as a sound barrier.

. Environmental considerations: The roof the patio will hold an accessible green roof. In terms of shoreline treatment, rock pools are integrated with the riprap. Ficus trees and other types of dense trees are planted in this area to reduce noise and provide a relaxing experience. The rocks of the riprap have different shapes, regular and irregular, in order to enhance the richness of the intertidal habitats.

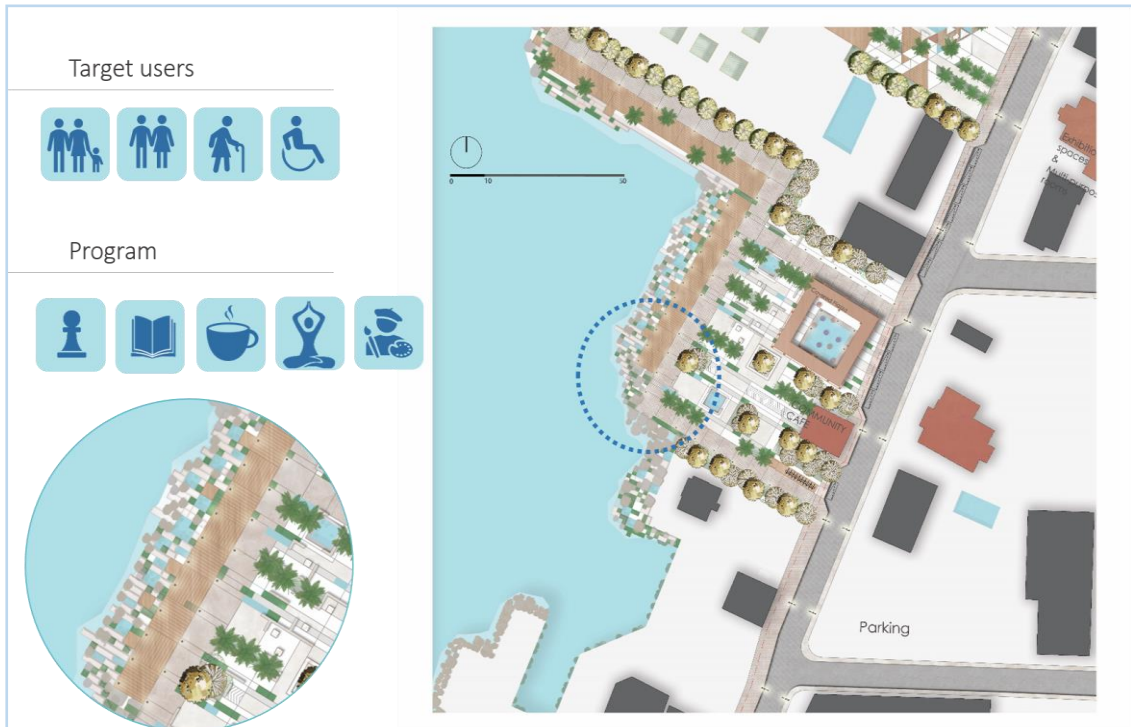


Figure 136: Design of the patio.

Source: Author



Figure 137: Sections and sketches of the patio.

Source: Author

#### d. The sport piazza

. Location: The sport piazza is located on one of the largest vacant areas of land reclamation along this section of the bay. It holds a strategic location given that it faces the cable car from the other side of seaside road (Fig.138, 139).

. Program: The sport piazza includes two vacant buildings that are repurposed. One is reused as community center for youth and scouts and the other one as an information visitor center facing the existing cable car. With regards to amenities, this cluster includes outdoor showers, indoor showers and WCs with lockers, a café area, with sitting and resting areas, a playground for kids as well as jumping mats and climbing walls. It also includes a tennis court and two open volley ball courts. These amenities are made from ephemeral structures. The closed amenities that require privacy are made from wicker and wood sticks. The volumes of the closed amenities are positioned in a misaligned way that creates dynamism and mimic the back-and-forth movement of the tide. A lowered platform is located next to the main pathway. It can be used for yoga, meditation and for outdoor sports.

The sport piazza provides leisure activities for different target users especially kids, youth, women and families.

. Environmental considerations: This area includes rock pools integrated with the riprap.

The riprap has a rectangular shape and includes complex tiles with nooks and crannies. Rows of palm trees are planted at the edge of the sport piazza to provide shade for the sports fields.



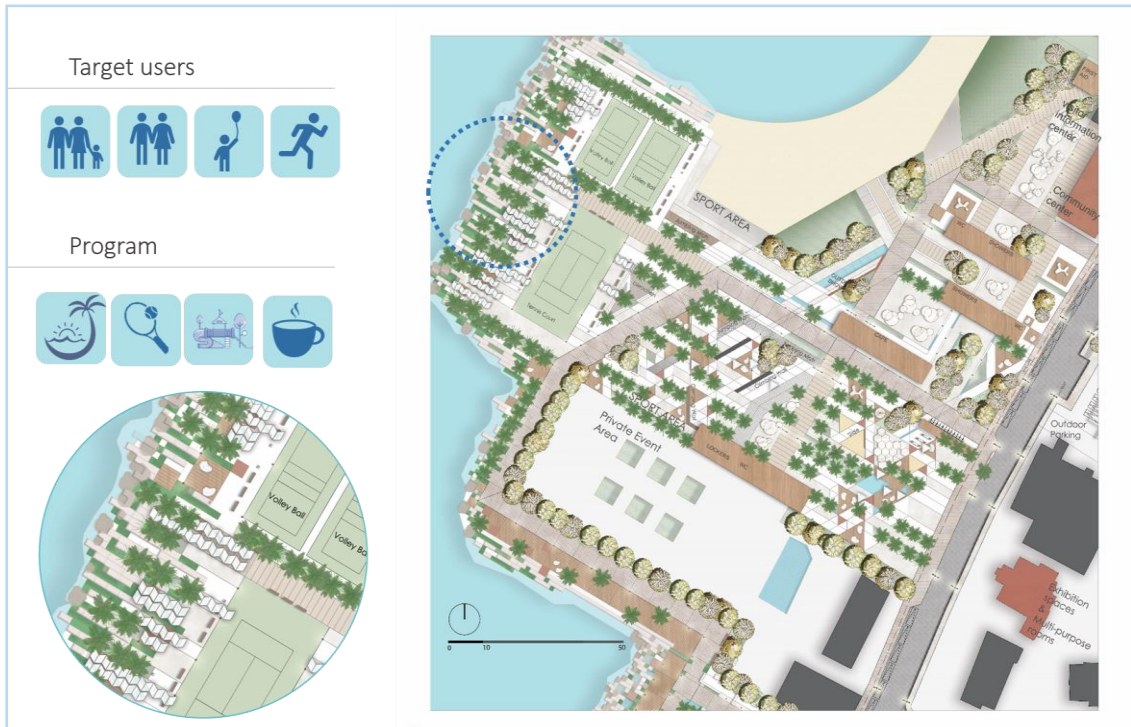


Figure 138: Design of the sport piazza.

