

AMERICAN UNIVERSITY OF BEIRUT

RECONNECTING HISTORICAL MEDITERRANEAN CITIES
TO THE SEA AND TO THE NEW DEVELOPMENTS OF THE
CITY:
THE CASE OF THE CITY OF SAIDA

by
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ABSTRACT OF THE THESIS OF

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Title: Reconnecting Historical Mediterranean Cities to the Sea and to the New
Developments of the City: the Case of the City Saida

In Saida, similarly to most historic Mediterranean cities, prosperity rhymed with the presence of the fertile agriculture plains, the skilled artisans, and the wealthy port of fishery and trade, up until the advent of the boulevards that brought a new dynamic, foreign to the coast, the North-South dynamic. Subsequently, the city, separated from its sea, began losing its characteristic traits. At present, the coastline of Saida faces several issues: On a socio-economical level, the three characteristic activities that used to take place along the waterfront of Saida, agriculture, fishing and trade, are disappearing. On the physical level, the maritime boulevard constitutes an infrastructural break while the corniche is subject to discontinuity, lack of safety and physical as well as visual obstructions. On the legal level, the coast is victim of violations transgressing the right to the sea through big scale backfilling projects initiated by the CDR, the municipality and the government. In addition, the publicness of the waterfront is threatened by privatization. On the natural level, alarming pollution rates are degrading the coastal physical and social value due to a solid waste crisis, wastewater mismanagement, and excessive vehicular emissions.

To address these challenges, an integrated approach between urban design and landscape was developed to analyze the physical, socio-economic, environmental, legal context of the city. Consequently, regeneration is used a tool for sustainability in order through a cultural-led, place-responsive, people centered urban design strategy focusing on an ecological landscape framework, and inspired from the historical landscape characters, aiming to enable the reconnection of the waterfront to the sea, empower the citizens to reclaim their waterfront and enhance the new developments of the city.

This thesis tackles the different layers of the city and attempts to inform its intervention from the intertwined nature of the coastal realm. It aims to achieve connectivity and enhance accessibility of the coast through; (1) developing character zones using landscape and urban design tools; (2) enhance connectivity and accessibility within each character zone and between each character zone; (3) exploring means of connectivity and accessibility between the coastal character zones and the inner neighborhoods and regional context of Saida; (3) taking advantage of the publicly owned properties and large scale land reclamation projects. Finally, this research strives to explore and adopt a regenerative approach to the revitalization of cultural and natural assets along the shoreline.

TABLE OF CONTENTS

ACKNOWLEDGEMENTS	1
ABSTRACT	2
ILLUSTRATIONS	6
TABLES	15
ABBREVIATIONS	19
INTRODUCTION	20
A. Problem Statement, Research Question & Hypothesis:.....	22
B. Objectives and research relevance:	26
C. Thesis structure:	28
LITERATURE REVIEW	30
A. Worldwide and national coastal challenges facing waterfronts and Old port cities	31
B. Connectivity in coastal Mediterranean cities.....	41
C. Integrated Coastal Zone Management as general framework:	48
D. Sustainable waterfront regeneration as an approach to coastal Mediterranean cities:	53
E. Towards an integrated approach between Urban design and landscape architecture.....	70
F. Concluding framework:	76

METHODOLOGY	78
A. Elaborate a theoretical framework.....	78
B. Develop base-line condition	81
C. Stakeholders analysis.....	84
D. Assess best practices for coastal planning	86
E. Develop and analyze Landscape character zones (LCZ), and Historical landscape associations (HLA)	87
F. Urban design intervention.....	88
 SAIDA CITY PROFILE	 90
A. Saida Context and Location.....	90
B. History and Evolution of Saida.....	92
C. Current City Profile	133
D. Main findings.....	206
 COASTAL URBAN LANDSCAPE CHARACTERIZATION OF SAIDA.....	 208
A. Identification of historical character zones and their evolution.....	208
B. Current Landscape Character Zones.....	214
C. Comparative analysis of Character Zones	245
D. Main findings / City Scale threats and opportunities on the coast of Saida	256
 CITY SCALE DESIGN STRATEGY.....	 259
A. City scale strategy	259

B. Planning Guiding Principles for coastal urban landscape character zones (CULCZ).....	283
C. Proposed implementation framework.....	328
URBAN DESIGN PROPOSAL FOR THE OLD CITY COASTLINE.....	333
A. Old City of Saida: Character zone F urban design strategy.....	333
B. Bahr El Eid and the fishermen port: Site-level urban design	348
CONCLUSION	365
A. Critical assessment of the proposal and the method used:.....	366
B. Research limitation:	368
C. Research assumptions:.....	369
APPENDIX A	370
APPENDIX B	375
APPENDIX C	378
APPENDIX D	379
APPENDIX E.....	385
REFERENCES	395

ILLUSTRATIONS

Figure

1. - Problem statement mapping	25
2. - <i>Model of the historical Port-City relation</i>	32
3. - Coastal population in correlation with the alteration of the coastline in 2001	34
4. - <i>Drivers of Land reclamation</i>	35
5. - <i>Types of land reclamation</i>	36
6. - The coastline, a fragile asset.....	40
7. - Population in Lebanon in 1998	40
8. -Space required by different transportation modes to carry 200 people.....	43
9. -Streets are places of activity	45
10. -Shared street in Seattle, Washington	46
11. -Photo of the shared street in Seattle, Washington	46
12. -Street mall in Denver, Colorado.....	47
13. - <i>Beach Profile across Breakwater at Gran Dominicus</i>	63
14. - <i>Gran Dominicus 3-Row Reef Ball Submerged Breakwater</i>	64
15. -What is Landscape?.....	72
16. - Layers used in Coastal Landscape Character Assessment	75
17. - Research framework.....	77
18. - Star diagram model	80
19. - Location of Saida compared to Beirut.....	90
20. -Administrative boundaries in Saida	91
21. -Saida in 1912	95
22. - Aerial photo of Saida (Riad el Solh Boulevard highlighted)	96
23. - Tapline trajectory from KSA to Saida.....	97
24. - The Zahrani Oil Refinery 1951	97
25. -Saida in 1956.....	100
26. - Map of Union of Municipalities of Saida and Zahrani,	101

27. - Aerial photo of Saida in 1956.....	103
28. - Aerial photo of Saida in 1994 showing the roads and urbanization pattern.....	103
29. -Saida in 1994.....	105
30. - Saida's Masterplan by Ecochard in 1958.....	107
31. - Saida's Masterplan in 1967.....	109
32. - West Wastani LPS plan in 1982.....	110
33. - Saida's Masterplan in 1995.....	112
34. - NPMPLT Masterplan for Saida in 2005.....	114
35. - Saida Corniche urban treatment Proposal	115
36. - Waterfront Masterplan by Dar el-Omran in 1997	117
37. - Perspective of the Masterplan proposed by Dar el-Omran in 1997	117
38. -Saida'a Stadium and Sports city as envisioned by Laceco	119
39. - The stadium of Saida as executed till now	119
40. - The CDR proposed highway	121
41. - Saida's new port.....	122
42. - Aerial photo of the new port taken 2017 by Mohammad el Hariri	122
43. - Plan of the first land reclamation proposal in Saida.....	123
44. - Dekerman evolution	125
45. -Saida Blue-Green network	128
46. -Recommendation of the SUSDS for the new commercial port.....	128
47. -Saida USDS Strategic framework	129
48. - Seafront Proposal by the Barcelona team in 2016	130
49. - The port and fishermen dock.....	130
50. - Mapping Physical accessibility	135
51. - Typologizing Physical accessibility	136
52. - Mapping the visual obstruction from the coastal road	139
53. - Typologizing the visual obstruction from the coastal road	140
54. -Mapping the building heights in Saida in 2020.....	143

55. -Typologizing the building heights in Saida in 2020.....	144
56. - Descriptive map assessing walkability along the coastal road	147
57. - Analytical map assessing walkability along the coastal road.....	148
58. - Distribution of employment within the craft sector 2004	149
59. -Poverty levels among traditional workers compared to overall poverty in Saida 2004	149
60. -Exportation of goods from Saida in 1907	150
61. - The waterfront of Saida, a versatile space.....	151
62. - Socio-spatial activities along the coastal road of Saida.....	153
63. - Crafts remaining in Saida	154
64. - Mapping the socio-spatial activities taking place on the waterfront of Saida.....	156
65. - Typologizing the socio-spatial activities taking place on the waterfront of Saida	157
66. - Condition of monuments in the Old City of Saida.....	158
67. - Age of monumnets in the Old City of Saida	158
68. - Map of the monuments in the Old City of Saida.....	159
69. -Saida Sea Castle	160
70. - Khan El Franj	160
71. -Al-Bahr mosque	161
72. - Valuable heritage site outside of the Old City of Saida	162
73. - Natural heritage sites in Saida	163
74. - Mapping the built and natural hertiage in Saida.....	164
75. - Typologizing the built and natural hertiage in Saida	165
76. - Mapping the landmarks along the waterfront of Saida	167
77. - Typologizing the landmarks along the waterfront of Saida	168
78. - Mapping the building use in Saida	171
79. - Mapping the Ground floor use in Saida	172
80. - Mapping the Land cover and land uses in Saida	173
81. - Typologizing the Land cover and land uses in Saida	174

82. - Map showing the condition of the monuments in the Old City of Saida	176
83. - Mapping the general state of the neighborhoods in Saida.....	178
84. - Map of the ownership patterns in the Old City of Saida	179
85. - Mapping the land ownership along the waterfront of Saida	182
86. - Mapping the waterfront land ownership by companies	183
87. - Typologizing the ownership patterns along the waterfront of Saida.....	184
88. - Map of Union of Municipalities of Saida and Zahrani, Greater Saida, Municipal Saida	186
89. - Zahrani Union of municipalities confessional distribution	187
90. - Mapping the violations of the maritime domain in Saida	190
91. - Typologizing the violations of the maritime domain in Saida	191
92. - Descriptive map of the landform and topography of the waterfront in Saida.....	195
93. - Typologizing the landform and topography of the waterfront in Saida	196
94. - Mapping green and blue network in Saida.....	197
95. - Typologizing the green and blue network in Saida.....	198
96. - Mapping shoreline condition in Saida.....	202
97. - Typologizing the shoreline condition in Saida.....	203
98. - Mapping land reclamation in Saida	204
99. - Typologizing land reclamation in Saida.....	205
100.-Historial Character Zones of the waterfront of Saida in 1912	211
101.-Historial Character Zones of the waterfront of Saida in 1956	212
102.- Historial Character Zones of the waterfront of Saida in 1994	213
103.- Defining Character Zones	214
104.b - Overlapping Surface types with main Character Zones.....	216
105.- Defining current Character Zones in Saida	217
106.- General section of Caharacter Zone A	218
107.-General view of Character Zone A.....	218
108.-Plan of Character Zone A.....	219
109.-General section of Character Zone B	221

110.-General view of Character Zone B	221
111.-Plan of Character Zone B	221
112.-General section of Character Zone C	223
113.-General image of Character Zone C.....	223
114.-Plan of Character Zone C	223
115.-General section of Character Zone D.....	225
116.-General view of Character Zone D.....	225
117.-Plan of Character Zone D.....	226
118.-General section of Character Zone E	228
119.-General view of Character Zone E.....	228
120.-Plan of Character Zone E	229
121.-General section of Character Zone F.....	231
122.-General view of Character Zone F	232
123.-Plan of Character Zone F.....	232
124.-General section of Character Zone G	235
125.-General view of Character Zone G.....	235
126.-Plan of Character Zone G	235
127.-General section of Character Zone H.....	237
128.-General view of Character Zone H.....	238
129.-Plan of Character Zone H.....	238
130.-General section of Character Zone I.....	240
131.-General view of Character Zone I.....	240
132.-Plan of Character Zone I	240
133.-General section of Character Zone J	242
134.-General view of Character Zone J.....	243
135.-Plan of Character Zone J	243
136.-City Scale threats of the coast of Saida	258
137.-Vision for the coast of Saida	261

138.- Ring Road Project	268
139.-Mobility , Greenway, soft mobility and parking spaces.....	269
140.- Adaptable streetscapes/Site specific street types.....	272
141.-Street sections and plans adapted for the coastal road	273
142.-Saida Blue-Green Network	274
143.-Green corridor concept / Source: Archdaily.com.....	275
144.-Riviving a river in Seoul / Source: thewire.in	275
145.-Green corridor in Saida	276
146.-Blue-Green network as a transversal connectivity catalyst.....	277
147.-Seamless connectivity between land and sea	279
148.-Section A: Dune planting	280
149.-Section B: Stepping stones	280
150.-Section C: Reef balls and sea grass	280
151.-Section D: Steps, ramps and sand nourishment	280
152.-Section E: Steps, platforms and complex tiles	280
153.-Section F: Seamless building integration	280
154.-City Scale Strategy	282
155.-Map of the Planning Guiding Principles for CULCZ A, B, C and D	284
156.-Main activity, stakeholders and main users in Character Zone A.....	286
157.-Economic cycle in zone A.....	286
158.-Schematic distribution of landmarks and socio-spatial activities in Character Zone A	287
159.-Section 1	287
160.-Main activity, stakeholders and main users in Character Zone B	289
161.-Economic cycle in zone B	289
162.-Schematic distribution of landmarks and socio-spatial activitits in Zone B	290
163.-Section 2.....	290
164.-Main activity, stakeholders and main users in Character Zone C	293
165.-Economic cycle in zone C	293

166.-Schematic distribution of landmarks and socio-spatial activities in Character....	294
167.-Section 3	294
168.-Main activity, stakeholders and main users in Character Zone D.....	297
169.-Economic cycle in zone D.....	298
170.-Schematic distribution of landmarks and socio-spatial activitits in Character Zone D	298
171.-Section 4	299
172.-Section 5	299
173.-Map of the Planning Guiding Principles for CULCZ E.....	300
174.-Main activity, stakeholders and main users in Character Zone E	303
175.-Economic cycle in zone E	303
176.-Schematic distribution of landmarks and socio-spatial activitits in Character Zone E.....	304
177.-Section 6	304
178.-Section 7	305
179.-Section 8	306
180.-Section 9	306
181.-Map of the Planning Guiding Principles for CULCZ F and G	307
182.-Main activity, stakeholders and main users in Character Zone F	310
183.-Economic cycle in zone F	311
184.-Schematic distribution of landmarks and socio-spatial activitits in Character Zone F	311
185.-Section 10	312
186.-Main activity, stakeholders and main users in Character Zone G.....	314
187.-Economic cycle in zone G.....	314
188.-Schematic distribution of landmarks and socio-spatial activities in Zone G	315
189.-Section 11	315
190.-Map of the Planning Guiding Principles for CULCZ H, I and J.....	316
191.-Main activity, stakeholders and main users in Character Zone H.....	318

192.-Economic cycle in zone H.....	319
193.-Schematic distribution of landmarks and socio-spatial activities in Character Zone H	319
194.-Section 12	320
195.-Main activity, stakeholders and main users in Character Zone I	322
196.-Economic cycle in zone I	322
197.-Schematic distribution of landmarks and socio-spatial activities in Character Zone I.....	323
198.-Section 13	323
199.-Main activity, stakeholders and main users in Character Zone J	325
200.-Economic cycle in zone J	326
201.-Schematic distribution of landmarks and socio-spatial activities in Character Zone J.....	326
202.-Section 14	327
203.-Horizontal and vertical integration.....	330
204.-PPP framework.....	331
205.-Choice of Character Zone F	335
206.-Physical strategy on the Character Zone scale	338
207.-Infrastructural strategy on the Character Zone scale.....	340
208.-Socio-economic strategy on the Character Zone scale.....	343
209.-Environmental strategy on the Character Zone scale.....	345
210.-Regulatory strategy on the Character Zone scale.....	347
211.-Site selection.....	348
212.-Urban design strategy on the site scale	350
213.-Zones distribution.....	353
214.-Docks distribution	353
215.-Overall masterplan	354
216.-Plan of Platform 2 and 3.....	355
217.-Strategy of Platform 1 and inspiration	356

218.-Section 1	357
219.-Plan of the commercial and institutional zone of the port.....	357
220.-Design strategy of the commercial and institutional zone	358
221.-Section 2	359
222.-Plan of the transitional zone and the food court.....	360
223.-Design strategy of the transitional zone and the food court.....	361
224.-The cultural node plan.....	362
225.-Section 3	364
226.-Section 4	364

TABLES

Table

1. - Nature-based solution for coastal areas	62
2. - <i>Changes in Shoreline and Sand Volume Calculations 1998 to 2001</i>	63
3. - Hybrid solution for coastal areas	66
4. - Hard interventions for coastal areas	68
5. -Data and source for LCA.....	78
6. -Data and source for HLA	79
7. -Data and source on Urban design tools	80
8. -Data and source for case profile	81
9. -Data and source of human system mapping	83
10. -Data and source of natural system mapping.....	84
11. -Data and source for stakeholders analysis.....	85
12. -Data and source for ongoing projects in Saida.....	85
13. -Data and source for best practices in waterfront regeneration	86
14. -Zones available on the coast of Saida following the zoning of 1995.....	111
15. -Proposed zoning of the new landreclamation of the Dekerman in 2018.....	125
16. - Types of access modes along the coast in Saida	134
17. - Types of visual obstructions along the coastal road.....	137
18. - Buildings height and density	141
19. - Walkability along the coastal road in Saida	146
20. - Types of Socio-Spatial Activities	155
21. - Types of Built and Natural Heritage	163
22. - Types of Landmarks	166
23. -Types of Land Cover / Land Use	170
24. -Neighborhoods condition	177
25. - Types of ownership patterns on the waterfront of Saida.....	181
26. - Types of violations of the maritime domain.....	189

27. - Types of landforms.....	193
28. - Types of the green and blue network	194
29. - Types of the shoreline condition	199
30. - Types of land reclamation	201
31. - Current Character zones:	216
32. -Characteristics of Character Zone A	219
33. -Characteristics of Character zone B	222
34. -Characteristics of Character Zone C.....	224
35. -Characteristics of Character Zone D	226
36. -Characteristics of Character Zone E.....	229
37. -Characteristics of Character Zone F	233
38. -Characteristics of Character Zone G	236
39. -Characteristics of Character Zone H	238
40. -Characteristics of Character Zone I.....	241
41. -Characteristics of Character Zone J.....	243
42. -Character zones assessment tools	245
43. -Descripencies and similarities based on the base layers: Topography, Shoreline condition, Land cover/Land use,Building height.....	247
44. -Descripencies and differences based on physical layers: Visual obstruction, Accessibility, Walkability.....	248
45. -Descripencies and differences based on the environemental layers: Land reclamation, Green blue network.....	248
46. -Descripencies and differences based the social layers: Socio-spatial activities, Landmarks, Neighborhood state, Heritage value.....	249
47. -Descripencies and differences based on the legal layers: Ownership, Violations, Zoning.....	250
48. -Star model assessment of all the CZ.....	252
49. -City Scale Threats and Opportunities.....	257
50. -General objectives, strategic objectives, and strategies for the coast of Saida on the physical level	263

51. -General objectives, strategic objectives, and strategies for the coast of Saida on the socio-economic level	264
52. -General objectives, strategic objectives, and strategies for the coast of Saida on the regulatory level	265
53. -General objectives, strategic objectives, and strategies for the coast of Saida on the environmental level.....	266
54. -Planning Guiding Principles for coastal urban landscape character zone A.....	285
55. -Planning Guiding Principles for coastal urban landscape character zone B	288
56. -Planning Guiding Principles for coastal urban landscape character zone C	291
57. -Planning Guiding Principles for coastal urban landscape character zone D.....	296
58. -Planning Guiding Principles for coastal urban landscape character zone E	301
59. -Planning Guiding Principles for coastal urban landscape character zone F.....	308
60. -Planning Guiding Principles for coastal urban landscape character zone G.....	313
61. -Planning Guiding Principles for coastal urban landscape character zone H.....	317
62. -Planning Guiding Principles for coastal urban landscape character zone I.....	321
63. -Planning Guiding Principles for coastal urban landscape character zone J	324
64. -Grading criteria of the physical layers.....	379
65. -Grading criteria of the social layers.....	380
66. -Grading criteria of the enviromental layers.....	381
67. -Star model assessment of CZ A B and C	382
68. -Star model assessment of CZ D E and E.....	383
69. -Star model assessment of CZ G H I and J.....	384
70. -SWOT of Character Zone A.....	385
71. -SWOT of Character Zone B	386
72. - SWOT of Character Zone C	387
73. - SWOT of Character Zone D.....	388
74. - SWOT of Character Zone E	389
75. - SWOT of Character Zone F	390
76. -SWOT of Character Zone G.....	391

77. -SWOT of Character Zone H.....	392
78. -SWOT of Character Zone I	393
79. -SWOT of Character Zone J	394

ABBREVIATIONS

AUB	American University of Beirut
CDR	Council for Development and Reconstruction
CNRS	National Center for Remote Sensing
FAR	Floor to Area Ratio
ICZM	Integrated Coastal Zone Management
LC	Lot Coverage
LRC	General Directorate of Land Registry and Cadaster
NPMPLT	National Physical Master Plan of the Lebanese Territory
PM	Prime Minister
SUSDS	Saida Urban Sustainable Development Strategy
UNESCO	United Nations Educational, Scientific and Cultural Organization
LCA	Landscape Character Assessment
HLC	Historical Landscape Character
LCZ	Landscape Character zone

CHAPTER I

INTRODUCTION

Historically, water was an imperative component of settlement. It represented locational advantages for trade, agriculture, and social activities (Kostopoulou, 2013, p. 3). Along the Mediterranean, people developed a tight relationship with their coast. The dynamics of coastal cities was typically between sea and land, mostly for trade, nourishment, and social activities. However, industrialization and modernization has caused a drastic change in these cities on a morphological, economic, and social levels (Schubert, 2010). Similarly in Saida , prosperity rhymed with the presence of fertile agriculture plains, skilled artisans, and wealthy port of fishing and trade, up until the advent of roads connecting Beirut to the South. These roads brought a new dynamic, to the coast, the North-South dynamic, conflicting with the land-sea connectivity. Subsequently, looking at views of Saida's waterfront between the 1930s and the present, the city today is in disconnection with its past image. In fact, the three characteristic features mentioned above (fertile agriculture plains, skilled artisans, and wealthy port of fishing and trade) are vanishing because of urban planning policies adopted throughout the years. It seems as if two different cities existed on the same location at different times (Figure 1). It does not represent a progressive evolution.

At present, efforts of waterfront redevelopment are ongoing worldwide following the framework of inclusivity, sustainability, community resilience(Schubert, 2010), such as in Genoa Italy and in Barcelona, Spain. While in less developed contexts, such as in Lebanon, waterfront redevelopment is operating in the shadow of private interests, capitalism is allowing further deregulation of the economy and

privatization of public assets. Even though in Lebanon, the Lebanese coast was decreed as a public domain in 1925, the right to the sea is not fully recognized by “public authorities” who transgress the coast rather than protecting it (Lamy & Bou Aoun, 2017, p. 8).

With the issuing of Decree #17614/1964, the exploitation of public property was legalized, followed by Decree #481/1966 allowing the occupation of maritime public domain by the private sector (Debs et al., 2018). Subsequently, in 1988, the Kinayat area in Saida was privatized and enclosed (Dictaphone Group, 2015), and projects of backfilling of “Khalij el Iskandar” and “Bahr el Maleh” began after the civil war (Abou Alfa, 2016). Consequently, the waterfront of Saida can be painted in two different images. First, as seen through the eyes of dwellers, the coastline is a place of memory, a space of social gatherings, cultural celebrations, and traditional practices (Dictaphone Group, 2015). Second, as seen through the eyes of the government and the real-estate companies: the coastline is a space for real-estate development, an asset to attract consumerism. Accordingly, the trajectory of the coastline of Saida oscillates between two images: “the planned waterfront” vs “the dreamed waterfront”. This dichotomy has been imprinted on the urban realm of Saida across the different layers of the city, namely, the historical, the infrastructural, the socio-economic, the environmental, the political, and the governmental.

To counter the present-day coastal challenges in Saida, this thesis seeks to understand first the different forces that shaped the coast of the city. Accordingly, this thesis seeks to reconcile the two images of the coast of Saida and to reconnect the city with its sea through an integrated approach between urban design and landscape architecture. Under the umbrella of ICZM, this approach targets the coast of Saida as a

holistic entity and then treats specifically the Old Core and the fishermen port into a public asset connected to the Old Core and the city. Subsequently, it builds on the numerous experiences of Mediterranean cities that succeeded in achieving sustainable coastal developments through a process of culturally based regeneration.

A. Problem Statement, Research Question & Hypothesis:

1. Thematic issues:

According to the case overview, the coastline of Saida faces several issues divided along the four layers (

Figure 1):

At the socio-economical level, the three characteristic activities that used to take place along the waterfront of Saida, (agriculture, fishing and trade) are disappearing because of urban sprawl, rise of mechanization and industrialization, and unorganized development (Hallaj, 2014). The rich heritage of Saida is a major asset for tourism, however due to the instability of the political situation, and lack of maintenance, the tourism sector is underappreciated in this city (Barthel, 2014).

At the physical level, The city is disconnected from the sea. The waterfront of Saida suffers mainly from infrastructural breaks caused by the maritime boulevard (Hammoud, 2018). Additionally, the built heritage is endangered by gentrification and lack of maintenance. The Old city remains dissociated from the maritime domain and from the historic port, while the new development of the city along the coast is becoming more car dependent and less people centered (Al-Harithy & Guadagnoli, 2014). Moreover, the corniche along Saida coastline is subject to discontinuity, lack of safety and physical as well as visual obstructions.

At the legal level, the publicness of the coast is transgressed through big scale backfilling projects initiated by the CDR, the municipality and the government. In addition, risks of privatization of the coast in Saida threaten its accessibility (Dictaphone Group, 2015), such as the plots along “Bahr el Qamleh” that were transferred from public ownership of the municipality to private ownership of the municipality¹.

At the environmental and ecological level, alarming pollution rates are degrading the coastal physical, ecological and social value due to a solid waste crisis, wastewater mismanagement, and excessive vehicular emissions (Hallaj, 2014). Excessive pollution is causing loss of natural habitats, which is inflicting a low income amongst the fishermen and causing a deterioration of the socio-spatial activities taking place along the coast of Saida (Barthel, 2014).

2. Focused issue:

The main problem discussed in this research is related to the fragmentation of the maritime domain and its dissociation from the city. This is due to the violation of maritime properties and the “right to the sea” by landfilling, land reclamation and lack of planning. This disconnection is highlighted in two directions, a longitudinal break (North-South) between the different character zones along the coast of Saida and a transversal break (East-West) between land and sea.

Given the uncertainty of the fate of the coast of Saida, and learning from the precedents of coastal developments in Lebanon, such as in Beirut and Jounieh, the main question I ask is related to the possibility of creating an alternative model of

¹ Plot 375 transferred in 1947 following decree 10830/47

development of the waterfronts of Saida. The coast should be developed as an extension of the city and as a main asset for Saida and Greater Saida, not as a gated development or a back of house of the city, following an alternative vision that safeguards heritage, public rights, connectivity, and the environment based on sustainability principles.

THE DREAMED WATERFRONT

الكينيات

”كنا نعمل كل شي بدنا ياه بدون ما حدا يقننا مسموح وممنوع“

شط القملة

”كنا نتمشى على طول شاطئ القملة، وكنا في نهاية الطريق ندرك أننا سنصل الى فندق طانيوس (أو سيدون) حيث لا يمكننا المتابعة فنعود أدراجنا“

بحر العيد - المينة

”يا أخي وبصراحة رأيي إنها مشاريع رأسمالية ولن تفيدنا بالعكس ستضر بنا كصيادين. بهذا المرفأ الجديد سيقل رزقنا ونتاجنا اليومي من صيد الأسماك.“

بحر اسكندر

«الكل كان لازم ينزل على بحر اسكندر ويغسل وجهه، وأكثر شي عشان يبعدوا النحس والشر.»
«كلنا كنا ننزل سوا. ما كان في فرق بين غني وفقير وكبير وصغير.»

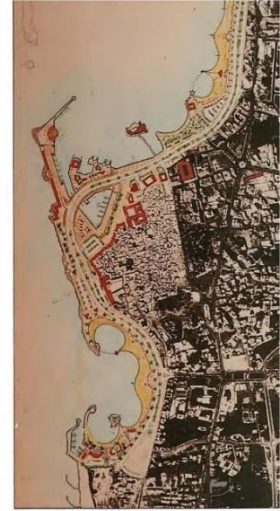
بحر المالح

”منطقة سينيق حتى حدود المسلخ كانت أجمل منطقة لصيد الأسماك.“

THE PLANNED WATERFRONT



1-Saida Municipal Stadium and sports complex + Saidon Hotel



2-The Coastal highway



3-The new commercial and touristic port. Iskandar Bay



4-The landfill and another port proposition



Figure 1- Problem statement mapping
Source: Author

Thus my research question is:

"How can an integrated landscape architecture and urban design approach set the basis for the recovery of the coast of Saida by enhancing accessibility and connectivity along the shoreline and with the hinterland?"

My hypothesis is that the waterfront has to be regarded as a main asset for the city of Saida rather than being planned as a back of house area. It is up to urban designers and landscape architects in coordination with urban planners, to lay the ground for an alternative model of waterfronts development, giving back the waterfront to the people rather than favoring it for the societal elites. Thus, a cultural-led, place-responsive, people centered urban design strategy focusing on an ecological landscape framework, and inspired from the historical landscape characters, will enable the reconnection of the waterfront to the sea, empower the citizens to reclaim their waterfront and enhance the new developments of the city.

B. Objectives and research relevance:

1. Objectives:

- Develop a theoretical framework that integrates Urban Design and Landscape Architecture tools and approaches
- Apply the framework on Saida to understand problems and issues facing the coast
- Propose an urban design intervention that achieves connectivity and accessibility along the coast, between all the character zones and across the city, connecting hinterland and coast.

2. Research relevance:

Previous theses on Saida tackled different aspects of the city related to connectivity (Al Haddad, 2012; Hammoud, 2018), ecological landscape (Al-Sabbagh, 2015) and revitalization of the waterfront of Saida through tourism (Osman & Farahat, 2018), however none of them considered the whole bay in its physical entity under the lens of accessibility and sustainability. Moreover, looking at different proposals for the waterfront of Saida, I noticed that the work of Columbia University's workshop² on the waterfront of Saida and the Barcelona's waterfront proposal tackled mainly the old waterfront of Saida, or started from the Kinayat garden until Mina Iskandar, leaving in gray the southern part of the city. As for the Barcelona proposal, it lacked contextual integration, as it consisted of physical gesture related to beautification rather than regeneration. Therefore, my awareness of the context, my research will contribute to assess Saida's entire waterfront in regards to accessibility, walkability, and continuity, while taking into account the local cultural particularities.

Secondly, the waterfront of Saida has been largely disfigured through large-scale landfilling and privatization; however, this issue is not contested sufficiently. Thus, this research consists of a gesture of advocacy of public rights, raising awareness of the public "Right to the Sea" and the importance of protecting the only public beach left in Saida "Baher el Qamleh".

Finally, in 2017 Lebanon ratified the ICZM Protocol in Madrid, which takes into account the protection of coastal areas. Accordingly, in line with the goals of *Beirut, zone10* elaborated by Issam Fares Institute at AUB, this research will contribute to

² Workshop conducted with Saida Observatory in summer 2018

revealing an alternative regeneration strategy to the waterfront, safeguarding ecosystems and the public rights.

C. Thesis structure:

This thesis begins with an introduction of the issue discussed, the research question, objectives and research relevance. Afterwards, I review within chapter II the coastal issues starting from a worldwide perspective, then focusing on the Mediterranean and Lebanon, followed by tools and strategies of remediation, particularly cultural-led regeneration of Mediterranean cities, under the umbrella of ICZM, in the aim of achieving a sustainable coastal development. This approach culminates in an integrated method merging landscape character assessment with tools from urban design. The framework elaborated will be tested on Saida, a Mediterranean coastal city in Lebanon, rich in heritage and facing a wide array of coastal issues.

In Chapter IV I present a detailed description of the physical, socio-economic, environmental, and legal layers shaping the coast of Saida through mapping these layers and typologizing the coast, leading to the characterization of the coast of Saida into Character zones. These Character zones are assessed in Chapter V through a SWOT analysis, a Star model diagram and a differences and similarities matrix, constructing the base of the intervention. In Chapter VI, I put to use all the before mentioned information and analysis and come up with a set of city scale principles that will guide the design of each character zone. I elaborate design strategies for each Character zone according to its users, stakeholders and the economic ecosystem animating it. Finally, I go into details in the design of the character zone of the Old City of Saida, ensuring connectivity of this zone with the sea and with the fishermen port. I conclude this

research with a set of recommendations regarding an alternative vision for the development of waterfront in historic Mediterranean cities of the South.

CHAPTER II

LITERATURE REVIEW

Given that the research tackles the coast of Saida, a Mediterranean historical city, this chapter begins by exploring worldwide coastal challenges with emphasis on Mediterranean experiences. Followed by an overview on integrated coastal zone management as a planning approach and a response to these issues, while stressing on heritage in the Mediterranean area, built and natural.

The second part of the chapter focuses on regeneration of historical with a focus on cultural regeneration in Mediterranean cities, taking as example Barcelona, and Genoa. This section looks into lessons on dealing with the built, intangible and natural heritage. It focusses on the principles of regeneration of these three components of heritage, the tools and the strategies used. Within the context of built heritage, this section elaborates on the notion of preservation, rehabilitation and continuity. Within the context of intangible heritage, the notions of synergies and innovation are discussed. In addition, within the context of natural heritage, nature based solutions and hybrid intervention are discussed as a tool to achieve sustainability and connectivity along the coast.

The final section of this chapter concludes with a framework bridging landscape architecture and urban design through the notion of Coastal Landscape Character Zones and its application in a sustainable coastal development project.

A. Worldwide and national coastal challenges facing waterfronts and Old port cities

Waterfronts are unique and irreplaceable assets for cities. They represent the interface between land and water, a constantly interactive and interchangeable line that sparks with activities (Ragheb, 2017). Historically, water was the primary resource for settlement, needed for irrigation, nourishment and transportation (Kostopoulou, 2013). On the waterfront, fishing ports became settlements, local production became an industry and the ports expanded into cities. Schubert (2010) best discusses the evolution of the ports following industrialization. According to him, ports became transportation hubs, and the waterfront became an industrial entity serving production. With post-industrialism, during the 20th century, the purposeful relationship between harbors and cities deteriorated, mainly due to the evolution of maritime technology, the evolving multifunctional character of post-industrial cities, and containerization (Schubert, 2010, p. 74). Subsequently, ports' dissociation from the city was followed by the decline of traditional harbor and manufacturing industries that abandoned their water-bound sites and relocated to suburbs leaving behind derelict spaces and buildings (Kostopoulou, 2013, p. 4581). The evolution of the relationship between port and city is illustrated by Hoyle et al. (1988) in *Figure 2*. It shows how the city and its port grew from being two entities in symbiosis into being two competitive entities growing apart.

Stage	Symbol		Period	Characteristics
	○ city	● port		
(I) Primitive cityport			Ancient–medieval to 19th century	Close spatial and functional association between city and port
(II) Expanding cityport			19th–early 20th century	Rapid commercial and industrial growth forces port to develop beyond city confines, with linear quays and break-bulk industries
(III) Modern industrial cityport			mid-20th century	Industrial growth (especially oil refining) and introduction of containers and ro-ro facilities require separation and increased space
(IV) Retreat from the waterfront			1960–1980s	Changes in maritime technology induce growth of separate maritime industrial development areas
(V) Redevelopment of the waterfront			1970–1990s	Large-scale modern port consumes large areas of land- and water-space; urban renewal of original core

Figure 2 - Model of the historical Port-City relation

Source: (Kostopoulou, 2013)

Following this evolution, cities initiated the redevelopment of their waterfronts using mixed-use models relying on tourism, leisure, exclusive housing, and office developments, but these development efforts were not without negative effects and challenges (Gospodini, 2001).

1. Challenges facing worldwide coastal cities:

Given their role as economic centers, cultural loci, social hubs and natural assets, coastal cities attract people from all around the world (Carta & Ronsivalle, 2016). As coastal city populations increase, and as economic and industrial pressures increase, pressure on ecosystem surge causing several problems along the waterfront (Morris et al., 2019). On an environmental level, waterfronts are subject to erosion due to sea currents; they are also more prone to storms and floods. These challenges are increasing with the dangers of global warming. Despite these challenges the natural ecosystem find its balance through time, however the permanent disfiguration of the coast by

human activity is altering the ecosystem in a fast pace causing irreparable damages³ (Morris et al., 2019). Land-use changes, growing coastal urbanization and industrialization, population growth, altered water edge and quality, and climate change are degrading marine habitats, ecological processes, communities, and the livability of our coastal cities (Stauber et al., 2016). Within this perspective, the most important coastal issues are summarized below:

a. Overpopulation and mismanagement of the maritime domain:

With 14 of the world's 17 largest cities located along coasts and 40% of the world population lives in coastal zones that takes up to 7% of the Earth land area (UN, 2017), coastal areas are getting exploited by development, and the ecosystem is being exhausted by human activity. Water pollution has increased due to the bad management of waterfronts, locating industries on coastal sites in order to benefit from the ease of transportation, and due to the discharge of untreated wastewater and bad solid waste disposal management (Morris et al., 2019). The UN report (2017) confirms that 80 % of all pollution in seas and oceans comes from land-based activities. Moreover, air pollution has increased due to vehicle gas emission, and the degradation of the green cover. In addition, coasts suffer from an abuse of the ecosystem, due to the use of grey infrastructures, which triggers the loss of the natural landscapes and the "artificialization" of the shoreline (UN, 2017). The distribution of the coastal population and its density, in correlation to the alteration of the coastal edge is shown in

³ About 20 per cent of the world's coral reefs have been destroyed and show no immediate prospects for recovery; about 16 per cent of them were seriously damaged by coral bleaching in 1998, but of these about 40 per cent have either recovered or are recovering well. (UN, 2017, p. 5)

Figure 3. According to this map, the most populated areas represent the most artificial coasts.



Source: Burke et al., World Resources Institute, Washington DC, 2001; Paul Harrison, Fred Pearce, AAAS Atlas of Population and Environment 2001, American Association for the Advancement of Science, University of California Press, Berkeley.

Figure 3 - Coastal population in correlation with the alteration of the coastline in 2001

b. Land reclamation:

Facing the rapid increase of coastal population, the scarcity of land, and the high value of coastal real estate, urban sprawl has expanded into the sea with land reclamation. Land reclamation is the process of producing new land on maritime wetlands and thus by filling the area with heavy rock and/or cement, then filling with clay and soil (Stauber et al., 2016). However, in some countries such as Lebanon, garbage is used as landfilling substrate, which increases water pollution in this area (Abou Alfa, 2016).

The drivers, types and effects of land reclamation discussed in this section are based on the research of Sengupta et al (2018). The authors conducted a study on land reclamation in 16 megacities, comparing them and analyzing the process of their creation. Accordingly, this research specifies the drivers of land reclamation as natural and man-made (*Figure 4*) (Sengupta et al., 2018). Man-made drivers can be demographic (such as overpopulation and high consumption rate), institutional (such as ratifying land reclamation acts and absence of environmental protection policies), economic (such as globalization and standards mainly for commercial port), technological (such as advanced geo-physical engineering), or cultural (such as environmental negligence). However, this study missed to mention the effect of real-estate greed a driver for land reclamation. In the Lebanese context, the real-estate greed fuels the production of new lands, especially if these lands have high prices. In addition, the drivers for land reclamation in Lebanon are mostly institutional given the lax legal system and the corrupted political power and cultural given the lack of awareness concerning the importance of the maritime domain, and its value as a cultural and public asset.

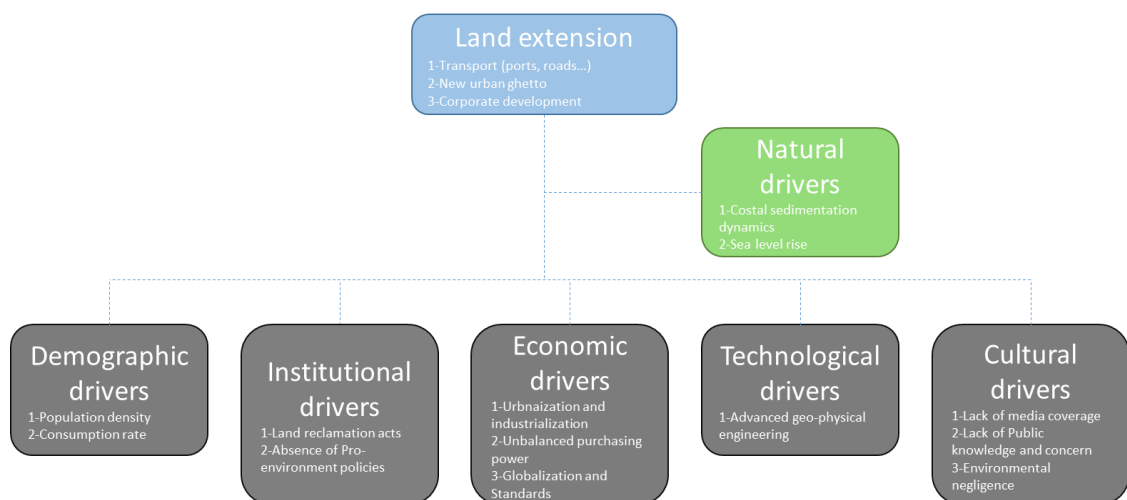


Figure 4-Drivers of Land reclamation
Source:(Sengupta et al., 2018), adapted by author

The same study also typologizes land reclamations and distinguishes three types (*Figure 5*): the expanded land construction, the offshore land construction and the merged construction. In Lebanon, all land reclamation is expanded lands, resulting mostly from landfilling and bad-practice garbage disposal and solid waste management into the sea.

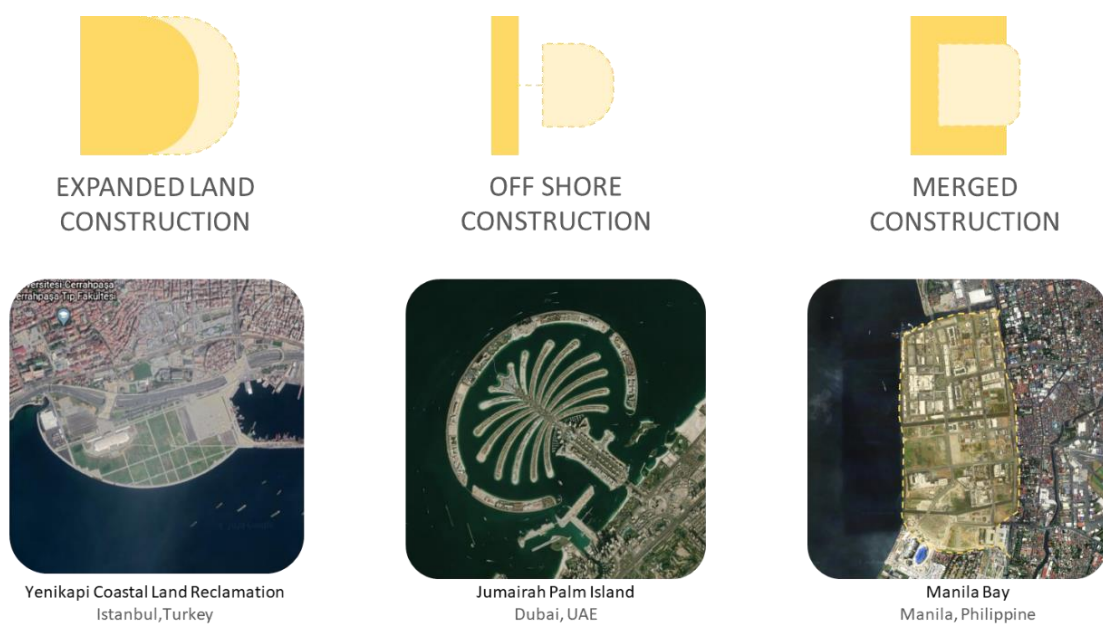


Figure 5-Types of land reclamation
 Source:(Sengupta et al., 2018), adapted by author

According to Grydehøj, urban land reclamation functions as “accumulation by dispossession” (Harvey, 2003) by transforming a fluid and abstract resource for future public good into a solid and static elite private asset. This type of violation somewhat always favors societal elites inasmuch as the technologies of modern-day land reclamation are prohibitively expensive for all but the most resource-rich individuals and institutions. In addition, Land reclamation can capture the coastline for elite

interests, dispossessing existing users by creating a new coastal urban development dissociated completely from the old urban space (such as the development of gated communities) (Grydehoj, 2015).

c. Occupation and privatization of the maritime public domain:

In addition to the occupation of the waterfront by elites under the form of touristic establishments, and private residences, the occupation of the coast can also be in service of industrial activity, port activity, security reasons, or even informal settlements. Thus, deprivation of the maritime public domain can be caused by a public entity, such as the government, not only by private individuals. With the lack of sufficient planning and management, the occupation of the coast causes major damage to the ecosystem and to the socio-spatial activities taking place on the waterfront. In fact, in a study on the public maritime domain in Philippines " *Transition from common to private coasts: Consequences of privatization of the coastal commons*"(Cabral & Aliño, 2011), the authors highlighted the negative effect of the lack of coherent policies, standards, and weak enforcement of policies in leasing the coastal commons. Such weak legal frameworks in the Philippines, as in Lebanon, caused "displacement, deprivation and marginalization of fishing and farming communities and have degraded many coastal zone areas"(Cabral & Aliño, 2011).

2. *Challenges facing Mediterranean coastal cities:*

In addition to the above mentioned challenges, Mediterranean cities share a number of common problems given their similar history and context, which differentiates them from other cities in the world, and influences their current policies

and planning. The Priority Action Program (2004) divides the Mediterranean cities into two entities, the north and the south, following their level of development (Priority Actions Programme (PAP), 2004). Mediterranean cities of the south did not undergo the same industrial revolution as the rest of the world, and thus do not have the derelict spaces on ports as the cities in the north. However, they were influenced in the 19th century by the European city model, which caused a dualism in the structure of the city between the old city rich in heritage, inhabited by a dense population despite its derelict state, and the new modern city expansion (Priority Actions Program (PAP), 2004). The unplanned expansion has several effects on the city such as, degradation of agricultural lands, destruction of the environment, separation between the dwelling and the workplace, causing car dependency and increasing air pollution. Subsequently, the city space is dominated and fragmented by road networks. Moreover, Mediterranean Old Cities became pockets of deprivation as the number of these cities suffer from the absence of a clear waste strategy for collection, treatment and storage of solid waste and wastewater. The problems facing Mediterranean cities are summarized by the European Environment Agency (EEA) (1999) by seven main points: (1) Excessive urbanization, (2) unregulated agricultural practices, (3) intensive fishing, (4) intensive aquaculture, (5) unregulated industrial activity, (6) maritime transport and (7) over tourism.

The manifestation of the above-mentioned problems is visible on the physical, the environmental, the economic and the social realm of the Mediterranean coastal city. Facing these issues demands innovative solutions through the process of urban management and regeneration; however, the structural constitution of the Mediterranean cities constrain the elaboration of such approaches (Priority Actions Program (PAP), 2004). The Priority Action Program, 2004 defines these constraints as follows:

- The rigidity of the institutional arrangements is a main obstacle when it comes to innovative solution for the management of the coast. The governing institutions are usually highly centralized administrative systems organized along traditional sectoral compartments. Such systems imposes limitation on the inclusion of the private sector often essential to resolve complex problems.
- The weakness of the local authorities in the Mediterranean cities also influences the implementation of solutions. These authorities are not equipped enough and often employ dated tools such as zoning plans facing complex and modern problems.
- The scarcity of financial resources in the Mediterranean cities of the south often limits their ability to intervene and repair the degraded coastal conditions. In this light, international donors can be beneficial; however, donors may have their own priorities and agendas.

Lebanon shares most of these issues with Mediterranean cities of the South. The Lebanese coast groups three major populated coastal cities, Beirut, Saida, and Tripoli, while, the rest of the population resides mainly on in the suburbs next to these cities and on the hills overlooking the coast (

Figure 6, Figure 7) (DAR - IAURIF, 2005).

However, the rest of coastal strip, if not populated, is subject to urbanization by industrial developments, recreational facilities, ports and airport, and land reclamations (Lamy & Bou Aoun, 2017). The development of the coast challenges the notion of the beach-as-democracy. Most of these developments prohibit physical accessibility to the beach (private beach resorts), block visual connectivity with the sea (buildings above street level and fencing around coastal developments), disfigure the coastal edge

(landfill of Dekerman Saida) and erase the social value of the coast (new commercial port in Saida). Even though Lebanon have signed the Madrid Protocol in 2008⁴, for the protection of the coastline, recent costal developments do not respect the notion of publicness of the coast. It is worthy to note that the Lebanese legal system allow such deregulation.

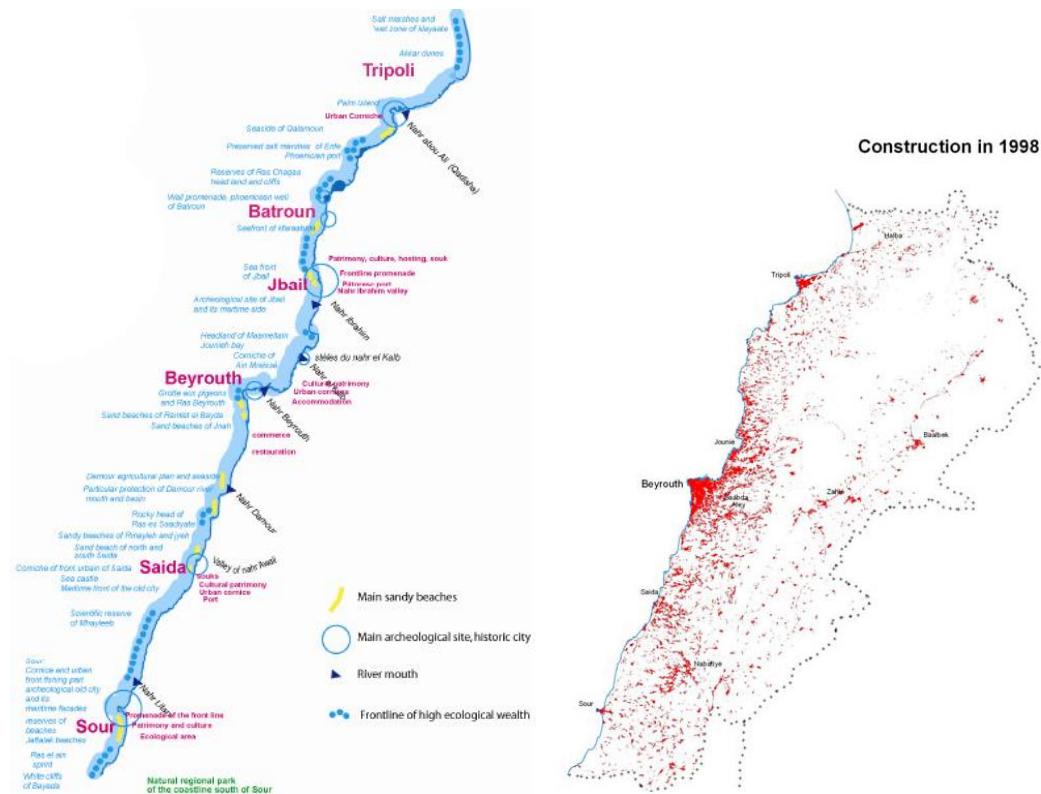


Figure 6- The coastline, a fragile asset
 Figure 7- Population in Lebanon in 1998
 Source: NPMP/LT 2005

⁴ According to the Madrid Protocol (2008), a 100m setback from the sea should be respected in coastal area, and the provision of public access to the coast is a must.

B. **Connectivity in coastal Mediterranean cities**

In light of the challenges facing Mediterranean coastal cities, this section further discusses the consequences of vehicular dominance and unplanned city development on the relation of the city with its coast. In the second part of this section, tools to enhance connectivity are discussed based on mobility and adaptable streets types.

1. Consequences of unregulated city expansion and vehicular dominance

As discussed in the previous section, Mediterranean cities were influenced in the 19th century by the European city model, which caused a dualism in the structure of the city between the old city rich in heritage and the new modern city expansion (Priority Actions Program (PAP), 2004). The unplanned expansion of the city, coupled with the lack of planning of road networks, and infrastructural projects along the coast has caused degradation of agricultural lands, destruction of the environment, separation between the dwelling and the workplace. Subsequently, the city space is dominated and fragmented by road networks. This fragmentation is translated into urban breaks between the old city and the new development and between the city and the coast. Unregulated city expansion and vehicular dominance influence the urban realm on many levels (Hammoud, 2018):

- (1) Loss of character and identity: Dominance of vehicular traffic influence the image of the city and its perception by its inhabitants (Appleyard & Lintel, 1971). Moreover, unplanned roads can erase the identity of the place by covering important landmarks such as the maritime boulevard in Saida covering the sandy coast and disfiguring the Iskandar bay.
- (2) Loss of Active Street Life and social cohesion: Luis Kahn(2016) expressed clearly this notion by stating "We mainly have roads, not streets" (Louis Kahn,

quoted in PPS, 2016). In fact, prioritizing vehicular traffic hinders walkability by narrowing sidewalks, disconnecting paths and transforming residual spaces into parking (Hess, 1997). While street life can be a promoter of social cohesion, depriving the community from this public space causes a loss of the social interactions between the members of this community.

- (3) Isolation: Car dependent streets increase segregation and create isolated communities. Moreover, these unplanned streets often isolate parts of the city, creating insular pockets (Trancik, 1986). In the context of Saida, the maritime boulevard separated the Old City from the sea and the port, while the Riad el Solh Boulevard separates the Old City from the new development of the city. Thus, the Old City becomes an insular entity isolated by streets.
- (4) Loss of Biodiversity: Vehicular arteries and car density in the city are increasing with the increase of population, city growth, and high reliance on automobiles, which in turn disrupt natural habitats and erode the natural system (Benedict & Mc Mahon, 2012).

2. *Enhancing Connectivity*

a. Mobility:

Cities worldwide are reverting back to soft mobility plans, and to public transportation in order to reduce the vehicular footprint on their urban environment, under the name of "sustainable mobility" (Gallo & Marinelli, 2020). These experiences have shown that reducing car traffic and streets' impact, while allowing more space for people and integrating a public transportation network, is not only beneficial for the environment, but also from an economic perspective. Such as in Bordeaux, on the

riverfront of the Garonne, after the regeneration process⁵, and the creation of a tram connecting the suburbs to the waterfront, the city now welcomes over six million visitors each year, an impressive number considering the city has less than a quarter of a million residents (Gaillard-Mairal, 2017). Along with the wine industry, tourism is Bordeaux's highest earning industry (Invest in Bordeaux, 2017).



Figure 8-Space required by different transportation modes to carry 200 people
Source: PTV Vision Traffic

In fact, reducing cars' footprint does not equal to reducing the people number accessing an area. In this light, several studies show that for an equal number of people carried by cars, the space required by tramway is by eight time less (

Figure 8). In this light, given the urban break caused by the maritime boulevard in Saida, the reduction of this boulevard and the implementation of a public transportation loop would be very beneficial in enhancing connectivity along the coastal

⁵ Cars and dilapidated warehouses occupied the docks. As part of the regeneration, the city limited vehicular access to the docks and tore down the old warehouses. The spaces closest to the water became pedestrian zones where people now walk, skate, rollerblade. Cycle paths were put into place and vehicular access was limited.

character zones. The connection between Beirut and the South can be diffused within the city of Saida, given the multitude of longitudinal roads, such as the eastern boulevard.

b. Adaptable Streets:

According to Iacofano & Malhotra, (2019), "Many different types of streets serve different purposes, but all streets should be designed recognizing that humans will be using the street."(Iacofano & Malhotra, 2019, p. 16). Therefore, the authors expand by designating five main principles to be considered when designing a street: First, design streets for humans. Streets should convey an intimate feel that allows users, especially pedestrians and bicyclists, to feel safe and comfortable, through reducing street width, breaking up the length, and adding medians, trees, art and vertical elements. Second, use the right size. Ensuring that travel lanes, bike facilities, pedestrian pathways and crosswalks are appropriately sized in relation to each other creates mutual respect between the different modes of travel. Third, streets should provide multiple benefits. Creating a multifunctional street will have economic benefits, for example when using sidewalks for extension of commercial activities. Fourth, design for a multimodal shift. We should envision walking, biking and transit as the primary modes of travel. Fifth, design for tomorrow. As travel lanes for cars decrease in size, the extra space created can be used for wider sidewalks, more trees, and more bicycle and pedestrian amenities (Iacofano & Malhotra, 2019).

The vision of this book is based on the "Complete streets" model, advocating that streets are not only for moving, but street are rather public spaces, and their successful design supports human activity (Figure 9). Therefore, streets are spaces to

move, gather, shop, play, grow and heal. Nevertheless, not all streets can accommodate all these function, but it is through flexibility that a range of activities are incorporated, for people of all ages and abilities at different times of the day and for different days of the week (Iacofano & Malhotra, 2019).

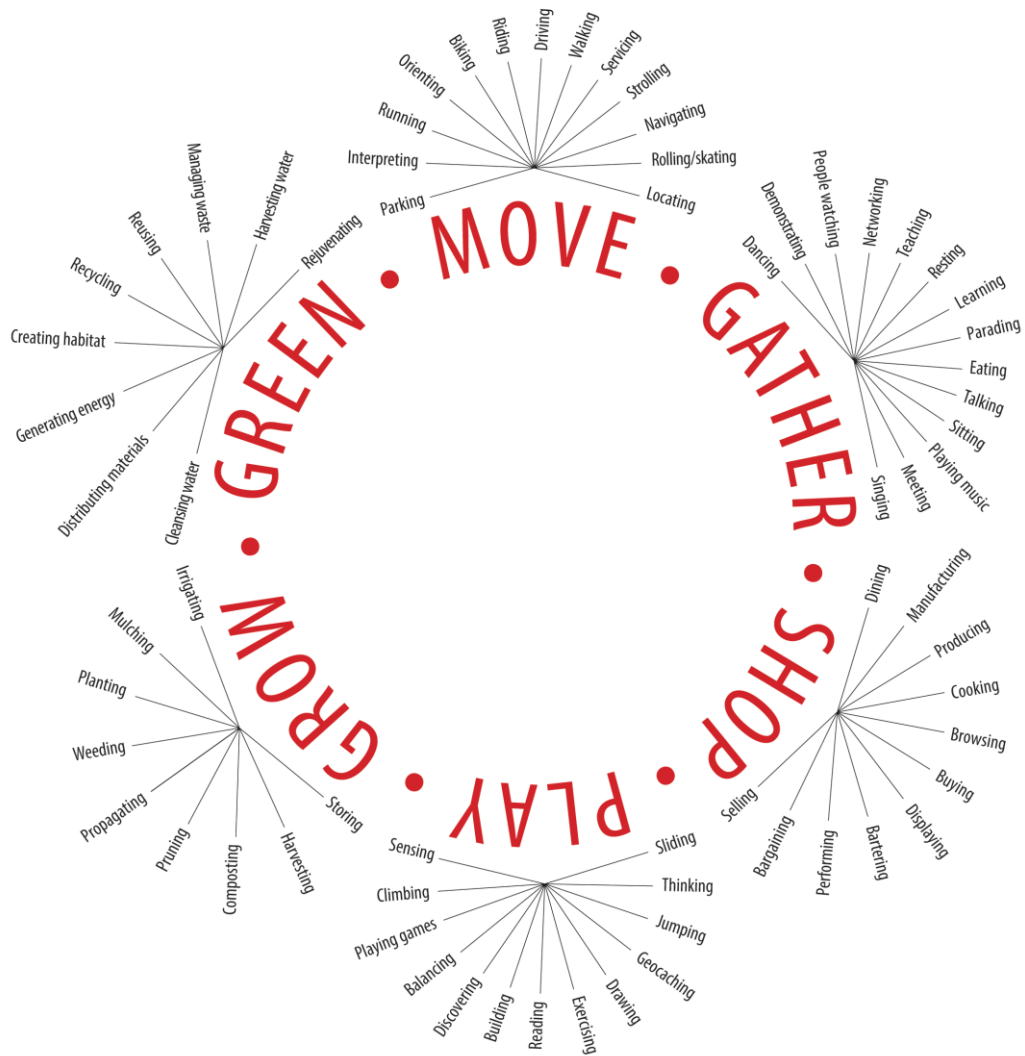


Figure 9-Streets are places of activity
Source: (Iacofano & Malhotra, 2019)

This book offers a wide array of street types safeguarding human scale and interaction, as well as enhancing mobility and connectivity. From these street types, shared streets represent several benefits in the case of the Old City in Saida given the

reduced space in front of the city (Figure 10). This type of streets creates an inclusive place that provides economic, social and environmental opportunities. Programming the street as an extension of the city provides animation of the public realm and incites people to participate in the street life. Moreover, the textures, landscape, and materials used provide a continuity between the public spaces and the road (Figure 11).



Figure 10-Shared street in Seattle, Washington
Source: (Iacofano & Malhotra, 2019, p. 51)



Figure 11-Photo of the shared street in Seattle, Washington
Source: (Iacofano & Malhotra, 2019, p. 51)

Besides from street types, streetscapes and programming can play a major role in enhancing connectivity. Such approaches can consist of creating a mid-lane in the street catering for shopping, events spaces, gathering nodes, and restaurants extension (

Figure 12). These gestures can create commercial opportunities for the dwellers as well as public spaces for gathering.

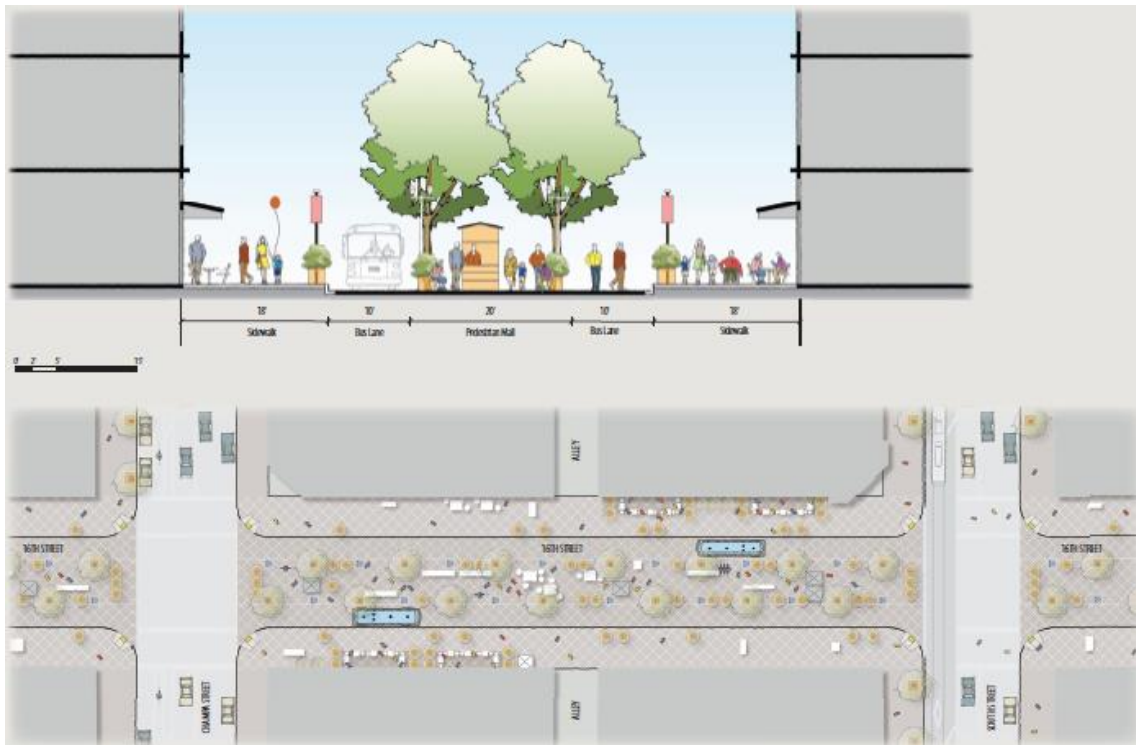


Figure 12-Street mall in Denver, Colorado
 Source: (Iacofano & Malhotra, 2019, p. 141)

Other strategies can be implemented, such as traffic calming elements. For example using shifting streets can reduce traffic speed which creates a safer space for walkability.

Adapting these street types and strategies improves connectivity between the city and the sea, as well as, connectivity along the coastal area. However, the implementation of these strategies demands integrated process between public agencies such as the municipality of Saida and private investors, such as shop owners, restaurants owners, union of craftsmen and the dwellers of the city.

C. **Integrated Coastal Zone Management as general framework:**

Issues facing coastal cities intertwine across levels and intersect several layers. Facing these issues requires an integrated solution that cuts across the different scales of

the coastline and deals with the wide array of functions that animate the coast. Thus, the integrated Coastal Zone Management rises as a planning approach promoting sustainability of coastal cities.

1. Definition

The concept of ICZM was conceived in 1992 during the Earth Summit of Rio de Janeiro and elaborated in the proceedings of the summit within Agenda 21. The European commission defines ICZM as follow:

"A dynamic, multidisciplinary and iterative process to promote sustainable management of coastal zones. It covers the full cycle of information collection, planning (in its broadest sense), decision-making, management and monitoring of implementation.

ICZM uses the informed participation and cooperation of all stakeholders to assess the societal goals in a given coastal area, and to take actions towards meeting these objectives. ICZM seeks, over the long-term, to balance environmental, economic, social, cultural and recreational objectives, all within the limits set by natural dynamics.

'Integrated' in ICZM refers to the integration of objectives and to the integration of the many instruments needed to meet these objectives. It means integration of all relevant policy areas, sectors, and levels of administration. It means integration of the terrestrial and marine components of the target territory, in both time and space."(European Environment Agency (EEA), 2000)

In light of this definition, ICZM is a holistic and multi-disciplinary planning approach that addresses difficult management issues of coastal zones and promotes ecological approaches in an attempt to reach sustainability. The framework aims to achieve an equilibrium between environmental, economic and socio-cultural objectives

within the parameters of natural dynamics(PAP/RAC, 2016). In fact, in the absence of integrated and holistic planning and policies, the task of developing sustainable, long-term strategies for coastal zones becomes challenging. Therefore, ICZM rises as a planning approach seeking appropriate solutions and working on long-term strategies and on achieving short-term goals(European Environment Agency (EEA), 2000). ICZM can be applied at different scales. It can be a part of local, regional, national or even international strategic plans. However, ICZM tackles each scale while treating the coast as a large interconnected system of relations.

The purpose of the ICZM approach is to seek solutions for the multiple challenges that are hitting coastal areas such as excessive urban growth, resource exploitation, and eventual hazards and risks (Fabbri, 1998). The main goal of this approach is to arrive to sustainability by working on a holistic multidisciplinary method that integrates economic, social and environmental components and by finding a middle ground between promoting developments and maintaining the environment. It aims to integrate all disciplines in order to avoid fragmentation and sectoral management.

(Khakzad, Pieters and Van Balen, 2015)

The ICZM planning approach also focuses on the efficiency of the management. Thus, it works on reducing as much as possible costly delays in project implementation. Moreover, the ICZM planning approach works on finding strategies that can include mutual co-benefits and trade-offs on several levels in order to attain a sustainable coastal development(PAP/RAC, 2016).

2. The integration concept:

The notion of "Integration" present in the ICZM is the most important aspect of the approach. Integration cannot be fully attained without the involvement of all the partners, stakeholders and the articulation of all policies in a complementary way, with cross-sectoral institutional coordination and regional and local authorities in coastal zones (PAP/RAC, 2016). The integration concept is related to several layers:

- Geographic integration: The coastal system is regarded as an interconnected entity with special importance accorded also to the interconnection between land and sea.
- Integration across time scales: The coast is affected by a wide array of decisions, governmental, and international. The effect of these decisions should be regarded on a short, medium and long scale.
- Integration across sectors: A wide range of activities take place on the coast, such as port activities, fishing, tourism, commerce, industry... Each one of these activities uses the coast in a different manner and modifies it accordingly. Thus, "horizontal integration" between different sectors is necessary to achieve sustainable management of the coast.
- Political and institutional integration: The boundaries of the ecosystem go beyond the local scale; however, the political decisions taken are usually on a local level. Therefore, importance should be accorded to the "vertical integration" from local to international levels. It also means the integrative collaboration between the public and private sector and the integration and involvement of all stakeholders.

- Integration across disciplines: The ICZM approach offers multidisciplinary strategies that acknowledges the scientific, political, social and local expertise.
- Integrating policy, management, education and research: Establishing creative partnerships between government, civil society and the private sector.

3. Principles and Requirements

According to the protocol of the ICZM in the Mediterranean (2008), the goals of this approach are the following (UNEP, 2008):

- Implementing a sustainable approach for coastal areas through rational planning and consideration of the three components of sustainable development equally (the environmental, economic and socio-cultural aspects).
- Preservation of coastal zones for the present and future generations.
- Sustainable and smart use of natural resources.
- Preservation of integrity of coastal ecosystems, landscapes and their physical and geological features.
- Mitigation of the effects of climate change.
- Coordination between the initiatives in the field of coastal strategies whether these initiatives are made by public or private entities. Additionally, finding consistency across all scales (at the national, regional and local level).

The Madrid protocol highlights the fact that policy and goals should be accessible to every concerned stakeholder (UNEP, 2008). Therefore, transparency regarding all stages of the process is necessary. The coordination and the full involvement of all the stakeholders help in dealing with conflicts of interests that might arise throughout the process. Most importantly, the ICZM approach must rely on the

principles of sustainable development(European Environment Agency (EEA), 2000; PAP/RAC, 2016; UNEP, 2008).

4. *Main findings:*

ICZM is an important approach to achieve sustainable development by allowing a cross-sectional integration, horizontal between the different stakeholders and vertical between the different governmental agencies. The adoption this framework will help introduce a new responsive and flexible management plan for the coast of Saida in particular and the Lebanese coast in general, replacing the current dated and rigid approaches used. The application of the ICZM approach requires a coordination of both planning and design tools to ensure its success. On the planning level, ICZM operates through a wide array of tools such as land use management, participatory approaches and round tables, transparent and accessible data platforms, and awareness and incentivizing programs. On the design level, the use of tools that improve sustainability of the coast is required, such as coastal environmental regeneration, and coastal urban regeneration, by using "Nature based Solutions" and " hybrid solution" to improve livability, connectivity and accessibility of the coast. Applying ICZM will encourage diversity, cater for an effective governance, guarantee a balance of opinions, and enhance the cultural and environmental assets of the coast.

D. Sustainable waterfront regeneration as an approach to coastal Mediterranean cities:

1. Evolution of the regeneration concept

Under the umbrella of ICZM, waterfront regeneration, at present, operates as a tool for sustainability. Facing all the issues mentioned in the previous section, many cities worldwide acknowledged the importance of their waterfronts as a main asset, and they are concentrating their efforts on the regeneration of their waterfronts (Kostopoulou, 2013; Schubert, 2010). However, the concept of waterfront regeneration was not always related to sustainability. Since its formalization in the USA context in the 1960's, the concept of regeneration has evolved through time. According to Schubert(2010), four generations of waterfront regeneration approaches can be discerned throughout history. First, in the mid 1960's in North American cities a “project-led” approach was adopted such as in Baltimore. Second, in the beginning of the 1980's, the containerization technologies left some ports underused, and were developed by large-scale projects. Third, in the early 1990's, in Europe, the notion of “Right to the city” emerged and with it, the paradigm of regeneration shifted towards participatory planning culture of seaport cities. Fourth, in the 2000's, Public-Private partnerships were exploited to implement new city marketing projects. In a more general vision, the Priority Action Program, 2004) designates three types of urban regeneration types (Galdini, 2005; Priority Actions Program (PAP), 2004):

- Imposed regeneration: Undertaken after a long period of abandonment of derelict waterfront lands following deindustrialization.
- Opportunistic regeneration: Characterized by private-public partnership looking out for available land for a large-scale project (e.g. Barcelona, Athens)

- Preventive or prospective urban regeneration: Undertaken in zones of social and economic inequity and deterioration (e.g. Istanbul, Aleppo, Alexandria).

The concept of urban regeneration has progressed through the years from a simple form of renovation and rehabilitation of derelict infrastructure and spaces, to include the urban fabric, the revitalization of the economy and city branding. At present, the regeneration concept seeks more social-equity, promotes participation, and social professional integration of the community into a multi-functional context. Regeneration is progressively applying the principles of sustainability while integrating the different layers of the city; that include social, economic, political, environmental and physical considerations.(Priority Actions Program (PAP), 2004)

This thesis will focus on the fourth generation of Waterfront regeneration (with emphasis on the social role of the coast and the "right to the sea"). It will follow the Prospective and preventive urban regeneration type given the context of the case study, Saida, where the old city fabric, continuously inhabited since very early prehistory, remains neglected at present.

2. What is waterfront regeneration?

Regeneration is an organic metaphor, considering the city as a living organism that evolves as considered by Geddes (1915). This organism is kept alive by several systems, assimilated to the different network sustaining the livability of the city. Thus regeneration is concerned with improvement of economic, social and environmental networks in order to sustain vitality of the urban environment and make it more resilient by facing immediate challenges, while preserving for future needs. In fact, urban regeneration is a tool for sustainability, as it rejoins the main goal of sustainability in

improving the quality of life and viability of the built, social, and natural environment (Tanrikul & Hoşkara, 2019) as well as conserving resources.

Urban regeneration takes into consideration the complexity of urban dynamics. Therefore, it is applied through a horizontal integration, which comprise several fundamental principles listed by The Priority Actions Program (2004) as follows:

- Urban regeneration is location-specific: it deals with difficulties specific to all urban layers however, each component is dealt with in a specific manner. For example in Genoa, the regeneration process dealt with the old core in a different manner than the waterfront, while maintaining a continuity between both interventions.
- Urban regeneration deals with different timeframes: it answers to the social needs at present, and then those of long-term sustainability. Thus, it includes lessons from the past to inform actions of the present. Moreover, it tackles environmental balance and continuity of the ecosystem in service of public health and well-being.
- Urban regeneration is multidimensional: requires cooperation between public and private stakeholders. Urban regeneration helps to overcome contradictions, through negotiation and cooperation. Urban regeneration strategies are implemented in one sector and induce positive effects elsewhere.

Moreover, horizontal integration is applied in urban regeneration through tackling the different layers of the city(Priority Actions Program (PAP), 2004). From an economic perspective, this approach aims to attract investors, create employment, and revitalize the urban economy(Priority Actions Program (PAP), 2004). From a social perspective, urban regeneration works on enlarging the supply of urban housing,

develop local infrastructure, highlight social ties between the work environment and the residential environment. From an environmental perspective, it aims to improve living conditions, combat pollution, while taking into account the values and preferences of society and each social group. From a cultural point of view, regeneration aims to enhance architectural heritage (historic core), social heritage, and urban tourism(Priority Actions Program (PAP), 2004).

3. Importance of cultural heritage in the regeneration of Mediterranean cities

Experiences in urban regeneration of Mediterranean cities such as in Genoa and Barcelona have highlighted the importance of a culturally-led process of regeneration, especially in the case of the presence of an old city fabric. Historic Mediterranean cities are historic cities with a cultural nucleus, which most are still inhabitable(Tanrikul & Hoşkara, 2019). They are comprised of physical structures as well as tangible and intangible heritage from the past while presenting the culture and the way of living of its people(Tanrikul & Hoşkara, 2019). Thus, when tackling a Mediterranean city, it is important to acknowledge cultural heritage as a key component of the city system. Assuming Geddes interpretation (1915), the historic city should be regarded as a dynamic adaptive subsystem that evolves following different forces (economic, political, social, and environmental) but managed to maintain its identity, integrity and continuity (Fusco Girard, 2013). Empowering the sustainability of historic city centers is vital for cities by an integration of the places of origin, identity, and memory in the process of regeneration(Tanrikul & Hoşkara, 2019). In fact, a cultural-led regeneration should integrate the three folds of heritage: the built heritage, the natural heritage and the intangible heritage in order to attain sustainability.

i. Regeneration of built heritage / Preservation, rehabilitation and continuity:

Historical city centers are places of memories and meanings reflected through the building stock, urban texture, and traditional life forms (Tanrikul & Hoşkara, 2019). The preservation of historical city centers triggers a sense of social cohesion and inclusion necessary in the context of developing countries (Priority Actions Program (PAP), 2004). The regeneration of the old core empowers the presence of the historical building stock, reignites social memory, promotes the formation of an urban identity, creating a social attraction center, and providing economic benefits to the city with its cultural center and touristic potentials (Tanrikul & Hoşkara, 2019).

According to Al-Harithy, heritage should always "remain linked to the cultural context to which it belong" (AL-HARITHY, 2005). The restoration and conservation of the built heritage should not aim at its internationalization, or else it risks being packaged and frozen for the world to admire. Nor should it be nationalized, or else it might fall into a politicization of the national identity. Heritage should be acknowledged as an open process of production, rather than a product. Its transformation is sustained by roots in the identity of a local community (AL-HARITHY, 2005). From this perspective, It is necessary to protect and refunction built heritage in an integrative process, within the framework of sustainable conservation principles, objectives and aims, while ensuring a participatory approach throughout the planning and the design process.

ii. Regeneration of intangible heritage / Synergies, innovation and circularization:

Most Mediterranean cities are port cities known for their active waterfronts. The interface between the city and its port is a key place where economic strength,

competitiveness, human capital and global appeal, population and migration processes are increasingly concentrated (Kostopoulou, 2013). "They are laboratories of creativity, stimulated by their specific cultural historic landscapes"(Fusco Girard, 2013, p. 4330). The waterfront is an integral part of the Mediterranean historic city, and resestablishing interdependence between a city and its port means the integration of cultural heritage , economic development and social economic systems(Fusco Girard, 2013). In this light, Fusco (2013) adds to the definition of the city by Geddes (1915), as he attributes to it three main characteristics: interdependence (between human-made, natural, social capital, *etc.*); circular processes (which stimulate creativity) and synergies (which increase the resilience capacity).

In some culturally-led regeneration scenarios, intangible heritage is addressed through the elaboration of events as catalysts of change along the waterfront, such as in Barcelona (Annex 1) and in Genoa (Annex 2) . In other Mediterranean cities, intangible heritage is brought to the foreground of the regeneration scheme by reinforcing already existing practices with an innovative approach. For example, reinforcing the traditional crafts and the fishing industry in Ancona in Italy and creating an ecosystem around them, transformed the waterfront into a creative milieu. However it is important to note that creativity and innovation should not only focus on research and cultural industries, but also tackle the city's organizational structure, in order to reduce its dissipative momentum (Fusco Girard, 2013). In this perspective, culturally-led regeneration of the waterfront of old port cities aims at revitalizing the metabolism in the port areas and spreading it to the whole urban system. This approach will result in integrating economic wealth production, ecological preservation and reduction of social marginalization, starting from the ancient historical roots.

iii. Regeneration of Natural heritage / Nature-Based Solutions:

As urbanization pressure on coasts increases, the marine and terrestrial ecosystems are being altered. The sprawl of settlements along the coast induced a disfiguration of the coast through the use of hard infrastructure such as sea walls, and wave breakers, leading to the loss of ecosystems. In addition, endorsing marine transportation for shipping and tourism, reclaiming lands, and creating access to the sea for ports openings has multiplied the negative effect of the environment (Morris et al., 2019). However, with climate change and rising sea levels, hard infrastructure is proving to be obsolete, and the damage caused to the ecosystem is having social as well as economic repercussions. Morris (2019) argues that shoreline protection should be "more inclusive, resilient and safe [...] for people and nature, which maximize benefits for ecosystems, society and economies"(Morris et al., 2019, p. 171). A proposed design solution for the above mentioned issues relies on Eco-engineered shorelines and Nature-Based Solutions.

1. Definition:

Eco-engineered shorelines are a set of design solutions relying on biomimicry that serve the purpose of shore protection while enhancing the ecosystem, regenerating the natural habitat, and benefiting the socio-economic value of the shoreline. According to Morris et al (2019), these interventions are divided into three categories: Soft interventions, hybrid structures and environmentally sensitive hard interventions. In the theory elaborated by Morris et al (2019) this categorization may work, however in practice, environmentally sensitive hard interventions are considered as hybrid because they are nature-based solutions applied on hard infrastructures. The report of "Coastal

Management and Beach Restoration Guidelines in Jamaica" (2017) classifies the intervention in a more practical manner.

2. Types of interventions:

In this part, the coastal defense solution will be divided into two distinct categories. First, the Nature-based solutions, that are divided into two branches, soft and hybrid interventions. Followed by grey interventions, also known as hard interventions, following the classification used by the EU for Jamaica (GFDRR, 2017).

a. Soft interventions:

Soft interventions, also known as, living shorelines, are inspired and supported by nature. Through a planned study of the site, and a strategic placement of components along the coastal profile, these solutions provide a habitat for the fauna and flora, regenerating the ecosystem. Morris et al (2019) specifies that Nature-Based Solutions (NBS) are based usually on habitat-forming species. These types of interventions are also sometimes referred to as green infrastructure, natural infrastructure, and soft engineering.

Examples of living shorelines range from the use of reef-forming invertebrates such as corals, oysters, mussels and worms, to the use of intertidal vegetation such as mangroves and saltmarsh or subtidal vegetation, such as seagrass(GFDRR, 2017). The choice of the specie to be used has to follow several considerations(Morris et al., 2019): First, the specie has to have the ability to reproduce and form a habitat within the conditions of the designated coast. Second, it has to have the ability to form a curb effect for erosion. Third, native species are always better to use than non-native ones.




However, in some cases, the foreign species are used given their additional efficiency, their capability to withstand the local conditions and their friendliness to the local ecosystem. Fourth, it is important to make sure that the species chosen are in line with the socio-spatial activities taking place at this location. For example, if shellfish are chosen on a recreational beach as a mean of withholding erosion of sand, they can cause cuts to the users of the beach given their sharp edges.

The use of soft interventions is getting more and more regulated, recommended, and spread due to their multi-action effect(Morris et al., 2019). In fact, Nature-based solutions provide a wide range of benefits, not only in protection of the shoreline, but also in enhancing socio-spatial activities, activating spaces, and inviting tourism. Moreover, these solutions are more resilient once the ecosystem has recovered, they can adapt to changes and self-repair(Morris et al., 2019). Additionally, NBS are cheaper than hard infrastructure, and they promote the involvement of the community by building the resilient capacity of the ecosystem(GFDRR, 2017). Nevertheless, soft interventions have some disadvantages when it comes to their implementation, as there is not much guidance regarding these practices(GFDRR, 2017). Moreover, the level of protection acquired cannot be exactly determined, and the protection takes time to develop once the intervention is implemented(GFDRR, 2017). Finally, the use of NBS has to follow specific guidelines when it comes to the choice of species and the localization of the intervention(Morris et al., 2019).

Table 1 summerizes the possible NBS solutions in the context of Saida, highlighting their position, their advantages and their disadvantages. Amongst the strategies reviewed, beach vegetation, seagrass and reef balls are applicable in the context of the case study of Saida, in the context of a sandy shore. Beach vegetation is

already existing on site and can be amplified such as in Tyre where the backdrop of the sandy beach is full of vegetation. As for seagrass, the Mediterranean basin is a good ground for the *Posidonia oceanica*, commonly known as Neptune grass or Mediterranean tape-weed and restoration of grass meadows have been taking place between Cyprus and Spain. For the rock coastline, reef balls can also be used as a protection perimeter, however hybrid intervention are more suitable.

Table 1 - Nature-based solution for caostal areas
Source: Following (GFDRR, 2017)

STRATEGY	REFERENCE IMAGE	LOCATION	ADVANTAGES	DISADVANTAGES
Beach vegetation planting	Location: Tyre Source: Lebanon traveler.com 	Shoreline	<ul style="list-style-type: none"> • Reduce the threats of coastal erosion and flooding • Capture air blown sand and protect sand dune • Create new habitats 	<ul style="list-style-type: none"> • Difficulty to ensure that the vegetation takes root
Seagrass restoration	Location: Cyprus Source: popularscience 	Shoreline	<ul style="list-style-type: none"> • Slow down coastal currents which helps stabilize sediments and retain sand • Provide habitat • Clarify water 	<ul style="list-style-type: none"> • Degraded naturally • Degraded from human activity
Coral reef restoration	Location: Mediterranean Source: http://fingerlakesbiobioar.com/ 	Nearshore	<ul style="list-style-type: none"> • Provide ecosystem services and habitat • Act as a natural break water • Reduce the risk of coastal erosion and flooding 	<ul style="list-style-type: none"> • Degraded naturally by storm events such as hurricanes as well as coral bleaching events • Degraded from human activity such as overfishing and coastal development

I will also explore furtherly reef balls use given that they are very beneficial and adaptable to the case study I am considering. Reef balls are hollow hemispherical-shaped artificial units made for the enhancement of habitats and coral reef restoration but they also act as coastal protection structure. When gathered, reef balls act as a submerged breakwater. These structures are present in different types, such as layer cake, lobster cake, stalactites, stalagmite... ('Izzat Na'im et al., 2018). According to

Harris (2009) "Submerged breakwaters [formed with reef balls] can assist with shoreline stabilization, while minimizing adverse impacts on adjacent beaches"(Harris, 2009, p. 236). Thus, artificial reefs contribute to stabilization through wave attenuation and wave refraction. Harris discusses the example of the Gran Dominicus (

Figure 14), where reef balls were used to stabilize the sand and enlarge the shore (Harris, 2009, p. 239). This intervention was very efficient, even in withstanding hurricanes. Following this intervention, the coastline gained 10m of width in a span on 2 years(*Table 2*,

Figure 6). The Dominicus example is illustrated below in *Table 2*.

Table 2- Changes in Shoreline and Sand Volume Calculations 1998 to 2001
Source: (Harris, 2009)

Profile Line	Shoreline Change (meters)	Sand Volume Change (m ³ /m)
West	+10 m	+25.65 m ³ /m
East	+13 m	+44.25 m ³ /m
Control	0 m	+2.0 m ³ /m

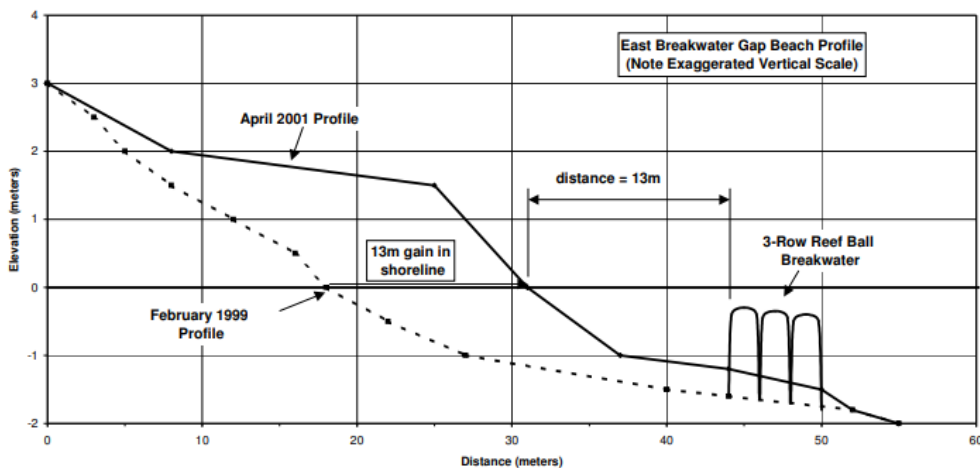


Figure 13- Beach Profile across Breakwater at Gran Dominicus
Source: (Harris, 2009)



Figure 14- Gran Dominicus 3-Row Reef Ball Submerged Breakwater
Source: (Harris, 2009)






b. Hybrid interventions:

Hybrid interventions are a combination of nature-based and grey infrastructure aiming to provide immediate shoreline protection solutions coupled with wider benefits. NBS and hard infrastructures can be complementary (GFDRR, 2017). They can be planned from ground zero as hybrid intervention(GFDRR, 2017), or NBS solutions can be applied on existing hard structure to make them more environmentally sensitive and promote habitats(Morris et al., 2019). According to Morris et al (2019), such approaches can provide considerable benefits by supporting wider management and protection goals, regenerating ecosystems and/or providing added protection beyond that of traditional hard structures. Morris et al (2019) designate these interventions as environmentally sensitive hard defenses. The authors explain that the goal of such interventions is maximize the intertidal surface area available for colonization and to include habitat structural complexity. Hybrid interventions include but are not limited to stepping structures in order to ease access and provide space for habitat, sloping structures, adding macroscale habitat features such as horizontal fins or complex tiles, integrating holes of varying sizes as shelter for fish, casting pits, grooves, water-

retaining structures such as flower pots and other features into the concrete panel or block (GFDRR, 2017; Morris et al., 2019).

Hybrid interventions are the most convenient to use because they combine the advantages of the hard structure with the benefits of the nature-based solutions (Morris et al., 2019). Subsequently these interventions have an immediate effect on the shore protection, coupled with the ability of regenerating habitats. They provide opportunities for innovation through the process of combining several interventions in a logical succession, creating a more resilient and more diverse shore (GFDRR, 2017). The different hybrid interventions that can be used on the coast of Saida are summarized in Table 3. From these interventions, Stepping stones is the most beneficial given its ability to promote accessibility to water and to enhance the connectivity between land and sea. The other interventions can be used in spaces where accessibility to the water is not desirable.

Table 3 - Hybrid solution for coastal areas

STRATEGY	REFERENCE IMAGE	LOCATION	ADVANTAGES	DISADVANTAGES
Stepping and sloping structures	<p>Location: Barangaroo Source: asla.org</p> 	Shoreline	<ul style="list-style-type: none"> • Reduce the amount of wave energy • Promote habitat • Incite access to water • Promote socio-spatial activities 	<ul style="list-style-type: none"> • Does not have as wider benefits as the soft interventions • Expertise in this domain are still raw and applications are not widely spread
Adding microscale habitats - Complex tiles	<p>Location: Sydney Source: Daily telegraph</p> 	Shoreline	<ul style="list-style-type: none"> • Promote habitat • Maintain the stability of the seawall 	
Drilling holes in seawalls	<p>Location: Sydney Source: Hindle, 2018</p> 	Shoreline	<ul style="list-style-type: none"> • Promote habitat • Maintain the stability of the seawall 	
Water Retaining features – Flower pots	<p>Location: Sydney Source: smh.com.au</p> 	Shoreline	<ul style="list-style-type: none"> • Promote habitat • Maintain the stability of the seawall 	
Rock pools	<p>Location: N/A Source: Hindle, 2018</p> 	Shoreline Nearshore	<ul style="list-style-type: none"> • Promote habitat 	

c. Hard interventions:


Hard interventions, also known as, engineered, structural solutions, put to use mineral and hard materials such as rocks, concrete, steel, masonry, asphalt, and may sometimes use wood and geotextile (Morris et al., 2019). They are typically impermeable structure that block the energy of a wave, deflect a current and protect land from incident waves(GFDRR, 2017). These interventions include breakwaters, connected, detached and submerged, seawalls, revetments, and groynes. Within the wider literature, these types of interventions are also sometimes referred to as grey infrastructure(GFDRR, 2017).

Hard interventions are widely used due to the detailed understanding and exact science behind them (Morris et al., 2019). Moreover, there is extensive experience in undertaking these types of structures, which makes it easier and safer to implement. Additionally, these types of interventions will provide immediate effect in mitigating natural disasters (Morris et al., 2019). However, grey infrastructure has major disadvantages mainly when it comes to preserving the ecosystem. Hard interventions usually impact habitats, weakening them. These types of structures are not as resilient as a nature-based solution. They might rupture and become damaged causing larger disasters. Furthermore, grey coastal infrastructure serves only one purpose, to protect the shore, but does not benefit anything else. From another perspective, protecting the shore will allow the shoreline to develop well, from an ecological perspective. In some cases, after construction of hard measures, ecosystems recover.

Table 4 summarizes the hard interventions gathered from several resources including the "Coastal Management and Beach Restoration Guidelines in Jamaica"(2017) and Morris et al(2019). These interventions dominate the Lebanese

coast in an aggressive way. In Saida, the government has undertaken several hard coastal infrastructures that have proven malefic to the ecosystem, the socio-spatial activities, and the economic development of the city. Examples of these interventions are used also in the Table 4.