Source: Author



Figure 139: Sections and sketches of the sport piazza.

Source: Author

e. The paragliding piazza

. Location: The paragliding piazza is located on one of the largest vacant areas of land reclamation along this section of the bay. (Fig.140, 141).

. Program: The piazza includes a wide space for paragliding with grass fields. Concrete benches with tables are fixed on clear-cut riprap at the edges of the piazza to provide a space for sightseeing and picnicking. This piazza provides leisure activities for different target users especially youth, and families.

. Environmental considerations:

The riprap has a clean-cut rectangular shape and includes complex tiles with nooks and crannies on its edges. No trees are planted to avoid hazards during paragliding. Low bushes and grass fields are planted instead.



Figure 140: Design of the paragliding piazza.

Source: Author



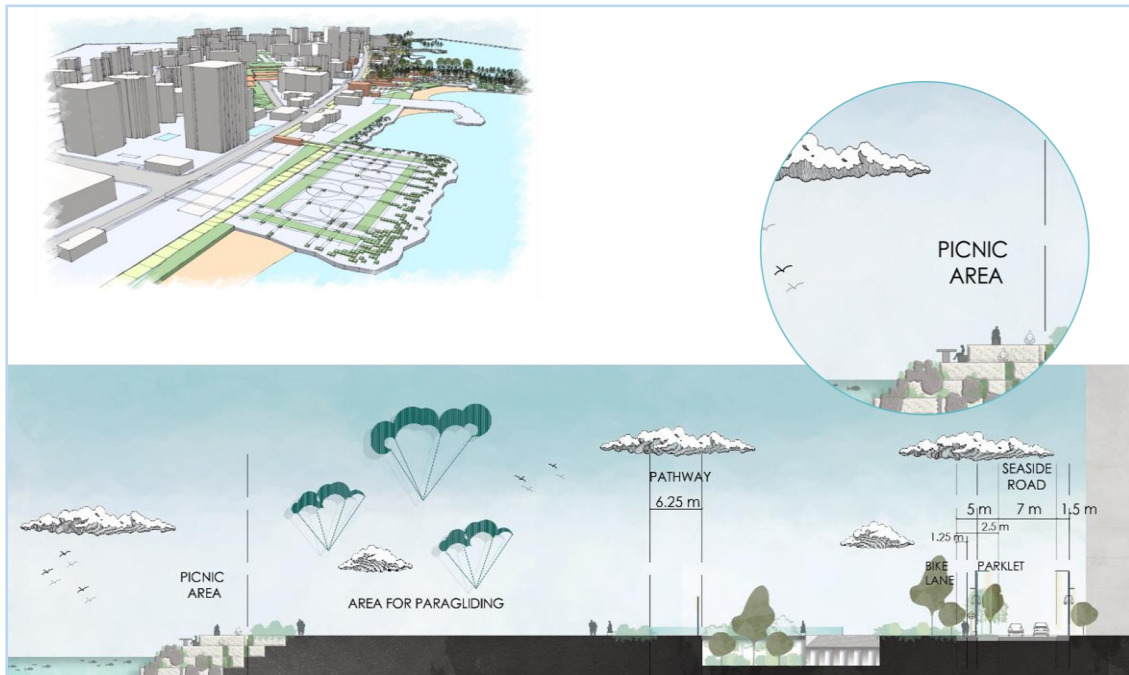


Figure 141: Sections and sketches of the paragliding piazza.

Source: Author

### C. Concluding remarks – Connecting the proposed design to a sustainable approach

Going through all the design elements of the proposed project, the intervention can be linked to several sustainable design principles that were developed by Niemann and Werner (2016) as discussed in Chapter 2.

First of all, the project places a high value on the preservation and restoration of green spaces via tree planting, implementing green roofs (in parking buildings and other public spaces) and via regenerative nature-based solutions along the entire shoreline of the bay. Secondly, the project is integrated with the city's fabric via a well-connected network of sidewalks and pathways where its new created functions/ clusters are in relation to the existing land-use. Besides connectivity, the project respects the historical identity of the site via several measures. These measures involve the repurposing of abandoned traditional buildings; the revitalization of the existing neglected fabric; the

respect of the current socio-spatial activities and the understanding of their evolution throughout history. Moreover, the design proposed offers a diverse mix of uses via different piazzas, targeting different users from different age groups, gender and socio-economic backgrounds. The aim is to respond to the various needs of the coastal community. With regards to equity, the project hosts public spaces and offers beach access to all citizens via pathways and different piazzas distributed consistently along the bay of Jounieh. Furthermore, the design proposed offers a level of flexibility by offering adaptable spaces via designing demountable facilities and kiosks with ephemeral structures that do not harm or alter the coastline.

Besides these principles, Niemann and Werner (2016) talk about two key points which are active citizenship and long-term planning for obtaining sustainable waterfronts. However, the application of these notions is not guaranteed and remains dependent on contextual governmental and societal factors.

## CHAPTER VIII

### CONCLUSION

This research studied the bay of Jounieh in its entirety and categorized the site into coastal urban landscape character zones based on a comprehensive multi-dimensional study of several components that have shaped and are still shaping the site (physical/urban, regulatory, cultural, socio-economic, and environmental). Following the framing of the research question, these components were centered around the issue of physical and visual connectivity between the coastal city and its sea. The identification of character zones was based on an integrated dual approach combining both a landscape and urban design approach. After analyzing and assessing the potential and vulnerabilities of each character zone, spatial strategies were proposed based on a holistic approach that aims for the sustainable development of the bay in its entirety. The overall approach and general guidelines were inspired from the literature and tools of sustainable tourism applied in beach resort cities. A detailed prototype of one landscape character zone was then selected to demonstrate the applicability of the guidelines suggested.