Table 4 - Hard interventions for coastal areas

STRATEGY	REFERENCE IMAGE	LOCATION	ADVANTAGES	DISADVANTAGES
A shore-connected breakwater	Location: Saida Source: marcontracting.com 	Shoreline Nearshore	<ul style="list-style-type: none"> • Reduce the amount of wave energy • Promote sedimentation • Provide a fully protected harbor for docking 	<ul style="list-style-type: none"> • May interrupt sedimentation and cause accretion • Obstruct visual access • Potential water quality degradation • Loss of habitat • Pollute and trap water
Detached breakwater	Location: Kamur, India Source: Wikipedia 	Nearshore	<ul style="list-style-type: none"> • Reduce the amount of wave energy • Promote sedimentation • Can be submerged 	
Revetment	Location: Saida Source: Mapio.net 	Shoreline	<ul style="list-style-type: none"> • Protect against erosion • Reduce wave overtopping • Reduce wave overtopping 	<ul style="list-style-type: none"> • Disrupt natural shoreline processes • Destroy shoreline habitats • Reduce the width of inter-tidal beaches • High visual impact
Seawall	Location: Saida Source: Khoury contracting 	Hinterland Shoreline	<ul style="list-style-type: none"> • Protect the land and upland areas from erosion and flooding 	<ul style="list-style-type: none"> • Exacerbate coastal squeeze • Cause down drift • Effect existing • Wave and current patterns
Groynes	Location: Barcelona Source: World Today 	Shoreline Nearshore	<ul style="list-style-type: none"> • Control and manage the natural movement of beach material • Slow down the longshore drift • Deflect tidal currents away from the shoreline 	<ul style="list-style-type: none"> • Increase amount of sediment moving offshore • Break the continuity of a coastal strip

4. Threats of cultural led regeneration

Capitalizing on heritage can be beneficial for the economy of a city. Culture can serve well as a motor for the regeneration process, attracting capital, rebranding the city in a more attractive allure, and evolving the economy into a tertiary sector, mainly tourism. However, this approach has its disadvantages if not considered carefully. As Stated by Al Sayyad (2001) using heritage to attract tourists might be equivalent to "manufacturing" it, leading to a production of the heritage in order to supply a demand. The exploitation of heritage in the light of the tourism industry can create three distinctive landscapes (AlSayyad, 2001): First, history can be used to create a dream landscape, culminating into a "Densification of heritage". In this lens, all building typologies and the spatial configuration are packaged and crystallized in the form of products. This idea rejoins the notion of internationalization of heritage tackled by Al-Hartihy (2005) previously. Second, history can be selective in order to polish a certain image to tourists. Which will lead to a commodification of the heritage and its nationalization, reinforcing a particular political identity to the considered heritage. Third, heritage can be taken out of context, losing its ties to culture. Such as in Las Vegas(AlSayyad, 2001), where cultural heritage is assimilated into symbols. Additionally, a culturally-led regeneration, mainly in historical cities, may induce gentrification in the light of lax regulatory frameworks and lack of participation.

To mitigate the threats of a culturally led regeneration in the context of Saida, participation is quintessential. The participatory process should be maintained on three stages. (1) Participation should begin during the planning phase of the project, (2) extend to the implementation phase, and (3) continue after the completion of the

project. The application of the culturally led regeneration is best applied under the framework of the ICZM taking benefits of the cross-sectional integration provided, to secure a flexible and comprehensive application. Moreover, an integration between the three components of heritage (natural, tangible and intangible) is essential in the process of regeneration. These components cannot be perceived as independent entities, they are rather interconnected in a circular dynamic. Built heritage, intangible heritage and natural heritage thrive in synergy and symbiosis. For example, in the case of Saida, regenerating the coast using NBS solutions (natural heritage) will enhance habitats in the area and the production of fish, which will benefit the fishermen of Saida (intangible heritage). In their turn, the fishermen residing in the old city will invest in rehabilitating their homes (tangible heritage), rendering the city more appealing for tourists who will visit more often and encourage the arts and crafts sector in the city (intangible heritage). This is just one example of the ripple effect accompanying the regeneration process. However, the success of such approaches requires not only an integration between planning and design, but also an integration between different design disciplines, mainly urban design and landscape architecture.

E. Towards an integrated approach between Urban design and landscape architecture

Based on the previous discussion on coastal issues, integrated coastal management and waterfront regeneration, this section will propose an integrated approach to the analysis, planning and design of the coast of Saida to ensure present and future sustainability. Regeneration rejoins sustainability by tackling the different layers of the city and improving them for the present needs and the needs of the generations to

come. However, when tackling the coast, the relationship between these different layers becomes very intricate. In fact, coastal areas are the “interface” between the city and the sea, the rigid and the fluid. In specific, urban coastal areas form a particular landscape, characterized by a complex system in which the built fabric, the socio-cultural, economic and ecological systems dynamically intertwine. Therefore, an integrated approach between landscape architecture and urban design is necessary to enhance the sustainable urban coastal area. We will attempt to tackle this issue through the notion of Landscape Character assessment while integrating an urban scale to it.

1. Landscape Character assessment:

When defining coasts as a particular landscape, this notion does not entail only the landform, green cover, soil ... In fact the landscape by itself is an integrating concept. According to Fairclough (2018), landscape "*embraces all the physical, natural and social/cultural influences that have shaped the land, together with the ways that people interact with and perceive it, together again with the act of shaping future landscapes – the processes by which mere ‘land’ is transformed into landscape*"(Fairclough et al., 2018, p. 8). In light of this definition, Landscape rejoins sustainability as a force acting for the future, a driver of change, "a way of seeing that becomes a way of acting"(Fairclough et al., 2018, p. 8). However, to put the power and potential of the landscape approach to use, it is important to understand all the connections between the different components of the landscape before proceeding into action. Thus, the importance of the characterization process allows the definition of a distinct, recognizable and consistent pattern of elements in the landscape (Vogiatzakis, Griffiths & Morse, 2007).

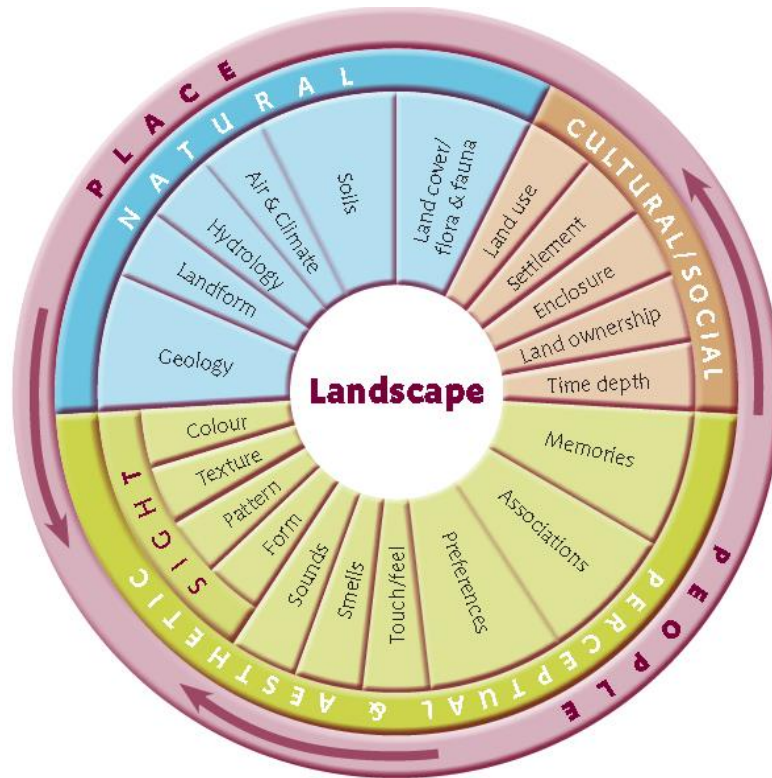


Figure 15-What is Landscape?
 Source:(Graham Fairclough et al., 2018)

Landscape Character Assessment (LCA) is a set of techniques and procedures to map differences between landscapes, based on their historical evolution, physical characteristics and land use (bringing in the human dimension) (Griffiths et al., 2004). In fact, LCA defines landscape characters through a double process, landscape typology and landscape classification. Landscape typology refers to the process of defining the different layers used, the scale, the objectives of the study and the techniques used for the sampling. While Landscape classification is in relation to the mapping exercise, the translation of the typologies into a concrete limited entity. The Landscape Character Assessment is conducted as a four step process(Tudor, 2014): Beginning with defining the scope and the purpose of the study, followed by a desk

study of available information, then by a field verification study, and ending with classification and the description.

According to Tudor (2014), LCA is considered as a tool for sustainability due its following qualities:

- It provides an integrating spatial framework – better understanding
- It provides a landscape evidence base to inform a range of decisions/ applications
- It involves an understanding of how the landscape is perceived
- It can be undertaken at any scale
- Landscape is everywhere and all landscapes and seascapes have a character

2. Adjusted LCA for coastal urban contexts:

This thesis is informed by the Character-based approaches of landscape character assessment (LCA) and the historic landscape character (HLC). HLC and LCA are both complementary approaches. They both enable strategic landscape decisions in spatial planning and development control, they both approach landscape with a practical goal, they are spatially based and heavily dependent on mapping, and they both aim for a comprehensive coverage. Despite their similarities HLC and LCA emerged from two different disciplines, LCA is carried out by landscape architects and planners while HLC is carried out by archeologists. Thus, landscape character assessment tackles the natural and cultural components of a landscape, while historic landscape character studies the human activity and its impact on the landscape. In fact, HLC adds to the LCA the notion of time-depth highlighting the power of cultural forces in shaping the landscape over time (Griffiths, 2018).

The inventory used for the LCA process stems from the layers that define the landscape: Natural (Geology, landform, hydrology, soils, land cover...); Socio-cultural (Land use, ownership, enclosure, settlement...); Perceptual (memories, preferences, textures, colors...) (Griffiths,2018). Most of these layers are used in this thesis research; however, a new category of layers is introduced in order to narrow the scale of the characterization and the make it more suitable for an urban design study. The layers added are of Urban/Physical subject such as, buildings height, road networks, walkability. In addition, layers related to the coast were added in order to make the study more location-specific, such as type of coastline, size of embankment, accessibility of the coast, visibility of the sea. Subsequently, the layer adopted in our research can either fall under the category of cultural/ human-induced systems or natural system. The differences between our approach and the LCA approach is first related to the scale. The scale adopted for LCA and HLC is mostly national and regional, while our research tackles a local scale. Furthermore, the layers and categories used in the inventory of our research are more site-specific to coastal Mediterranean cities of the south, facing encroachments on the public maritime domain.

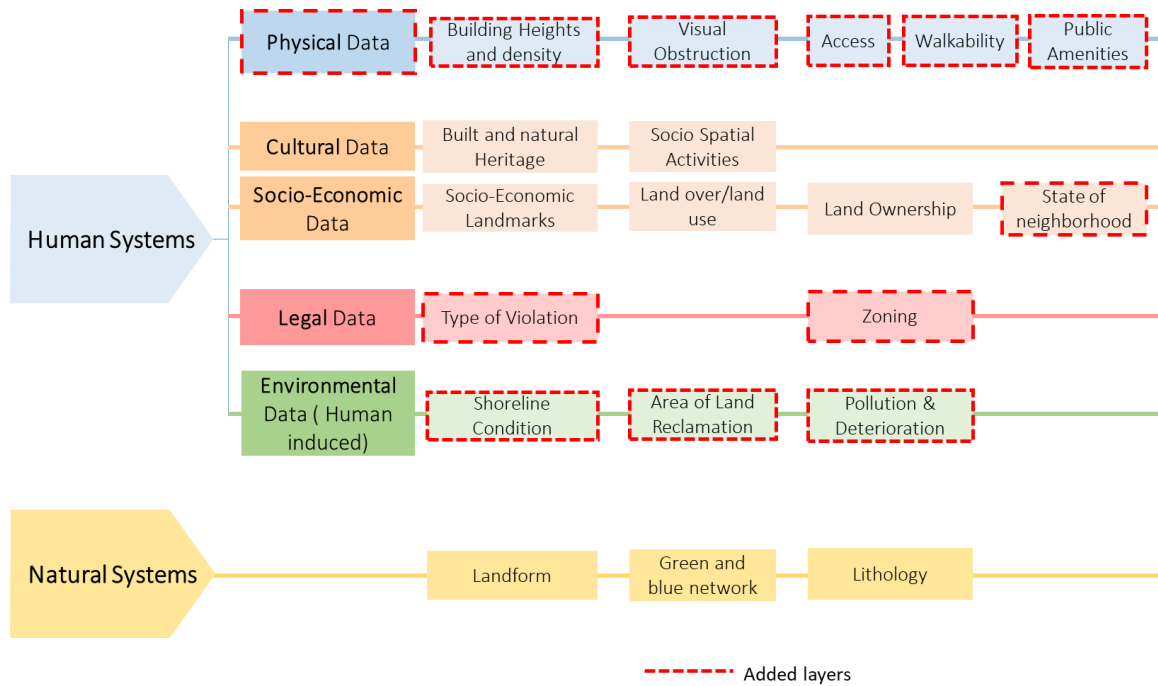


Figure 16 - Layers used in Coastal Landscape Character Assessment
Source: Author

Besides landscape character assessment, the similarities between the historic landscape character and this current research reside in the use of historic aerial photos in order to analyze the distinctive character and settlement patterns evolution.

It is worthy 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.

F. Concluding framework:

In brief, the framework proposed is a comprehensive process between analysis and intervention. The analysis process is based on integrating both landscape architecture and urban design through the adaptation of Landscape Character Assessment to the coastal urban setting. Thus, leading to the designation of comprehensive coastal zones, named Coastal Urban Landscape Character Zones. The assessment of these zones constitutes the base of the intervention and informs the choice of strategy adequate for each zone.

In this context, this thesis tackles the coast of Saida in its entirety and the zone of Old City specifically, in the aim of transforming this coast into a sustainable coastal development, under the umbrella of ICZM. The framework of ICZM is necessary given its integrative quality and its scalability, allowing to tackle each CULCZ on a small scale and relate it to the coast as a holistic entity on a larger scale.

In this context, the zone of the Old City is tackled through a culturally-led regeneration approach following the analysis of this area. This approach aims mainly to establish connectivity and continuity between the city and the sea on two levels. Connectivity along the coast between the zone of the Old City and the adjacent zones, and connectivity across the coast between the city and the sea. The regeneration approach employed is a three-fold integrated process. It tackles (1) built heritage through preservation, rehabilitation and continuity, (2) intangible heritage by addressing the informal practices taking place on the coast, and creating synergies to revitalize the socio-economic activities, and (3) natural heritage using nature based solution and hybrid ecological interventions. This approach requires a coordination between planning and design, combining planning tools such as participation, and land

management with design tools such as nature-based solutions, to implement a sustainable design proposal of an ICZM of the coast.

This framework is developed as prototype for Mediterranean coastal cities. The applicability of the approach elaborated (culturally led regeneration) depends on the context of the CULCZ chosen. The framework elaborated is summarized in

Figure 17.

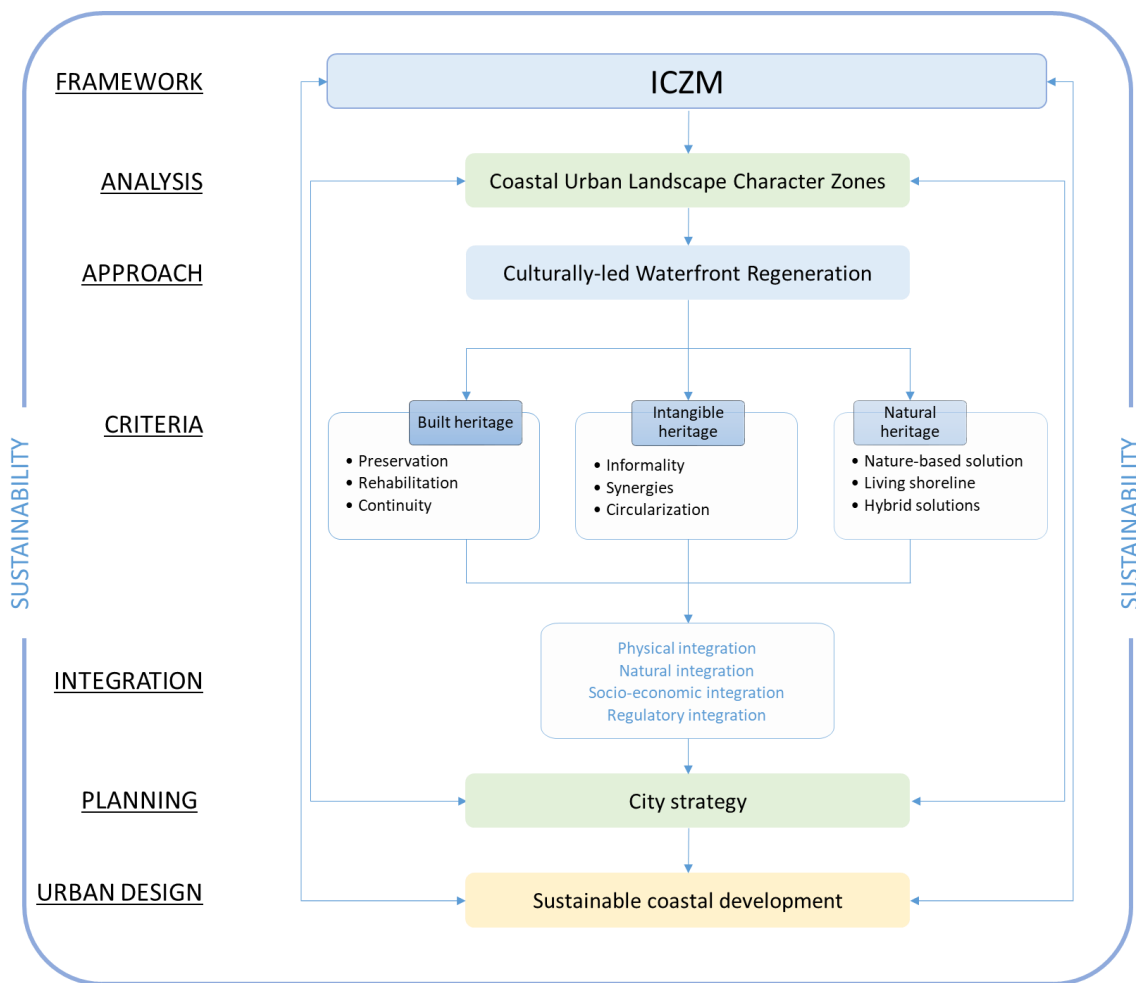


Figure 17 - Research framework
Source: Author

CHAPTER III

METHODOLOGY

The proposed research methodology stems from my research question and is inspired by the notion of Character zones elaborated in *Beirut, Zone 10*. It adopts a comprehensive understanding of all the layers of a landscape in relation to its components and users: social, morphological, legal, and environmental layers. However, the aforementioned methodology is adapted to fit the urban analysis of a trench of the Lebanese coastline. The research methods adopted in this thesis are based on a qualitative approach, as defined by Gilham, in order to “illuminate issues and turn up possible explanations” of the changes along Saida’s waterfront. As Yin advises, I used “multiple, not just single, sources of evidence”(Yin, 2014), relying on primary and secondary data, in order to corroborate the facts.

A. Elaborate a theoretical framework

1. *Literature on Landscape Character Assessment*

Purpose: Understanding Landscape Character Assessment and its adaptation to the Lebanese Coastline (Table 5).

Data:

Type of Data	Source
Literature review on theoretical and practical LCA, in countries with similar context such as Cyprus	Peer reviewed articles – Books

Table 5-Data and source for LCA

Source: Author

Tools and process: I gathered the data through documentation from online sources, libraries, online journals and reports. As well, I considered some case studies with

similar context to Saida where LCA has been conducted, notably in Sydney and through the works of Medscapes in the Mediterranean area.

Output: We elaborated a set of guidelines for the Characterization of urban coastal areas. These results is simulated into a diagram inspired by the diagram of MEDSCAPES.

2. Literature on Historical Landscape Assessment:

Purpose: Revealing the old Landscape character zones in order to depict what was erased and what was kept from the historical landscape of the coastline. In addition, this characterization will help depict repeated trends of adaptation to certain landscape feature, from which I may draw inspiration for the intervention area (Table 6).

Data:

Layer	Map
Historical	Aerial photographs
	Old maps
	Archival records
	Testimonies
	Reports

Table 6-Data and source for HLA
Source: Author

Tools and process: I gathered the data through documentation from online sources, libraries, online journals and reports. As well, I considered some case studies with similar context to Saida where LCA has been conducted, notably in Cyprus and through the works of Medscapes in the Mediterranean area.

Output: I elaborated, following this research, a set of historical maps depicting the evolution of character zones throughout time.

3. Literature on Urban design tools and principles:

Purpose: Define criteria for the Character Zones assessment and understand how to act on the urban landscape to improve the livability of the waterfront (Table 7).

Data:

Type of Data	Source
Literature review on urban design tools and principles	Peer reviewed articles – Books

Table 7-Data and source on Urban design tools
Source: Author

Tools and process: I gathered the data through documentation from online sources, libraries, online journals and reports.

Output: I elaborated a set of guidelines and a matrix grouping the different criterias, divided into three layers, the physical, socio-spatial and environmental. Each category has 5 subcategories, and each sub-category is graded from 1 to 5 and suggesting a grading criteria for each principle. The final diagram has the form of a star, and helps visualize the impact of each layer in the CZ (Figure 18).

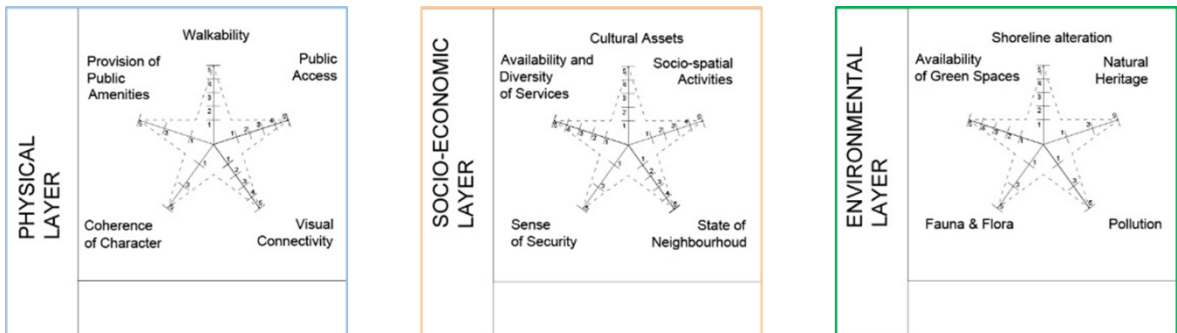


Figure 18 - Star diagram model
Source: Author

B. Develop base-line condition

1. Historical background of Saida

Purpose: Depict the historical evolution of Saida and examine the different historical events that influenced its planning and the costal line modification (Table 8).

Data:

Data	Date	Source	Author
Aerial photographs	1946	IFPO	Poidebard
	1956	Lebanese army	Lebanese Army
	1970	Lebanese army	Lebanese Army
	1994	Lebanese army	Lebanese Army
	2002	Lebanese army	Lebanese Army
	2007	Lebanese army	Lebanese Army
	2017	BING MAPS	Assembled by author
Maps of Saida	1685	National Library of France	French army
	1860	National Library of France	Ernest Renan
	1864	IFPO	Poidebard
	1912	IFPO	Wagner & debes leipzig
	1933	Lilmadina	Durrafourd
	1967	Lilmadina	Durrafourd
	1995	Municipality	Autocad map
Zoning plans	1965	IFPO	Ecochard
	1967	Municipality	Lebanese Government
	1995	Municipality	Lebanese Government
Topography maps	1964	Lebanese army	Lebanese army
	2002	Lebanese army	Lebanese army
Archived Books	1913	تاريخ صيدا	Ahmed Aref El Zein
	1985	تطور صيدا العمراني وتأثيراته الإقتصادية والإجتماعية في المنطقة	Mustafa Dandachli
	2001	Saida 1873-2001	Eng. Ahmad kalash
Pictures	1867 - present	Old and new pics from archives of the municipality, Lilmadina, Rida Chmouni, IFPO, Archnet	

Table 8-Data and source for case profile

Source: Author

Tools and process: I began by superimposing the different maps chronologically and tracing them using AutoCAD, GIS and Photoshop to be able to compare between them.

Output: I conducted a historical characterization based on the aerial photographs and old maps of Saida, which allowed me to establish a comparison between the current situation of the coast and its historical evolution. After superposing the different dated maps and aerial photographs, in a chronological manner, I traced the evolution of the coastline on a series of maps. Additionally, I depicted the remaining parts of the waterfront, and defined a pattern of evolution that can inform us on further development trends and understand the importance of the coastline as an asset through time.

2. Existing condition of Saida

Purpose: Understand the present forces that are shaping the waterfront of Saida to be able to intervene with a place responsive, people centered contextual approach.

Data: The current situation in Saida is analyzed through the different layers gathered for the LCA. This data collection takes as a base the work done by the SUSDS as well as other reports and studies. The layers are divided into two main systems, Human (Table 9) and Natural (Table 10). By human, we designate all the manmade or man influenced layers of the city, while the natural system groups all the other layers.

Human system:

Layer	Map	Source	Date	Comments
Social-Economic	Cultural and Social Landmarks	SUSDS Reports such as “Mashi t Dallik”	2014 2015	
	Socio-spatial activities	Author		Through observation and fieldwork
	Building use	Author		Through observation and fieldwork
	Land use	SUSDS	2014	Updated by Author
	Built heritage	SUSDS	2014	Updated by Author
	Land Ownership	SUSDS for the Old city part.		Updated by Author

		Municipality and Land registry website for the rest of the coastline		
	GF use	Author		Through observation and fieldwork
Physical	Road network	Author	2016	Based on the base map received from the municipality, dated 1995. I will superpose it with the most recent aerial view and update it.
	Parcels	Municipality, but updated by author	2016	
	Built vs vacant plots	Author	2016	
	Visual obstructions			
	Building height	Author	2019	Through observation and fieldwork
	Building state	Author	2019	Through observation and fieldwork
	Access	Author	2019	Through observation and fieldwork
	Visual Obstruction	Author	2019	Through observation and fieldwork
	Walkability	Author	2019	Through observation and fieldwork
	Public amenities			
Legal	Zoning	Municipality	1967-1995	
	Violation of property and urban regulation	Ministry of Public Works report	2006	
	Legal timeline	Author	2019	Local laws: “ <i>Le Littoral</i> ”, “ <i>Beirut Zone 10</i> ” International laws: ICZM protocol
Environmental	Pollution	SUSDS	2014	SUSDS
	Embankments	Author	2019	Through observation and fieldwork
	Shoreline condition			
	Land cover	CNRS	2015	

Table 9-Data and source of human system mapping

Source: Author

Natural system:

Natural	Geology	CNRS	2015	
	Topography	Lebanese Army	1962 - 2002	
	Contour lines	Lebanese Army		10m Interval
	Shoreline condition	Author		Through observation and fieldwork

Table 10-Data and source of natural system mapping

Source: Author

Tools and process: I gathered the data through extensive documentation, fieldwork, observation, and site surveys. The data gathered is both qualitative and quantitative, and consolidated on a base map that I completed based on the base map acquired from the municipality, dated 1994. I completed the mapping using AutoCAD and GIS, and some post-processing on Photoshop to improve the visual quality of the maps presented.

Output: After grouping all the above-mentioned layers, I translated them into a series of maps adjusted to fit the latest aerial photograph. I used the data gathered to conduct a characterization process all along the coastline of Saida.

C. Stakeholders analysis

Purpose: Unveil the different approaches considered by the activists and by the municipality in Saida concerning the waterfront, and explore the different projects proposed and implemented by them along this coastline (Table 11).

Data:

Type of data	Source
Newspaper articles	The Daily Star, The Legal agenda
Reports	Mashi T Dallik report, Reports published by the municipality, Municipality archives

Interviews with NGO representatives and with municipality representatives	With SOSI (Saida Observatory), Lilmadina, Diving clubs in Saida, Dictaphone group, Interview with the head of the architecture department of the municipality in Saida
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Table 11-Data and source for stakeholders analysis

Source: Author

Tools and process: I depicted the two visions of Saida’s waterfront through interviews with representatives of NGOs in Saida on one hand, and with the head of the architecture department of the municipality on the other hand. Furthermore, the facts were crosschecked with documents and reports gathered through documentation.

Output: Two visions of the coastline emerged of this analysis. One with a social depth and the other with a developmental depth.

1. Proposed projects for Saida Coast:

Purpose: Explore the different approaches of waterfront planning in Saida and understand the development pressures that are shaping the coastline of this city (Table 12).

Data:

Project	Source	Date
Saida Northern Entrance	Laceco	1998
Coastal Highway	Dar Al Handassah	1994
Saida’s Waterfront	Dar Al Omran	2002
Barcelona’s proposal	Municipality	2015
The new commercial port	Municipality – Press conferences	2018
The landfill	Municipality – Press conferences	2019

Table 12-Data and source for ongoing projects in Saida

Source: Author

Tools and process: I gathered the information needed through documentation and interviews, and I considered these projects chronologically in there socio-spatial context.

Output: I assessed the projects according to the principles of urban design, regarding mostly their publicness, continuity and enclosure, diversity and character. Some guidelines of these projects were adopted as guidelines for my intervention, while others might have been amended for better outcomes.

D. Assess best practices for coastal planning

1. Explore case studies

Purpose: Define a structured framework that can guide the intervention on the different character zones defined earlier. In addition, learn from the experience of similar cities and waterfront and build on that knowledge in order to conceive a flexible vision for Saida's waterfront.

Data: The information gathered is in relation to the major threats and opportunities present on Saida's coastline. Saida is known for being an old port city inhabited since 4000 BC, vibrant with built and unbuilt heritage. More recently the coastline of Saida has been subject to major modifications such as landfilling, land reclamation, port construction. Subsequently, the subjects of the literature review vary between waterfront regeneration, cultural regeneration, and Natural regeneration (Table 13).

Data	Source
Literature review on waterfront regeneration	Peer-review articles, Books
Literature review on natural regeneration and nature-based solution	Peer-review articles, Books
Literature review on old port cities revitalization	Peer-review articles, Books

Table 13-Data and source for best practices in waterfront regeneration

Source: Author

Tools and process: I gathered the data through documentation from online sources, libraries, online journals and reports. The examples chosen have similar context to

Saida, being Mediterranean cities. For experiences on regeneration of old port cities, one can find similarities with Genoa, Italy, Barcelona in Spain. As for nature-based solutions, case studies considered are from Sydney given that the ecological regeneration is still a new construct and is popular in Australia.

Output: After reviewing examples of practices in coastal planning, I elaborated a set of guidelines to lead my intervention.

E. Develop and analyze Landscape character zones (LCZ), and Historical landscape associations (HLA)

1. Identify character zones on a map of the coastline of Saida

Purpose: Characterize the various zones of the coast following the process of layering and superimposing of the different layers collected and deduce characteristic sections along the coastline of Saida. The LCZ deduced are compared to historical character zones from which I discerned the evolution of the coastline and be inspired for future interventions.

Data: All of the previous gathered urban layers of the coast, tables, maps and diagrams of Saida.

Tools and process: The Landscape characterization consists of two parts; first, it requires a recording of the data; second, it requires overlaying the layers gathered to discern unique Landscape Character zones. This process was done through deskwork and a fieldwork.

The deskwork consists of grouping data from secondary sources such as reports, maps, studies, and previous theses. It allows a bird's eye study of the designated zone, while the fieldwork brings in the ground experience as a layer, where the social aspect is rendered into maps. The different layers were combined using AutoCAD and GIS, in order to achieve a clear characterization of the studied coastline.

Output: The main output of this phase is a series of maps, timelines and a matrix showing the different layers chosen in the characterization process. I chose layers upon

which characters can be discerned. In addition, each character zone is described and named.

2. Analyze character zones

Purpose: During this phase, we elaborated a consistent naming and description for the different zones. Additionally, we assessed each zone in regards to the fulfilment of the urban design principles set in the phase A.

Data: All of the previous gathered urban components of the coast, tables, maps and diagrams of Saida.

Tools and process: The process of delimitation of character zones was conducted using GIS, AutoCAD and Photoshop is sued for representation. Following the Characterization, we assessed each character zone using 2 different tools, the similarities an discrepancies matrix, and the star diagram. We concludes the shortcoming in each area and establishes a threats and opportunities table.

Output: The main output of this phase is a map showing the different character zones on the coastline of Saida, annexed with a matrix explaining the different layers used, a series of sections describing each character zone. For the assessment of the CZ The output is a matrix showing descrepencies and similarities, and a star diagram for each layer assessed. Finally, a table of threats and oppportunities is elaborated for each CZ and for the whole waterfront..

F. Urban design intervention

1. Set principles:

Purpose: The goal of this phase is to set a series of guideline that will confine the intervention in a clear framework and define the strategies implemented in order to nurture the main concept and guide the design.

Output: The guidelines are divided into city scale principles and CZ scale principles, translated into a set of diagrams, sections, tables and text.

2. Define the intervention zone and set a design strategy

Purpose: Following the previous assessment, the CZ I chose following my analysis is the Old City, since it is a key character zone, presenting major opportunities, and a wide variety of landscape and urban challenges.

Data: All of the previous gathered urban components of the coast, tables, maps and diagrams of Saida.

Tools and process: The process of delimitation of the focus LCA is conducted using GIS, AutoCAD and Photoshop. The design strategies put are in relation to the four layers of the city and are complementary with the city scale strategy.

Output: The main output of this phase is a map showing the different character zones on the coastline of Saida, and highlighting the focus area, showing the main interfaces of this area with the rest of the city. And a series of maps and text showing the design strategies implemented in this CZ.

3. Develop concept design:

Purpose: Creation an integrated urban design concept and strategy for the old fishermen port in relation to the old waterfront of Saida.

Tools and process: For mapping and visualization, I used AutoCAD, Photoshop and Google Sketchup.

Output: The concept design takes the form a series of annotated plans, showing the functions, the physical design aspects and the environmental aspect of the project. The plan is followed with a series of sections, and perspectives showing the general mood of the area.

CHAPTER IV

SAIDA CITY PROFILE

A. Saida Context and Location

Saida is the largest city in the south of Lebanon, and the third largest city of the country. Located 45km southern of Beirut, the foundations of Saida dates back to 4000 BC (Rodier, 2005) (

Figure 19). Situated along the Mediterranean basin, on a promontory continued by the “Zireh” island, Saida has long had a tight link with the Mediterranean Sea, thus, the name of the city is associated to the term of fishery in Arabic “Sayd” “صيد” (Al-Harithy & Guadagnoli, 2014, p. 2). Saida’s waterfront spreads from the Awali River to the Sainik River, along a 7 km coast nurtured by four smaller rivers. Administratively, Saida comprises three parts: the Old city, the Wastani and the Dekerman (Figure 20).



Figure 19 - Location of Saida compared to Beirut
Source: <http://the-lebanon.com/>



Figure 20-Administrative boundaries in Saida
Source: Traced by Author from a map provided by the municipality

B. History and Evolution of Saida

In order to understand Saida's current profile, it is important to situate this city along a time and space matrix, reviewing all the processes that led to its transformation. I will first give a historical overview of the events that shaped the city following its evolution extra-muros. Secondly, I will review the legal framework that paved the road for the urbanization of this city, unfolding the different planning tools that were used and their implication on the waterfront. Thirdly, I will go over the different design and planning approaches of Saida's waterfront.

1. Evolution Of The City Extra-Muros

Up until the nineteenth century, Saida was still confined between its walls, and the neighboring lands were all agricultural planes. However, in 1874, the Chakiriah road was paved and eased the way of expansion extra-muros into the agricultural fields.

a. 1874 - The Chakiriah Road:

The medina continued its intramural development and rarely exceeded its limits. However, as the city became saturated, vacant land inside the walls became rare and citizens began moving outside (El Kalash, 2001). In that era, the city had still maintained its characteristic connection with the Mediterranean Sea through the old port. It was not until the first years of the twentieth century that the city witnessed a large number of wealthy people move, from the Old City towards the orchard, in search of a more comfortable life. Since the construction of Chakiriah Street (Figure 21), the city has been expanding its footprint on agricultural land. This road became an active

commercial corridor linking the Sea Castle to the Land Castle, and the old city to the new urban extensions (El Nashra, 2015).



Figure 21
Aerial photo of Saida in 1916
(Al Shakiryah road highlighted)
Source
(Poidebard & Lauffray, 1951)

As seen in Figure 22, the agricultural fields covered the Wastani area and the northern part of the Dekerman, mainly due to the presence of water sources and canals north of the city. Early settlements outside of the Old City were beginning to take shape along the coast, northern of the city, in continuity with the Shakiriyeh road.

b. 1920 To 1943 – Mandate Period:

Under the French mandate, Lebanon was divided administratively into 5 governorates⁶ and Saïda was the capital of the governorate of South Lebanon. On one hand, the Old City had difficulties adapting to the new ways of life, while on the other hand, the new urban developments were accelerating its growth, which induced a dichotomy between the old and the new city. Furthermore, the advent of the Naquoura-

⁶ Known as “Mouhafazat”

Beirut-Tripoli (NBT) railway line in 1942, which crosses Saida from south to north, prompted links between Saida and the rest of Lebanon but weakened the relation between the old and new fabric (Rodier, 2005, p. 13)

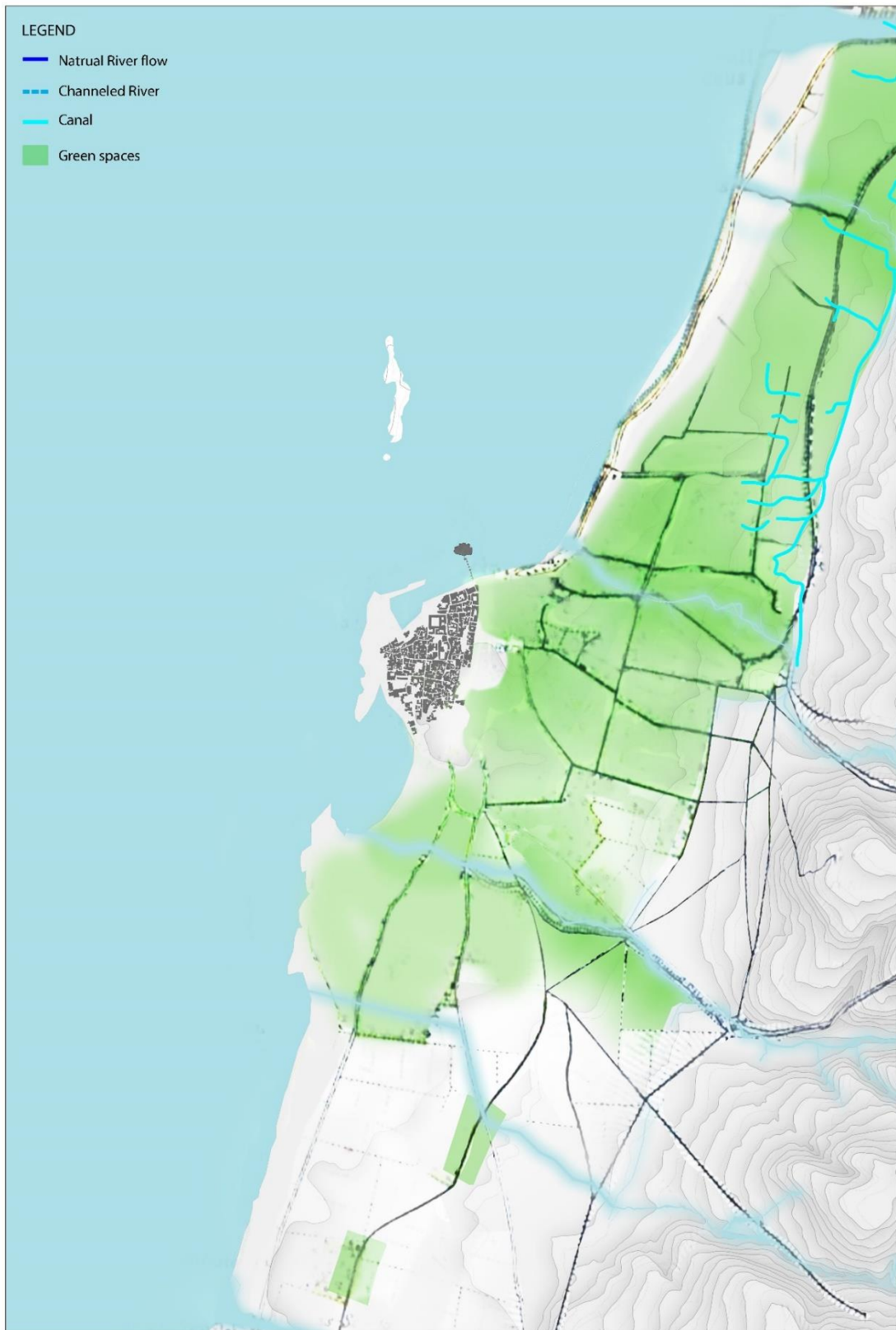


Figure 22-Saida in 1912

Source: Traced by Author based on Gaillardot's survey in Renan's "Mission de Phenicie" in 1912

c. 1948 To 1950 – The Palestinian Nakaba, the Riad El Solh Boulevard and The Tapline:

This rupture was aggravated by three main factors. Firstly, the construction of the Riad El Solh street in 1949, connecting the capital to the South, creating a new centrality, especially around the Place de l'Etoile and displacing the economic center of the city (

Figure 23).

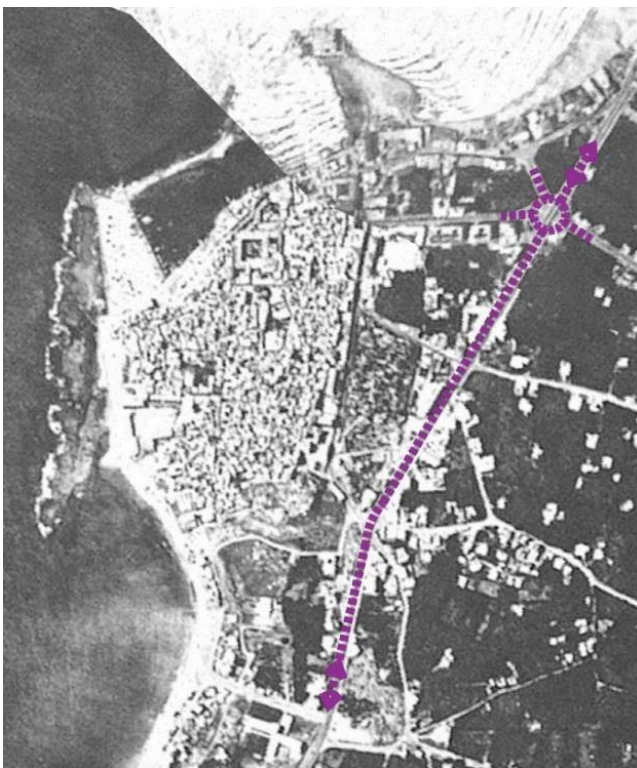


Figure 23 - Aerial photo of Saida (Riad el Solh Boulevard highlighted)
Retrieved from: (Hammoud, 2018, p. 60)

Secondly the construction of the Tapline bringing petroleum from Saudi-Arabia to the port of Zahrani south of Saida, conveying to Saida important capital translated into investments, multiplying the impact of the built fabric (Lebanese Republic & Municipality of Saida, 2001, p. 11) (Figure 24, Figure 25)

Figure 25

Figure 24 - Tapline trajectory from KSA to Saida
Source: (Trans-Arabian Pipe Line Company, 1951)

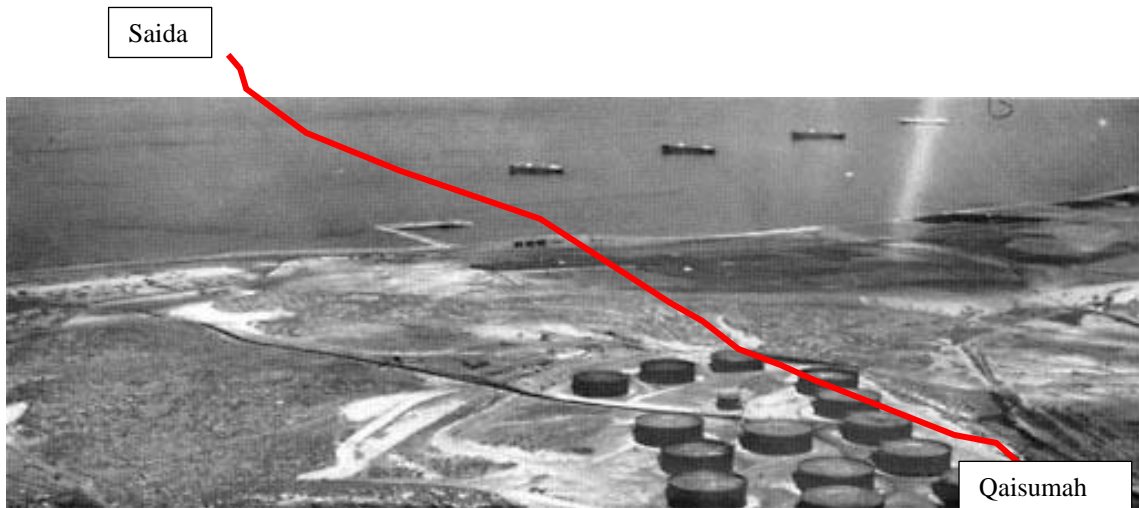


Figure 25 - The Zahrani Oil Refinery 1951
Source: (Trans-Arabian Pipe Line Company, 1951)

Thirdly, following the creation of the State of Israel in 1948, hundreds of thousands of Palestinians fled to Ain el Helwe, the largest Palestinian camp in Lebanon. The economic role of Saida was pushed forward by this event since the Aramco pipeline going to Haifa was blocked and thus the only petroleum refinery was the Zahrani (Nahas, 2001, p. 216).

Locating oil refineries on the coast of Zahrani brought an economic boom to Saida, which implicated on the urban level the construction of Hotel Sidon on the Qamleh sand dune, and the construction of the municipal Stadium next to it. Thus, the economic prosperity of the city was the precursor of the disfiguration of its coastline in the Wastani area. While in the Dekerman area, the presence of the Ain el Helwe refugee

camp had halted the development of this area, preserving temporarily its coast, until the flourishing of industrial activity in this neglected zone.

d. 1950 To 1975 – Before the Civil War:

Following this economic revival, and the independence of Lebanon, in 1954 the administrative limits of Saida were defined by the decree 11/1954. Saida comprised three parts, the Old city, the Wastani and the Dekerman. The Dekerman and the Wastani area were separated by the Qamla water stream that ended on the Qamla sandy beach.

In 1956, an earthquake hit the south of Lebanon and damaged the Old city of Saida extensively: 700 apartments in the Old city were completely destroyed and the rest was damaged. (Lebanese Republic & Municipality of Saida, 2001, p. 11).

In 1956, after the earthquake that hit the Jezzine area, the Lebanese government set up a National Authority for reconstruction that granted Ecochard's team the task of planning the city of Saida, the capital of south Lebanon, and to build in that city new low-income neighborhoods (Verdeil, 2012, p. 12). In 1957, Ecochard submitted the master plan of Saida (Figure 31). The scheme was the fruit of a holistic view of Lebanon, aiming to define the role of Saida in relation to its surrounding. Furthermore, he insisted on the importance of the relation between the city and its surrounding, the hill and the sea (Ghorayeb, 1995). However, the masterplan of Ecochard was not realized, and in 1967, following the decree Decree 9016/1967, the first Masterplan for Saida was issued. This masterplan was modified twice by Decree 6458/1973 and the second by Decree 10239/1975.

Both the economic revival and the earthquake had their tolls of the coast of Saida. The economic prosperity initiated the construction of the coast while the

earthquake caused the destruction of parts of the built coastal heritage of the city. Hotel Sidon and the municipal stadium are visible in the north on Figure 26. Moreover, the built fabric had begun its sprawl into the agricultural fields and along the North-South roads. As well, the Ain El Helwe camp was established South-East of Dekerman, while the Dekerman area in front of it had flourished as an agricultural field in connection with the coast (Figure 26).

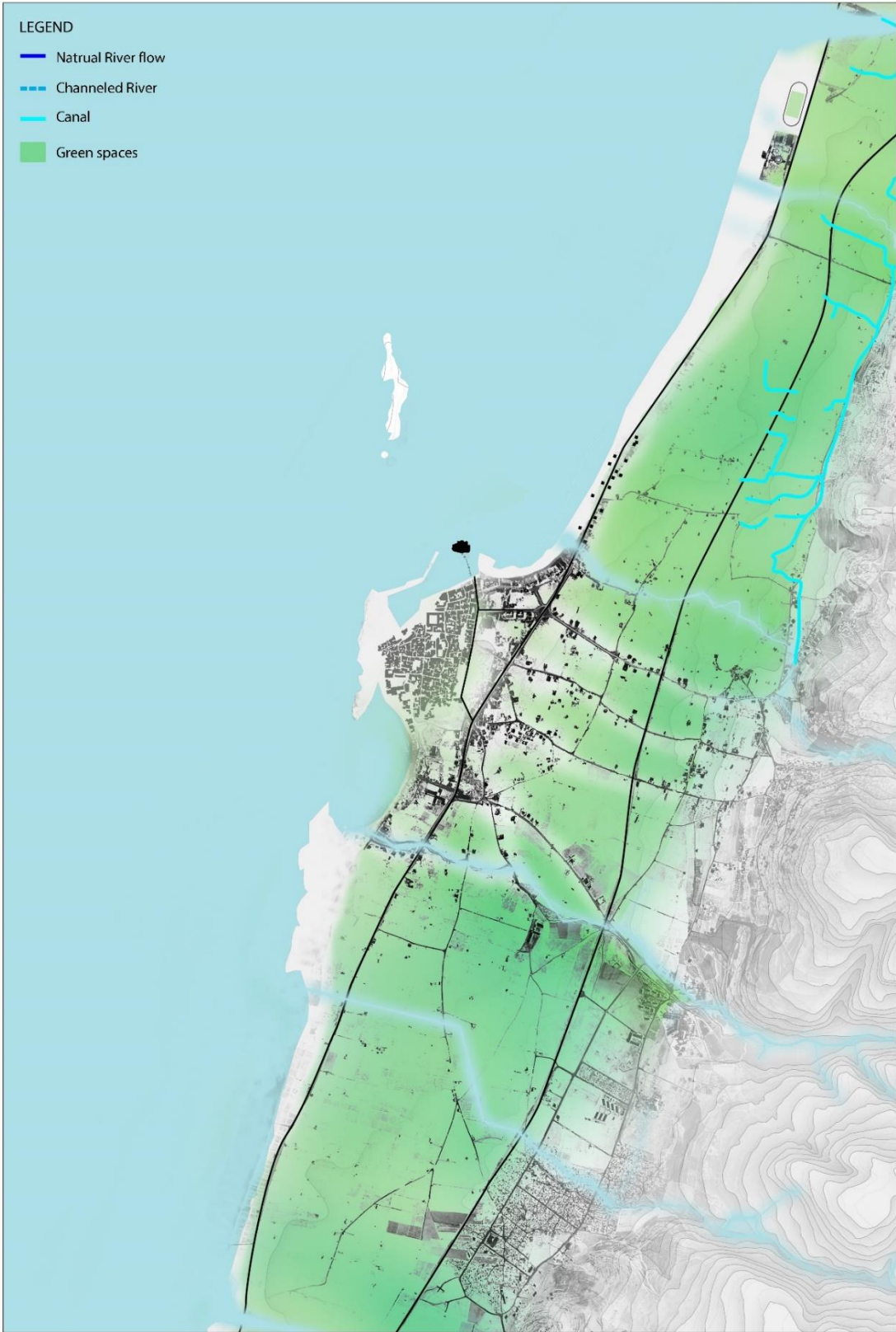


Figure 26-Saida in 1956

Source: Traced by Author based on the aerial photo provided by the Lebanese Army in 1956

e. 1975 To 1990 – During the Civil War:

The Lebanese Civil war started in 1975 until 1990, and was characterized by a sectarian division of the country. In Saida, the majority of the Christians left their homes to gain refuge. In 1978, the Saida-Zahrani municipal union was created following the decree 1097, in the aim of executing projects for the benefit of the union (Figure 27).

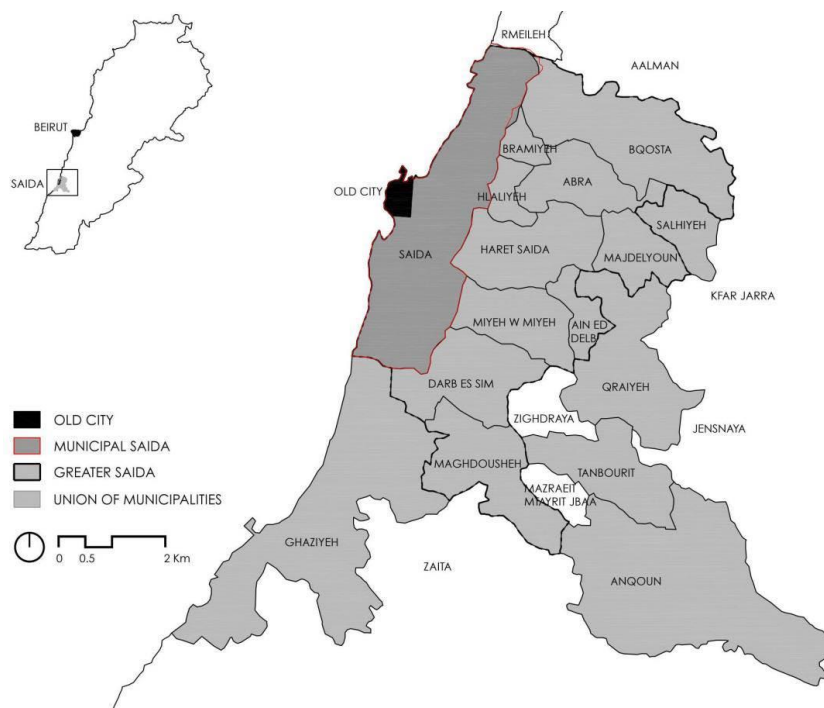


Figure 27 - Map of Union of Municipalities of Saida and Zahrani,
Source: (Al-Sabbagh, 2015, p. 82)

At first, the union grouped: Saida, Bramieh, Hilalieh, Abra, Salhieh, Majdelyoun, Haret Saida, Al Mieh w Mieh, Darb el Seem, Magdoshi, Al Ghazieh, and Ankoun. Later Ain El Deleb and Bqosta were added to form a total of fifteen municipalities (localiban, 2017). The union is headed by the municipality of Saida, for having the largest area within. However, due to sectarian differences and contradicting political affiliations between the different municipalities, the union had difficulties in

governing this big area. Consequently, this mismanagement was reflected in the garbage crisis that started in 1982 when “a garbage dump was started on public land on the southern shore of [Saida]”(Abou Alfa, 2016).

Moreover, vehicular connectivity of Saida was being considered, and thus in 1980 the Eastern Boulevard was created in order to relieve the congestion from Riad El Solh Street. This Boulevard ensured the connection from North of Saida to the South; however, it created an infrastructural break between the two parts of the city, and endangered the agricultural activity of the plain.

From 1982 until 1985, Saida was invaded by the Israeli army. This attack left Saida with ravaging damage. Particularly, the bombardments targeted the maritime façade of the Old city, which was completely destroyed (Nahas, 2001, p. 217). Once the Israeli invasion ended, the Prime Minister Rafiq El Hariri had risen as a political and sectarian leader. He encouraged the reconstruction of the city and aimed at reconnecting it to the rest of the country.

f. 1990 Until Present:

In 1990, as the war ended in Lebanon, the reconstruction initiative began all over the country. In Saida, the waterfront façade of the old city was reduced to rubble. The southern part of the city had gained a garbage mountain right on the coast, which was disintegrating and polluting in the Mediterranean Sea (Abou Alfa, 2016). In the light of the modern tendencies of the time, and given the availability of backfilled land on the coast, the creation of a coastal highway was intended all along the coast of Saida, linking Beirut to the South. In 1994 the coastal highway was approved and the works began in 1995 (Figure 29).



Figure 28 - Aerial photo of Saida in 1956
 Source: Lebanese Army. (1956). Saida. Aerial Photograph, Directorate of Geographic affairs. Marked by Author

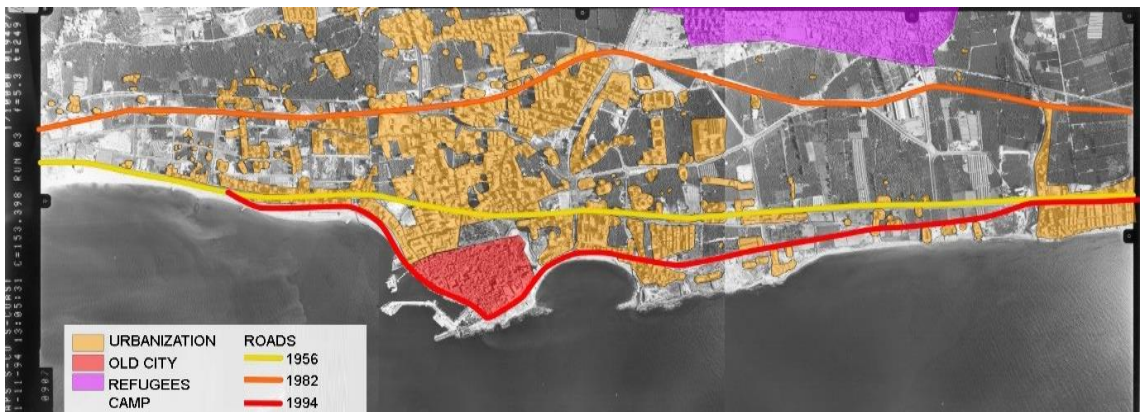


Figure 29 - Aerial photo of Saida in 1994 showing the roads and urbanization pattern
 Source: Lebanese Army. (1994). Saida. Aerial Photograph, Directorate of Geographic affairs. Marked by Author

Despite the intension of reconnection, the coastal highway provoked a major urban break between the city and the sea, and mainly between the Old city and its port. In 1995, following the decree 6552, a revised masterplan for Saida was implemented. “The Master plan includes 11 zones (A,B,C,D,D1,E,F,I,I1,G,G1) [...]

The planning ordinance of 1995 issued building regulations specific only to plot coverage ratios, maximum height and /or floor-area ratio [...] The 1995 Master plan envisions a limited tourism and minor commercial and craft uses in the old city in addition to the traditional residential functions.”(Al-Sabbagh, 2015, p. 189).

Other initiatives of redevelopment were ongoing, such as “Sidon Sea Front Development Master Plan Competition” that aimed at the rehabilitation of the damaged waterfront. The competition was won by Dar al Omran in 1999, but the proposal was not implemented. Other projects such as new ports and sport stadium were proposed and some are currently under development.

Following the establishment of the coastal boulevard, the expansion of the Municipal stadium the pavement of the fishermen port, and the creation of a landfill in Dekerman, the coast of Saida became majorly disfigured following a series of governmental, and municipal decisions. A comparison between Figure 26 and Figure 30 shows the scale and the extent of the disfiguration of the coast. Moreover, the uncontrolled urban sprawl, spread along the waterfront and into the agricultural fields. While in the Dekerman, the coast, once neglected, developed into an industrial area (Figure 30).



Figure 30-Saida in 1994

Source: Author from a the aerial photograph provided from the Lebanese army (1994)

2. Planning the City and Its Waterfront

a. 1956 – Ecochard Plan:

Through his proposal, Ecochard intended through his proposition to provoke economic growth in Saida and its surroundings. Hence, he emphasized the importance of the relation of Saida with the Mediterranean Sea. Accordingly, he proposed a coastal highway, 17 m in width, ensuring connectivity of Saida with the rest of Lebanon and Syria and more importantly granting accessibility to its port to transform it into a vibrant sector. (Ghorayeb, 1997) (Figure 31)

Ecochard stressed also on the importance of the existing fishermen port, recommending the improvement of its productivity. Furthermore, he highlighted the importance of tourism and suggested the creation of a touristic port south of the Old City. Based on the ports location, Ecochard suggested a commercial line along the coastal road that faces the Sea castle, a large parking space and a hotel that overview the Sea and has an easy access to Saida's central district (Ghorayeb, 1997). “Thus, Ecochard reconnected the old city with the Sea and connected the city with its adjacent districts and the country as a whole. His scheme combined the value of the past and the vision for the future. He cherished the historical monuments in the old city, yet he planned it to efficiently perform as a modern city.”(Hammoud, 2018, p. 67)

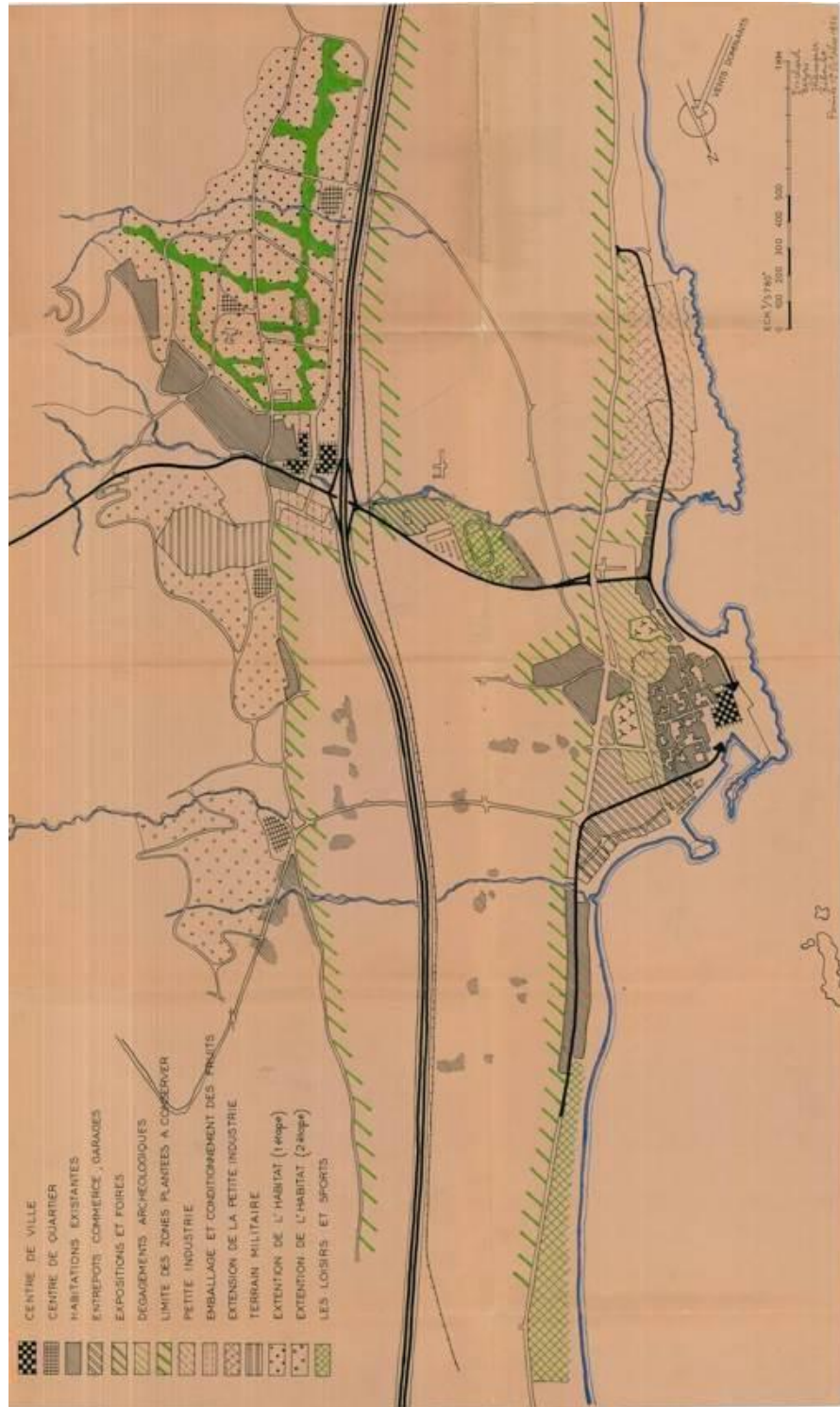


Figure 31 - Saida's Masterplan by Ecochard in 1958

Source:

Amin Al-Bizri Archives, courtesy of Fadi Kotob

Retrieved from:

(Al-Sabbagh, 2015, p. 181)

b. 1967 – Saida First Masterplan:

Following the decree Decree 9016/1967, the first Masterplan for Saida was issued. This masterplan was modified twice by Decree 6458/1973 and the second by Decree 10239/1975. The 1967 Master plan noted the following regulations (Figure 32):

- “- It divided Saida into 8 zones according to their use as following: archeological, residential, residential/commercial, tourism/ sports/ hotels, and Industrial types 1 and 2.
- It dictated building regulations, exploitation ratios, land pooling and subdivision guidelines (road width, setback, exceptions) for each of the zones.
- The planned road network including the Eastern Boulevard; the Maritime Boulevard; the bypass of East Wastani.
- Suggested areas for the construction of public services: schools, hospitals and parks.”(Al-Sabbagh, 2015, p. 36)

In light of this Masterplan, the entire coastline had the same exploitation factor, belonging to zone G (Tourism, Sports, and Hotels), with a lot coverage of 15% and a FAR of 0.3. Accordingly, the Old city had its own zone (A) with a lot coverage of 60% and a FAR of 1.8.

This masterplan located the highway along the railway, in similarity to the plan of Ecochard. However, contrary to the proposal of Ecochard, a coastal road was planned in the aim of an economic revival of the waterfront.

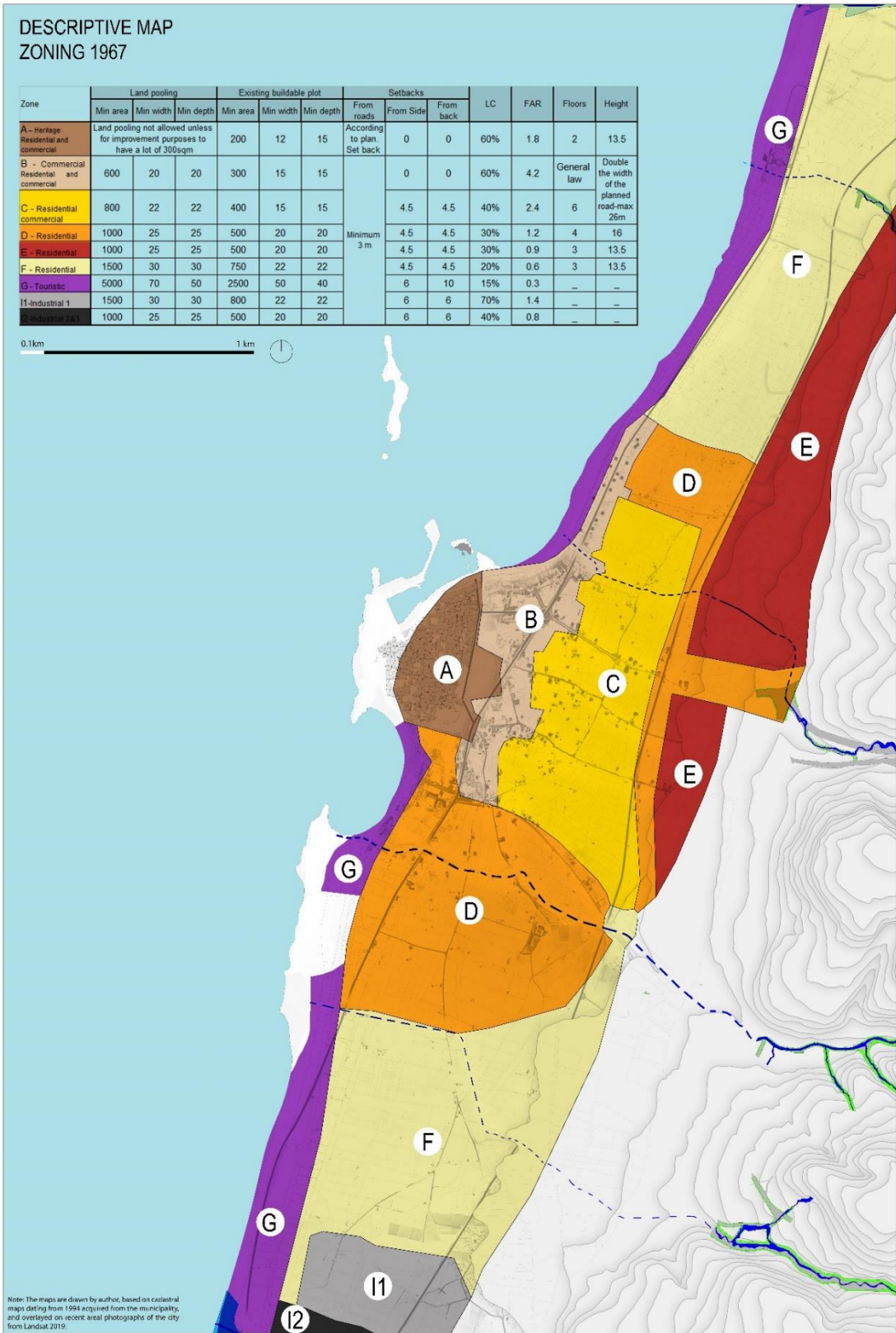


Figure 32 - Saida's Masterplan in 1967
 Source: Edited by Author following the zoning map of 1967 acquired from municipality

c. 1982 – Western Wastani Land Pooling:

Following the decree 4966/1982, the West Wastani area was pooled and subdivided. The area was planned as a residential zone and did not take into account the agricultural characteristics of the Wastani. The encouragement of investments in this area paved the way for the construction of a coastal highway that facilitates the access to this neighborhood. (Dictaphone Group, 2015, p. 7) (Figure 33)



Figure 33 - West Wastani LPS plan in 1982

Source:

(Al-Sabbagh, 2015, p. 42)

In Figure 33, the proposed Land Pooling and Subdivision is shown. The green color refer to public properties, the blue and orange refer for public domain (streets), and the yellow for the 75% new subdivided private lots (El Kalash, 2005). This project had some benefits such as providing the municipality with the needed area to establish the road network and installation of infrastructure. It also provided five large parcels with a total area of 6.8 hectares divided as such: two public schools, a public hospital (the Turkish hospital), a justice palace, and one public garden (2.2 hectares). However, the LPS project had a big negative effect on the area. It disfigured the landscape character of the area and disrupted its harmony by paving all the watercourses that irrigated this zone, erasing footpaths and historical plot boundaries defining neighborhoods, thus destroying the agricultural morphology of the lands and rendering pedestrian mobility and connectivity to the coast impossible (Al-Sabbagh, 2015).

d. 1995 – Saida’s Second Masterplan:

In 1995, following the decree 6552, a revised masterplan for Saida was implemented dividing the city into 11 zones (A,B,C,D,D1,E,F,I,I1,G,G1). This new zoning divided the coastline into 7 zones (Table 14), with no consideration to the coast, resulting in damaging the waterfront facade. Now, along the coastline the following zones are present: (Figure 34)

Table 14-Zones available on the zoast of Saida following the zoning of 1995

ZONE	FAR	LOT COVERAGE
A (Historic)	1.8	60%
B (Very Dense residential and commercial use)	4.2	60%
C (Dense residential and commercial use)	2.4	40%
D (Medium-Dense residential and commercial)	1.2	30%
G (Touristic use)	0.3	15%
G1 (Touristic use)	0.6	20%

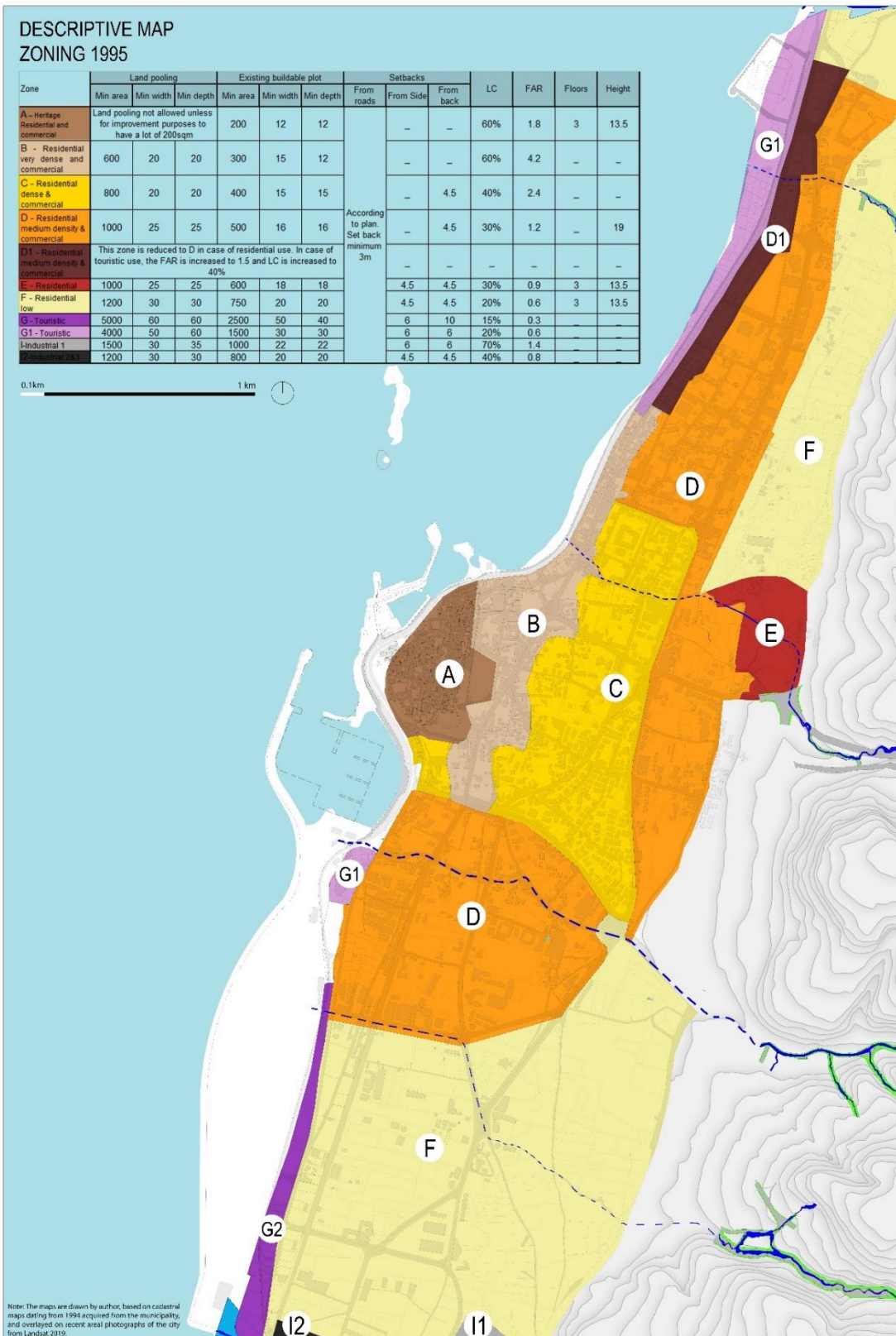


Figure 34 - Saida's Masterplan in 1995
 Source: Edited by Author based on the zoning map (1995) acquired from the municipality of Saida

e. 2005 - The National Physical Master Plan of Lebanon and Its Territories

(NPMPLT):

The NPMPLT published in 2005 was elaborated taking into consideration a holistic view of Lebanon. According to this Masterplan, Saida was named as a “gate city”. It designated that Saida as one of the main agglomerations in Lebanon and will need 6000 to 10000 hectares to accommodate its increasing population in the coming 30 years.

However this study would change if any agreement of the right to return of the Palestinian refugees was signed (DAR-IAURIF, 2005). (Figure 35)

The NPMPLT indicates that Saida is suffering from its proximity to Beirut, given the important role of the Capital as a commercial and service center. However, Saida has several key factors that should be preserved and regenerated in order to ensure its prosperity: “This requires emphasizing the city’s assets: its sea façade, its historical heritage, souks, crafts, public services, agricultural plain, etc.”(DAR - IAURIF, 2005, p. 15)

Furthermore, this report warns about the dangers of reclaimed lands and coastal landfills. As for the port, the report indicates that the location of the actual port in Saida is very restraining for ships access due to its shallow water basin. Moreover, its expansion is tricky given its proximity to the Sea Castle and the Old City, thus it should be moved south. “However, in case this increase is to occur, it will be appropriate to consider a new port mid-way between the two cities of Saida and Tyre, using the Nabatiyeh highway towards Qonaitra.”(DAR - IAURIF, 2005, p. 31)

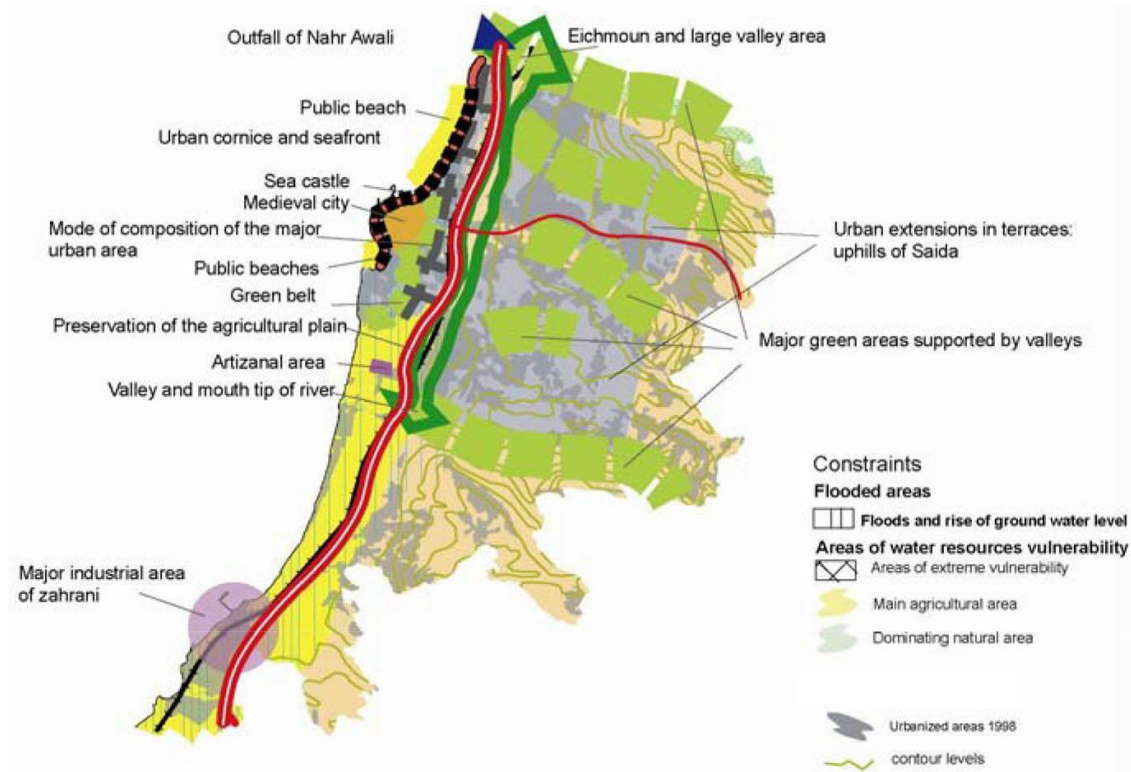


Figure 35 - NPMLT Masterplan for Saida in 2005
 Source: (DAR - IAURIF, 2005, p. 58)

3. *Different Approaches and Projects for Saida's Waterfront*

a. The Coastal Highway by Dar Al Handasah:

Following the destruction of the waterfront façade of the Old city, and due to excessive traffic on the Solh Boulevard, in 1994, Dar Al Handasah,(Shair and Partners) was commissioned to propose a solution to improve vehicular connectivity and ease traffic congestion of traffic.

Dar Al Handasah proposed a coastal highway that was elevated 4.5m in front of the Old City in order to provide access beneath it for the fishing harbor to the sea. “Dar Al Handasah recommended this design for its cost and efficiency if compared to other alternatives. The coastal expressway could be executed along with urban landscape to provide a more sustainable solution.” (Hammoud, 2018, p. 80) (

Figure 36).

Moreover, Dar Al Handasah designed an extension of the existing fishermen port to accommodate commercial and touristic activity, while preserving the Mina Iskandar as a natural bay and enhancing its role as a recreational area for the Old City. However, despite of the UNESCO report in 1993 that warned about the importance of the relation between the Old City and the Mediterranean Sea, in 1994, the government issued a decision number 17 to consider the coastal corniche in Saida as an extension of the highway to the South. In addition, regardless of Dar AL Handasah proposal, the implemented highway spanned along the periphery of the Old City, separating it from the sea. In 1995, following the decree 7533/1995, the coastal highway was effective, and was enlarged even more than it was previously designed.



Figure 36 - Saida Corniche urban treatment Proposal

Source:

Dar al-Handassah 1994

Retreived from:

(Hammoud, 2018, p. 80)

b. Sidon Sea Front Development Master Plan Competition by Dar El Omran

The negative effect of the coastal highway took its toll on the Old City as soon as it was executed. The socio-spatial practices of the residents of Saida that used to take place on the coast were abruptly disrupted, the ecological diversity of the area deteriorated influencing the productivity of the fishing industry. Moreover, the landscape character of the Old City in connection to the Old port and the sea was disfigured.

Consequently, a competition for the development of the waterfront was launched and won by Dar al-Omran. Their approach was based on reviving and developing the historical nodes and spines of the Old City. Accordingly, Badran, the lead architect of Dar el Omran, intended to do two main actions:

“Reinforcement of the inherited characteristics of Old Saida urban context”

“Activities to maximize the gains of investment and development of the waterfront”

In addition, Dar el Omran prescribed some main guidelines related to the waterfront also (

Figure 37,

Figure 38):

- “- Conserving and upgrading the existing building facades
- Reducing the traffic load on the sea boulevard
- Reducing traffic speed on the Sea Boulevard within the old city waterfront boundaries
- Creating a green belt around the old city,
- Provision of parking spaces to serve the old city and the waterfront

- Strengthening the city's relation with the sea through its main circulation axes and through the creation of visual continuity
- Proposing support activities for the investment operation, for economic and social development, and for the cultural and informational dimensions that should form the axis of the development process.” (UNESCO, 2002, p. 239)

The urban design proposal proceeded by a strategy of infill, and covered part of the seafront with built facilities resembling the typology of the old fabric. This intervention was criticized for backfilling the sea and preserving the coastal highway, however, it remained hypothetical intervention from which nothing was retained but the fact of the backfilling and the preservation of the coastal highway.



Figure 37 - Waterfront Masterplan by Dar el-Omran in 1997
Source: <http://www.daralomran.com/planning.html>



Figure 38 - Perspective of the Masterplan proposed by Dar el-Omran in 1997

Source: <http://www.daralomran.com/planning.html>

c. The new municipal stadium:

Looking at the aerial photographs of the 50s, this area is an extension of the orchards of Wastani. However, when the land registry began in Lebanon, these properties were registered as public coastal lands. Following the pavement of the first part of the coastal highway, and in response to the request of the municipality, the decree 2105/1944 was signed (Appendix 3). Accordingly, the property of these lands was transferred from public good to private properties of the municipality, giving the municipality the right to sell these lands to a private investor.

In 1944 the government issued decree 2105, giving permission to the municipality to construct a sports stadium, a garden, and swimming beach. The next year, the football stadium was inaugurated. Moreover, when Lebanon wanted to host the Asian football cup in 2000, the government issued a decision in 1998 for the CDR to improve the stadiums of Saida, Tripoli, Jounieh, Zahle, and Baalbak. Accordingly, Laceco were commissioned the task in Saida. Taken from the website of Laceco, the description of the project is the following:

“The suggested master plan revolved around the rehabilitation of the multipurpose Saida Municipal Stadium and the development of retail areas, a shopping mall, a seaside hotel and marina around it, turning it into an urban sporting complex. A

thalassotherapy center was also planned, drawing on a nearby mineral water spring up the Awali River.” (<http://www.laceco.net/projectsdetails.php?projectid=69>)

The construction of this project would have had a major negative impact on the coast. Environmentally, the large land reclamation required would have disfigured the seascape and destroyed any remaining habitat in the sea. Moreover, it would have paved a large portion of the sand dune, reducing the width of the sandy beach. On a socio-spatial level, this sports complex would have been developed as an elites club, excluding the locals of Saida and the greater area. At present, this project is not implemented fully, only the football stadium was constructed, and is rarely used due to its degrading situation. (Figure 39- Figure 40)

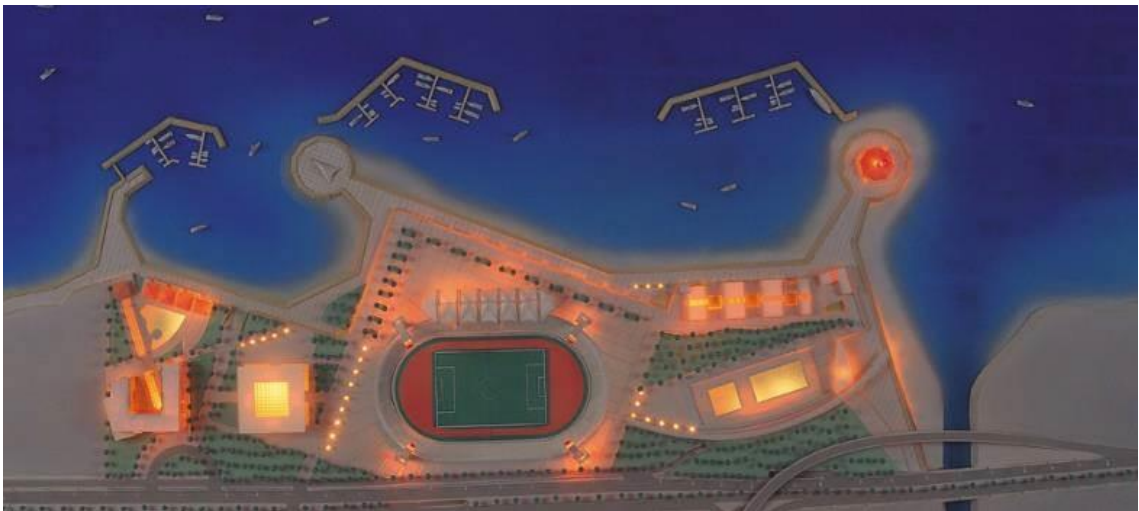


Figure 39-Saida'a Stadium and Sports city as envisioned by Laceco
Source: www.Laceco.com



Figure 40- The stadium of Saida as executed till now

Source:

www.Laceco.com

d. The return of Hotel Sidon to the Qamleh beach:

Al Qamleh beach is the sandy shore where the Qamleh stream meets the Mediterranean Sea. In 2009, the municipality of Saida , in commemoration of the old Sidon hotel, wanted to rebuild a hotel on the shore of Al Qamleh. Accordingly, the municipality issued the decision #856 that approved the construction of a hotel on lot 375, in an agreement with the “Lebanese Company for Investments and Development of Hotels. sal”⁷ represented by Izzat Qaddoura. The mayor at the time, Mr. Mohammed El Saoudi, described the hotel as being a 4 floors building comprising 84 rooms, a touristic yacht club, a breakwater, and other facilities (Zaatari, 2011)⁸. Moreover, in his speech, the mayor announced that the citizens of Saida will be considered as investors, as they

⁷ الشركة اللبنانية للتطوير والإستثمار الفندقى

⁸ Plans of the Hotel could not be photographed, they were reviewed at the municipality, under the supervision of the municipality head architect during our interview

will be allowed to invest in 80% of the shares of the hotel, while the private company would have 20%. (Zaatari, 2011).

The execution of this project would have paved the way in front of other touristic developments on the Qamleh beach (as it happened with the Eden Bay in Beirut), especially that the Qamleh beach is divided into plots in private ownership of the municipality. This area is Zoned G1, allowing construction of a three stories building, which will disrupt the visual and physical connectivity and accessibility to the sea in this zone.

e. A New Highway Outside The City Boundary:

After several reports noting the negative effect of the coastal highway on the Old City and on the waterfront, the municipality of Saida was convinced to act on improving the condition. Thus, a new highway was proposed by the CDR in 2012. This highway would bypass the city, freeing Saida from the vehicular congestion and dominance (Figure 41).

As advised by the SUSDS, the Eastern ring will be slightly more expensive, but will be the most effective option in reducing congestions on many levels as well as preserving the integrity of the urban fabric in the inner city. Thus, by alleviating traffic from the maritime boulevard and the eastern boulevard, connectivity between the

hinterland and the sea, between the Old City and the sea and accessibility to the coast will be significantly enhanced.

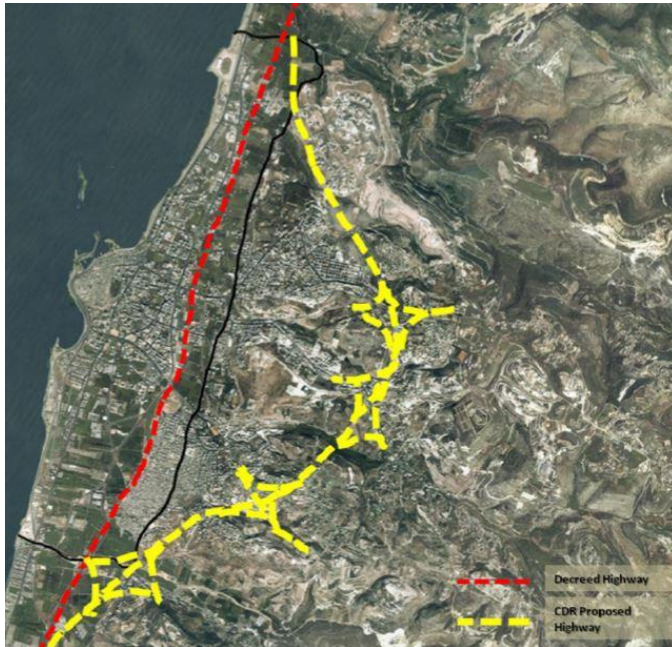


Figure 41 - The CDR proposed highway
In yellow is the proposed highway by the CDR, also known as the Ring Road
In red is the decreed Highway that passes through the Wastani orchards, but has not been executed yet. Source: (Hallaj, 2014)

f. A new port for the city:

Even though SIDON⁹ did not see the light, plans for the improvement of the fishermen port, and for backfilling of the sea were still effective but were delegated to the CDR in 2011 following decree 5790.

Accordingly, the improvement of the fishermen port meant for the municipality of Saida that the commercial activity of the current port has to be moved to Alexander Bay. The municipality overlooked the importance of this bay as a cultural heritage, and the warnings of the SUSDS and the MPNPLT concerning the dangers of creating a commercial port near the Old City. Thus, the works of backfilling of the Alexander bay

⁹ The real estate company

are in their midst at present and this area is a major risk factor for the built and cultural heritage of the city, as well as for its economic development.(Alieh, 2015)) (

Figure 42- Figure 43)



Figure 42- Saida's new port

Source: (Alieh, 2015)

Figure 43- Aerial photo of the new port taken 2017 by Mohammad el Hariri

Source: (Hammoud, 2018, p. 95)

g. A new land for the city:

Land reclamation in Saida was thought of in 1979, long before the Normandi. According to Moustafa Dandachli (Dandachli, 1985), in the 80's Rafik El Hariri (a Sidonian expat at the time) proposed to invest in a project of land reclamation for the creation of a new port in Saida (Figure 44). In coordination with the CDR, the reclaimed land would be 660,000sqm, which the late PM Hariri would have the full exploitation rights over 30 years, in return for taking care of all the expenses of the project and allowing the CDR to buy 50% of the shares during the first 2 years of the project. The land reclamation was expanded from the old port towards the north of Saida, enclaving the citadel and planning a casino on the Zireh Island. Luckily, this project did not see the light, as it would have disfigured the coast by paving the only remaining public beach in the area (the Qamleh beach). Its implementation would have enclaved the Old City as an insular entity, and would have damaged the image of the city mainly by artificializing the perimeter of the Sea Castle and the Zireh Island. Later, the port project had shifted to the

south of the city, taking advantage of the landfill and the natural bay, however this proposition was also disregarded.