In response to the research question, the proposed urban design intervention seeks to reconnect the coastal city and community with its sea according to three scales. First of all, and at the city-scale, the intervention works on connecting the different character zones between each other by linking important landmarks found along the seafront and by proposing a connected network of sidewalks, promenades and pathways guaranteeing walkability along the bay of Jounieh.

Secondly and at the scale of each character zone, the intervention proposes new public spaces, reclaims and repurposes illegal encroachments to ensure beach access and visual connection to the sea.

Thirdly, proposed piazzas at a micro scale translate these notions of connectivity via urban and landscape design considerations.

With regards to the main findings of this research, the adopted methodology and framework revealed several achievements. The integrated framework allowed for a comprehensive coverage of the site. Thus, it allowed for uncovering findings that are multidimensional and intertwined. The framework also provided evidence based decision-making where strategies and design interventions were guided by the diagnosis of the site. Moreover, the framework adopted showed a level of flexibility in switching between different scales and linking the scales (city-scale, character zone scale, intervention scale) together. This flexibility is also shown in the matrix of layers that was chosen for mapping in which the layers were tailored according to the site specificities of the coastal city. Therefore, the methodology can be transferred and adapted to study other coastal cities and Lebanese coastal cities in particular. On the other hand, and given its integrated nature, the methodology showed that it requires a multidisciplinary team for more in-depth analysis, which was not the case of this research. Besides this limitation, it is worth noting that the adopted framework should not be limited solely to a physical design intervention. Given its integrated nature, this framework requires other planning and regulatory measures that tackle socio-economic, environmental as well socio-political dimensions that cannot be addressed solely by an urban design intervention.

With regards to challenges of this research, several limitations were present due to the current pandemic. Face to face surveys with the community were not conducted given that many touristic businesses and shops were closed during the lockdown. Thus, the intervention proposed was not based on a participatory process. It was based instead on recurrent observations of socio-spatial practices, informal discussions with professionals and residents as well as in depth fieldwork data that was conducted during and prior to the pandemic. Besides the pandemic, the lack of a clear database, especially with regards to the shoreline, the built fabric, the existing ecosystems, and natural habitats of the site, constituted a serious challenge. This entailed an elaborative work of mapping from the ground up.

It is important to note that the intervention is based on several assumptions. Without these assumptions, the project will not be successful, if implemented. The first assumption is based on the change of the current political body, and involves political reform that advocates for transparency, accountability, social justice and the right to access public goods. With the economic collapse and recent grassroots movements that emerged during 2019, a political change might be foreseen in the long-term future.

The second assumption is a result of the first hypothesis and involves adequate change in policies. These policies should implicate the condition of illegalities and encroachments on the public maritime domain with more stringent policies that do not allow for exceptionalities. Moreover, other policies should target the condition and safety of sex workers with regulations that regulate and decriminalize sex work and fight against human-trafficking. It is worth noting that empowering sex workers and reclaiming their human rights will constitute an ideological challenge in finding an

equilibrium between the current conservative religiously centered discourse and a more human rights centered approach.

The third and final assumption is based on the ability of the public sector to buy remaining coastal vacant lands and vacant buildings and to be able to re-purpose them for the service of the community. This entails a process of negotiations with the concerned private owners and requires funding.


It is important to highlight that the proposed intervention requires, prior to its implementation, surveys to assess what are the exact needs of the community that can be addressed via urban design solutions. The intervention also requires post-assessment by evaluating specific indicators related to the impacts desired of the project. This can be conducted via surveys and more extensive research.

In conclusion, it is important to stress on the suggestive value of the intervention. This project remains a proposal that aims to set the grounds for a meaningful conversation with the community of the bay. It aims to position the role of the urban designer as an observer, a facilitator and communicator for the service of the community. Hence the intervention remains as a tool for conversation and visioning for possible scenarios and for a better coastal city.

## APPENDIX

### Appendix 1

#### *Case study 1 – Introducing sustainable coastal tourism in Calvià, Spain*

Project overview	
General info	<p>Location: Municipal district of Calvià (Mallorca).            Date of start of the initiative: 1996            Scale : district scale</p> <div style="text-align: center;">  </div> <p>Source: <a href="https://www.majorcadailybulletin.com/london-fair/calvia/2019/11/04/59225/calvia-your-better-choice.html">https://www.majorcadailybulletin.com/london-fair/calvia/2019/11/04/59225/calvia-your-better-choice.html</a></p>
Goals & objectives	<p>The objectives of the LA21 approach consisted of 10 strategic action plans and 40 initiatives. The 10 action plan were the following (UNEPWTO, 2005):</p> <ol style="list-style-type: none"> <li>1/ Absorbing human pressure, limiting urban growth and recommending a comprehensive restoration of the territory and littoral</li> <li>2/ Favoring integration, cohabitation and the quality of life of the current population</li> <li>3/ Sustaining the natural heritage of the land and sea as well as promoting the creation of a tourist and regional eco-tax which has an environmental purpose</li> <li>4/ Recovering the historical, cultural and natural heritage.</li> <li>5/ Promoting the comprehensive restoration of the residential and tourist centers</li> <li>6/ Working on improving Calvià as a tourist destination by replacing growth with sustainable quality, increasing expenditure per visitor and by balancing the tourist season</li> <li>7/ Improving the public transport sector as well as providing services for visitors (pedestrians and cyclists) in</li> </ol>



	<p>town centers and/ or between one urban center and another</p> <p>8/ Introducing a sustainable management approach in key environmental sectors: water, energy and waste</p> <p>9/ Investing in human and knowledge resources, by refreshing and diversifying the economic systems</p> <p>10/ Adjusting and improving the local government structures as well as extending the capacity of public–private investments</p>
<b>Project context</b>	
Historical context	<p>Calviá, Spain is a well-known touristic destination and its coast witnessed in the 60s and 70s excessive mass tourism revolved around the idea of sea, sand and sun. Calviá has been an archetypal example of a Mediterranean second-generation resorts city that has witnessed over the years; over development, over exploitation of its resources and environmental damage.</p>
Physical – urban context	<p>During the 1960s and 1970s, Calviá witnessed massive urbanization on an ad hoc basis. This has resulted in the emergence of unplanned beach resorts and causing in the long term future a social and environmental degradation. Land use presented continuous land occupation due to excessive urbanization.</p>
Infrastructural context	<p>Due to heavy tourist activity Calviá used to suffer from high congestion. Moreover, no public transport was available.</p>
Socio-economic context	<p>Calviá has a high degree of investment in the tourism industry, given its close proximity to major European cities. Approximately 95 % of its jobs in the municipality are directly or indirectly linked to tourism (Dodds &amp; Graci 2010).</p> <p>In 2010, the city counted 42 000 residents (Dodds &amp; Graci 2010) with six tourist zones and 27 beaches. The city started facing an economic decline since the 1990s due to increased competition and due to environmental and social degradation. Furthermore, seasonal fluctuations were noticeable in employment, with periods of high levels of employment, during the high season coupled with high rates of unemployment during the low season.</p> <p>It is also worth to mention that the city also suffers from low level of education therefore the number of trained skilled professionals was low. Besides this matter, the city</p>

	witnessed high levels of immigration combined with a lack of integration.
Cultural context	57% of heritage sites were at high risk of deterioration (Dodds & Graci 2010).
Environmental context	The city suffered from a high amount of waste and options for waste disposal were limited. Besides issues of waste, rainfall water was scarce due to heavy pressures exerted by tourists. Only 2% of energy consumption was renewable energy. Moreover, lack of public transport and a high use of cars contributed to a high emission of carbon dioxide.
Geographical context	Calviá is located in the southwest tip of the Spanish island of Majorca in the Mediterranean Sea. The island of Mallorca is part of the Balearic Islands covering an area of 3640km <sup>2</sup> with a 40% of its land designated as a natural park. The coastline of Calviá measures 54 km and two thirds of its coastline present constructions.
<b>Stakeholders</b>	
Funding	The funding for this project was given from the Town Council of Calvià and in collaboration with the Central Government and the Autonomous Community
Partners and different agents	<ul style="list-style-type: none"> <li>. Secretary of State for Trade, Tourism and Small and Medium-sized companies (offering financial support)</li> <li>. Department of tourism for the Balearic Islands (offering financial support)</li> <li>. Associations of Hotel Owners (offering technical support)</li> </ul>
<b>Spatial Quality</b>	
Spatial experience	The quality of the tourist areas was enriched and upgraded by initiating pedestrian and cycling routes and by adding more vegetation and trees.
<b>Planning tools</b>	
Policies	<p>In 1995 Calviá's town council decided to adopt a long-term sustainable approach using the Local Agenda 21 (LA21) which was inspired by the Earth summit of Rio (1991) and the fifth program of the EU (1992). The LA21 defined the program as the 'Complete Rehabilitation Setting'. The program works on three objectives: <b>the conservation of natural heritage, the modernization of the tourist sector and the restoration of existing heritage.</b></p> <p>The purpose of the LA21 was to find a solution for the problem of uncontrolled growth, to restore the resort and</p>


	<p>surrounding landscape, to demolish inappropriate facilities, to improve the quality of amenities and to provide appropriate products (UNEP/ICLEI, 2003). Thus the main purpose of this approach was tackling the issue of overcapacity and limiting urban growth while improving the quality of life.</p>
Tools and actions	<ul style="list-style-type: none"> <li>. Application of the 1992 Rio de Janeiro Summit Conference Resolution on Development and the Environment by applying environmental measures</li> <li>. Managing uncontrolled urban growth</li> <li>. Declassification of 1,350 hectares of building land, equal to 40,000 tourist beds</li> <li>. Urban renewal and remodeling of coastal areas and seafronts</li> <li>. Demolition of buildings on seafront and conversion of private areas into park areas</li> </ul> <p>Over 30 building clearance action plans were executed and many plots were purchased to prevent further construction. By 2004, the area of demolished buildings reached 13500 sqm. Demolition involved poorly located and unattractive hotel buildings (UNEPTWO, 2005)</p> <ul style="list-style-type: none"> <li>. Enhancement of the quality of the public services and tourist amenities</li> <li>. Working to establish a wide social consensus via active participation of all the agents involved in the process and via assessment forums, special committees, and the involvement of several institutions and universities</li> <li>. Changing the season nature of tourism, with a large increase in tourism during the winter season</li> <li>. Management plan for the heritage sites and national resources</li> <li>. Prohibition of sea dredging which was used to regenerate beaches and its replacement by more environmentally-friendly measures that minimize coastal erosion</li> <li>. Eco-labels for the hotels and apartments in order to encourage them to raise their standards and sustainable policies</li> <li>. Application of a waste management and recycling plan to ensure that 70% of all urban waste is sorted from the origin</li> <li>. Capacity building and training for workers in the tourism sector, public education and awareness campaigns</li> <li>. Introduction of clean energy such as solar energy for street lighting dropping the CO2 emission</li> </ul>
Community participation	<p>Social participation was one of the essential aims of the LA21 approach and included the following entities:</p>

	<ul style="list-style-type: none"> <li>. Management Committee of the Council (Chaired by the Mayor).</li> <li>. Group of Experts (Academics, Scientists and others</li> <li>. Citizens' Forum (open consultation council with participation from 150 citizens)</li> <li>. Thematic Commission (with an average of 30 participants)</li> <li>. People consultation (The survey involved 30 per cent of the adult population)</li> </ul>
<b>Assessment</b>	
Level of success	<p>As Dodds &amp; Graci (2010) affirm many initiatives of this approach were successful. The success of this project was through the application of a multi-stakeholder participation and through a positive and inclusive communication between the municipality, the private sector and other entities. Leadership also played an important role in achieving this level of success. The effort of the Mayoress Margarta Najera widely contributed to the rise of awareness and engagement of several stakeholders.</p> <p>Calvià has turned around its mass tourism image from one of environmental degradation to one of environmental sustainability in under fifteen years. Among the awards that the city received are the following: The European Prize for Sustainable Cities awarded by the EC, 'Best Practice' in localizing agenda 21 in 1998, Green Globe Award from the World Travel and Tourism Council, World Summit Business Award for Sustainable Development Partnership from the UN for the reduction and re-cycling of waste, Quality Coast Award in 2007 and 2009. It is also worth to note that eight of its beaches have received a 'Blue Flag' award.</p>
Transferability	<p>This case study shows the possibility of the real application of the Rio Summit Conference Resolution of 1992 provided that there would be a widespread participation and social consensus</p>
Chance of application	<p>Local Agenda 21 for Calvià had the intention to develop a pilot experiment which can be used as a reference for other mature tourist resorts destinations around the Mediterranean area. An observatory is created to allow the lessons learned to be exported to other coastal cities with similar characteristics.</p> <p>Local Agenda 21 for Calvià remains a good example of the successful application of the 1992 Rio Summit Resolution on a local scale.</p>