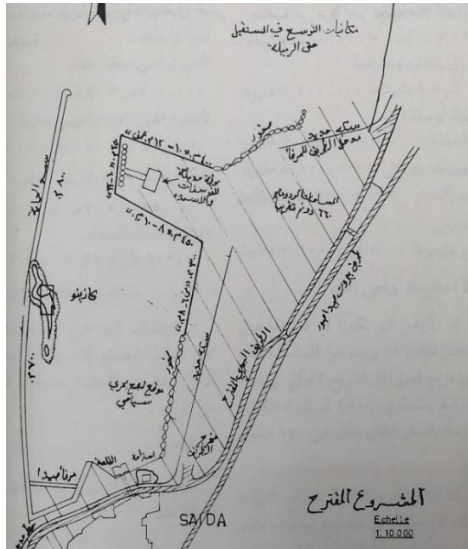


Figure 44 - Plan of the first land reclamation proposal in Saida
Source:(Dandachli, 1985, p. 178)

The present landfill in Saida is the child of the garbage mountain that began in 1982, following the Israeli occupation. The garbage dump serves two main purposes: “it consolidated the rubble resulting from Israeli attacks in the area, and it disposed of the waste accumulating within the city’s neighborhoods and surrounding villages.”(Abou Alfa, 2016). Due to governance issues related to the small scale of the municipality of Saida versus the union of municipalities that Saida leads, and in the shadows of sectarianism, the temporary garbage solution became a permanent garbage mountain. The garbage mountain was located to the south of the city, directly on the coast, it began to crumble and fall into the Sea, and its fumes were intoxicating. Thus in 1998, following initiatives of engineers in the private sector (namely, company IBC, Inc.) the idea of a household solid waste treatment plant emerged. On November 29, 2002, the Lebanese Cabinet issued Ordinance No, 33, granting the municipality of Saida a license

to contract out the work of infilling the sea near Dekerman. (Abou Alfa, 2016). The treatment plant was built in 2008 but was not operational for several years, due to political tensions.

However, in 2011, following decree 5790, the works of backfilling were legalized, and rehabilitation works began through “landfill mining¹⁰” technique following decree 5790, and the backfilling was legalized as “a protection perimeter for the garbage mountain”. CDR contracted IBC to start treating the landfill. Surprisingly, the surface of the reclaimed land was still 660 000 sqm same as in 1979. The preliminary visualizations of the reclaimed area showed it as an entire garden in 2012, however soon enough the garden area was reduced to 33 000sqm as stated by SUEZ¹¹ in 2013. Lately in 2018, in a municipal conference, masterplans of the reclaimed land of Saida were presented, showing the division of space as follows, with limited public space (Figure 45, Table 15):

Table 15-Proposed zoning of the new landreclamation of the Dekerman in 2018

Zones	Use	Area
Zone A	Port storage area	194 157sqm
Zone B	Oil and Gaz	52 335sqm
Zone C	Special economic zone	145 589sqm
Zone D	Expo center	40 552sqm
Zone E	Plots	30 651sqm

¹⁰ Landfill mining is the process of excavating waste from active or closed landfills to reduce their environmental impact. It includes removing the hazardous material from the ground after a predefined period and treating it to recover: A combustible fraction, Recyclable materials, Soil, Landfill space (www.waste360.com)

¹¹ SUEZ environment has joined forces with Al-Jihad for commerce and contracting (JCC) for Saida “Waste mountain” rehabilitation.



Figure 45- Dekerman evolution
Source: Author

It is worthy to note that the recently developed zoning for the landfill area followed a top-down approach. It is the fruit of the coordination between the municipality and the consultant "Seatec". The plan shown may not be the final version, as it was featured during a coordination meeting. The plan was not published, and no public review of the project has been done yet.

h. The SUSUDS Report:

In 2014, Saida Municipality in Partnership with Hariri Foundation for Sustainable Human Development, and Euro-Mediterranean project “ MedCities”,

commissioned the study titled "Saida Urban Sustainable Development Strategy" (SUSDS). The Euro Mediterranean project aims to provide a holistic city study and aid its sustainable development. The goal of the project was to improve the socio-economic conditions of residents, sustain the environmental health, ensure connectivity of the city with its surroundings, amend and develop legal frameworks, and finally ensure security and stability.

This report was elaborated with the help of Prof. Al-Harithy and Prof. Makhzoumi,. It followed a multilayer analysis of the city, tackling the infrastructural, socio-economic, cultural, political, and natural aspects of Saida. The report concluded a set of guidelines and action plans, from which some are in direct relation with the waterfront:

- “- Increasing competitiveness of Saida’s traditional trade and crafts
 - Improving sustainability of fishermen livelihoods: valorization, diversification and capacity building
 - Restoration program for the historical housing in the Old City of Saida
 - Rehabilitation and reactivation of Hammams in private ownership in the Old City
 - Redesign and reactivate Bahr El Eid as a primary social space in the old city
 - Reviving and protecting Shat el Qamleh and Al Ziri
 - Protect the coastal Al-Kinayat as part of the Mala'b Al Baladi Amenity Space”
- (Al-Harithy, Makhzoumi, Hallaj, Chabaan, et al., 2014, p. 2)

The project elaborated a sustainable vision for the city by capitalizing on its distinctive assets; its social diversity, its natural landscape, its bold heritage and its strong political affiliation. The vision was articulated as follows:

“Saida and dynamic surroundings offer the successive generations of its residents a healthy diversified economy and a green environment to live and prosper capitalizing on its locational advantages, rich history and cultural diversity.”(Al-Harithy, Makhzoumi, Hallaj, Kanj, et al., 2014, p. 4)

Thus, it aimed to preserve the natural environment and enhance the city character. The report adopted the concept of the Blue and Green network as a Green infrastructure tool to establish connectivity and continuity of the ecosystem (Figure 46). Its benefits surpasses the environmental realm, thus it helps to improve the quality of living in the city though providing social encounters and enhance economic growth.

The report advised against some ongoing projects on the coast such as the new commercial port. The project was rejected due to its lack of economic feasibility, the hindrance of the city historical link to the sea; the absence of a holistic vision for the city and the role of the port within this vision, the lack of coordination with the union of municipality of Saida and Zahrani, and the major disfiguration of Saida distinctive landscape (Figure 47).

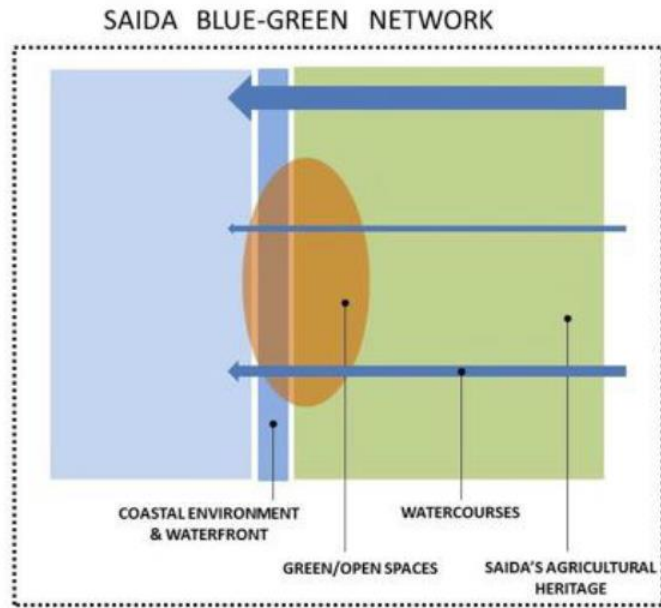


Figure 46-Saida Blue-Green network
Source:(Makhzoumi & Al-Sabbagh, 2014)

Sector: Mobility
Code: 1.4
Title: New Commercial Port and Adjacent Wave Breaker Barrier and Land Reclamation
Implementing Agency: Ministry of Public Works and Mobility
Partners:-
Expected Duration: 30 months



Recommendation:

Approved Approved with recommendation

Pending information Suspend Reject

Figure 47-Recommendation of the SUSDS for the new commercial port
Source:(Al-Harithy, Makhzoumi, Hallaj, Chabaan, et al., 2014, p. 8)

The SUSDS concluded with a map illustrated the strategic framework elaborated

(

Figure 48). In relation to the coast, ecological corridors are created along the shore south and north of the Old City. These corridors are complementary to the Blue-Green network infiltrating the city. The Old City is protected by a buffer zone which will enhance the cohesion between the new and the old fabric. Moreover, The report advocates for the implementation of the Ring Road project, as a strategy to alleviate vehicular dominance and traffic from the city and along the waterfront.

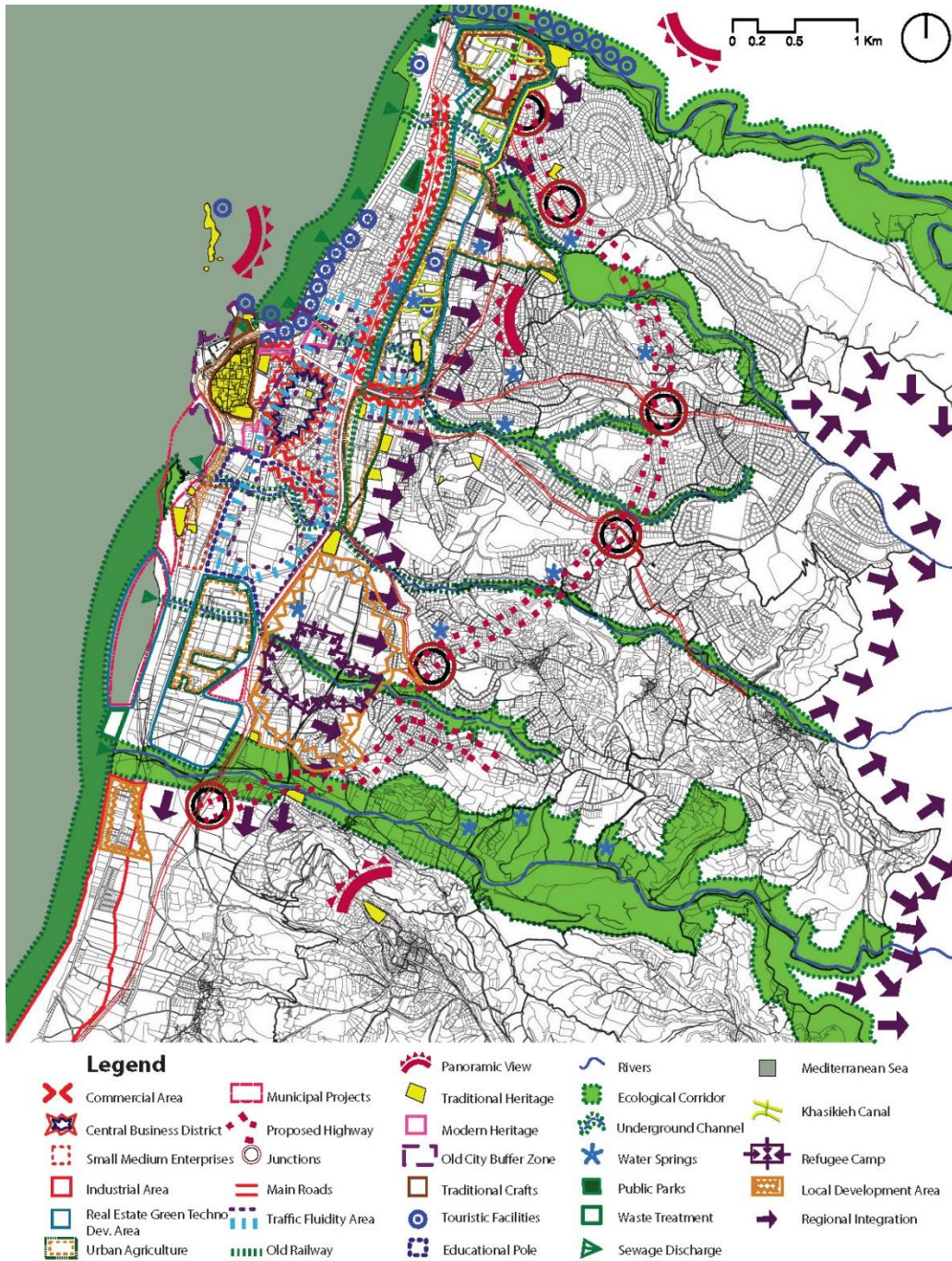


Figure 48-Saida USDS Strategic framework

Source: (Al-Harithy, Makhzoumi, Hallaj, Chabaan, et al., 2014, p. 122)

i. The Barcelona Report:

The municipality of Saida, noticing the negative effects of the coastal highway, teamed with the municipality of Barcelona in 2014, in order to readjust its waterfront.

The report targeted the enhancement of accessibility of the sandy beaches, and the

dominance of the soft mobility rather than the dominance of vehicular traffic. The proposition was inclusive but was not executed till today.(Hammoud, 2018, p. 93)

(Figure 49, Figure 50)

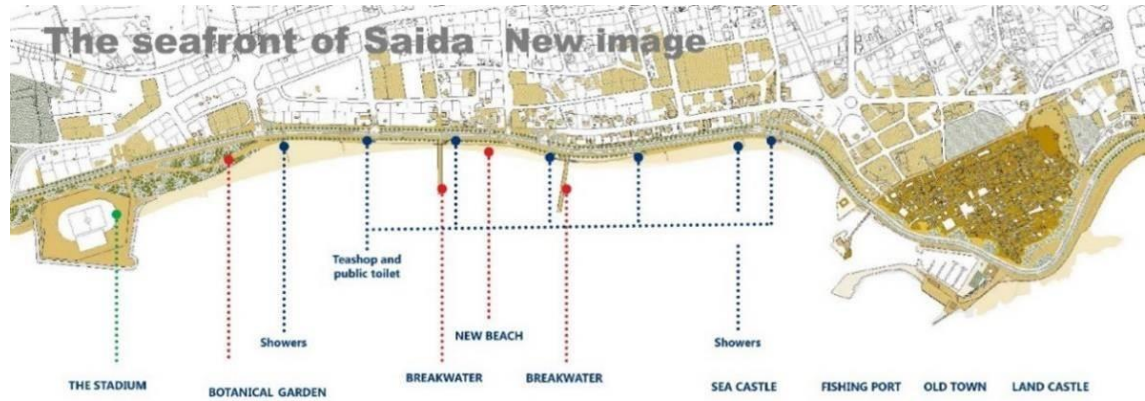


Figure 49 - Seafront Proposal by the Barcelona team in 2016
Source: The Barcelona Report 2016

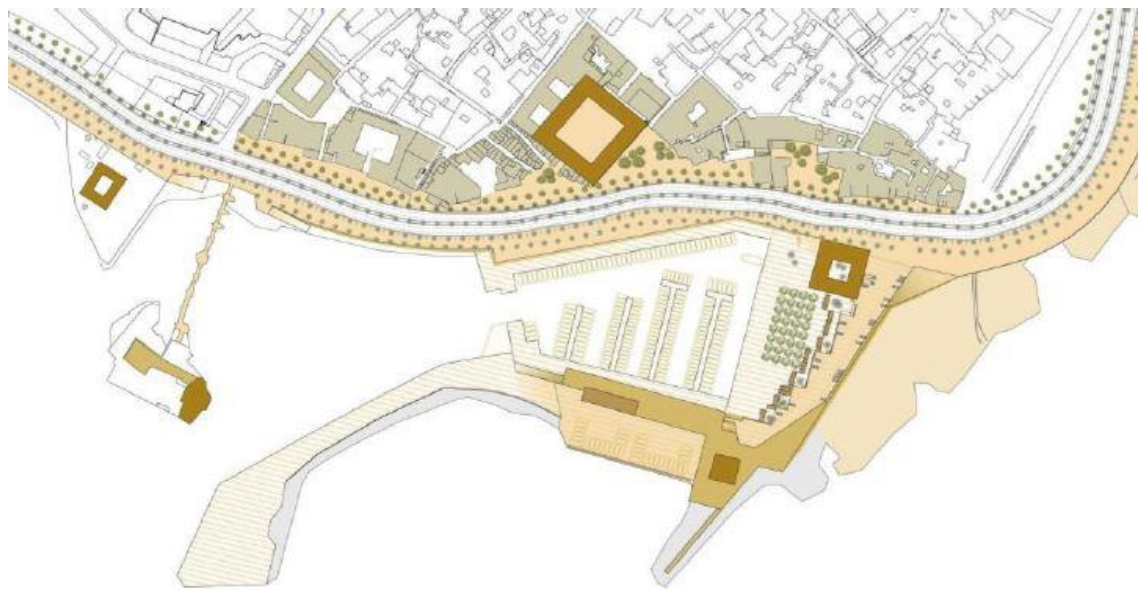


Figure 50 - The port and fishermen dock
Source: The Barcelona Report 2016

Despite the fact that this proposal's target was to enhance connectivity, however, it only tackled the subject mostly from a physical way. The strategies proposed included the creation of a dedicated bus lane along the corniche, the creation of a continuous promenade that enters to the fishermen port, the extension of the corniche to gain more

space for pedestrians, improvement of access through the use of ramps and stairs. However, the strategies proposed have a small impact on coastal connectivity, and could have been pushed much further. For example in the fishermen port, visual connectivity with the sea is still obstructed, and half of the public space is planned for cars.

In terms of the social aspect of the project, the proposal lacked context. First, the proposal was a top down design, inspired by a European model of waterfronts, which functions differently than the coast of Saida. Second, the project had no impact on improving the livelihood of the local residents. It rather capitalized on the touristic aspect of the waterfront.

In terms of environmental considerations, it was reduced to street planting and expansion of the Kinayat garden. Moreover, to capture sediments and enlarge the sandy beach, groynes were proposed, even though they cause a fragmentation of the public beach.

In conclusion, the Barcelona proposal had some good strategies on the physical level to alleviate traffic and enhance ease of movement. However, the strategies employed fell short when it came to other layers, and even on the physical level, these strategies could have been taken further to realize the full capacity of the coast.

j. Discussion / ICZM as a solution:

Since the plan of Ecochard for Saida, followed by the zoning plans of 1967 and 1995, and the land pooling of Wastani, the planning tools employed to manage the coast of Saida were all rigid, facing the complex challenges of coastal areas. Despite the good intentions behind the different zoning plans proposed and executed for the city, this tool contributed to the fragmentation of the coastal landscape, the dominance of vehicular traffic, isolation of the city from the sea, and the creation of urban breaks in form of road networks. In fact, these plans did not look into specificities of the existing urban landscape (social, cultural and physical context), it rather shifted the urban dynamic towards real-estate market, disregarding the provision of the environment. It was not until the NPMPLT that a comprehensive planning tool was elaborated on a national scale, however lacking political will for change, and taking advantage of the current real estate driven planning, the NPMPLT is most of the time disregarded. On a local level, in Saida, the SUSUDS followed an integrated approach bridging the different layers of the city into one comprehensive strategy, but its recommendations were disregarded most of the time, such as in the case of the new commercial port in Mina Iskandar, the new landfill of Dekerman and other developmental projects along the coast. In the context of lack of planning and lack of adequate tools, when it comes to coastal areas, a change in management should be adopted on a local and national scales. The ICZM framework comes as an answer to the complex issues facing the coast (UNEP, 2008). In the context of this thesis, given that Lebanon has signed the ICZM protocol for Mediterranean cities (UNEP, 2008), the implementation of this framework and the different tools accompanying it is essential for the development of a sustainable coastal zone.

C. Current City Profile

In this section, an integrated study of the coast of Saida is conducted. This study expands on the physical, socio-economic, legal and environmental dimensions to provide a comprehensive reading of the coast. Two main actions are conducted in this section, mapping and typologizing. Thus for each layer considered two maps are presented, followed by a table showing the different types mapped. This chapter aims to provide a base for the analysis of the coast. It brings to the fore, the main issues and strengths of the coastline of Saida.

1. Saida through the Physical Lens





a. Accessibility of the Waterfront

Mapping the accessibility of the coast stems from the research question of this thesis. The importance of accessibility is related to the notion of democracy and social justice and is by nature a universal right. Mapping and analyzing access to the coast provides an insight on the well-being of the community and its physical connection to the waterfront. It also brings to the fore the issue of physical connectivity between the city and its sea.

Public accessibility to the coast of Saida is preserved largely due to the public ownership of coastal lands (Figure 51). The Qamleh beach represents an area where public access is free and unmonitored. Nevertheless, formal access points are very few and are usually stairs and never ramps, so people are resorting to informal access modes such as jumping over the handrails. Moreover access is sometimes monitored in gated spaces such as the Kinayat garden, the Sheikh Zayed Garden, and the Saoudi garden. Accessibility of the waterfront in Saida stretches beyond the shore, towards the Zireh,

where a water taxi costing 3000LBP at the time of the survey provided transport from and to the islet. The mapping of the type of access along the studied area reveals four types (Figure 52) listed in Table 16.

Table 16- Types of access modes along the coast in Saida

Types	Description	Location	Photos
Type 1	Monitored access. A security check and gates protect these areas. They open on schedule, operated mostly by the municipality.	-The Kinayat garden -The Rest House -The Sea Castle -Commercial part of the port	
Type 2	Accessible to the edge but not to the water	-Municipal stadium -Iskandar bay	
Type 3	Free and unmonitored access	-Qamleh beach -Fishermen port	 
Type 4	Gated, and protected areas with restricted access	-Military casern -Dekerman landfill	

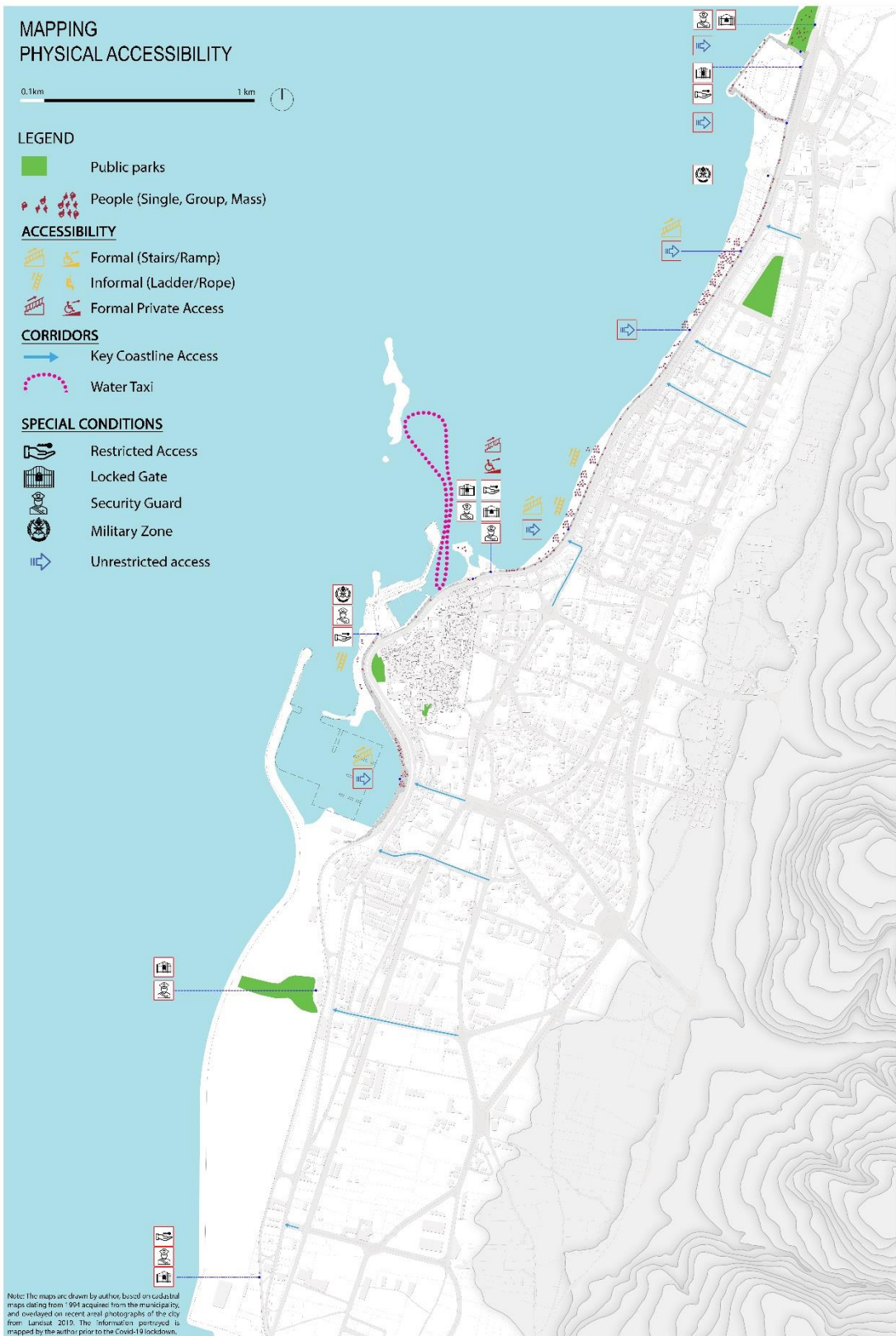


Figure 51 - Mapping Physical accessibility
Source: Trace by author after survey





Figure 52 - Typologizing Physical accessibility
 Source: Trace by author after survey

b. Visual connectivity with the sea

The visual connectivity is an important layer relevant to the research question. Visual connectivity is an important indicator of the relation of residents with the coast. Visual connectivity and obstruction are mapped from the coastal boulevard of Saida. Along this road, visual connectivity with the Mediterranean Sea is largely preserved due to the public ownership of the coast. However, the view is punctually obstructed by either high opaque walls hiding a military casern, such as in the northern part of Wastani, and buildings above street levels, such as the stadium and the Saida RestHouse. Whereas towards the south of the city the obstructions become of a larger scale. The mapping (Figure 53) conducted revealed seven types (Figure 54) of visual connectivity, listed in Table 17.

Table 17- Types of visual obstructions along the coastal road

Types	Description	Location	Photos
Type 1	Obstruction by metal wire mesh fence	-Stadium area -Sea Castle area	
Type 2	An unhindered view towards the sea	-Qamleh beach	




Type 3	A hindered view with concrete walls	-Military casern area -Rest house	
Type 4	View obstructed by a building	-Rest house -Municipal Stadium -Development on the new port	
Type 5	A hindered view by the presence of a port, its industrial equipment, and the high seawalls constructed to protect the interior basin	-Fishermen port -New commercial port	
Type 6	A visual connectivity obstructed by a human made dune	-Saoudi Garden	
Type 7	Not defined yet due to the unfinished development of the area	-Dekerman landfill	



Figure 53 - Mapping the visual obstruction from the coastal road
Source: Trace by author after survey

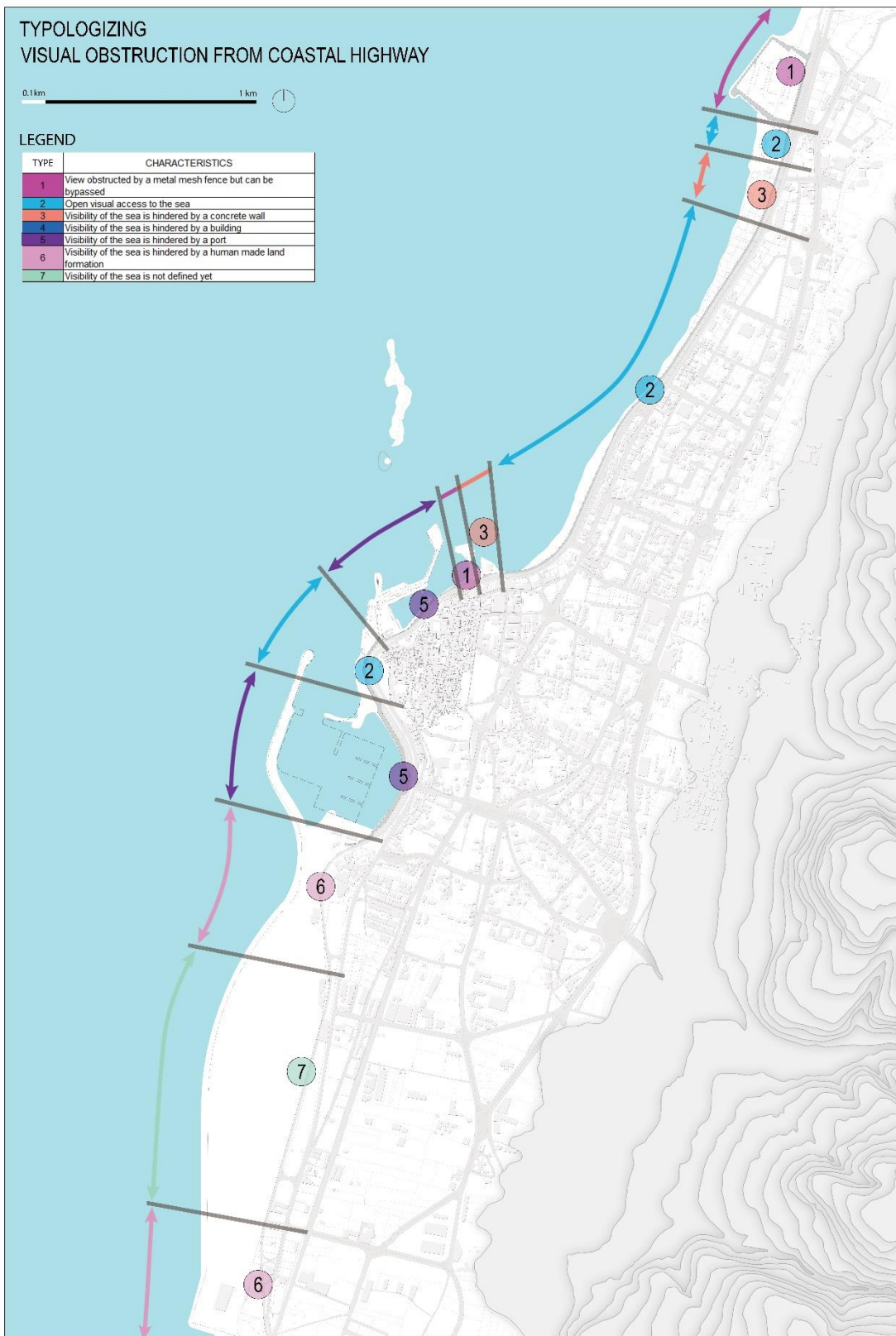



Figure 54 - Typologizing the visual obstruction from the coastal road
Source: Trace by author after survey




c. Buildings Height

Building height and density are mapped in this section. The density of the fabric and the building height influence the visual connectivity and the relationship of the coastal fabric with the sea.

Urban sprawl in Saida spread from the Old city towards the agricultural fields. Since the Old core was zoned at the time as a Historical zone, the construction of new buildings within its boundaries was suspended, preserving the medieval dense fabric. However the new expansion of the city followed much more advanced techniques of construction and followed modern rules of zoning, resulting in medium to tall buildings in the Wastani area. While in the Dekerman area, development was halted by the presence of the Ain El Helwe refugee camp, causing the preservation of the agricultural plains in this area coupled with low height buildings with a low density. The mapping (Figure 55) conducted revealed seven types (Figure 56) of visual connectivity, listed in Table 16.

Table 18- Buildings height and density

Types	Description	Location	Photos
Type 1	No buildings Agricultural fields		
Type 2	Low height buildings and low density		

Type 3	Medium height buildings and a medium density		
Type 4	Medium to high buildings and the fabric is dense.		
Type 5	Tall buildings, between 9 and 12 floors, and a dense fabric.		
Type 6	Buildings of maximum 3 floors high.		
Type 7	The unbuilt reclaimed lands		
Type 8	The unbuilt coast of the city		

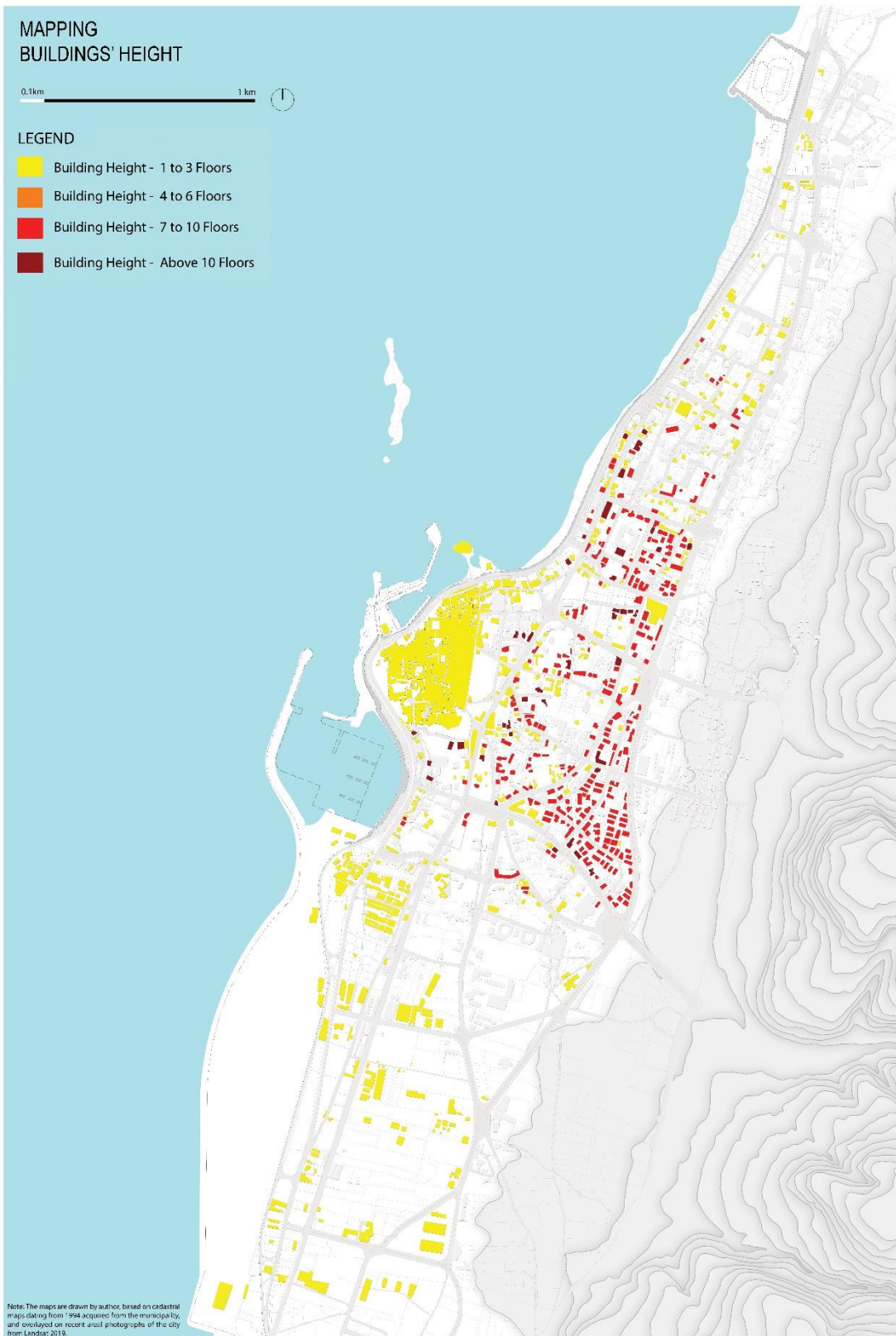


Figure 55-Mapping the building heights in Saida in 2020
Source: Trace by author after survey

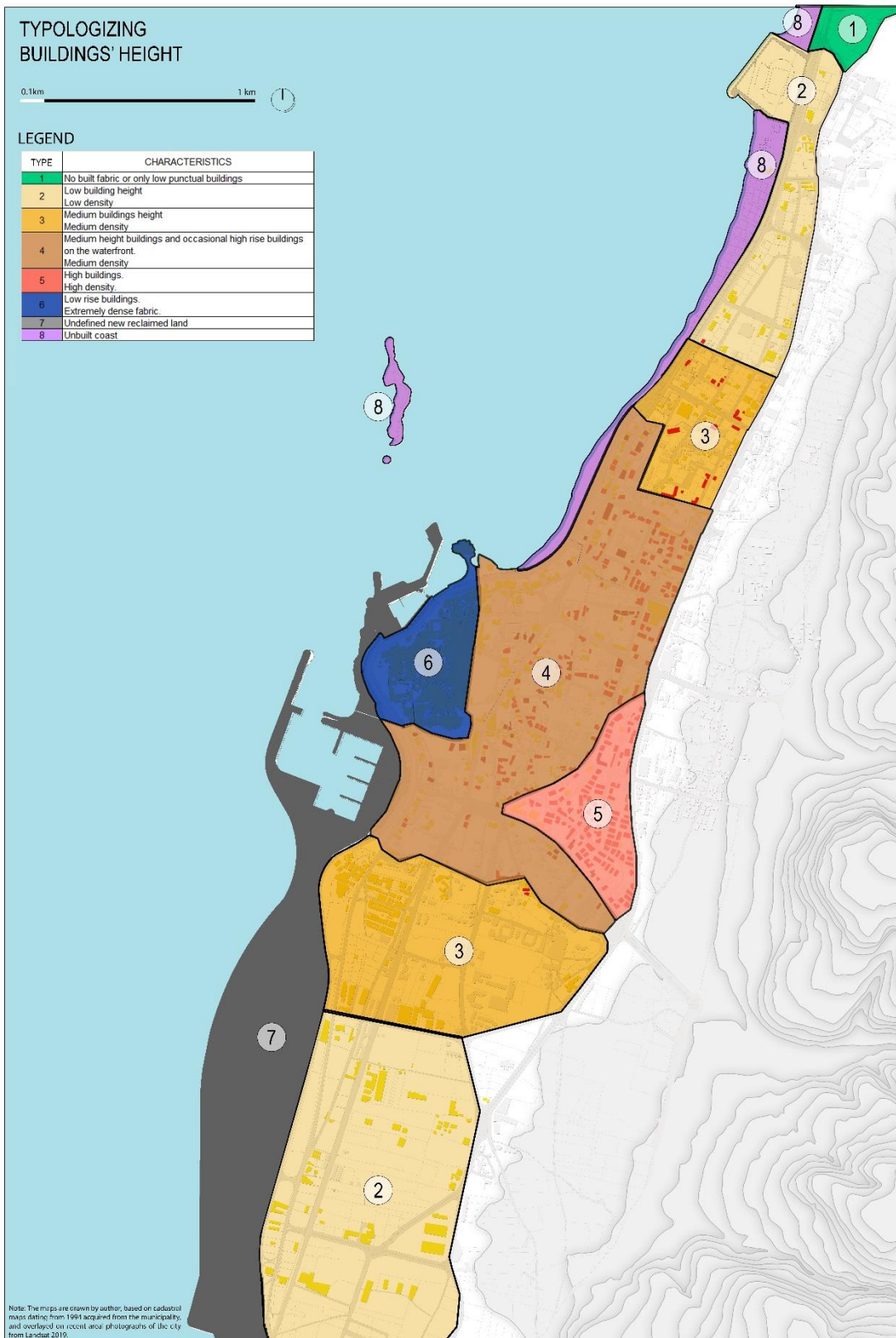


Figure 56-Typologizing the building heights in Saida in 2020
Source: Trace by author after survey

d. Walkability along the Waterfront

Mapping walkability along the waterfront gives an insight on the level of pedestrian connectivity, ease of mobility and physical interactions between the different users of the coastal street in Saida .

It is mainly preserved and continuous in the northern part of the city up until the Rest House constituting a bottleneck where cars park on the sidewalk and interrupt the pedestrian flow. Followed by several interruptions along the Old City, walkability is reestablished along the Iskandar gulf. Nevertheless, walkability towards the Iskandar bay is hindered by the presence of heavy vehicles, trucks waiting for their turn to enter the port or the landfill. Sidewalks in the northern part of the city are around 8m wide, allowing several socio-spatial activities. However, lack of public amenities such as seating, shading and WC take their toll on the usage of the space especially in the hot and sunny Mediterranean weather. Towards the Dekerman, walkability is absent due to multiple hazards on the sidewalks, coupled with the absence of lighting, and the undefined and industrial character of the zone. The mapping (Figure 57) conducted revealed five types (Figure 58) of visual connectivity, listed in Table 19.

Table 19- Walkability along the coastal road in Saida




Types	Description	Location	Photos
Type 1	Interrupted and hazardous sidewalk with no amenities	Dekerman area	
Type 2	Medium sidewalks but no amenities	Qamleh beach	
Type 3	Public amenities and narrow sidewalks	the surroundings of the Saudi garden northern of the Dekerman	
Type 4	Medium sidewalks with some amenities	Coastline of the Old city	
Type 5	Large sidewalk with the presence of some amenities	Iskandar bay	



Figure 57 - Descriptive map assessing walkability along the coastal road
 Source: Trace by author after survey

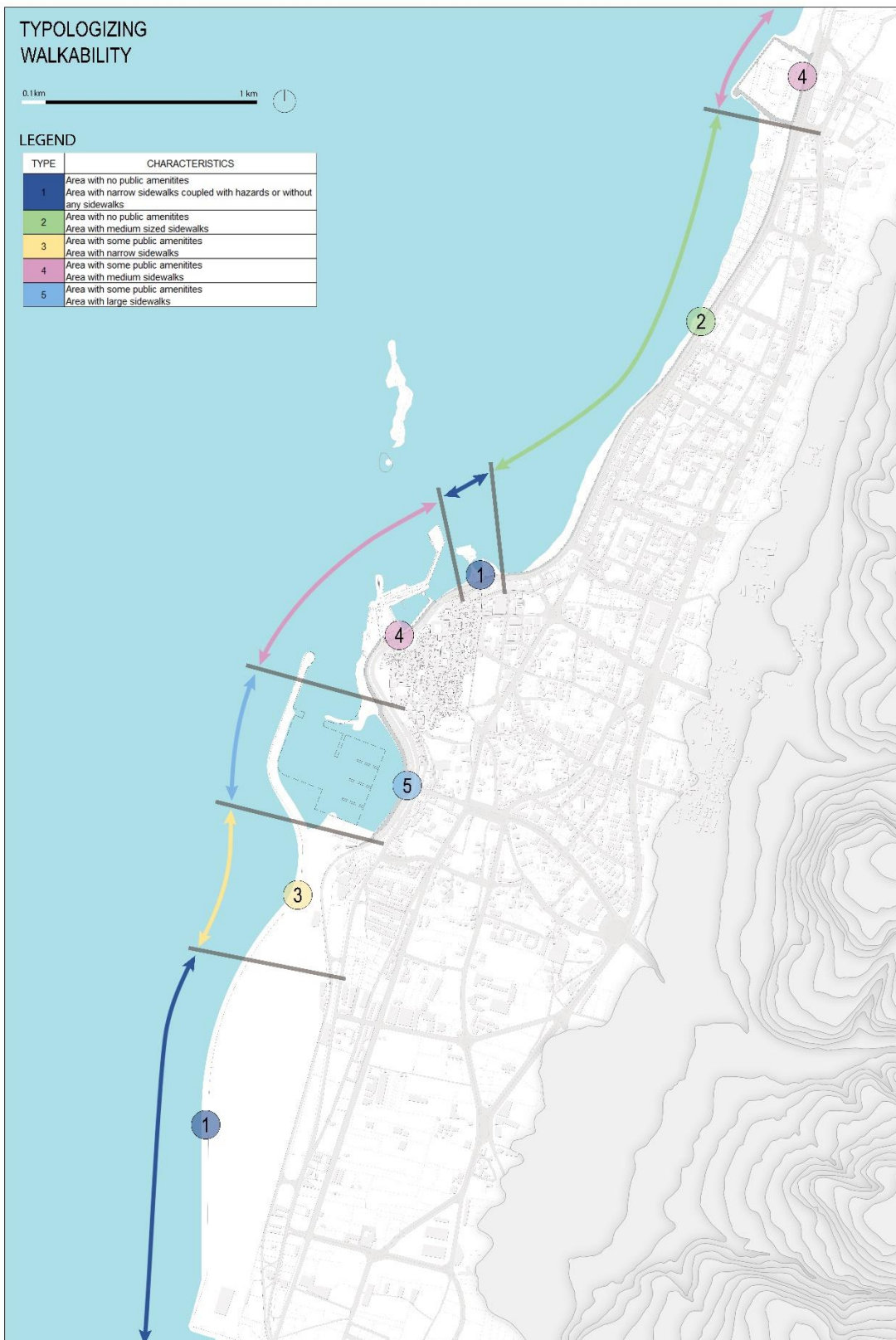
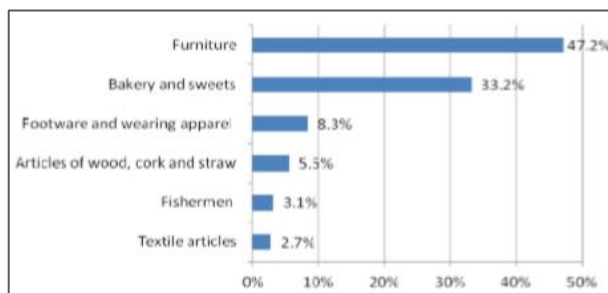


Figure 58 - Analytical map assessing walkability along the coastal road
 Source: Trace by author after survey

2. Saida through the Socio-Economic Lens

a. Socio-spatial practices along the sea throughout history

Historically, the strategic location of Saida on the Mediterranean Sea served trade and fishing sectors, while vast plains and the abundance of water streams ensured richness of agricultural activities. These activities shaped the urban economy of Saida up until the advent of the Chakirieh road in 1874 opening the way for the expansion of the city extra-muros into the agricultural plain. Saida was known for the production of silk, silver and gold artifacts and the trade of murex since the Phoenician era (Rodier, 2005, p. 4) . Aligned with the importance of the murex, Saida gained important expertise in glass making. Moreover, Saida gained a significant military role given its craftsmanship of ships construction in the Persian era(Rodier, 2005, p. 5). This cultural legacy held by Saida, made the city a touristic destination, however, these traditional crafts are disappearing today because of lack of adequate infrastructure in the old city, and lack of planning and support(Al-Harithy & Guadagnoli, 2014, p. 1).



	Poverty headcount \$4 per capita per day	Extreme Poverty headcount \$2.4 per capita per day
Saida city	46.3%	16.5%
Traditional crafts labor in Saida	65.6%	56.2%

Figure 59- Distribution of employment within the craft sector 2004

Figure 60-Poverty levels among traditional workers compared to overall poverty in Saida 2004

Source: SUSDS, Employment in Traditional Crafts and Trades, p3

As for the agricultural sector, Saida was known for the production of figs, olives, oranges, lemons, raisins, loquats, pomegranates, bananas, and berries.

Saida's most important exportated items in 1908		
Silkworm Cocoons	100000 Kg	to Lebanon
Silkworm Cocoons	160000 Kg	through Saida's road
Dried figs	75000 Kg	to Alexandria
Oil	50000 Kg	to Alexandria
Olives	25000 Kg	to Alexandria
Raisins	12000 Kg	to Alexandria
Rose water	4000 Kg	to Syria, Egypt and Asitana
Loquats	2500 crates	to Beirut, Syria, etc
Tabacco	78000 ounces	from Tyre and Sibon to Egypt
Pomegranate	900 qantar	to Beirut, Syria, Egypt
Banana	worth 3400 Lira	to Beirut
Eggs	600000 egg	to Alexandria
Eggs	700000 egg	From the Caza of Saida to Beirut
Chicken	120000 bird	From Saida
Oranges and lemons	18000 fruit daily during the season	to Beirut, Lebanon and Syria
Oranges and lemons	50000 crates	to Asitana, Russia and England
Sesame	2000 ounces	to Egypt and big demand in Europe
Leather	250 roll	to Beirut and Cyprus

Figure 61-Exportation of goods from Saida in 1907
Source:(El Zain, 1913, p. 132)

Following its rich history, the waterfront of Saida has acquired a versatility of functions through time. It has served as a transportation hub, a trade center, a social space, a festivity area, sports and leisure zone, a religious gathering area and a military asset.



Saida's waterfront, a Social space



Saida's waterfront, a Transportation hub



Saida's waterfront, a Festivity space



Saida's waterfront, a space for trade

Figure 62 - The waterfront of Saida, a versatile space
Source: Municipality of Saida

However, following the pavement of the boulevards along the city, and due to uncontrolled urban sprawl, agricultural plains are at present fragmented and the agricultural sector is falling victim of land speculation (Makhzoumi & Al-Sabbagh, 2014, p. 2). Along the newly paved internal boulevards, new economic nodes are taking shape in the form of malls, commercial centers, and food courts, while investment along the waterfront remains shy due to high land prices (Hallaj, 2014a, p. 1)

In conclusion, Saida is deviating from its heritage and thus it is losing its competitiveness. Nevertheless, Saida is the gate of the South and still has major assets such as a strong political leadership; a diversified economy with the presence of traditional crafts and modern economy; unique natural assets with 31% of the land remaining as agricultural plain (Hallaj, 2014a, p. 7); and a rich cultural heritage. (Barthel, 2014, p. 4)

b. Current festivities and current socio-spatial practices

Mapping and analyzing the current socio-spatial activities gives an insight on how the locals are using the coast, where are the most used spaces and the most avoided ones and why are they distributed as such. This study will allow a deeper understanding of the relation between the coast and the social fabric of the city.

At present, festivities still take place on the waterfront of Saida such as Eid el Adha, taking place in Baher el Eid. This space used to be one of the most active spaces on the waterfront; however, after the advent of the different boulevards, Baher el Eid remained separated from the sea and invaded by cars. Last year, efforts made by Saida Observatory in coordination with AUB translated into the rehabilitation of part of this space. In the northern side of the city, other type social space along the waterfront exists, the Kinayat garden, where people gather in the afternoon for some coffee and nargile while their kids play.

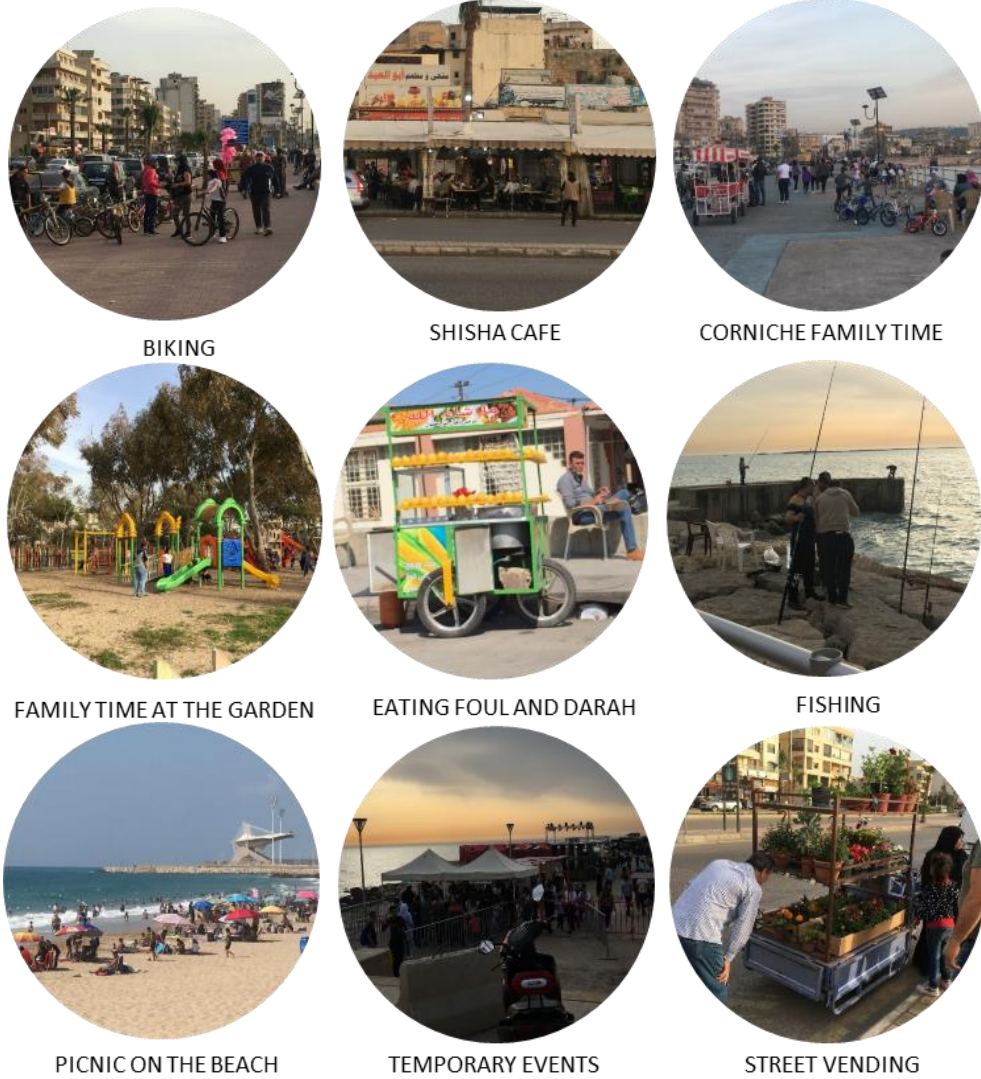


Figure 63 - Socio-spatial activities along the coastal road of Saida

Moreover, Saida still has in its Old Core a living heritage of small businesses and crafts (

Figure 64). These craftsmen have a particular knowledge and craftsmanship passed down from older generations. Between these crafts Saida is known for shoe-making, weaving, leather artifacts, textiles, straw products, woodwork, furniture making, traditional foods, sweets, in addition to soap and orange blossom water (Chaaban et al.,

2014). Fishing also constitutes a characteristic heritage of Saida, along with the baskets weaving, nets sewing, boat repair and construction, fish selling.



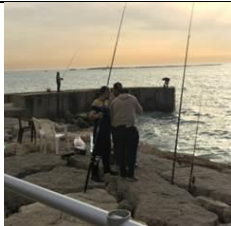
Figure 64 - Crafts remaining in Saida

Through the observation of the monuments along the bay, and the activities of the people in this area, it becomes prominent that the sidonians are in tight relation with their religious beliefs, given the multitude of mosques along the bay. It is noticeable that on Fridays after prayer time, people gather on the corniche facing the mosques.

Figure 65 shows the distributions of the socio-spatial activities along the waterfront of Saida. These activities can be assembled into sports such as running,

jogging, biking, along the corniche up until the Rest house. Ball sports such as football, volleyball, basketball, tennis, taking place near the stadium northern of the city, or on the sandy beach. Other activities are related to the beach and the sun, such as swimming, diving, sunbathing mainly on the Zireh Islet and on the Qamleh beach. It is worthy to note that the Old city constitutes a node for crafts and fishing, and is a well-known site-seeing zone. The mapping conducted revealed six types (Figure 66) of visual connectivity, listed in Table 20.

Table 20- Types of Socio-Spatial Activities

Types	Description	Location	Photos
Type 1	Active space with water sports and social gatherings	-the Kinayat area -the Qamleh beach.	
Type 2	A vibrant area with sports activities	-municipal stadium	
Type 3	Low activity zones	-Facing the military casern	
Type 4	Rich in cultural tourism, fishing, commercial activity and crafts	-the Old City	
Type 5	Low activity zone during the day and busy in the afternoon	-Iskandar bay	

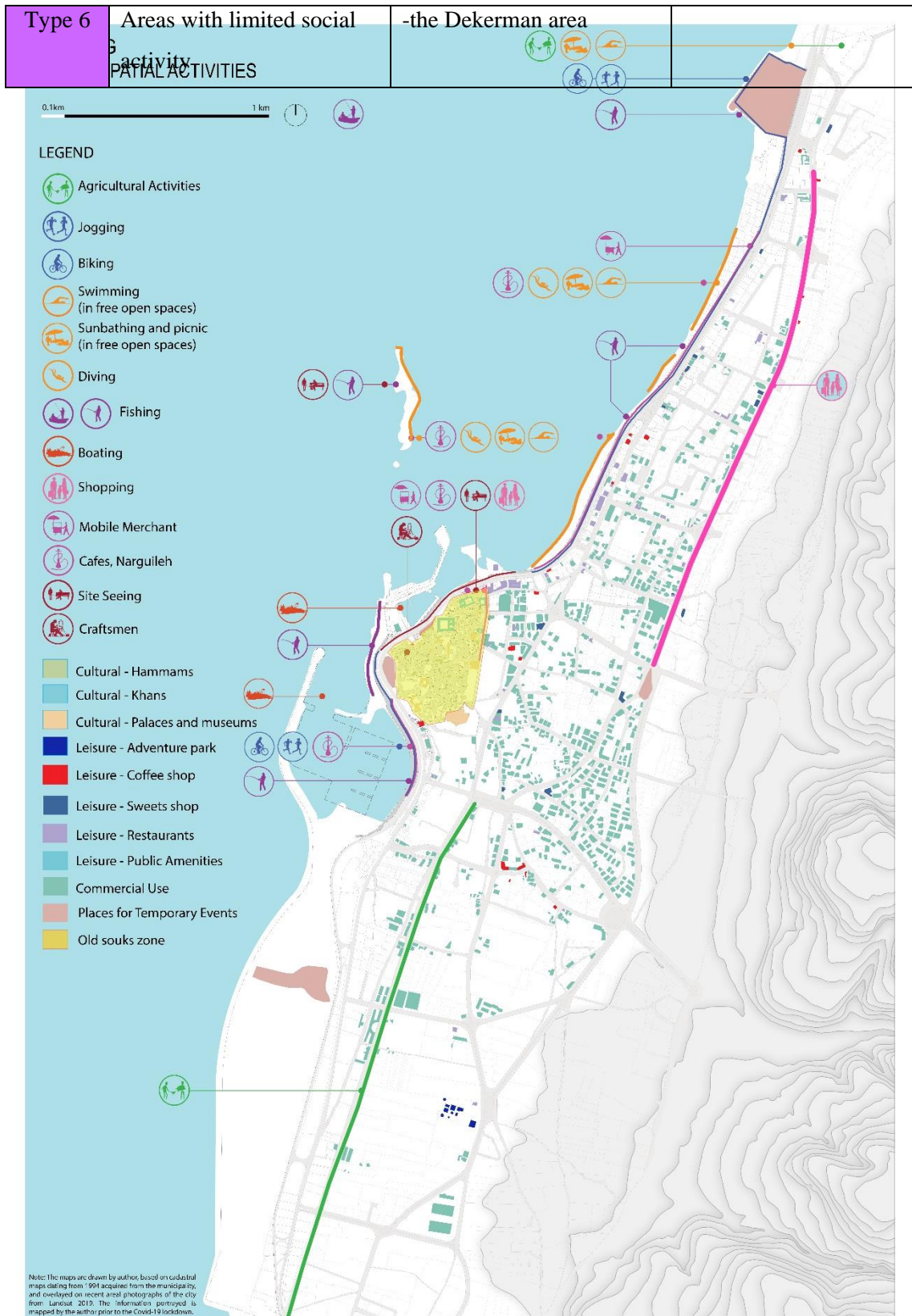


Figure 65 - Mapping the socio-spatial activities taking place on the waterfront of Saida
 Source: Traced by author following survey

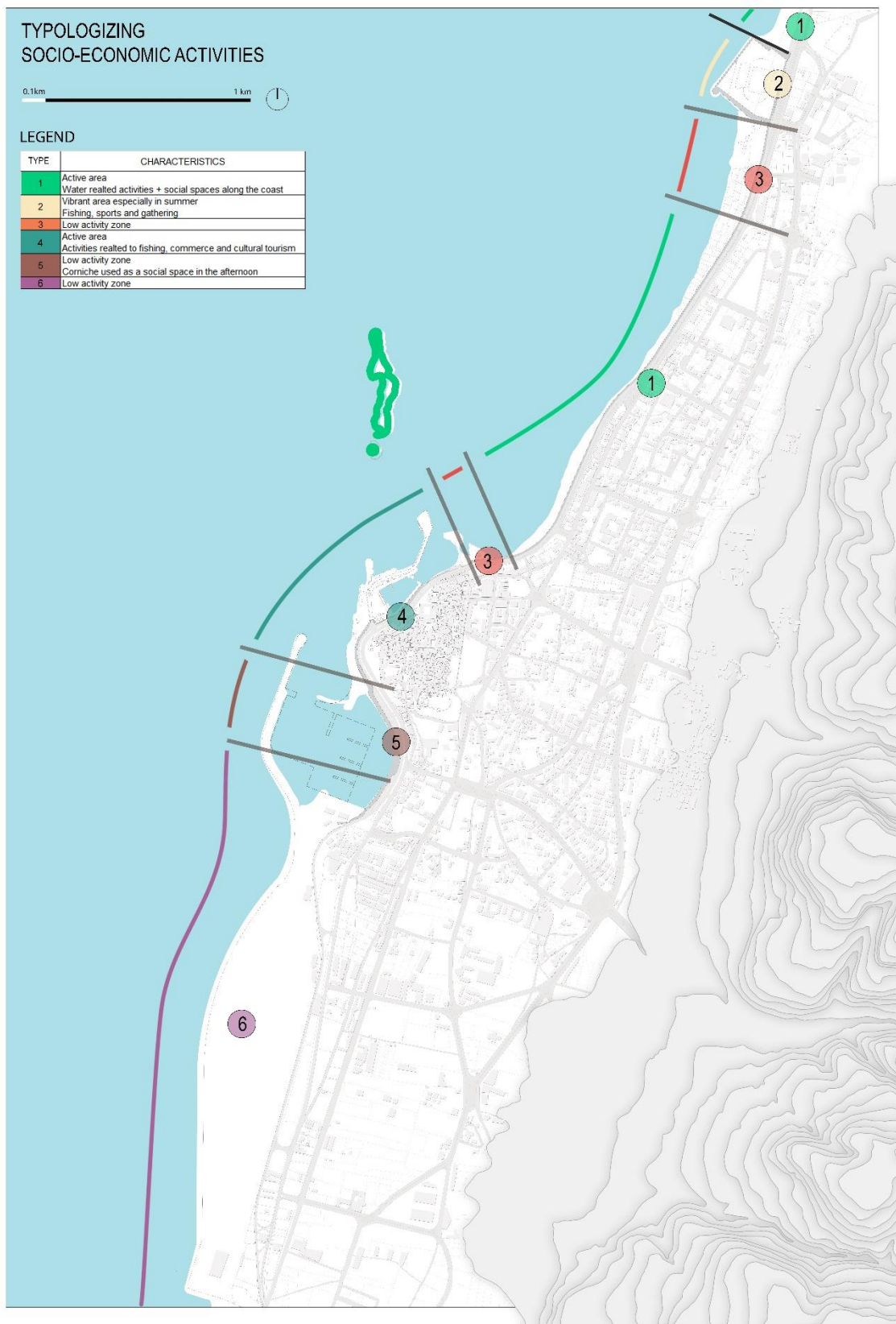


Figure 66 - Typologizing the socio-spatial activities taking place on the waterfront of Saida
Source: Traced by author following survey

c. Built and Natural Heritage

Mapping the built and natural heritage gives an insight on the richness of the coastal city, its previous role, as well as its evolution through time. It explains the historic relation between the socio-spatial activities and the sea and shows how this relation is evolving.

A survey of the built heritage sites in Saida reveals that the majority of these monuments are concentrated in the Old City and date back to the Ottoman era. According to the study conducted by USUDS in 2014, between 63 monuments in the Old City, 51 monuments date back to the Ottoman period. These monuments are mostly privately owned and are recently restored (Al-Harithy & Guadagnoli, 2014).

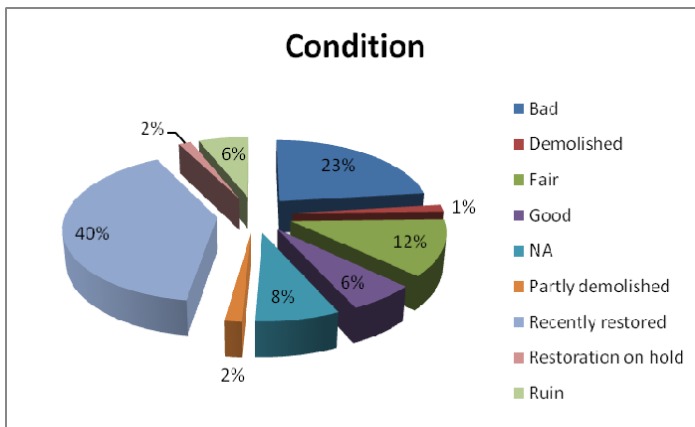


Figure 67 - Condition of monuments in the Old City of Saida

Source: (Al-Harithy & Guadagnoli, 2014)

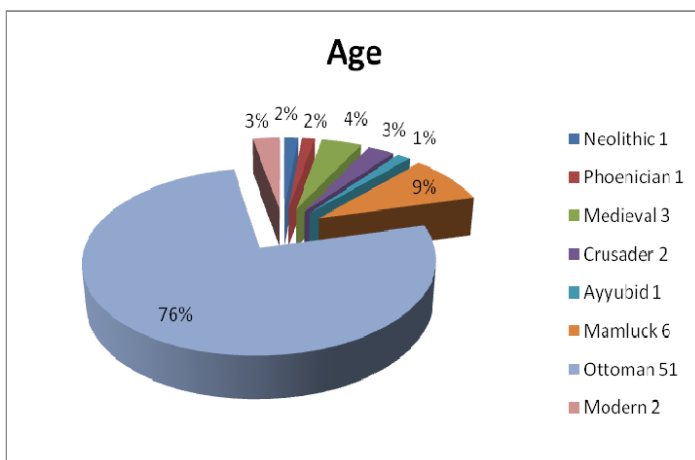


Figure 68 - Age of monuments in the Old City of Saida

Source: (Al-Harithy & Guadagnoli, 2014)



Figure 70-Saida Sea Castle
Source: Wael Hamzeh,2019

Khan El Franj has a tight link with the history of waterfront of Saida (Figure 71). Built in the 17th century following the typology of caravanserais, the khan hosted merchants from around the world, and was the center of economic activity. Afterwards the Khan became a barrack under the Ottoman rule, and then it was converted to a convent for nuns and an orphanage while occupied by the French council. Later, the Islamic Waqf recovered their ownership of the monument. In the 20th century, the Hariri foundation restored the Khan and it is used at present as a cultural center hosting a multitude of events.



Figure 71- Khan El Franj
Source: Author

A wide range of monuments other than khans can be found in Saida, such as Hammams, Maqams, Mosques, Palaces, Zawiyas, and Churches. Among these monuments, Al Bahr mosque plays also a tight role in the linkage between the sea and the Old City (Figure 72). It used to be the place where travelers to Saida came to pray once docked on the port.



Figure 72-Al-Bahr mosque
Source: Author

Built heritage is not only confined in the Old city of Saida, however the monuments outside of the medina are not well documented and not well known to many (Figure 73) . The monuments are mainly Maqams, such as Maqam Abi Rouh, Maqam El Sit, Maqam Al Nabi Sidon. In addition to archeological sites mainly southern of the Old city.



MAQAM ABI ROUH



DERELICT HOUSES



ESHMOUN TEMPLE



DERELICT HOUSES



UNCONTROLLED ADDITIONS

Figure 73 - Valuable heritage site outside of the Old City of Saida

Natural heritage has also a major presence in Saida. It constitutes spaces of social activity and agriculture practices, such as the Kinayat garden, and the Awali river, Qamleh beach, Wastani orchards, and Dekerman agricultural lands (Figure 74). These spaces had a much bigger role historically in promoting social life in Saida, however they are threatened at present by the uncontrollable development of the city. The mapping (Figure 75) conducted revealed four types (Figure 76) of visual connectivity, listed in Table 21.



Figure 74 - Natural heritage sites in Saida

Table 21- Types of Built and Natural Heritage

Types	Description	Location
Type 1	Areas rich in natural heritage	-The sandy coast -The remaining agricultural spaces of wasatani and dekerman
Type 2	Areas rich in tangible and intangible heritage. The Old City and the Zireh Island.	-The old city -The zireh island
Type 3	Low in heritage value. The new expansions of the city	-The new expansions of the city
Type 4	No heritage value. Valuable assets in this area were erased	-The new reclaimed land -Iskandar bay

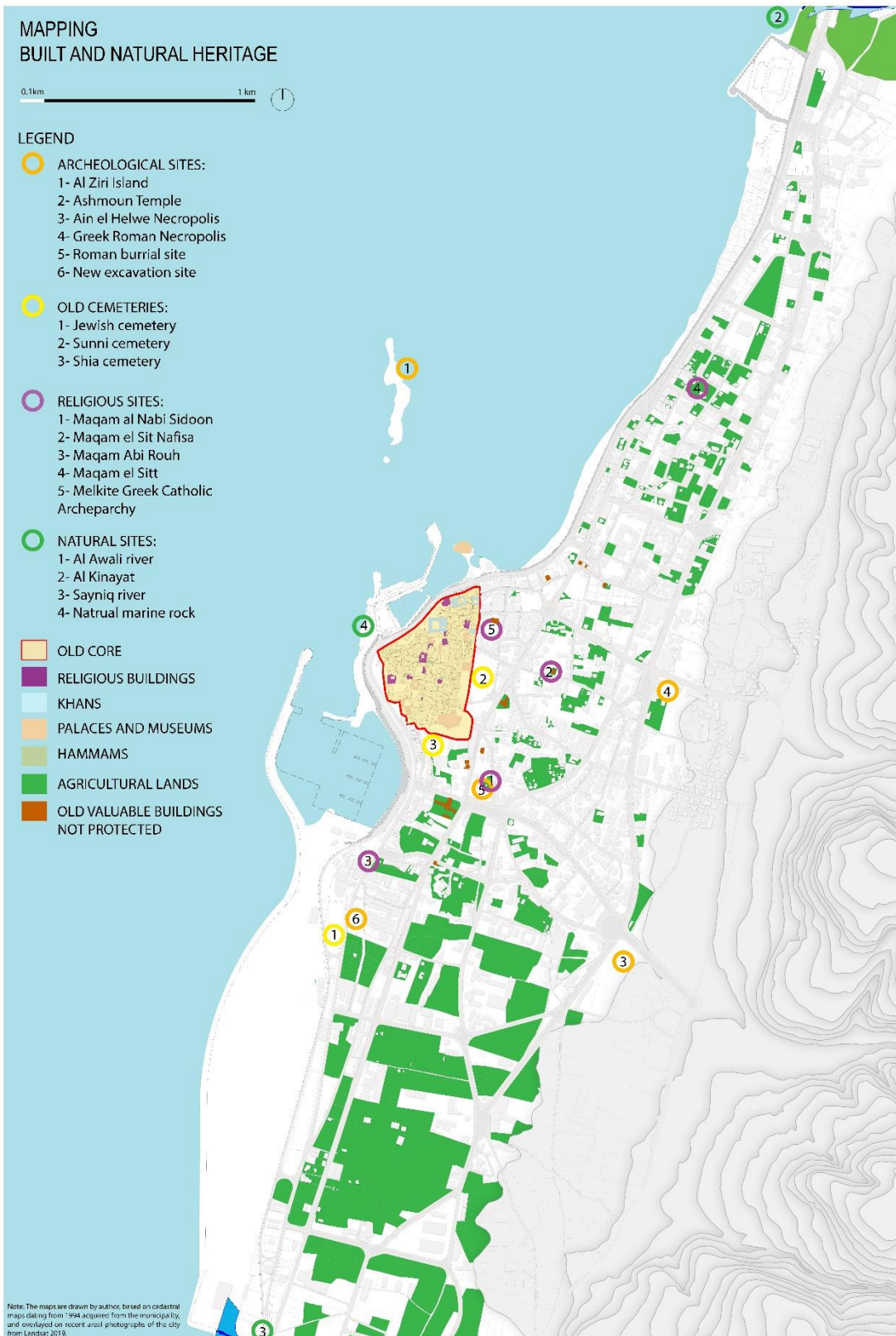


Figure 75 - Mapping the built and natural hertiage in Saida
 Source: Traced by author following survey and SUSDS heritage map

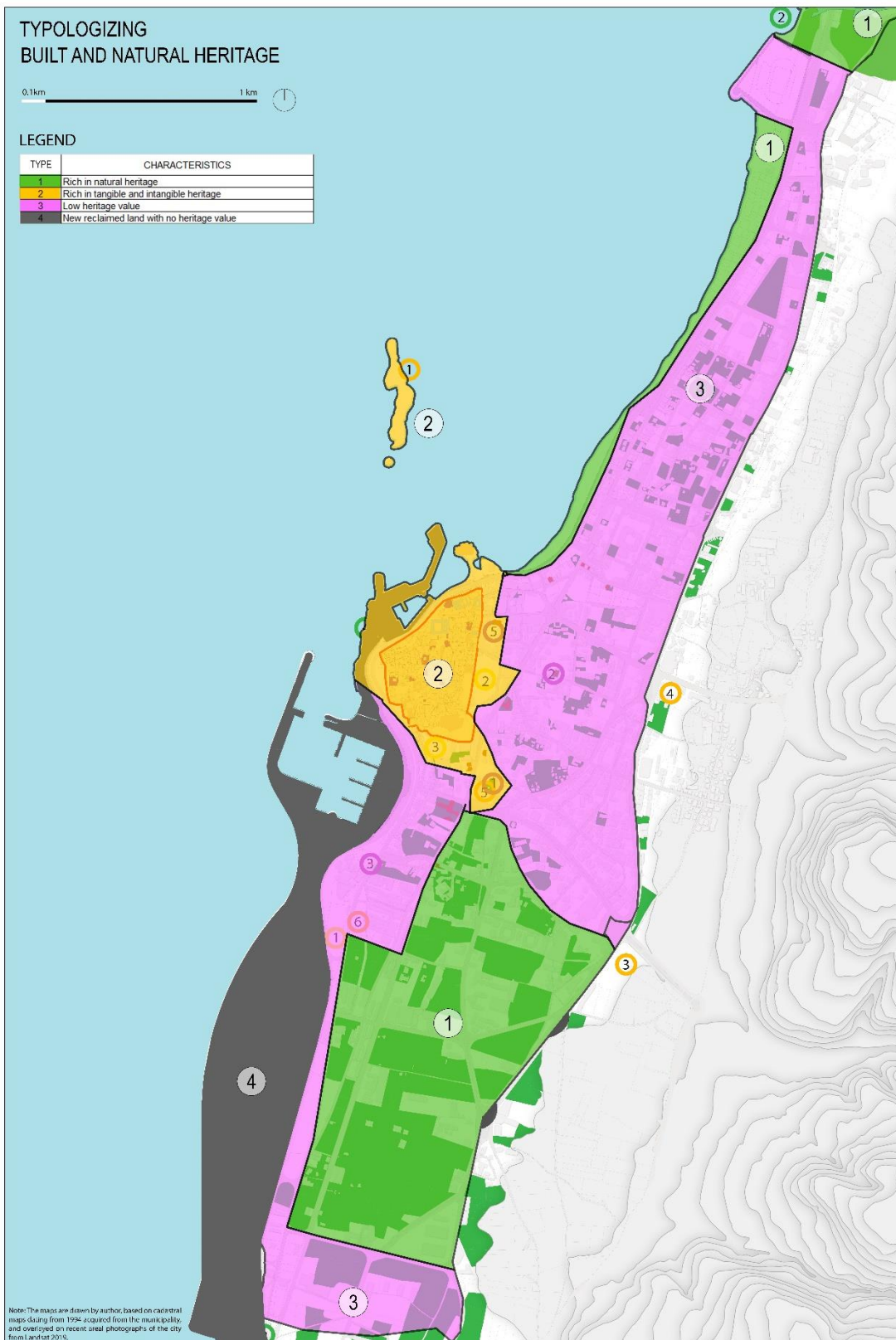


Figure 76 - Typologizing the built and natural heritage in Saida
 Source: Traced by author following survey and SUSDS heritage map

d. Socio-Economic Landmarks

Mapping the landmarks of the city serves to uncover the gathering nodes and explain the types of relationships between city and sea by highlighting the main uses of the coast.

The landmarks of Saida are sporadic, reflecting the image of the investments in the city and lacking a holistic vision to revitalize the role of Saida on a regional level (Hallaj, 2014a). Being the administrative center and the head of the union of municipalities of Zahrani, a number of large landmarks are spread along the city. From administrative centers (the Serail of the South of Lebanon, and the General Directorate of Urbanism of the South), to major hospitals (the Turkish Hospital), to higher education campuses (the Lebanese University campus and the Rafic el Hariri high school), to big religious monuments (the Bahaa el-Din Hariri Mosque). The names of these landmarks reflect the power balance in the city, displaying prominent families in Saida such as Hariri, Saad and Bizri.

The mapping (Figure 77) conducted revealed seven types (Figure 78) of visual connectivity, listed in Table 22.

Table 22- Types of Landmarks

Types	Description	Location
Type 1	Abundance of social landmarks	Northern part of the city, around the Awali river leading to the Kinayat garden
Type 2	Mixed landmarks, with an abundance of social landmarks. Presence of Cafes and restaurant along the waterfront.	Southern part of Wastani
Type 3	Dominance of Educational landmarks	Southern of the old city
Type 4	Administrative landmarks	Around the Nejme square and in the Wastani area
Type 5	Religious landmarks including churches, mosques, and cemeteries	Southern of the old city
Type 6	concentration of cultural landmarks	The old city
Type 7	A low number of landmarks	Dekerman area

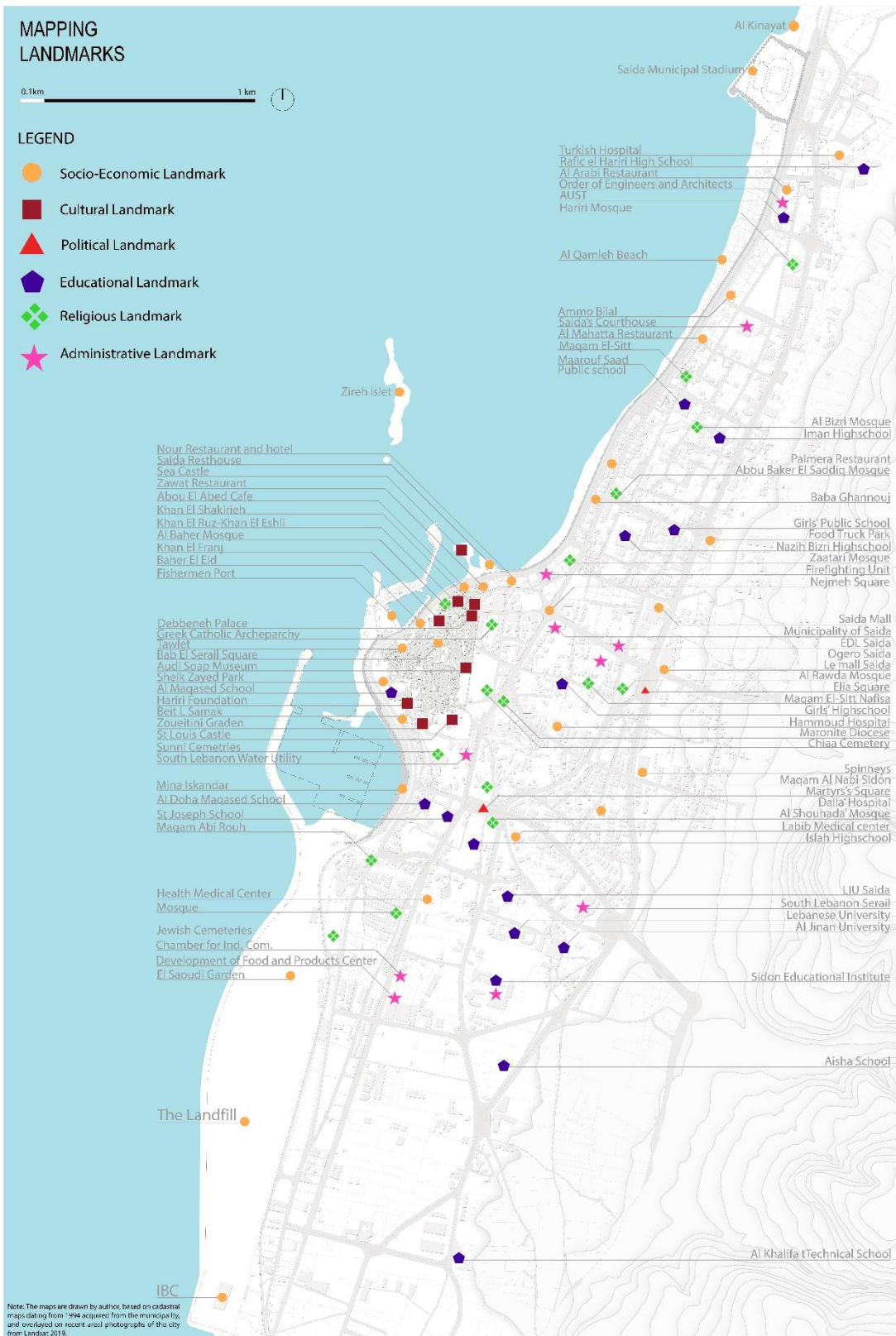


Figure 77 - Mapping the landmarks along the waterfront of Saida
 Source: Traced by author following survey and SUSDS heritage map

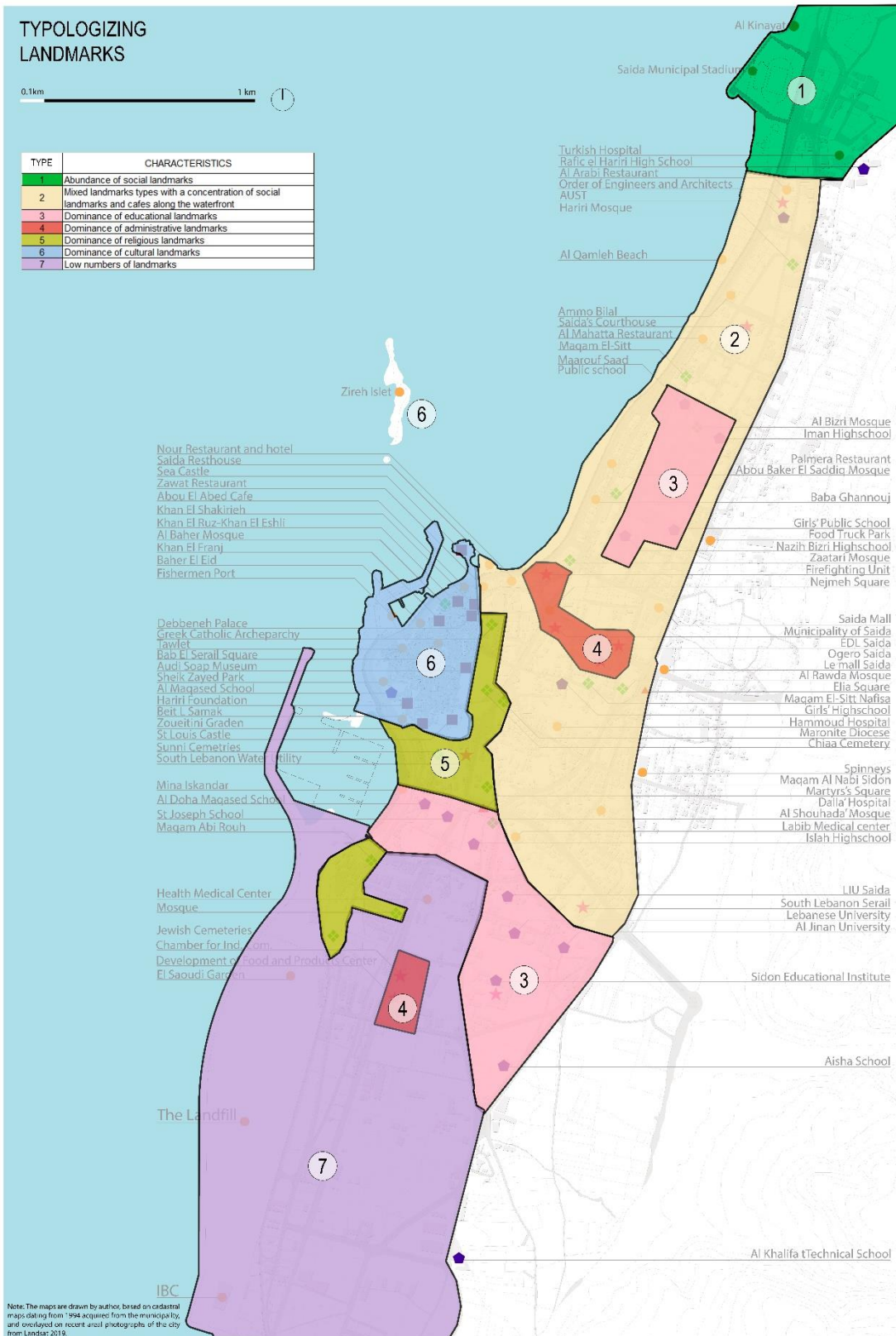


Figure 78 - Typologizing the landmarks along the waterfront of Saida

e. Land Cover/Land Use

Mapping land use and land cover helps to understand how the dweller of the city are using the coastal space, what are the main uses catered along the coast, and reveals the possibility of creating networks between these different spaces. In that aim, building (Figure 79) use, ground floor use (Figure 80) and land use (Figure 81) were mapped.

The uncontrolled urban growth of Saida coupled with the unplanned development and investment in the city have create a mosaic of functions spread all over the urban fabric. While most of the upper floors in building are residential, the ground floors are of majority commercial. Only few old houses and villas remain purely residential in the Wastani area.

Categorizing the building and land use in Saida into types was a difficult task to accomplish due to the irregularity of the spread. However, 14 types were designated according to the ratio of open spaces, green spaces, and the dominant use (Figure 82),

Table 23-Types of Land Cover / Land Use

Types	Description	Location
Type 1	Dominance of agricultural lands exceeding 65% of the area	The Awali area The Dekerman fields
Type 2	Lands with reminiscent agricultural spaces	Wastani area
Type 3	The military zones	Near the municipal stadium
Type 4	The sandy beaches	Qamleh beach
Type 5	The sports facilities, such as the municipal stadium	Municipal stadium
Type 6	A mixed-use fabric with 18% of green spaces	
Type 7	Residential dense zones	Not in direct contact with the waterfront
Type 8	A mixed-use transitional zone around the Old city with an emphasis on commerce and parking	Around the Old city
Type 9	Dense, mixed use fabric with low open spaces ratio	Old City of Saida
Type 10	The embankments hosting a port	Fishermen port and the new commercial port
Type 11	A zone of natural rocks	West of the fishing port
Type 12	A zone mixed between agricultural use and educational facilities	Northern Dekerman
Type 13	The industrial development southern of the city	Southern Dekerman
Type 14	The landfill area	In front of the Dekerman

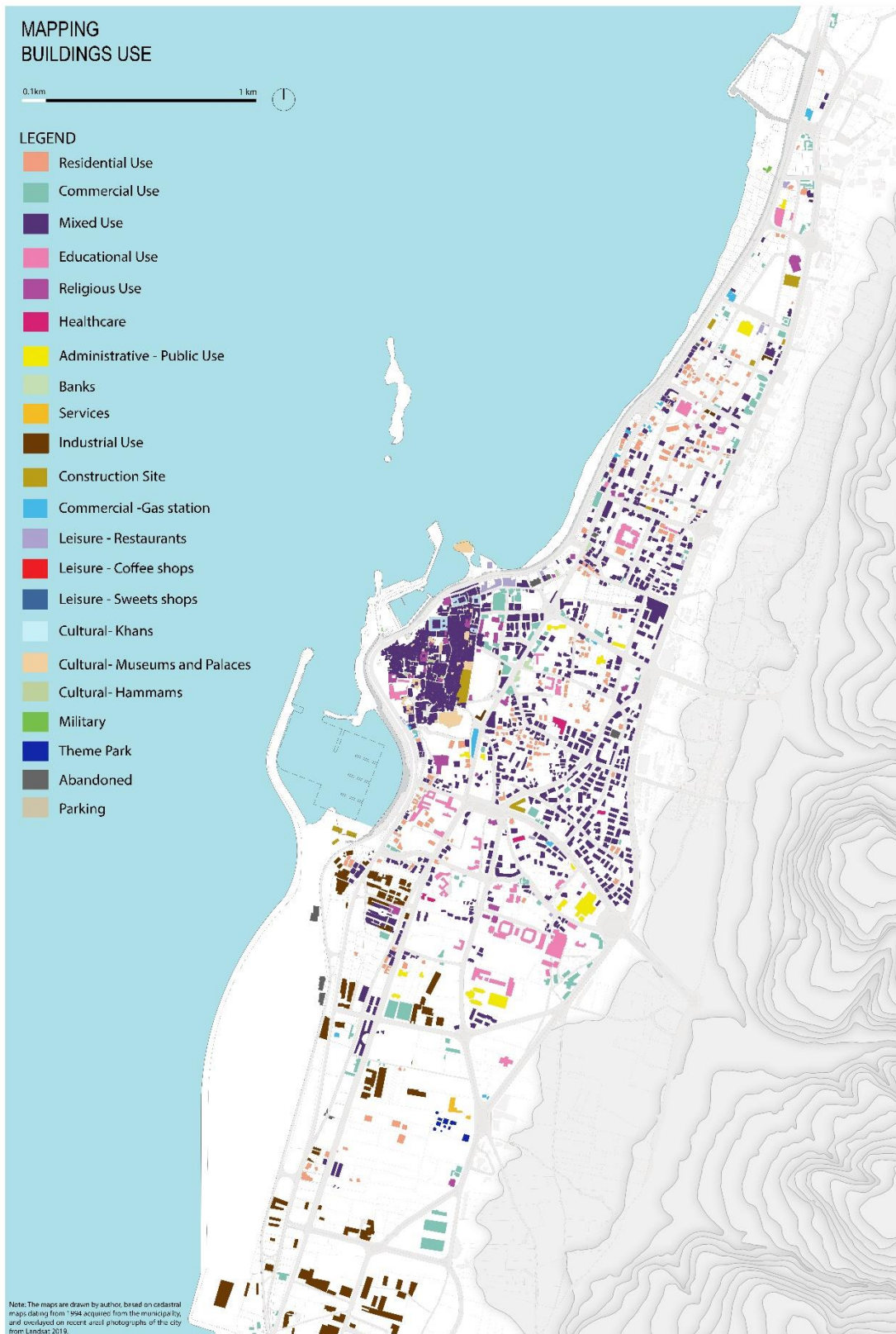


Figure 79 - Mapping the building use in Saida
 Source: Traced by author following survey

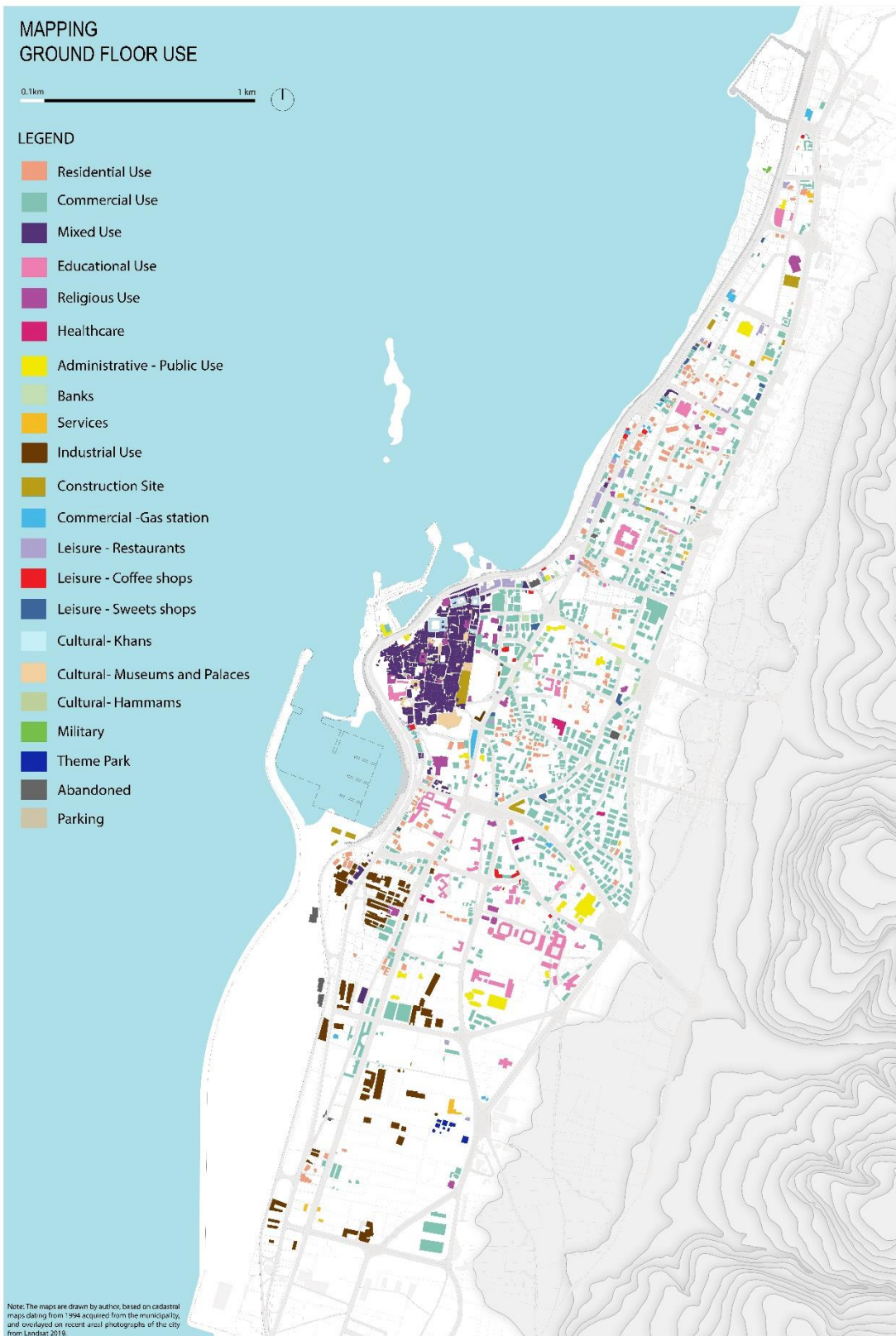


Figure 80 - Mapping the Ground floor use in Saida
Source: Traced by author following survey



Figure 81 - Mapping the Land cover and land uses in Saida
Source: Traced by author following survey and SUSDS land use map

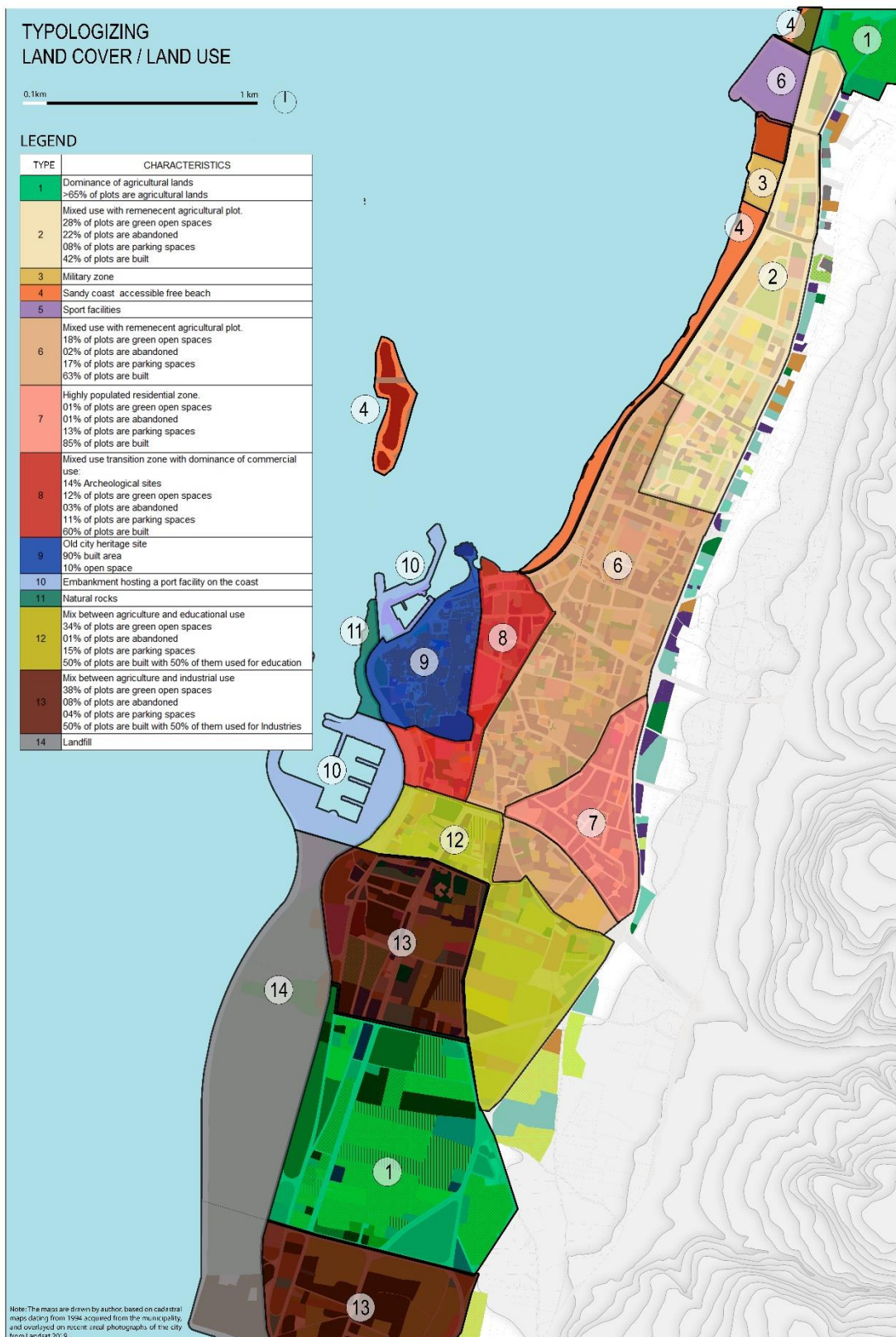


Figure 82 - Typologizing the Land cover and land uses in Saida

f. Neighborhood condition

Mapping the neighborhoods physical condition gives an insight on the coastal communities' wellbeing and their socio-economic status. Within this perspective, the coast of Saida hosts diverse socio-economic classes. Mapping the neighborhood condition was done on a large scale, not a building by building basis, thus only one map is provided. The general feel of the neighborhood was mapped.