Lessons learned	<p>The project showed the possible abilities of a tourist resort destination to shift its strategies into a more ecological agenda following an integrated and sustainable conception of local development.</p> <p>This provides future generations the capability to satisfy their economic, social and environmental desires in a well-balanced setting.</p>
<b>References</b>	
	<p><a href="http://habitat.aq.upm.es/bpes/onu98/bp438.en.html">http://habitat.aq.upm.es/bpes/onu98/bp438.en.html</a>  <a href="https://www-taylorfrancis-com.ezproxy.aub.edu.lb/chapters/calvi%C3%A1-mallorca-spain-implementing-multi-stakeholder-policy-rachel-dodds-sonya-graci/10.4324/9781849776660-21?context=ubx&amp;refId=2f3fc1db-cf2a-4089-a884-ba4c053d6af3">https://www-taylorfrancis-com.ezproxy.aub.edu.lb/chapters/calvi%C3%A1-mallorca-spain-implementing-multi-stakeholder-policy-rachel-dodds-sonya-graci/10.4324/9781849776660-21?context=ubx&amp;refId=2f3fc1db-cf2a-4089-a884-ba4c053d6af3</a></p>

## Appendix 2

### *Case study 2 – Introducing hybrid solutions in Carss Bush Park*

Project overview	
General info	<p>Location : Sydney, Australia            Date: 2015            Scale : Intervention on a 240 m existing seawall</p>  <p>Source: <a href="https://www.totalearthcare.com.au/portfolio/environmentally-friendly-seawall-construction/">https://www.totalearthcare.com.au/portfolio/environmentally-friendly-seawall-construction/</a></p>
Goals and objectives	<p>The objective of this project is to implement an environmentally friendly seawall to enhance the quality of the intertidal habitat of the foreshore, while resolving issues of erosion</p>
Program	<p>The project includes :</p> <ul style="list-style-type: none"> <li>- 240m of foreshore remediated</li> <li>- 1375m<sup>2</sup> saltmarsh constructed and planted</li> <li>- 112m<sup>2</sup> rockpools habitat created</li> <li>- 10,000 native plants planted</li> </ul> <p>A small boat ramp for the local sailing club is provided, as well as an overwater boardwalk to improve community access</p>
Project context	
Historical context	<p>The area was originally part of Jonathon Croft's land which was purchased from the Crown in 1854. In 1863 William Carss, a cabinetmaker from Scotland, purchased the land . He constructed his house in the park, which today is known as Carss Cottage. In 1923, Kogarah Municipal Council bought the Estate, turned part of the land as a parkland as well as subdivided the remaining lands into building blocks.</p>

Physical – urban context	The foreshore structure and shape of the shoreline was altered during the reclamation works in 1937. Land reclamation works continued until 1982.
Infrastructural context	The site’s vertical concrete seawall was constructed to reclaim land from Kogarah Bay. However structural failures in the seawall began to appear and resulted in erosion behind the wall Large holes became apparent behind the seawall. This created a safety concern due to their location along a popular walking route and adjacent playing fields
Socio-economic context	Carss Bush Park remains a valuable community asset, which significantly adds to the quality of the natural environment. It includes a wide variety of recreational facilities and services
Cultural context	Carss Cottage is now a converted historical museum.
Geographical context	Carss Bush Park is a 20 hectare land that includes a natural reserve and an urban park. It is located in the Sydney suburb of Carss Park, Georges River Council, New South Wales, Australia.
<b>Stakeholders</b>	
Funding	A \$276,000 grant was provided by the NSW Office of Environment and Heritage and was supplemented with Council funds. Technical support was provided from within Georges River Council and from NSW Office of Environment and Heritage.
<b>Planning Tools</b>	
Tools and actions	Permits were required for land reclamation, as the seawall was built seaward in the intertidal zone, and for dredging, as removal of fill was conducted in the intertidal zone. Land Owners Consent were also required.
<b>Design strategy</b>	
Concept dimensions	The concept of this environmentally friendly seawall improved the natural ecology of the Kogarah Bay, while also enhancing the aesthetic, social, educational and cultural assets of the Georges River foreshore.
<b>Spatial quality</b>	
Relationship to context	The design reflects the recreational use and highly urbanized nature of the site. A limited area of riparian revegetation was included to ensure that the project footprint did not encroach on the neighboring playing grounds. Taking into consideration the views from



	adjacent private properties, only low lying riparian vegetation was planted.
Spatial experience	Landscaping features were included into the design to ensure an aesthetically pleasing space to the community, and to encourage the use of the space for the public.
<b>Assessment</b>	
Levels of success	This project contributed to the improvement in habitat availability and richness along the Kogarah Bay foreshore. Observable improvements in biodiversity have been recognized on the intertidal foreshore.
Significance	This seawall project showcases how cost effective ecological improvements along a highly urbanized shoreline can be attained.
<b>Reference</b>	
	<a href="https://www.fishhabitatnetwork.com.au/application/third_party/ckfinder/userfiles/files/CASE%20STUDY%20-%20Carss%20Bush%20Park%20Environmentally%20Friendly%20Seawall.pdf">https://www.fishhabitatnetwork.com.au/application/third_party/ckfinder/userfiles/files/CASE%20STUDY%20-%20Carss%20Bush%20Park%20Environmentally%20Friendly%20Seawall.pdf</a>