In the Old City, where most of the fabric needs maintenance, a good number of monuments has been restored in the last 30 years. However some of them need urgent intervention given that the inheritors of the buildings do not have the means for restoration and the government does not have any plan to help in this process (Al-Harithy & Guadagnoli, 2014, p. 7) . Furthermore, some monuments that are under private ownership are still rented out with old rent prices, and the owners do not have any incentive to restore the buildings given that the rent law protects the tenants (Al-Harithy & Guadagnoli, 2014, p. 7).

The monuments with immediate contact with the coastal road are in good condition except for Khan Al-Riz, owned by a Sunni and Christian waqf along with private ownership, Maqased and the Lebanese Governemnt. This building is occupied by a sweets factory, the "Sami Dada Factory of Toffees & Candies", two carpenter workshops and some dwellings (Al-Harithy & Guadagnoli, 2014, p. 41). Another monument near Bahr El-Eid is in ruins following the Israeli bombardments in 1982, Hammam Al-Mir. The ruins of this monument are enclosed within a masonry wall enclosing private electrical generators.

Rafik el Hariri led Restoration efforts of the Old City in the 1980's, rehabilitating major monuments such as the Al-Omari Mosque. Hariri foundation

continued the restoration efforts, and other families followed with an adoptive reuse of their houses into museums such as Audi, Debbene and Al-Solh. Other restoration initiatives were taken such as the CHUD (cultural heritage and urban development project) but however, there is a lack of coordination between the different projects and all the restoration efforts targeted monuments but did not tackle the residential fabric that suffers from a very bad state.



Figure 83 - Map showing the condition of the monuments in the Old City of Saida
Source: (Al-Harithy & Guadagnoli, 2014)

The rest of Saida is in a better state than the Old City. However, clusters of buildings in bad condition can be found mainly near the Nejme square, around the Iskandar gulf and in Jal al Ajram where an industrial development takes place. Nevertheless, the area with the worst condition remains the refugee camp of Ain el

Helwe. Northern of the city, in Wastani area, buildings are new and developments accommodate spaces for car parking and infrastructure.

Following the mapping of the neighborhoods condition, five types were found (Table 24, Figure 84)

Table 24-Neighborhoods condition

Types	Description	Location
Type 1	New and high-quality neighborhood	Norhtern Wastani
Type 2	Mid quality neighborhood	Parts of Wastani and Dekerman
Type 3	Mid to low quality neighborhood	Transition zone around the Old City
Type 4	Poor quality neighborhood	The Old City Costal edge of Dekerman
Type 5	Slum	Ain El Helwe camp

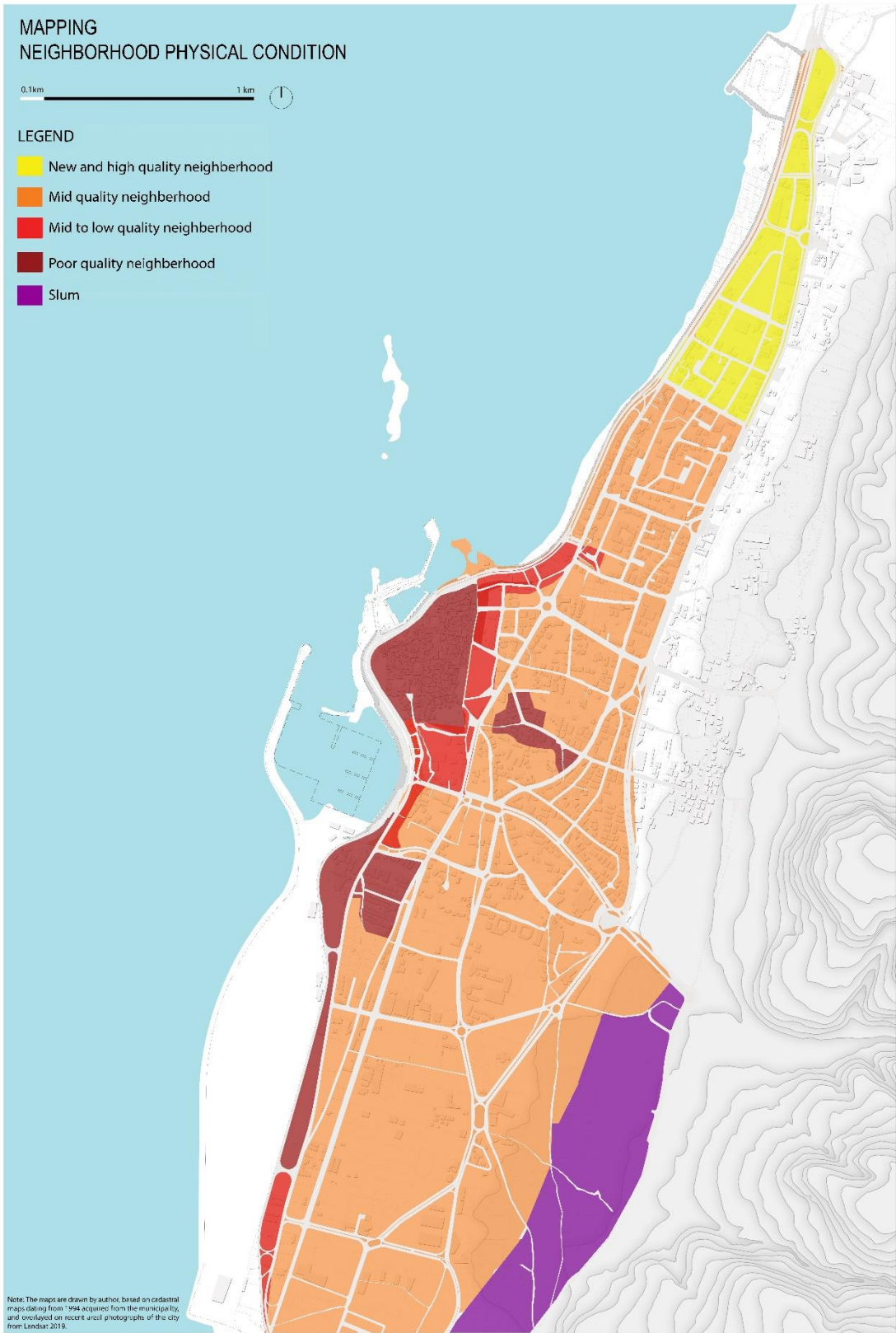


Figure 84 - Mapping the general state of the neighborhoods in Saida
Source: Traced by author following survey

g. Owners and stakeholders

Mapping the ownership patterns along the waterfront of Saida and the stakeholders, helps the creation of a more comprehensive scheme of the development of the coast, the extent of the intervention and the relations of power shaping the coast..

i. Owners in Saida:

The fact that Saida has been inhabited for centuries has created a mosaic of ownership pattern in this city (Figure 85). According to the mapping done by the USUDS for the Old City, private individuals own 79% of the Old City. The rest of the buildings are owned by governmental agencies such as the DGA, the municipality, the Sunni, Shiite, Christian, and Jewish waqf, prominent NGOs such as the Hariri

foundation.

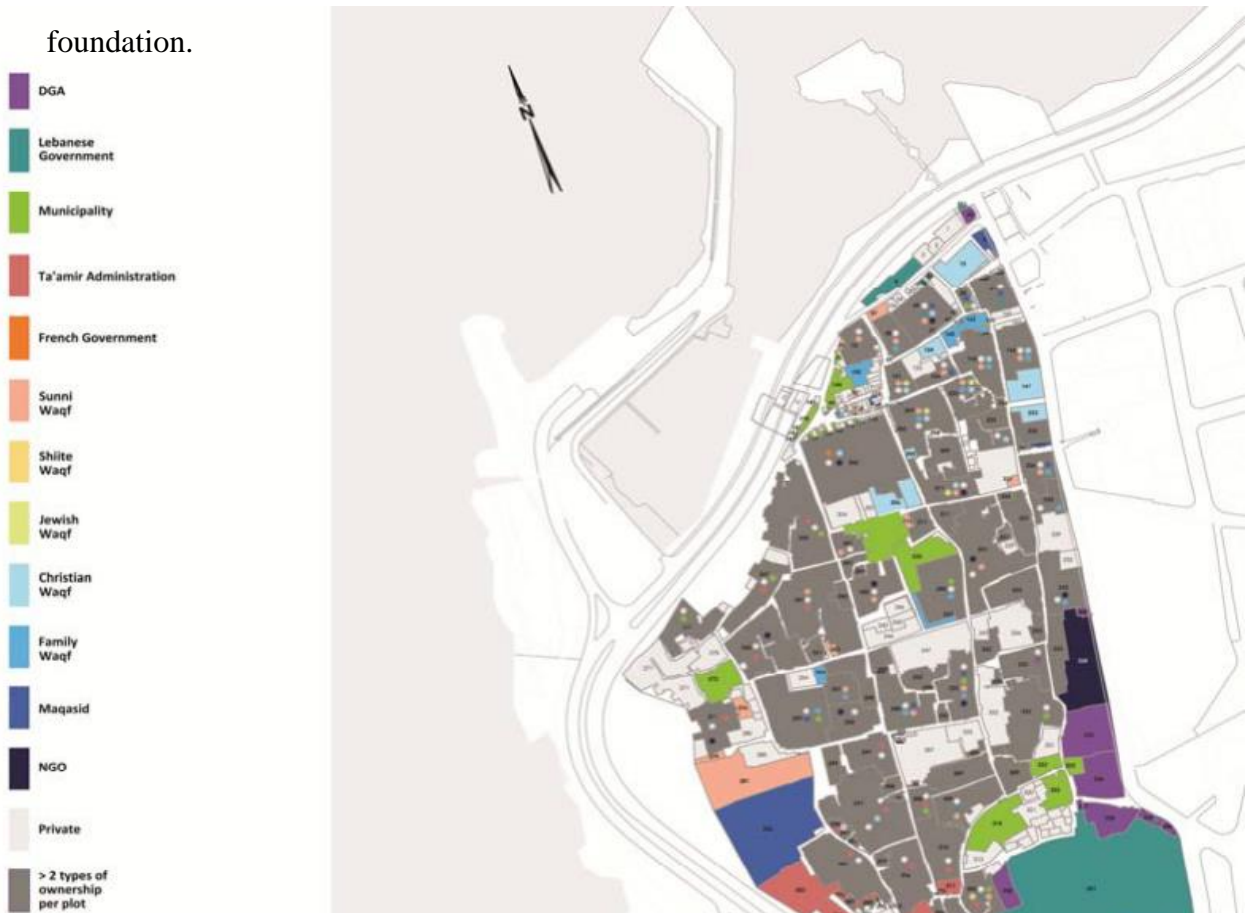


Figure 85 - Map of the ownership patterns in the Old City of Saida
Source: (Al-Harithy & Guadagnoli, 2014)

The rest of the waterfront of Saida presents a simpler ownership pattern. All the lands on the western side of the maritime boulevard are publicly owned, however their use is not entirely public. In fact, some of the lands ownerships highlight many questions, such as the Kinayat area, the Qamleh beach, the new land reclamation and the new port's ownership. In fact, the Kinayat area is made up of large parcels of irrigated orchards, historically owned by a number of families in Saida. However, these property rights contradicted the decree signed in 1925 concerning the publicness of the river banks, decree 144/1925. Yet, in 1988, the private appropriation of the Kinayat area began by mainly 2 companies : “شطان” و “النهر كينايات”.(Dictaphone Group, 2015, p. 9). In the SUSDS, the protection of Al-Kinayat was advised “as part of the Mala'b Al Baladi Amenity Space”(Al-Harithy, Makhzoumi, Hallaj, Chabaan, et al., 2014, p. 2).

At present, after consulting real estate attestations of seaside properties from the General Directorate of Land Registry and Cadastre, the most prominent families owning plots in Wastani waterfront are: El Bizri, Rostom, El Qotob, Al Nawal, Al Safadi, Atallah, Abdi, Hammoud, Dada, Al Maghribi, Abdo, Mahmoud, Ramadan. While the most prominent families owning waterfront lands in Dekermen are: Zantout, Wehbe, Bachacha. However, it should be noted that from the 250 plot checked, 55 plots were not available for view, approximately 20% of the information remains hidden.

Amongst the companies owning plots on the waterfront, two clusters emerge, one facing the Qamleh beach and owned by Moskata, and the other faces the landfill and is owned by Al-Salama real-estate Company (Figure 87).

Following the mapping of the ownership pattern along the coast (Figure 86), six types of ownership pattern emerged (Figure 88, Table 25)

Table 25- Types of ownership patterns on the waterfront of Saida

Types	Description	Location
Type 1	The coast is public ownership of the municipality while the eastern side is owned by companies	Parts of Wastani
Type 2	The coast is public ownership of the municipality while the eastern side is owned by private individuals	Qamleh beach zone
Type 3	The coast is governmental property while the eastern side is mixed ownership	Old City
Type 4	A public governmental ownership of the coast versus individual ownerships on the eastern side of the waterfront	Iskandar bay
Type 5	A public governmental ownership of the coast versus municipal and waqf properties along the internal road	North and South Dekerman
Type 6	A public governmental ownership of the coast versus companies' ownerships on the eastern side	Mid Dekerman area

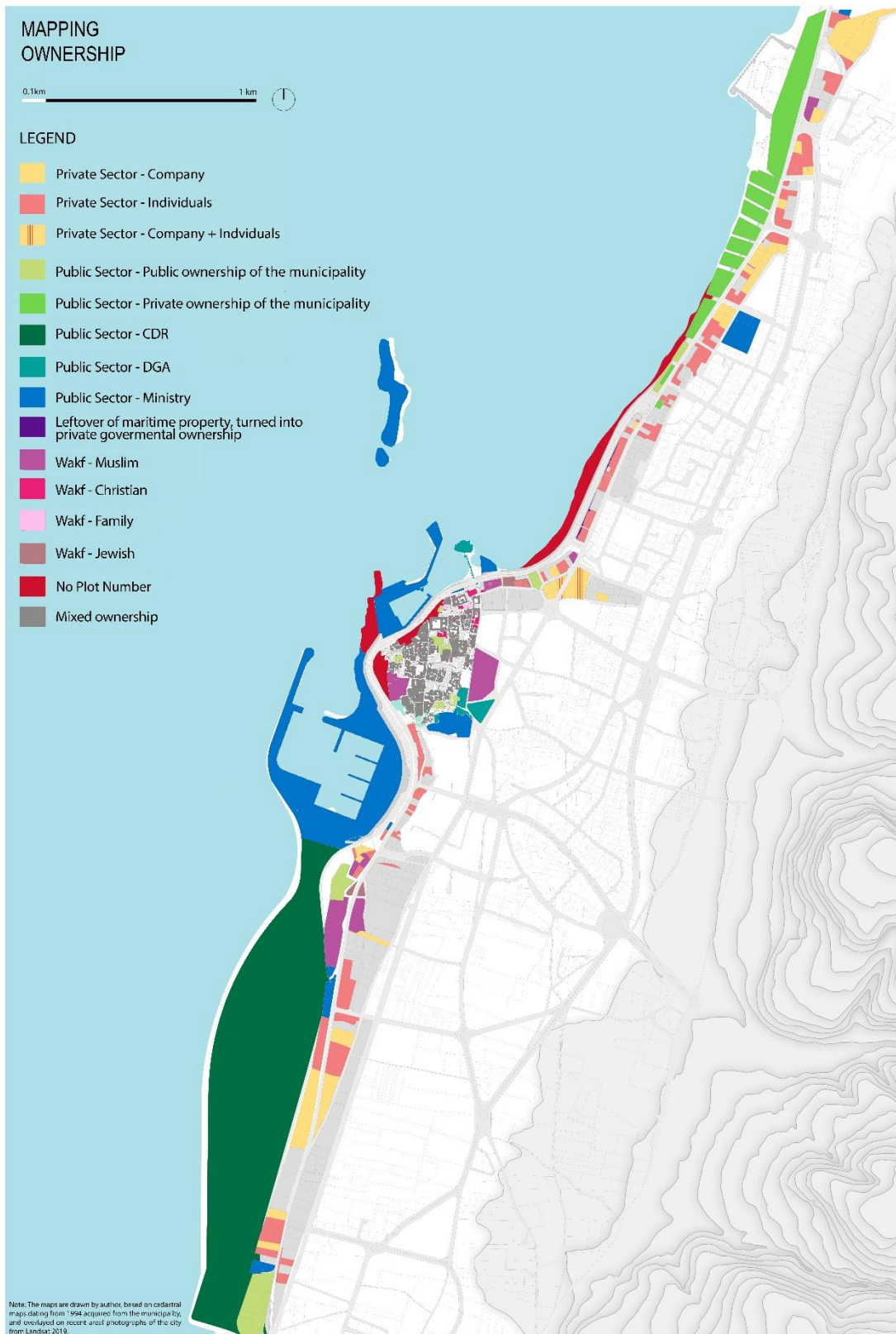


Figure 86 - Mapping the land ownership along the waterfront of Saida
 Source: Traced by author after gathering land deeds from the land registry

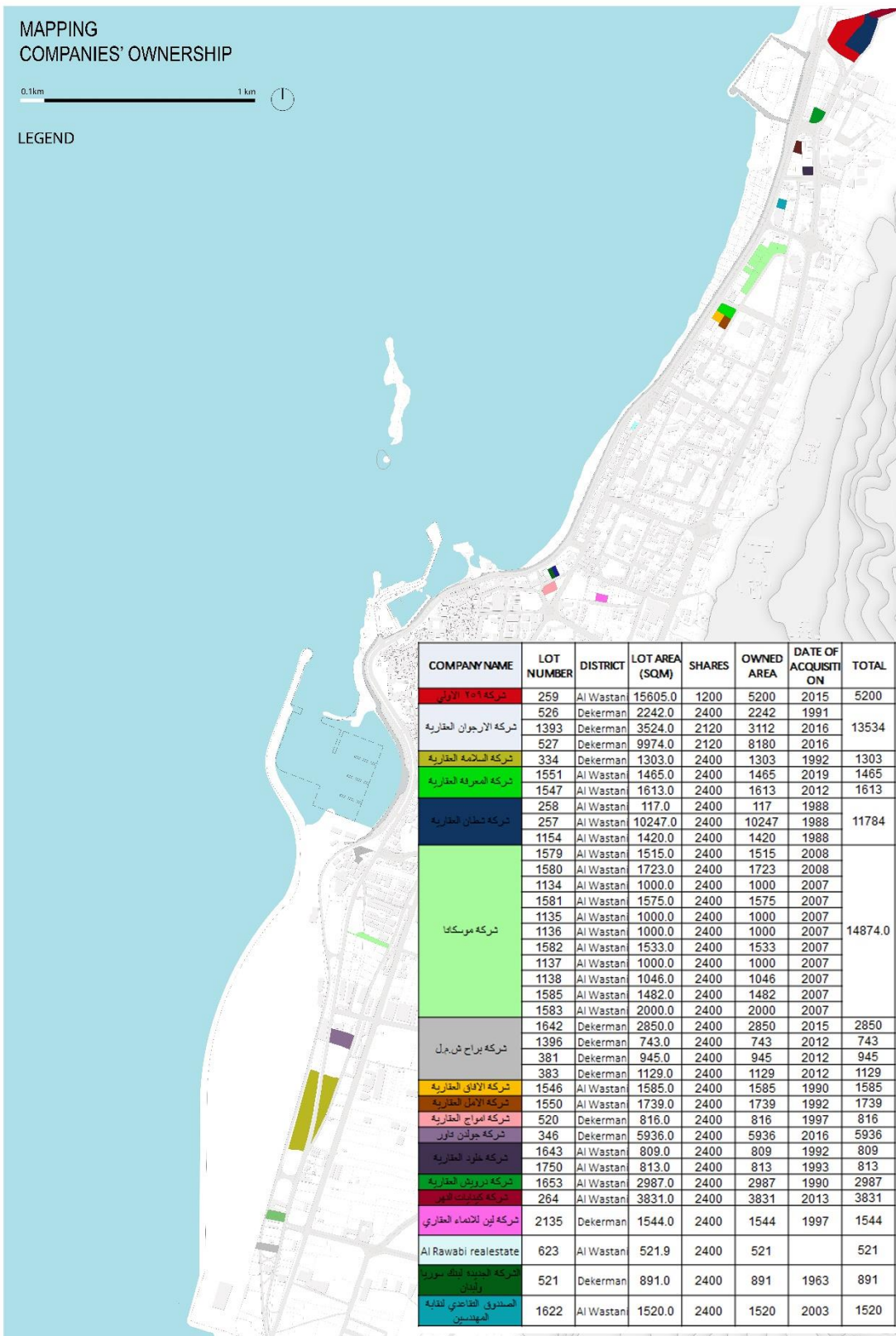


Figure 87 - Mapping the waterfront land ownership by companies
 Source: Traced by author after gathering land deeds from the land registry

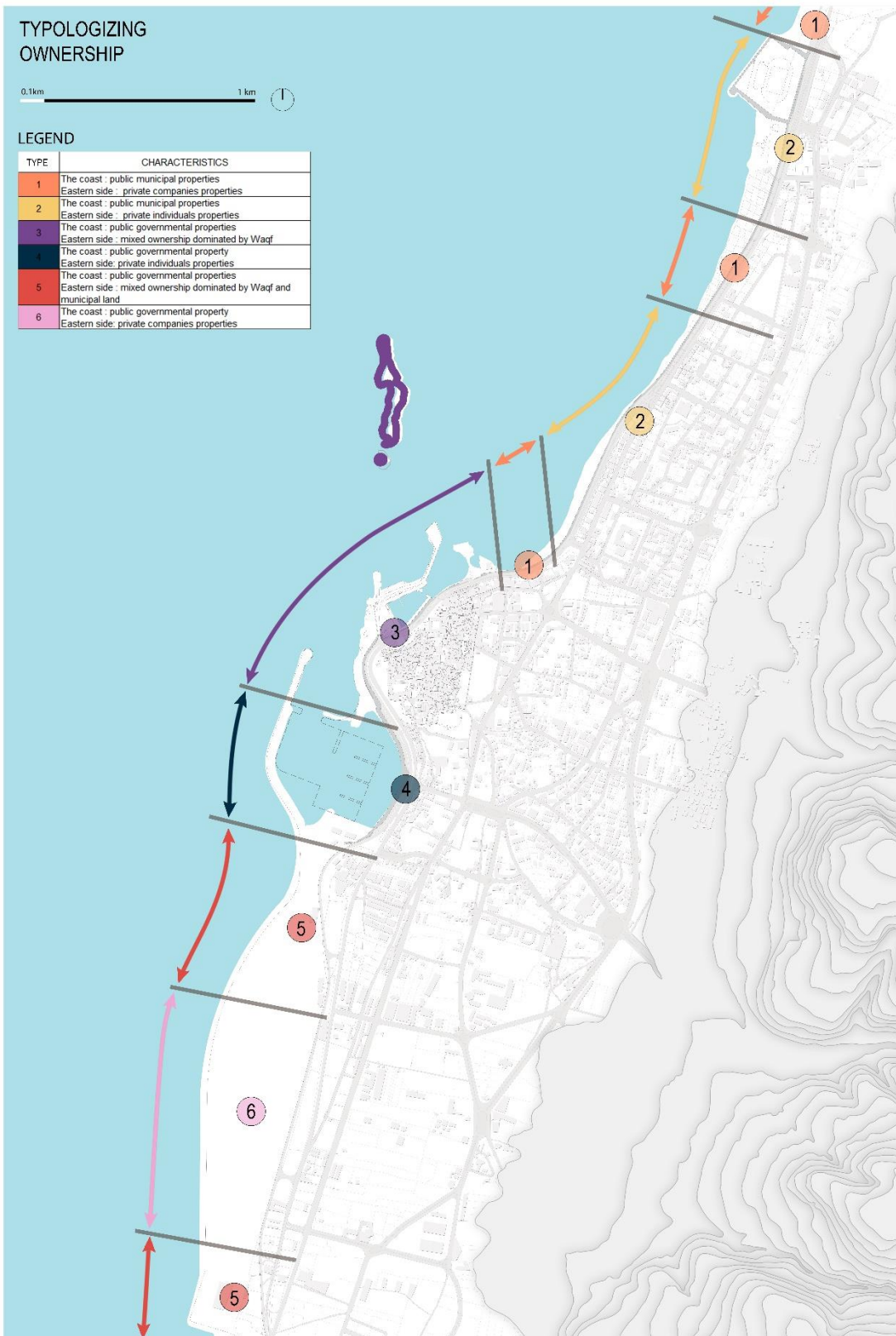


Figure 88 - Typologizing the ownership patterns along the waterfront of Saida

ii. Stakeholders in Saida:

Governmental agencies:

Ministry of Tourism: The ministry of tourism owns the Saida Resthouse. It has the duty of documenting, promoting and operating sites in the city; however, Saida's heritage remains underappreciated and the potential of the city remains unrealized.

Directorate general of antiquities: DGA owns the majority of the archeological sites in Saida. It oversees all the digging and restoration activities and has to coordinate with the DGU to elaborate master plans for historic cities.

Directorate general of Urbanism: DGU creates zoning plans and master plans for cities however it is a highly centralized agency.

Council of development and reconstruction: the CDR is in charge of infrastructural works in all regions. And had to put the NPMPLT in 2000 to create a holistic vision for the country. However, the CDR is not in charge of the implementation of this vision. So even though the NPMPLT advises against a new port in Saida or Tyr and advocates for it to be built between the two cities, the municipality of Saida lobbied its way into creating a new port in Saida (Barthel, 2014).

The ministry of transportation: this agency oversees the work of the ports, the water taxis and the fishing boats.

Local government:

The municipality of Saida: The municipality of Saida is a key player in the city. Its power oscillates between two poles, Hariri and Saad. At present, the head of the municipality is pro future movement. The dynamic between the two poles causes blockage of some projects. The municipality owns a big number of lands on the

waterfront of Saida and is in charge of the operation and maintenance of public amenities such as the public gardens; however, this big scope lacks funds.

Union of municipalities of Saida and Zahrani: In 1978, the Saida-Zahrani municipal union was created following decree#1097/78 (Figure 27). However, as stated by El Solh “[the] Union is an agglomeration of a number of independent and locally autonomous municipalities, each bringing to the Union’s platform the politics that it adheres to”(Solh, 2012, p. 93). The Future movement¹², a main Sunni political party leads the Municipality of Saida, while the adjacent municipalities are mostly Shia (Figure 90). This sectarian divide threatens the implementation of any common vision for the area.

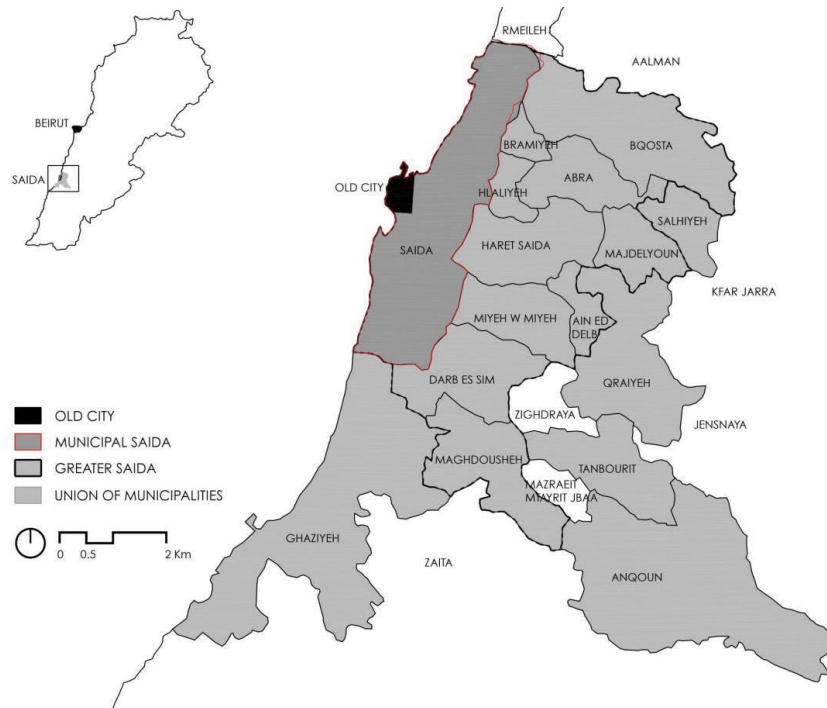


Figure 89 - Map of Union of Municipalities of Saida and Zahrani, Greater Saida, Municipal Saida

Source:

(Al-Sabbagh, 2015, p. 82)

¹² The Future movement is headed by the Hariri Family, who are the main decision takers in Saida

Municipality	Confessional Base	Population (currently residing)	Registered Voters
Saida (old city)	Sunni	65,000	55,158
Bqosta	Christian	7,000	354
Hilaliyeh	Christian	16,000	817
Salhiyeh	Christian	1,200	871
Abra	Christian	35,000	1,357
Qreiyeh	Christian	7,000	1,657
Majdeloun	Christian	8,000	735
Ain el Delb	Christian	1,000	1,523
Mieh-Mieh	Christian	N/A ²²	N/A
Maghdouche	Christian	6,000	N/A
Tanbounite	Christian	1,000	783
Bramiyeh	Christian	2,000	1,068
Darb es Sim	Christian	10,000	2,116
Anqoun	Shi'a	15,000	2,683
Haret Saida	Shi'a	27,000	2,615
Ghaziyeh	Shi'a	25,000	6,554

Source: Information derived from municipalities (2011)

Figure 90- Zahrani Union of municipalities confessional distribution

Source: (Solh, 2012)

Religious power:

The Sunni Waqf: they own a large number of monuments and plots in the Old City and waterfront, including mosques and schools. They are interested in rehabilitation of some monuments in the Old City. They coordinate with the Hariri foundation.

The Catholic Waqf: They are the most prominent Christian power, however their activities in the Old City are only with coordination with the Debbeneh family.

Local stakeholders:

The fishermen community: the fishermen community is in direct relation to the waterfront of Saida due to the presence of the fishermen port in front of the Old City and given the tight relation between Saida and fishing. At present Saida counts 264 Lebanese and 100 Palestinian fishermen. The Lebanese have 164boats while the Palestinians have 65. A syndicate for fishermen protects this trade in Saida by

preventing any newcomers to the field, thus all the fishermen in Saida have inherited this profession. However, the Palestinians are not allowed to vote in the syndicate. 75% of the Lebanese fishermen live in the Old City while the 25% and the Palestinian live in the refugee camp of Ain el Helwe or in the Taamir. According to the SUSDS, the monthly gross income per boat in Saida ranges between 400\$ to 1000\$, so the fishermen live on a very low income that varies according to their catch.

The craftsmen of Saida: Traditional crafts in Saida are facing extinction due to the lack of technological advancement and the low income of these trades. In fact two main activities have flourished, the sweets making and the furniture making, however once established, the companies leave the Old City and get settled along the eastern boulevard. The craftsmen of Saida are majorly over 50, and live mostly in the Old City.

Notable families: Such as the Hariri family remains dominant in Saida and are very active socially, economically and politically. Other families in Saida are Audi, Saad, Zaidan, El-Solh, Hammoud, Debbaneh. They play different roles in the social realm of the Old City.

NGOs:

Different NGOs are active in Saida, mainly the Old City and are advocating for its rehabilitation. These NGOs include the Hariri foundation, Saida Observatory for Social Impact, Mustafa and Maarouf Saad foundation, Audi Foundation, Debbaneh Foundation. In addition to international entities mainly related to heritage or the Mediterranean basin such as ENPI CBCMED, COPEMED, CHUD...

3. *Saida through the Legal Lens*

a. Violations Of The Maritime Domain

Mapping the violation of the maritime domain stems from the problematic of the research. According to the report made by the Ministry of Public Works and Transport and by the Directorate General of Land and Maritime Transport in 2012 the violations of the maritime public domain in Saida are very few. It should be noted that in the report, the plots highlighted in purple on the map below are listed as violating the maritime domain; however, after the construction of the coastal boulevard in 1995, these same plots are now located between two asphalted roads and the corniche, far from the shore. It is also worth noting that the landfill and the new port were executed in 2012 after the report was done, however they were constructed following DECREE#5791/2011, so they do not fall in the category of violations. It is visible that the legal occupation of the maritime domain in Saida is far more aggressive than the private one. Following the mapping (Figure 91) of the violations, three types of violation patterns emerged (Table 26, Figure 92)

Table 26- Types of violations of the maritime domain

Types	Description	Location
Type 1	No registered violations	Qamleh beach
Type 2	Occupation in accordance to a decree	spreads on more than 60% of the coast of Saida
Type 3	Registered violations against maritime domains	northern of the Old City

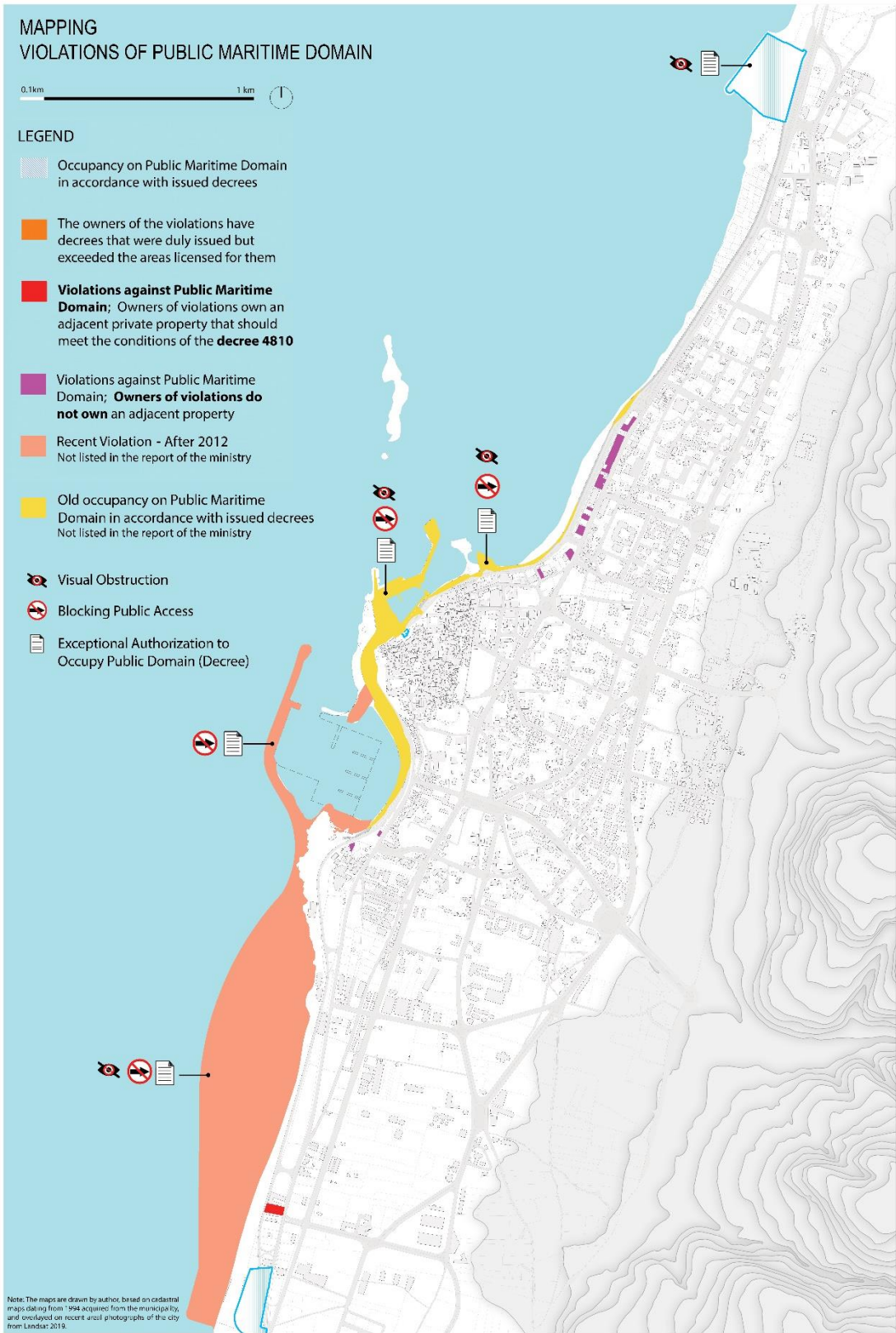


Figure 91 - Mapping the violations of the maritime domain in Saida
 Source: Traced by author following the reports of the ministry of public works

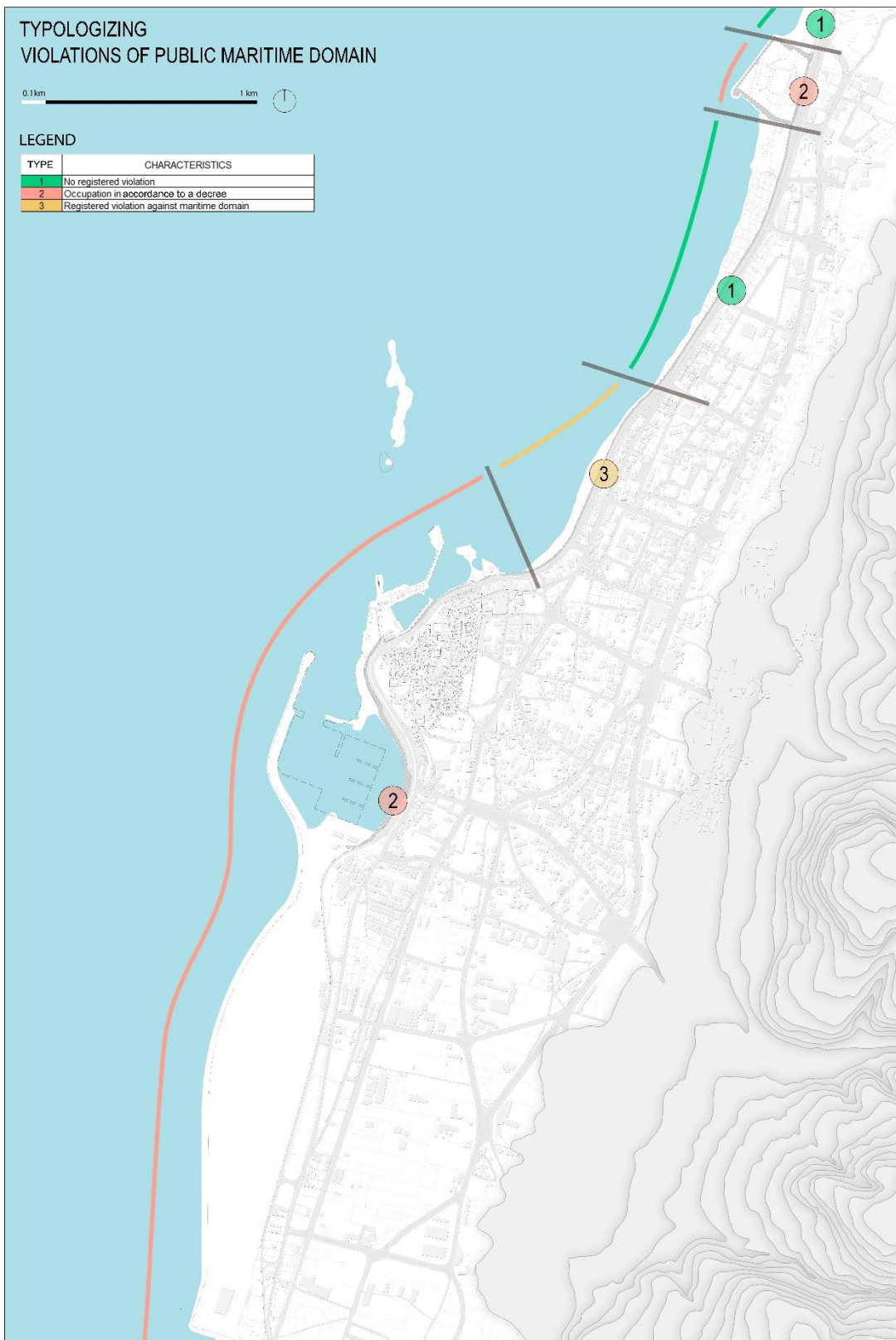


Figure 92 - Typologizing the violations of the maritime domain in Saida

4. Saida through the Environmental Lens

Pollution in Saida is generally related to the garbage mountain. However, this issue is being resolved at the time through landfilling. In addition to the garbage crisis, Saida faces a sewage treatment issue along the coast. Following my interview with Mr. Hakawati¹³, he revealed that the wastewater canalization was excavated within the rivers alignments¹⁴, which made it impossible to be maintained. The primary wastewater treatment station is built but needs secondary stations to operate fully, and the sewage system has been damaged due to storms and lack of maintenance. Thus, the municipality is evacuating the wastewater directly in the sea in winter and stocks it in the treatment station in summer. Moreover, air pollution increases on the waterfront due to excessive vehicular CO₂ emission along the highway. The aforementioned situation is detrimental to the coastal fauna and flora, downgrading the fishing activity and the social use of the coast.

a. Natural Systems

i. Landform

Mapping landform and topography help reveal distinctive natural features of the coast. It allows also to study their influences on the visual and physical connectivity between the residents and the sea.

Saida has been known for its flat agricultural plains. The topography map shows that the landform of Saida is practically flat. Only 2 small dunes take shape along the coast, northern of Wastani we have the Kinayat garden with the Municipal stadium and

¹³ Head of the architecture unit in the municipality of Saida. Interview conducted on the 18th of April 2019

¹⁴ following a decision from the CDR and the municipality in order to attenuate costs

the old Sidon hotel area, and the hill of the land citadel. The backdrop of Saida is constituted of hills inhabited by small villages such as Mieh w Mieh, Maghdoucheh, Bramiyeh. and the other villages.

Mapping topography and landform (Figure 93) reveals three different types along the coast of Saida (Figure 94, Table 27)

Table 27- Types of landforms

Types	Description	Location
Type 1	The flat land	All of Saida
Type 2	The hills	Villages surrounding Saida
Type 3	4m high hill	Northern Wastani

ii. Green and blue network

Studying the watercourses and the green cover of the coast will allow the elaboration of the Blue-Green network in service of the enhancement of connectivity along and across the waterfront.

Saida is delimited by two rivers, the Awali is the northern border and the Sayniq is the southern border of the city. The agricultural plains of Saida were irrigated by 4 smaller rivers, Abou Ghayath, Abl Qamleh, Al Barghout, Ain Zaytoun, However these rivers were paved to allow infrastructural development of the urban space. In the Wastani area, canals were used for irrigation, the remains of Khasiqiyah canal are still available and NGOs are working to integrate this canal within a new plan for the Wastani area. At present, Saida is known for the plantation of bananas, citrus, loquats and has a number of greenhouses and nurseries, mainly in the Dekerman area.

Mapping the green cover and the watercourses (Figure 95) reveals three different types along the coast of Saida (Figure 96, Table 28)

Table 28- Types of the green and blue network

Types	Description	Location
Type 1	Well irrigated and planted area, with a visible water source	The kinayat area,
Type 2	A reminiscent agricultural space with paved rivers	The wastani area
Type 3	Areas with very low agricultural value	Mainly around the Old City
Type 4	No agricultural value or irrigation source	The Old Core
Type 5	A well irrigated zone with a high agricultural value	The Dekerman with the big planted plots
Type 6	Vacant land with no agricultural value	Landfill

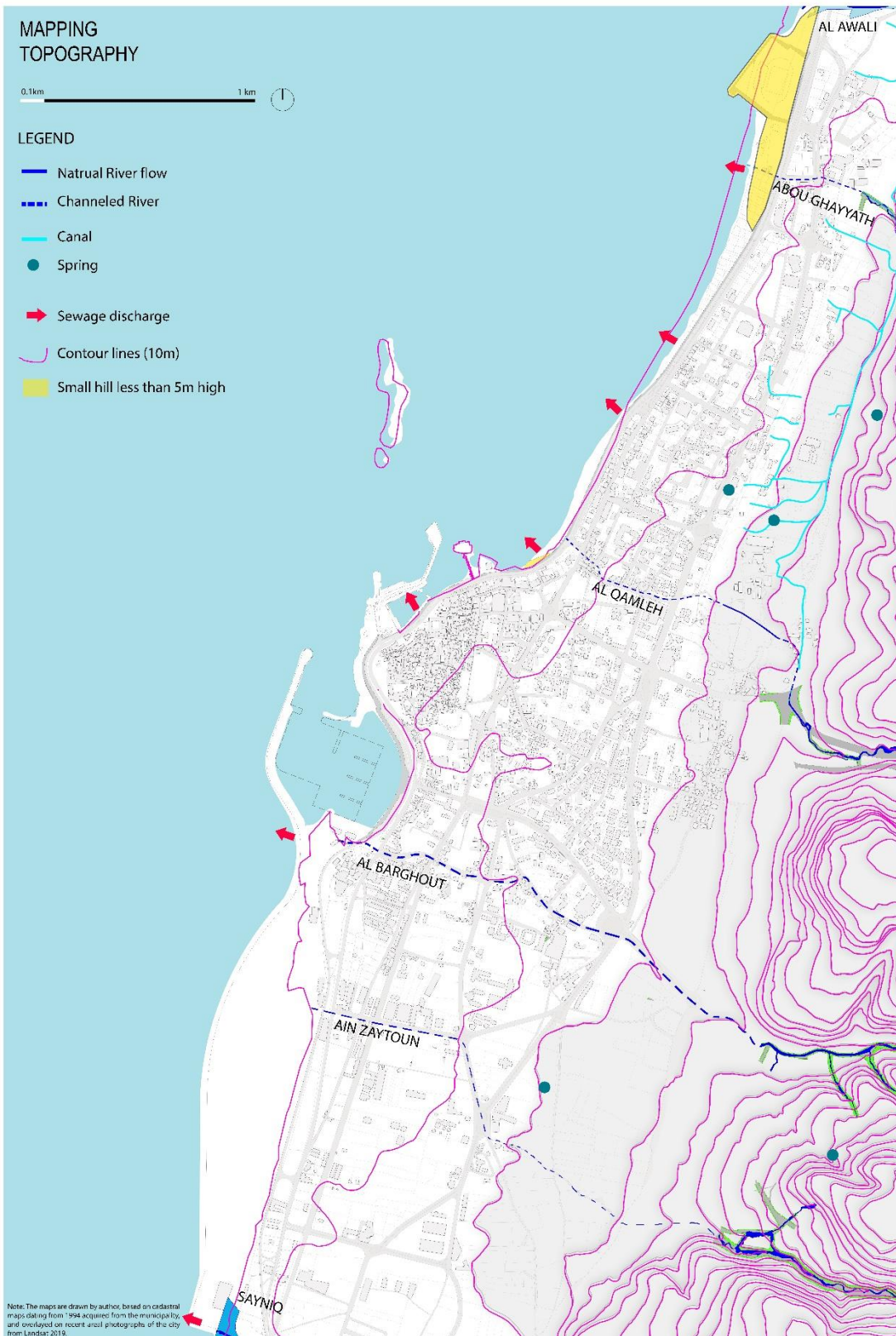


Figure 93 - Descriptive map of the landform and topography of the waterfront in Saida
 Source: Traced by author following the rivers network of the SUSDS

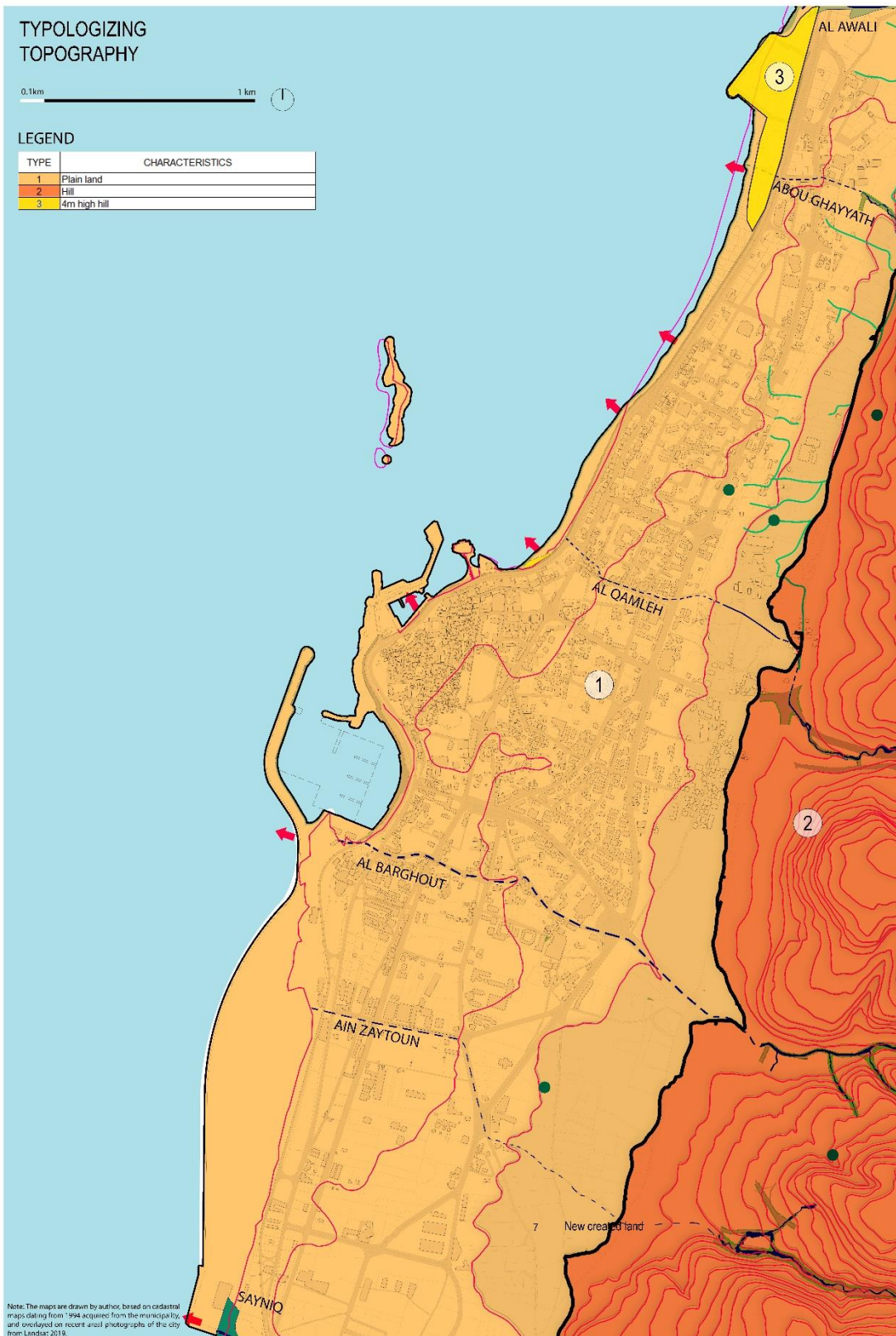


Figure 94 - Typologizing the landform and topography of the waterfront in Saida
 Source: Traced by author following municipality documents

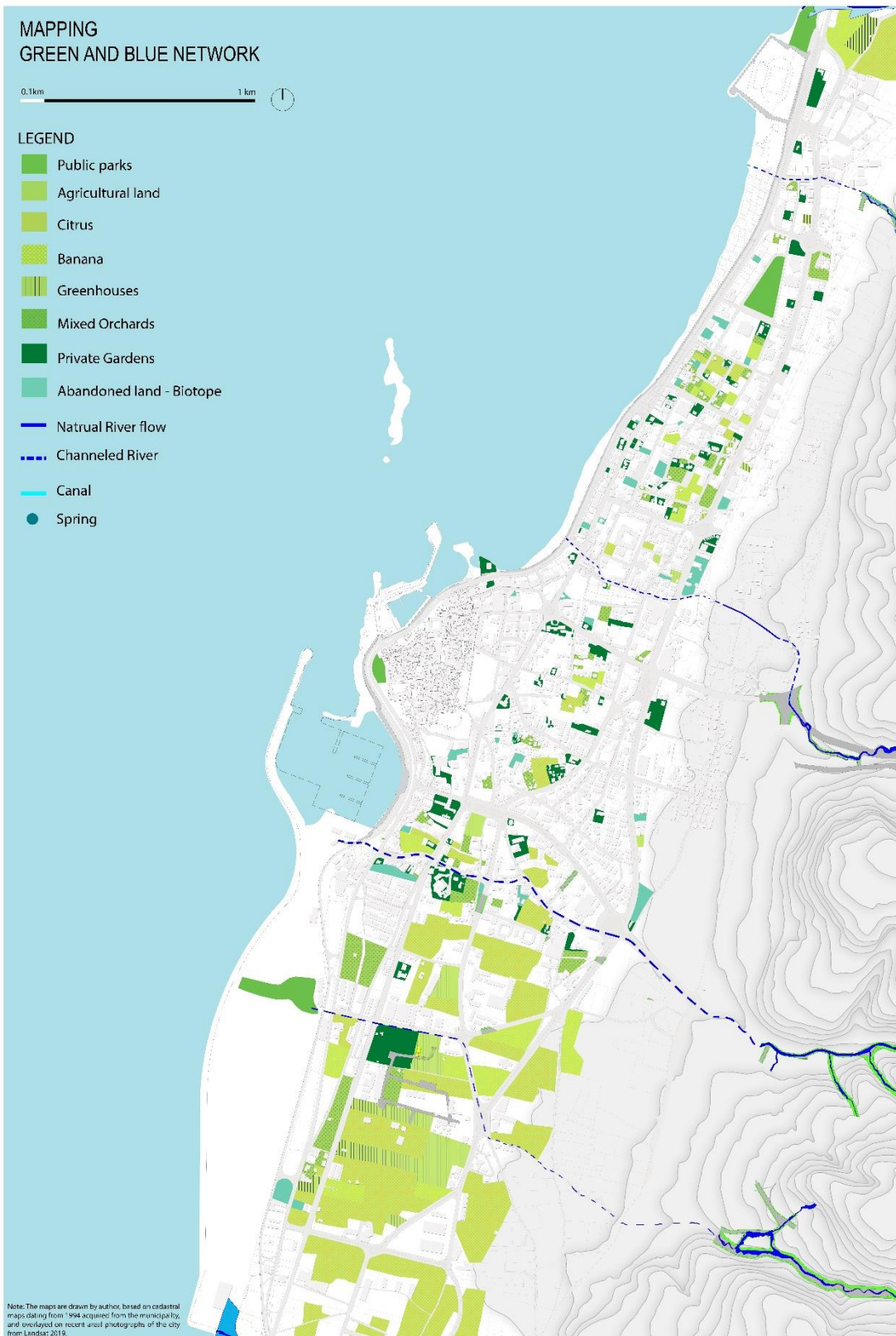


Figure 95 - Mapping green and blue network in Saida
 Source: Traced by author following the SUSDS report and field visit

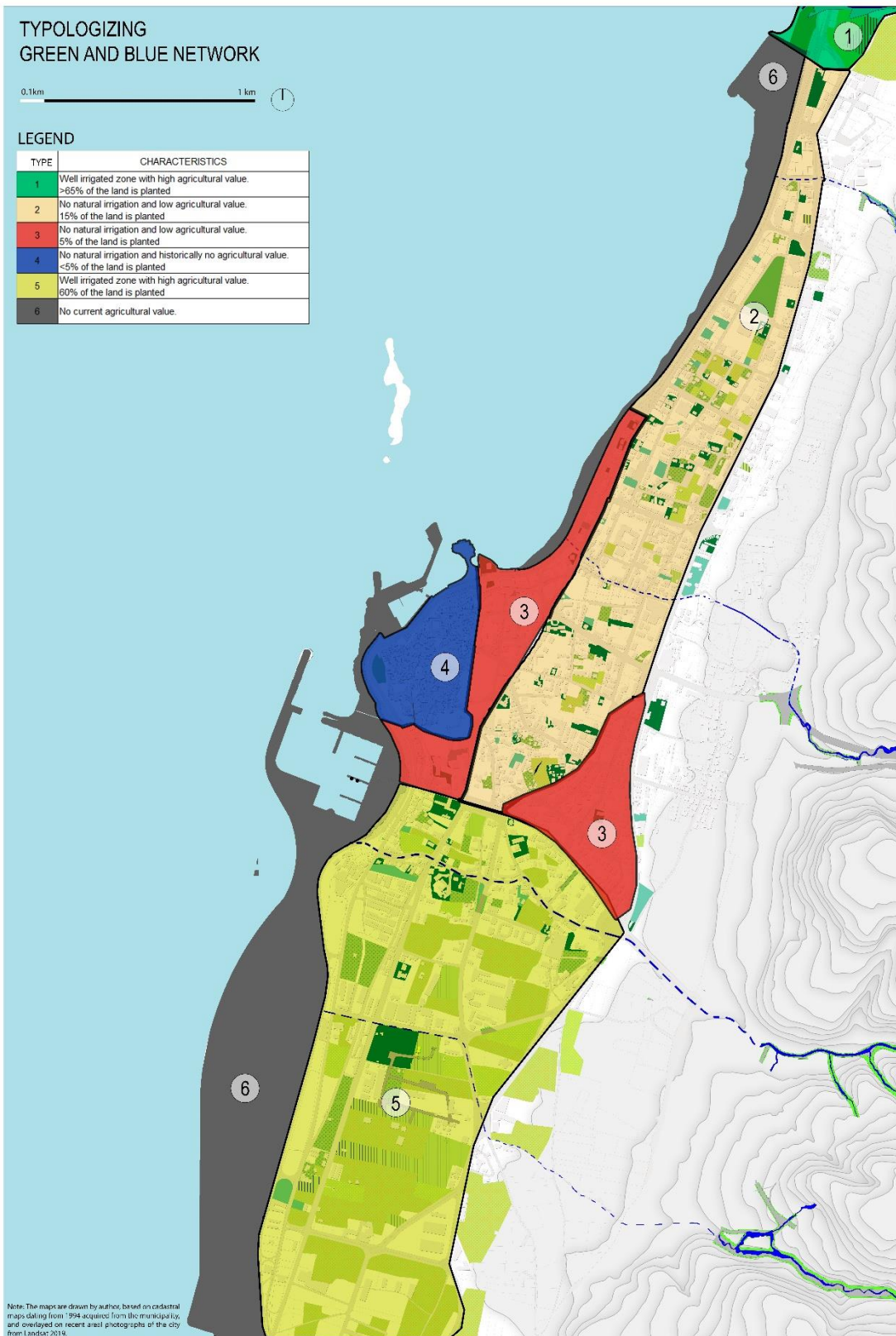


Figure 96 - Typologizing the green and blue network in Saida

a. Natural Systems



i. *Shoreline types*


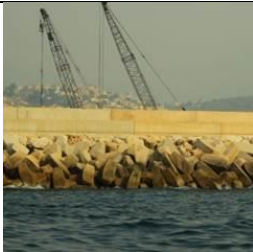

Mapping the shoreline condition gives reveals information about the extent of artificialization of the coastline. In addition, artificial coasts are often related to blockage of access, which meets the research question of this thesis.

The shoreline of Saida has been heavily modified. The only zone that remains natural is the Qamleh coast; however, this beach is subject to erosion and has been reduced due the enlargement of the coastal highway.

Folowing the mapping of the shoreline condition (Figure 97), five types were discerned (Figure 98, Table 29)

Table 29- Types of the shoreline condition

Types	Description	Location	Photos
Type 1	A natural sandy coast	the Qamleh beach the Kinayat Garden	
Type 2	An artificial riprap coast, describing the stadium area	Stadium area	

Type 3	Mixed between riprap and sand	Southern part of the Qamleh beach	
Type 4	Mixed of artificial coast between riprap, tetrapods and concrete	Dekerman landfill New commercial port Part of the fishermen port	
Type 5	Natural rocks	South of the fishermen port	

ii. Areas of land reclamation



Mapping land reclamation and embankment gives an insight on the extent of disfiguration of the coastal line.

As discussed before, land reclamation in Saida has had a major effect on its coastline. Improvement projects conducted by the CDR and the municipality were not coordinated between each other's and caused a fragmentation of the coast.

Following the mapping of the embankments (Figure 99), five types have emerged (

Table 30, Figure 100).

Table 30- Types of land reclamation

Types	Description	Location	Photos
Type 1	Coastline kept natural No embankment	Kinayat area	
Type 2	Coastline is modified Medium size embankment	Municipal stadium Fishermen port New commercial port	
Type 3	Coastline is modified No embankment	Qamleh beach	
Type 4	Coastline is modified Small embankment	Qamleh beach Old City	
Type 5	Coastline is majorly modified Big scale embankment	Dekerman area	

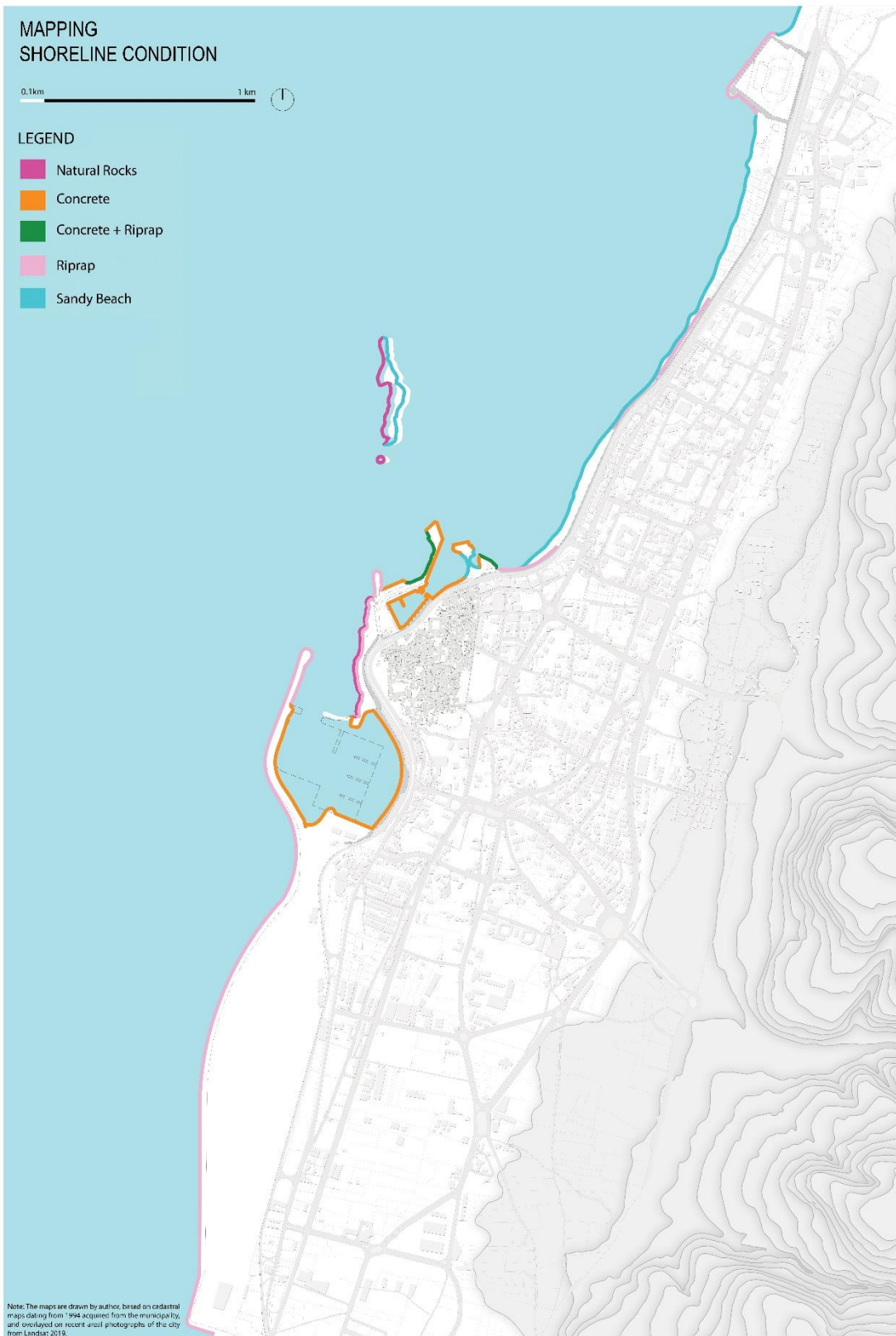


Figure 97 - Mapping shoreline condition in Saida
 Source: Traced by author following field visits

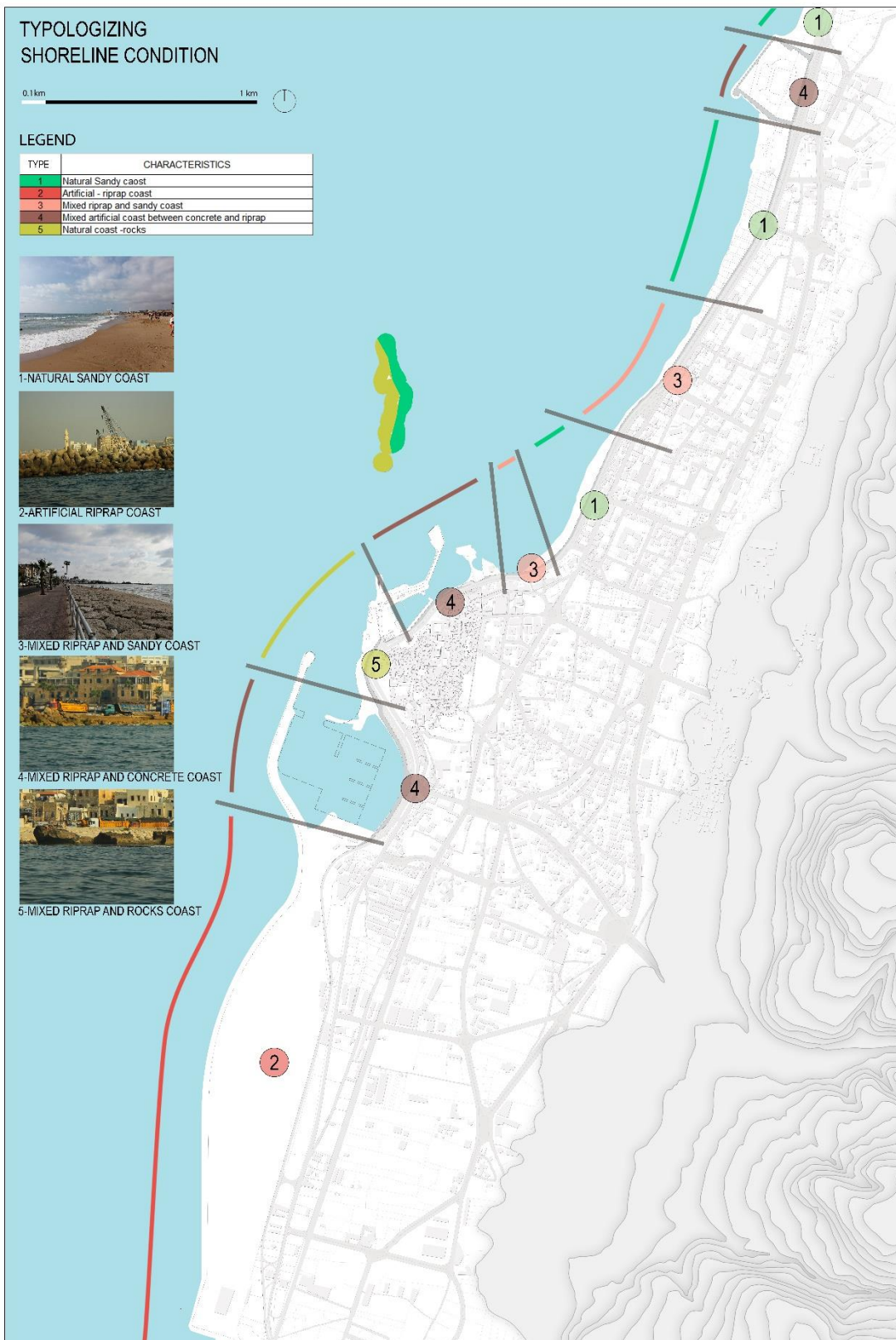


Figure 98 - Typologizing the shoreline condition in Saida

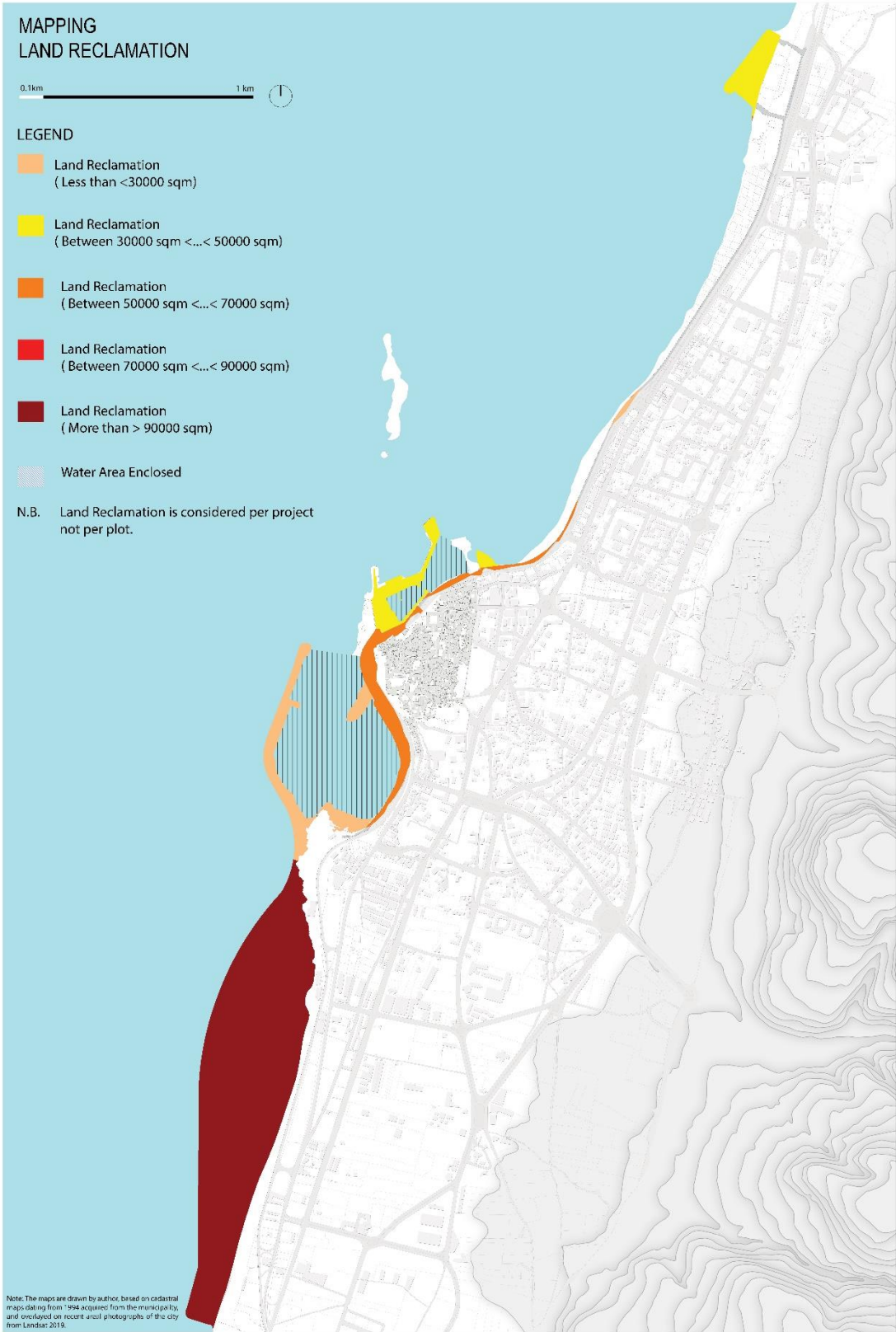


Figure 99 – Mapping land reclamation in Saida

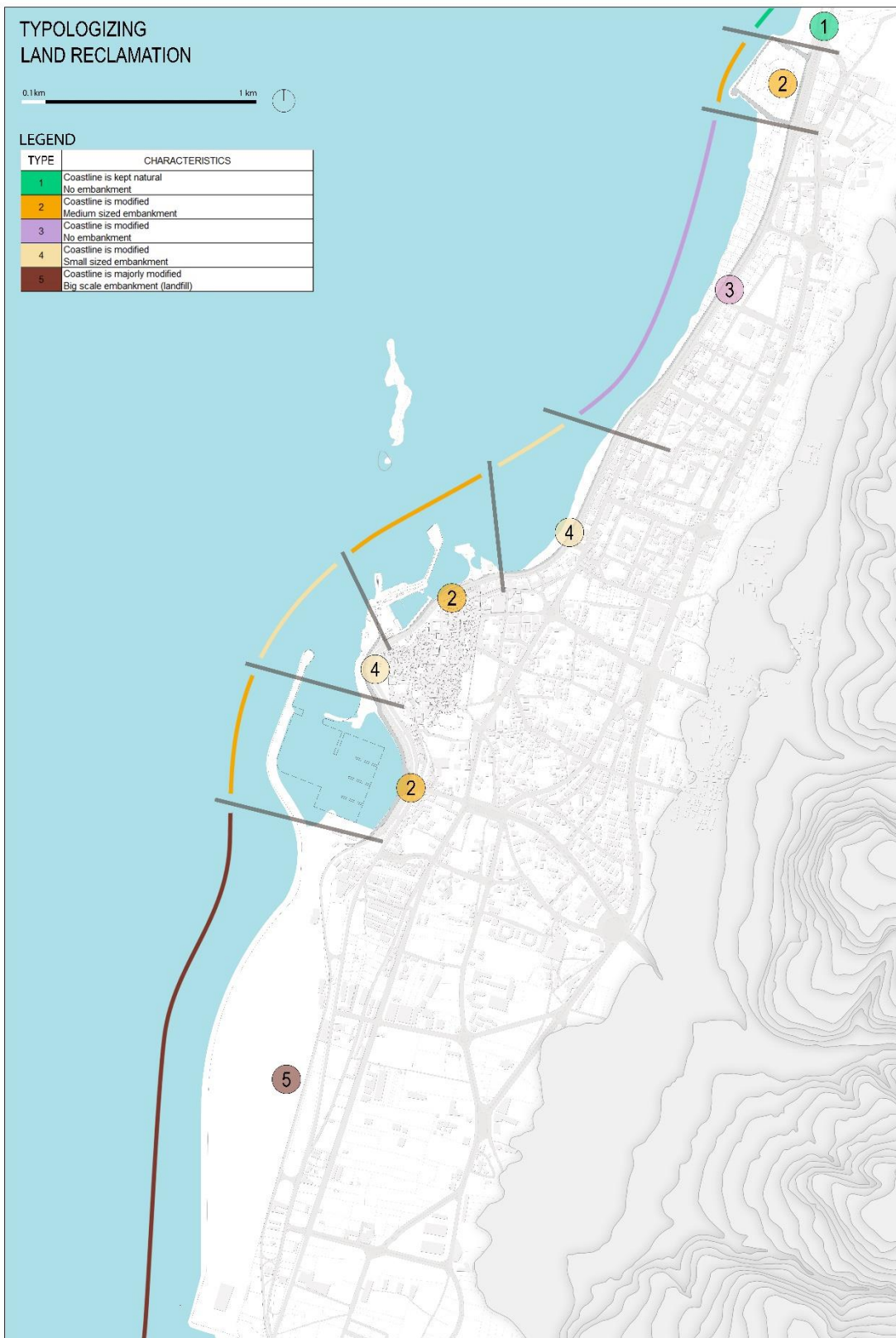


Figure 100 - Typologizing land reclamation in Saida

D. Main findings

Connectivity and accessibility of the coast of Saida are hindered by several factors spanning across all the layers previously mapped.

First, the coast of Saida is majorly disfigured by large-scale embankments, owned by the government, and constructed by legal and governmental agencies. These embankments are taking the shape of gated developments on the coast (such as the Municipal stadium, the Dekerman landfill, and the commercial part of the fishing port) blocking physical access, obstructing visual connectivity and interrupting the socio-spatial practices.

Second, Saida suffers from an infrastructural break separating the city from the sea. Prioritizing vehicular traffic over pedestrian movement, and reinforcing the North-South connection between Beirut and the South, the maritime boulevard transform the coastline into a transit route, interrupting connectivity between of the hinterland with the coast. In addition, the environmental deterioration of the coast has also affected its viability.

Third, large-scale disfiguration of the coastline, vehicular dominance, unplanned industrial activity, untreated waste disposed on the coast and pavement of the watercourses, are all threatening the presence of terrestrial and marine habitats. Networks of green and blue spaces previously present, are disappearing, threatening connectivity of the ecosystem.

Fourth legal point of view, the zoning of Saida is contributing to the fragmentation of its coast. The latest zoning divides the coast into seven zones, regardless of the character of each zone. In addition, this zoning allow construction on

the maritime domain, mainly in the Bahr el Qamlah area, thus increasing the risk of privatization of this area and threatening its future as a public space.

However, given public ownership of the coastal lands in Saida, there is potential for a sustainable development of this coast before it meets its fate of being transformed into a gated development such as Marina Dbayeh, or an industrial back of house such as the landfill of Burj Hammoud.

CHAPTER V

COASTAL URBAN LANDSCAPE CHARACTERIZATION OF SAIDA

The design strategy adopted in this thesis stems from the process of characterization. First, historical maps are analyzed to produce historical character zones of the coast of Saida, and deduct its evolution. Then current coastal character zones are discerned by integrating the multi-layered findings of the research and superimposing them. Each CZ reflects the multiple social, natural, archeological and economical potentials of the delimited area. Based on this analysis, the coast of Saida is divided into 10 different coastal character zone. Each zone is then assessed according to criteria related to the present physical, socio-economic and environmental situation, and a comparative study between the different CZ is conducted following three different tools: The similarities and differences table, the star diagram, and the SWOT analysis. This analysis will inform the city scale strategy and guide the choice of the intervention area, as well as the intervention strategy.

A. Identification of historical character zones and their evolution

The historical character zones were mapped based on old maps and aerial photos of Saida. Historical character zones provide an understanding of the evolution of the coast. Coupled with a historical reading of the city, this tool can highlight the different drivers behind this evolution, and may provide a glimpse of the future. The information extracted from the old aerial photographs and maps are related to the availability of

green spaces, the building density, and road network and overlapped with the topography of Saida. Three dates are chosen according to available data and the large-scale changes along the waterfront of the city: 1912 based on the maps of Wagner and Debes Leipzig, 1956 and 1994 based on the areal images from the Lebanese army.

The map of 1912 (Figure 101) shows six character zones, they are mainly dictated by the geomorphology of the bay and the nature of the coastline. Only Zone C was inhabited and constituted the old dense fabric of the Old City of Saida, still enclosed between its walls. Zone B and F represented a sandy coast while Zone E depicted a rocky shore. At the time, the Dekerman had no tangible agricultural value as shown on the source map.

In 1956 (Figure 102), expansion out of the Old City had started following the pavement of the Chakiriyeh road and Riad el Solh road. Subsequently, Zone B that constituted once a wide sandy beach began its fragmentation into two zones. In addition, the Dekerman had changed in character due to two main factors, first, the refugee camp of Ain El Helwe which was settled east of this area, and second, the agriculture lands in the Dekerman expanded due to new technologies in irrigation.

In 1994 (Figure 103), after the end of the Israeli occupation and the civil war, and following an unorganized urban expansion of the residential fabric of the city, the waterfront of Saida has been furtherly fragmented. It counted nine zones. The densest was still the Old Core of Saida. The coastline of Saida had been majorly modified by land reclamations, causing additional dissociation along the northern sandy coast. Southern of the Old City, the waste and rubble of the city were consolidated in a garbage mountain on the natural rocks (Abou Alfa, 2016). The development of the

Dekerman was halted by the presence of the refugee camp, and thus industrial activities began to take place on its land along with the agricultural areas.

In conclusion, the evolution of the character zones through history shows that these zones tend to increase with time, mainly because of the human intervention on nature. It is through uncontrolled urban sprawl and unplanned land management that the character zones in Saida increased, aggravating the fragmentation of the waterfront of the city that was once a homogeneous entity.