## Appendix 3

### *The SWOT analysis of each character zone*

#### 1. The A.T.C.L. and port area - Character zone A

Potential and Opportunities	The A.T.C.L. and port area - Character zone A
Physical layer	<ul style="list-style-type: none"> <li>. Presence of wide sidewalks suitable for family seating and small play areas</li> <li>. Presence of one public garden that can be connected to a network of other public spaces</li> <li>. Presence of railway tracks that are neglected and can be managed as a public trail</li> </ul>
Socio-economic layer	<ul style="list-style-type: none"> <li>. Presence of heritage sites that can be connected to the souks and other heritage sites via a specific trail</li> <li>. Presence of the port as an important socio-economic asset and it involves a new touristic development project</li> <li>. New project of a public beach to be implemented in this area</li> <li>. Presence of a civil war landmark; a diving site near the military clubs that should be valorized</li> </ul>
Regulatory layer	<ul style="list-style-type: none"> <li>. The port is a public project that can be used to generate income serving the rehabilitation of the coast</li> <li>. Presence of several traditional buildings that should be maintained and protected</li> <li>. Presence of natural cliffs that should be protected</li> </ul>
Natural and environmental layer	<ul style="list-style-type: none"> <li>. Presence of natural cliffs that are an important natural asset and should be valorized</li> <li>. Presence of a diving site nearby the military clubs</li> </ul>

Weaknesses and Threats	The A.T.C.L. and port area - Character zone A
Physical layer	<ul style="list-style-type: none"> <li>. Development pressures with a new project of extending the port</li> <li>. High visual disconnection between the sidewalk and the beach</li> <li>. Disfiguration of the seascape and landform of the area due to the presence of military clubs and port facilities</li> </ul>
Socio-economic layer	<ul style="list-style-type: none"> <li>. Deterioration of the fishing port value</li> </ul>
Regulatory layer	<ul style="list-style-type: none"> <li>. No flexibility in urban design projects because of the presence of army settlements</li> <li>. Lack of financial support for the fishing and crafts sector</li> </ul>

Natural and environmental layer	<ul style="list-style-type: none"> <li>. High rates of water pollution</li> <li>. Excessive land reclamation altering the physical structure of the bay and threatening the maritime fauna and flora</li> <li>. The previous bullet point coupled with the presence of noise are degrading the quality of the marine ecosystems</li> </ul>
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## 2. The souks of Jounieh - Character zone B

Potential and Opportunities	The souks of Jounieh - Character zone B
Physical layer	<ul style="list-style-type: none"> <li>. Presence of direct pathways between plots that lead directly to the sea and can be rehabilitated</li> <li>. Presence of continuous sidewalks with benches and other public amenities</li> </ul>
Socio-economic layer	<ul style="list-style-type: none"> <li>. Historic fabric with a strong cultural identity that has great potential for revitalization</li> <li>. Socially active area that hosts several festivities during summer</li> <li>. Project of pedestrianization of the souks and implementation of a museum are currently being studied. This can revitalize the souks and make this area more socially active.</li> </ul>
Regulatory layer	<ul style="list-style-type: none"> <li>. Presence of a law that protects the historic fabric of the souks</li> <li>. Presence of public pathways that lead directly to the sea making public interventions for this area easier to implement</li> </ul>
Natural and environmental layer	<ul style="list-style-type: none"> <li>. Presence of two public gardens that have limited access and can be managed for more access</li> <li>. Presence of few vacant coastal plots that are used as parking areas and can be used for implementing public beaches</li> </ul>

Weaknesses and Threats	The souks of Jounieh - Character zone B
Physical layer	<ul style="list-style-type: none"> <li>. High rate of closed gates in public pathways hindering the direct access to the seashore and adding to the visual disconnection of the souks with the sea</li> <li>. Lack of cohesiveness between the old fabric and the more recent built fabric that was constructed during the civil war, before the implementation of protective measures for the built fabric of the souks</li> </ul>
Socio-economic layer	<ul style="list-style-type: none"> <li>. High rate of closing shops suffering from the economic crisis</li> </ul>
Regulatory layer	<ul style="list-style-type: none"> <li>. Lack of incentives such as tax breaks that encourages the community to invest and maintain the souks of Jounieh</li> <li>. Lack of regulations that protect and restore the shoreline</li> </ul>

Natural and environmental layer	<ul style="list-style-type: none"> <li>. Noise and high traffic flow along this area</li> <li>. Presence of constructions very near to the coast</li> <li>. High rates of water pollution near Ghadir river</li> <li>. Cumulative effect of small scale land reclamation areas is altering the physical structure of the bay</li> <li>. The above mentioned bullet points are degrading the quality of the marine ecosystems</li> </ul>
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### 3. The leisure core of Nouair district - Character zone C

Potential and Opportunities	The leisure core of Nouair district - Character zone C
Physical layer	<ul style="list-style-type: none"> <li>. Presence of one public garden/ trail that can be connected to a network of sidewalks</li> <li>. Presence of vacant lands and orchards that can serve as an extension for the existing the public trail and serve as a community garden</li> </ul>
Socio-economic layer	. This area constitutes an important node that connects Jounieh to the Lady of Harissa and to the mountains of Keserwan via the cable car and via the activities of paragliding
Regulatory layer	. Presence of vacant lands next to the sea that can be appropriated and can be used for implementing public beaches
Natural and environmental layer	<ul style="list-style-type: none"> <li>. Presence of areas with vegetation due to the remaining orchards and agricultural fields</li> <li>. Potential for elaborating an artificial reef for the restoration of marine ecosystems</li> </ul>

Weaknesses and Threats	The leisure core of Nouair district - Character zone C
Physical layer	<ul style="list-style-type: none"> <li>. Lack of cohesiveness between the old and the newly built fabric and between the souks and other areas</li> <li>. Lack of maintenance of the existing historic buildings and structures</li> </ul>
Socio-economic layer	<ul style="list-style-type: none"> <li>. Social stigmatization due to street soliciting of sex workers</li> <li>. Disruption of the social and spatial connectivity with the souks of Jounieh</li> </ul>
Regulatory layer	<ul style="list-style-type: none"> <li>. Privatization of the coast is making public interventions regarding the access to the sea hard but necessary</li> <li>. Lack of regulations and incentives that protect remaining orchards and agricultural fields</li> <li>. Lack of regulations that protect and restore the shoreline</li> </ul>
Natural and environmental layer	<ul style="list-style-type: none"> <li>. Presence of constructions very near the coast</li> <li>. Remaining orchards and agricultural spaces are threatened by unregulated urbanization</li> <li>. Cumulative effect of small scale land reclamation areas is altering the physical structure of the bay</li> </ul>

	. Presence of land reclamation, noise and water pollution are degrading the quality of the marine ecosystems
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#### 4. The leisure core of Sahel Alma and Maameltein - Character zone D

Potential and Opportunities	The leisure core of Sahel Alma and Maameltein - Character zone D
Physical layer	. Presence of several touristic assets that are abandoned and neglected that can be managed and rehabilitated
Socio-economic layer	. Presence of several touristic assets that are privately managed and maintained
Regulatory layer	. Potential to limit urbanization and protect areas that have natural vegetation with natural features (cluster of pine trees) . Presence of several traditional buildings that should be protected
Natural and environmental layer	. Presence of a high percentage of natural vegetation . Presence of a diving site called Aqua Barge

Weaknesses and Threats	The leisure core of Sahel Alma and Maameltein - Character zone D
Physical layer	. Lack of maintenance of the existing heritage buildings and structures
Socio-economic layer	. Social stigmatization due to street soliciting of sex workers . Disruption of the social and spatial connectivity with the souks of Jounieh
Regulatory layer	. Privatization of the coast is making public interventions regarding the access to the sea hard but necessary . Lack of regulations and incentives that protect remaining vegetation . Lack of regulations that protect and restore the shoreline
Natural and environmental layer	. Presence of constructions very near the coast . Remaining green areas are threatened by unregulated urbanization . Cumulative effect of small scale land reclamation areas is altering the physical structure of the bay . Presence of land reclamation, noise and water pollution are degrading the quality of the marine ecosystems

## 5 The Tamaris beach area of Maameltein - Character zone E

Potential and Opportunities	The Tamaris beach area of Maameltein - Character zone E
Physical layer	. Presence of see through fences, thus visual connection can be easily solved by replacing see through fences with low balustrades
Socio-economic layer	. Presence of a heritage site (the Roman bridge) that should be more valued and can be connected to the souks and other heritage sites via a specific trail
Regulatory layer	. Presence of an area with low levels of urbanization that can be protected . No alterations regarding the shoreline that should remain protected . Low rate of buildings that are very close to the sea, thus implementing a setback that prohibits construction is feasible
Natural and environmental layer	. No alterations regarding the shoreline in this area . Low rate of water pollution in this area . Low rate of buildings that are very close to the sea

Weaknesses and Threats	The Tamaris beach area of Maameltein - Character zone E
Physical layer	. Free and open access points are informal and threatened and are coupled with hazards
Socio-economic layer	. Social stigmatization is present due to street soliciting of sex workers
Regulatory layer	. Privatization of the coast is making public interventions regarding the access to the sea hard but necessary . Lack of regulations and incentives that protect remaining vegetation . Lack of regulations that protect the shoreline from alterations
Natural and environmental layer	. Remaining areas of natural vegetation are threatened by unregulated urban sprawl . Presence of litter along the shoreline

## 6. The Hill of Casino du Liban, Kfaryassine - Character zone F

Potential and Opportunities	The Hill of Casino du Liban, Kfaryassine - Character zone F
Physical layer	. Area with high visual connectivity; important spot for sightseeing that can host other inclusive activities

Socio-economic layer	<ul style="list-style-type: none"> <li>. Presence of the Casino du Liban with high cultural value</li> <li>. Socially active area that hosts several informal activities on seaside road which should be sustained</li> </ul>
Regulatory layer	<ul style="list-style-type: none"> <li>. Presence of an area around Casino du Liban with low levels of urbanization that are protected</li> <li>. No major alterations regarding the shoreline that should be protected</li> <li>. Low rate of buildings that are very close to the sea, thus implementing a setback that prohibits construction is feasible</li> </ul>
Natural and environmental layer	<ul style="list-style-type: none"> <li>. Presence of a hill with low levels of urbanization</li> <li>. Low rate of buildings that are very close to the sea</li> </ul>

Weaknesses and Threats	The Hill of Casino du Liban, Kfaryassine - Character zone F
Physical layer	<ul style="list-style-type: none"> <li>. Free and open access points are rare, informal and threatened and they are coupled with hazards</li> </ul>
Socio-economic layer	<ul style="list-style-type: none"> <li>. Lack of basic services making the area unsafe at night</li> </ul>
Regulatory layer	<ul style="list-style-type: none"> <li>. Privatization of the coast is making public interventions regarding the access to the sea hard but necessary</li> </ul>
Natural and environmental layer	<ul style="list-style-type: none"> <li>. Presence of litter along the shoreline</li> </ul>

### 7. The beach enclave model of Kfaryassine, Tabarja - Character zone G

Potential and Opportunities	The beach enclave model of Kfaryassine, Tabarja - Character zone G
Physical layer	<ul style="list-style-type: none"> <li>. Presence of few open access coupled with hazards that can be managed and can be rehabilitated</li> </ul>
Socio-economic layer	<ul style="list-style-type: none"> <li>. Presence of several touristic assets that are privately maintained and can form a leisure cluster next to the Casino</li> </ul>
Regulatory layer	<ul style="list-style-type: none"> <li>. Presence of natural cliffs that should be protected</li> </ul>
Natural and environmental layer	<ul style="list-style-type: none"> <li>. Presence of natural cliffs that are an important natural asset</li> <li>. Presence of many planted areas</li> <li>. Presence of a diving site</li> </ul>



Weaknesses and Threats	The beach enclave model of Kfaryassine, Tabarja - Character zone G
Physical layer	<ul style="list-style-type: none"> <li>. Free and open access points are very rare and are informal, they are threatened and are coupled with hazards</li> <li>. High visual disconnection with the sea due to the presence of tall chalets buildings</li> </ul>
Socio-economic layer	<ul style="list-style-type: none"> <li>. Provision of services is highly exclusive</li> <li>. Presence of large beach resorts that are exclusive and autonomous, making the community living inside these gated beach resorts introverted</li> </ul>
Regulatory layer	<ul style="list-style-type: none"> <li>. Privatization of the coast is making public interventions regarding the access to the sea hard but necessary</li> </ul>
Natural and environmental layer	<ul style="list-style-type: none"> <li>. Large scale land reclamation areas are altering the physical structure of the bay</li> <li>. Presence of land reclamation, noise and water pollution are degrading the quality of the marine ecosystems</li> </ul>