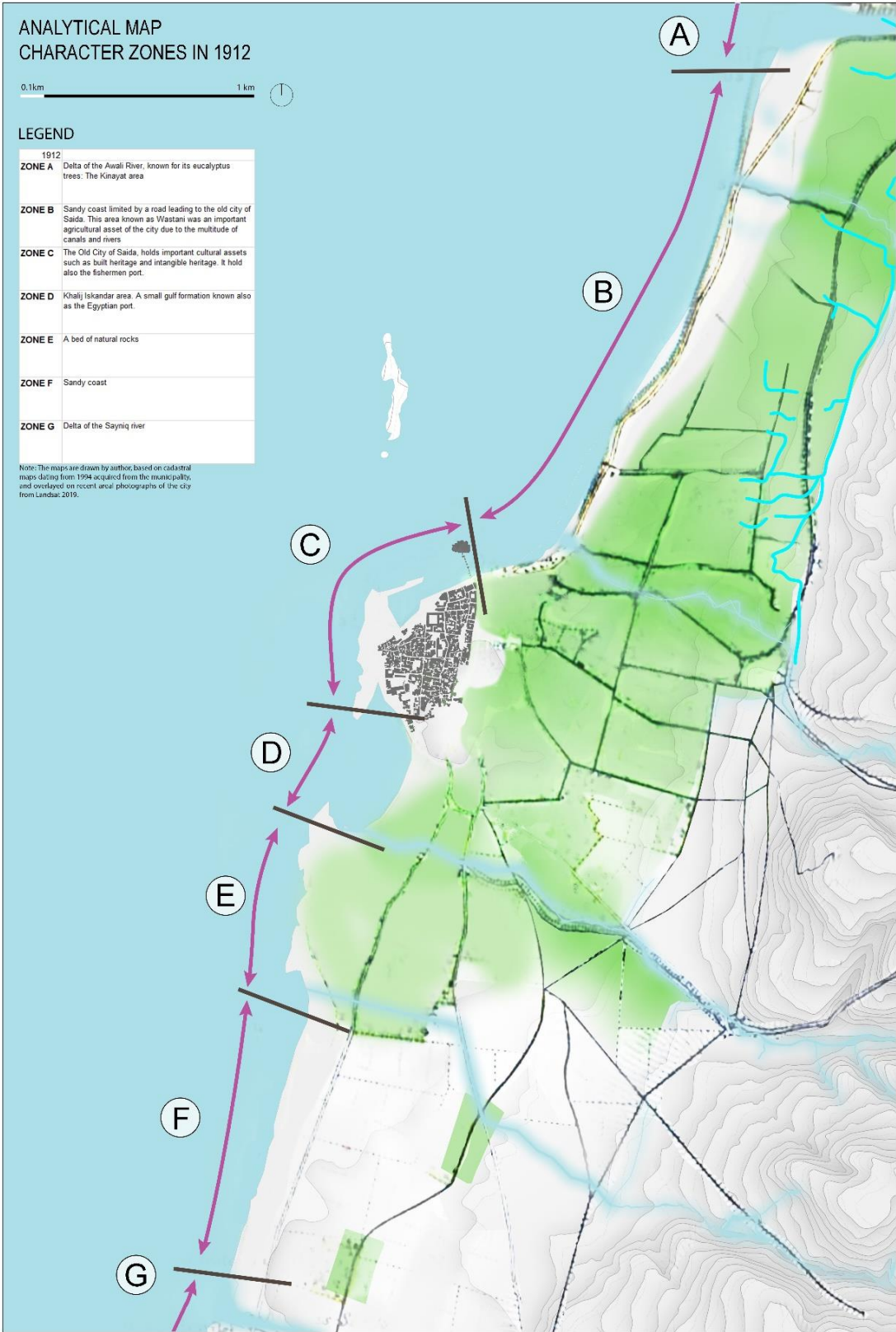


Figure 101-Historial Character Zones of the waterfront of Saida in 1912
 Source: Author, after Wagner, Debes, Leipzig from Renan's "Mission de Phoenicie"

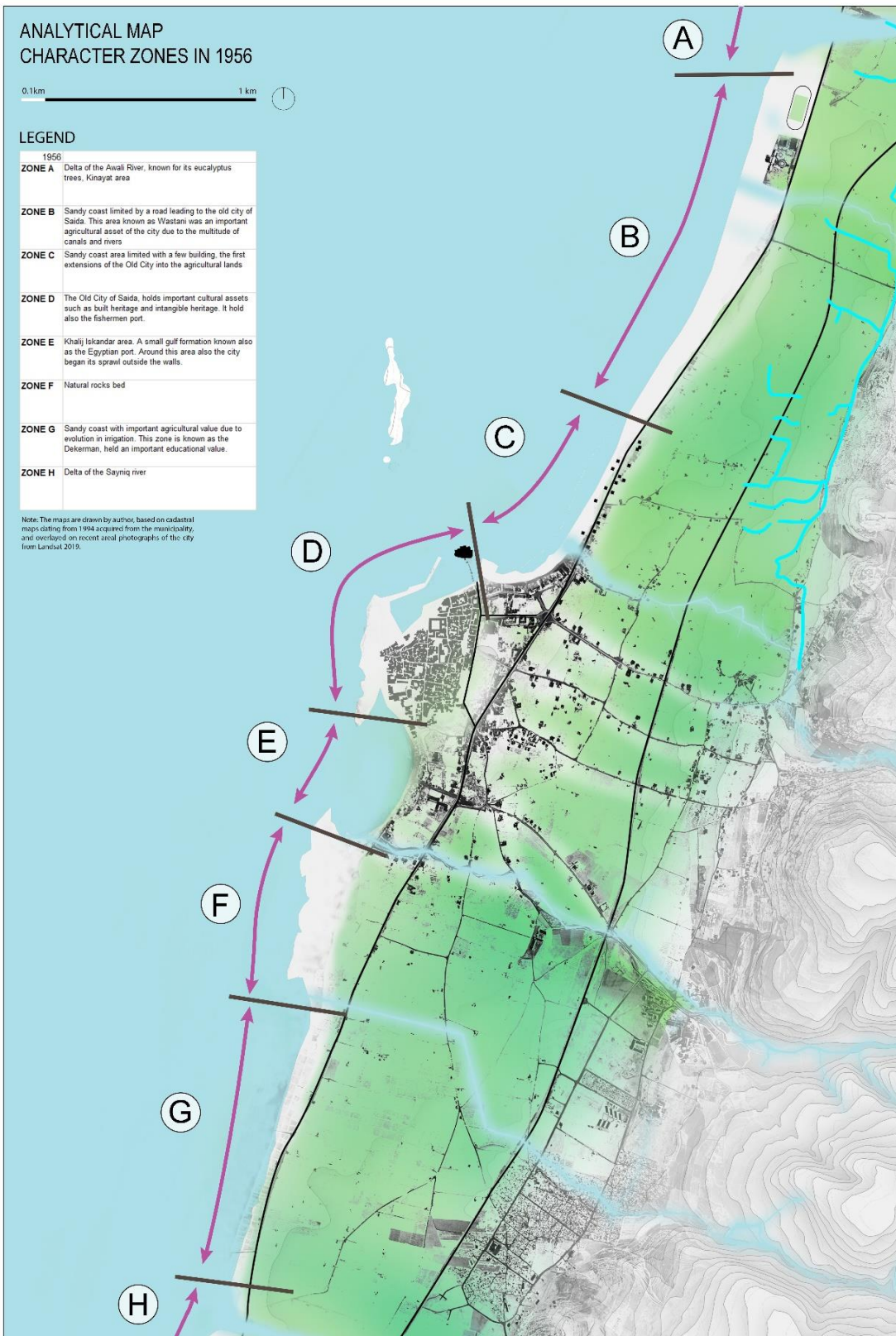


Figure 102-Historial Character Zones of the waterfront of Saida in 1956
Source: Author, after Arial images from the Lebanese Army in 1956

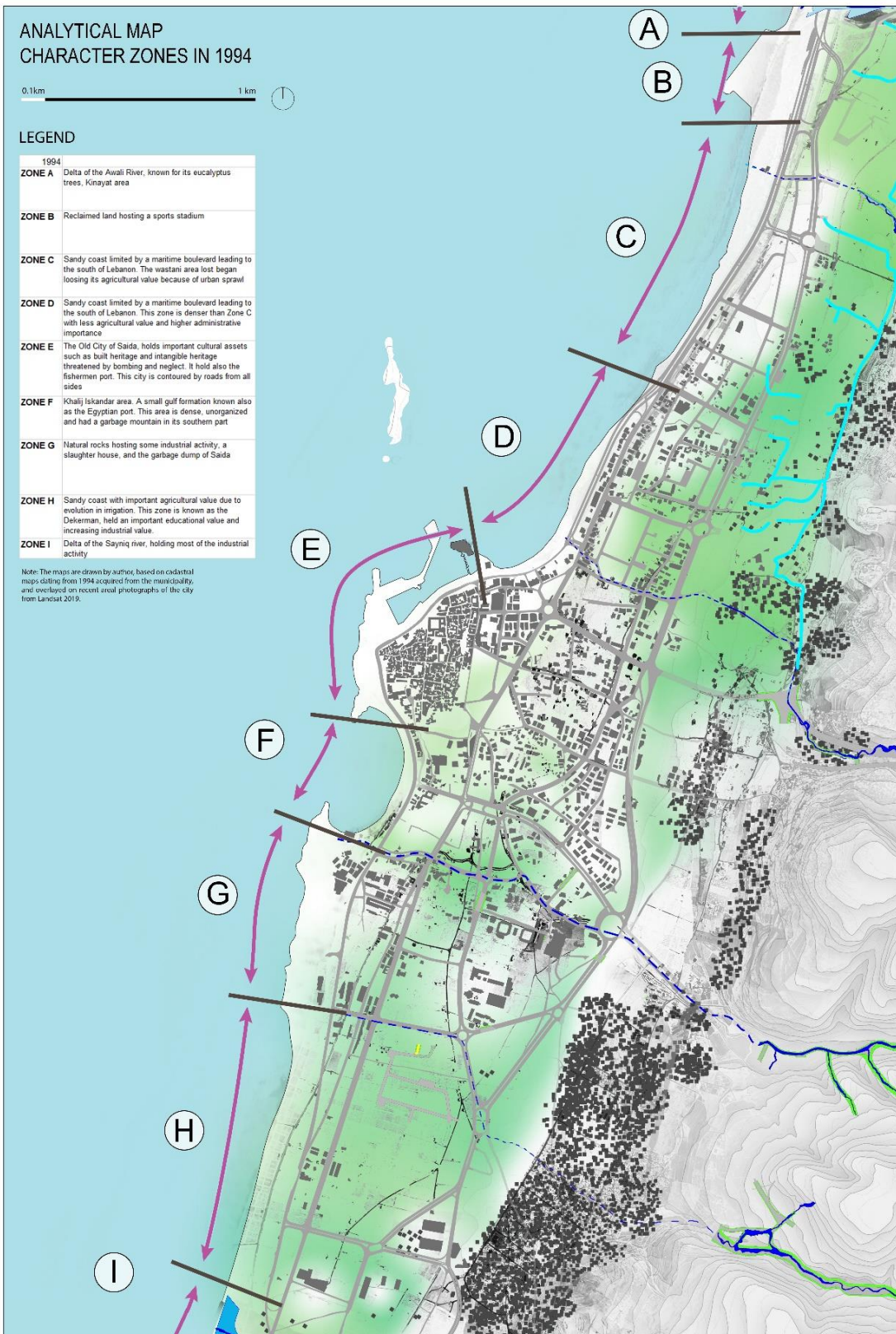


Figure 103- Historial Character Zones of the waterfront of Saida in 1994
Source: Author, after areal images from the Lebanese Army in 1994

B. Current Landscape Character Zones

The identification of the current Character zones was attained through a rigorous work of mapping, typologizing, and overlaying as explained in the methodology. The process is iterative and each layer informed the Character zone in a different manner. From each category, (Physical, Social, Regulatory, Environmental), a base layer was chosen and then the four layers were superposed to determine the main divisions of the overall Character Zones. The base layers chosen are: buildings heights and density (Physical layer), land cover/land use (Social layer), shoreline condition (Environmental layer), and Landform (Natural system). These layers were chosen because they constitute the most concrete and tangible criteria that shapes the character of the coastal area in Saida. Figure 104 shows the base layers outlined in purple. It is important to note that the types defined previously in Chapter IV are either linear types, where the delimited zones are defined following the costal edge, or surface types, where the delimited zones expand from the coastline inland.

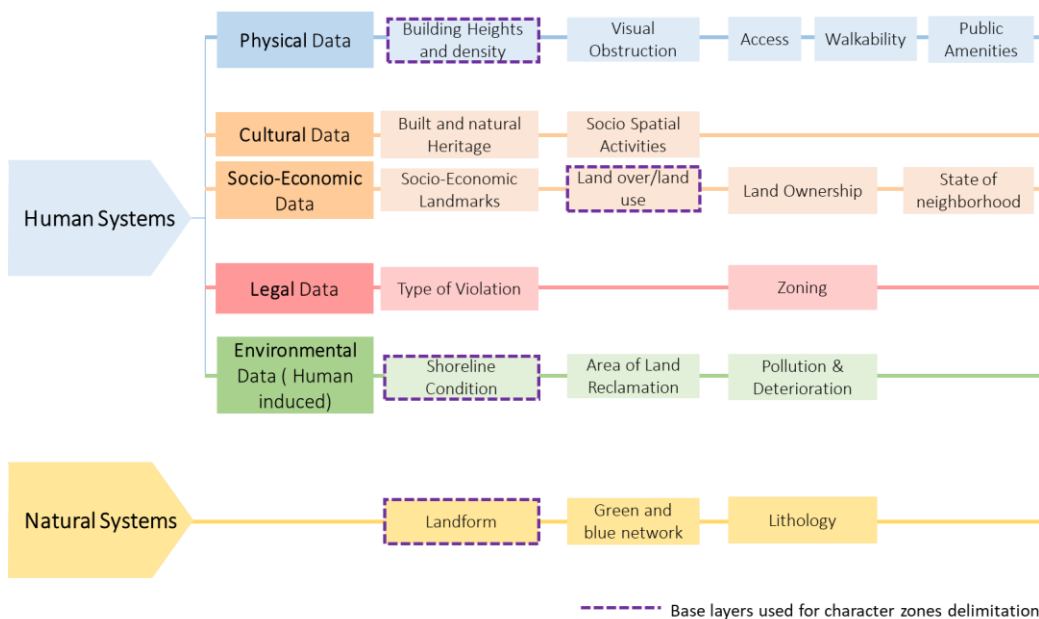


Figure 104 - Defining Character Zones

Source: Author

The different types deducted previously (shown as colored area in Figure 105a & Figure 105b) were then overlaid over the zones delimited following the superimposing of the base layers. In Figure 105a, the limit of the linear types are represented with a thick black line, while the limit of the zones created by superimposing the base layers are represented by colored surfaces. In Figure 105b, the limit of the surface types are represented in red while the limit of the zones created by superimposing the base layers are represented by colored surfaces. Most of the types were complementary to the zones discerned by the superimposition of the base maps. However, some distortions were observed; they deviated minimally from the red limit representing a small variation in the Character zone, or they might indicate a sub-Character zone within a CZ.



Figure 103a - Overlapping Linear types with main Character Zones
Source: Author



Figure 105b - Overlapping Surface types with main Character Zones
Source: Author

As a result of overlaying the mentioned layers, the waterfront of Saida is divided into ten character zones (Figure 106) named after the most prominent characteristic in each zone and described by three attributes in relation to the base layers used to define them as shown in Table 31.

Table 31- Current Character zones:

Character zone	Name	Attribute
Zone A	The Kinayat	Small sand dune, agricultural land, No built fabric, Natural sandy coast
Zone B	The Municipal Stadium	Small dune, Sports and Leisure use, Low density, Artificial riprap coast
Zone C	The Qamleh beach dune	Small dune, Mixed use, Low density, Natural sandy coast
Zone D	The Qamleh beach	Flat plain, Mixed use, Low density, Natural sandy coast
Zone E	The Qamleh beach extension	Flat plain, Mixed use, Medium density, Mixed riprap, concrete and sandy coast
Zone F	The Old City	Flat plain, Old City heritage site, High density, Mixed riprap, concrete, and rocks coast
Zone G	The Iskandar bay	Flat plain, Mixed use with port facility, Medium density, Artificial tetrapod coast
Zone H	The landfill and urbanized Dekerman	Flat plain, Mixed use, Medium density, Artificial tetrapod coast
Zone I	The landfill and agricultural Dekerman	Flat plain, Agricultural land, Low density, Artificial tetrapod coast
Zone J	The landfill and Industrial Dekerman	Flat plain, Industrial land, Low density, Artificial tetrapod coast

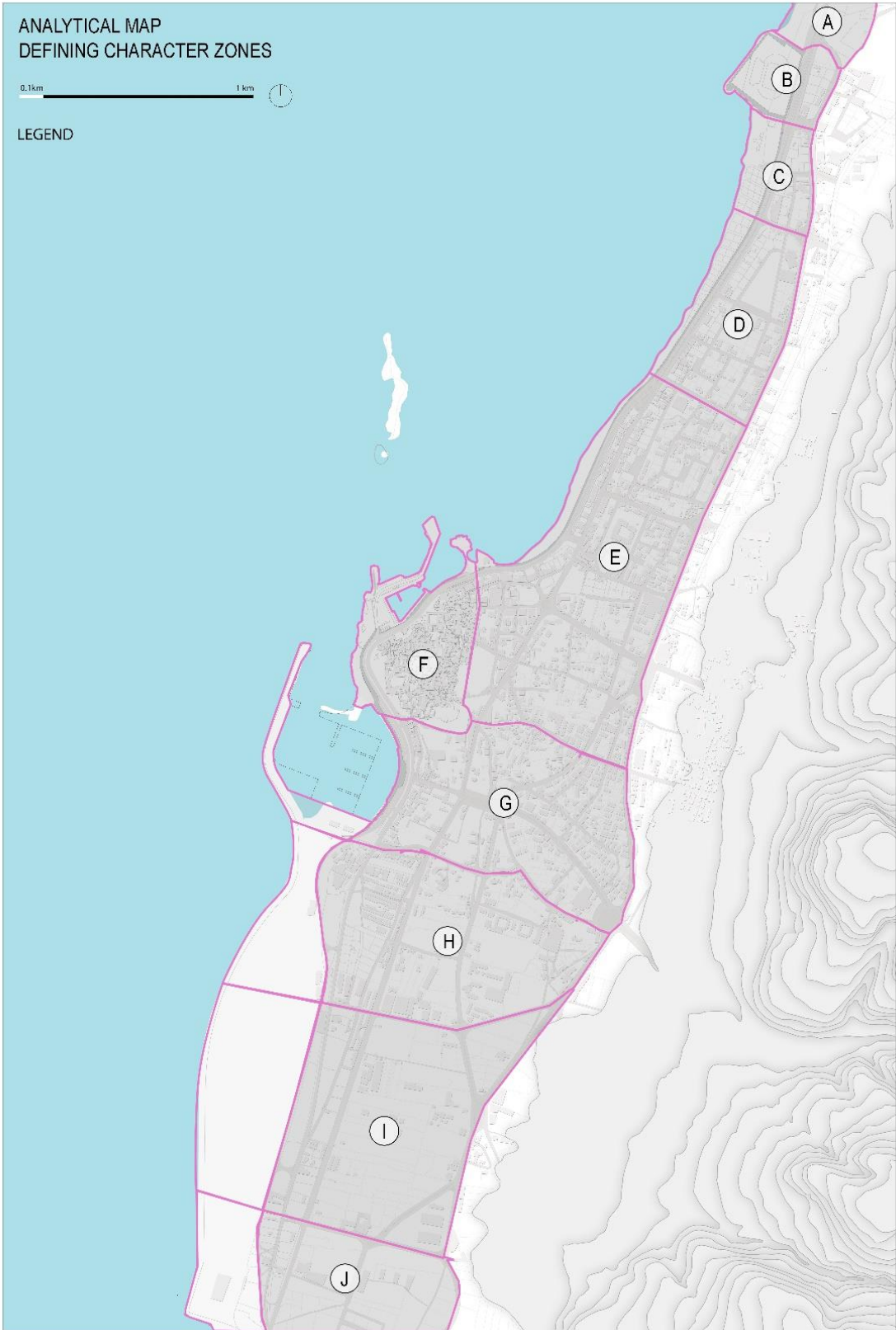


Figure 106 - Defining current Character Zones in Saida
Source: Author

Each character zone is described according to the four layers mapped and different types deducted. Following this description, each CZ is assessed using the three tools mentioned before, informed by urban design and sustainability principles.

1. Character Zone A: The Kinayat

The first zone A is the Kinayat (Figure 107, Figure 108, Figure 109). A remarkable natural landmark on the coast of Saida, consisting of a small dune planted with Eucalyptus trees, under which a public garden spans. This area is active mostly in the afternoons and on weekends due to the presence of the gated public garden where there is a shisha café and a playground for kids. Moreover, the delta of the Awali river is an active space during the summer, where young men tend to go fish and swim. The Kinayat Garden, on the waterfront of Saida, is owned and operated by the municipality. However, Kinayat el Nahr, on the riverbed of the Awali are owned by a real-estate company. The characteristics of the Kinayat zone are summarized in Table 32.

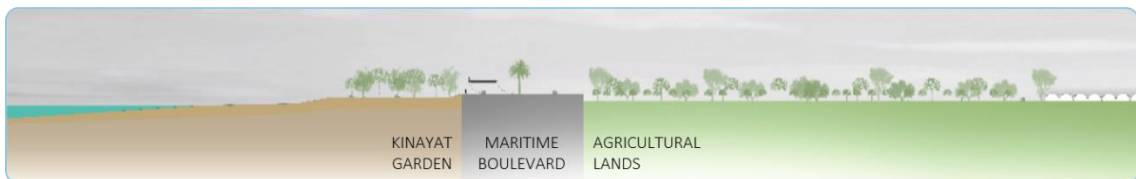


Figure 107- General section of Character Zone A

Source: Author



Figure 108-General view of Character Zone A

Source: Author



Figure 109-Plan of Character Zone A
Source: Author

Table 32-Characteristics of Character Zone A

Physical layer	Coherence of character	<ul style="list-style-type: none"> • Homogeneous agricultural character • Limited number of built agricultural houses
	Visual connectivity	<ul style="list-style-type: none"> • Partially obstructed visual connectivity by a metal mesh fence
	Physical accessibility	<ul style="list-style-type: none"> • Monitored accessibility at Kinayat Garden; gated plot; scheduled opening • Ease of sea access
	Walkability and amenities	<ul style="list-style-type: none"> • Some public amenities: WC, snack, lighting, playground for kids, sidewalk and parking
Socio-economic layer	socio-spatial activities	<ul style="list-style-type: none"> • active mostly in the afternoons • gathering area for families mainly
	Neighborhood character	<ul style="list-style-type: none"> • neighborhood is pleasant with green spaces, and agricultural lands
	Heritage	<ul style="list-style-type: none"> • Rich in natural heritage mainly the Awali river and the Kinayat garden.
	Landmarks	<ul style="list-style-type: none"> • Important landmark on the waterfront of Saida.It's an element of the collective memory of the Sidonians.
	Ownership	<ul style="list-style-type: none"> • The Kinayat Garden: the municipality • Kinayat el Nahr : by a real-estate company

Regulatory layer	Violations	<ul style="list-style-type: none"> • No registered violation in this area
	Zoning	<ul style="list-style-type: none"> • Seaside plots: zone A is G1 Touristic with a lot coverage of 15% and FAR of 0.3. • Eastern side plots: zone F residential low density with a lot coverage of 20% and FAR of 0.6
Environmental layer	Topography	<ul style="list-style-type: none"> • Small sand dune 4m higher than sea level
	Coastline condition	<ul style="list-style-type: none"> • Coastline is kept natural and is not subject to any embankments. • The coast is sandy, limited by some seagrass.
	Green cover	<ul style="list-style-type: none"> • Well irrigated due to the presence of the Awali River • High agricultural value • Presence of Eucalyptus trees • More than 65% of the land is planted while the other plots are still empty

2. Character Zone B: The Municipal Stadium

Character Zone B is defined mainly by the presence of the Municipal Stadium as a prominent landmark (Figure 110, Figure 110, Figure 112). This area was a small sand dune 4m higher than sea level. Now the land reclamation replaced the dune. The stadium is a vibrant area especially in summer for sports such as jogging, and biking. Fishermen climb the riprap edge to fish in this area. Additionally, the surrounding space of the stadium hosts temporary events such as the spring festival. However, the stadium is mostly closed. The characteristics of the Municipal Stadium zone are summarized in Table 33.



Figure 110-General section of Character Zone B
Source: Author



Figure 111-General view of Character Zone B
Source: Author



Figure 112-Plan of Character Zone B
Source: Author

Table 33-Characteristics of Character zone B

Physical layer	Coherence of character	<ul style="list-style-type: none"> • Few new buildings and in good condition. • Empty lots are surrounded by a high wall,
	Visual connectivity	<ul style="list-style-type: none"> • Partially obstructed visual connectivity by a mesh fence and the tiers of the Municipal stadium
	Physical accessibility	<ul style="list-style-type: none"> • Restricted access of the Stadium • Ease of access of the edge and walkway around the stadium
	Walkability and amenities	<ul style="list-style-type: none"> • Some public amenities: WC (locked within the Stadium), lighting, sidewalk and parking
Socio-economic layer	socio-spatial activities	<ul style="list-style-type: none"> • vibrant area especially in summer for sports such as jogging, and biking • Space around the Stadium caters temporary events
	Neighborhood character	<ul style="list-style-type: none"> • Planned to be a new high quality neighborhood with low density and high percentage of open spaces
	Heritage	<ul style="list-style-type: none"> • Low heritage value
	Landmarks	<ul style="list-style-type: none"> • Dominated by one big scale social landmark, the Municipal Stadium of Saida
	Ownership	<ul style="list-style-type: none"> • Stadium: the municipality • Eastern side : Private property by individuals
Regulatory layer	Violations	<ul style="list-style-type: none"> • Occupation of maritime domain ratified by decree 2105/1944
	Zoning	<ul style="list-style-type: none"> • Seaside plots: zone A is G1 Touristic with a lot coverage of 15% and FAR of 0.3. • Eastern side plots: zone D and D1 residential and commercial medium density with a lot coverage of 30% and FAR of 1.2.
Environmental layer	Topography	<ul style="list-style-type: none"> • Small sand dune 4m higher than sea level
	Coastline condition	<ul style="list-style-type: none"> • medium size embankment of 75000sqm • The coast is covered with riprap
	Green cover	<ul style="list-style-type: none"> • no natural irrigation and a • low agricultural value with 15% of the land planted

3. Character Zone C: The The Qamleh beach dune

Zone C is mainly defined by the presence of the Qamleh public beach (Figure 113, Figure 114, Figure 115). Previously hosting the Sidon hotel, this area is a small sand dune 4m higher than sea level. The dune is subject to erosion due to the regression of vegetation. Zone C has a low activity rate due to military presence. Next to the casern, towards the municipal stadium, a flat surface on the top of the dune is mostly empty. The characteristics of zone C are summarized in Table 34.

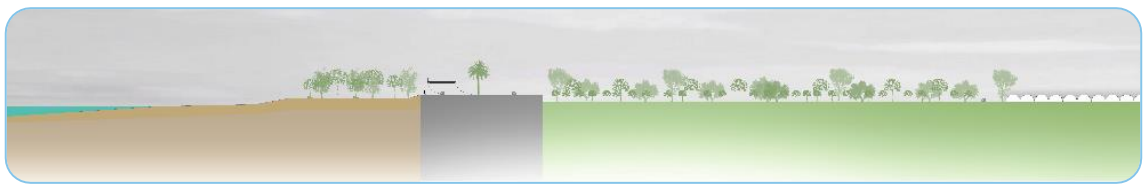


Figure 113-General section of Character Zone C
Source: Author



Figure 114-General image of Character Zone C
Source: Author



Figure 115-Plan of Character Zone C
Source: Author

Table 34-Characteristics of Character Zone C
Source: Author

Physical layer	Coherence of character	<ul style="list-style-type: none"> • Few new buildings and in good condition; low height and scattered. • On the coast a temporary metal structure in present
	Visual connectivity	<ul style="list-style-type: none"> • Obstructed visual connectivity high concrete wall surrounding military casern
	Physical accessibility	<ul style="list-style-type: none"> • Blocked access of the dune by the military casern • Ease of access of the sea but no formal entrance
	Walkability and amenities	<ul style="list-style-type: none"> • Continuous sidewalk but no amenities
Socio-economic layer	socio-spatial activities	<ul style="list-style-type: none"> • a low activity rate due to military presence
	Neighborhood character	<ul style="list-style-type: none"> • Planned to be a new high quality neighborhood with low density and high percentage of open spaces
	Heritage	<ul style="list-style-type: none"> • Low heritage value
	Landmarks	<ul style="list-style-type: none"> • Mixed landmarks types, the most important is the AUST campus, and the Order of engineers building
	Ownership	<ul style="list-style-type: none"> • Stadium: the municipality • Eastern side : Private property by individuals
Regulatory layer	Violations	<ul style="list-style-type: none"> • No registered violation of maritime domain
	Zoning	<ul style="list-style-type: none"> • Seaside plots: zone A is G1 Touristic with a lot coverage of 15% and FAR of 0.3. • Eastern side plots: zone D and D1 residential and commercial medium density with a lot coverage of 30% and FAR of 1.2.
Environmental layer	Topography	<ul style="list-style-type: none"> • Small sand dune 4m higher than sea level
	Coastline condition	<ul style="list-style-type: none"> • The coastline is kept natural • Sand dune followed by a sandy coast
	Green cover	<ul style="list-style-type: none"> • low agricultural value • low agricultural value with 15% of the land planted

4. Character Zone D: The The Qamleh beach

Character Zone D is the Qamleh beach zone (Figure 116, Figure 117, Figure 118), a sandy public beach, open for the public and managed by the municipality of Saida. In this zone, other prominent landmarks define the area such as the Hariri mosque, the Wastani public garden and the Courthouse of South Lebanon. Zone D has a high activity rate especially in summer. The beach is mostly used in summer. Tables with wide umbrellas are provided for people picnicking in this zone. As for swimming, this activity is practically reserved for men due to the conservative constitution of the social fabric. Other activities such as water sports, diving and snorkeling are present also. On the corniche, sports such as jogging and biking are present. In addition, people gather for shisha and food, such as fowl, darah and ghazleh, catered by street vendors and temporary kiosks. The characteristics of zone D are summarized in Table 35.



Figure 116-General section of Character Zone D

Source: Author

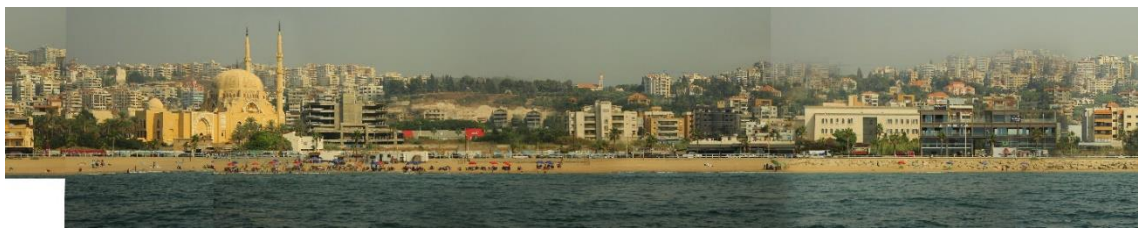


Figure 117-General view of Character Zone D

Source: Author



Figure 118-Plan of Character Zone D
Source: Author

Table 35-Characteristics of Character Zone D
Source: Author

Physical layer	Coherence of character	<ul style="list-style-type: none"> • Medium building density, 4 to five floors high • Plots in front of the Wastani public garden are awaiting development.
	Visual connectivity	<ul style="list-style-type: none"> • Preserved visual connectivity
	Physical accessibility	<ul style="list-style-type: none"> • Free open access; • Only one formal entrance with no equipment for people with special needs

	Walkability and amenities	<ul style="list-style-type: none"> • 8 meters wide sidewalk with benches, trees and lighting. • Temporary amenities are provided in summer (WC, showers, snack)
Socio-economic layer	socio-spatial activities	<ul style="list-style-type: none"> • High activity rate especially in summer: picnic, swimming, volleyball, tanning, jogging, cycling, strolling. • Swimming is practically reserved for men due to the conservative constitution of the social fabric. • Presence of street food vendors
	Neighborhood character	<ul style="list-style-type: none"> • Planned to be a new high quality neighborhood with low density and high percentage of open spaces
	Heritage	<ul style="list-style-type: none"> • Low heritage value
	Landmarks	<ul style="list-style-type: none"> • Mixed landmarks types, the most important is the Hariri Mosque, the justice palace of the South, the Wastani Public garden, the Qamleh beach
	Ownership	<ul style="list-style-type: none"> • Stadium: the municipality • Eastern side : privately owned by companies, mainly Moscata S.A.L.
Regulatory layer	Violations	<ul style="list-style-type: none"> • No registered violation of maritime domain
	Zoning	<ul style="list-style-type: none"> • Seaside plots: zone A is G1 Touristic with a lot coverage of 15% and FAR of 0.3. • Eastern side plots: zone D and D1 residential and commercial medium density with a lot coverage of 30% and FAR of 1.2.
Environmental layer	Topography	<ul style="list-style-type: none"> • Flat sandy shore
	Coastline condition	<ul style="list-style-type: none"> • The coastline is kept natural • No embankment
	Green cover	<ul style="list-style-type: none"> • low agricultural value • low agricultural value with 15% of the land planted • Wastani Public Garden is abandoned not planted

5. Character Zone E: The The Qamleh beach extension

Character Zone E is the The Qamleh beach extension, consisting of a narrow sand strip limited by the maritime boulevard and a dense mixed use built fabric (Figure 119, Figure 120, Figure 121). This zone has a high activity rate. The beach is not managed in this area, however, people use it for picnicking by putting tables and umbrellas rented from a nearby kiosk or brought by them. As for swimming, this activity is practically reserved for men due to the conservative constitution of the social fabric. Other activities such as water sports, diving and snorkeling are present also. On the corniche, sports such as jogging and biking are present. Also, people gather for shisha and food, such as fowl, darah and ghazleh, catered by the mobile vendors and temporary kiosks. In addition to the beach, this zone is known for the presence of the municipality, the Nejme square and a large number of parking spaces. The characteristics of zone E are summarized in Table 36.

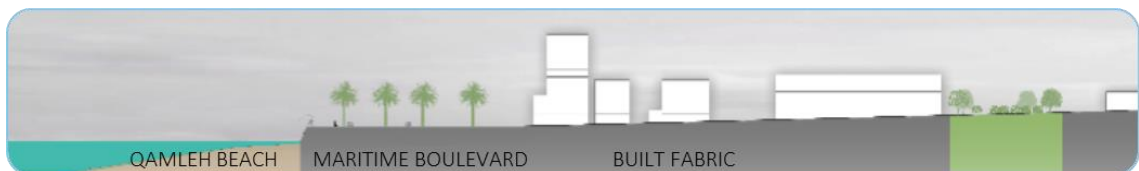


Figure 119-General section of Character Zone E
Source: Author



Figure 120-General view of Character Zone E
Source: Author



Figure 121-Plan of Character Zone E
Source: Author

Table 36-Characteristics of Character Zone E
Source: Author

Physical layer	Coherence of character	<ul style="list-style-type: none"> • Medium building density that increases in proximity to the Old City; 5 to 8 floors high • Exception of high buildings r from 8 to 12 floors
	Visual connectivity	<ul style="list-style-type: none"> • Preserved visual connectivity • Rest House high fence creates blockage
	Physical accessibility	<ul style="list-style-type: none"> • Free open access; • Only one formal entrance with no equipment for people with special needs • Access is controlled in Rest House area
	Walkability and amenities	<ul style="list-style-type: none"> • 8 meters wide sidewalk with benches, trees and lighting; no amenities or shading provided • Car dominance

Socio-economic layer	Socio-spatial activities	<ul style="list-style-type: none"> • High activity rate especially in summer: picnic, swimming, volleyball, tanning, jogging, cycling, strolling. • Swimming is practically reserved for men due to the conservative constitution of the social fabric. • Presence of street food vendors
	Neighborhood character	<ul style="list-style-type: none"> • Dense neighborhood with medium to low quality • Pocket spaces of dense and non-maintained buildings
	Heritage	<ul style="list-style-type: none"> • Built heritage concentrated near the Chakiriyeh road
	Landmarks	<ul style="list-style-type: none"> • Mixed landmarks types, the most important is tthe Nejme Square, , the Zaatari mosque, Al Saddiq mosque, Al Bizri mosque. And the Municipality of Saida.
	Ownership	<ul style="list-style-type: none"> • Stadium: the municipality • Eastern side : privately owned by individuals and companies
Regulatory layer	Violations	<ul style="list-style-type: none"> • Several buildings next to the Zaatari mosque are reported as violating the maritime domain but they are no longer on the coast
	Zoning	<ul style="list-style-type: none"> • Coast is not zoned • Eastern side plots: B very dense residential and commercial with a lot coverage of 60% and FAR of 1.2 without any restrictions for height. And C and D both residential and commercial
Environmental layer	Topography	<ul style="list-style-type: none"> • Flat sandy shore
	Coastline condition	<ul style="list-style-type: none"> • coastline is modified in this zone by embankment of the Rest house • Eroded Sandy shore
	Green cover	<ul style="list-style-type: none"> • No agricultural value • Open spaces are mostly parkings

6. Character Zone F: The Old City

Zone F is the Old City of Saida. It is the oldest development along the coast of the city (Figure 122, Figure 123, Figure 124). The fabric of the Old City is low rise, ranging from 1 to 3 floors and extremely dense fabric. The only open space in the medina is Bab El Sarail square. This area is vibrant with activities related to heritage and tourism. Fishing is the main activity of the port that has strong ties with the past of the city. This zone is also known for site seeing, commerce, crafts. Some traditional crafts still exist in the Old Core such as carpentry, soap making, sweets making, boats construction, while other crafts are disappearing. Cultural landmarks such as hammams, khans, palaces, mosques, and museums dominate the Old City. Directly on the waterfront we can find Masjed el-Bahr, Khan el Franj, Al Omari mosque, Al Maqased School, El Mir Amin palace. Most of these landmarks were restored and have a tight link to the social activity of the waterfront. The characteristics of zone F are summarized in Table 37.

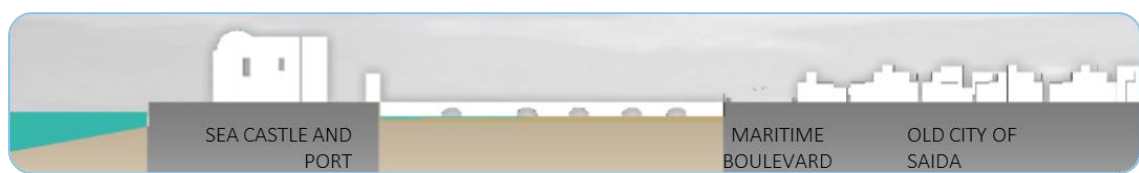


Figure 122-General section of Character Zone F
Source: Author



Figure 123-General view of Character Zone F
Source: Author



Figure 124-Plan of Character Zone F
Source: Author

Table 37-Characteristics of Character Zone F

Source: Author

Physical layer	Coherence of character	<ul style="list-style-type: none"> • Extremely dense fabric with low rise buildings, ranging from 1 to 3 floors • The only open space in the medina is Bab El Sarail square
	Visual connectivity	<ul style="list-style-type: none"> • Visual connectivity is blocked by wave breakers around the port, huge cranes and immense ships
	Physical accessibility	<ul style="list-style-type: none"> • Restricted unless in a water taxi or a fishing boat • On the port's premises, easy access to the fish market, but other areas are restricted due to the commercial activity of the port • Access to Zireh Islet is provided through water taxis that charges 3000LBP for a two-ways ticket.
	Walkability and amenities	<ul style="list-style-type: none"> • Excessive traffic, random car parking, and interrupted sidewalks.
Socio-economic layer	Socio-spatial activities	<ul style="list-style-type: none"> • Vibrant with activities related to heritage and tourism; site seeing, commerce, crafts, carpentry, soap making, sweets making, boats construction • Fishing and commerce are the main activities of the port
	Neighborhood character	<ul style="list-style-type: none"> • Low quality neighborhood with neglected residential fabric and lack of infrastructure.
	Heritage	<ul style="list-style-type: none"> • Rich in cultural heritage; tangible such as the built fabric of the old core and intangible such as the crafts industries. • Low Natural Heritage; rock forming the old fishing port, but they are now paved.
	Landmarks	<ul style="list-style-type: none"> • Cultural landmarks such as hammams, khans, palaces, mosques, and museums dominate the Old City. • Masjed el-Bahr, Khan el Franj, ruins of hammam, Al Omari mosque, Al Maqased School, El Mir Amin palace are located directly on the waterfront.

		<ul style="list-style-type: none"> • Most of these landmarks were retorted and have a tight link to the social activity of the waterfront.
	Ownership	<ul style="list-style-type: none"> • The coast: public governmental property • The Old city: a mosaic of ownership patterns ranging between public, private, Christian waqf, Muslim waqf, Jewish waqf, NGOs and maritime properties.
Regulatory layer	Violations	<ul style="list-style-type: none"> • Occupation of the maritime public domain by the Rest House, the Syndicate of fishermen and the port are in coordination with decrees issued by the government. • The expansion of the maritime boulevard over maritime properties has been legislated by the Lebanese government in 1994.
	Zoning	<ul style="list-style-type: none"> • The Old City: Zone A historical residential and commercial zone with lot coverage of 60% and FAR of 1.8. • Land pooling and subdivision is not allowed in this area unless it is for rehabilitation purposes and has to be equal to 300spm.
Environmental layer	Pollution	<ul style="list-style-type: none"> • The presence of the commercial port increases water pollution and endangers fishing activities
	Coastline condition	<ul style="list-style-type: none"> • Coastline heavily modified
	Green cover	<ul style="list-style-type: none"> • No agricultural value

7. Character Zone G: The Iskandar gulf

Zone G is the Iskandar gulf. The buildings in this area are of medium height, ranging from 4 to 6 floors with occasional high rise buildings of 12 floors. The visibility of the sea is hindered by the presence of the wave breaker of the port, and by the new three floors buildings being constructed on the land of the port. The wide sidewalk in this area is ideal for family gathering, where people gather for shisha while their kids

play on their bikes in the afternoons. Fishermen use the edge of this corniche for fishing and access the water through the provided staircase or climb on the rocks.

This zone is dominated by educational landmarks such as the Saint Josphe school, Maqased School, Lebanese University, LIU. The martyrs square is considered as a political and social landmark in this area. Characteristics of this zone are summarized in Table 38.



Figure 125-General section of Character Zone G
Source: Author



Figure 126-General view of Character Zone G
Source: Author



Figure 127-Plan of Character Zone G
Source: Author

Table 38-Characteristics of Character Zone G

Source: Author

Physical layer	Coherence of character	<ul style="list-style-type: none"> • Medium building height and density; 4 to 6 floors ; occasional high rise buildings of 12 floors. • An unbuilt reclaimed land is awaiting development. • No coherence; clash with the old fabric of Saida.
	Visual connectivity	<ul style="list-style-type: none"> • Visual connectivity obstructed by wave breaker and the new 3 floors buildings constructed on the new port.
	Physical accessibility	<ul style="list-style-type: none"> • No monitoring • Low concrete blocks separate the cornice and the sea. • One formal entrance in the form of a staircase. • Informal accessibility; climbing in order to access the rocks on the bay.
	Walkability and amenities	<ul style="list-style-type: none"> • 15 meters wide sidewalk serves this area; no amenities are provided.
Socio-economic layer	Socio-spatial activities	<ul style="list-style-type: none"> • Family gatherings on the wide sidewalk for shisha, and kids playtimes afternoons. • Excessive traffic and truck parking endangers this activity as well as the safety of students. • Fishermen use the edge of this cornice for fishing
	Neighborhood character	<ul style="list-style-type: none"> • Highly dense neighborhood with medium to low quality • Low percentage of open spaces
	Heritage	<ul style="list-style-type: none"> • No significant heritage value apart from the murex hill and some scattered and neglected old houses
	Landmarks	<ul style="list-style-type: none"> • Educational landmarks: Saint Jospheh school, Maqased School, Lebanese University, LIU ... • Political landmark:The martyrs
	Ownership	<ul style="list-style-type: none"> • The coast: public governmental property • Eastern side : privately owned by individuals and companies
Regulatory layer	Violations	<ul style="list-style-type: none"> • The port is constructed following a decree and thus is not considered as a violation.

	Zoning	<ul style="list-style-type: none"> • Zone B, C and D, respectively very dense, dense and medium density residential and commercial zone. Zone B has a lot coverage of 60% and FAR 4.2, Zone C has a lot coverage of 40% and FAR of 2.4, and Zone D has a lot coverage of 30% and FAR 1.2.
Environmental layer	Pollution	<ul style="list-style-type: none"> • High rates of air pollution due to excessive trucks parking and passing by
	Coastline condition	<ul style="list-style-type: none"> • Coastline is modified in this zone with a medium size embankment
	Fauna and Flora	<ul style="list-style-type: none"> • Low agricultural value • The maritime ecosystem has been heavily modified due to the land reclamation works on going.

8. Character Zone H: The landfill and urbanized Dekerman

Zone H is the landfill and urbanized Dekerman. Its urban fabric has a medium height and a medium density fabric. This area has some public amenities such as a public garden with a view to the sea, equipped with a public WC, shaded spaces and water features. Archeological sites are present in this zone right in front of the industrial area, such as the Jewish cemetery. This part of the Dekerman has a high agricultural value. Around 50% of the land is still cultivated between citrus plantation, banana plantation and nurseries. Characteristics of this zone are listed in Table 39.



Figure 128-General section of Character Zone H

Source: Author



Figure 129-General view of Character Zone H
Source: Author



Figure 130-Plan of Character Zone H
Source: Author

Table 39-Characteristics of Character Zone H
Source: Author

Physical layer	Coherence of character	<ul style="list-style-type: none"> • Medium height buildings (4 to 5 floors) and a medium density fabric. • An unbuilt reclaimed land.
	Visual connectivity	<ul style="list-style-type: none"> • Blocked by a hill formation on the reclaimed land • From the public garden, the sea is visible
	Physical accessibility	<ul style="list-style-type: none"> • Restricted access to the reclaimed land • Access to the Saoudi garden is monitored and follows a schedule • No access to the sea
	Walkability and amenities	<ul style="list-style-type: none"> • Public amenities such as a public garden equipped with a public WC, shaded spaces and water features • No amenities outside of the garden

		<ul style="list-style-type: none"> • 2 meters wide sidewalk subject to interruptions and hazards
Socio-economic layer	socio-spatial activities	<ul style="list-style-type: none"> • Low activity zone due to the industrial character and the pollution rate.
	Neighborhood character	<ul style="list-style-type: none"> • Poor quality neighborhood with high density and low percentage of open spaces, especially around the industrial zone.
	Heritage	<ul style="list-style-type: none"> • Archeological sites right in front of the industrial area, such as the Jewish cemetery
	Landmarks	<ul style="list-style-type: none"> • Some punctual landmarks such as Maqam Abi Rouh and the Saoudi garden
	Ownership	<ul style="list-style-type: none"> • Cost: public governmental properties • Eastern side : mixed ownership dominated by Waqf and municipal lands
Regulatory layer	Violations	<ul style="list-style-type: none"> • This land reclamation is constructed following a decree and thus is not considered as a violation
	Zoning	<ul style="list-style-type: none"> • Zone D: medium density residential and commercial zone with a lot coverage of 30% and FAR 1.2. • Small part of land, where Maqam Abi Rouh if located, has been zone as G1 touristic area with a lot coverage of 20% and FAR 0.6 • Even though this area is planned as residential and commercial zone, industrial activity has taken over the space and has rendered the neighborhood of poor quality
Environmental layer	Topography	<ul style="list-style-type: none"> • Flat plain
	Coastline condition And embankment	<ul style="list-style-type: none"> • The coastline is majorly modified by a big scale embankment. • A landfill of 600000sqm has taken over the waterfront of the three CZ H, I and J
	Green cover	<ul style="list-style-type: none"> • High agricultural value. Around 50% of the land is still cultivated between citrus plantation, banana planation and nurseries

9. Character Zone I: The landfill and agricultural Dekerman

Zone I is the landfill and agricultural Dekerman. The urban fabric in this area has a low height (2 to 4 floors) and a low density. In addition, there is an unbuilt reclaimed land. The landfill area is a low activity zone due to the industrial character of the zone and the high pollution rate. This zone is not developed yet into a neighborhood but it has a high percentage of open spaces used for agriculture. No significant landmarks are noticed in this area and built heritage is absent in this zone however natural heritage is eminent. Characteristics of this zone are summarized in



Figure 131-General section of Character Zone I
Source: Author



Figure 132-General view of Character Zone I
Source: Author



Figure 133-Plan of Character Zone I
Source: Author

Table 40-Characteristics of Character Zone I

Source: Author

Physical layer	Coherence of character	<ul style="list-style-type: none"> • A low height (2 to 4 floors) and a low density fabric. • An unbuilt reclaimed land.
	Visual connectivity	<ul style="list-style-type: none"> • Visibility of the sea is not defined yet due to the unfinished reclaimed land • A metal wire mesh obstructs the view partially • The sea wall rises and blocks the view and the edge of the land reclamation
	Physical accessibility	<ul style="list-style-type: none"> • Restricted access to the reclaimed land
	Walkability and amenities	<ul style="list-style-type: none"> • No amenities are provided • 2 meters wide sidewalk subject to interruptions and hazards
Socio-economic layer	socio-spatial activities	<ul style="list-style-type: none"> • Low activity zone due to the industrial character and the pollution rate.
	Neighborhood character	<ul style="list-style-type: none"> • Not developed yet into a neighborhood but it has a high percentage of open spaces used for agriculture
	Heritage	<ul style="list-style-type: none"> • Absent built heritage • Eminent natural heritage
	Landmarks	<ul style="list-style-type: none"> • No significant landmarks
	Ownership	<ul style="list-style-type: none"> • Cost: public governmental properties • Eastern side: private companies (trying to gather as much land before the development of this area)
Regulatory layer	Violations	<ul style="list-style-type: none"> • This land reclamation is constructed following a decree and thus is not considered as a violation
	Zoning	<ul style="list-style-type: none"> • Zone F: residential low density zone with a lot coverage of 20% and FAR 0.6. • Small strip that used to be the shoreline is zoned as G, touristic, with a lot coverage of 15% and FAR 0.3.
Environmental layer	Topography	<ul style="list-style-type: none"> • Flat plain
	Coastline condition	<ul style="list-style-type: none"> • The coastline is majorly modified by a big scale embankment.

		<ul style="list-style-type: none"> • A landfill of 600000sqm has taken over the waterfront of the three CZ H, I and J
	Green cover	<ul style="list-style-type: none"> • High agricultural value. Around 75% of the land is still cultivated between citrus plantation, banana plantation and nurseries

10. Character Zone J: The landfill and industrial Dekerman

Zone J is the landfill and industrial Dekerman. The urban fabric in this area has a low height (2 to 4 floors) and a low density fabric. In addition, there is an unbuilt reclaimed land. The access to the reclaimed land is restricted as well as the access to the garbage treatment center. As for the access to the sea it is completely blocked. The landfill area is a low activity zone due to the industrial character of the zone and the pollution rate. This zone is considered as a polluted neighborhood due to the presence of industries and the garbage mountain. In addition, the presence of the refugee camp in the eastern part of the zone, the Ain el Helwe camp has halted the residential development of this area. The main activity in this zone is industrial, however it surpasses its designated zone as limited by the zoning plan. Built heritage is absent in this zone however natural heritage is summed by the Sayniq river, mostly paved and undervalued. Characteristics of this zone are listed in table



Figure 134-General section of Character Zone J

Source: Author



Figure 135-General view of Character Zone J
Source: Author



Figure 136-Plan of Character Zone J
Source: Author

Table 41-Characteristics of Character Zone J
Source: Author

Physical layer	Coherence of character	<ul style="list-style-type: none"> • A low height (2 to 4 floors) and a low density fabric. • An unbuilt reclaimed land.
	Visual connectivity	<ul style="list-style-type: none"> • Visibility of the sea is not defined yet due to the unfinished reclaimed land • A metal wire mesh obstructs the view partially • The sea wall rises and blocks the view and the edge of the land reclamation • The building of the garbage treatment facility blocks the view
	Physical accessibility	<ul style="list-style-type: none"> • Restricted access to the reclaimed land • Restricted access to the garbage treatment center • Completely blocked access to the sea
	Walkability and amenities	<ul style="list-style-type: none"> • No amenities are provided

		<ul style="list-style-type: none"> • 2 meters wide sidewalk subject to interruptions and hazards
Socio-economic layer	socio-spatial activities	<ul style="list-style-type: none"> • Low activity zone due to the industrial character and the pollution rate.
	Neighborhood character	<ul style="list-style-type: none"> • Polluted neighborhood due to the presence of industries and the garbage mountain • The Ain el Helwe refugee camp, located in the eastern part of the zone has halted the residential development of this area • A medium percentage of open spaces used for agriculture
	Heritage	<ul style="list-style-type: none"> • Absent built heritage • Natural heritage is summed by the Sayniq river, mostly paved and undervalued
	Landmarks	<ul style="list-style-type: none"> • No significant landmarks • The most important landmark is the garbage mountain
	Ownership	<ul style="list-style-type: none"> • Cost: public governmental properties • Eastern side: owned by the municipality and the government
Regulatory layer	Violations	<ul style="list-style-type: none"> • This land reclamation is constructed following a decree and thus is not considered as a violation
	Zoning	<ul style="list-style-type: none"> • Zone F: residential low density zone with a lot coverage of 20% and FAR 0.6. • Near the Sayniq River the area is designated as I1 and I2 both industrial with a lot coverage of 70% and 40% and FAR 1.4 and 0.8.
Environmental layer	Topography	<ul style="list-style-type: none"> • Flat plain
	Coastline condition	<ul style="list-style-type: none"> • The coastline is majorly modified by a big scale embankment. • A landfill of 600000sqm has taken over the waterfront of the three CZ H, I and J
	Green cover	<ul style="list-style-type: none"> • High agricultural value. Around 50% of the land is still cultivated between citrus plantation, banana plantation and nurseries

C. Comparative analysis of Character Zones

In this section, each zone assessed according to criteria related to the present physical, socio-economic and environmental situation, and a comparative study between the different CZ is conducted following three different tools (Table 42) : The similarities and differences table, the star diagram, and the SWOT analysis. This analysis will inform the city scale strategy and guide the choice of the intervention area, as well as the intervention strategy.

Table 42-Character zones assessment tools

Source: Author

TOOL	AIM
Similarities and differences matrix	Reveal breaks of character or continuity between the character zones
Star diagram	Rate connectivity, accessibility, livelihood and environmental sustainability in each character zone
SWOT analysis	Unveil the opportunities available on the coast to face the negative impact threatening its connectivity and accessibility

1. Similarities and differences:

Understanding the similarities and differences between the character zones informs the planning strategies developed, and allows the understanding of the extent of the interventions needed. By visualizing similarities in a matrix, the connectivity between the adjacent Character Zones can be discerned where similarities between them increase. Similarly, when the differences between adjacent Character Zones augment, it marks the presence of a break between the two characters.

In order to visualize clearly the similarities and differences between the different character zones, a matrix was developed to plot the characteristics of each mapped

layer. When consecutive character zones share the same type, it means that they have the same characteristics and allows the recommendation of similar strategies. Moreover, similarities between two consecutive character zones highlights the presence of relations between these zones, thus noting a higher degree of connectivity between them. These cases are highlighted in green in Table 43, 14, 15, 16, and 17.

According to the matrix elaborated, Character zones A, B and C share the same topography, the same quality of space and the same zoning. The three CZ form a continuous dune elevated from the sea level, and they are zoned as G1 touristic. However, these zones have differences; mainly zone A and C remained natural, while zone B is subject to a large embankment, causing an artificialization of the coast. D and E are quite similar character zones given their flat topography, the sandy shore, the continuous visual connectivity and physical accessibility of the coast and the socio-spatial activities taking place on the coast; however, they differ by their density, building height, and percentage of open spaces. As for zone F, The Old City, it constitutes a unique set of criteria, especially when it comes to social activities, and heritage. Nevertheless, zone F shares some of characters with zone E and zone G, mainly related to visual accessibility of the sea. When it comes to the Dekerman area and the landfill, the three character zones designated by H, I and J are very similar, considering their flat topography, their agricultural importance and the presence of the large-scale embankment on their coast. However small variations related to land cover and land use are responsible of changing the character of the zone. For example, zone H has an educational use and educational landmarks as a dominant trait, while zone I is dominated by agricultural practices, while zone J is dominated by industrial development.

Table 43-Descripencies and similarities based on the base layers: Topography, Shoreline condition, Land cover/Land use, Building height

	LAYER	TYPE	Zone A	Zone B	Zone C	Zone D	Zone E	Zone F	Zone G	Zone H	Zone I	Zone J	
BASE LAYERS	Topography	1 Plain land				●	●	●	●	●	●	●	
		2 Hill											
		2 4m hill near the shore	●	●	●								
	Shoreline Condition	1 Natural Sandy coast	●		●	●	●						
		2 Artificial - riprap coast									●	●	●
		3 Mixed riprap and sandy coast				●	●						
		4 Mixed artificial coast between concrete and riprap		●					●	●			
		5 Natural coast -rocks							●				
	Land cover/Land use	1 Dominance of agricultural lands	●									●	
		2 Mixed use with reminiscent agricultural plot			●								
		3 Military zone			●								
		4 Sandy coast accessible free beach	●		●	●	●						
		5 Sport facilities		●									
		6 Mixed use with low reminiscent agricultural space				●	●						
		7 Highly populated residential zone											
		8 Mixed use transition zone with dominance of commercial use						●		●			
		9 Old city heritage site							●				
		10 Embankment hosting a port facility on the coast							●	●			
		11 Natural rocks							●				
		12 Mix between agriculture and educational use								●			
		13 Mix between agriculture and industrial use									●		●
		14 Landfill									●	●	●
	Built fabric, density and height	1 No built fabric or only low punctual buildings	●										
		2 Low building height Low density		●	●							●	
		3 Medium buildings height Medium density				●	●				●		●
		4 Medium height / occasional high rise buildings . Medium density						●		●			
		5 High buildings. High density.											
		6 Low rise buildings. Extremely dense fabric.							●				
7 Undefined new reclaimed land									●	●	●	●	
8 Unbuilt coast		●		●	●	●							

Table 44-Descripencies and differences based on physical layers: Visual obstruction, Accessibility, Walkability

	LAYER	TYPE	Zone A	Zone B	Zone C	Zone D	Zone E	Zone F	Zone G	Zone H	Zone I	Zone J	
Visual obstruction	1	View obstructed by a mesh fence but can be bypassed	●	●									
	2	Open visual access to the sea			●	●	●	●					
	3	Visibility of the sea is hindered by a concrete wall			●								
	4	Visibility of the sea is hindered by a building					●						
	5	Visibility of the sea is hindered by a port						●	●				
	6	Visibility of the sea is hindered by a human made land formation								●		●	
	7	Visibility of the sea is not defined yet								●	●	●	
	Access	1	Monitored access	●					●				
		2	Access to edge but not to water		●				●	●			
		3	Free access to the shore			●	●	●					
		4	Restricted access						●		●	●	●
	Walkability	1	Area with narrow sidewalks coupled with hazards or without any sidewalks								●	●	●
		2	Area with no public amenities Area with medium sized sidewalks		●	●		●					
		3	Area with some public amenities Area with narrow sidewalks	●					●				
		4	Area with some public amenities Area with medium sidewalks				●						
		5	Area with some public amenities Area with large sidewalks							●			

Table 45-Descripencies and differences based on the environmental layers: Land reclamation, Green blue network

ENVIRONMENTAL LAYERS		TYPE	Zone A	Zone B	Zone C	Zone D	Zone E	Zone F	Zone G	Zone H	Zone I	Zone J
Land reclamation	1	Coastline is kept natural No embankment	●									
	2	Coastline is modified Medium sized embankment		●				●	●			
	3	Coastline is modified No embankment			●	●	●					
	4	Coastline is modified Small sized embankment					●					
	5	Coastline is majorly modified Big scale embankment (landfill)								●	●	●
Green blue network	1	Well irrigated zone with high agricultural value. >65% of the land is planted	●									
	2	No natural irrigation and low agricultural value. 15% of the land is planted		●	●	●	●					
	3	No natural irrigation and low agricultural value. 5% of the land is planted					●		●			
	4	No natural irrigation and historically no agricultural value. <5% of the land is planted						●				
	5	Well irrigated zone with high agricultural value. 60% of the land is planted							●	●	●	●
	6	No current agricultural value.						●	●	●	●	●

Table 46-Descripencies and differences based the social layers: Socio-spatial activities, Landmarks, Neighborhood state, Heritage value

	LAYER	TYPE	Zone A	Zone B	Zone C	Zone D	Zone E	Zone F	Zone G	Zone H	Zone I	Zone J	
SOCIAL LAYERS	Activities	1	Active area. Water related activities + Active social space along the coast	●			●	●					
		2	Vibrant area especially in summer for sports and temporary event		●		●						
		3	Low activity zone			●							
		4	Active area. Activities related to fishing, commerce and cultural tourism						●				
		5	Low activity zone due to traffic. Corniche used as a social space in the afternoon							●			
		6	Low activity zone							●	●	●	●
	Landmarks	1	Abundance of social landmarks	●	●								
		2	Mixed landmarks types with a concentration of social landmarks and cafes along the waterfront			●	●	●					
		3	Dominance of educational landmarks					●		●			
		4	Dominance of administrative landmarks					●					
		5	Dominance of religious landmarks							●			
		6	Dominance of cultural landmarks						●				
		7	Low numbers of landmarks								●	●	●
	Neighbourhood state	1	New high quality neighbourhood with low density and high percentage of open spaces	●	●	●	●						
		2	Mid quality neighbourhood with medium density and medium percentage of open spaces					●					
		3	Mid to low quality neighbourhood with high density and low percentage of open spaces							●		●	
		4	Poor quality neighbourhood with high density and low percentage of open spaces						●		●		●
		5	Slum									●	●
	Heritage value	1	Rich in natural heritage	●		●	●	●					
		2	Rich in tangible and intangible heritage						●				
		3	Low heritage value		●					●	●	●	●
		4	New reclaimed land with no cultural value							●	●	●	●

Table 47-Descripencies and differences based on the legal layers: Ownership, Violations, Zoning

LEGAL LAYERS	LAYER	TYPE	Zone A	Zone B	Zone C	Zone D	Zone E	Zone F	Zone G	Zone H	Zone I	Zone J	
LEGAL LAYERS	Ownership	1 The coast : public municipal properties Eastern side : private companies	●			●	●						
		2 The coast : public municipal properties Eastern side : private individuals properties		●	●	●	●						
		3 Eastern side : mixed ownership dominated by Waqf							●				
		4 The coast : public governmental property Eastern side: private individuals properties								●			
		5 Eastern side : mixed ownership dominated by Waqf and municipal land									●		●
		6 The coast : public governmental property Eastern side: private companies properties										●	
	Violations	1 No registered violation	●		●	●							
		2 Occupation in coordination with a Decree		●					●	●	●	●	●
		3 Registered violation against maritime domain						●					
	Zoning	A							●				
		B					●			●			
		C					●			●			
		D		●	●	●	●			●	●		
		D1		●	●	●							
		E											
F		●									●		
G											●	●	
G1		●	●	●	●					●			
I1												●	
I2												●	

2. Assessing the sustainability of each Character zone using the star model:

The star model is a pictorial diagram employed by Varna & Tiesdell (2010) to assess the publicness of public spaces. In this study, publicness was assessed following five criteria: ownership, control, animation, civility and physical configuration. Assessment in this research is based on this model but different criteria are designated in order to assess connectivity and accessibility rather than publicness.

In this section, for each character zone, three layers are assessed: physical, socio-economic, and environmental. In each layer, five criteria are graded. Criteria chosen for the physical, socio-economic and environmental layers are shown respectively in Table 64, Table 65, Table 66.

Each criteria is graded over 5. Making the highest score for each layer 25 and the highest overall grade of all layer 75. Subsequently, the zones with the lowest scores are the zones that require immediate intervention. This intervention does not have to be only from a design point of view but can be from a planning perspective. As seen in Table 48, zones H, I and J have the lowest scores, they need immediate action however this action can be in form of a law that puts the area under environmental impact study, or to pass a law that designates the landfill as a reserve, park, for the city, until this land is needed in the future.

Table 48-Star model assessment of all the CZ

Zone	Star Model Assessment	Total Score	Score Category
ZONE A	<p>Public Access Visual Connectivity Challenge of Character Position of Amenities Availability of Amenities</p> <p>Cultural Assets Availability and Diversity of Services Sense of Security State of Neighbourhood</p> <p>Shoreline alteration Natural Heritage Availability of Open Spaces Pollution Fauna & Flora</p> <p>SCORE = 19/25</p>	60/75	HIGHEST SCORE
ZONE B	<p>Public Access Visual Connectivity Challenge of Character Position of Amenities Availability of Amenities</p> <p>Cultural Assets Availability and Diversity of Services Sense of Security State of Neighbourhood</p> <p>Shoreline alteration Natural Heritage Availability of Open Spaces Pollution Fauna & Flora</p> <p>SCORE = 17/25</p>	45/75	MEDIAN SCORE
ZONE C	<p>Public Access Visual Connectivity Challenge of Character Position of Amenities Availability of Amenities</p> <p>Cultural Assets Availability and Diversity of Services Sense of Security State of Neighbourhood</p> <p>Shoreline alteration Natural Heritage Availability of Open Spaces Pollution Fauna & Flora</p> <p>SCORE = 17/25</p>	48/75	MEDIAN SCORE
ZONE D	<p>Public Access Visual Connectivity Challenge of Character Position of Amenities Availability of Amenities</p> <p>Cultural Assets Availability and Diversity of Services Sense of Security State of Neighbourhood</p> <p>Shoreline alteration Natural Heritage Availability of Open Spaces Pollution Fauna & Flora</p> <p>SCORE = 20/25</p>	56/75	HIGHEST SCORE
ZONE E	<p>Public Access Visual Connectivity Challenge of Character Position of Amenities Availability of Amenities</p> <p>Cultural Assets Availability and Diversity of Services Sense of Security State of Neighbourhood</p> <p>Shoreline alteration Natural Heritage Availability of Open Spaces Pollution Fauna & Flora</p> <p>SCORE = 19/25</p>	52/75	HIGHEST SCORE
ZONE F	<p>Public Access Visual Connectivity Challenge of Character Position of Amenities Availability of Amenities</p> <p>Cultural Assets Availability and Diversity of Services Sense of Security State of Neighbourhood</p> <p>Shoreline alteration Natural Heritage Availability of Open Spaces Pollution Fauna & Flora</p> <p>SCORE = 16/25</p>	37/75	MEDIAN SCORE
ZONE G	<p>Public Access Visual Connectivity Challenge of Character Position of Amenities Availability of Amenities</p> <p>Cultural Assets Availability and Diversity of Services Sense of Security State of Neighbourhood</p> <p>Shoreline alteration Natural Heritage Availability of Open Spaces Pollution Fauna & Flora</p> <p>SCORE = 12/25</p>	35/75	MEDIAN SCORE
ZONE H	<p>Public Access Visual Connectivity Challenge of Character Position of Amenities Availability of Amenities</p> <p>Cultural Assets Availability and Diversity of Services Sense of Security State of Neighbourhood</p> <p>Shoreline alteration Natural Heritage Availability of Open Spaces Pollution Fauna & Flora</p> <p>SCORE = 8/25</p>	23/75	LOWEST SCORE
ZONE I	<p>Public Access Visual Connectivity Challenge of Character Position of Amenities Availability of Amenities</p> <p>Cultural Assets Availability and Diversity of Services Sense of Security State of Neighbourhood</p> <p>Shoreline alteration Natural Heritage Availability of Open Spaces Pollution Fauna & Flora</p> <p>SCORE = 11/25</p>	24/75	LOWEST SCORE
ZONE J	<p>Public Access Visual Connectivity Challenge of Character Position of Amenities Availability of Amenities</p> <p>Cultural Assets Availability and Diversity of Services Sense of Security State of Neighbourhood</p> <p>Shoreline alteration Natural Heritage Availability of Open Spaces Pollution Fauna & Flora</p> <p>SCORE = 8/25</p>	20/75	LOWEST SCORE

3. *SWOT analysis:*

The SWOT Analysis is a useful framework for analyzing the strengths, weaknesses, opportunities, and threats of each Character Zone in order to deduce city scale opportunities and threats for the coast of Saida. This tool helps to unveil the opportunities available on the coast to face the negative impact threatening its connectivity and accessibility. The SWOT analysis will inform the strategies elaborated for each Character zone and for the city as a whole. The strength, opportunities, threats and weaknesses of each Character Zone are translated into a table (Annex 5). The analysis tackles the physical, socio-economic, legal and environmental aspects of the coast as an attempt to understand the possible entry points for the intervention and the needed actions.

Character zone A suffers from an infrastructural break separating the coast from the city development (Table 70). Its role as a public garden along the coast is threatened by the fact that this area is enclosed within a fence, obstructing visual connectivity with the sea and controlling accessibility. However, being a municipal land on the entrance of the city, the Kinayat Garden represent an opportunity for the activation of the coast as a public space, a gathering area for families and playground for the kids. Moreover, taking advantage of the green cover and the natural coast, this zone is ideal for regeneration of habitat along the coast.

Character zone B is characterized by the presence of the Municipal Stadium, which constitutes both an opportunity and a threat (

Table 71). With the large-scale embankment hosting the stadium, the disfiguration of the coast has caused the loss of marine habitat, coupled with difficulties of accessibility of the sea. However, the stadium is a municipal asset, and thus it can be

used as an activator in connection to other public spaces on the coast. By capitalizing on the active social role of the space around the Stadium and expanding it in relation to the nearby educational facilities (AUST and RHHS), this zone can be developed as a sports node along the coast of Saida.

The biggest threat to Character zone C is the risk of privatization and the possibility of building a hotel on the sand dune along the coast (Table 72). In fact, this zone is not currently very active due to the presence of a military casern. However, the coast is a municipal land and thus it can be developed as an asset for the city in continuity with the Kinayat Garden and the Municipal Stadium. Moreover, given that the Wastani land is not developed yet in this area, new regulations can be explored under which the plots can be developed while preserving their identity as orchards connected to the Blue and Green network of the city.

The presence of a public municipal beach in Character Zone D is a major strength of this area (Table 73). However, the sand strip constituting this beach is subject to erosion and has been reduced after the enlargement of the maritime boulevard. In this zone, visual connectivity is preserve and physical accessibility is possible, however only one formal entrance to the beach is provided. Capitalizing on this asset and connecting it to the city by reinforcing the transversal links with the hinterland can enhance the different socio-economic practices in this zone. The presence of sewage discharge threatens the beach activity; however, the presence of the primary treatment station can solve this issue coupled with the provision of a secondary treatment station for wastewater to be located on the landfill. The shallow water and the sediments presence.

Similarly, to Character Zone D, the sandy beach in Zone E constitutes a major strength. However, this sand strip is threatened by erosion and has lost most of its width following the pavement of the coastal boulevard. Capitalizing on the public ownership of the coast in this area, the sandy beach can be developed as a public asset for the city, connected to a network of public space through the Blue-Green Network in the aim of enhancing connectivity. The presence of the large street provides an opportunity for the expansion of the socio-economic activities, stimulating economic prosperity and animation of the coast.

The rich cultural heritage of Character Zone F is the most prominent strength of this area (Table 75). It provides opportunities of establishing connectivity between the city and the sea through the enhancement of socio-economic activities such as fishing. The removal of the commercial activity from the fishermen port provides the opportunity of creating a public space connecting the city to the sea, catering for innovative activities related to traditional crafts. At present, heritage in Saida is largely neglected, threatened and underutilized, and the city lacks of touristic facilities, however, the Old City has a can provide a major attraction for tourists if enhanced and promoted. As for open spaces and green cover, the Old City is surrounded by neglected open spaces such as the area around the St Louis Castle, the cemeteries, the murex hill and peripheral spaces. These spaces provide an opportunity to be connected into a green belt surrounding the Old City, creating a buffer zone between the new development and the old fabric.

In zone G, the biggest threat is the establishment of a commercial port, disfiguring Iskandar Bay (

Table 76). The presence of this port threatens the identity of the coast of Saida and threatens mainly the Old City due its proximity. However, this port also constitutes in the biggest opportunity for this zone. Given, it is a public ownership; it can be developed into a touristic port functioning in relation to the Old City. The port can be treated a public space for the city, rather than being developed as an elitists hub.

Zone H, I and J share the same major threat (

Table 77,

Table 78,

Table 79), that is the presence of the large-scale landfill. The uncertainty of the future of this large land, coupled with the presence of the refugee camp in Ain el Helwe halted the development of this zone. However, the landfill presents an opportunity to create a reserve for the city, a public space on the coast. Moreover, since the landfill is owned by the government and the municipality, it can be used to implement land swap strategies aiming to vacate important lands in the city. Such as transferring the industrial development from zone H to zone J, and replace it with a social housing development aiming to host low-income locals on the coast of Saida.

D. Main findings / City Scale threats and opportunities on the coast of Saida

Some of the issues stated are redundant from one zone to the other and thus they form a shared problem across the city. These threats are gathered in a table and they will inform the city scale strategy elaborated in the next chapter. The Table 49 below sums

up the city scale issues and opportunities, followed by a map showing the threats along the coast (Figure 137).

	CITY SCALE THREATS	CITY SCALE OPPORTUNITIES
PHYSICAL	<ul style="list-style-type: none"> ● Infrastructural break separating the city from the Mediterranean sea ● Dominance of vehicular traffic on the maritime boulevard ● Weak transversal links between the waterfront and the hinterland 	<ul style="list-style-type: none"> ● Accessibility to the beach is manageable since no building is constructed yet on the shore ● Visual connection with the sea is mostly preserved ● The multitude of boulevards crossing the city from north to south can be used to alleviate traffic from the waterfront
SOCIO-ECONOMIC	<ul style="list-style-type: none"> ● Tangible and intangible heritage are widely threatened, neglected and underutilized ● SMEs and crafts shops are disappearing facing to big scale retailers, and malls. 	<ul style="list-style-type: none"> ● Diversified socio-spatial activities take place on the corniche and the waterfront of Saida ● Saida has great assets to use as a foundation for a new city branding strategy (cultural and natural heritage)
LEGAL	<ul style="list-style-type: none"> ● Absence of laws protecting the public realm, agricultural spaces, and heritage buildings ● The present zoning fragments the waterfront into non cohesive zones next to each other's ● Absence of a collective vision for all the city and the waterfront 	<ul style="list-style-type: none"> ● The shore is owned by the municipality, ministries and CDR, so the shore is publicly owned ● Saida is in the union of municipalities of Zahrany, which could help in elaborating a large vision for the southern coast of Lebanon, not only Saida.
ENVIRONMENTAL	<ul style="list-style-type: none"> ● Agricultural spaces, and natural heritage are threatened by urban sprawl and the obsolescence of the agricultural practices ● High pollution rates due to excessive vehicular emissions, bad wastewater treatment, and garbage disposal ● The natural assets of the city are being dominated by grey infrastructures ● Erosion of the beach is threatening marine ecosystem and socio-spatial activities 	<ul style="list-style-type: none"> ● The city is rich in water sources, and agricultural fields which can be put to use in a green and blue network reinforcing the connection between hinterland and the waterfront ● The plain topography of the city makes it easy to walk as a trail ● Presence of a garbage treatment plant and the water treatment plant ● Presence of municipal properties and parks that can be revitalized to form a green network around the city

Table 49-City Scale Threats and Opportunities
Source: Author

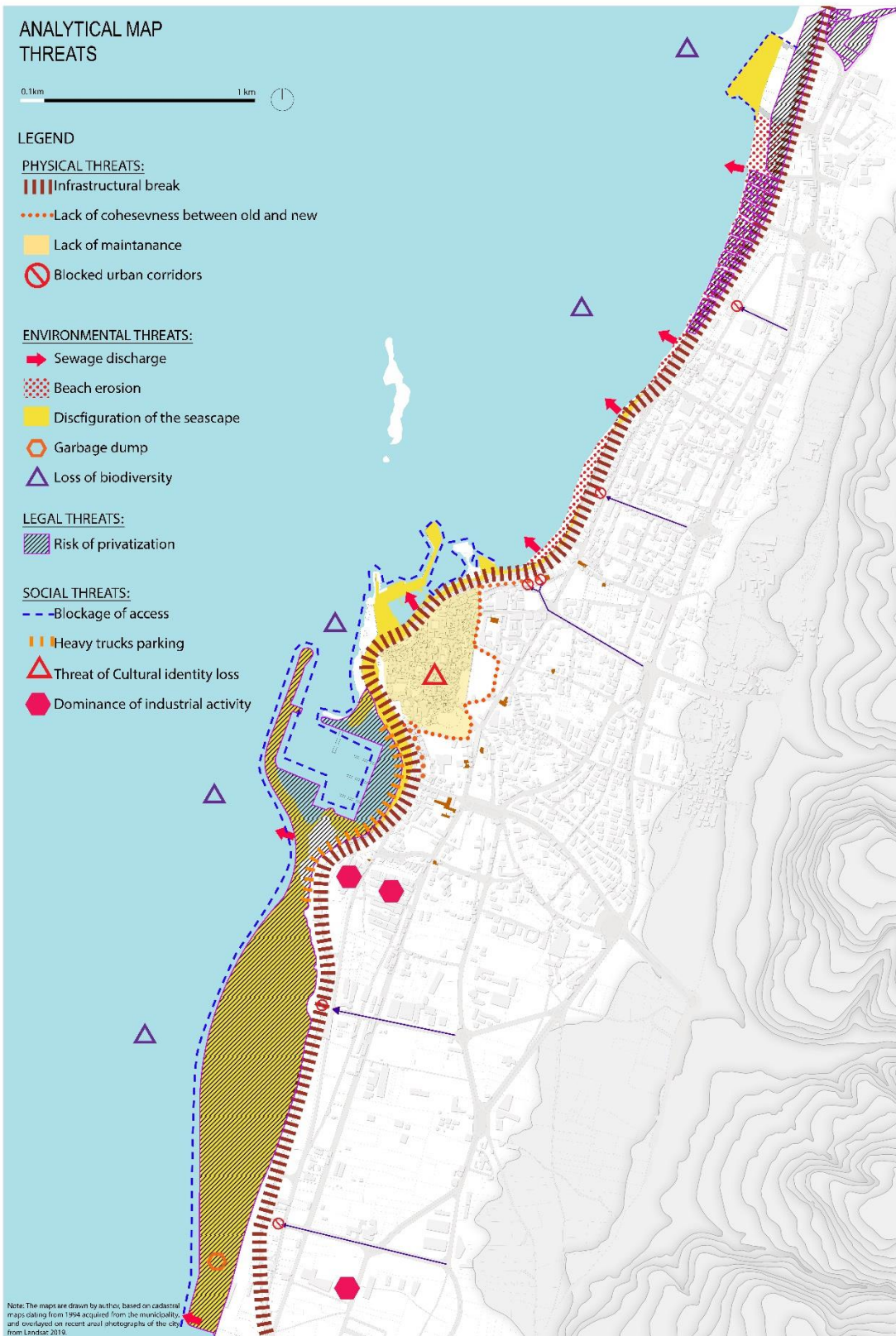


Figure 137-City Scale threats of the coast of Saida
Source: Author

CHAPTER VI

CITY SCALE DESIGN STRATEGY

This section builds on the findings of the previous analysis following the SWOT analysis, the similarities and differences matrix and the Star model. This chapter starts by elaborating a set of general principles that will guide the intervention on each character zone. Then two sets of strategies are elaborated, reinforcing connectivity in reference to my research question. The first set is for North-South connectivity, or connectivity along the waterfront, while the second is for West-East connectivity or connectivity across the coastal strip. Finally, guidelines will be suggested for each CULCZ, followed by a general scheme linking them into a holistic approach to the coast of Saida.

A. City scale strategy

1. Vision

Following the research on the coast of Saida, and the resulting comprehensive analysis, the coast is regarded as a main asset for the city of Saida and the area of Greater Saida. The vision elaborated for the coast of Saida stems from the vision set by the Priority Action Program (2016) for integrated coastal zones in the Mediterranean area. The vision (Figure 138) put forward for the coast of Saida is:

“The coast of Saida is, a resilient, productive, diverse, distinctive, attractive, healthy and well-connected coast, contributing to sustainable development for the benefit of present and future generations”

- 1) Resilient to natural processes such as climate change and erosion and resilient to human processes, such as pressures of tourism and coastal urban development.
- 2) Productive financially in traditional, modern and future economic sectors, and productive ecologically through agriculture and habitat provision.
- 3) Diverse ecologically with a variety of marine and terrestrial ecosystems, diverse socio-economically with a wide array activities providing a distinctive Mediterranean experience.
- 4) Distinctive culturally through tangible (built fabric of the Old City) and intangible heritage (arts, crafts, and social norms); and distinctive naturally through its particular natural heritage sites (Qamleh beach, Kinayat , sea rocks, agricultural plain)
- 5) Attractive not only for tourist and investors, but also for the residents of Saida and the greater Saida area.
- 6) Healthy through minimizing land (Solid waste treatment) and marine (waste water treatment) based pollution, providing a healthy environment for people, natural resources such as fisheries, and wildlife.
- 7) Well-connected transversally with the hinterland, the surrounding hills of greater Saida, and well-connected longitudinally as a holistic entity.

In order to achieve this vision, the importance of connectivity and accessibility of the waterfront is emphasized in response to the current situation of Saida, where the coast is fragmented, segregated from the city and treated as the back of house of greater

Saida. Accordingly, the approach chosen takes advantage of the public ownership of the major landfilling works and the maritime boulevard, and transforms this ground into a public space, giving back to the people what was once theirs through a culturally-led, people-centered, place-responsive approach.

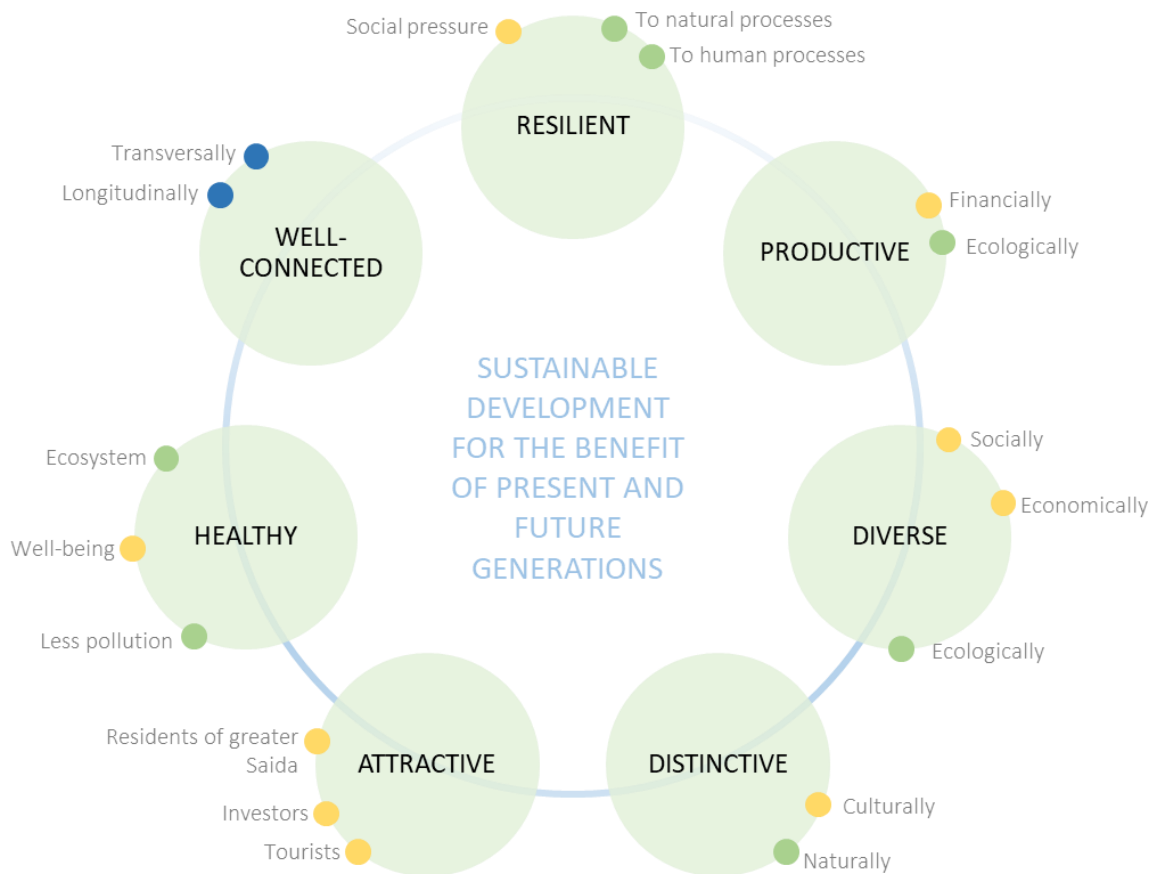


Figure 138-Vision for the coast of Saida
Source: Author

2. Vision objectives and strategies

In the following section, objectives and strategies are divided among the physical, the socio-economic, the regulatory and the environmental layers of Saida. A general objective is set for each layer, leading to strategic objectives, which will be implemented through several strategies. The general objective, strategic objectives and strategies are summarized in one table for each layer.

On a physical level, the general objective is to enhance physical connectivity between the city and its coast (Table 50). On the socio-economic level, the general objective consists of promoting socio-economical cohesion between the city and its waterfront (Table 51). On the regulatory level, the general objective is to safeguard and ensure the coherence and sustainability of the coast of Saida (Table 52). On the environmental level, the general objective is to improve the environmental sustainability of the coast and its ecological integration as a part of the city (Table 53). The tables of this section form the basis of the city scale strategy elaborated in the next section.

Table 50-General objectives, strategic objectives, and strategies for the coast of Saida on the physical level

Source: Author

General Objective	Strategic objective	Strategy
Enhance physical connectivity between the city and its waterfront	Improve mobility along the waterfront and from the city towards the coast	Implement a soft mobility plan ,reduce vehicular dominance on the waterfront, and provide parking spaces
		Connect public spaces and public gardens via an integrated pedestrian network
		Create more public space along the waterfront by reducing vehicular traffic
	Enhance access to the coast	Design and implement seamless transitions between land and sea
		Provide public amenities along the waterfront such as but not limited to shading, resting, lighting
		Ensure the continuity of passages from within the city towards the coast- Mainly corridors between the eastern boulevard and the coast/ The Old City towards the port / The Dekerman towards the reclaimed land
	Preserve visibility and enhance it	Introduce restrictive rules concerning porosity of fences, alternated setbacks
		Integrate the traffic related green areas towards visual continuity
		Preserve visual corridors along across the city, leading to the sea
	Ensure coherence of character between the different coastal character zones	Introduce restrictive rules concerning building materials, textures, and implement step-backs on the waterfront in order to meet the human scale
		Preserve built heritage and valuable buildings and link them a network of heritage spread across the city in link with the coast
		Create and impose a protection perimeter for built heritage, especially for the Old Core

Table 51-General objectives, strategic objectives, and strategies for the coast of Saida on the socio-economic level

Source: Author

General Objective	Strategic objective	Strategy
Promote socio-economical cohesion between the city and its waterfront	Highlight the waterfront as a common asset for Saida and greater Saida	Create diversified social spaces along the waterfront to cater the needs of the different users from all ages and genders
		Promote income-generation activities along the coast to support tourism
		Preserve tangible and intangible heritage and link them to the economic cycle of the city and the waterfront
		Setting up financing mechanisms to cover the cost of infrastructural developments
	Address traditional livelihoods and empower them (fishing, agriculture and related cottage industries)	Create coalitions for craftsmen, fishermen and farmers, and empower the syndicate of fishermen
		Promote networking between the local actors and NGOs in terms of securing findings, and continuous training
		Ensure circularization of the local economies by endorsing links between artisans and fishermen (crafts that are beneficial to fishermen such as boat building, hay weaving, net weaving, boats repairing...)
	Promote the waterfront of Saida as a beacon of synergy and innovation	Introduce spaces for collaboration between local and international artists and local craftsmen of Saida and
		Introduce weekly, seasonal and yearly festivities integrating the local crafts and talents
		Recognize in each character zone a main characteristic activity, build an economical ecosystem around it and provide subsidized spaces for these economies to flourish
	Promote the role of the waterfront as a catalyzer of reconciliation	Integrate the refugees in the overall development of the waterfront
		Provide vocational training and include refugees in the economic cycle of the city

Table 52-General objectives, strategic objectives, and strategies for the coast of Saida on the regulatory level

Source: Author

General Objective	Strategic objective	Strategy
Ensure coherence and sustainability of the coast of Saida from a legal perspective	Bring efforts towards a holistic approach	Creation of a committee assigned the role of reviewing all the projects related to the waterfront of Saida and the coordination between them
		Elaborate a new zoning for the old city including micro schemes based on improved data and wider survey
		Ensure coordination between all the members of the union of municipalities of Saida and Zahrani in order to unify the efforts towards a holistic planning of the coast of this zone
		Developing a strategic spatial vision for Greater Saida
	Promote participation and ensure horizontal integration of the community	Conduct participatory meetings concerning any development intended on the coast
		Elect from each character zone a representative as a member of the committee of the coast
		Ensure collaboration between the different sectors and users among the coast of Saida through discussion platforms, continuous observations, surveys...
	Enhance infrastructure management	Implement a taxation system for Saida and greater Saida area
		Implement value recapture on the waterfront properties and invest the revenue in the maintenance of public amenities and infrastructure
		Implicate the residents in the rehabilitation works
	Protect the distinctive landscape of Saida	Enforce current laws regarding the protection of riparian and marine resources
		Implement a legal framework for urban agriculture
		Implement regulations and incentives for the preservation of orchards

Table 53-General objectives, strategic objectives, and strategies for the coast of Saida on the environmental level

Source: Author

General Objective	Strategic objective	Strategy
Improve the environmental sustainability of the waterfront and its ecological integration as a part of the city	Preserve the city historical link with the sea, with the coastal orchards and the with the hills	Reinforce the presence of the watercourses across the city as corridors leading to the coast
		Reinforce green corridors crossing the city towards the coast
		Create an economical ecosystem revolving around agricultural practices, which will allow the integration of marginalized locals particularly, refugees and women
	Enhance the green cover of the city and expand it towards the waterfront	Preserve green spaces around the city and on the waterfront. And mainly impose regulations on the new landfill considering it a green reserve
		Link the green spaces along the waterfront, and reinforce links between public gardens, quasi-public gardens and private gardens ensuring the continuity of the ecosystem
		Enhance the system of managing infrastructure and amenities
	Enhance the ecosystem of the coast	Preserve and protect natural rocks and sand dunes
		Promote the use of nature based solutions for shore protection, sediment gathering and the creation of habitats
		Increase areas of recreational green spaces along the coast as buffer zones for potential flood and protection
	Plan for a Blue-Green Network that serves amenity and promotes sustainable use of environmental resources	Developing the waterfront into a dynamic multifunctional landscape
		Integrating the traffic related green areas towards visual continuity
		Developing the river corridors as amenity landscapes and greenways and preserve visual corridors along across the city, leading to the sea

3. Principles for city scale strategy

- a. North-South connectivity: Improving mobility along the waterfront and across the city
 - i- Mobility

The improvement of mobility along the coast of Saida is achieved through the proposal of a tramway loop, inspired by the grassway tramway executed in the historical center of Bordeaux (reviewed in Chapter II). As discussed before, the adoption of a public transportation scheme will make the coast accessible for a larger number of people while reducing the space needed to accommodate the vehicles. Moreover, the loop of the tramway will enhance connectivity along the character zones and between the coast and greater Saida. In fact, the proposed trajectory of the tramway takes advantage of the old train rail to create a loop around Saida, connecting all the surrounding hills of greater Saida to the coast, and connecting all the character zones along the waterfront. The tramway will pass along all the exits connecting Saida with the surrounding hills, linking people coming from Jezzine, Bramieh, Mieh w mieh, Ain el Helwe, Maghdouche, Darb el Sim, Haret Saida, Qrayeh, Sirop and other villages to the coast of Saida. Moreover, along the coast, the tramway stops are positioned strategically near the main events spaces, active nodes and parking spaces created (Figure 140). The tramway stops are located as follows:

- (1) Next to the Municipal Stadium
- (2) Next to the Wastani garden where an underground parking is proposed
- (3) Next to Zaatari mosque where a market space is proposed
- (4) Next to the Nejme square where major parking spaces and a municipal hotel proposed

- (5) Facing Masjed El Bahr and the food node
- (6) Facing the fishermen port and Bahr el Eid
- (7) Facing the Maqased School
- (8) Facing the new commercial port, in connection to the Martyrs square;
- (9) Next to the entrance to the eco-park hotel;
- (10 and 11) In connection with the green corridors leading to the reserve.

It is worthy to note that this thesis stands with the recommendation of the SUSDS concerning the implementation of the Ring road project, alleviating traffic from the coastal area towards the interior¹⁵ (Figure 139).

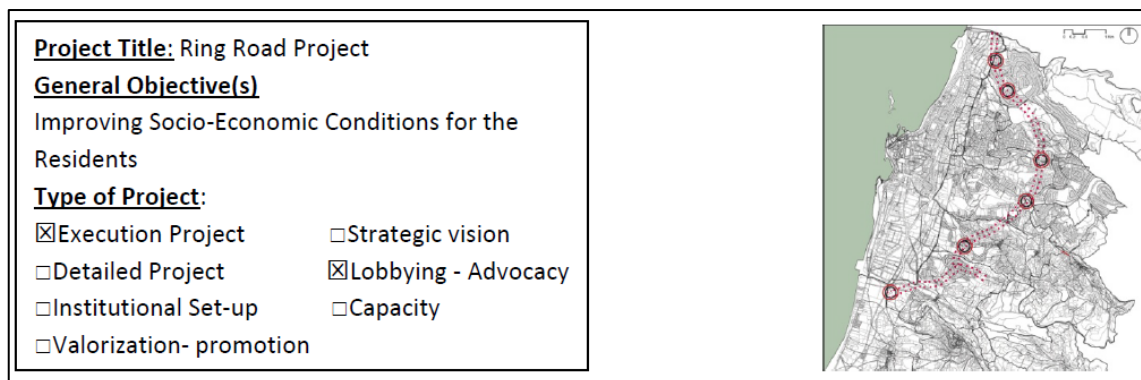


Figure 139- Ring Road Project
Source: (Al-Harithy, Makhzoumi, Hallaj, Chabaan, et al., 2014)

¹⁵ "The ring road was proposed in the last traffic study carried for Saida to relieve the traffic pressure on the city and free the sea boulevard for re-development as a tourist and ecological asset." (Al-Harithy, Makhzoumi, Hallaj, Chabaan, et al., 2014)



Figure 140-Mobility , Greenway, soft mobility and parking spaces
 Source: Author

ii- Adaptable streets

In the context of the coastal boulevard of Saida, the road is mainly designed around vehicular needs, which caused isolation of the city from the sea, a loss of biodiversity, a loss of social cohesion, and a loss of identity. Following the discussion concerning connectivity, and against this rigid model of a car dependent design, a set of flexible road types is proposed, adaptable to the city context, integrating the socio-economical, and the environmental layers within the infrastructural realm.

The designed roads accommodate a continuous bicycle lane on both sides of the road, parking spaces all along the coast, activity spaces, planted spaces used for shading and continuity of habitat, resting spaces, activities platforms, frontages for businesses. Four different road types are proposed along the coast of Saida (Figure 141), they are described as follows (Figure 142):

Type 1: this type caters for the needs of the Kinayat garden and the Municipal stadium. It accommodates for a two-way traffic with two lanes each, in addition a buffer lane serving a diagonal parking space in front of the Stadium and the public garden. An 18-meter mid-lane, planted in a grid, characterizes this type, allowing flexibility and animation. Socio-economic activities can take place under the trees (such as an open market space, a restaurant area), while this lane can be used as a parking space when sports tournaments are taking place in the Stadium.

Type 2: This type caters for the needs of the Wastani area. It accommodates for a two-way traffic with one lane each, and a dedicated lane for tramway. An active mid-lane is proposed for this street, a space that can be rented by restaurants, businesses, kiosks, and used for public gathering, providing continuity and diversity on a physical, social and economic level.

Type 3: This type cater for the spaces with a narrower road than the previous options. A tramway is allocated along this type, along with a two-way traffic with one lane each. Improving pedestrian walkability and connectivity is ensured in this type by the continuity of the sidewalks, and by using traffic calming methods such as shifted streets.

Type 4: This type caters for the coastal zone facing the Old City. In this zone, a shared street typology is used to reinforce continuity between the urban fabric and the coastal edge. By giving priority to pedestrian activity, calming traffic and providing social spaces along the street, the road is assimilated into a public space continuous all along the Old City, connecting the built historic fabric the coast.

Along all these street types, sidewalks are continuous, and cater for diverse activities, such as but not limited to walking, cycling, resting, gathering, selling, dining, site seeing, playing, and jogging. In terms of materiality, it is necessary to ensure a continuity of materials and textures between the road and the sidewalk in the case of type 4, the shared street, to convey a feeling of one continuous public space expanding from the built fabric towards the coast. As for the rest of the street types, the continuity of material is necessary between the sidewalks, public spaces, and pedestrian passages. Moreover, the physical continuity of the pedestrian and cycling passages is necessary.