#### 8. The agricultural fields of Wata Slem - Character zone H

Potential and Opportunities	The agricultural fields of Wata Slem - Character zone H
Physical layer	<ul style="list-style-type: none"> <li>. Area showing little urbanization with high potential for soft urban design interventions</li> </ul>
Socio-economic layer	<ul style="list-style-type: none"> <li>. Presence of agricultural practices</li> </ul>
Regulatory layer	<ul style="list-style-type: none"> <li>. Presence of several remaining agricultural fields that should be protected</li> </ul>
Natural and environmental layer	<ul style="list-style-type: none"> <li>. Presence of a diverse fauna and flora</li> <li>. Presence of natural rocks with high ecological value that are considered as an important natural asset</li> </ul>

Weaknesses and Threats	The agricultural fields of Wata Slem - Character zone H
Physical layer	<ul style="list-style-type: none"> <li>. Development pressures with the construction of a new large scale beach resort project</li> </ul>
Socio-economic layer	<ul style="list-style-type: none"> <li>. Lack of safety at night</li> <li>. Social practices that are threatened</li> </ul>
Regulatory layer	<ul style="list-style-type: none"> <li>. Area zoned as touristic and not agricultural with no policies or incentives to protect agricultural practices</li> <li>. Privatization of the coast is making public interventions regarding the access to the sea hard but necessary</li> </ul>
Natural and	

environmental layer	. Presence of natural rocks that are at risk
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### 9. Al Minah, Tabarja - Character zone I

Potential and Opportunities	Al Minah, Tabarja - Character zone I
Physical layer	. High visual connectivity making this area with great potential for sightseeing
Socio-economic layer	. Historic fabric with a strong cultural identity . Socially active area that hosts several festivities during summer
Regulatory layer	. Presence of several traditional buildings that should be protected
Natural and environmental layer	. Presence of a small bay that is an important geomorphological asset . Presence of natural rocks with high ecological value that are considered as an important natural asset

Weaknesses and Threats	Al Minah, Tabarja - Character zone I
Physical layer	. Free and open access points are very rare . Discontinuity of sidewalks
Socio-economic Layer	. Provision of services that are exclusive along the bay of Al Minah
Regulatory layer	. Privatization of the coast making public interventions regarding the access to the sea hard but necessary . No flexibility in urban design projects because of the presence of army settlements
Natural and environmental layer	. Presence of constructions very near the coast

## Appendix 4

### *The ranking criteria of the star model assessment*

#### Physical and built framework for star model assessment

Physical / urban design framework	RATING				
	1	2	3	4	5
Walkability	. No provision of sidewalks	. Discontinuous sidewalks on one side . Narrow sidewalks on one side	. Narrow sidewalks on both sides . Medium sidewalks on one side	. Medium sidewalks on both sides	. Large sidewalks on both sides
Provision of public amenities	. No provision of public amenities (public WC, shading, benches, bins)		. Presence of some amenities		. Presence of public garden + . Presence of several amenities (public WC, shading, benches, bins)
Coherence of character	. No consistence of character		. Coherence of character interrupted by exceptions that are not integrated with the existing fabric		. Consistence of character, with a strong and harmonious identity
Visual connectivity	. Complete visual disconnection due to presence of high buildings	. Hybrid area mostly visually disconnected . Visual disconnection due to high and opaque fences	. Hybrid partially visually disconnected . Presence of see through fences	. Presence of visual corridors between low rise buildings . Seaside road next to flat	. Unhindered view to the sea . Buildings below seaside road

				agricultural fields	
Public access	. No public access	. Few informal open access points coupled with hazards	. Few open access points, less than 50% of all access points	. More than 50% of accessibility	.100% accessible

Socio-economic and cultural framework for star model assessment

Socio-economic Framework	RATING				
	1	2	3	4	5
Presence of cultural assets	. No cultural assets . No heritage sites	. Presence of very few cultural assets that are not protected and neglected	. Presence of several cultural assets that are not protected and neglected . Presence of very few cultural assets that are protected by law	. Presence of several cultural assets that are protected but neglected . Strong cultural identity that is maintained but is not protected by law	. Strong cultural identity that is protected and maintained
Provision and diversity of services	. No provision of basic services (pharmacy - minimarkets)	. Most of provided services are exclusive services	. Provision of one type of services	. Provision of some types of services	. Provision of and diverse services
Sense of Security	. No sense of security at day and at night . Presence of brothels and stories of abduction		. Sense of security only at daytime		. High sense of security . Presence of cameras and security guards . Sense of safety at night

Condition of neighborhood	. Area in very bad state in terms of building state, condition of roads and quality of public areas	. Area in bad state in terms of building state, condition of roads and quality of public areas . Mixed area with average and bad neighborhoods	. Area in average state in terms of building state, condition of roads and quality of public areas	. Area in good state in terms of building state, condition of roads and quality of public areas	. Area in very good state in terms of building state, condition of roads and quality of public areas
Socio-spatial activities	. No diverse socio- spatial activities . Socio-spatial activities social that create social stigmatization	. Presence of socio-spatial activities that are exclusive	. Presence of socio-spatial that are limited . Presence of socio-spatial that are threatened	. Mix of exclusive and nonexclusive socio-spatial activities that are accessible and inclusive to all age and gender	. Mix of a rich and diverse socio-spatial activities that are accessible and inclusive to all age and gender

Environmental framework for star model assessment

Environ- Mental Framework	RATING				
	1	2	3	4	5
Shoreline alteration	. Shoreline that is heavily altered and involves large areas of land reclamation (large scale encroachments)	. Shoreline that is heavily altered and involves several medium scale areas of land reclamation (cumulative effect)	. Shoreline that is heavily altered and involves several small scale areas of land reclamation (cumulative effect)	. Shoreline that involves minor alterations	. Natural condition of shoreline kept maintained
Provision of green spaces	. No green spaces (less than 10%)	. Provision of green spaces (between 10% to 25%)	. Provision of green spaces (between 25% to 50%)	. Provision of green spaces (between 50% to 70%)	. Provision of green spaces (more than 70%)

Quality of fauna and flora	. Highly urbanized area with no rich fauna and flora		. Area with mild urbanization , and some areas of biotope		. Area with little urbanization, and features with high ecological value
Pollution	. Presence of high levels of pollution coming from different sources		. Presence of low levels of pollution		. No alarming levels of pollution
Natural assets	. Absence of agricultural practices and natural features		. Presence of agricultural practices and/ or natural features that are not protected		. Presence of agricultural practices and/ or natural features that are protected

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