Figure 141- Adaptable streetscapes/Site specific street types
 Source: Author

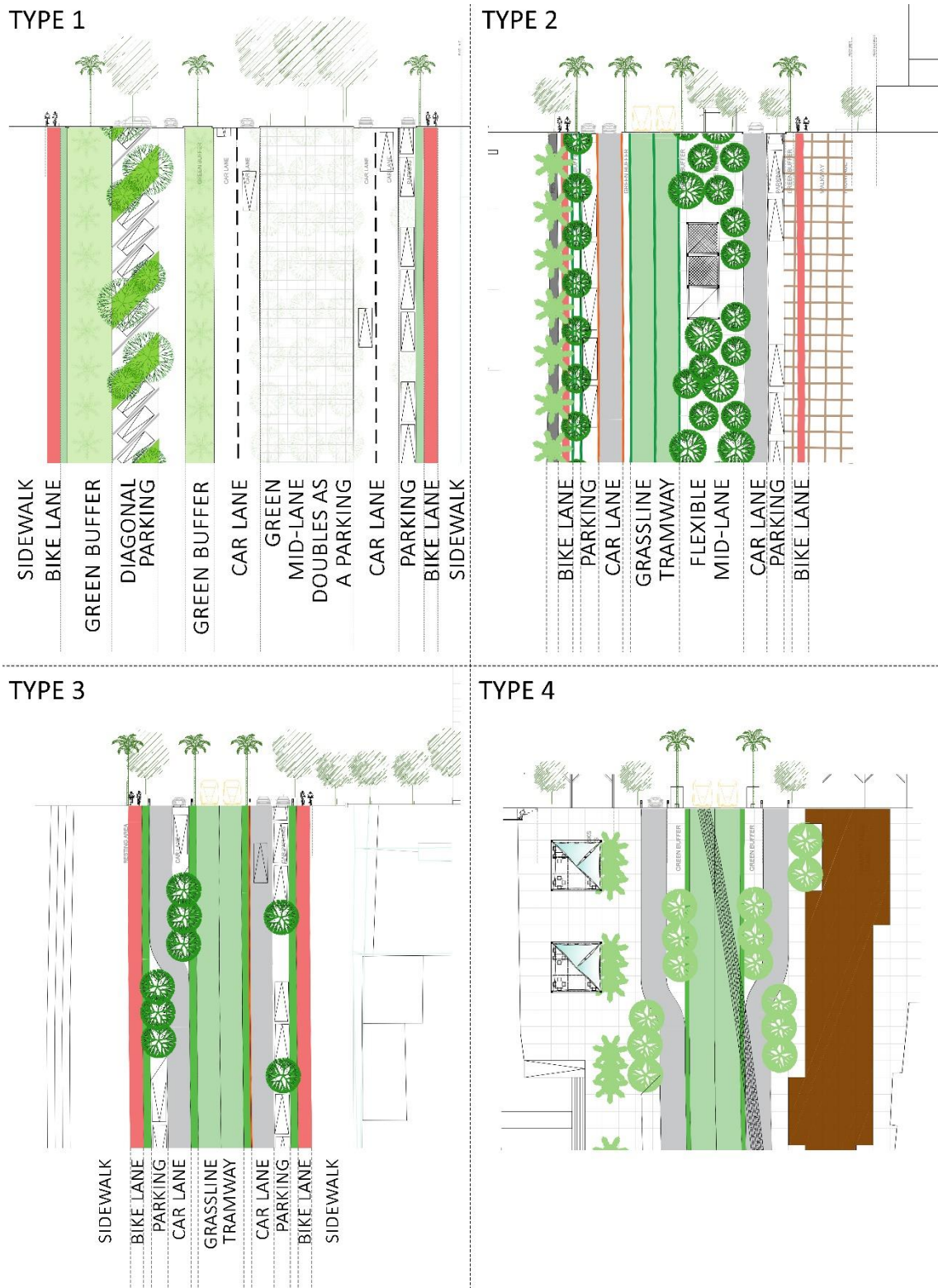


Figure 142-Street sections and plans adapted for the coastal road
Source: Author

b. East-West connectivity: Ensuring public access along the waterfront

i- Blue-Green network

This thesis adopts the concept of the green-blue network elaborated in the SUSDS as a strategy to enforce connectivity between the hinterland and the coast. In fact, BG network is an integrated nature based solution that operates under the ICZM. The benefits of this approach span on all the layer of the urban realm. It functions a biodiversity driver, an economic catalyst, a social enhancer, a physical connector and an environmental protector (Ghofrani et al., 2017). The Blue and Green network operates by connecting all key landscape elements in Saida, such as orchard, watercourses, hills, and linking them to the coast while simultaneously protecting landscape heritage, ensuring connectivity, and creating a continuous pedestrian movement across the entire city (Makhzoumi & Al-Sabbagh, 2014).

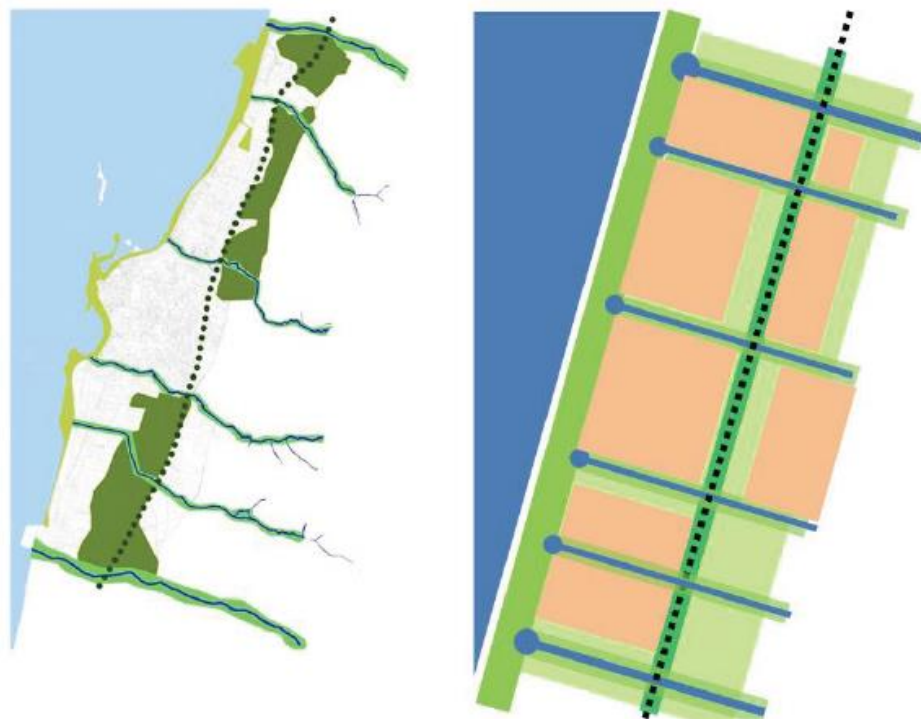


Figure 143-Saida Blue-Green Network
Source: (Makhzoumi & Al-Sabbagh, 2014)

The existing watercourses in Saida are mostly paved and covered. It is recommended to uncover the watercourses where possible, and if not possible, the watercourse will be transformed into a green corridor linking the foothills to the coast while prioritizing pedestrian movement (

Figure 146). Design examples for the green corridors are shown in Figure 144 and Figure 145. Additional green corridors are designated in Figure 147; they are vital links between the transportation nodes on the eastern boulevard and the coast. These entire transversal corridors will meet at the coast where they are linked by the continuous coast, and the added street greenery creating a holistic network that travel the city of Saida. The corridors will expand beyond the corniche, into the beach, and pave the way for people to access their coast. Around the extension of the corridor, main amenities are locating in service of the coast users.



Figure 144-Green corridor concept / Source: Archdaily.com



Figure 145-Reviving a river in Seoul / Source: thewire.in



Figure 146-Green corridor in Saida

Source: Author

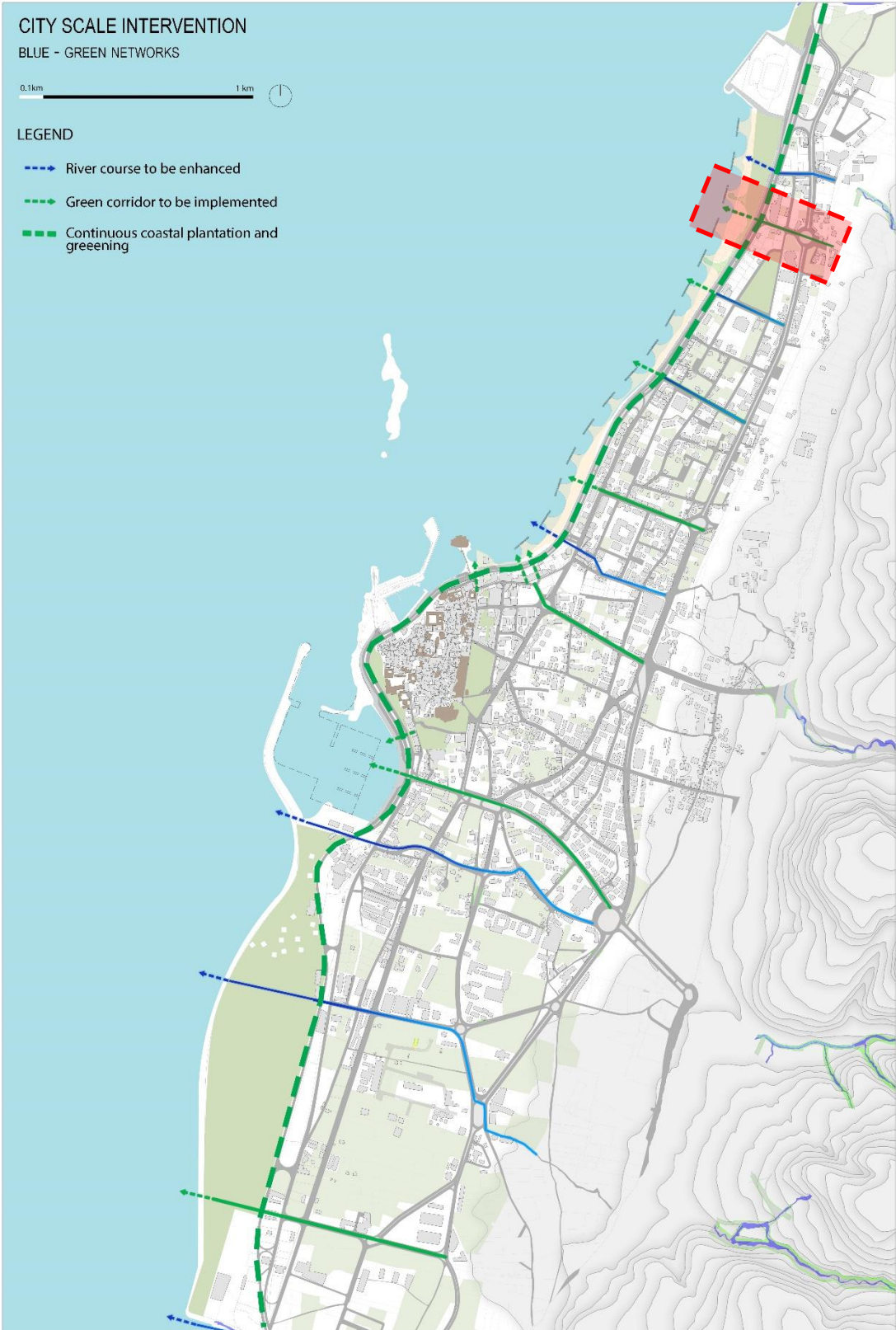


Figure 147-Blue-Green network as a transversal connectivity catalyst
 Source: Author

ii- Seamless connectivity between land and sea

The current situation of the coastal boulevard of Saida is best described as an infrastructural break, separating the city from the sea. In order to establish transversal connectivity, in addition to other approaches such as the BG network, some solution reside in the treatment of the interface between the land and the sea. By employing Nature-Based solution, this interface can be rendered seamless and more sustainable. Seamless in the sense of easing accessibility and enhancing connectivity, while sustainable is related to the enhancement of the ecosystem, the creation of habitat, the promotion of socio-spatial activities and the revitalization of socio-economic activities. In addition, NBS help preserve natural heritage and evolve it into a productive asset rather than a stagnant object. Amongst the NBS used on the coast of Saida we can discern stepping stone (Figure 150), rock pools, combination of seagrass and reef balls(Figure 151), dunes plantation(Figure 149, Figure 152), and the use on complex tiles (Figure 153). The distribution of these strategies is visible in (Figure 148).

Other methods of providing seamless connectivity can be ensured through urban design guidelines, such as imposing in Mina Iskandar that all buildings have to be under street level (Figure 154), or designing stepping platform reaching water level (Figure 153), or the creation of green buffers to ensure coherence of character between and new.



Figure 148-Seamless connectivity between land and sea
Source: Author

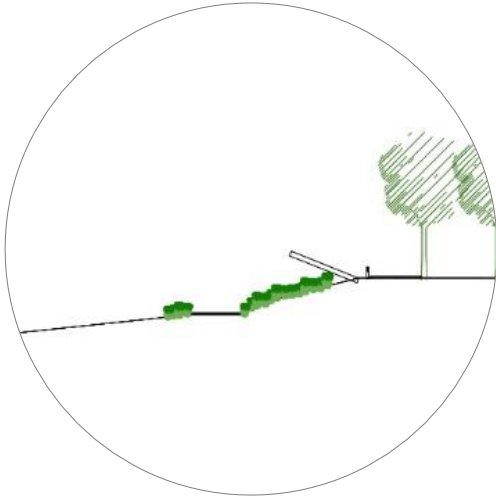


Figure 149-Section A: Dune planting

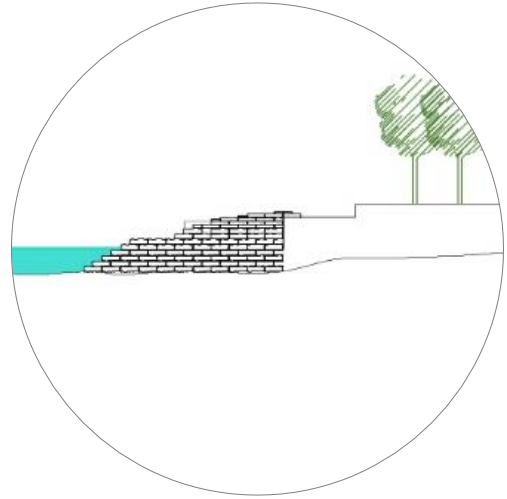


Figure 150-Section B: Stepping stones



Figure 151-Section C: Reef balls and sea grass

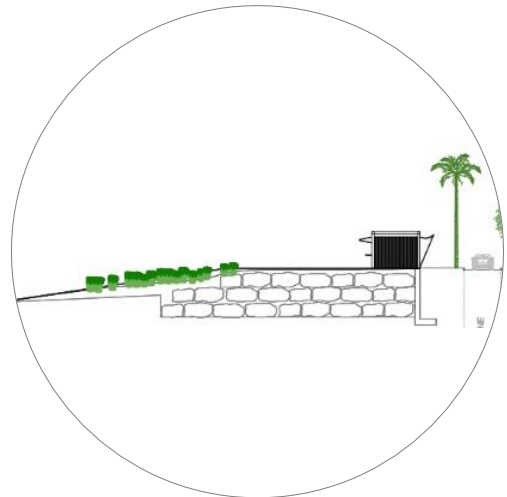


Figure 152-Section D: Steps, ramps and sand nourishment

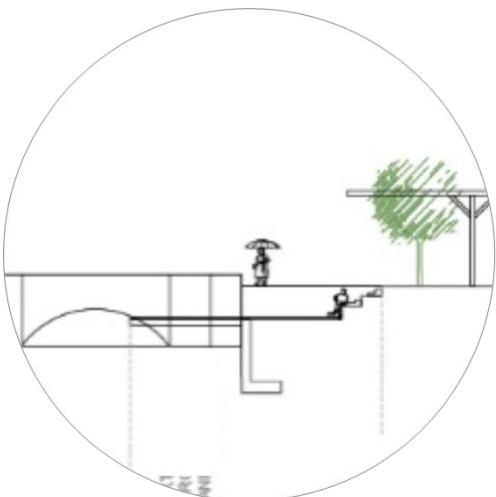


Figure 153-Section E: Steps, platforms and complex tiles

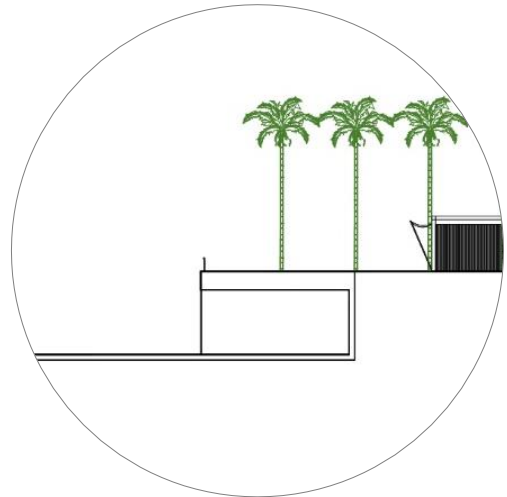


Figure 154-Section F: Seamless building integration

4. City scale strategic plan

The city scale strategic plan (Figure 155) elaborated for the coast of Saida stems from the analysis of the physical, socio-economic, regulatory and environmental layers of the city. It combines the different principles into one comprehensive plan for the city. In this context, connectivity is a key feature of this plan; physical, socio-economic, and environmental connectivity is sought through the regeneration process. It is important to note that the city scale strategy in this research emphasizes the physical connectivity of the coast and expands it into an urban design intervention as a prototype guiding the other layers. Nevertheless, as stated before, the regeneration effect is comparable to a ripple effect, thus acting on the physical layer of the city will have repercussions over the socio-economic and the environmental realms of the coast. However, in order to ensure the optimal effectiveness of this proposal, guiding principles should be elaborated and expanded as well on the socio-economic and environmental layers.



Figure 155-City Scale Strategy
Source: Author

B. Planning Guiding Principles for coastal urban landscape character zones (CULCZ)

The previously discussed objectives and strategies are translated in each character zone, under the form of planning guiding principles to be implemented along the coast of Saida for ensuring connectivity and sustainability of the coast.

These principles are presented in this section first in the form of a map, showing each principle and designating its location. Second for each character zone, principles are elaborated in a table, divided onto the physical, socio-economic, legal and environmental layers of the Character zone. Third, a diagram shows the main socio-economic activity animating this character zone and the different users and stakeholders related to this activity. Fourth, a diagram showing the different socio-spatial activities in this character zone is drawn. This diagram is color coded and annotated, representing a schematic view of the character zone. Finally, sections across the character zone are presented, showing the general urban feel of the character zone, and the different strategies used.

1. Character Zone A:

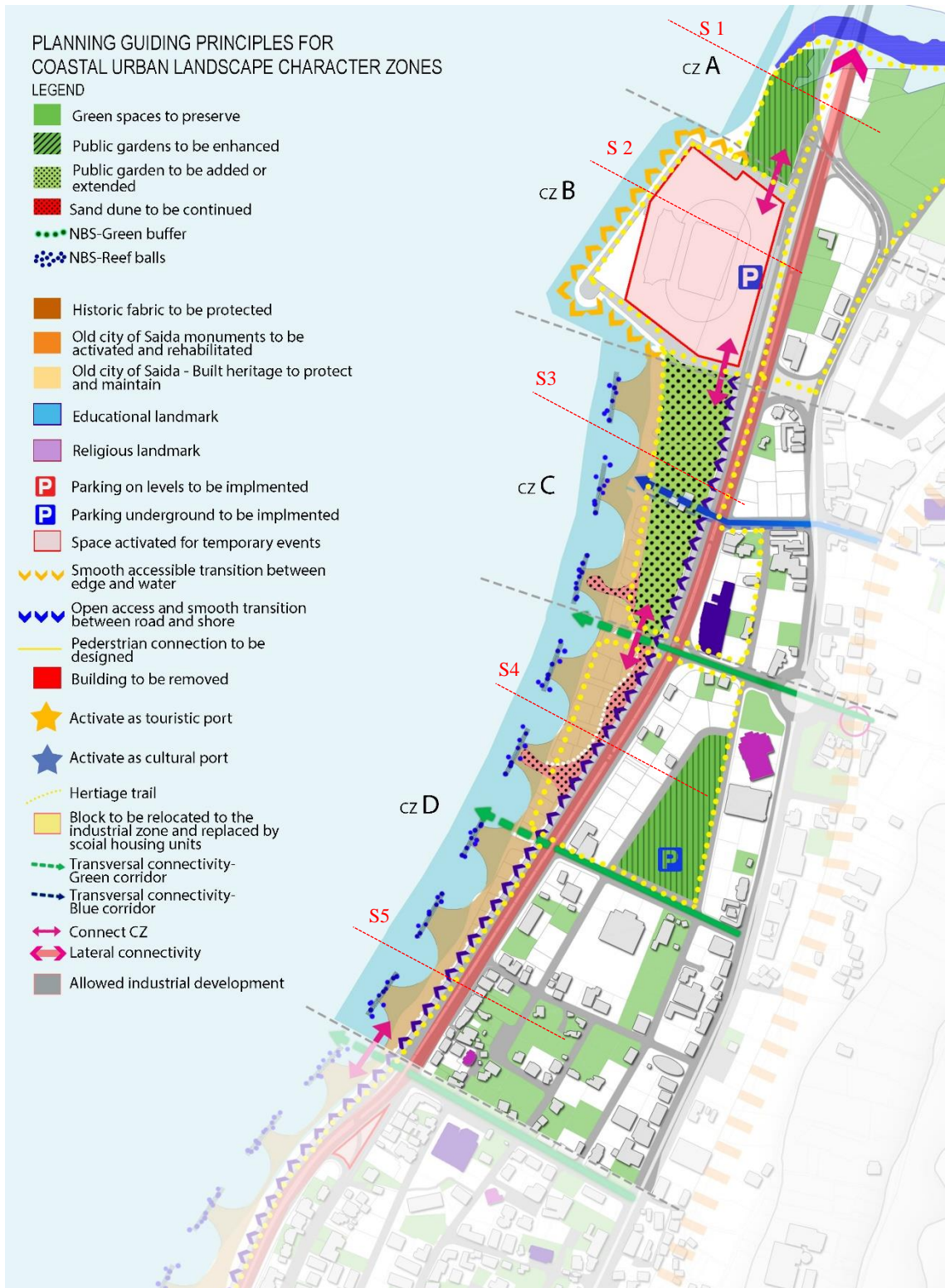


Figure 156-Map of the Planning Guiding Principles for CULCZ A, B, C and D
Source: Author

The guiding principles of CULCZ A are summarized in Table 54. This zone is planned as an agricultural zone near the river and a recreational area for families visiting the Kinayat (Figure 157). The public garden (Kinayat), and the active mid-lane are operated by the municipality. These spaces will host kiosks and markets in which farmers can rent spaces in subsidized prices to sell their products (Figure 158, Figure 159,

Figure 160). The Kinayat garden will host a playground for kids, and spaces for gathering.

Table 54-Planning Guiding Principles for coastal urban landscape character zone A
Source: Author

	Layer	Guidelines
CHARACTER ZONE A	Physical	<ul style="list-style-type: none"> • Improve accessibility to the Kinayat Garden and connect it to the network of public spaces along the coast • Improve accessibility to the water edge through a seamless transition between land and sea using nature based solutions • Create a pedestrian link between the garden and the stadium • Maximize accessibility to the Awali river , being part of the heritage network implemented • Reduce car traffic in this zone by using temporary road blocking techniques and diverting the traffic towards the eastern boulevard • Provide amenities for the public spaces such as lighting, benches, shading, public WC
	Socio-economic	<ul style="list-style-type: none"> • Activate the riverbed of Awali as part of the heritage network implemented • Activate the Kinayat Garden as a public space for family gatherings • Create an economic ecosystem around agriculture, organic food production and healthy meals preparation in correlation with the sports activities and youth center in CZ B and C
	Legal	<ul style="list-style-type: none"> • Create and implement legislation to protect the green agricultural areas, the Awali river, and the sand dune

	<ul style="list-style-type: none"> • Prohibit the municipality from selling the private municipal lands in this area • Prohibit construction on the Zone G1
Environmental	<ul style="list-style-type: none"> • Regeneration of the green cover in this area • Plantation of the sand dunes to increase sand catchment • Expansion of the green cover towards the municipal stadium

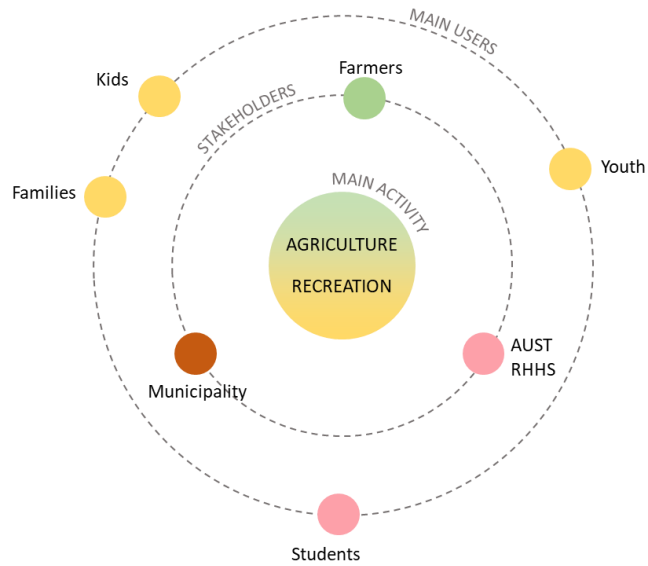


Figure 157-Main activity, stakeholders and main users in Character Zone A
Source: Author

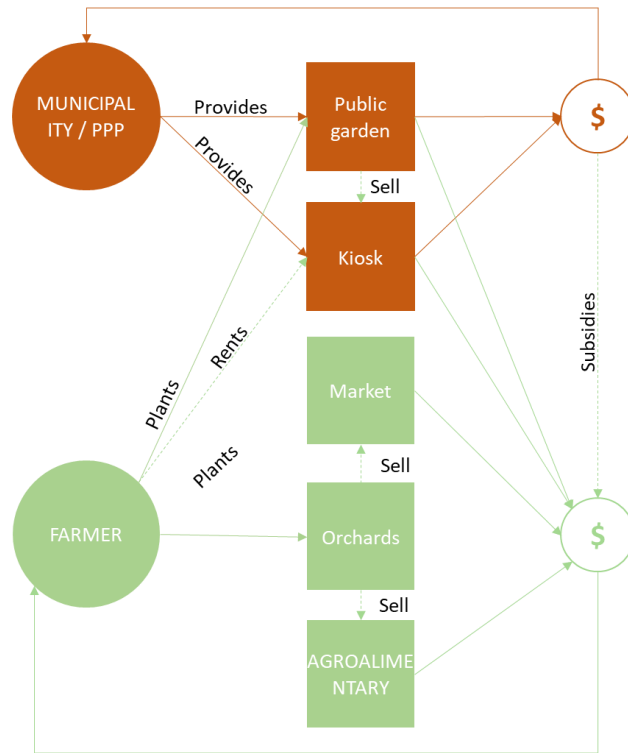


Figure 158-Economic cycle in zone A
Source: Author

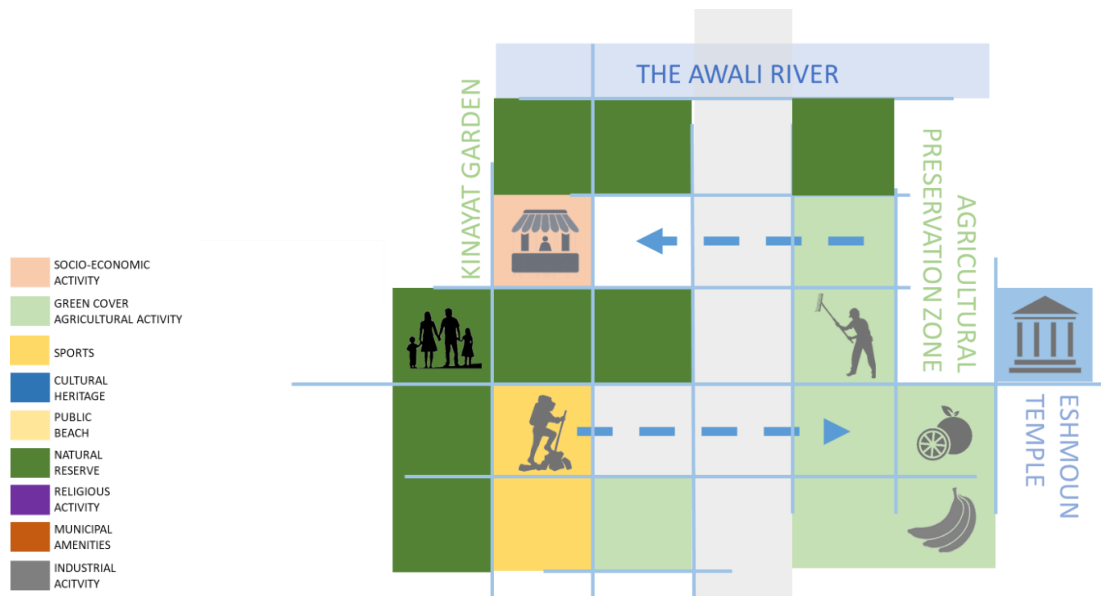


Figure 159-Schematic distribution of landmarks and socio-spatial activities in Character Zone A

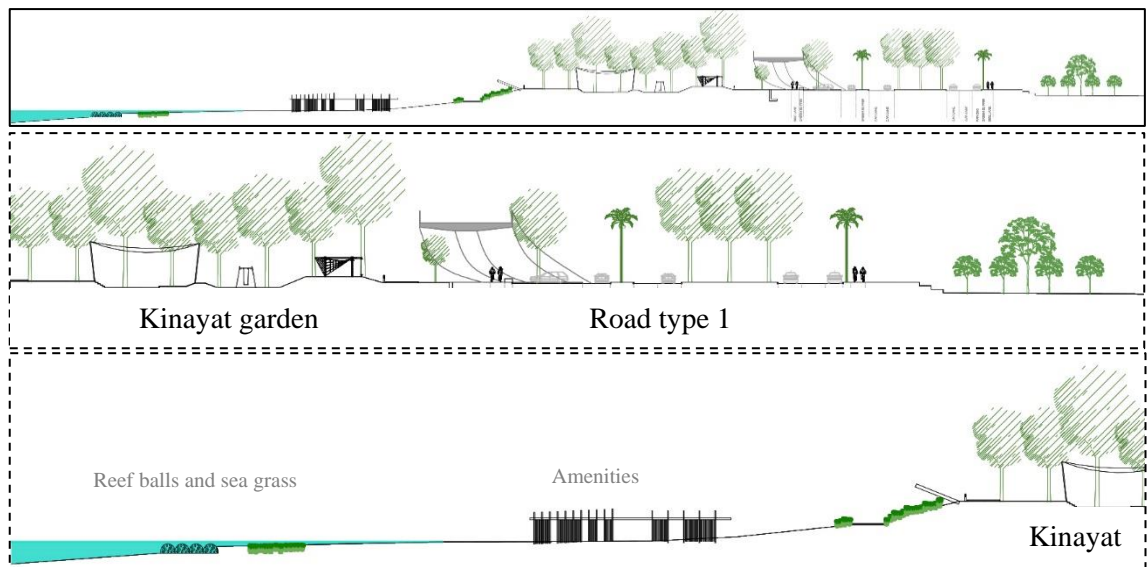


Figure 160-Section 1
Source: Author

2. Character Zone B:

The guiding principles of CULCZ A are summarized in Table 55. Following these guidelines, zone B is developed as a sports node in connection to the nearby universities and schools. In this zone, the municipality owns the stadium

Table 55-Planning Guiding Principles for coastal urban landscape character zone B
Source: Author

CHARACTER ZONE B	Layer	Guidelines
	Physical	<ul style="list-style-type: none"> • Improve accessibility to the Municipal Stadium and connect it to the network of public spaces along the coast • Create a pedestrian link between the garden, the stadium, and the sand productive park (CZ A, B and C) • Reduce car traffic in this zone traffic reduction techniques and diverting the traffic towards the eastern boulevard • Maximize parking spaces in this area to accommodate big events, by creating a planted mid-lane that doubles into a parking when needed • Improve accessibility to the water edge through a seamless transition between land and sea using stepped stones as a nature based solution • Provide amenities for the public spaces such as lighting, benches, shading, public WC
	Socio-economic	<ul style="list-style-type: none"> • Activate the Municipal Stadium and the area surrounding it as a sports node along the waterfront in connection with the AUST (covered stadium), the RHHS, • Create an economic ecosystem around sports, watersports, organic food production and healthy meals preparation in correlation with the sports activities and youth center in CZ A and C
	Legal	<ul style="list-style-type: none"> • Create and implement legislation to protect the green agricultural areas of Wastani • Prohibit the municipality from selling the private coastal municipal lands • Regulate the fencing used around private plots. Fence to be transparent creating visual continuity of green spaces
	Environmental	<ul style="list-style-type: none"> • Impose biotope percentage on plots to be built • Expansion of the green cover towards the municipal stadium • Improve habitat ecosystem using stepped stones and rock pools as a nature based solution

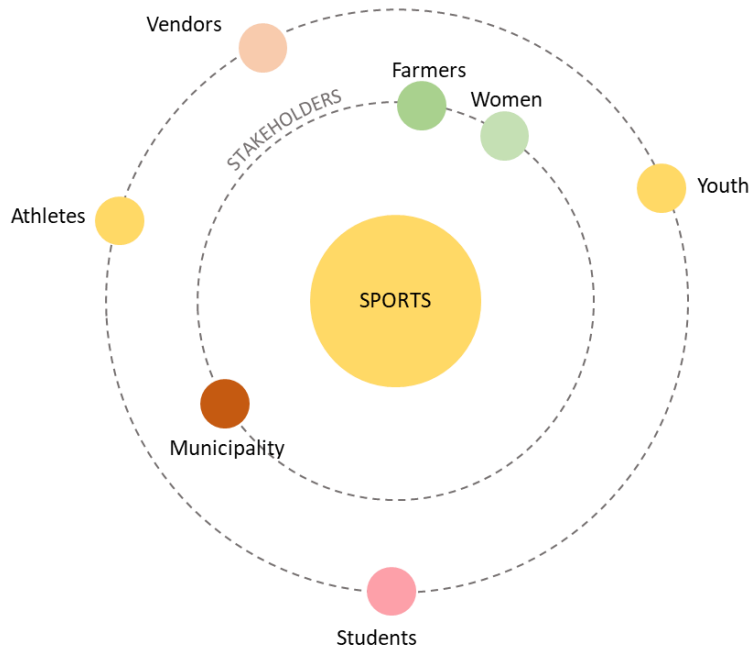


Figure 161-Main activity, stakeholders and main users in Character Zone B
Source: Author

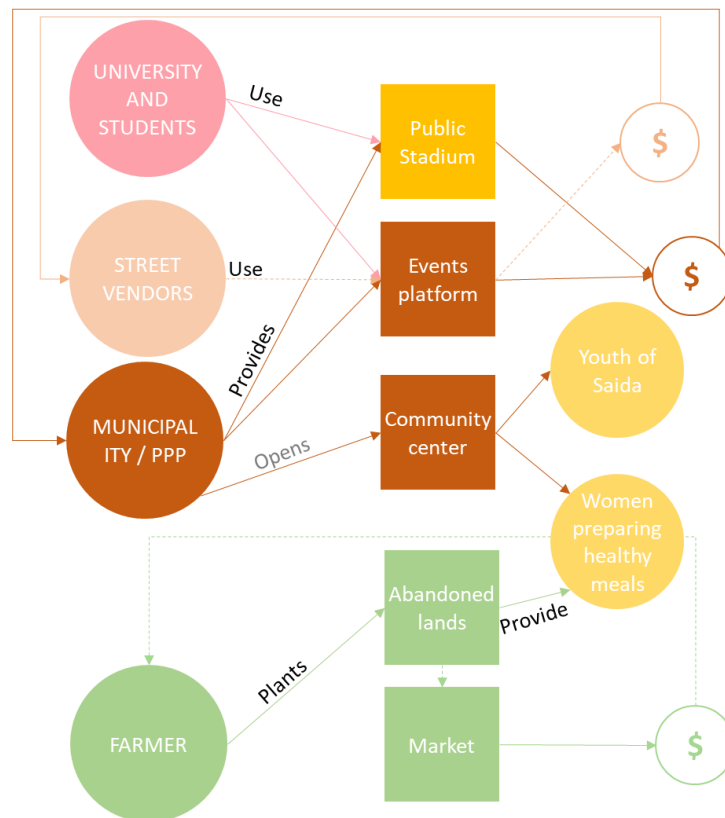


Figure 162-Economic cycle in zone B
Source: Author

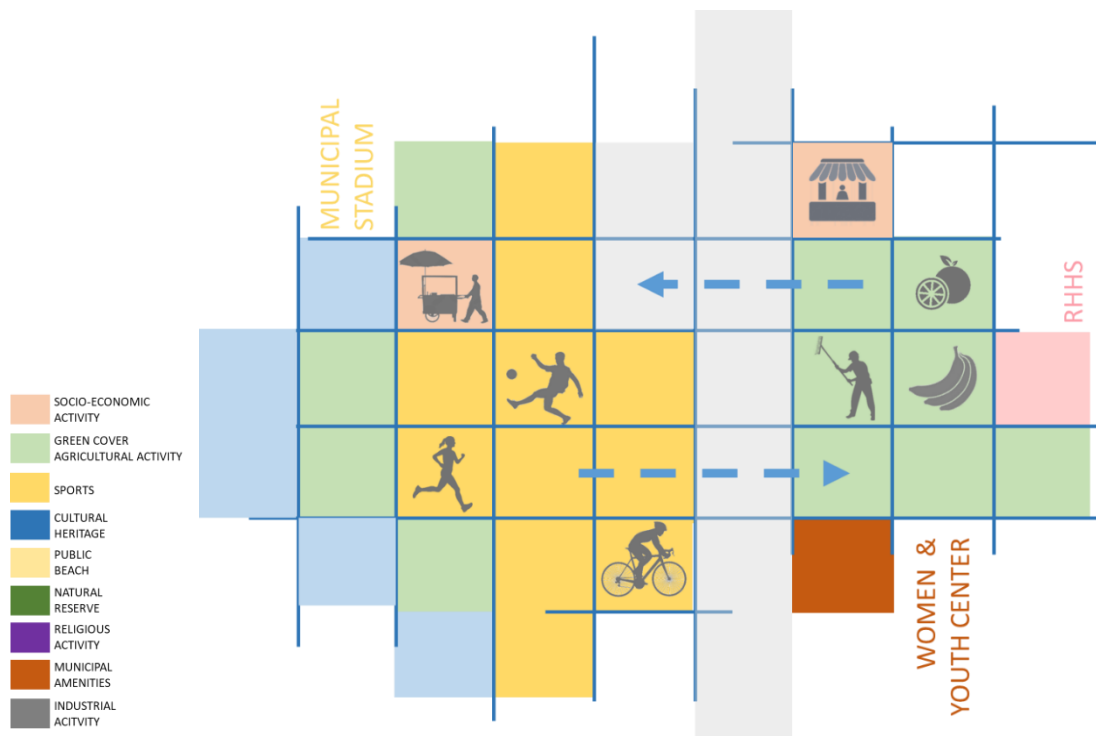


Figure 163-Schematic distribution of landmarks and socio-spatial activities in Zone B
Source: Author

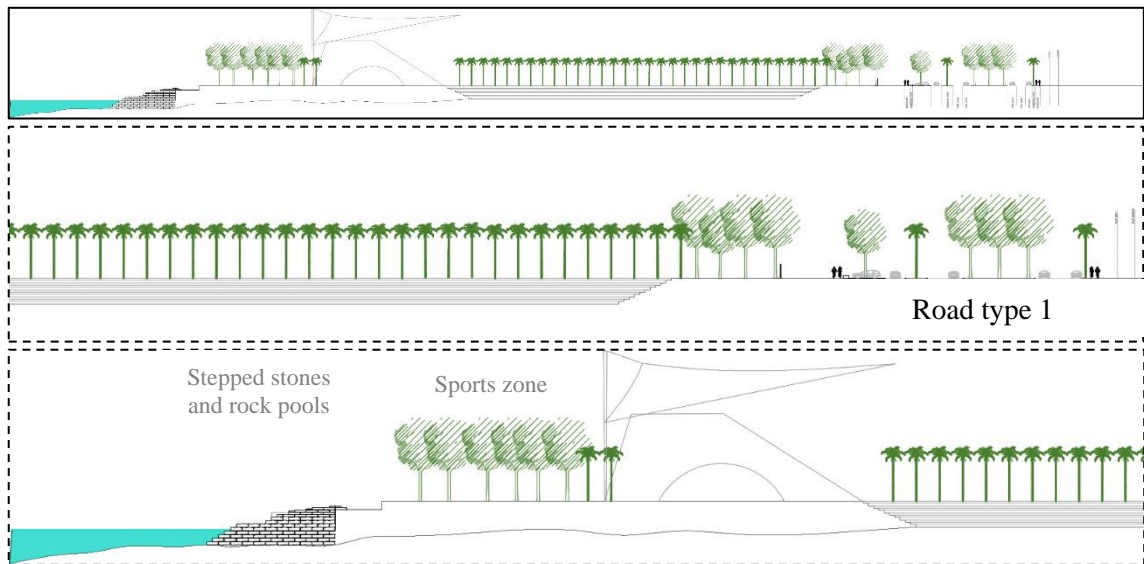


Figure 164-Section 2
Source: Author

3. Character Zone C:

The guiding principles of CULCZ C are summarized in Table 56. This zone is planned as a recreational for youth, athletes, and an agricultural for farmers (Figure 165). The sand dune in this area will be an extension of the Kinayat garden, planted with productive trees such as dates (Figure 168). Under these trees, sports equipment, camping areas, tree house and gathering areas can be designed (

Figure 167). These amenities will generate money for the municipality to maintain the space. Negotiations with AUST and RHHS can be conducted to allow the usage of their covered sports facilities during winter, while allowing the educational institutions to use the municipal stadium (

Figure 166).

Table 56-Planning Guiding Principles for coastal urban landscape character zone C
Source: Author

	Layer	Guidelines
CHARACTER ZONE C	Physical	<ul style="list-style-type: none"> • Improve accessibility to the sand dune by moving the military casern • Create a pedestrian link between the garden, the stadium, and the sand productive park (CZ A, B and C) • Reduce car traffic in this zone traffic reduction techniques and implement a greenway tramway that loops around the city • Maximize parking on the sides of the roads, and create an active mid-lane used as a public space • Improve accessability to the water edge through a seamless transition between land and sea • Rehabilitate the Abou Ghayath stream as a corridor linking the eastern boulevard to the coast • Provide amenities for the public spaces such as lighting, benches, shading, public WC

Socio-economic	<ul style="list-style-type: none"> • Activate sand dune as a continuity of the Municipal stadium, to be planted and used for outdoor sports, camping area and watersports • Create an economic ecosystem around sports, watersports, organic food production and healthy meals preparation in correlation with the sports activities and youth center in CZ A and B • Use the gained space from the reduction of vehicular traffic as a amenity spaces for the expansion of businesses (frontages rented from the municipality), informal businesses (spaces for mobile vendors) and public spaces • The return of these spaces should be invested in infrastructural maintenance
Legal	<ul style="list-style-type: none"> • Create and implement legislation to protect the green agricultural areas of Wastani and the sand dunes • Prohibit the municipality from selling the private coastal municipal lands and from constructing these lots • Regulate the fencing used around private plots. Fence to be transparent creating visual continuity of green spaces • Impose any construction of the shore to be reversible, in light structure
Environmental	<ul style="list-style-type: none"> • Impose biotope percentage on plots to be built • Expansion of the green cover towards over the dune and creation of a palm park as a productive recreational space • Improve habitat and retain sediments using reef balls, and seagrass

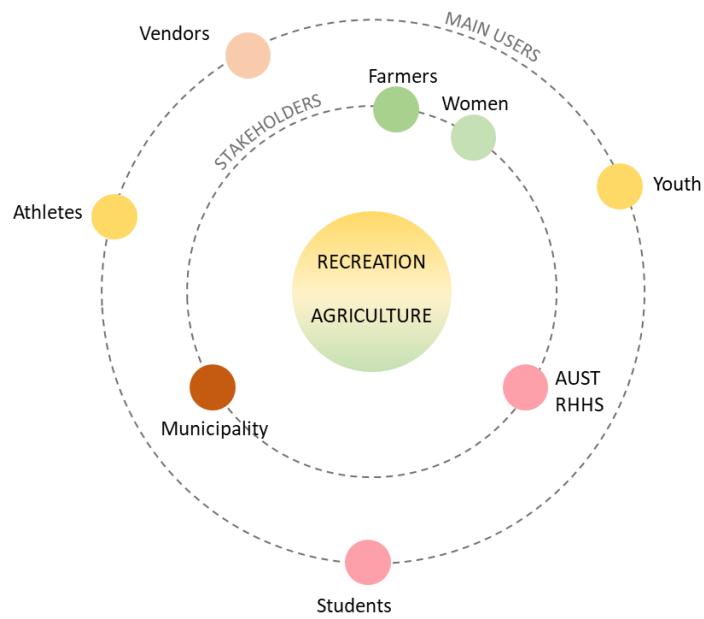


Figure 165-Main activity, stakeholders and main users in Character Zone C
Source: Author

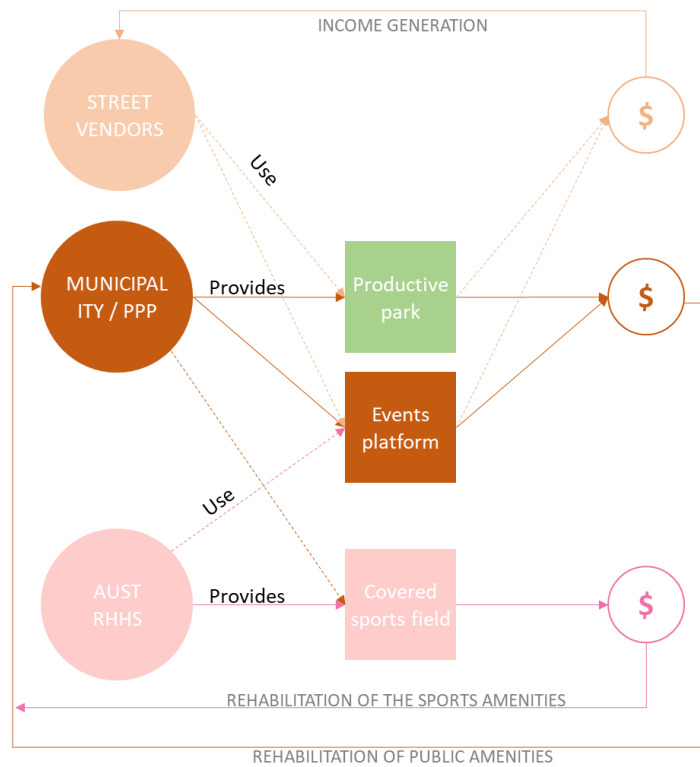


Figure 166-Economic cycle in zone C
Source: Author

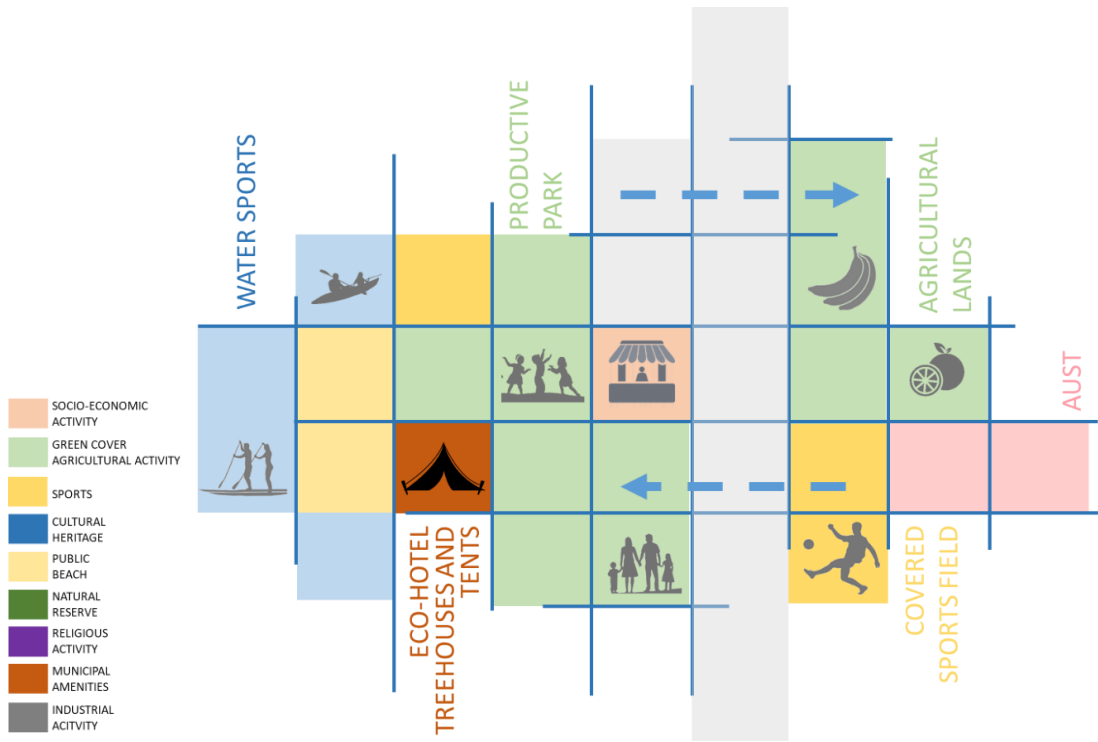


Figure 167-Schematic distribution of landmarks and socio-spatial activities in Character Zone C
 Source: Author

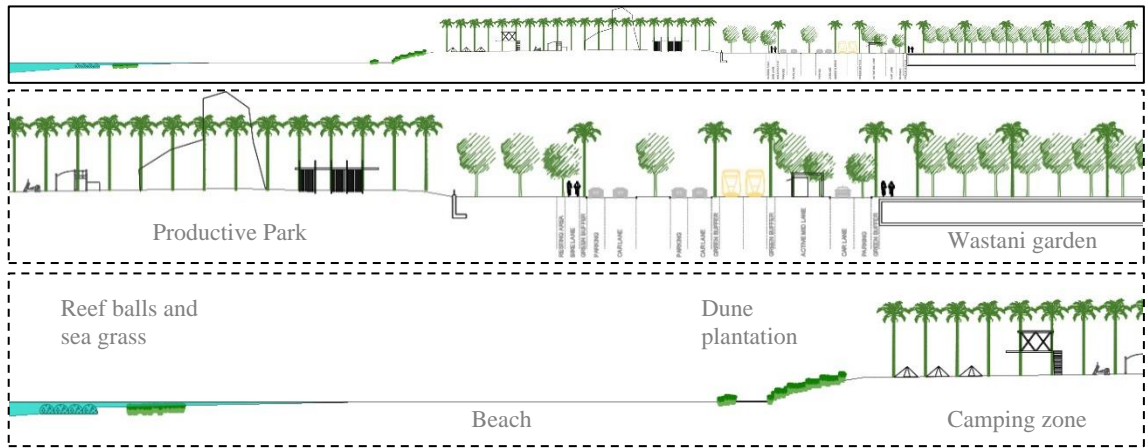


Figure 168-Section 3
 Source: Author

4. Character Zone D:

The guiding principles of CULCZ D are summarized in Table 57. This zone is planned as a recreational area mainly for families (Figure 169). The sand dune in this area will be extended and planted to procure a sheltered bay hosting a safe space for conservative women to use the coast (Figure 168). The sandy coast will be enlarged through the use of reef balls and seagrass to catch sediments and protects from further erosion (Figure 172, Figure 173). Along the coastal street, an active mid-lane is provided, it will host kiosk, coffee shops, open market, gathering spaces (Figure 171). These amenities will generate money for the municipality to maintain the space. (Figure 170).

Table 57-Planning Guiding Principles for coastal urban landscape character zone D
Source: Author

CHARACTER ZONE D	Layer	Guidelines
	Physical	<ul style="list-style-type: none"> • Improve accessibility to the Qamlah beach by designing a seamless transition between sidewalk and sand • Ensure a continuity of the sand dune providing a buffer zone for the coast, creating a protected zone on the beach to cater the needs of conservative communities, in relation to the Hariri mosque. This zone will double as a reserve for turtles in nesting season • Reduce car traffic in this zone traffic reduction techniques and implement a greenway tramway that loops around the city • Maximize parking on the sides of the roads and under the Wastani garden, and create an active mid-lane used as a public space • Improve accessibility to the water edge through a seamless transition between land and sea • Provide amenities for the public spaces such as lighting, benches, shading, public WC • Open up the transversal links between the eastern boulevard and the coast, and rehabilitate them as green urban corridors
	Socio-economic	<ul style="list-style-type: none"> • Activate the Qamleh beach as a destination for recreation and water sports • Create an economic ecosystem around water activities, and sports • Use the gained space from the reduction of vehicular traffic as an amenity spaces for the expansion of businesses (frontages rented from the municipality), informal businesses (spaces for mobile vendors) and public spaces. The return of these spaces should be invested in infrastructural maintenance • Activate the Wastani garden as a public garden linked to the network of public spaces leading to the waterfront
	Legal	<ul style="list-style-type: none"> • Prohibit the municipality from selling the private coastal municipal lands and from constructing these lots • Impose restrictive building regulations imposing step-backs, alternated setbacks and porous fencing to ensure visual continuity of the landscape

		<ul style="list-style-type: none"> • Impose regulation regarding reversibility of constructions on the shore and the use of light materials such as wood
	Environmental	<ul style="list-style-type: none"> • Impose biotope percentage on plots to be built • Improve habitat and retain sediments using reef balls, and seagrass • Protect the agricultural orchards of Wastani

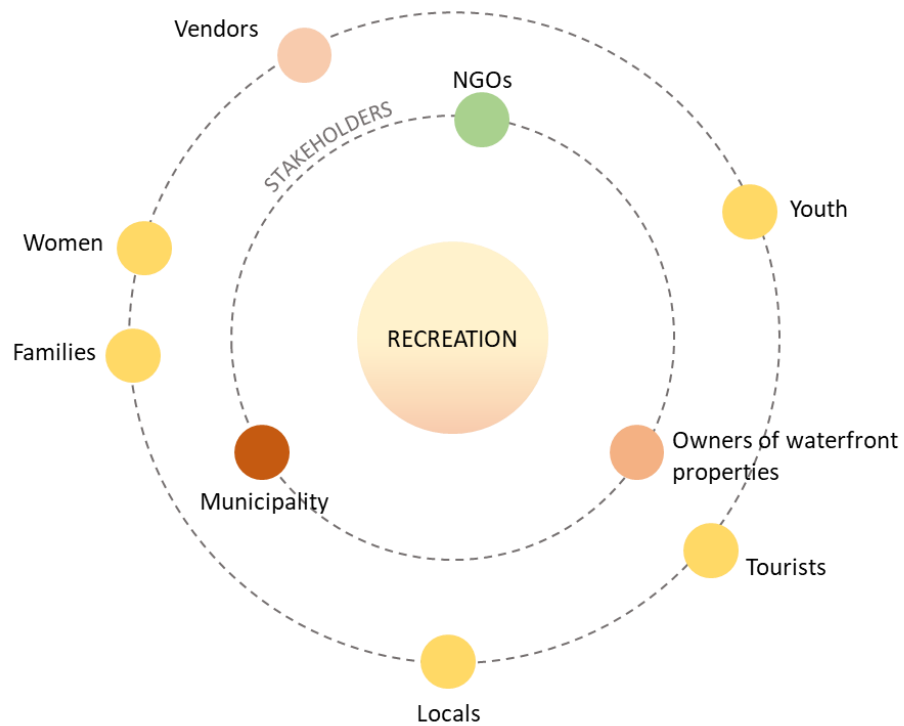


Figure 169-Main activity, stakeholders and main users in Character Zone D
Source: Author

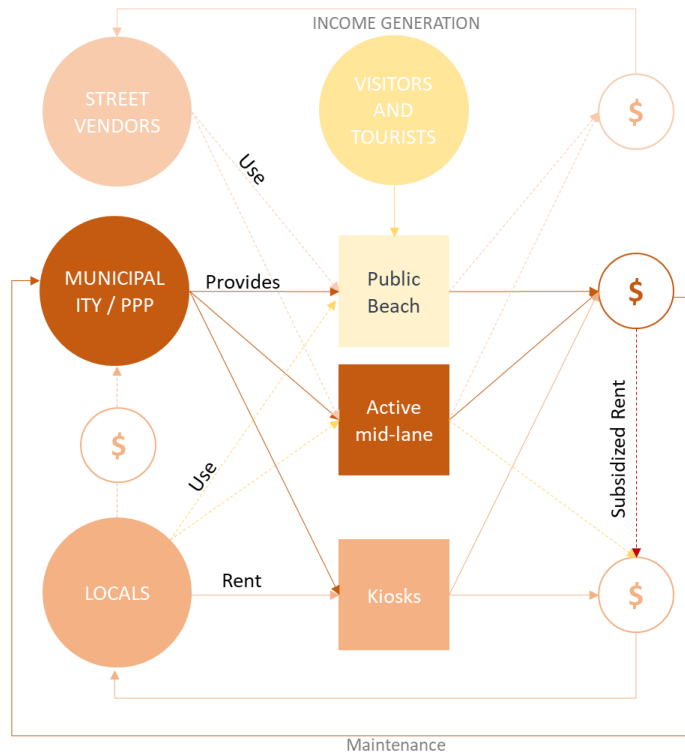


Figure 170-Economic cycle in zone D
Source: Author

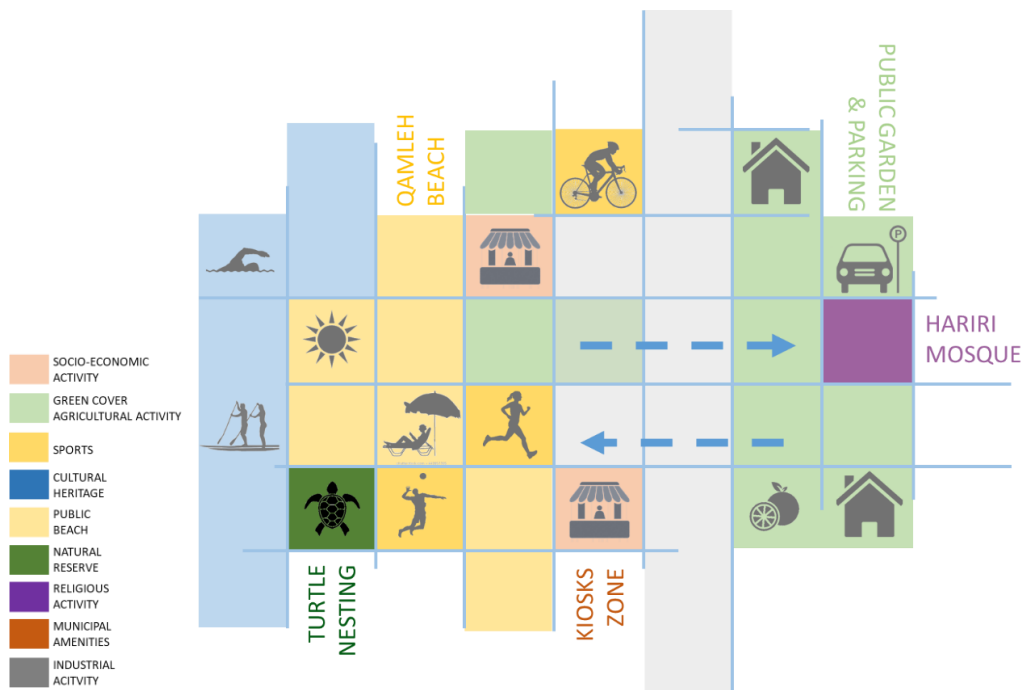


Figure 171-Schematic distribution of landmarks and socio-spatial activities in Character Zone D
Source: Author

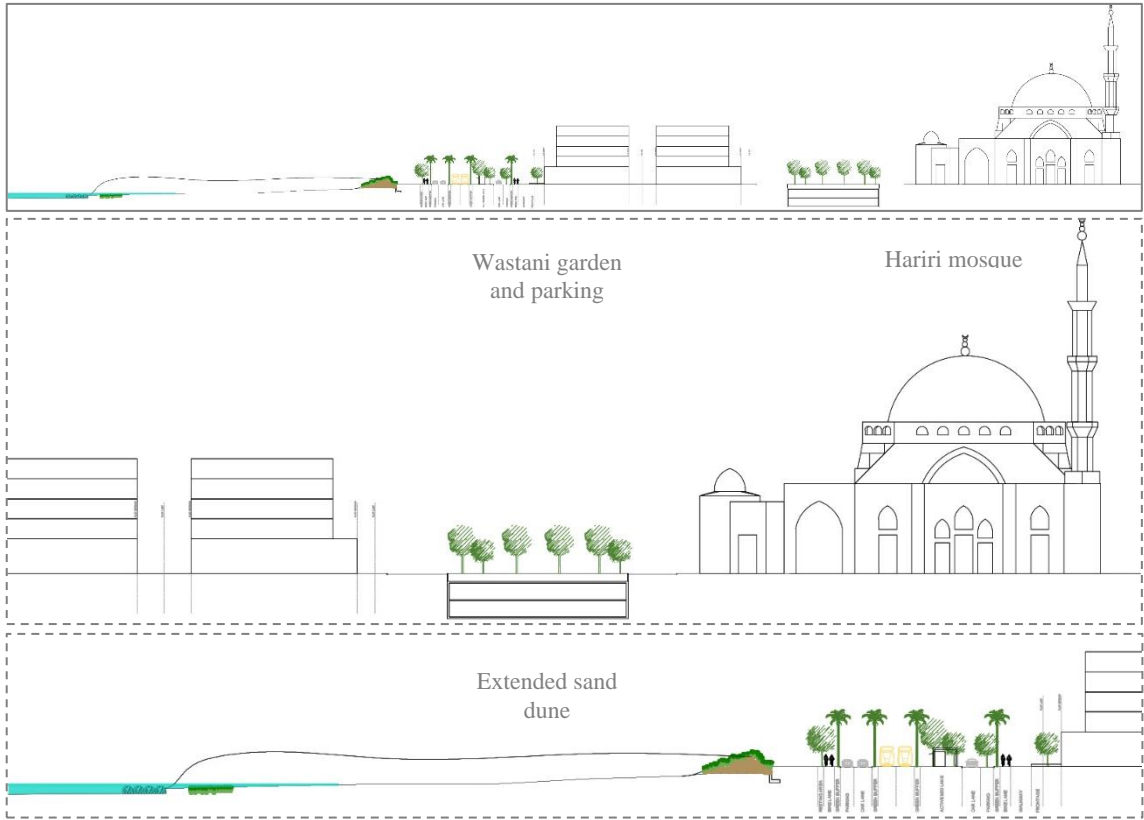


Figure 172-Section 4
Source: Author

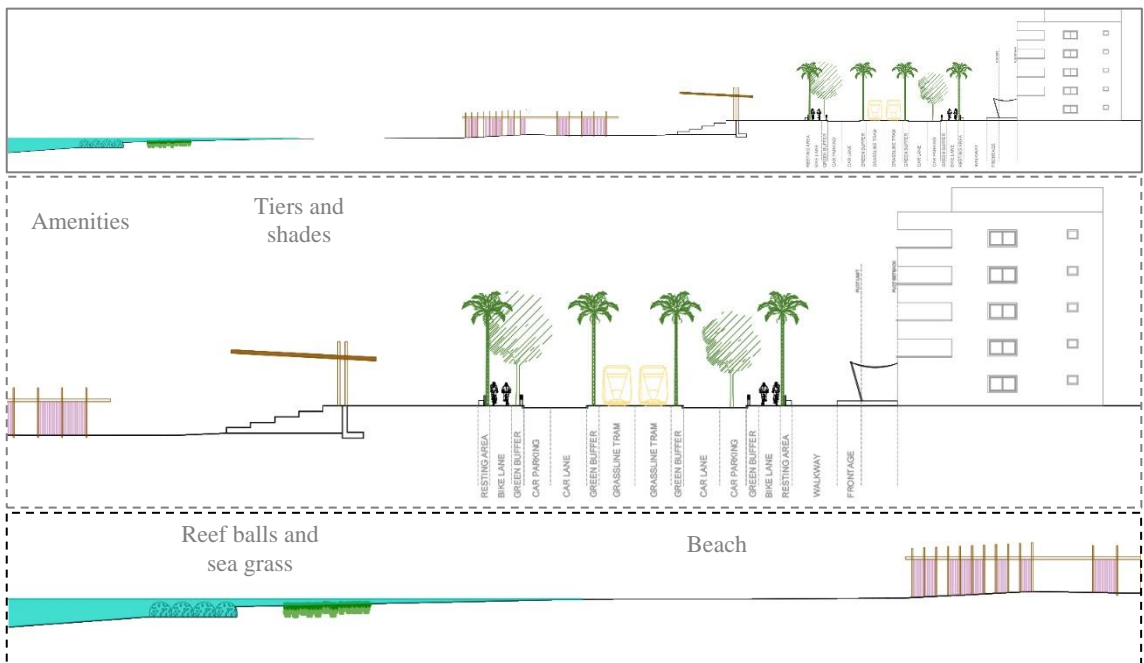


Figure 173-Section 5
Source: Author

5. Character Zone E:



Figure 174-Map of the Planning Guiding Principles for CULCZ E
Source: Author

The guiding principles of CULCZ E are summarized in Table 58. This zone is planned as a recreational area in continuity to the Zone E using the same NBS solutions (Figure 175, Figure 177). A series of public spaces animate the coast in this zone, in relation to the function of the city. A market place is provided near the Zaatari Mosque with an underground parking space (Figure 178). The old municipal building is rehabilitated into a hotel on the coast (

Figure 181). Along the coastal street, an active mid-lane is provided, it will host kiosks, coffee shops, open market, gathering spaces (

Figure 179,

Figure 180). These amenities will generate money for the municipality to maintain the space (Figure 176).

Table 58-Planning Guiding Principles for coastal urban landscape character zone E
Source: Author

	Layer	Guidelines
CHARACTER ZONE E	Physical	<ul style="list-style-type: none"> • Improve accessibility to the Qamlah beach by designing a seamless transition between sidewalk and sand • Ensure a continuity of the sand strip, enlarging to accommodate socio-spatial practices related to water • Reduce car traffic in this zone by implementing traffic reduction techniques and a greenway tramway that loops around the city • Maximize parking on the sides of the roads and under the market space created • Improve accessibility to the water edge through a seamless transition between land and sea • Provide amenities for the public spaces such as lighting, benches, shading, public WC • Open up the transversal links between the eastern boulevard and the coast, and rehabilitate them as green urban corridors • Maintain the current parking plots around the Nejme square through incentives for the real-estate companies such as TDR or Density bonuses

	<ul style="list-style-type: none"> • Open the access from Nejme square to the waterfront as a pedestrian friendly link • Open the direct access from Murjan square to the waterfront in link with Abou Bakr el Sadiq mosque • Transfer the bus stop from the land in front of the old municipal building on the waterfront, and put it in the back, in connection with the Nejme square and the parking lots
Socio-economic	<ul style="list-style-type: none"> • Activate the Qamleh beach as a destination for recreation and water sports • Create an economic ecosystem around water activities, recreation (restaurants, cafes, and sweets shops) • Use the gained space from the reduction of vehicular traffic as an amenity spaces for the expansion of businesses (frontages rented from the municipality), informal businesses (spaces for markets) and public spaces. The return of these spaces should be invested in infrastructural maintenance • Activate the old municipality building as a hotel for the municipality to rent for tourists. And rehabilitate the space in front of it as a public garden in relation to the coast and linked to the network of public spaces on the waterfront
Legal	<ul style="list-style-type: none"> • Provide incentives in form of density bonuses and TDR for the real-estate companies owning the parking lots around the Nejme square in return of space for a bus stop and the provision of public underground parking spaces in case the plots were ever built • Impose restrictive regulations concerning the colors, materials and textures used for the coastal built fabric, to preserve homogeneity. • Impose a planting percentage of trees in front of the immediate neighboring lots to the Old City to create a buffer zone • Impose regulation regarding reversibility of constructions on the shore and the use of light materials such as wood
Environmental	<ul style="list-style-type: none"> • Impose biotope percentage on plots to be built • Improve habitat and retain sediments using reef balls, and seagrass • Use nature-based solutions as stepping stones where riprap was used along the coast

- Enhance green corridors across the city to promote continuity of the ecosystem from hinterland towards the coast

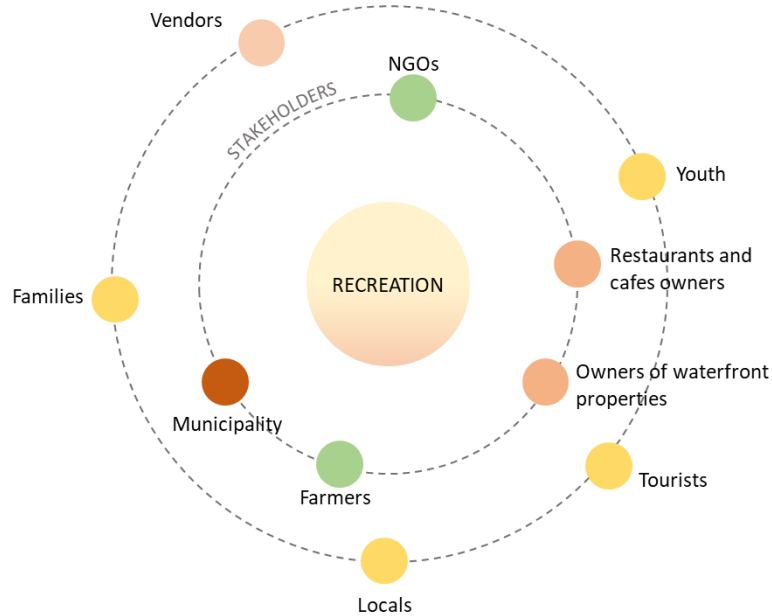


Figure 175-Main activity, stakeholders and main users in Character Zone E
Source: Author

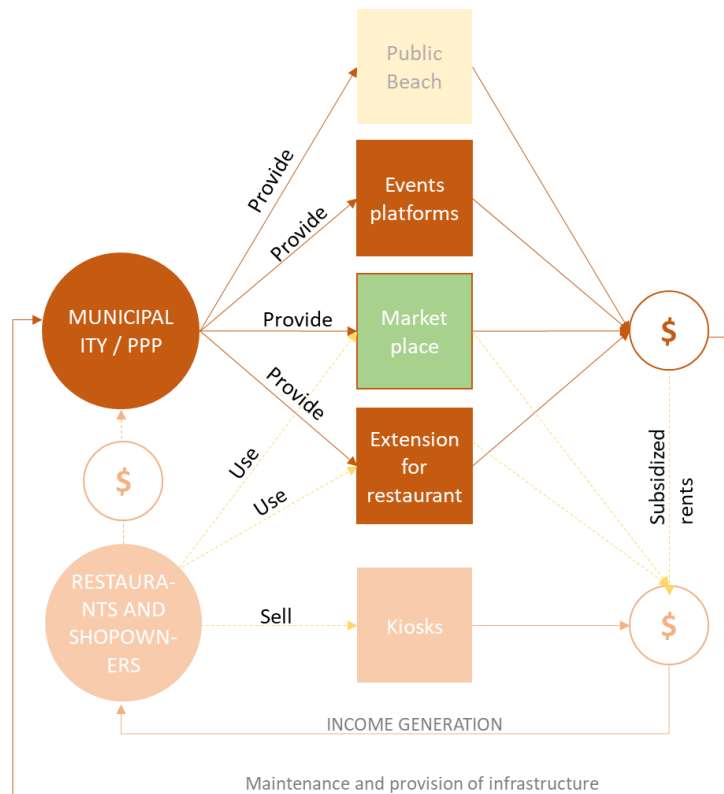


Figure 176-Economic cycle in zone E
Source: Author

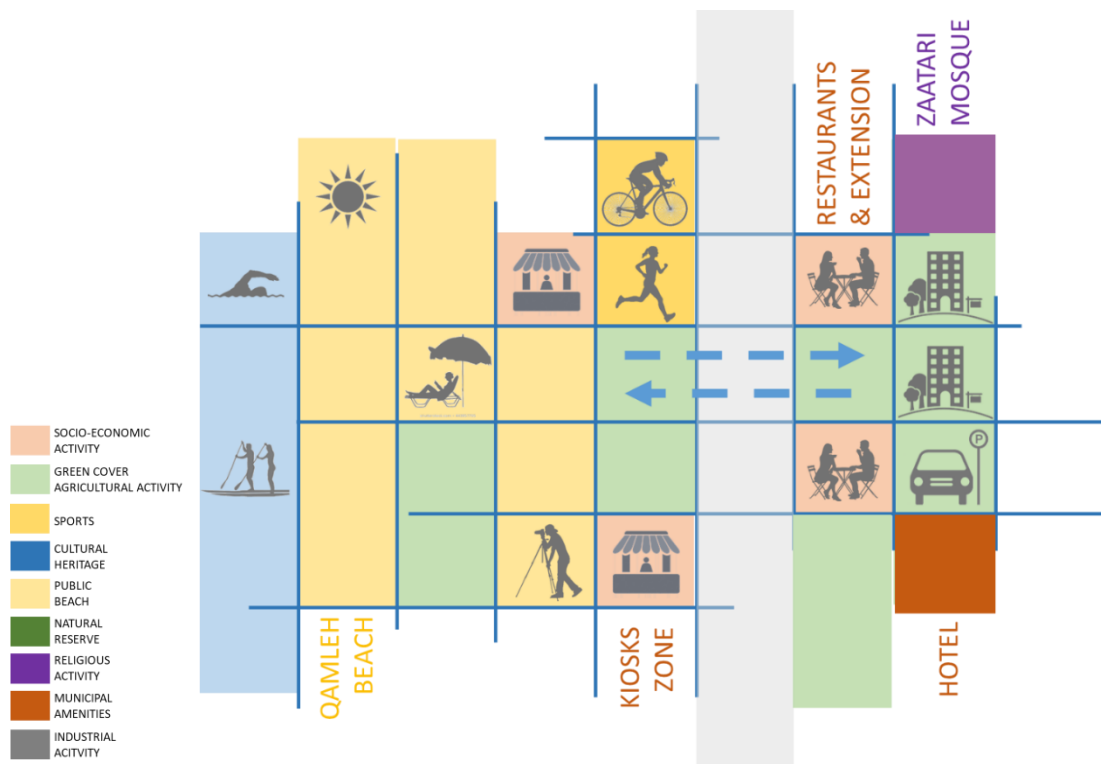


Figure 177-Schematic distribution of landmarks and socio-spatial activities in Character Zone E
 Source: Author

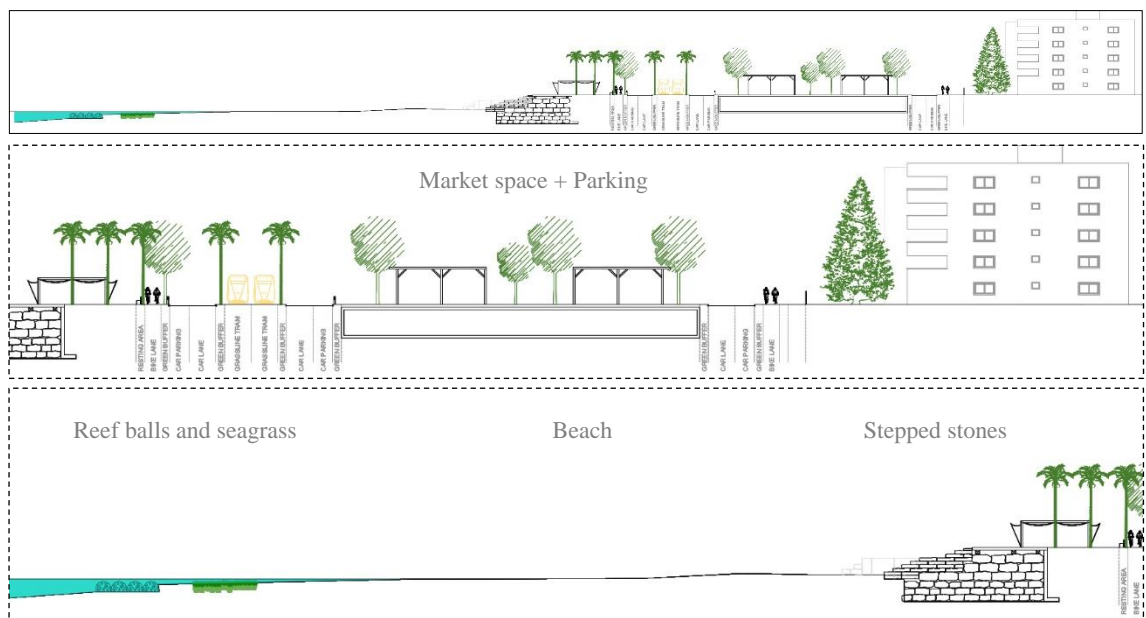


Figure 178-Section 6
 Source: Author

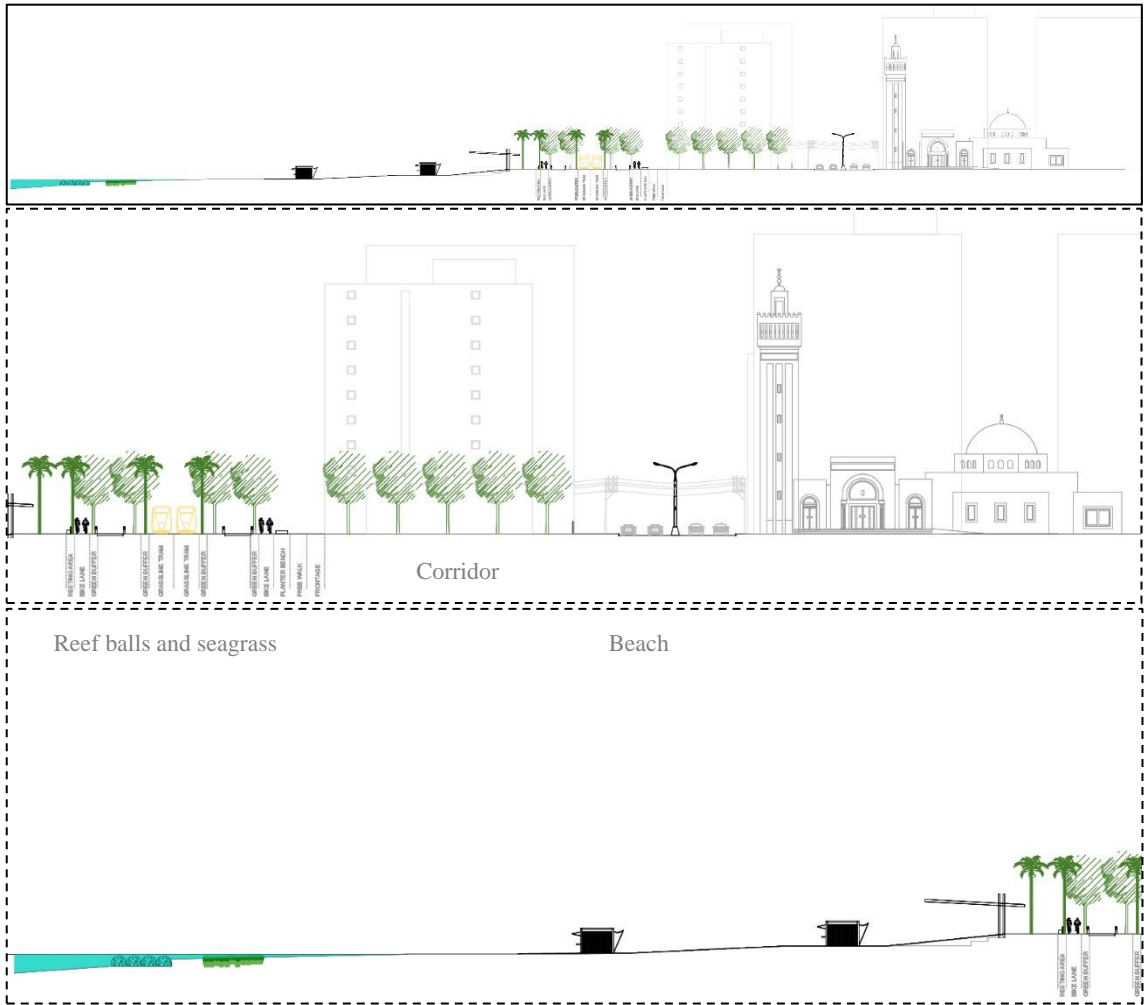


Figure 179-Section 7
Source: Author

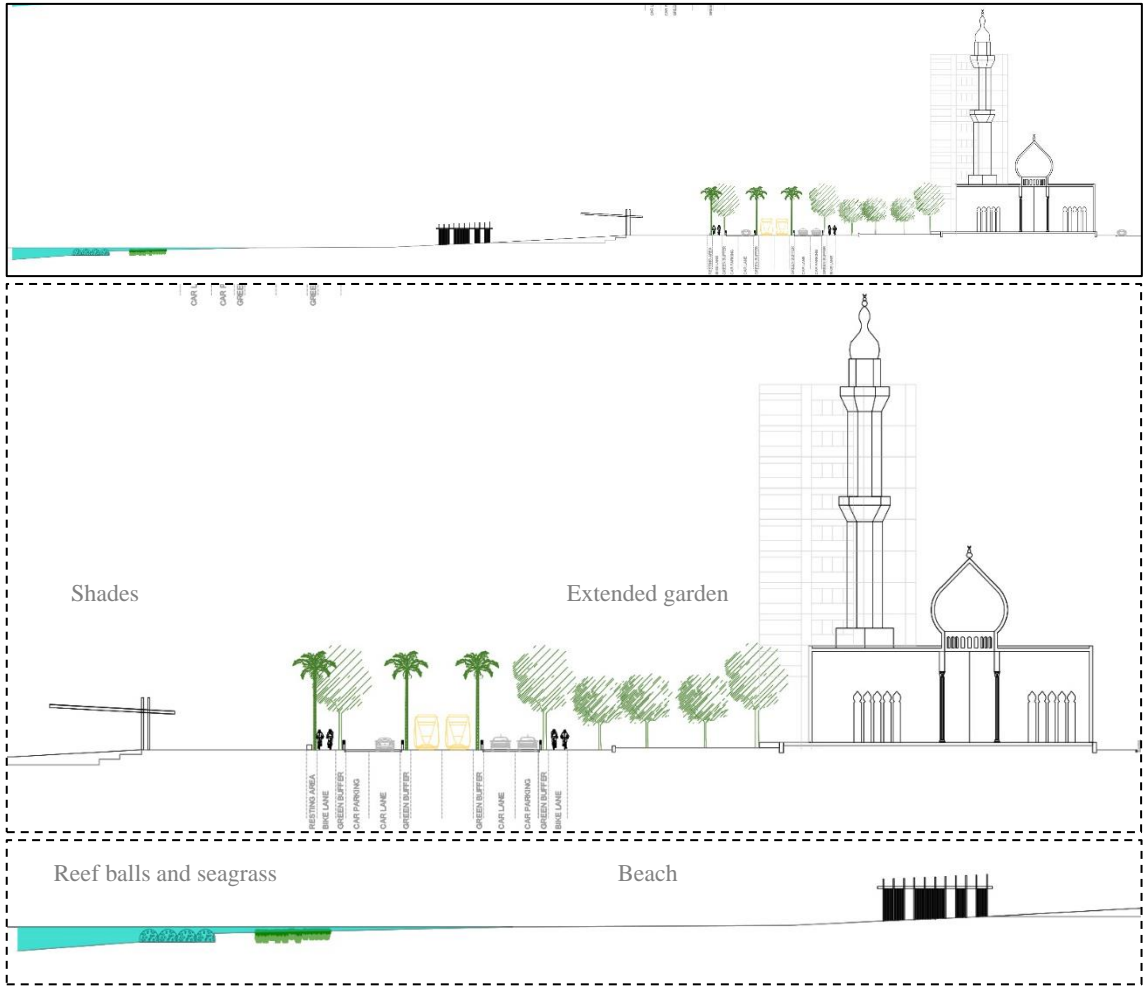


Figure 180-Section 8
Source: Author

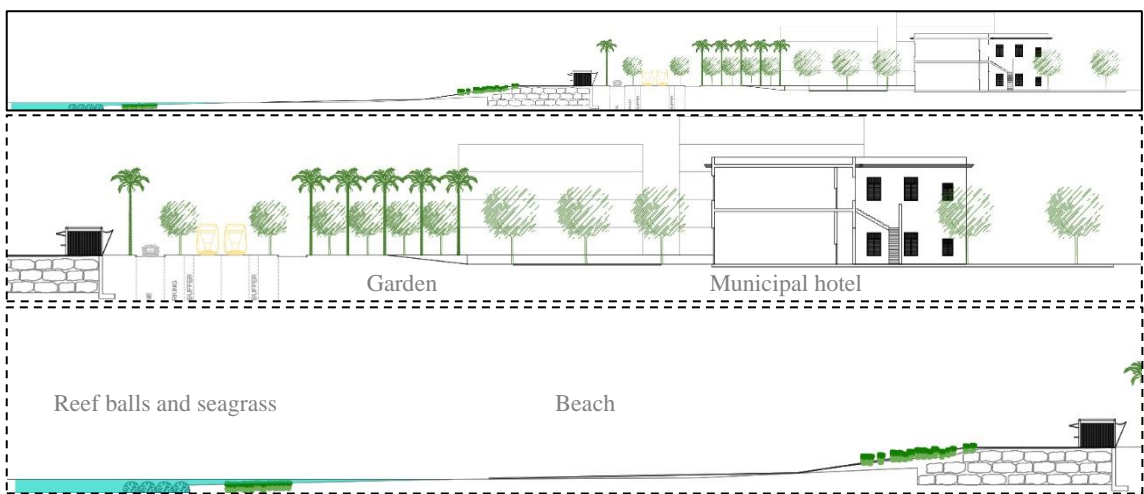


Figure 181-Section 9
Source: Author

6. Character Zone F:



Figure 182-Map of the Planning Guiding Principles for CULCZ F and G
Source: Author

The guiding principles of CULCZ F are summarized in Table 59. This zone is planned as the cultural center of the city, with fishing being the main cultural activity linking Old City and sea (Figure 183). In this zone, the public spaces are conceived as spaces of diversity, innovation, cooperation and festivities (Figure 185). Fishermen, who are mostly inhabitants of the Old City, will be provided with spaces and amenities to enhance their productivity. Cooperation between the fishermen and the craftsmen are encourage for building and maintaining boats, weaving baskets, nets and other tools needed for fishing (Figure 184). The road is transformed into a shared street accommodating public space and enhancing connectivity between the city and the sea (Figure 186).

Table 59-Planning Guiding Principles for coastal urban landscape character zone F
Source: Author

	Layer	Guidelines
CHARACTER ZONE F	Physical	<ul style="list-style-type: none"> • Improve accessibility to the fishermen port • Enhance connectivity along the waterfront and reduce car traffic in this zone by implementing a shared street typology to cater for the different needs in a reduced space and to reinforce the appropriation of the ground by people rather than by cars • Create alternated parking on the side of the roads and create an underground parking under the Baher el Eid area, and the Sheikh Zayed garden • Provide amenities for the public spaces such as lighting, benches, shading, public WC • Enhance transversal connectivity by rehabilitate Chakirieh road as a link between inner Saida and the coast, highlighting the entrances of the Old City and the monuments and linkin them to the coast • Create a continuous link around the city by linking the southern gate of the city to the coast, from one end and to the garden around the land citadel

	<ul style="list-style-type: none"> • Enhance connectivity along the waterfront by activating the public spaces along the coast, expand them and create a continuity between them. Link the Abou el Abed tents with Bahr el Eid with Sheikh Zayed Garden and expand them towards the coast • Remove the fishermen syndicate building and transfer it to the port
Socio-economic	<ul style="list-style-type: none"> • Activate the fishermen port as a cultural port in continuity with the cultural aspect of the Old City • Enhance connectivity between the city and the waterfront by creating an economic ecosystem revolving around fishing (restaurants, cafes, and crafts) and culture (theatre, museum, exhibition spaces) catering for the needs of the locals and the tourists • Consider the buildings on the waterfront as activators of the public space. The area in front of Abou el Abed tent is activated as a food node, the area near Al Bahr mosque is rehabilitated into a space of prayer and contemplation, Bahr el Eid is activated as a playground and a space for the expansions and innovations of crafts ion realtion to the fishing sector. The space near Maqased is activated as a playground in relation to the school • Promote the waterfront as a space for synergy and innovation between craftsmen and artists, Fishermen and craftsmen, fishermen and NGOs
Legal	<ul style="list-style-type: none"> • Implement regulations regarding the newly built fabric on the coast. In the protection perimeter of the Old City, construction should be light, reversible and minimalist. • Impose restrictive regulations concerning the colors, materials and textures used for the coastal built fabric, to preserve homogeneity. • Impose a planting percentage of trees in front of the immediate neighboring lots to the Old City to create a buffer zone • Implement regulations regarding the closure of the roads during festivities, mainly the Eid
Environmental	<ul style="list-style-type: none"> • Preserve and protect the existing natural rocks near the port • Provide a protection perimeter for these rocks and promote habitat using continuous reef balls barriers and rock pools.

- Use nature-based solutions as stepping stones to reinforce the connectivity of the coast with wet edge
- Create an eco-engineered coast on the edge of the port, enhancing fish production and fishing practices which will have relative economical returns
- Enhance green corridors across the city to promote continuity of the ecosystem from hinterland towards the coast
- Create a green buffer zone around the Old City, rehabilitating the open spaces such as cemeteries, parking, and gardens and linking them

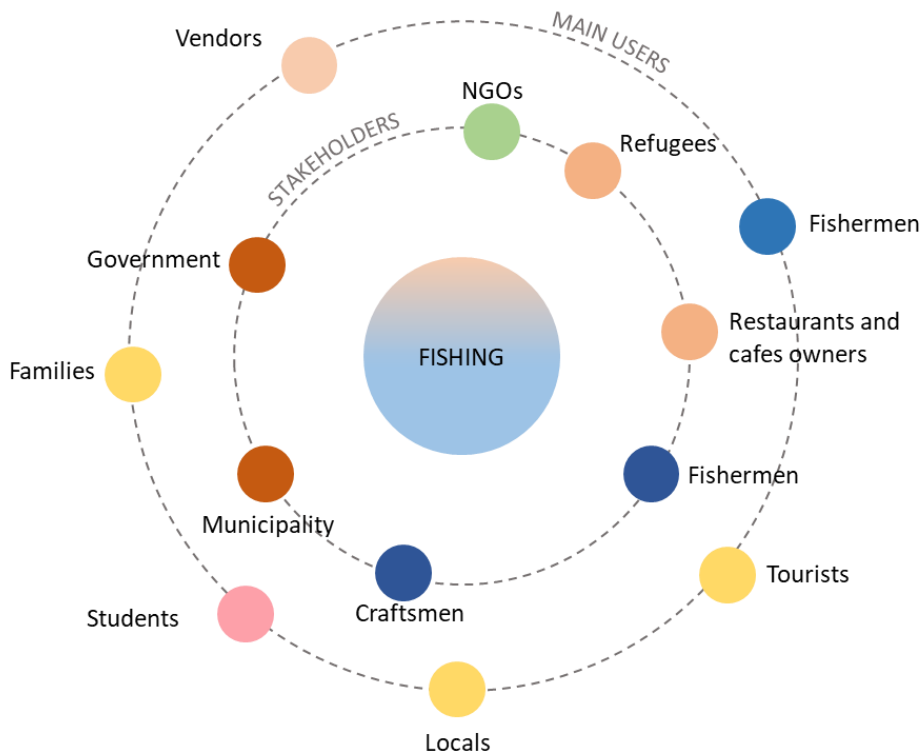


Figure 183-Main activity, stakeholders and main users in Character Zone F
Source: Author

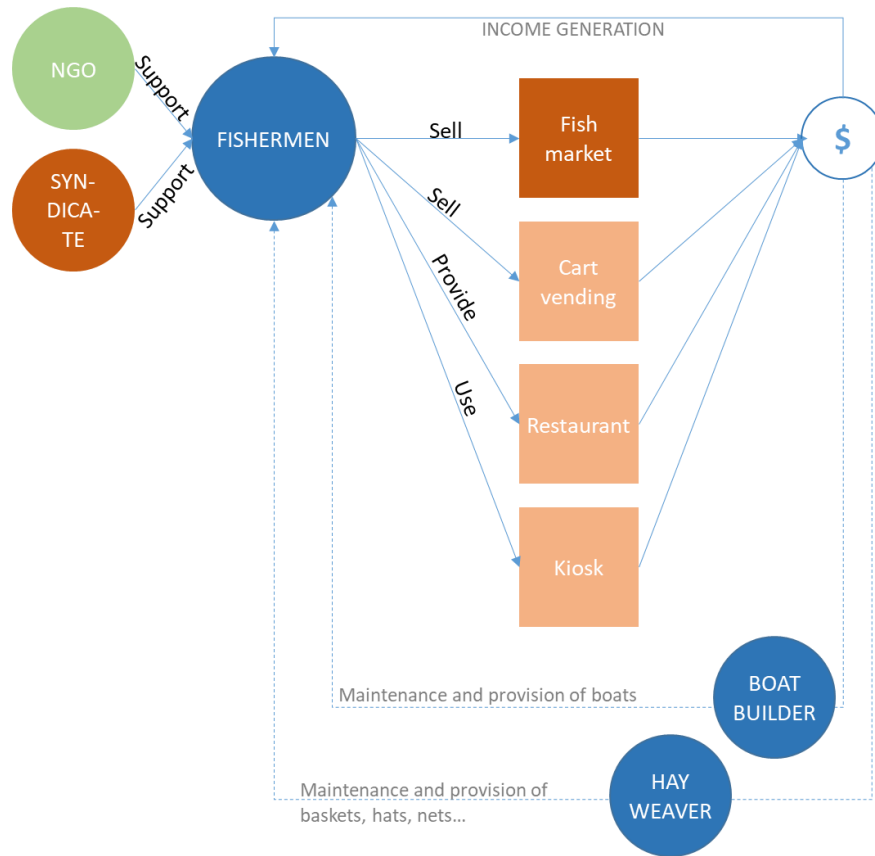


Figure 184-Economic cycle in zone F
Source: Author

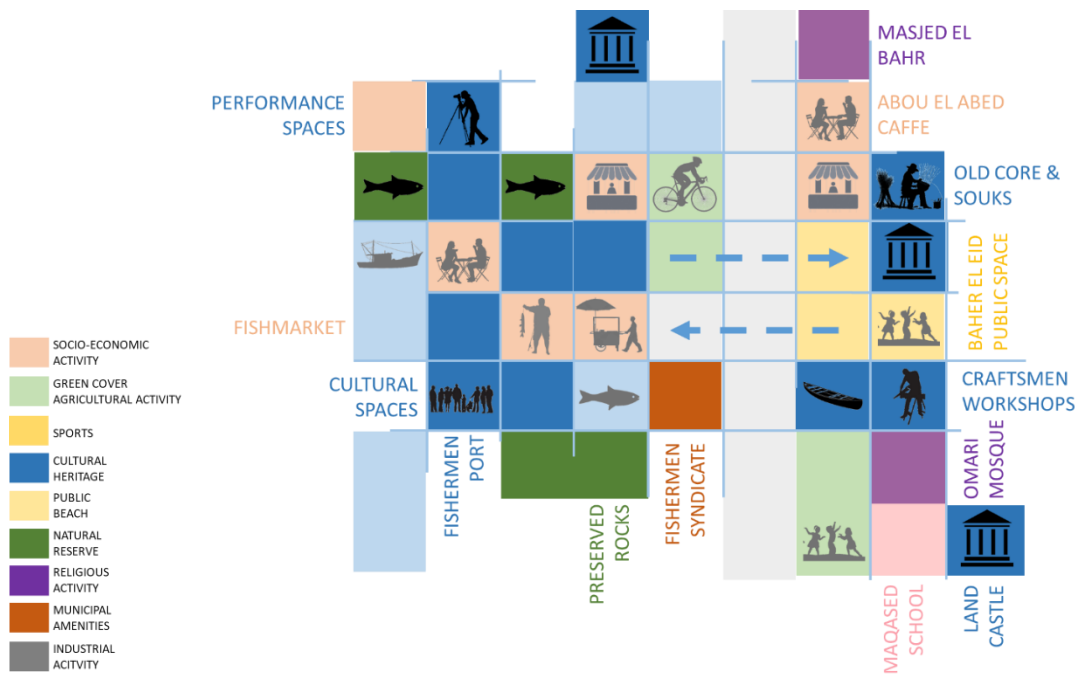


Figure 185-Schematic distribution of landmarks and socio-spatial activities in Character Zone F
Source: Author

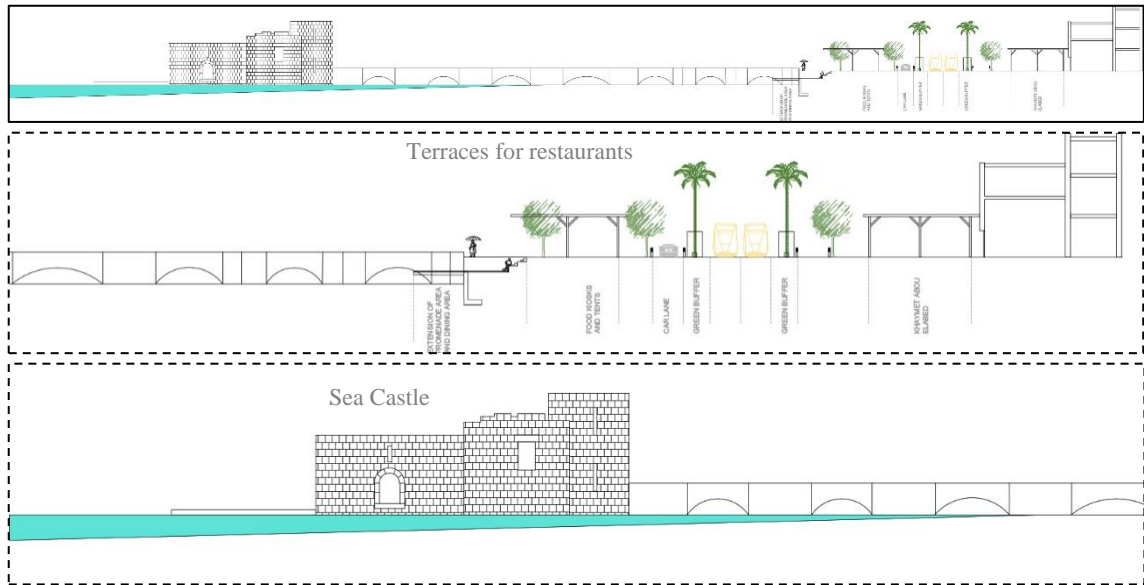


Figure 186-Section 10
Source: Author

7. Character Zone G:

The guiding principles of CULCZ G are summarized in (Table 60). This zone is planned as the commercial and touristic area given the presence of the newly constructed commercial port (Figure 182, Figure 187). This zone will host a playground for the students of the surrounding schools, as well as a series of shops built under the street level, and giving on the port's premises (Figure 188, Figure 189, Figure 190). Along the street, the sidewalks are widened and host large frontage spaces to be rented by businesses, restaurants, and shops, which will ensure a continuous income for the municipality. The commercial port is also planned as a touristic port able to host tourists coming by boat. In this zone, a specific road is designated for trucks traffic and a specific time is set for their circulation making the street safer for students and pedestrians.

Table 60-Planning Guiding Principles for coastal urban landscape character zone G
Source: Author

CHARACTER ZONE G	Layer	Guidelines
	Physical	<ul style="list-style-type: none"> • Improve accessibility to the water edge by designing a seamless transition between the corniche and the lower level • Enhance connectivity along the waterfront and reduce car traffic in this zone by implementing traffic calming solutions and a soft mobility plan • Create alternated parking on the side of the roads and create an underground parking under the gained spaces after the reduction of the street size • Provide amenities for the public spaces such as lighting, benches, shading, public WC • Enhance transversal connectivity by reinforcing the link with the martyrs square as a green corridor linking the interior of the city to the coast • Enhance connectivity along the waterfront by activating the gained public spaces along the coast, expand them and create a continuity between them
	Socio-economic	<ul style="list-style-type: none"> • Activate the new port as a commercial and touristic port with emphasis on the role of the locals in providing services and promotion of the informal sectors (street vendors) • Enhance connectivity between the city and the waterfront by creating an economic ecosystem revolving around the needs of youth, mainly students in this area given the abundance of schools and universities • Promote the waterfront as a space for synergy and innovation between the university students, the tourists, fishermen and NGOs
	Legal	<ul style="list-style-type: none"> • Preserve visual connectivity between the city and the sea by imposing regulation for building under street level on the new port • Impose restrictive regulations concerning the colors, materials and textures used for the coastal built fabric, to preserve homogeneity. • Impose a planting percentage of trees in front of the immediate neighboring lots to the Old City to create a buffer zone
	Environmental	<ul style="list-style-type: none"> • Preserve and protect the existing natural rocks near the port

- Provide a protection perimeter for these rocks and promote habitat using continuous reef balls barriers and rock pools.
- Enhance green corridors across the city to promote continuity of the ecosystem from hinterland towards the coast

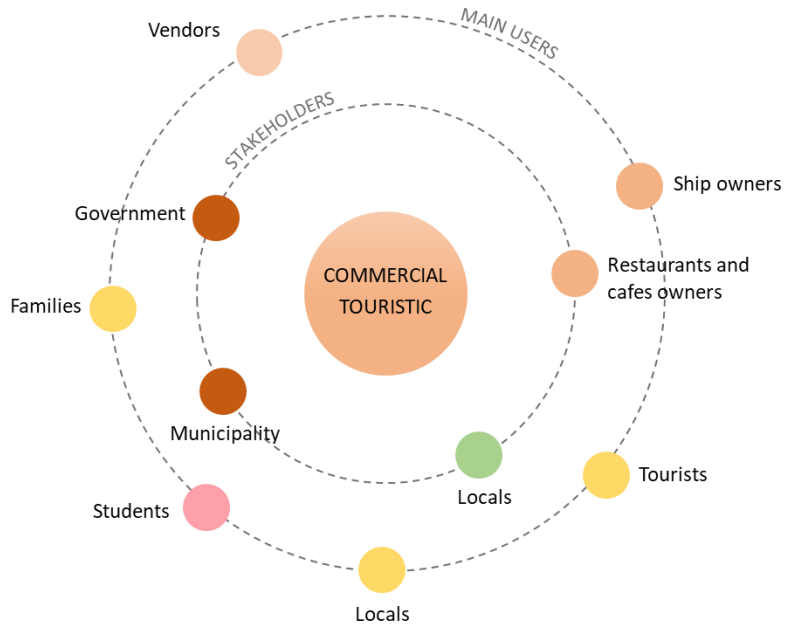


Figure 187-Main activity, stakeholders and main users in Character Zone G
Source: Author

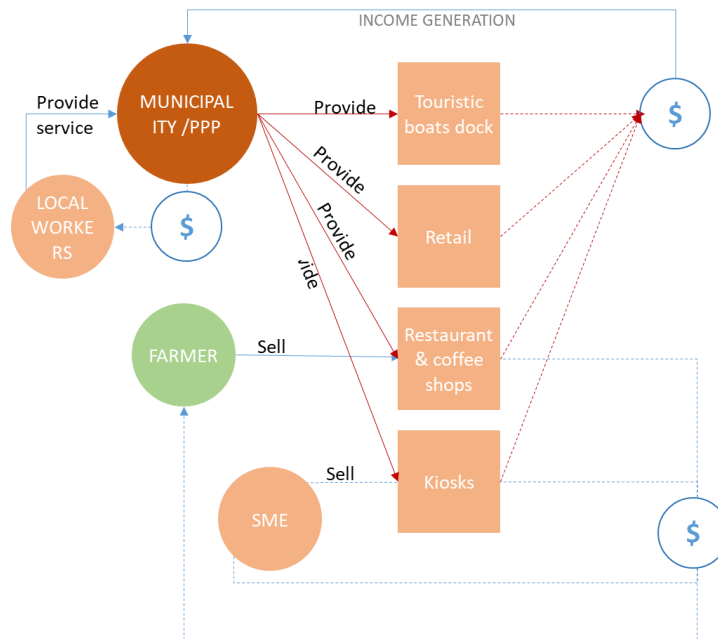


Figure 188-Economic cycle in zone G
Source: Author

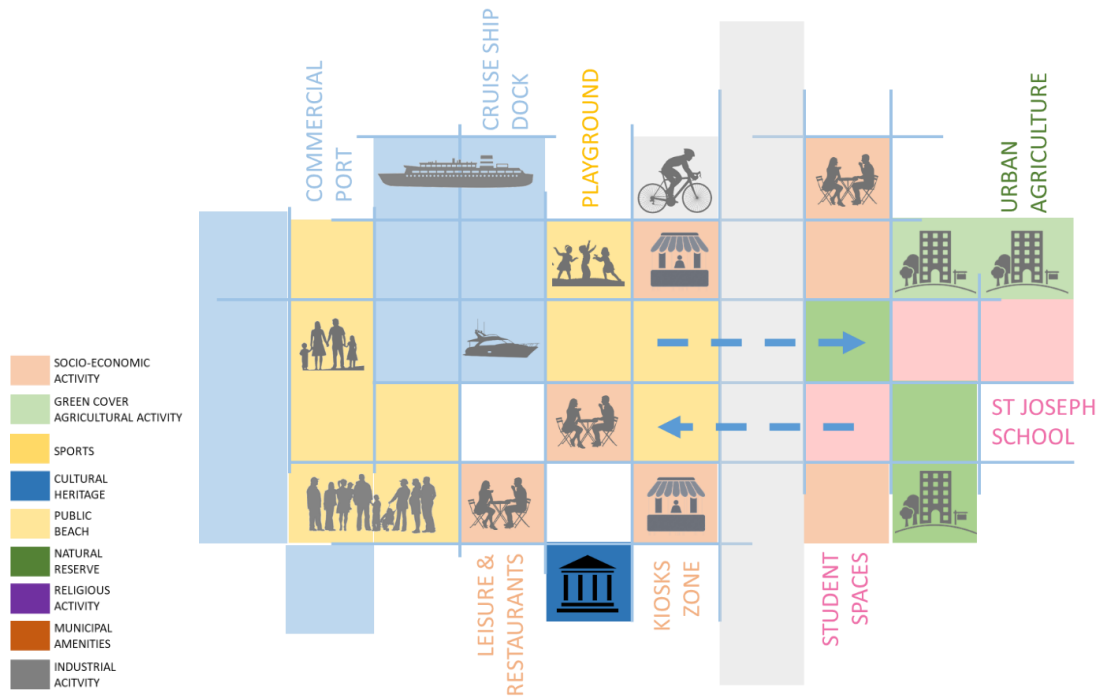


Figure 189-Schematic distribution of landmarks and socio-spatial activities in Zone G
Source: Author

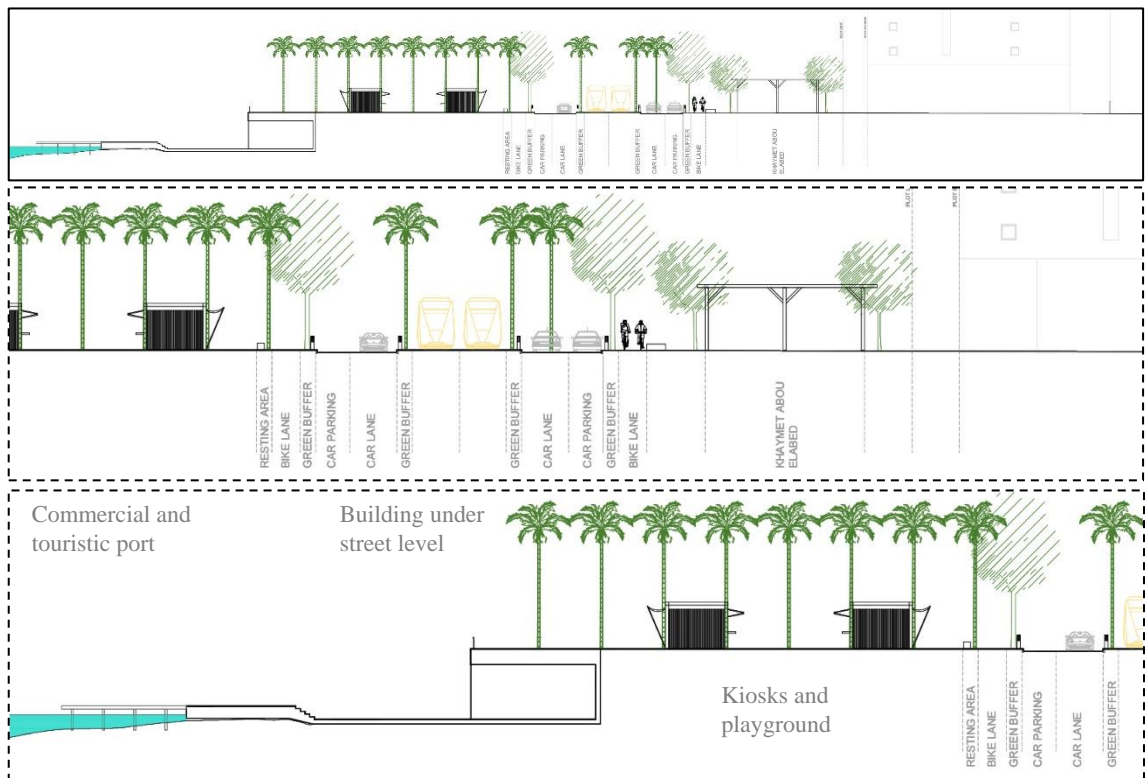


Figure 190-Section 11
Source: Author

8. Character Zone H:



Figure 191-Map of the Planning Guiding Principles for CULCZ H, I and J
Source: Author

The guiding principles of CULCZ H are summarized in (Table 61). This zone is designed as an eco-park (Figure 191, Figure 192). The Saoudi garden already existing will be enhanced and extended. This zone will host some touristic facilities such as accommodations dispersed between the landscape (Figure 195). In this zone also, the industrial zone will be relocated to the Zone J and replaced by a social housing project to help with the integration of refugees and low-income people (Figure 193, Figure 194).

Table 61-Planning Guiding Principles for coastal urban landscape character zone H
Source: Author

	Layer	Guidelines
CHARACTER ZONE H	Physical	<ul style="list-style-type: none"> • Improve accessibility to the water edge by designing a seamless transition between the edge of the landfill and the water • Enhance connectivity along the waterfront and reduce car traffic in this zone by implementing traffic calming solutions and a soft mobility plan (greenway tramway) • Create alternated parking on the side of the roads and a parking space for the trucks to alleviate their impact on the Iskandar gulf • Provide amenities for the public spaces such as lighting, benches, shading, public WC • Enhance transversal connectivity by rehabilitating the old river streams into green corridors linking the inner Dekerman to the waterfront • Relocate the industrial blocks in this area towards the southern part of the city and replace them with social housing units for the people living in Saida and Ain el Helwe
	Socio-economic	<ul style="list-style-type: none"> • Activate the reclaimed land near the port as an asset for tourism. Implement leisure and touristic amenities scattered within a park • Enhance connectivity between the city and the waterfront by creating an economic ecosystem revolving around recreation and tourism

	<ul style="list-style-type: none"> • Promote urban agriculture as a strategy to alleviate poverty in the area and encourage inclusion and expand this practice toward the reclaimed land
Legal	<ul style="list-style-type: none"> • Preserve the green spaces in this area and give incentives for agricultural practices • Prescribe a new zoning for this area designating the landfill as a reserve park allowing minimal low height scattered construction • Impose a 100m setback from the water edge for protection from natural disasters and for public use
Environmental	<ul style="list-style-type: none"> • Enhance green corridors across the city to promote continuity of the ecosystem from hinterland towards the coast • Allow vegetation to grow on the landfill, and create a natural reserve • Maintain the Saoudi Park and link it as a part of the reserve • Mimic natural rocks to create a seamless transition between the park and the sea • Promote the use of nature-based solution for the protection of shore, such as flood retaining vegetation

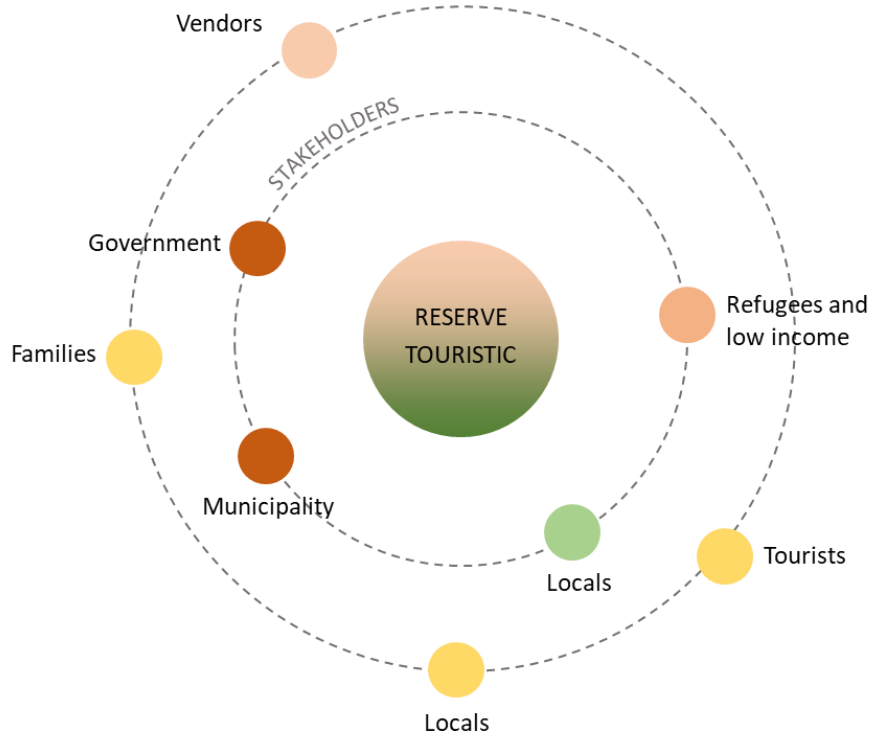


Figure 192-Main activity, stakeholders and main users in Character Zone H
Source: Author

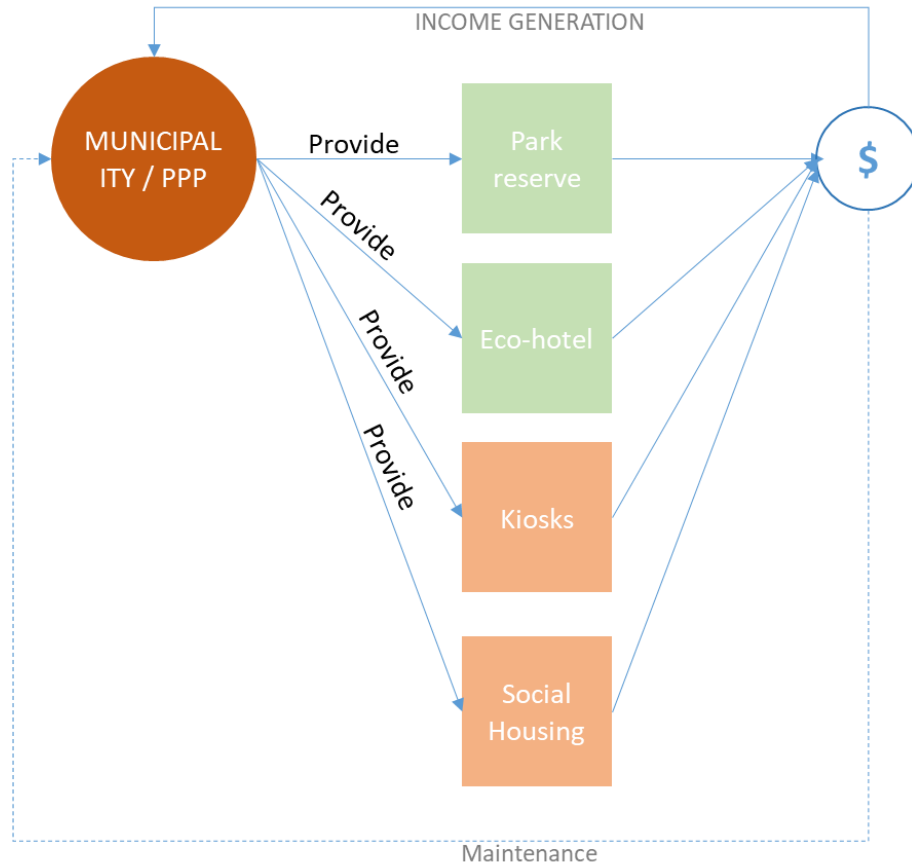


Figure 193-Economic cycle in zone H
Source: Author

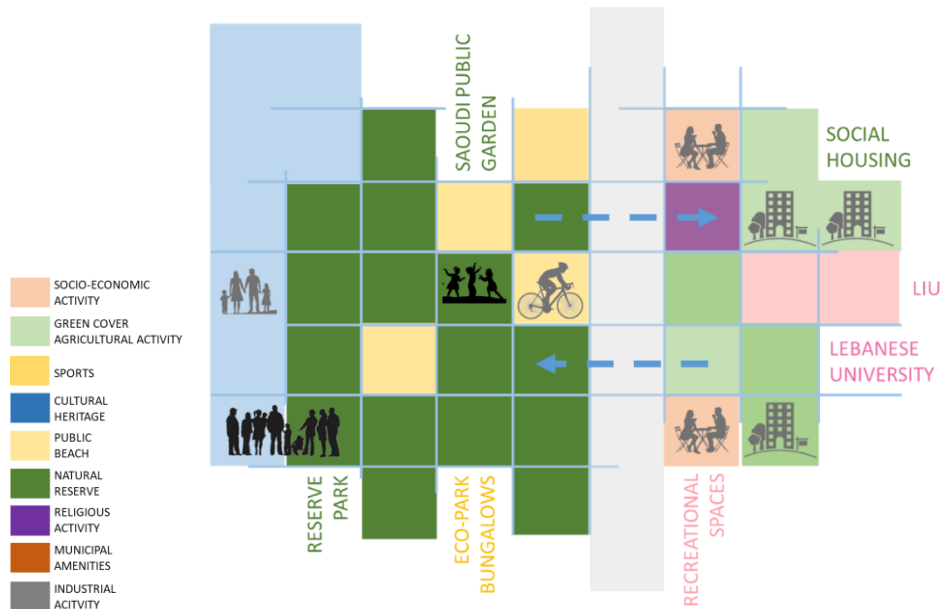


Figure 194-Schematic distribution of landmarks and socio-spatial activities in Character Zone H
Source: Author

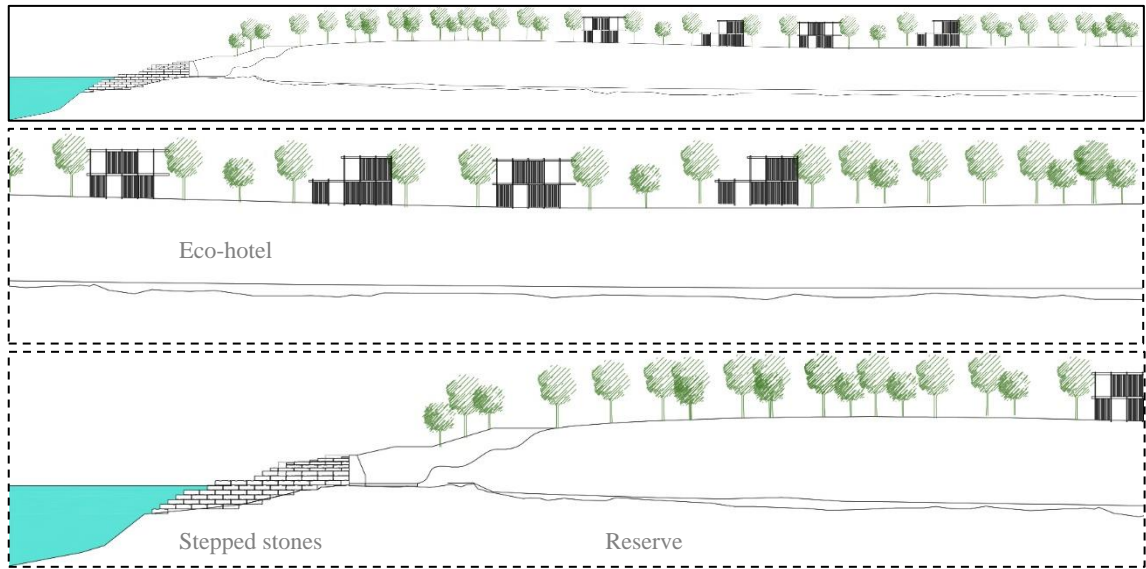


Figure 195-Section 12

Source: Author

9. Character Zone I:

The guiding principles of CULCZ I are summarized in (

Table 62). This zone is designed as reserve (Figure 191, Figure 196).

Transversal connectivity is enhanced in this area by rehabilitating the old river streams into green corridors linking the inner Dekerman to the waterfront. The reserve is a garden for the city, animated by punctual interventions distributed within the green cover, creating gathering nodes (Figure 197, Figure 198, Figure 199).

Table 62-Planning Guiding Principles for coastal urban landscape character zone I
Source: Author

CHARACTER ZONE I	Layer	Guidelines
	Physical	<ul style="list-style-type: none"> • Improve accessibility to the water edge by designing a seamless transition between the edge of the landfill and the water • Enhance connectivity along the waterfront and reduce car traffic in this zone by implementing traffic calming solutions and a soft mobility plan (greenway tramway) • Create alternated parking on the side of the roads and a parking space for the trucks to alleviate their impact on the Iskandar gulf • Provide amenities for the public spaces such as lighting, benches, shading, public WC • Enhance transversal connectivity by rehabilitating the old river streams into green corridors linking the inner Dekerman to the waterfront
	Socio-economic	<ul style="list-style-type: none"> • Activate the reclaimed land near the port as an asset for Saida and greater Saida to be used as a green lung, a waterfront park. • Enhance connectivity between the city and the waterfront by creating an economic ecosystem revolving around agriculture • Promote urban agriculture as a strategy to alleviate poverty in the area and encourage inclusion and expand this practice toward the reclaimed land
	Legal	<ul style="list-style-type: none"> • Preserve the green spaces in this area and give incentives for agricultural practices • Prescribe a new zoning for this area designating the landfill as a reserve • Impose a 100m setback from the water edge for protection from natural disasters and for public use • Prescribe a law for the protection of the green agricultural spaces and the big lots typology • Impose a biotope percentage on the plots to be built, preserving a continuity of the ecosystem from inner Saida towards the waterfront

Environmental	<ul style="list-style-type: none"> • Enhance green corridors across the city to promote continuity of the ecosystem from hinterland towards the coast • Allow vegetation to grow on the landfill, and create a natural reserve • Mimic natural rocks to create a seamless transition between the park and the sea • Promote the use of nature-based solution for the protection of shore, such as flood retaining vegetation
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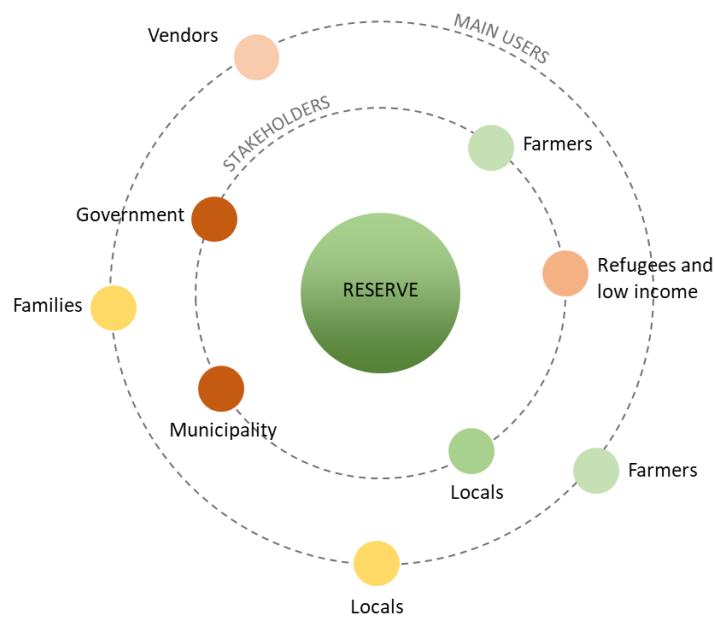


Figure 196-Main activity, stakeholders and main users in Character Zone I

Source: Author

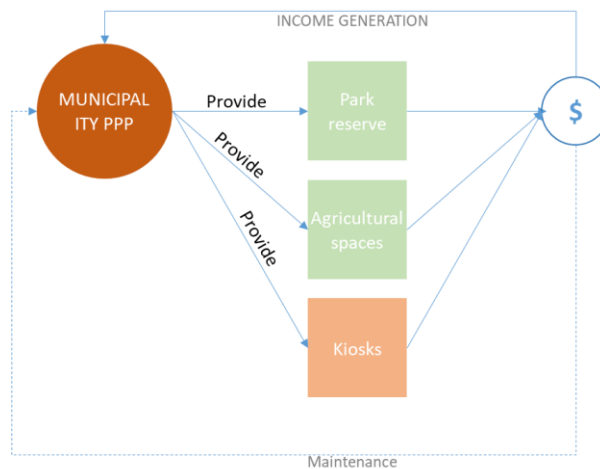


Figure 197-Economic cycle in zone I

Source: Author

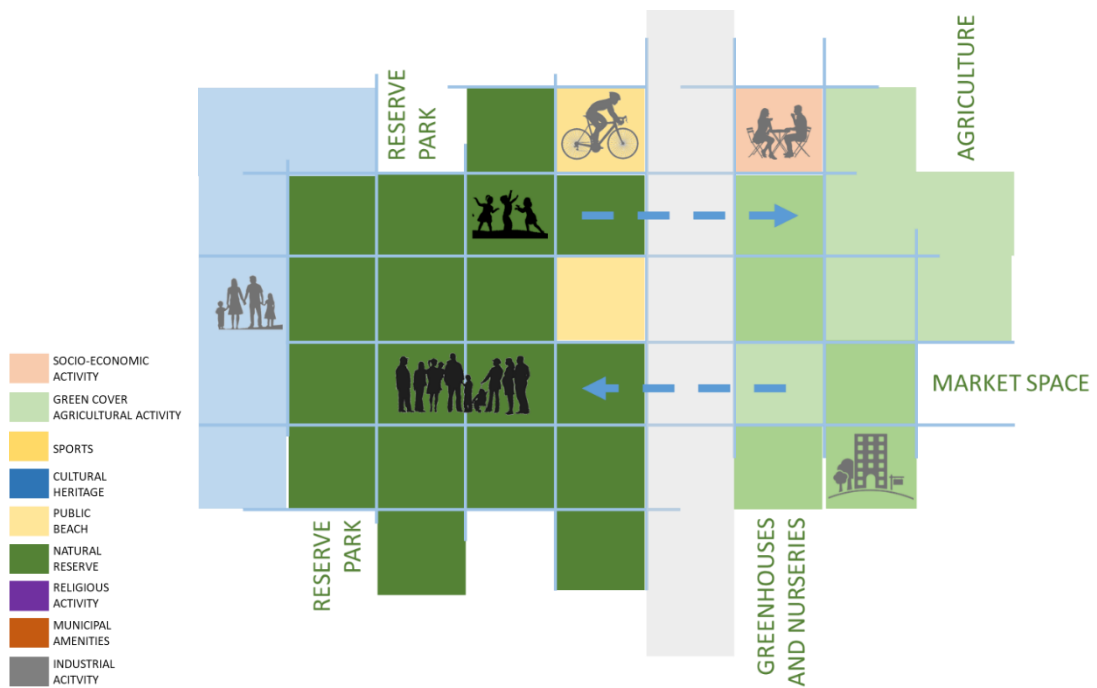


Figure 198-Schematic distribution of landmarks and socio-spatial activities in Character Zone I
 Source: Author

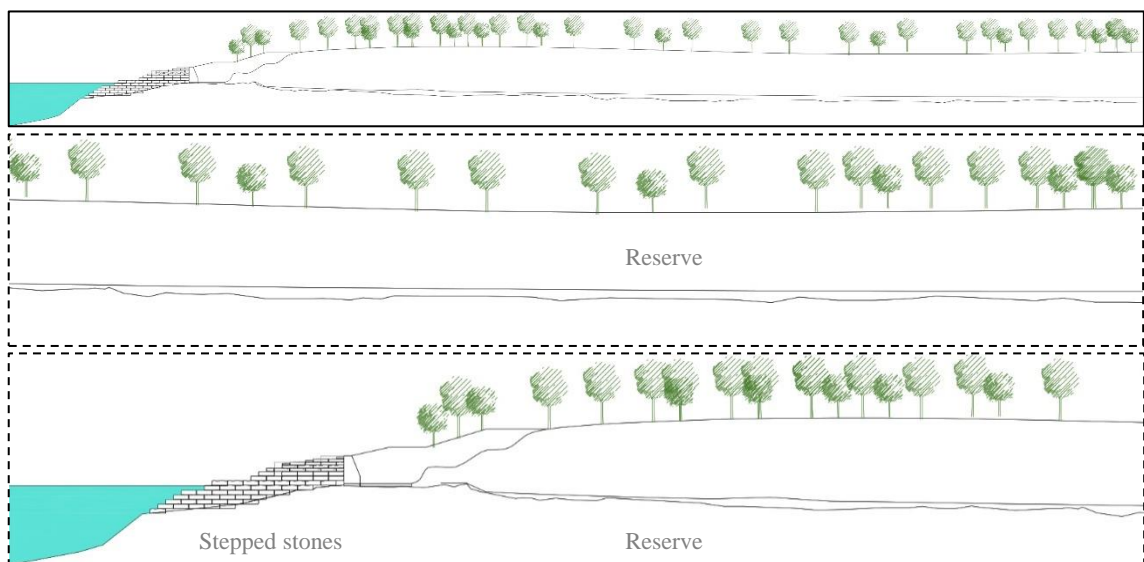


Figure 199-Section 13
 Source: Author

10. Character Zone J:

The guiding principles of CULCZ J are summarized in (Table 63). This zone is planned as an industrial area, surrounded by a green buffer linking the coast with the Sayniq river (Figure 191, Figure 200). In this area, regulation concerning the type of industrial activity allowed are reinforced. As well, agro-alimentary industries are given incentives to use local agricultural products (Figure 200, Figure 201, Figure 202, Figure 203).

Table 63-Planning Guiding Principles for coastal urban landscape character zone J
Source: Author

	Layer	Guidelines
CHARACTER ZONE J	Physical	<ul style="list-style-type: none"> • Improve accessibility to the water edge by designing a seamless transition between the edge of the landfill and the water • Create alternated parking on the side of the roads and a parking space for the trucks to alleviate their impact on the Iskandar gulf • Provide amenities for the public spaces such as lighting, benches, shading, public WC • Enhance transversal connectivity by rehabilitating the old river streams into green corridors linking the inner Dekerman to the waterfront • Relocate the Gas factory towards the landfill, in the industrial area as the zoning prescribes to implement the direct green corridor linking the "Hesbe" to the waterfront • Create a green belt around the industrial activity and link it to the Sayniq river
	Socio-economic	<ul style="list-style-type: none"> • The reclaimed land is used for industrial activity in this zone and for the implementation of a secondary water treatment tank • Enhance connectivity between the city and the waterfront by creating an economic ecosystem revolving around agro-industry and recycling the solid waste • Promote urban agriculture as a strategy to alleviate poverty in the area and encourage inclusion and expand this practice toward the reclaimed land

Legal	<ul style="list-style-type: none"> • Preserve the green spaces in this area and give incentives for agricultural practices • Impose a 100m setback from the water edge for protection from natural disasters and for public use froming a green belt around the industries • Prescribe a law for the protection of the remaining green agricultural spaces • Impose a biotope percentage on the plots to be built, preserving a continuity of the ecosystem from inner Saida towards the waterfront
Environmental	<ul style="list-style-type: none"> • Enhance green corridors across the city to promote continuity of the ecosystem from hinterland towards the coast • Allow vegetation to grow on the landfill, and create a natural reserve • Promote the use of nature-based solution for the protection of shore, such as flood retaining vegetation

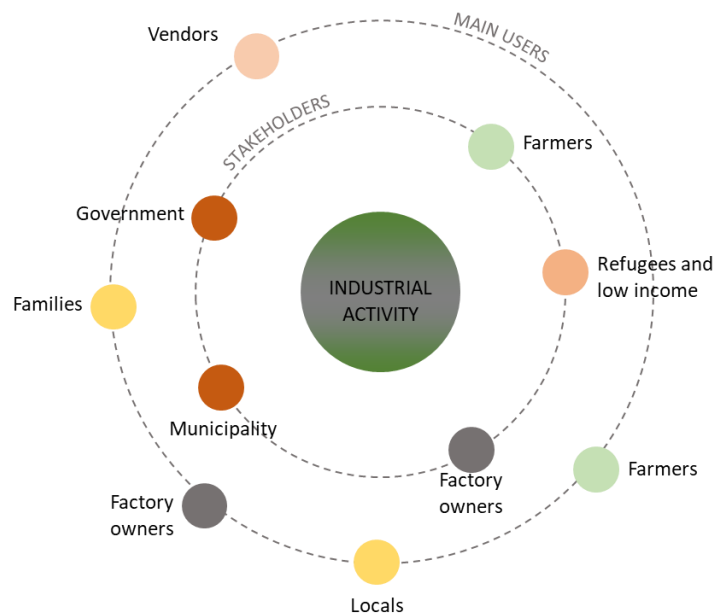


Figure 200-Main activity, stakeholders and main users in Character Zone J
Source: Author

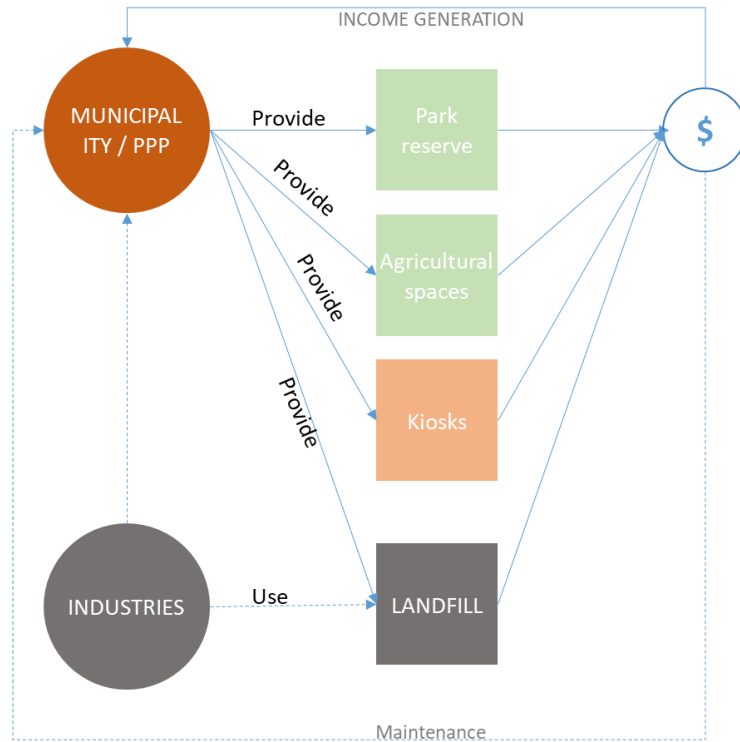


Figure 201-Economic cycle in zone J
Source: Author

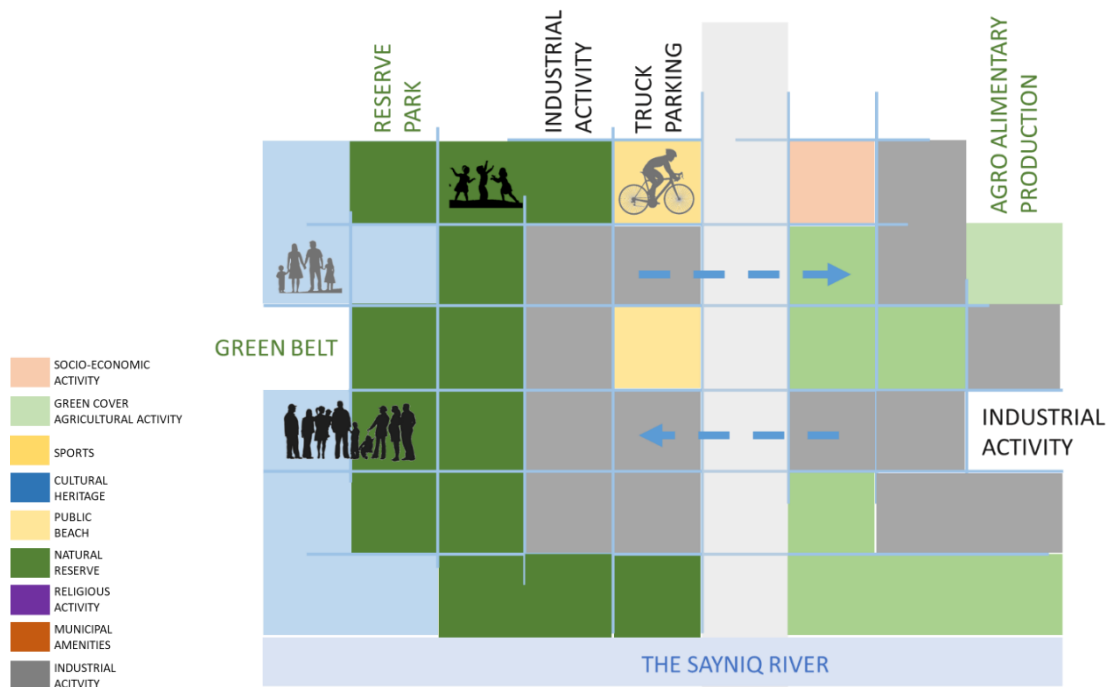


Figure 202-Schematic distribution of landmarks and socio-spatial activities in Character Zone J
Source: Author

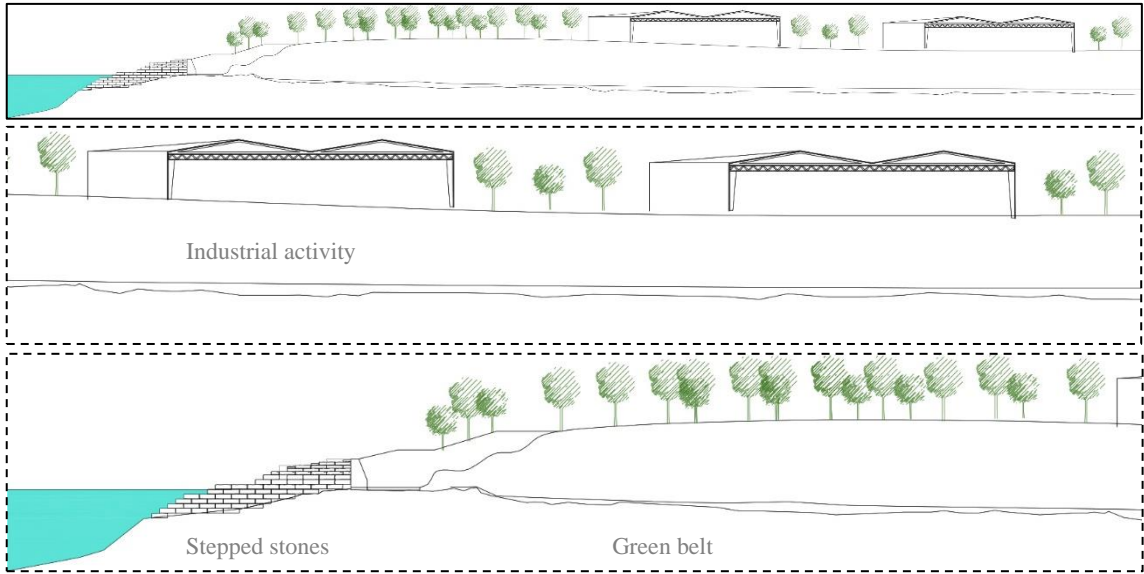


Figure 203-Section 14
Source: Author

C. Proposed implementation framework

The implementation of this project follows the principles of ICZM , informed by previous experiences of cultural regeneration in the Mediterranean context such as in Barcelona (Jauhiainen, 1995), Ancona (Waterfront Ancona 3.0, 2020) and Genoa(Galdini, 2005).

The implementation process is based on the principle of integration discussed in ICZM. Through horizontal integration, coordination between the different stakeholders and users of the waterfront is ensured. While vertical integration ensures coordination between the different governmental entities and allows a more holistic approach towards the coast of south Lebanon, the Lebanese coast and the Mediterranean coast in general.

1. *Institutional arrangements:*

Before delving into the details of the vertical and horizontal integration scheme, some institutional arrangements are required.

Municipal Coastal Committee: On a local level, an independent municipal body specialized for the coast of Saida should be created. At present, the municipality of Saida has a committee in charge of the agricultural market, the souks and the coastal corniche ¹⁶. Given the complexity of coastal areas, a dedicated committee for the coast should be created. Continuous training should be provided for this committee in partnership with international Mediterranean NGOs such as Medcities.

¹⁶ لجنة الحسبة و الاسواق التجارية و الكورنيش البحري
(<https://www.saida.gov.lb/page6/%D8%A7%D9%84%D9%84%D8%AC%D8%A7%D9%86>)

Union of municipalities Coastal Committee: On a district level, a similar body should be created within the union of municipalities of Saida and Zahrani. This Committee will group representatives from each municipal committee of each coastal city within the union's boundaries.

Governmental coastal committee: This entity will operate similarly to the "Conservatoire du Littoral" in France. This entity will be in charge of the management of coastal areas, protection of coastal natural heritage, promotion of the coast as an asset, and safeguarding the publicness of the coastal domain. This entity will oversee the implementation of coastal development projects and will coordinate with the different ministries (tourism, public works, environment, CDR).

2. Principle on integration:

Horizontal integration: Horizontal integration is realized through the creation of steering committees in each Character Zone. These steering committees are managed by the municipal council and should include: Coastal lands owners, Waqf (Muslim and Christian), NGOs' related to the waterfront, Union of fishermen of Saida, Union of craftsmen of Saida, Union of traders of Saida, Union of industries of Saida.

Coordination between these entities is essential to elaborate a vision for each Character zone. These visions will be coordinated by the Municipal coastal committee to address the coast of Saida in its entirety.

Vertical integration: Vertical integration will ensure the scalability of the approach. It is realized through coordination between the character zone level, the municipal level, the union of municipalities' level, and the national level.

The integration scheme is summarized in Figure 204.

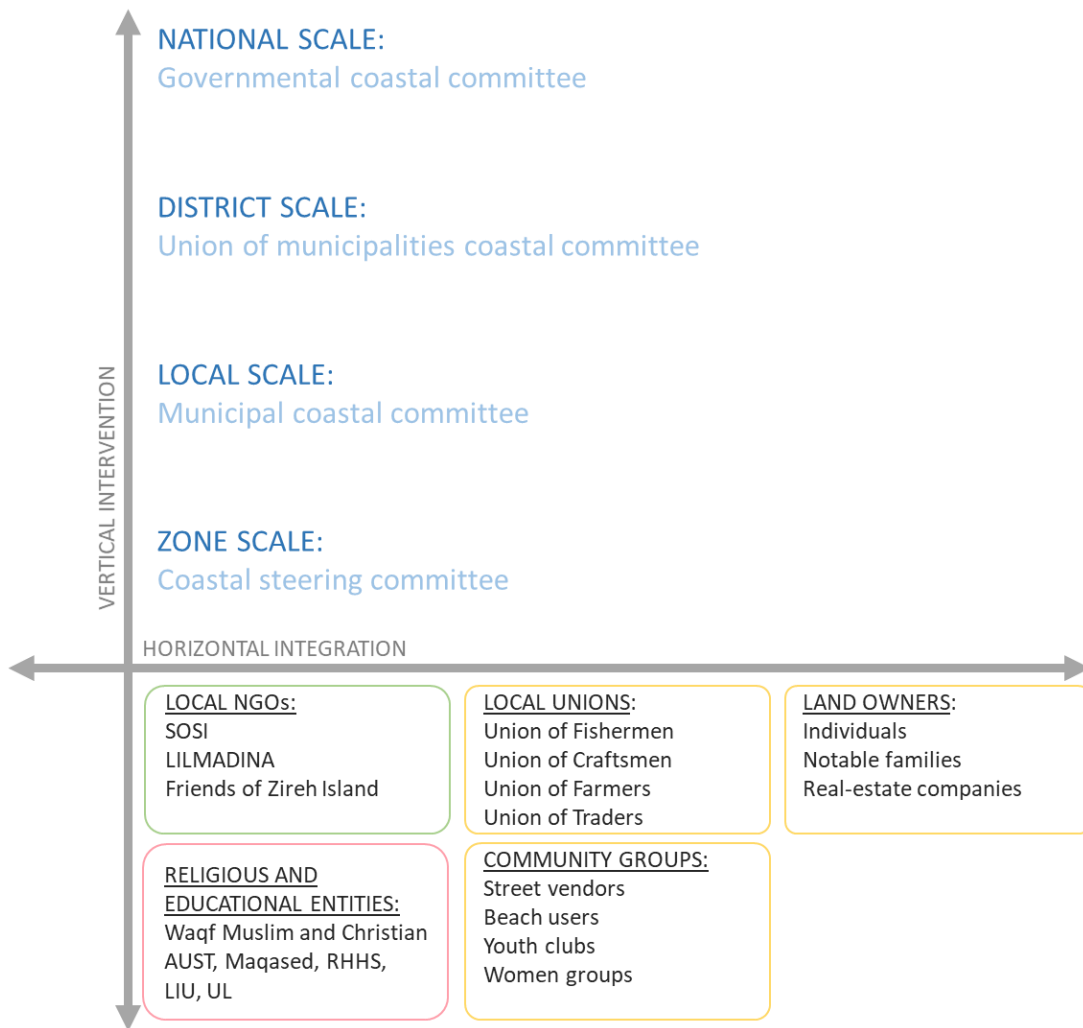


Figure 204-Horizontal and vertical integration
Source: Author

3. Execution, Operation and Financial considerations:

Given the current economic crisis, the lack of governmental funding and the scarcity of municipal funds, the execution of the project is based on two approaches: Public-Private Partnerships and Donors funding.

Public-Private Partnerships: The operation and implementation of the project is realized through a PPP (Public Private Partnership) (Figure 205). The municipality should lead this partnership, given that it owns the biggest number and area of coastal

lands. The board of the PPP is formed by investors and developers, NGOs (such as Asdikaa el Zireh) and a representative from each steering committee of each CZ. Within this arrangement, the private sector provides the funds for the implementation of the project while the municipality provides the land required. The private sector Builds the projects –Operates it for a limited time frame - Transfers the project back to the municipality. The assets that are concerned by this process are as follows: the right to operate the touristic Eco-park, the right to operate the commercial and touristic port, and the right to develop a residential project in zone H where a fixed percentage of social housing is determined.

It is important to note that the Municipal Coastal committee will oversee the implementation of the project and will set the guidelines of the operation in coordination with the steering committees and the private sector.

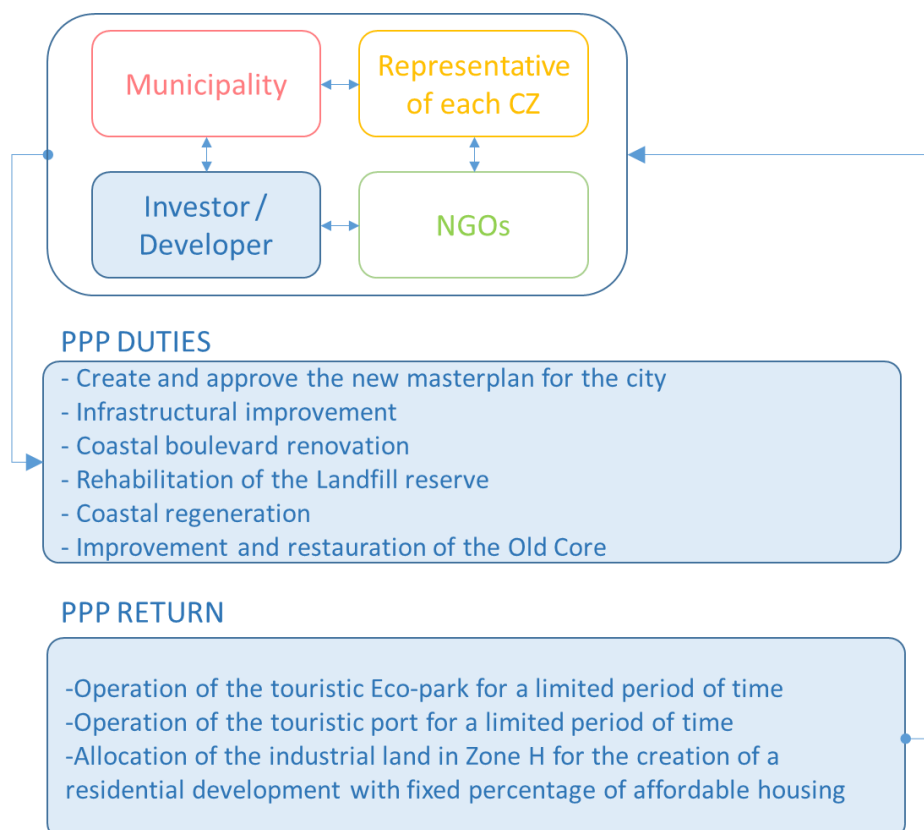


Figure 205-PPP framework
Source: Author

Funding from donors: Funding for the project can also be sought from international and national donors. In this perspective, Mediterranean NGOs such as COPEMED¹⁷, and MEDCITIES¹⁸. Additionally, these NGOs can provide continuous training and consultation.

4. Regulatory and planning arrangements

To ensure a successful implementation of this project, new planning tools should be considered. In Lebanon the most common planning tools used are Zoning and Land pooling. However, these tools are dated and rigid when facing coastal development, especially in the context of a Mediterranean city. Therefore, it is advised to use the character zones approach, rather than zoning approach, for its strategic approach informed by an integrated analysis. Secondly, tools such as Transfer of Development Right (TDR), and density bonuses are relevant in this context. Valuable land can be reacquired by the municipality, using these tools, and put in the service of common good. Moreover, taxes such as value recapture are beneficial in such conditions. It will help mitigate the threat of gentrification, while generating income for the municipality to maintain the rehabilitated public spaces.

¹⁷ supporting fisheries management in the Mediterranean <http://www.faocopemed.org/>

¹⁸ MedCities helps empower Mediterranean local governments to achieve their strategic priorities <http://www.medcities.org/en/presentation>

CHAPTER VII

URBAN DESIGN PROPOSAL FOR THE OLD CITY COASTLINE

Following the city scale strategy elaborated and the design principles set, the urban design proposal for the chosen character zone (The Old City) is discussed in this chapter. In the first section, the choice of CZ-F is argued followed by the design strategy for the designated character zone. This Strategy is expanded on the physical, socio-economic, regulatory, and environmental layers of the city. In the second section, the urban design intervention in CZ-F is elaborated. In this character zone, the choice of the site (Baher El Eid and the Fishermen port) is argued, followed by a review of the main ideas and programs, leading to the design approach and the masterplan. Finally, parts of the proposed design will be viewed on a more detailed level.

A. Old City of Saida: Character zone F urban design strategy

1. Selection of Character Zone F

Coasts are dynamic spaces where economic strength, competitiveness, human capital, population, migration processes, and cultural exchanges are increasingly concentrated. However, in the case of Mediterranean historic cities, the old port area offers a particular landscape, the product of a complex system in which socio-cultural, economic and ecological systems dynamically intertwine (Fusco Girard, 2013). In fact, historic port areas convey through this landscape a combination of social and natural creativity and help shape the true identity of the city. In most old port cities, the old port

represents the space where the city reaches the sea. This was the case in Saida before the pavement of the maritime boulevard. However, the current situation of the coast is painted differently. The city is now segregated from its maritime domain, and the historic link between the Old City and the sea is lost.

Given the importance of the Old City, its cultural heritage weight, and its distinctive landscape, I have chosen to intervene on Character Zone F in an attempt to reestablish connectivity between the Old City and the Sea (Figure 206). I will take advantage of the diversified socio-economy of this site, its wide array of problems, and its diversified landscape challenges in order to create a pilot intervention that will inform the other intervention along the coast.

Moreover, the construction of the new commercial port in Saida, means that the commercial activity will be moved from the Old port of the city. Thus, the design elaborated takes advantage of this opportunity to create a people-centered, culturally-led, place-responsive intervention, integrating all socio-spatial practices, economic activities, environmental challenges, cultural heritage, and legal framework.

Additionally, the municipality of Saida is working on executing the proposal of Barcelona for the waterfront of Saida and the development of the fishermen port. However, this project lacks flexibility, does not respect the context, ignores the social aspect of the city, and reduces ecological impact into some greening practices.

Therefore, the proposed intervention is an alternative design for the coast of the Old City and the fishermen port, focusing on the immediate and long term sustainability. This proposal is an effort to demonstrate to the municipality and city stakeholders the true value of their coast as a main asset developed in a sustainable approach for the present and the future needs.

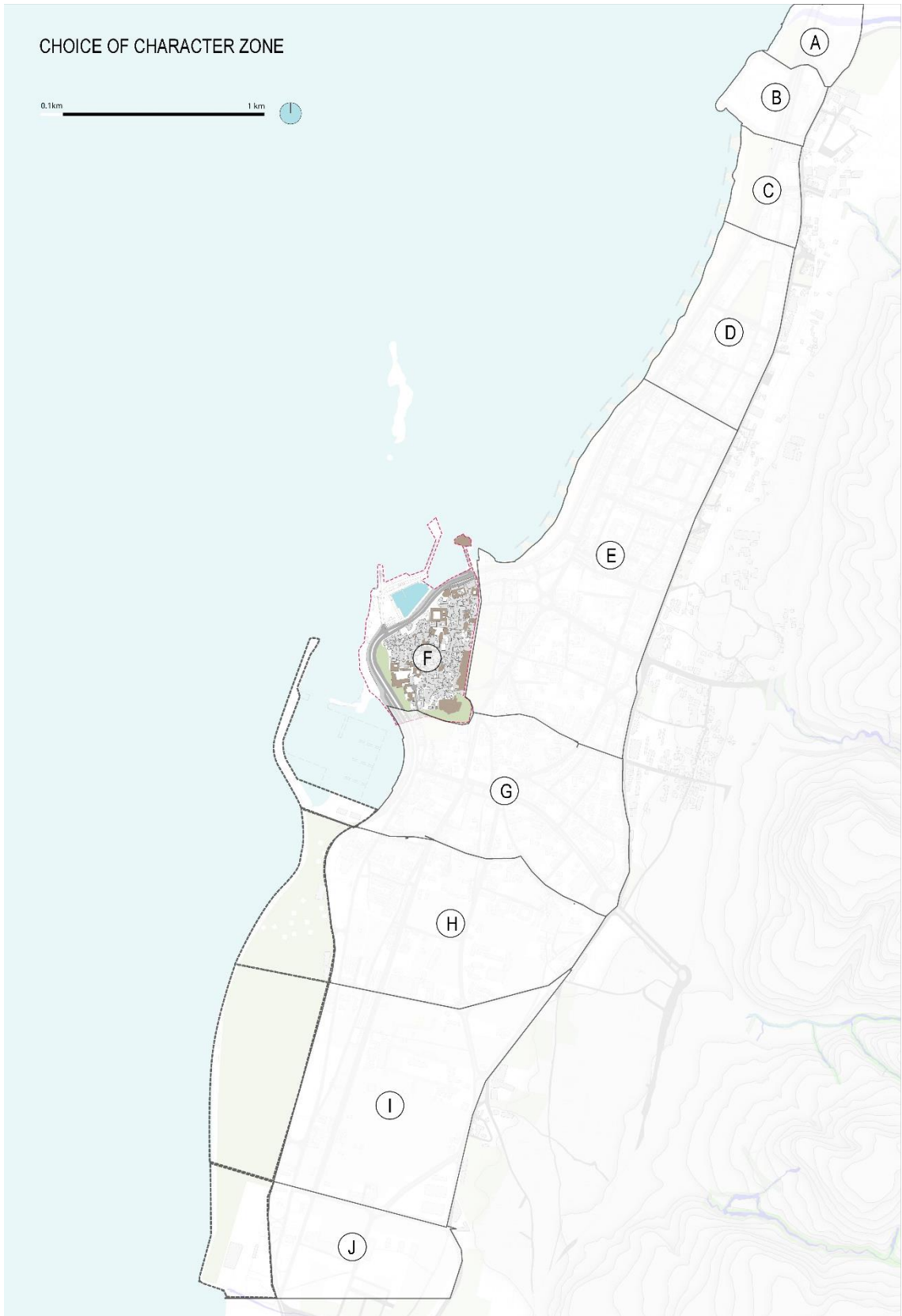


Figure 206-Choice of Character Zone F
Source: Author

2. Old City of Saida: Character zone F urban design strategy

The intervention on Character zone F follows an integrative approach, capitalizing on the cultural heritage of the Old City and the availability of public land in order to restore accessibility and connectivity to the coast and act as one of North-South connecting nodes. The aim is to regenerate the coast of zone F by tackling the built heritage, the intangible heritage and the natural heritage, thus integrating the physical, the social, the economical, the infrastructural and the legal aspects simultaneously. The design proposed is explained based on these layers while taking into consideration that many strategies traverse several layers.

a. Physical strategy:

The main strategy adopted in Character Zone F on a physical level is using peripheral open spaces of the Old City, the street, and shoreline as an integrated physical space reconnecting the Old City the sea (Figure 207). This strategy is applied by transforming the road it into a shared street, and by promoting mobility using a tramway, connecting the hinterland to the waterfront and connecting all the CZ along the waterfront. The shared street typology caters for the different needs of the users in a reduced space and reinforces the appropriation of the ground by people rather than by cars. Consequently, the public space gained after the reduction of the boulevard is put to use along the waterfront by expanding the existing public spaces and creating a continuity between them. As such, Abou el Abed tents is connected with Bahr el Eid and with Sheikh Zayed Garden and all this public space expands towards the coast, preserving the same materiality between both sides of the street and treating the street itself as a continuity of the public space. Along the shared streets, side parking is

accommodated, public amenities are provided, and street vegetation is put to use to provide shade for users.

Transversal connectivity between the inner city and the coast is provided through rehabilitating Chakirieh road as a link, and rehabilitating the South gate of the city and linking it to the corniche. In addition, the entrances of the Old City are highlighted and extended towards the coast, thus connecting Bab el Sarail square to the waterfront and extending the interior of the city towards the coast.

In terms of rehabilitating the existing public spaces, Bahr El Eid project initiated by Saida's Observatory for Social Impact (SOSI)¹⁹ has to be extended towards the fishermen syndicate. While the current fishermen syndicate building is removed, to be replaced by light structure buildings similar to the tent structure constructed. Similarly, the temporary fishery currently on the fishermen port and the temporary structures used for the commercial activity of the port are removed to concede the space for the fishermen port. Finally, along the interface between the road and the coastal edge, accessibility is ameliorated by implementing seamless designs connecting the upper level of the road with the lower level of the port and the preserved rocks.

In conclusion, the main strategy is implemented by providing an ease of access and movement for the users of the space, by adding more green spaces and enhancing existing ones, and by providing more amenities animating the public space.

¹⁹ <http://www.saidaobservatory.org/>

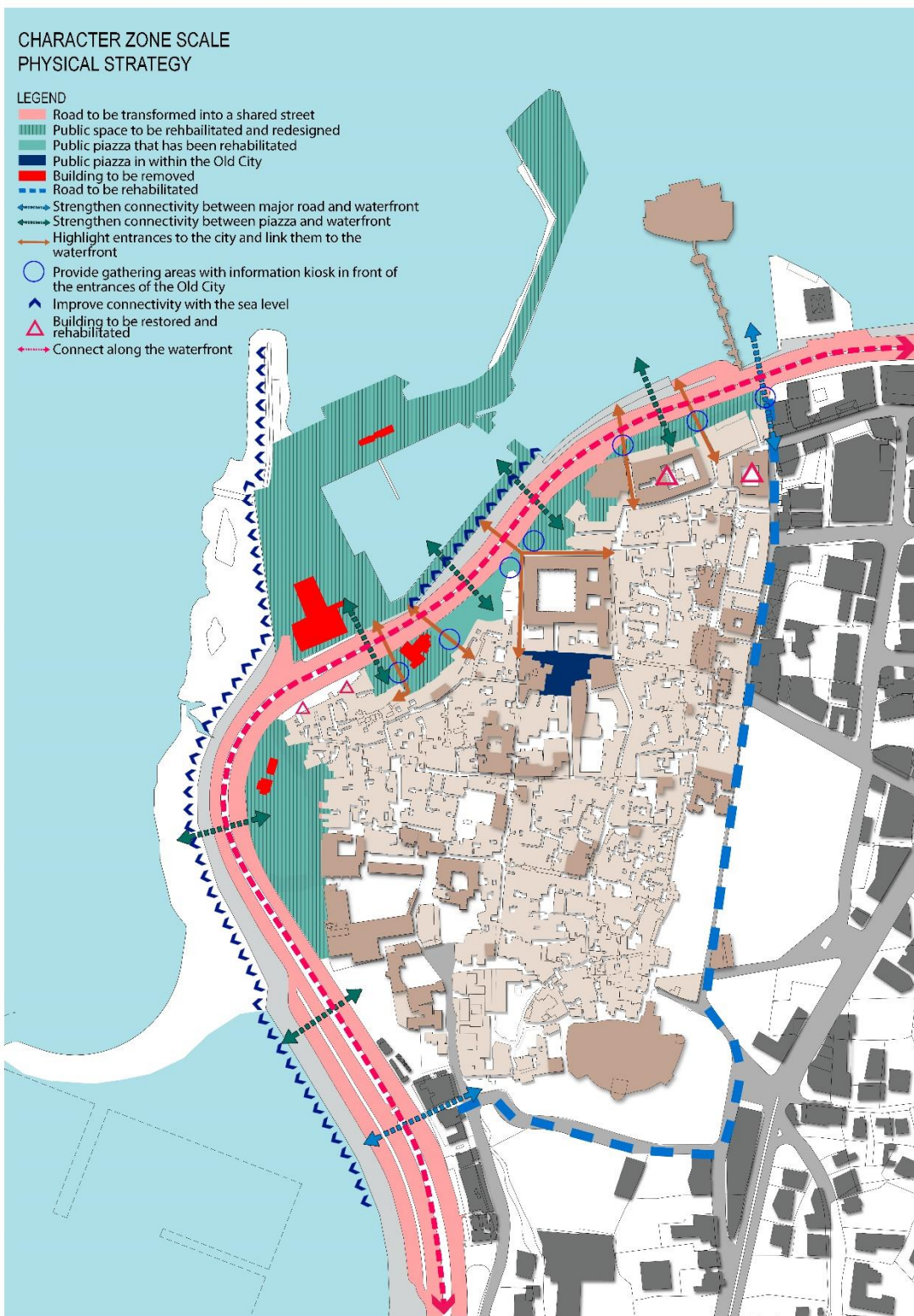


Figure 207-Physical strategy on the Character Zone scale
Source: Author

b. Infrastructural strategy:

The main strategy adopted in Character Zone F on an infrastructural level is enhancing mobility of pedestrians and their ease of access. In that light, the transformation of the coastal road to a shared street is coupled with other measures to improve accessibility and connectivity of the coast. First, parking spaces are accommodated along the road. In addition two underground parking plots are recommended, the first parking under the Baher el Eid space, to be connected underground to the fishery, and the second parking is under the Sheikh Zayed garden. Moreover, major parking plots are allocated on the periphery of the Old City, towards the Nejme square and towards the Mina Iskandar.

Tramway stops are planned near the important nodes of the Old City and around 400m apart. The first stop serves the Sea Castle, Abou l Abed tent, El Bahr mosque, the second stop serves the fishermen port and the Bahr El Eid, the third stop serves Al Maqased School.

As for the current port, the commercial/industrial use, hindering the identity of the fishing industry, is removed towards the new port. The grey infrastructure used to protect the port is replaced by a Nature-based solution not only mitigating the dangers of the sea but also enhancing habitats, promoting socio-spatial activities, revitalizing the fishing and tourism sectors, and opening up the view from the port towards the sea and the natural rock bed.

This strategy will alleviate vehicular domination on the coast of the Old City, improve mobility and accessibility along the coast, and enhance connectivity between the different public spaces along the street



Figure 208-Infrastructural strategy on the Character Zone scale
Source: Author

c. Socio-economic strategy:

The strategy employed is based on the concept of synergy, capitalizing on the cultural heritage, mainly the intangible practices. Synergies are created between the two sides of the road in order to catalyze connectivity and empower accessibility.

The existing buildings on the waterfront are considered as activators of the public space. The area in front of Abou el Abed tent is activated as a food node expanding the activity of the restaurants in this area and capitalizing on the sweet production happening in Khan el Riz. The area near Al Bahr mosque is rehabilitated into a space of prayer and contemplation, while Bahr el Eid is activated as a playground and a space for the expansions and innovations of crafts in relation to the fishing sector. The space near Maqased is activated as a public park in relation to the Omari mosque and playground in relation to the school and in continuity with the sports fields enclosed in this institution.

In this character zone, fishing is designated as a socio-economic activity linking the city to the sea, given that the major number of fishermen resides in the old city of Saida. Therefore, the port is activated as a fishing port, a cultural landscape that expands the identity of the Old City towards the sea. Through festivities and events, the waterfront is promoted as a space reconciliation and cooperation between craftsmen and artists, fishermen and craftsmen, fishermen and NGOs. In this aim, a circularization of the economy is required, where the craftsmen can employ their skills in order to supply the needs of the fishermen, such as baskets weaving, boats construction and reparation, nets weaving. These collaborations aim to empower the fishermen, teach them new techniques, improve their skills and their productivity.

In the Old city, networks of heritage are elaborated such as network between the religious buildings and networks of museums. These networks are linked to the coast through the main entrances of the city, promoting the hidden heritage and expand it towards the coast.

The role of the waterfront as a catalyzer of reconciliation is highlighted in this area though the integration of the refugees in the overall development of the waterfront, and their implication in the fishing sector under the supervision of the syndicate. Moreover, the sustainable coastal development elaborated, targets also the livelihood of the marginalized classes in Saida, living mainly in the Old City by integrating them in the rehabilitation of the space and including them in workshops to promote their skills in the crafts and fishing industries. Additionally the circularization process of the crafts signifies that a source of primary products should be sustained, these products can be provided following recycling and reusing of trash rather than putting it in the landfill, which will also generate income for the marginalized.

Finally, this strategy aims to achieve social cohesion, improve the livelihood of the low-income dwellers of the Old City, animate the coast of the Old City with diverse economic and social activities, and render it more attractive for locals, visitors and tourists.



Figure 209-Socio-economic strategy on the Character Zone scale
Source: Author

d. Environmental strategy:

The environmental strategy for this zone is based on three principles: ecological regeneration, addressing pollution, and increasing green cover. Through this strategy, connectivity along the waterfront is enhanced by creating green buffers between the Old City and the neighboring CZ, in addition to the continuity of the landscape of the shared street. Additionally, a green belt is proposed around the Old City, linking the open spaces such as the Murex hill, the Zoueitini Garden, the area around the St Castle, the cemeteries and linking them to the coast. In this light, the cited open spaces need to be designed and enhanced in terms of green cover, landscape and amenities.

Accessibility of the water edge is promoted with Nature-based solutions, replacing the grey infrastructure currently constructed. Among the solutions used, the seawalls can be replaced by submerged reef balls, that will deflect the power of the waves. Coupled with the use of stepping stones, and the use of flood reducing green spaces, the incident waves' energy would be absorbed without causing any damages, while the ecosystem would be regenerated.

A reduction of the concrete footprint is recommended, given that it has majorly disfigured the distinctive landscape of the old port and has minimized the impact of the Sea Castle as a valuable monument, while also covering the natural rock. Consequently, the preservation and protection of the natural sea rock bed is recommended, as this landscape feature is essential for the fishing practices, promotion of habitat and socio-spatial activities. Taking advantage of the shape of the port and dock near the Sea Castle, the creation of an eco-engineered bay in continuity with the rock bed is an opportunity for the creation of a unique asset aiming the promotion of the ecological value of the bay, and providing space for diverse practices.

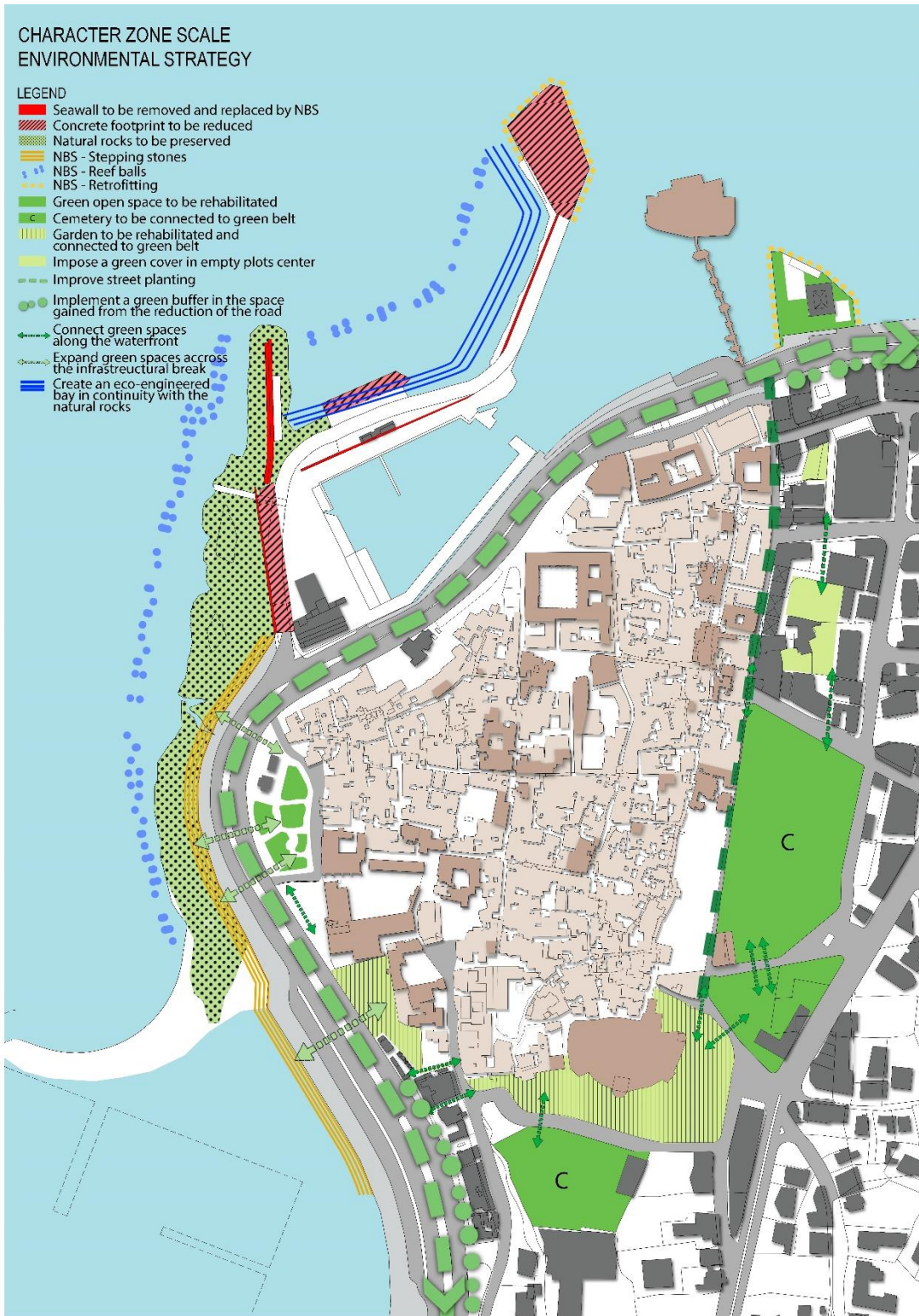


Figure 210-Environmental strategy on the Character Zone scale
Source: Author

e. Regulatory strategy:

The regulatory strategy for this zone is based on three principles: preservation of the existing heritage, enhancement of the coherence of the coastal fabric, protection of the publicness of the coast. In this light, a protection perimeter for the Old Core and monuments needs to be set in place and within this perimeter, construction should be light, reversible and minimalist. Additionally, restrictive regulations concerning the colors, materials and textures used for the coastal built fabric should be implemented to preserve homogeneity. New buildings on the port should be inspired by the typologies of the Old Core, not by replicating the typology, but rather by considering the mass, volume, opening, textures and other qualities of the old fabric in Saida.

The Old port area should be zoned as an extension of the Old City, where the maximum height is set to two floors, and the buildings footprint is pre-set. In addition, as recommended by the SUSDS, the zoning of the Old City should be reviewed in given its limited framework, and new tools should be employed to allow a better restoration of the old urban fabric.

In terms of environmental regulations, planting percentage of trees in front of the immediate neighboring lots to the Old City should be imposed to create a buffer zone. The natural rocks should be considered as a reserve, with no construction permitted. Additionally, protection laws for the green belt proposed should be set in place.

Additionally, the municipality should implement regulations regarding the closure of the roads during festivities, mainly the Eid. Moreover, to promote social cohesion, incentives for the integration of refugees in the fishing sector and the crafts sector should be provided, in form of tax breaks.

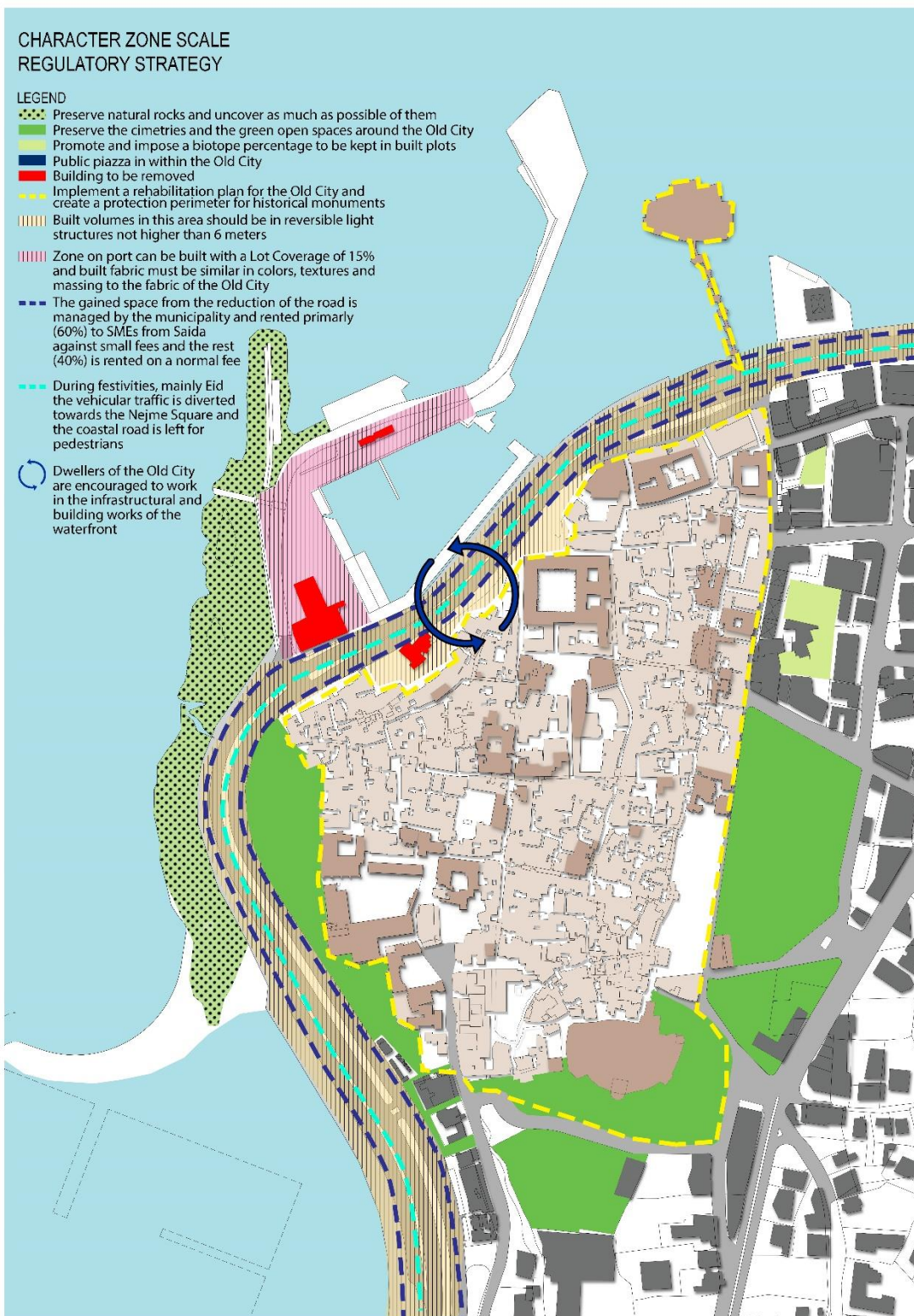


Figure 211-Regulatory strategy on the Character Zone scale
Source: Author

B. Bahr El Eid and the fishermen port: Site-level urban design

1. Site selection:

Within the context of the importance of old cities and their port areas discussed earlier in the choice of the character zone, the site chosen (Figure 212) represents several advantages. First, the relation between the city and its fishing port is rooted in history and is characteristic of Saida. In fact, the city was named after the fishing activity taking place on its coast. Second, Bahr El Eid represents the interface between the Old City of Saida and the old port. This space is highly present in the social memory of the locals and its location is strategic for establishing connectivity between the city and the port. Third, the distinctive landscape of the port and the coast of the Old City presents the opportunity of working with several types of connections between land and sea, representing a wide array of solutions for similar cases across the bay.

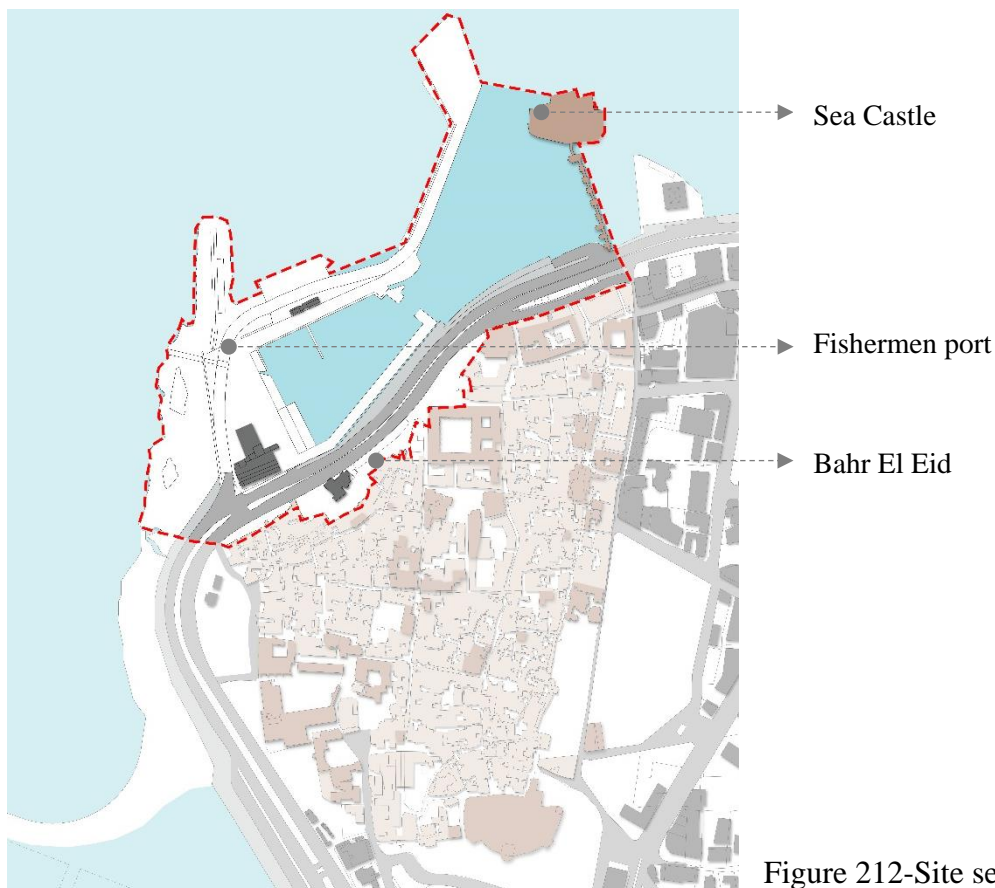


Figure 212-Site selection

2. Concept and design approach:

The main approach aims to reestablish connectivity and accessibility between the Old City and its port through to use the peripheral open spaces of the Old City (Bahr El Eid, the space facing Masjed El Bahr, Abou el Abed tent) , the street, and shoreline as an integrated physical space reconnecting the Old City the fishermen port.

The design strategy takes its base from the existing built fabric and evolves it into a contemporary language that builds on the past in order to serve the future. Design elements, structure, materials, functionality are tackled in this section in order to show that the integrative approach is spans from the design principles elaborated to the design implementation.

To reconnect the Old City with the port, four design strategies are employed:

- (1) The old coastal line: The aim of this strategy is first, to reduce the impact of the street by dissimilating it under an organic line. Second, this strategy will bring back an element of the social memory of the locals. The old coastal limit is retraced and emphasized as a design element, which will accommodate functions related to the history of the coast, such as oral history booths.
- (2) The grid: The aim of this strategy is to emphasize connectivity and evolution between the old fabric of the city and the new proposed design. The old grid of the vernacular fabric is extended to meet the old coastal limit and then evolves into a new orthogonal language. Thus showing complementarity between the two elements.
- (3) The entrances to the Old City: This strategy aims to connect the Old City interior spaces of the Old City (the souks, Bab el Sarail square) with the

sea. The main entrances of the Old City are highlighted as corridors linking the interior of the old fabric with the coastal development. Between these main passages, public spaces are defined in relation to the buildings of the maritime façade. Each space will cater a different function in relation to the building bordering it. The function activated expands beyond the street, towards the port.

- (4) Continuity and Diversity in materiality: In term of treatment, a differentiation of color and texture is recommended between the passages and the public spaces. The passages are a continuity of the pavement of Old City. While the public spaces are gradients, dense near the old fabric and clearer near the port, to convey a sense of pushing the public space towards the coast and the fishermen port.

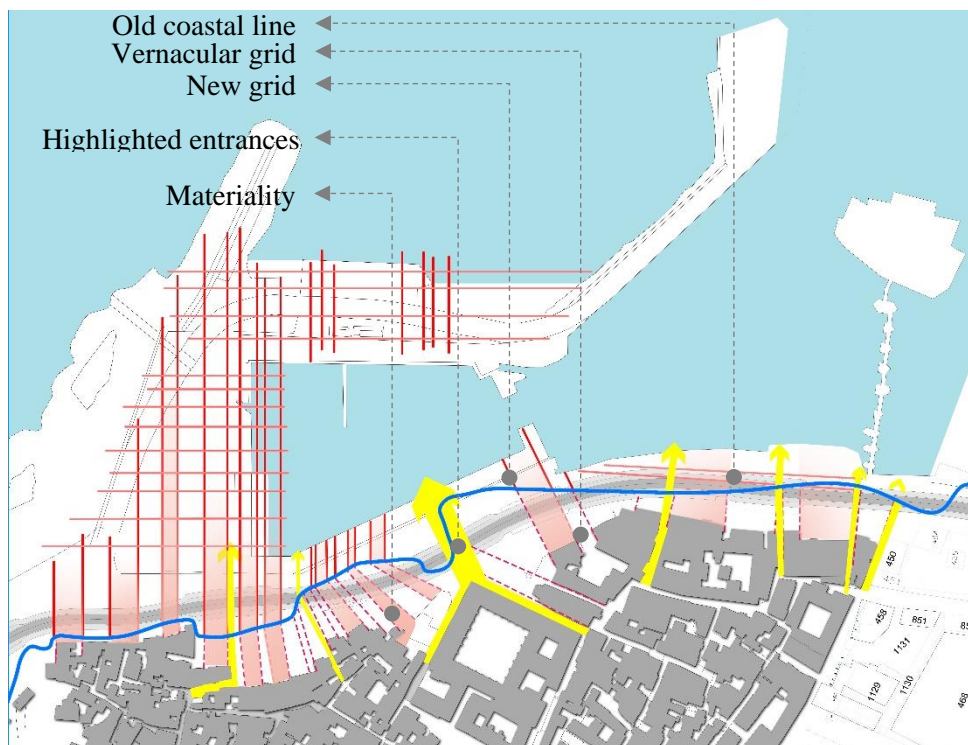


Figure 213-Urban design strategy on the site scale
Source: Author

3. *Overall masterplan:*

a. Program:

As discussed in the previous section, on the coastal edge of the Old City, the entrances' corridors delimit platforms along coast. Each platform is activated by the building on its edge (

Figure 214). In this perspective, six platforms are created:

- (1) Platform 1: Aiming at reigniting the social memory of this space, this platform hosts a big water feature covered by a retractable mesh. It constitutes a space of gathering and recreation.
- (2) Platform 2: The space replacing the syndicate is activated as a continuity of the old city, where craftsmen produce the equipment of the fishermen.
- (3) Platform 3: The playground of Bahr El Eid is kept in this zone and integrated in the new design. This space is expanded towards the port with a small volleyball court, and landscape features serving as a playground for kids.
- (4) Platform 4: The space in front of the mosque is activate as an extension of the mosque for festivities and contemplation. The grid in this zone morphs towards the Qiblah indicated the direction taken for prayers.
- (5) Platform 5: Facing Khan El Riz, the Abou el Abed tent is expanded, and enhanced. Additional spaces are provided for food kiosk, street food vendors and outdoor live kitchens.
- (6) Platform 6: aims to provide a gathering space connecting the Chakirieh road with the Sea Castle. This space serve also as a gathering point at the entrance of the Old City.

Towards the port, a series of spaces are gathered along a promenade. This promenade is catered by three different paths:

- (1) The shared street expands to the port through a seamless landscape leading to a green corridor.
- (2) A skywalk is provided (highlighted in pink), in the aim of giving a different view of the city and the port, and to provide an alternative path without passing through the fish market.
- (3) A service path is provided all along the port basin. It caters for the needs of the fishermen and their boats. This path meets the city through the boat building workshop.

The first part towards the city is the commercial functions. Next to it are the institutional functions, followed by an open public space, leading to the food court. Afterwards a cultural space is designed, culminating in an events piazza. Another event piazza is planned near the citadel; this piazza will host a lighthouse and amenities for festivities.

In this zone, four types of docks are provided (Figure 215). The main basin is divided into 2 entities; the lower part is a dock for boats to be rented, while the upper dock is the fishermen boats. Facing Masjed el Bahr a dock for water taxis is provided. In addition, facing the citadel, a dock for sailboats is designed. Zones distribution is presented in

Figure 214, followed by the overall masterplan showing the different functions (Figure 216).



Figure 214-Zones distribution
Source: Author

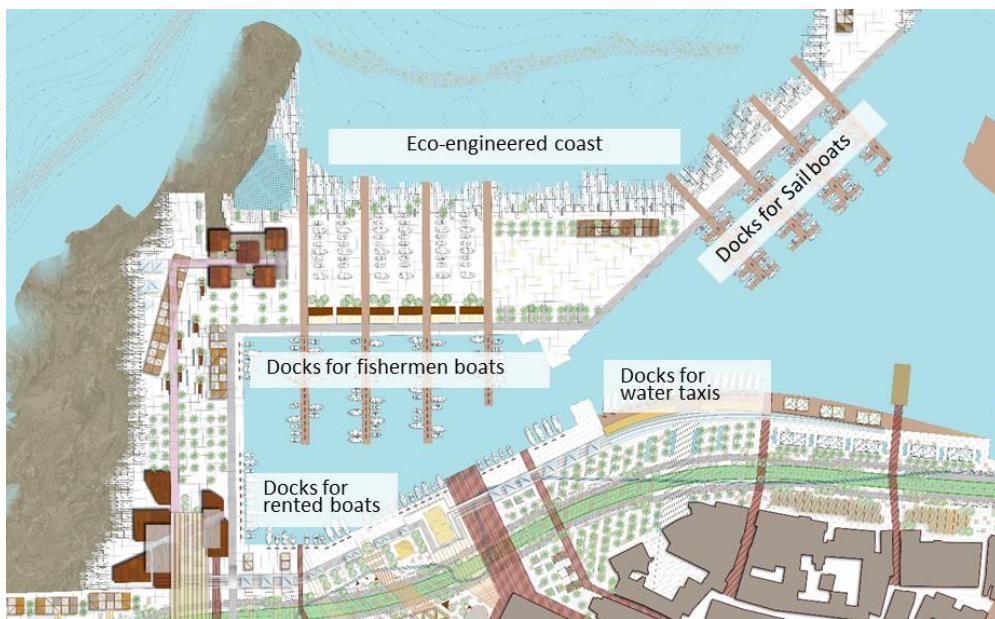
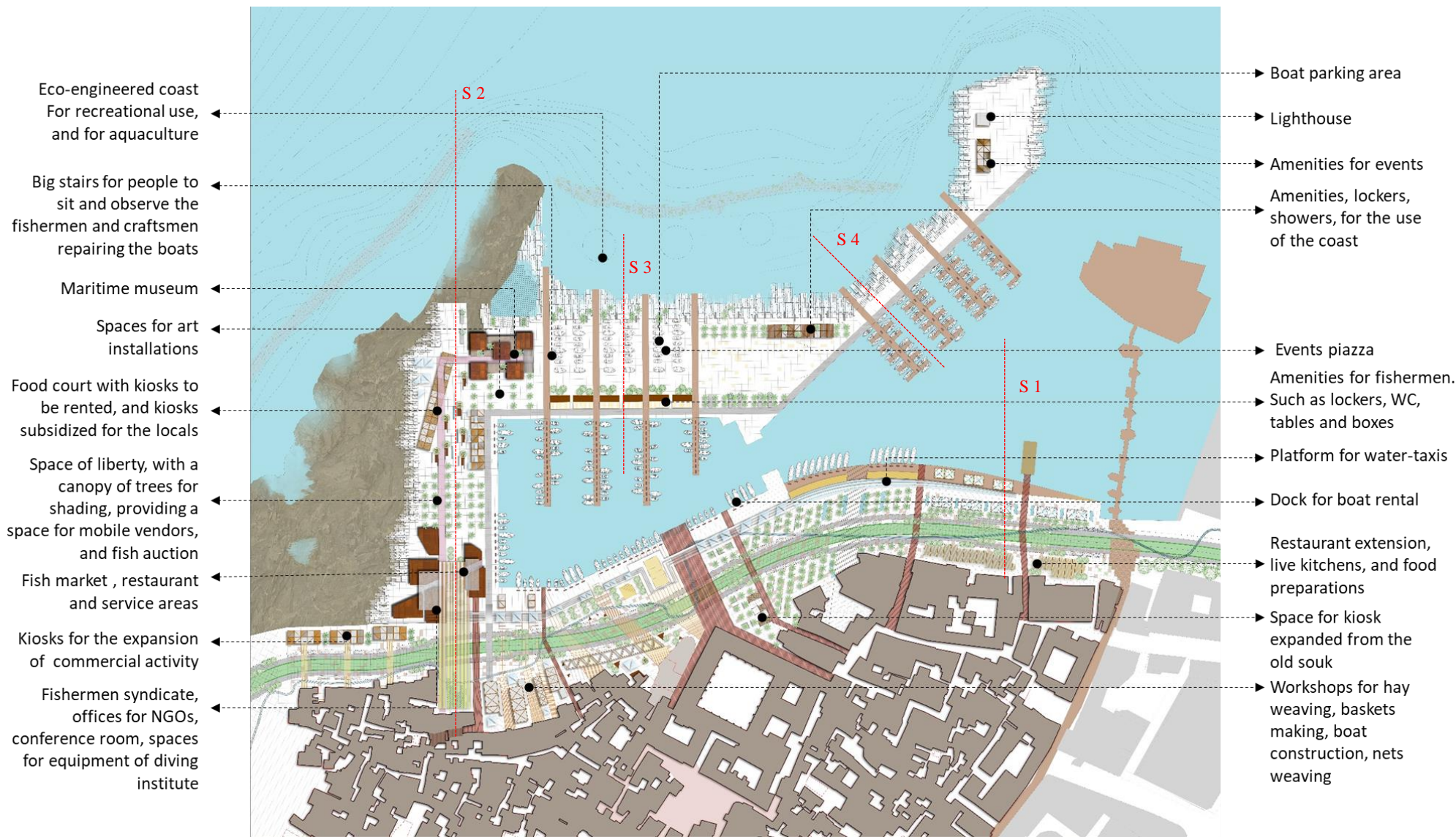


Figure 215-Docks distribution
Source: Author



- ← Eco-engineered coast
For recreational use,
and for aquaculture
- ← Big stairs for people to
sit and observe the
fishermen and craftsmen
repairing the boats
- ← Maritime museum
- ← Spaces for art
installations
- ← Food court with kiosks to
be rented, and kiosks
subsidized for the locals
- ← Space of liberty, with a
canopy of trees for
shading, providing a
space for mobile vendors,
and fish auction
- ← Fish market , restaurant
and service areas
- ← Kiosks for the expansion
of commercial activity
- ← Fishermen syndicate,
offices for NGOs,
conference room, spaces
for equipment of diving
institute

- Boat parking area
- Lighthouse
- Amenities for events
- Amenities, lockers,
showers, for the use
of the coast
- Events piazza
- Amenities for fishermen.
Such as lockers, WC,
tables and boxes
- Platform for water-taxis
- Dock for boat rental
- Restaurant extension,
live kitchens, and food
preparations
- Space for kiosk
expanded from the
old souk
- Workshops for hay
weaving, baskets
making, boat
construction, nets
weaving

Figure 216-Overall masterplan

4. Parts of the proposed design:

a. Platform 2 and 3 (the Workshop and the Playground) :



Figure 217-Plan of Platform 2 and 3
Source: Author

i. Concept and design approach:

This zone is designed in continuity with the existing fabric. Its aim is to provide a transitional space between the city and the sea, The grid used morphs following the existing built elements, such as the metallic structure in platform 3. Within this grids, the workshops are constructed in a shifted manner, recalling the image of the boats that used to dock on this coast (Figure 218). Visual and physical connectivity is preserved

through corridors between the workshops. As for the metallic structure in platform 3, its porosity preserve visual connectivity as well.

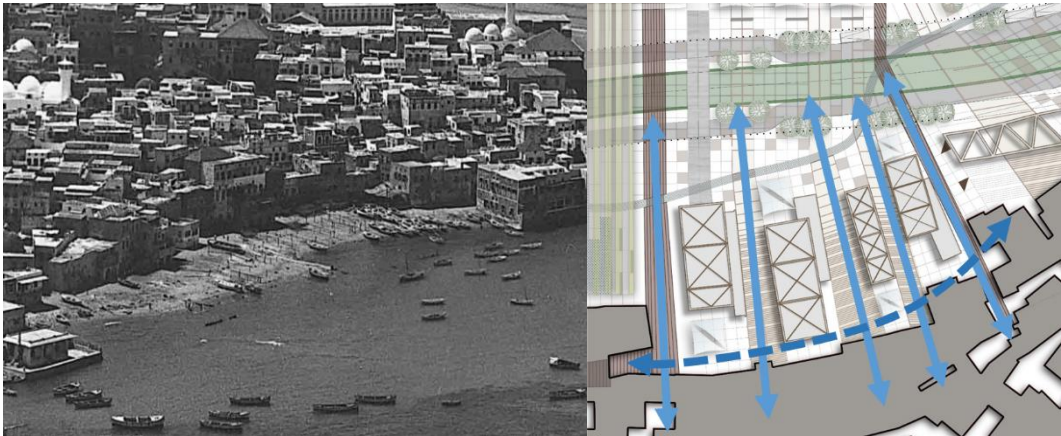


Figure 218-Strategy of Platform 1 and inspiration
Source: Author

ii. Program

Platform 2 is conceived as a space of collaboration between fishermen and craftsmen. In this zone, crafts located at the waterfront, such as carpentry, boat building and hay weaving are enhanced and endorsed in the service of the fishing port (

Figure 217). The boat building workshop is aligned with the service path serving the port. All the functions expand towards the coast. Thus, the playground of Bahr El Eid hosts on the port's side a climbing wall for kids, a small volleyball court protected with a net, and shaded spaces for a safe play time.

iii. Materiality:

In the aim of preserving the protection perimeter of the Old City, all the buildings in this zone are made from light, reversible structures. Metal structure or wood structure can both be used. The flooring is a continuity of the flooring of the Old City expanding the interior spaces towards the coast. A gradient effect is used to convey

a feeling of motion towards the port. Some pieces of wood decking are integrated in the flooring, enhancing the permeability and drainage of the space.

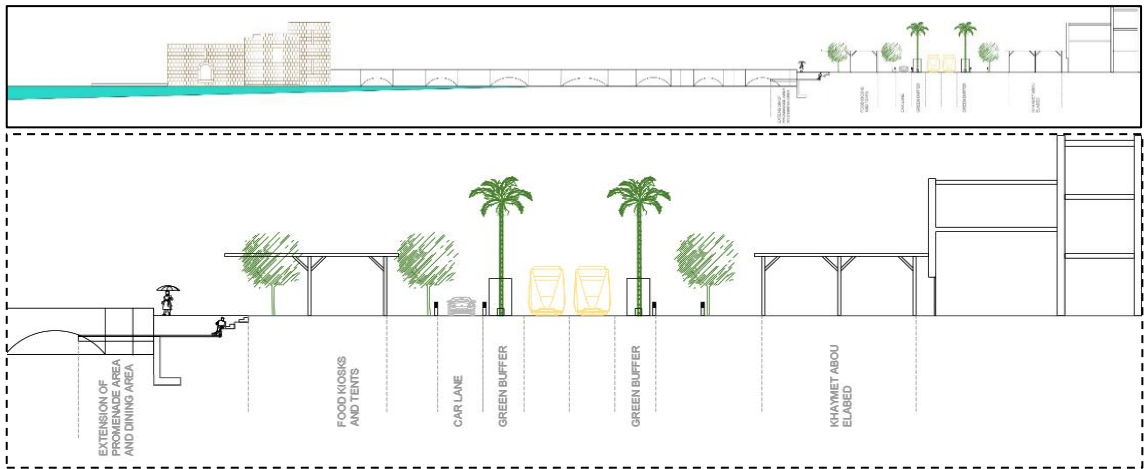


Figure 219-Section 1

b. Institutional and commercial zone:



Figure 220-Plan of the commercial and institutional zone of the port

i. Concept and design approach:

The design strategy employed has three main aims (

Figure 221). First, buildings are positioned to frame the entrance of the port.

Second, visual corridors are provided , creating a complex visual connectivity with the

sea, and inciting discovery. Third, hidden spaces are created as semi-public zones for the service of the buildings.

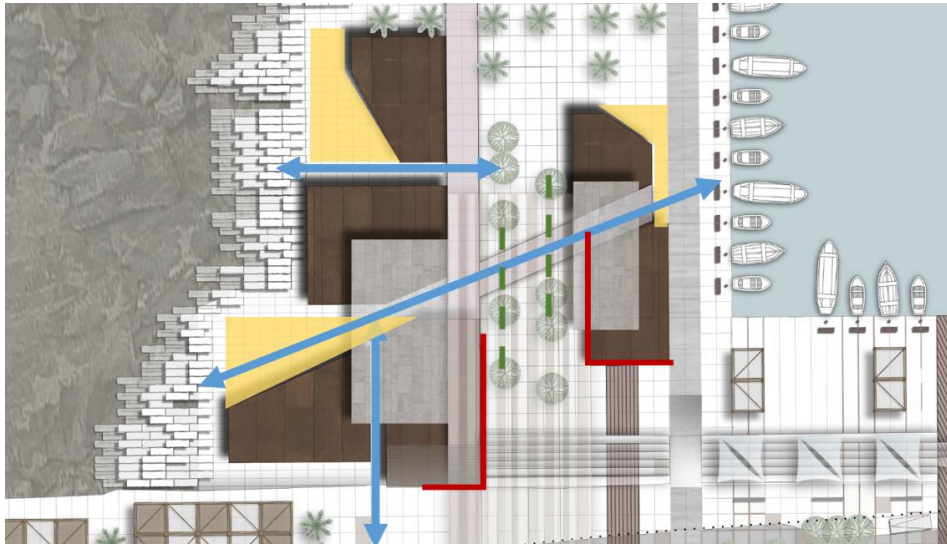


Figure 221-Design strategy of the commercial and institutional zone
Source: Author

ii. Program

The port is connected to the city on three different levels. First, the shared street expands to the port through a seamless landscape leading to a green corridor. Second, a skywalk is provided in the aim of giving a different view of the city and the port, and to provide an alternative path without passing through the fish market. Third, a connection is established underground, connecting the parking under Bahr El Eid to the port. In this zone, the built fabric is inspired by the old fabric of the city. It creates varied perspectives and a wide array of experiences and surprises. To the back, the buildings are carved in order to allow a semi-private space for cleaning fish in case of the fish market, or for putting equipment of diving. The fish market and restaurant are positioned on the right side, between the flux of visitors and the flux of the fishermen. While the institutional activities are positioned at the left, in a calmer area, in connection to the preserved rock bed.

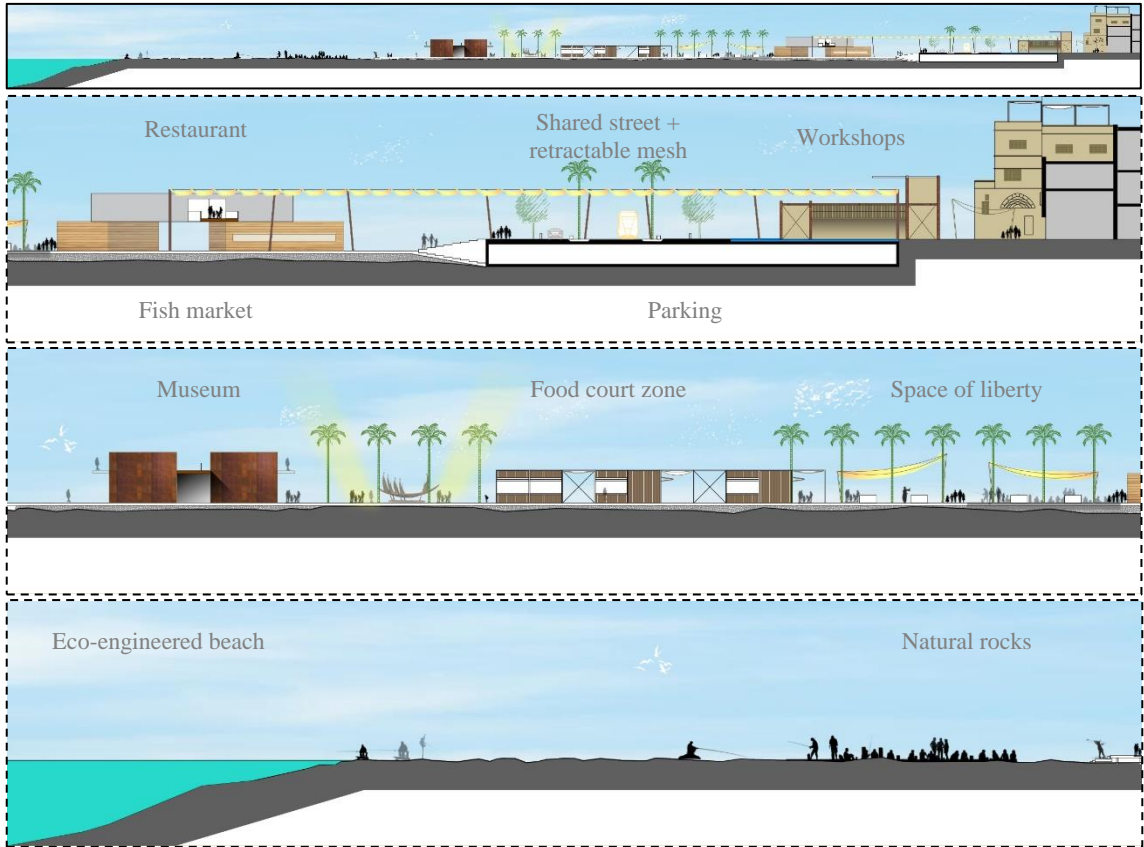


Figure 222-Section 2
Source: Author

c. Transitional zone and food court:

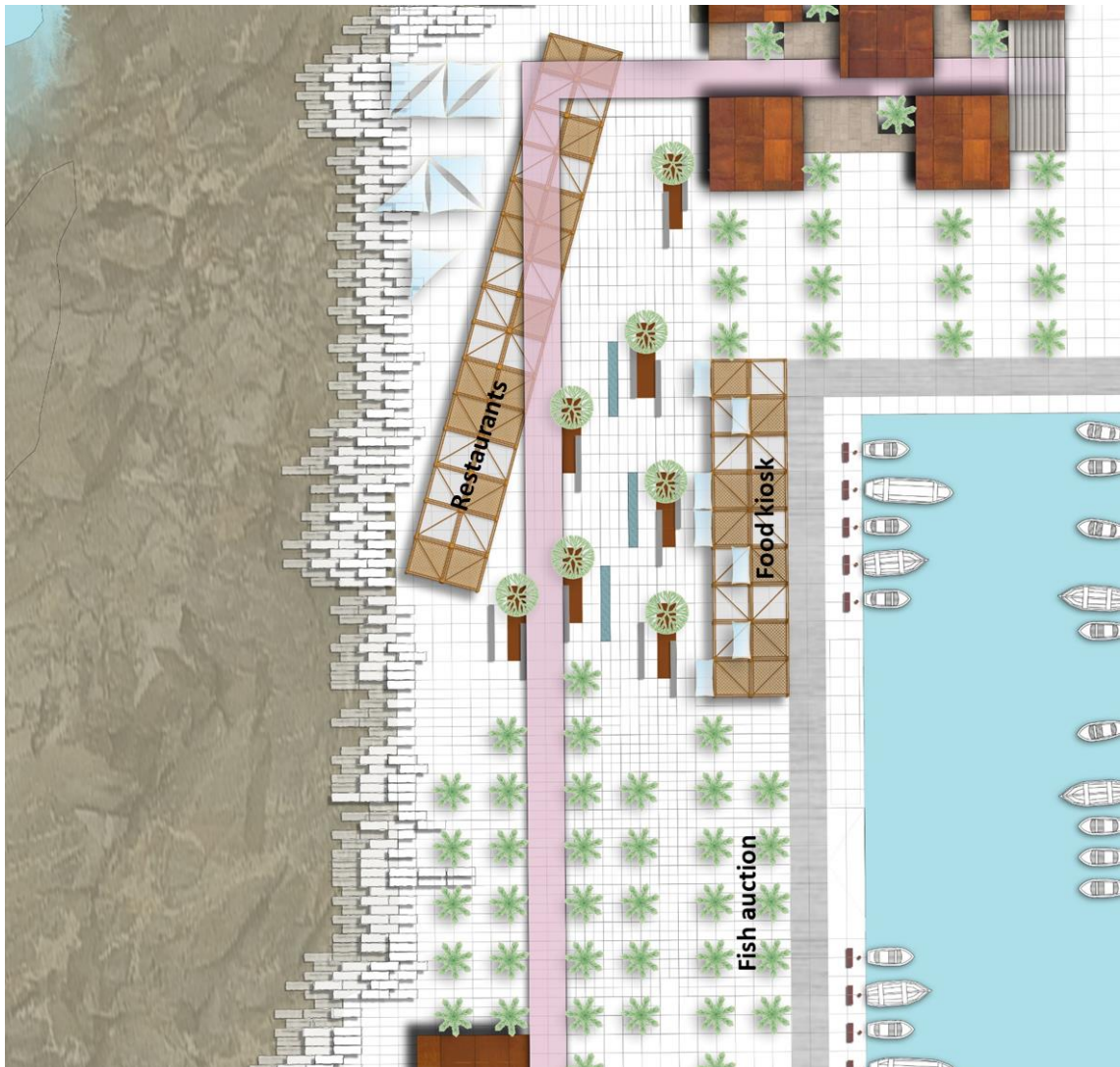


Figure 223-Plan of the transitional zone and the food court

i. Concept and design approach:

This zone is designed as a transition between the commercial node and the cultural node. The first zone is an open space, with open visual connectivity and accessibility to the shore. While the second zone is frame by two strong lines, from which, one is rotated deviating the flux of people towards the cultural node (Figure 224).



Figure 224-Design strategy of the transitional zone and the food court

ii. **Program**

The second part of the fishermen port is a space of liberty. An area not programmed, where only a canopy of palm trees shades the ground, allowing for informal vending activities, street vendors, fish auction, and other activities to take place (Figure 223). This zone benefits of a wide angle of vision and a panoramic view following the framed entrance. The skywalk continues above this zone.

The third part of the fishermen port the food court. This area is equipped with metallic frames that fit kiosks. Spaces can be allocated in a modular way and the revenue generated from the rent serves the maintenance of the port. Locals can have

subsidized rents. The middle space between the kiosks is equipped with benches, tables, shading, and trees.

d. The cultural node:

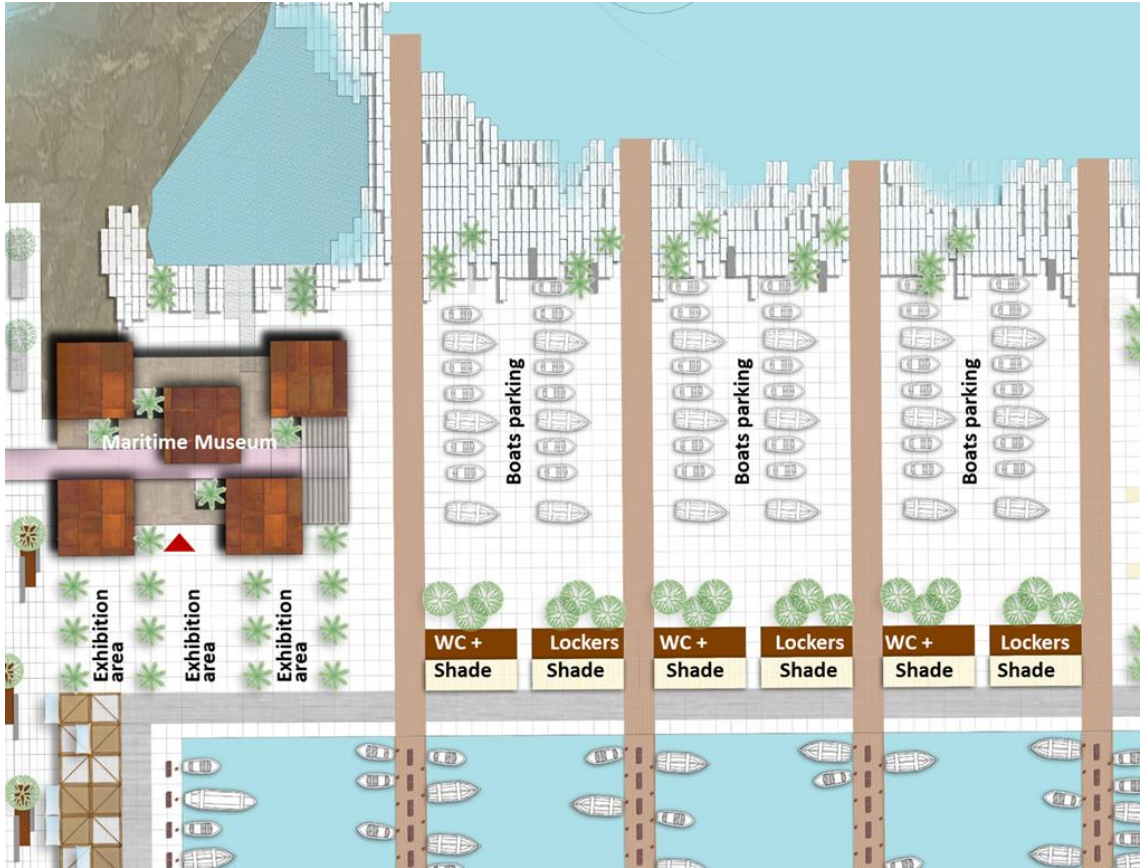
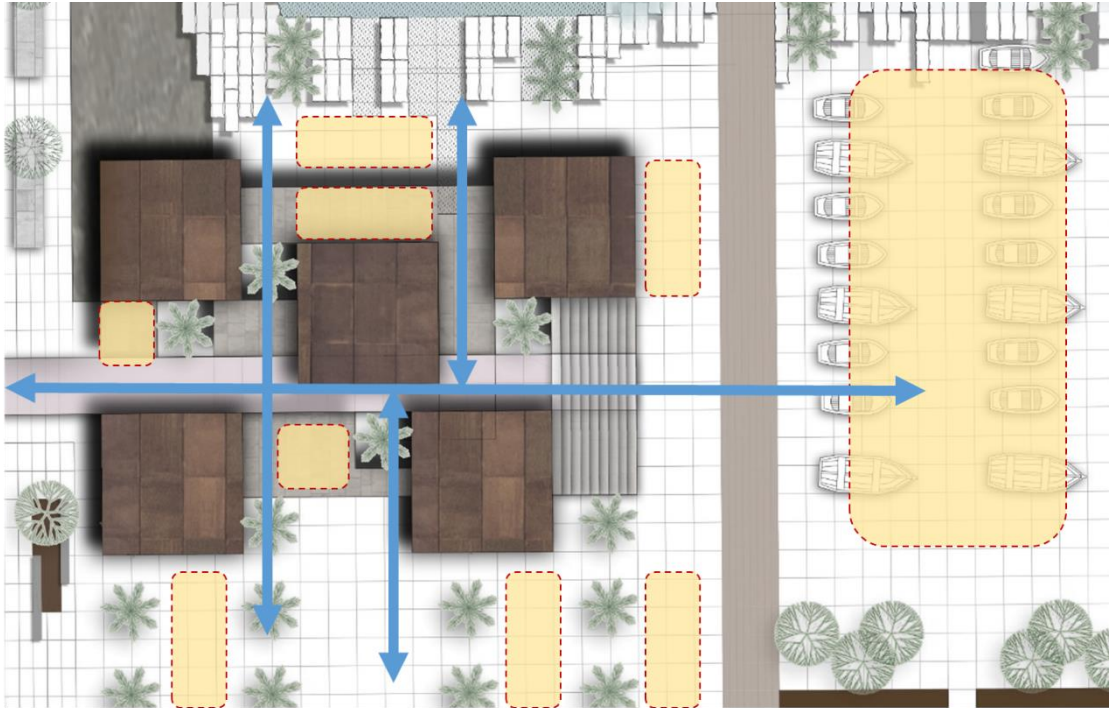


Figure 225-The cultural node plan

i. Concept and design approach:

The design strategy adopted in this area stems from the notion of spectacle. In this context, visual corridors and pocket spaces are created for exhibition spaces. The area is animated through intangible heritage and the everyday practices of fishermen and boat builders.



ii. Program:

This area hosts a maritime museum with exterior spaces for exhibition. The museum is in direct contact with the eco-engineered coast, allowing opportunities of exhibition on floating elements. In this area, the skywalk culminates in a wide stepped platform, where visitors can sit and watch the fishermen and craftsmen repair, repaint and built their boats. Near the dock, shading and amenities for fishermen are provided. They are positioned in a way to keep transparency and porosity across the port, preserving visual continuity. The quays expand on the ports ground and lead to the boats parking space. This space is a flexible platform for events, where a stage can be assembled, benefiting from the sea castle as a backdrop for performances. The edge of the port is regenerated into an eco-engineered coast, using NBS solutions such as stepping-stones, easing access and promoting habitat. Reef balls, attenuating the waves' energy and enhancing the ecosystem, protect this coast. Additionally, pools for

aquaculture are located within this area, ensuring a continuous productivity for the fishermen.

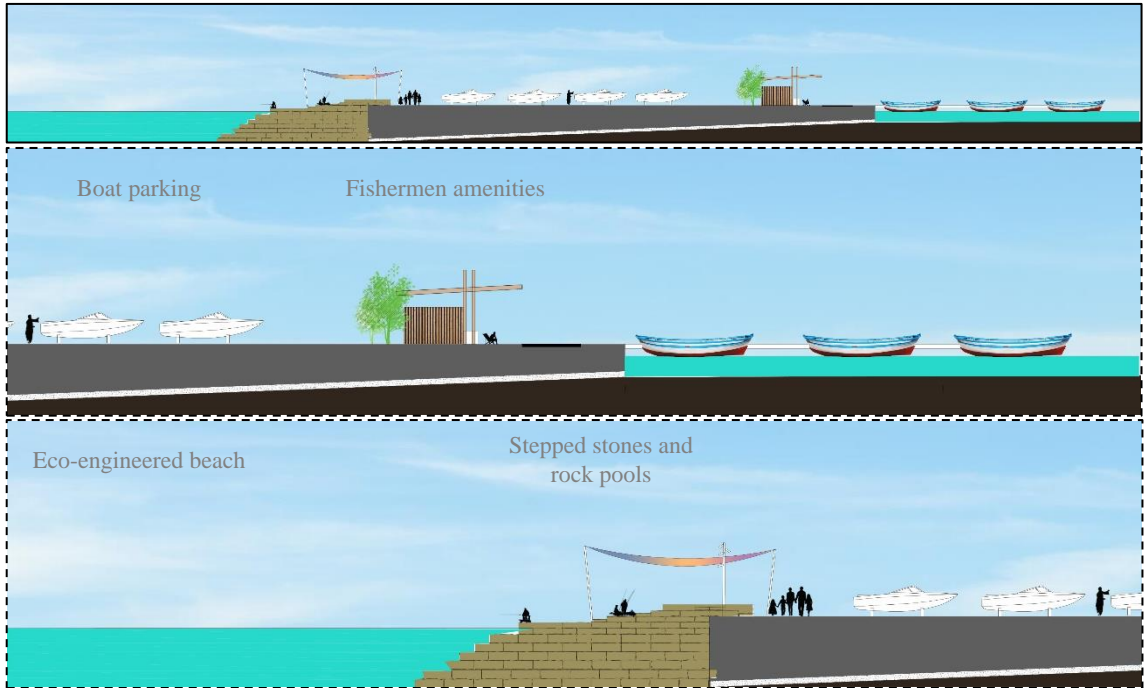


Figure 226-Section 3
Source: Author

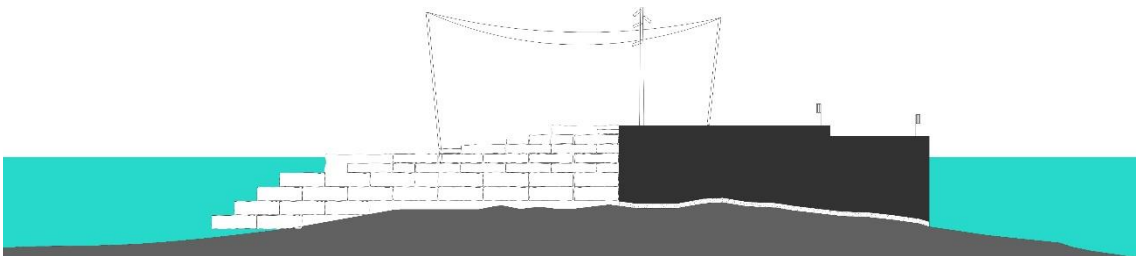


Figure 227-Section 4
Source: Author

CHAPTER VIII

CONCLUSION

This thesis tackled the issue of accessibility and connectivity between the hinterland and the coast, and along the coast, in Mediterranean old cities of the south, taking Saida as a case study. In this purpose, an integrated dual approach, combining landscape architecture with urban design, was elaborated leading to the discernment of Coastal Urban Landscape Character Zones. After analyzing all the CULCZ using three tools (similarities and differences matrix, star model assessment and SWOT), an integrated city-scale strategy (spanning on the physical, socio-economic, regulatory and environmental levels) is proposed, enhancing sustainability of the coast as a holistic entity. The strategies proposed stemmed from the ICZM framework, under which culturally-led regeneration was used as tool for sustainability to elaborate an urban design proposal for the zone of the Old City of Saida and its port. The intervention on the zone of the Old City aims to demonstrate the applicability of the strategies set. In response to the research question, the proposed urban design intervention seeks mainly to use peripheral open spaces of the Old City, the street, and shoreline as an integrated physical space reconnecting the Old City to the sea, and to use intangible heritage as an activator of this conceived space. Across the different layers, the proposal aims also to enhance mobility of pedestrians and their ease of access, regenerate ecosystems, address pollution, increase green cover, preserve the existing heritage (natural, built, and intangible), enhance the coherence of the coastal fabric, and protect of the publicness of the coast.

A. Critical assessment of the proposal and the method used:

1. Physical viability:

In contrast with the existing fragmented coast of Saida, this research proposes to look at the coast as character zones instead of zoning units. Considering the threat and opportunities of each coastal urban landscape character zone to inform the strategies. In this context, connectivity between the different CULCZ is established physically through the elaboration of a tramway loop, the use of adaptable streets types, and the elaboration of networks of landmarks. While connectivity between the city and the sea is established on the physical realm through the adaptation of the Green and Blue network as transversal visual and physical corridors, and the elaboration of seamless designs for the edge between the city and the sea, promoting ease of access and mobility.

2. Environmental viability:

The ecological viability of this proposal lies in the quantity, quality and connectivity of green and blue spaces along the maritime boulevard and within the coastal zones. In contrast to the existing condition of the coast in Saida, this proposal provides solution to the regeneration of the coastline through the implementation of Nature-Based Solutions, and the creation of a network of green spaces connecting orchards, abandoned gardens, nurseries, and shore to create a diverse and productive ecosystem.

3. *Social viability:*

The social viability of this proposal stems from the fact that the strategies elaborated are inspired by the actual socio-spatial activities and economic processes of the coast of Saida. Within this line of thinking, intangible heritage is reinforced and the livelihood of the low income dwellers is addressed and ameliorated. It is worthy to note the importance of participation within this proposal. Participation should be conducted on three phases. First, during the planning phase, a series of round table discussions, and surveys is necessary to assess the needs of the community, determine their expectations and their aspirations. Second, during the implementation phase, participation of the community in the execution process is important. It aims to convey a sense of appropriation of the space, promote social cohesion and enhance the inclusion of refugees within the community. Third, post completion of the project, participation is needed for the maintenance of the public spaces, and for the continuous assessment of the proposal in order to ameliorate it continuously.

4. *CULCZ method discussion:*

This research seeks to explore a new approach to the study of coastal areas, inspired by LCA, by bridging between landscape architecture and urban design in the aim of constructing a comprehensive framework for the analysis of coastal zones, and the elaboration of interventions and strategies for these areas. For the purpose of this thesis, the focus was on connectivity and accessibility between the different CULCZ and between the city and the sea. Was I able to succeed through this proposal? I can say that I succeeded to a certain extent. The employment of the elaborated framework allowed a a very comprehensive and integrated analysis of the coast of Saida. This

method allowed a clear reading of the opportunities, and threats of the coast, and informed in a critical way the different strategies on the physical, socio-economic, regulatory and environmental layers of each zone. Moreover, this method allowed to analyze the coast on different scales, from macro to micro, and to trickle the issue of connectivity from the city-scale to the site scale. However, given the wide and multidisciplinary framework, the passage from planning to design was marked by the focus on one layer, the physical, on the expense of the other layers of the city. In fact, given the presence of a large amount of data to be processed, the complexity of the issues faces and the large scope tackles, the method employed would be more successful if adopted by a team of multidisciplinary members.

B. Research limitation:

Several challenges faced this research; however, the main limitation was the scarcity of information and the secrecy adapted by the governmental agencies towards the available information. In this regard, first, no updated map of Saida was provided, and an up to date map of the city had to be retraced based on the cadastral map of 1995. Second, information regarding ownership and title deeds was not always available (more than 30% of the coastal plots are not featured on the website of the Lebanese land registry). Third, information regarding, marine and terrestrial ecosystems, fauna and flora, is very rare. Another challenge faced was the difficulty of conducting surveys and discussions due to the Covid-19 pandemic.

C. Research assumptions:

A number of assumptions constitute the base of the proposed intervention and guarantee its success. First, the creation of a new planning body specialized in coastal zones. Similar to the Conservatoire du Littoral in France, this entity will be in charge of the management of coastal areas, protection of coastal natural heritage, promotion of the coast as an asset, and safeguarding the publicness of the coastal domain. The second assumption is related to the introduction of new tools within the planning sector in Lebanon. Zoning and land pooling are both dated and rigid tools. Facing complex issues such as coastal areas, Landscape character assessment and seascape character assessment are more effective. In addition, transfer of development rights (TDR), density bonus, and value recapture, are all tools necessary and useful for a successful implementation of the proposal. Third, the availability of a political will is essential for this project and any other planning and urban design project in Lebanon.

Finally, the intervention proposed following this research is only a suggestion aiming to open a conversation about the different possibilities of the coast of Saida. It is a tool of visioning employed by an urban designer to generate alternative realities for the current coast of the city.

APPENDIX A

CASE STUDY 1 – BARCELONA, SPAIN

Project overview	
General info	<p>Location: Barceloneta, Port Vell (Barcelona)</p> <p>Date of start of the initiative:</p> <ul style="list-style-type: none"> • Democratic planning and civic design (1979–85) • The Olympic Games mega-project (1986–94) • Cultural strategy, public–private partnerships and economic growth (1995–2008) <p>Scale : district scale</p>
Goals & objectives	<ul style="list-style-type: none"> • Open Barcelona towards the sea by creating socially just models, policies and interventions • Redefine the relationship between the city and its shoreline • Revitalize the space between the historic city and the waterfront. • Highlight the city identity and improve the quality of urban life • Develop the competitive edge of Barcelona
Project context	
Historical context	<ul style="list-style-type: none"> • In recent history, Barcelona entered a period of democratization following the death of Franco, which marked the end of an era of punishment due to the support of the Republican government. • Two main events mark the development of Barcelona: in 1986: Spanish accession to the European Community, and particularly Barcelona's designation as host city of the 1992 Summer Olympics
Physical – urban context	<ul style="list-style-type: none"> • After World War II the city grew rapidly; the historic town degraded severely and the principal city port was relocated • The decline of the historic town (Ciutat Vella) located at the waterfront signified an enormous population outflow from there • The most significant issues in the historic town were degrading urban environment, density, low quality of housing and the lack of services.
Infrastructural context	<ul style="list-style-type: none"> • High walls excluded the city from the sea from the Middle Ages until the 1870s. • The only area that was directly in contact with water was the eighteenth-century neighborhood of Barceloneta where most of the inhabitants were marine workers • In 1888 the wall was replaced by a road " Paseo de Colon" which was widened later into a 12 lanes motorway

Socio-economic context	<ul style="list-style-type: none"> • The waterfront's historic economy revolved around industrial uses • The restructuring of the manufacturing industry in Barcelona relocated many of the waterfront's industrial activities, leaving the existing infrastructure abandoned. • High and increasing unemployment which has had a strong impact on social structures, putting stress on traditional family cohesion • The 1992 Olympics stimulated redevelopment of the waterfront to accommodate tourism • Port Vell is another major economic hub largely occupied by industrial sea uses
Cultural context	<ul style="list-style-type: none"> • Barcelona's cultural roots go back 2000 years. The catalan culture and language was repressed during the dictatorship of Franco, however after its liberation, Catalan culture was promoted through recovering works from the past and stimulating the creation of new works. • At present, Barcelona is a world-class city, chosen by UNESCO amongst the Creative Cities Network as a City of Literature since 2015.
Environmental context	<ul style="list-style-type: none"> • The environment was degraded due to industrial activity. Public spaces were neglected. The city faced challenges of flooding and heat waves
Geographical context	<ul style="list-style-type: none"> • Barcelona is located on the Mediterranean basin
Stakeholders	
Funding	<ul style="list-style-type: none"> • Through the creation of public-private enterprises and municipal private enterprises, the local government provided acquired the land through policy and resold 60% of the assets in double the price to the private sector. Thus acquiring funds for infrastructural works and public amenities maintenance
Partners and different agents	<ul style="list-style-type: none"> • The project began as a public initiative but continued as a Public private partnership • the creation of private municipal companies
Spatial Quality	
Spatial experience	<ul style="list-style-type: none"> • The quality of the waterfront was upgraded through the improvement of the pedestrian activity in this area, the creation of direct pathways connecting the urban fabric with the waterfront, and the elaboration of high-quality public spaces spread across the city as acupunctural interventions.
Planning tools	
Policies	<ul style="list-style-type: none"> • Tax incentives and grants to refurbish properties • Compulsory purchase of buildings in very poor condition in order to renovate them using public funds • A deliberate policy of introducing a new social mix into deprived neighborhoods
Tools and actions	<ul style="list-style-type: none"> • Use of events as catalysts of change

	<ul style="list-style-type: none"> • Double purpose infrastructure: short-term use during the event itself and long-term as a means of regenerating a decaying area of the city in the long-term. • A reduction in urban density of 20% • Careful planning of public building locations to encourage regeneration and prevent duplication • The creation of new communal open spaces in strategic areas to encourage social mixing • Conservation of buildings of heritage value for public use such as schools, libraries, offices, cultural centers... • Demolition of old warehouses between Barceloneta and Ciutat Vella and creating a marina for a water sport club and other water sport activities • The introduction of mixed new land uses, including service industries, office and retail, private and public housing • The encouragement of innovative architecture and thinking • Investment in transport infrastructure to improve accessibility and increase opportunities for economic and social activity. • A flexible rather than rigid approach to planning
Community participation	<ul style="list-style-type: none"> • Intensive sociological and economic studies were done before the drawing of the plans with local academics being strongly involved in them • Some academics note that the participatory process after 2000 was diluted, which will impact the growth of the city
Assessment	
Level of success	<ul style="list-style-type: none"> • Barcelona's urban regeneration has become a prominent example to other cultural regeneration approaches in the ways that it 'took an urban design, cultural planning and creative quarter approach' and integrated cultural activity in the redevelopment of areas 'alongside other activities in the environmental, social and economic sphere'
Transferability	<ul style="list-style-type: none"> • This case study shows how the ICZM approach can be applied on the Mediterranean coast. Thus, Barcelona regeneration plan tackled coastal environment protection strategies, urban sustainability, and managed the integration of socio-economic revitalization. • The application of the Barcelona regeneration model, as is, does not work without the socio-cultural links created within the policy of the project. However, one can get inspired by the small interventions implemented and the general approach taken in order to contextualize an integrated intervention on another site.

Chance of application	<ul style="list-style-type: none"> • The urban design strategies implemented in the Barcelona regeneration project are beneficial to Mediterranean cities given the similarities between them, mainly concerning the dense fabric, the infrastructural breaks and the neglected heritage • While highlighting culture and integrating it in policy and design, the waterfront gains an additional layer that cuts across the urban socio-economic processes of the city and brings them to the foreground of the regeneration process
Lessons learned	<ul style="list-style-type: none"> • Small-scale acupuncture projects create an easier and a more integrated development scheme rather than top-down big-scale developments. • Community participation is essential in the regeneration process in order to ensure the sustainability and the continuity of the project • The adoption of the ICZM framework allows the achievement of a sustainable coast • The implication of the private sector is very important in the implementation of the project, however the local government should lead the regeneration to ensure the socio-economic equity and inclusivity of the project • Culture is a powerful tool for regeneration, but its application has its challenges
References	
	<ul style="list-style-type: none"> • https://geographyfieldwork.com/BarcelonaModel1.htm • Jussi S. Jauhiainen (1995) Waterfront redevelopment and urban policy: The case of Barcelona, Cardiff and Genoa, European Planning Studies, 3:1, 3-23, DOI: 10.1080/09654319508720287 • Bako U. Ibrahim, Case study barcelona the waterfront redevelopment strategies utilized in barcelona build off the city's rich history, unique challenges, and defining characteristics



	Role of Culture	Governance	Inclusivity/Redistribution
Phase 1	Foster democratic urban Catalan identity and civic pride	Dialogue with citizens	Provision of collective, public services such as schools Provision of new public spaces (democratization of urban spaces) Provision of public housing
Phase 2	Architectural expression and urban pride Marketing the city for the Olympic Games Promoting urban lifestyles	Consensus	Provision of civic centres and libraries Renovation of museums Renovation of cultural infrastructure (e.g. theatres)
Phase 3	Functional tool Support 'knowledge economy' and cultural industries	Hegemonic; top-down organized participation	Top-down organized festivals Promotion of 'interculturality'

APPENDIX B

CASE STUDY 2 – GENOA, ITALY

Project overview	
General info	Location : Genoa, Italy Date of start of the initiative: 2004 Scale : district scale
Goals and objectives	
Program	<ul style="list-style-type: none"> • Venues for festivals, • Multi-theatre complex, and aquarium • Waterfront promenade stretches in the sea with artificial islands: • Port terminals, shipyards, new airport, marinas • Fishing port, • Public park
Project context	
Geographical context	<ul style="list-style-type: none"> • Situated in the North- Italian region of Liguria. Genoa is the capital of the region that lies on a natural bay. Genoa is built on a narrow strip of land 9 km across and 22 km long, between the sea and the mountains. The city can be divided into three parts: the center, the western part, and the eastern part. • The center is rich with cultural and historical heritage, where are established the principal services activities and public offices. The western part is dominated by industrial activities and the eastern part has predominantly a residential function. The city position between the sea and the mountains, limited the expansion in the growth phase of urban development.
Historical context	<ul style="list-style-type: none"> • The port of Genoa suffered like so many others in the Mediterranean Sea, from the structural changes in world trade flows
Physical – urban context	<ul style="list-style-type: none"> • High urban density, • Isolation of historical center from the newer parts of the city • noise and visual barriers between the city and the sea • Narrowness and bad condition of streets paving and pedestrian walkways, insufficient support of new businesses, inadequate parking and public transportation, bad access to traffic in the historical center.
Infrastructural context	<ul style="list-style-type: none"> • During the 20th century, the historical center gradually became isolated from the newer parts of the city and an elevated highway was built which forms a noisy and visual barrier between the old city and the sea.

	<ul style="list-style-type: none"> • Growing traffic, insufficient street lighting and garbage dumped in the streets all add to the problems of the historical center
Socio-economic context	<ul style="list-style-type: none"> • The city has suffered a continuous loss of residents. Not only has the population in the city and in the urban region diminished in size, but the population has aged considerably in recent years. The decline of population followed the crisis in the Genoese economy. • The number of job opportunities, the traditional industry, the petrochemical industry, the mechanical industry and the harbor, declined steeply in 1970s and 1980s.
Cultural context	<ul style="list-style-type: none"> • The center is rich with cultural and historical heritage
Stakeholders	
Funding	<ul style="list-style-type: none"> • local, national and European institution designed to stimulate business development and employment growth
Partners and different agents	<ul style="list-style-type: none"> • public actors have to develop strategic actions, in order to accelerate the process of detailed revitalization that only residents and private owners can fulfill properly • Public-Private partnership
Planning Tools	
Tools and actions	<ul style="list-style-type: none"> • Renewal of a number of areas through projects which seek to revitalize places both economically and socially by helping small businesses and craft industries • Encouragement and support new businesses, particularly in the hearth of the old center • Providing the historic city center with new services (greenspaces and sport areas, schools, asylums, university centers together with social services) • Redevelopment of the waterfront in relationship with the old town, redefining the city and its functional system • Pedestrianization of many parts of the old town and creation of a system of new parking areas as well as by good public transportation network • renovation of Porto Antico that has reconnected city and sea and the revitalization of the Centro Storico • Support for the weaker sections of society will involve projects designed to facilitate social interaction and improve service provision • Combat the marginalization of the elderly, immigrant communities and the youth
Design strategies	
Concept	<ul style="list-style-type: none"> • The use of events as catalyst of regeneration • The use of star-architect "Renzo Piano" in order to put back the waterfront on the international map
Spatial Quality	
Relationship to context	<ul style="list-style-type: none"> • Due to the narrowness of the coastal strip in Genoa, the creation of new public spaces was achieved through

	<p>digging hills, and reclaiming land, building terraces and filling the sea;</p> <ul style="list-style-type: none"> • The port, the airport lies on artificial soil
Space definition	<ul style="list-style-type: none"> • The old core represents the cultural image of the city and become the hub of its tourist, providing the historic city center with new services; green spaces, sport areas, schools, university centers, social services, street paving, technological networks, luxury housing sector; new pedestrian links, and parking areas.
Assessment	
Levels of success	<ul style="list-style-type: none"> • Genoa has completely transformed its image without losing any of its vibrancy. The goals urban regeneration project have been; rehabilitation of urban structures; improve the environment, the quality of life of inhabitants; preserve valuable and unique buildings; restructure economic activities
Lessons learned	<ul style="list-style-type: none"> • The process of urban regeneration is the result of an integrated approach, in that urban interventions, cultural policies, connection between tradition and innovation play a fundamental role • The participation of the private sector was very important, and meets the needs of the community
Reference	
	<ul style="list-style-type: none"> • Menchawy, A.. (2008). Urban regeneration in Mediterranean cities: an integrated urban development of Brownfield sites. 115-127. 10.2495/SC080121. • Galdini, Rossana. (2005). Urban Regeneration Process - The Case Of Genoa, An Example Of Integrated Urban Development Approach. European Regional Science Association, ERSA conference papers.

APPENDIX C

DECISION #10830

TO DROP PUBLIC OWNERSHIP OF COASTAL LANDS IN THE BENEFITS OF THE PRIVATE OWNERSHIP OF THE MUNICIPALITY OF SAIDA

الطبعة الرسمية : عدد ٢ - ١٢ كانون الثاني سنة ١٩٤٨

صفحة ٢٠

بيروت في ٣٠ كانون الاول سنة ١٩٤٧
 الامضاء : بشارة خليل الحوري
 صدر من رئيس الجمهورية
 رئيس مجلس الوزراء
 وزير الداخلية بالوكالة
 الامضاء : رياض الصالح
 وزير الاشغال العامة
 الامضاء : جوائيل المر
 وزير المالية
 الامضاء : محمد العبود

وزارة الداخلية

مرسوم رقم ١٠٨٣٠ / ك
 باسقاط املاك عامة لصالح املاك الدولة المحصوية
 واملاك عامة بلدية وقسم من املاك الدولة
 المحصوية لصالح بلدية صيدا

صيدا

جدول بالمقارنات الخاضعة للاستملاك والتقسيم بموجب الخريطة رقم ١ و ٢ لتنظيم منطقة الاولي

الملاحظات من المشتلات	المساحة التقطعة	مساحة كامل المقار	صاحب المقار	رقم المقار	المنطقة المقار
ارض رملية	٦١٢.٨	٦١٢.٨	الجمهورية اللبنانية (الملب البلدي)	٣٧٥	الوسطاني
»	٤٠٢٦	٤٠٢٦	»	٣٧٤	»
»	١٢٨٩	١٢٨٩	»	٣٤٠	»
»	١٨٢	١٨٢	»	٢٩٤	»
»	١١٧	١١٧	»	٢٩٣	»
بناء وارض رملية	١٠٩٢	٢٠٩٢	»	٢٩٢	»
»	٢٨٣٠	٢٨٣٠	»	٢٨٢	»
ارض رملية	٢٣٨	٢٣٨	»	٢٩٤	»
بناء وارض رملية	٥٠٢٣	٥٠٢٣	»	٢٩١	»
»	٤٠٢٨	٤٠٢٨	»	٢٩٢	»
»	٢٦٣٠	٢٦٣٠	»	٢٩١	»
»	٦٩٩١	٦٩٩١	»	٢٧٠	»
»	٢٢٠	٢٢٠	»	٦١٠	»
»	١٦٢٧	١٦٢٧	»	٦١١	»
»	١٣٨٩	١٣٨٩	»	٦١٢	»
ارض رملية	١١٥٨	١١٥٨	»	٦١٣	»
»	٢٢١	٢٢١	»	٦١٤	»
»	٥٧٣	٥٧٣	»	٦١٥	»
ارض رملية	٧١٣	٧١٣	الجمهورية اللبنانية (الملب البلدي)	٦١٦	الوسطاني
»	١٢٤٤	١٢٤٤	»	٧٨٥	»
»	١٠٢٧	١٠٢٧	»	٦٠٣	»
»	٥١٠	٥١٠	»	٦٠٥	»
»	٢٠٠	٢٠٠	»	٦٠٦	»
»	١٠٢٧	١٠٢٧	»	٢٦٨	»
»	١٤٠٧	١٤٠٧	»	٢٦٧	»
»	٨٧٣	٨٧٣	»	٢٦٦	»
	١٤٥٠٠٠	غير محددة	املاك عامة	غير مرقمة	الشواطئ البحرية
	١٥٠٠٠	»	»	»	مخاري المياه والطرق

ان رئيس الجمهورية اللبنانية
 بناء على الدستور اللبناني

بناء على المرسوم الاشتراعي رقم ١٠/٥٠ تاريخ ٣٧/١٠/١٩٣٠ للمدن
 بالمرسوم الاشتراعي رقم ٢٢٩ تاريخ ٤٢/١٠/١٠

بناء على التوافق رقم ١٤٤ تاريخ ١٠ حزيران سنة ١٩٢٥ المعدل
 بالتوافق رقم ١٠/١٠ تاريخ ٤٠/١٠/١٩٣٠

بناء على المرسوم رقم ١٠٨٢٩ تاريخ ٣٠ كانون الاول ١٩٤٧
 المتضمن تصديق خرائط تنظيم وتجسيم منطقة الاولي في صيدا

بناء على قرار بلدية صيدا رقم ٣٣٩ تاريخ ٤٧/٨/٤٦
 وبناء على اقتراح وزير الداخلية بالوكالة
 وبعد موافقة مجلس الوزراء

يرسم ما يأتي :

المادة الاولي - تسقط من الاملاك العامة لصالح املاك الدولة
 المحصوية اقسام الشواطئ البحرية وضاف المجاري والطرق العامة
 للمبينة في خرائط تنظيم وتجسيم منطقة الاولي في صيدا وفي الاواقع
 المرفقة بها .

المادة الثانية - تسقط من الاملاك العامة البلدية لصالح املاك
 البلدية المحصوية اقسام الطرقات العامة البلدية المبينة في خرائط
 تنظيم وتجسيم منطقة الاولي في صيدا .

المادة الثالثة - تسقط لصالح املاك بلدية صيدا المحصوية
 بموجب الانظمة المرعية الاجراء املاك الدولة المحصوية والاملاك
 المبينة في المادة الاولي من هذا المرسوم وفقاً لخرائط تنظيم وتجسيم
 منطقة الاولي والواقع المرفقة بها (١)

المادة الرابعة - ينشر ويباع هذا المرسوم حيث تدعو الحاجة .

(١) ان هذه الخرائط والواقع مودعة لدى وزارة الداخلية

مهندس قسم الدروس رئيس قسم التنفيذ رئيس معالجة البدييات والتسجيل مدير الداخلية العام
 نظري موافق هدى
 وزير الداخلية بالوكالة رئيس مجلس الوزراء رئيس الجمهورية
 الامضاء : رياض الصالح الامضاء : رياض الصالح بشارة خليل الحوري

Source: (Dictaphone Group, 2015, p. 13)

APPENDIX D

STAR MODEL ASSESSMENT

Table 64-Grading criteria of the physical layers

Source: Author

PHYSICAL/ URBAN DESIGN FRAMEWORK	RATING				
	1	2	3	4	5
Walkability	. No sidewalks	. Sidewalks with hazards	. Narrow sidewalks on both sides	. Medium sidewalks on both sides	. Large sidewalks on both sides
	J	H, I	A, F	B, C, D, E	G
Provision of Public Amenities	. No provision of public amenities (public WC, shading, benches)		. Presence of some amenities		. Presence of public garden + . Presence of several amenities
	B, C, F, G, I, J		D, E, H		A
Coherence of Character	. No consistence of character		. Coherence of character interrupted by exceptions that are not integrated with the existing fabric		. Consistence of character
	G, H, J		A, B, C, D, E, F, I		
Visual Connectivity	. Complete visual disconnection due to buildings above street level or piles or rubble	. Visual disconnection due to high and opaque fences	. Hybrid area . Presence of small length visual obstructions	. Partial visual obstruction that can be bypassed	. Unhindered view to the sea
	G, H, I, J		E, F	A, B, C	D
Public Access	. No public access	. Few informal open access points coupled with hazards	. Corniche is accessible but access to water is not granted or hazardous	. Accessible area but monitored	. 100% free accessible
	H, I, J	G	B, F	A, C	D, E

Table 65-Grading criteria of the social layers

Source: Author

SOCIO-ECONOMIC FRAMEWORK	RATING				
	1	2	3	4	5
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 several cultural assets that are protected but neglected . Strong cultural identity that maintained but not protected by law	. Strong cultural identity that is protected and maintained
	B, I, J	C, D, E, H	A, G	F	
Availability and Diversity of Services(. No provision of basic services (pharmacy - minimarkets)	. Few services provided	. Provision of one type of services	. Provision of some types of services	. Provision of rich and diverse services
	I	C, H, J	A, B	D	E, F, G
Sense of Security	. No sense of security due to industrial activity and neglect of space		. Sense of security only at daytime		. High sense of security . Presence of cameras and security guards . Safety at night
	H, I, J		F, G		A,B, C, D, E
State 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	. 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
	I, J	F, G, H	E	D	A, B, C
Socio-spatial Activities	. No diverse socio- spatial activities	. Presence of limited socio-spatial activities related to water	. Presence of socio-spatial that are limited . Presence of socio-spatial that are threatened	. Mix of socio-spatial activities that are mostly accessible and more or less 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
	H, I, J	G	F	B, C, D, E	A

Table 66-Grading criteria of the environmental layers
Source: Author

ENVIRONMENTAL 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 medium scale areas of land reclamation	. Shoreline that is heavily altered and involves small scale areas of land reclamation	. Shoreline that is kept but the shore is altered	. Natural condition of shoreline and shores kept maintained
	H, I, J	F, G	B	A, C, D, E	
Availability of Green Spaces	. No green spaces (less than 10%)	. Provision of green spaces (10% to 25%)	. Provision of green spaces (25% to 50%)	. Provision of green spaces (50% to 75%)	. Provision of green spaces (more than 75%)
	F	E, G	D, H, J	B, C	A, I
Fauna & Flora	. Highly urbanized area with no rich fauna & flora		. Area with mild urbanization, and some areas of biotope		. Area with little urbanization, and features with high ecological value
	F, G, H, I, J		B, C, D, E		A
Pollution	. Presence of high levels of pollution coming from different sources		. Presence of low levels of pollution		. No alarming levels of pollution
	H, I, J		A, B, C, D, E, F, G		
Natural Heritage	. 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
	D, E, F, G		A, B, C, H, I, J		

Table 67-Star model assessment of CZ A B and C
Source: Author

	ZONE A	ZONE B	ZONE C
PHYSICAL LAYER			
	SCORE = 19/25	SCORE = 15/25	SCORE = 16/25
SOCIO-ECONOMIC LAYER			
	SCORE = 21/25	SCORE = 17/25	SCORE = 17/25
ENVIRONMENTAL LAYER			
	SCORE = 20/25	SCORE = 13/25	SCORE = 15/25
OVERLAPPING OF LAYERS			
	TOTAL SCORE = 60/75	TOTAL SCORE = 45/75	TOTAL SCORE = 48/75

Table 68-Star model assessment of CZ D E and E
Source: Author

		ZONE D	ZONE E	ZONE F
PHYSICAL LAYER				
		SCORE = 19/25	SCORE = 20/25	SCORE = 13/25
SOCIO-ECONOMIC LAYER				
		SCORE = 20/25	SCORE = 19/25	SCORE = 16/25
ENVIRONMENTAL LAYER				
		SCORE = 17/25	SCORE = 13/25	SCORE = 8/25
OVERLAPPING OF LAYERS				
		TOTAL SCORE = 56/75	TOTAL SCORE = 52/75	TOTAL SCORE = 37/75

Table 69-Star model assessment of CZ G H I and J
 Source: Author

	ZONE G	ZONE H	ZONE I	ZONE J
PHYSICAL LAYER				
	SCORE = 14/25	SCORE = 6/25	SCORE = 8/25	SCORE = 5/25
SOCIO-ECONOMIC LAYER				
	SCORE = 12/25	SCORE = 8/25	SCORE = 5/25	SCORE = 6/25
ENVIRONMENTAL LAYER				
	SCORE = 9/25	SCORE = 9/25	SCORE = 11/25	SCORE = 9/25
OVERLAPPING OF LAYERS				
	TOTAL SCORE = 35/75	TOTAL SCORE = 23/75	TOTAL SCORE = 24/75	TOTAL SCORE = 20/75

APPENDIX E

SWOT ANALYSIS

		THREATS AND WEAKNESSES	STRENGTH AND OPPORTUNITIES
CHARACTER ZONE A	Physical	<ul style="list-style-type: none"> ● Presence of an infrastructural break, the maritime boulevard ● Visual disconnection between the shore and the sidewalk due to the metal fence ● Lack of formal accessibility means for the shore 	<ul style="list-style-type: none"> ● Accessible shore ● Walkable area ● Socially active area and gathering node ● Presence of a public garden towards the sea ● A wide sidewalk with a wide street is a potential for additional parking space ● This zone is the gate of the city and thus the gate of the South
	Socio-economic	<ul style="list-style-type: none"> ● Privatization of Kinayat el Nahr ● The Kinayat public garden is gated with restricted access ● Risk of privatization of the coast 	<ul style="list-style-type: none"> ● Active social zone due to the presence of the Kinayat public garden ● The presence natural heritage with potential of linking it to a trail ● The coast is publicly owned
	Legal	<ul style="list-style-type: none"> ● No protection for agriculture practices or river bed ● Zoning allows construction on the coast ● High price of lands due to speculation 	<ul style="list-style-type: none"> ● No violation of maritime properties till present ● Plots on the coast are owned by the municipality and can be used to generate income serving the rehabilitation of the coast
	Environmental	<ul style="list-style-type: none"> ● Natural and landscape heritage sites are not recognized and protected (Kinayat area, Awali river) ● Fragmentation of agricultural lands ● Sewage discharge ● Excessive traffic and narrow sand strip endangering turtle nesting 	<ul style="list-style-type: none"> ● Abundance of agricultural lands ● Presence of the Awali river and the Kinayat ● Presence of one public garden that can be connected to a network of other public spaces

Table 70-SWOT of Character Zone A
Source: Author

		THREATS AND WEAKNESSES	STRENGTH AND OPPORTUNITIES
CHARACTER ZONE B	Physical	<ul style="list-style-type: none"> ● Infrastructural break ● Disfiguration of the seascape due to the municipal stadium embankment ● Accessibility to the water is not provided while the walkway is 4meters higher than water level 	<ul style="list-style-type: none"> ● Walkable area with wide sidewalk ● Socially active area and gathering node ● Continuation of the sidewalk around the stadium ● Presence of a public piazza towards the sea ● Presence of a parking space under the stadium
	Socio-economic	<ul style="list-style-type: none"> ● Risk of privatization of the coast ● The stadium is underused and needs maintenance ● Absence of any type of public amenities 	<ul style="list-style-type: none"> ● Active social zone due to the presence of the area around the stadium ● The presence of the municipal stadium of Saida as an important landmark and an underused asset for the city and its surroundings
	Legal	<ul style="list-style-type: none"> ● No protection for agriculture practices ● Zoning allows construction on the coast ● High price of lands 	<ul style="list-style-type: none"> ● Publicness of the coast ● The municipal stadium is owned by the municipality and can be used to generate income serving the rehabilitation of the coast
	Environmental	<ul style="list-style-type: none"> ● Fragmentation of agricultural lands ● Sewage discharge ● Excessive traffic <p>Usage of uniform riprap seawall does not allow the proliferation of marine ecosystems</p>	<ul style="list-style-type: none"> ● Abundance of agricultural lands

Table 71-SWOT of Character Zone B

Source: Author

		THREATS AND WEAKNESSES	STRENGTH AND OPPORTUNITIES
CHARACTER ZONE C	Physical	<ul style="list-style-type: none"> ● Infrastructural break ● Sand strip is narrow and too close to coastal boulevard ● Disconnection between the sidewalk and the beach 	<ul style="list-style-type: none"> ● Walkable area with wide sidewalk ● Socially active area and gathering node ● Continuation of the sidewalk around the stadium ● Presence of a public piazza towards the sea ● Presence of a parking space under the stadium
	Socio-economic	<ul style="list-style-type: none"> ● Risk of privatization of the coast ● Lack of formal entrances to the beach ● The military casern block the entrance to the sea and threatens activity in this zone 	<ul style="list-style-type: none"> ● The presence of AUST university campus and their covered sports stadium can be used as an activator for this zone
	Legal	<ul style="list-style-type: none"> ● Zoning allows construction on the coast ● No protection or incentives to keep the remaining green spaces ● Presence of a military casern to the north of the zone ● High price of lands 	<ul style="list-style-type: none"> ● The coast is under municipal ownership ● Exploring new regulations under which the undeveloped lands of Wastani can be developed while preserving their identity
	Environmental	<ul style="list-style-type: none"> ● Sewage discharge ● Excessive traffic and narrow sand strip preventing turtle nesting ● Fragmentation of agricultural land 	<ul style="list-style-type: none"> ● Abundance of agricultural lands ● The presence of the dune with vegetation allows many ecosystems to profiler in this area

Table 72- SWOT of Character Zone C
Source: Author

		THREATS AND WEAKNESSES	STRENGTH AND OPPORTUNITIES
CHARACTER ZONE D	Physical	<ul style="list-style-type: none"> ● Infrastructural break and dominance of cars over pedestrian activity ● Sand strip is narrow and too close to coastal boulevard. ● Disconnection between the sidewalk and the beach ● Transversal connections with the city are weak. The road in front of the courthouse is completely blocked ● Only one formal entrance is provided for the beach 	<ul style="list-style-type: none"> ● Accessible shore ● Walkable area ● No visual obstruction in this area ● No construction yet on the coast
	Socio-economic	<ul style="list-style-type: none"> ● The Wastani public garden is not accessible and not maintained ● The narrow sand beach does not provide privacy for women to swim given the conservative ideology of the citizens ● Lack of amenities all year long, mainly shading 	<ul style="list-style-type: none"> ● Socially active area on the corniche, for gatherings and sports ● Presence of a public municipal beach ● Diverse economic activities such as street food vendors, coffee vendors, horse riding activity ● Presence of restaurants and coffee shops along the coastal boulevard
	Legal	<ul style="list-style-type: none"> ● Zoning allows construction on the coast ● High price of lands coupled with the will of real-estate agencies to collect waterfront plots and store them for speculation ● Lack of recognition and protection of built heritage such as old houses, maqams. 	<ul style="list-style-type: none"> ● Publicness of the coast ● Exploring new regulations under which the undeveloped lands of Wastani can be developed while preserving their identity ● Imposing property taxes, and value recapture on the unbuilt lands of the waterfront
	Environmental	<ul style="list-style-type: none"> ● Sewage discharge ● Excessive traffic and narrow sand strip preventing turtle nesting ● Erosion of the sand strip endangers the ecosystem as well as the socio-spatial activities 	<ul style="list-style-type: none"> ● Presence of a sandy shore ● Presence of the Wastani Public Garden, that can be activated and linked to a network of green and public spaces

Table 73- SWOT of Character Zone D
Source: Author

		THREATS AND WEAKNESSES	STRENGTH AND OPPORTUNITIES
CHARACTER ZONE E	Physical	<ul style="list-style-type: none"> ● Infrastructural break and dominance of cars over pedestrian activity ● Sand strip is narrow, too close to coastal boulevard and disappears in profit of the grey infrastructure methods used (seawalls) to retain the boulevard. ● Disconnection between the sidewalk and the beach with absence of formal entrance points to the shore ● Transversal connections with the city are weak. Connection with the main landmarks in the Wastani is completely blocked. Such as link with the Food truck park, or the Saida Mall ● Lack of coherence between the Old City and the built fabric in this area 	<ul style="list-style-type: none"> ● Accessible shore ● Walkable area ● No visual obstruction in this area ● No construction yet on the coast
	Socio-economic	<ul style="list-style-type: none"> ● Lack of amenities all year long, mainly shading ● Concentration of parking spaces in this area causing a congestion of the node near the Old City ● Built heritage is undervalued in this area, such as the old municipal building 	<ul style="list-style-type: none"> ● Socially active area on the corniche, for gatherings and sports ● Diverse economic activities such as street food vendors, coffee vendors, horse riding activity ● Presence of restaurants and coffee shops along the coastal boulevard ● Presence of an transportation node with parking around Nejme Sqaure
	Legal	<ul style="list-style-type: none"> ● Zoning allows construction on the coast ● High price of lands coupled with the will of real-estate agencies to collect waterfront plots and store them for speculation ● Lack of recognition and protection of built heritage such as old houses, maqams. 	<ul style="list-style-type: none"> ● Publicness of the coast
	Environmental	<ul style="list-style-type: none"> ● Sewage discharge ● Excessive traffic and narrow sand strip preventing turtle nesting ● Erosion of the sand strip endangers the ecosystem as well as the socio-spatial activities 	<ul style="list-style-type: none"> ● Presence of a sandy public shore

Table 74- SWOT of Character Zone E

		THREATS AND WEAKNESSES	STRENGTH AND OPPORTUNITIES
CHARACTER ZONE F	Physical	<ul style="list-style-type: none"> ●Infrastructural break ●Depleted state of the Old Core, mainly the residential fabric ●Lack of incentives and financial means for the maintenance works by tenants and owners ●Discontinuity of the sidewalk in front of the Old City due to random parking ●Danger on the students crossing the road to Maqased school due to trucks parking and dominance of vehicular traffic 	<ul style="list-style-type: none"> ●Presence of Baher El Eid as an open space for the Old City ●Abundance of heritage sites and specific building typologies such as khans, hammams, mosques... ●Presence of the fishermen port and the Zireh Islets as assets for the city
	Socio-economic	<ul style="list-style-type: none"> ●Saida's heritage is largely neglected, threatened and underutilized ●Lack of touristic facilities ●Lack of planning and financial support for fishing and crafts sectors ●Lack of accessibility to the shore ●Sheikh Zayed Garden is not active 	<ul style="list-style-type: none"> ●Rich cultural zone : tangible and intangible heritage on which a revitalization scheme can be drawn ●Diverse economic activities related to heritage such as fishing, soap making, hay sewing
	Legal	<ul style="list-style-type: none"> ●No protection perimeter for the Old Core or the Sea Castle ●The mosaic of owners for each building make it impossible for them to agree on a unified scheme of reparation and maintenance 	<ul style="list-style-type: none"> ●Publicness of the coast ●Protection of the Old city through zoning NGOs and private initiatives are eager to help rehabilitate the Old Core
	Environmental	<ul style="list-style-type: none"> ●Excessive vehicle traffic is causing decay for the historic facades ●There is a lack of open spaces in the Old City, and the available open spaces are not activated and maintained such as the garden of the At Louis Castle ●Marine natural rocks are paved for the extension of the port, endangering the ecosystem ●Dominance of grey infrastructure when it comes to marine defense 	<ul style="list-style-type: none"> ●Presence of natural rock next to the port Presence of number of open spaces that can be linked into a network: the cemeteries surrounding the Old City, the garden of the St Louis Castle, The Murex Hill, Sheikh Zayed garden, Baher l Eid

Table 75- SWOT of Character Zone F
Source: Author

		THREATS AND WEAKNESSES	STRENGTH AND OPPORTUNITIES
CHARACTER ZONE G	Physical	<ul style="list-style-type: none"> ●Infrastructural break ●Lack of cohesiveness between the old and the newly built fabric ●Transversal connection between the city and the waterfront is weak due to the dominance of vehicular traffic and random parking ●The new development of the commercial port are blocking the view towards the sea 	<ul style="list-style-type: none"> ●Presence of an important infrastructural node, the Shouhada square connecting the maritime boulevard to the eastern development of Saida and its suburbs ●The topography of the land make it possible to build amenities of the port below street level rather than blocking the sea view
	Socio-economic	<ul style="list-style-type: none"> ●The role of the new port as a commercial port is not viable due to difficulties of transportation, unsuitable infrastructure and absence of a functional train rail. ●Decrease of the social activities flow/intensity along the shoreline. 	<ul style="list-style-type: none"> ●Presence of a very wide sidewalk suitable for family seating and kids play zone ●Presence of a new asset, the commercial port that can be developed into a touristic port Presence of multitude of educational institutions that can be used to revitalize this area
	Legal	<ul style="list-style-type: none"> ●Top-down decisions such as building a commercial port in Mina Iskandar is endangering the social activities. ●Uncoordinated efforts and projects along the waterfront are decreasing the competitiveness of Saida 	<ul style="list-style-type: none"> ●The new port and the corniche are public lands ●Presence of a political power in Saida that can help revitalize the city
	Environmental	<ul style="list-style-type: none"> ●Excessive land reclamation is erasing whatever is left from the maritime fauna and flora and endangering the characteristic socio-spatial activities such as fishing 	<ul style="list-style-type: none"> ●Presence of agricultural lands

Table 76-SWOT of Character Zone G

Source: Author

		THREATS AND WEAKNESSES	STRENGTH AND OPPORTUNITIES
CHARACTER ZONE H	Physical	<ul style="list-style-type: none"> ● Infrastructural break ● Lack of visual and physical access to the sea due to the large scale embankment 	<ul style="list-style-type: none"> ● The undefined physical aspect of the reclaimed land can be morphed into a well-connected park linking the Dekerman to the sea
	Socio-economic	<ul style="list-style-type: none"> ● The presence of the refugee camp as an insular entity ● Lack of safety due to industrial works, and abundance of trucks ● Walkability is difficult in this area due to several hazards on sidewalks or absence of sidewalks ● Decrease of the social activities flow/intensity along the shoreline 	<ul style="list-style-type: none"> ● Presence of Agricultural activity and greenhouses nurseries ● Presence of heritage sites such as the Jewish cemetery, Maqam Abi Rouh ● Opportunity of transferring the depleted industrial zone to the industrial area south of the city, and gain subsequently a land for social housing
	Legal	<ul style="list-style-type: none"> ● The area is being transformed into an industrial zone though it is planned as a residential area ● Industrial development is taking over a zone designated as a residential area 	<ul style="list-style-type: none"> ● The reclaimed land is a public asset and can be utilized as an asset by the municipality to benefit all the city
	Environmental	<ul style="list-style-type: none"> ● Excessive land reclamation is erasing whatever is left from the maritime fauna and flora ● Natural and landscape heritage sites are not recognized and protected (Dekerman agricultural area) ● Industrial development is threatening the livelihood of this zone 	<ul style="list-style-type: none"> ● Presence of a public garden, the Saudi garden that can be linked with a network of green spaces along the shoreline

Table 77-SWOT of Character Zone H
Source: Author

		THREATS AND WEAKNESSES	STRENGTH AND OPPORTUNITIES
CHARACTER ZONE I	Physical	<ul style="list-style-type: none"> ● Infrastructural break ● Lack of visual and physical access to the sea due to the large scale embankment 	<ul style="list-style-type: none"> ● The undefined physical aspect of the reclaimed land can be morphed into a well-connected park linking the Dekerman to the sea
	Socio-economic	<ul style="list-style-type: none"> ● The presence of the refugee camp as an insular entity ● Lack of safety due to industrial works, and abundance of trucks ● Walkability is difficult in this area due to several hazards on sidewalks or absence of sidewalks ● Decrease of the social activities flow/intensity along the shoreline 	<ul style="list-style-type: none"> ● Presence of Agricultural activity and greenhouses nurseries
	Legal	<ul style="list-style-type: none"> ● The area is being transformed into an industrial zone though it is planned as a residential area ● Industrial development is taking over a zone designated as a residential area 	<ul style="list-style-type: none"> ● The reclaimed land is a public asset and can be utilized as an asset by the municipality to benefit all the city ● Agricultural lands are still intact in this zone and can be protected through incentives and laws
	Environmental	<ul style="list-style-type: none"> ● Excessive land reclamation is erasing whatever is left from the maritime fauna and flora ● Natural and landscape heritage sites are not recognized and protected (Dekerman agricultural area) ● Industrial development is threatening the livelihood of this zone 	<ul style="list-style-type: none"> ● Presence of a wide variety of plantation and vast agricultural lands not subdivided yet.

Table 78-SWOT of Character Zone I
Source: Author

		THREATS AND WEAKNESSES	STRENGTH AND OPPORTUNITIES
CHARACTER ZONE J	Physical	<ul style="list-style-type: none"> ● Infrastructural break ● Lack of visual and physical access to the sea due to the large scale embankment 	<ul style="list-style-type: none"> ● The undefined physical aspect of the reclaimed land can be morphed into a well-connected park linking the Dekerman to the sea
	Socio-economic	<ul style="list-style-type: none"> ● The presence of the refugee camp as an insular entity ● Lack of safety due to industrial works, and abundance of trucks ● Walkability is difficult in this area due to several hazards on sidewalks or absence of sidewalks ● Decrease of the social activities flow/intensity along the shoreline 	<ul style="list-style-type: none"> ● Presence of the garbage treatment plant, and the water treatment plant ● Possibility of creating an economic cycle around recycling and upcycling garbage rather than dumping it into the sea
	Legal	<ul style="list-style-type: none"> ● The area is being transformed into an industrial zone though it is planned as a residential area ● Industrial development is taking over a zone designated as a residential area 	<ul style="list-style-type: none"> ● The reclaimed land is a public asset and can be utilized as an asset by the municipality to benefit all the city ● Agricultural lands are still intact in this zone and can be protected through incentives and laws
	Environmental	<ul style="list-style-type: none"> ● Excessive land reclamation is erasing whatever is left from the maritime fauna and flora ● Natural and landscape heritage sites are not recognized and protected (Dekerman agricultural area) ● Industrial development is threatening the livelihood of this zone 	<ul style="list-style-type: none"> ● Presence of the Sayniq River as an undervalued natural heritage, with opportunity of revitalization as a link between the hinterland and the sea

Table 79-SWOT of Character Zone J
Source: Author

REFERENCES

- Abou Alfa, R. (2016). *Saida's Garbage Experience: How a Mountain Became a Landfill*. The Legal Agenda. <http://legal-agenda.com/en/article.php?id=1768>
- Al Haddad, L. E. (2012). *The transition zone between old and modern Saida: A strategic urban design intervention* [Master's thesis, American University of Beirut]. <https://ulib.aub.edu.lb/thesis/et-5757.pdf>
- AL-HARITHY, H. (2005). [Reframing] "World Heritage." *Traditional Dwellings and Settlements Review*, 17(1), 7–17. JSTOR.
- Al-Harithy, H., & Guadagnoli, G. (2014). *Cultural and Natural Heritage* (Saida Urban Sustainable Development Strategy). MedCities. http://www.medcities.org/documents/22116/135803/3.+Saida_+Diagnosis_Cultural+and+Natural+Heritage.pdf/a63dafac-c6cc-471e-bed3-c5f09e7e12af
- Al-Harithy, H., Makhzoumi, J., Hallaj, O. A., Chabaan, J., Hamade, K., Srour, L., Guadagnoli, G., Al-Sabbagh, S., & Mneimne, D. (2014). *Action Plans Report* (Saida Urban Sustainable Development Strategy). MedCities. <http://www.medcities.org/documents/22116/42242/Final+Report+Action+Plan+and+Appendixes.pdf/39cdb1fc-6469-441c-aa2e-2f65275d6fdf>
- Al-Harithy, H., Makhzoumi, J., Hallaj, O. A., Kanj, H., & Srour, L. (2014). *Strategic Framework Report* (Saida Urban Sustainable Development Strategy). MedCities. http://www.medcities.org/documents/22116/42242/13.11.12.Saida+USUDS+Strategic+Framework+Report_finalGG+-+Copy.pdf/7efb5852-d4bb-4740-8f42-8575b5b32bf7

- Alieh, Y. (2015). *Saida's new port completes first phase. Old port to open only to fishermen*. BusinessNews.Com.Lb.
<http://www.businessnews.com.lb/cms/Story/StoryDetails/5211/Saida's-new-port-completes-first-phase>
- Al-Sabbagh, S. M.-Y. (2015). *Rethinking planning tools through the ecological landscape design approach: Saida case study* [Master's thesis, American University of Beirut]. <https://ulib.aub.edu.lb/thesis/et-6166.pdf>
- AlSayyad, N. (2001). *Consuming tradition, manufacturing heritage: Global norms and urban forms in the age of tourism*. Routledge.
<https://doi.org/10.4324/9781315011486>
- Barthel, P.-A. (2014). *Saida's CDS (Cities for a New Generation-The Role of 3 MENA Cities)*.
http://www.cmimarseille.org/sites/default/files/newsite/library/files/en//12_Saida_Review%20of%20National%20Urbanization%20Framework_English.pdf
- Cabral, R. B., & Aliño, P. M. (2011). Transition from common to private coasts: Consequences of privatization of the coastal commons. *Ocean & Coastal Management*, 54(1), 66–74. <https://doi.org/10.1016/j.ocecoaman.2010.10.023>
- Carta, M., & Ronsivalle, D. (2016). *The Fluid City Paradigm: Waterfront Regeneration as an Urban Renewal Strategy* (1st ed). Springer International Publishing.
<https://doi.org/10.1007/978-3-319-28004-2>
- Chaaban, J., Hamade, K., & Srour, L. (2014). *Employment in Traditional Crafts and Trades* (Saida Urban Sustainable Development Strategy).
- Dandachli, M. (1985). *تطور صيدا العمراني. المركز الثقافي للبحوث والتوثيق*.

- DAR - IAURIF. (2005). *National Physical Master Plan of the Lebanese Territory*.
<http://www.cdr.gov.lb/study/sdatl/English/NPMPLT.PDF>
- Debs, H., Fawaz, M., Hamadeh, Y., Sahakian, S., & Serhan, I. (2018). *Beirut Zone 10, Social justice and the city*. AUB Policy Institute.
<http://www.aub.edu.lb/ifi/Pages/social-justice-and-the-city.aspx>
- Dictaphone Group. (2015). *Mashi T Dallik*. <https://dictaphonegroup.com/wp-content/uploads/2018/12/Mashi-ta-Daleek-final.pdf>
- El Kalash, A. (2001). *Saida 1873-2001*.
- El Nashra. (2015, September 19). شارع الشاكرية عمره 125 عامًا: أقدم سوق تجاري خارج مدينة صيدا القديمة. El Nashra.
<https://www.elnashra.com/news/show/914030/%D8%B4%D8%A7%D8%B1%D8%B9-%D8%A7%D9%84%D8%B4%D8%A7%D9%83%D8%B1%D9%8A%D8%A9-%D8%B9%D9%85%D8%B1%D9%87-125-%D8%B9%D8%A7%D9%85-%D8%A3%D9%82%D8%AF%D9%85-%D8%B3%D9%88%D9%82-%D8%AA%D8%AC%D8%A7%D8%B1%D9%8A-%D8%AE%D8%A7%D8%B1%D8%AC-%D9%85%D8%AF%D9%8A>
- El Zain, A. (1913). *تاريخ صيدا*.
- European Environment Agency (EEA). (2000). *CEC Communication 2000/547 ICZM*.
<https://www.eea.europa.eu/help/glossary/eea-glossary/integrated-coastal-zone-management>
- Fairclough, G., Sarlöv Herlin, I., & Swanwick, C. (2018). *Routledge Handbook of Landscape Character Assessment: Current Approaches to Characterisation and Assessment* (1st ed.). Routledge. <https://doi.org/10.4324/9781315753423>

- Fusco Girard, L. (2013). Toward a Smart Sustainable Development of Port Cities/Areas: The Role of the “Historic Urban Landscape” Approach. *Sustainability*, 5, 4329–4348. <https://doi.org/10.3390/su5104329>
- Galdini, R. (2005). Urban Regeneration Process—The Case Of Genoa, An Example Of Integrated Urban Development Approach. *European Regional Science Association, ERSA Conference Papers*.
- Gallo, M., & Marinelli, M. (2020). Sustainable Mobility: A Review of Possible Actions and Policies. *Sustainability*, 12. <https://doi.org/10.3390/su12187499>
- GFDRR. (2017). *Coastal Management and Beach Restoration Guidelines in Jamaica*.
- Ghofrani, Z., Sposito, V., & Faggian, R. (2017). A Comprehensive Review of Blue-Green Infrastructure Concepts. *International Journal of Environment and Sustainability*, 6, 15–36. <https://doi.org/10.24102/ijes.v6i1.728>
- Ghorayeb, M. (1997). L’intervention de Michel Écochard à Saïda: Projets et réalisations. In *Saïda: Cité du monde* (pp. 71–81). UNESCO.
- Gospodini, A. (2001). Urban Waterfront Redevelopment in Greek Cities: A Framework for Redesigning Space. *Cities*, 18(5), 285–295. [https://doi.org/10.1016/S0264-2751\(01\)00022-1](https://doi.org/10.1016/S0264-2751(01)00022-1)
- Graham Fairclough, Ingrid Sarlöv Herlin, & Carys Swanwick (Eds.). (2018). *Routledge Handbook of Landscape Character Assessment*. Routledge. <https://doi.org/10.4324/9781315753423>
- Grydehoj, A. (2015). Making Ground, Losing Space: Land Reclamation and Urban Public Space in Island Cities. *Urban Island Studies*, 1, 96–117. <https://doi.org/10.20958/uis.2015.6>

- Hallaj, O. (2014a). *Local Economic Development* (Saida Urban Sustainable Development Strategy). MedCities.
- Hallaj, O. (2014b). *Urban Infrastructure* (Saida Urban Sustainable Development Strategy). MedCities.
- Hammoud, R. (2018). *Green infrastructure as an urban design strategy to enhance connectivity in the city of Saida* [Master's thesis, American University of Beirut]. <https://ulib.aub.edu.lb/thesis/et-6818.pdf>
- Harris, L. E. (2009). Artificial Reefs for Ecosystem Restoration and Coastal Erosion Protection with Aquaculture and Recreational Amenities. *The Reef Journal*.
- Iacofano, D. S., & Malhotra, M. (2019). *Streets reconsidered: Inclusive design for the public realm*. Routledge.
- 'Izzat Na'im, I., Shahrizal, A. R. M., & Safari, M. D. (2018). A Short Review of Submerged Breakwaters. *MATEC Web Conf.*, 203. <https://doi.org/10.1051/mateconf/201820301005>
- Jauhiainen, J. (1995). *Waterfront redevelopment and urban policy: The case of Barcelona, Cardiff and Genoa* (Vol. 3). <https://doi.org/10.1080/09654319508720287>
- Kostopoulou, S. (2013). On the Revitalized Waterfront: Creative Milieu for Creative Tourism. *Sustainability*, 5(11), 4578–4593. <https://doi.org/10.3390/su5114578>
- Lamy, S., & Bou Aoun, C. (2017). *Le Littoral*. ALBA.
- Lebanese Republic, & Municipality of Saida. (2001). *Mobilisation des Ressources Urbaines et Architecturales* (IFPO).
- Makhzoumi, J., & Al-Sabbagh, S. (2014). *Green/Open Space Network* (Saida Urban Sustainable Development Strategy). MedCities.

http://www.medicities.org/documents/22116/135803/2.+Saida_Diagnosis_Green-Open.pdf/4bbf1534-8be5-46b1-b2ea-1b30f477d27d

Morris, R., Heery, E., Loke, L., Lau, E., Strain, E., Airoidi, L., Alexander, K., Bishop, M., Coleman, R., Cordell, J., Dong, Y., Firth, L., Hawkins, S., Health, T., Kokora, M., Lee, S., Miller, J., Perkol-Finkel, S., Rella, A., & Leung, K. (2019). *DESIGN OPTIONS, IMPLEMENTATION ISSUES and EVALUATING SUCCESS OF ECOLOGICALLY-ENGINEERED SHORELINES*.

Nahas, C. (2001). *Saida (Sidon)* (Stakeholder Analysis and Social Assessment for the Proposed Cultural Heritage and Tourism Development Project, pp. 197–237). CDR.

http://www.charbelnahas.org/textes/Amenagement_et_urbanisme/Cultural_Heritage_Report/I-Sidon_197-237.pdf

Osman, K. A., & Farahat, B. I. (2018). The conservation of the waterfront of Saida: A model for tourism and culture-led revitalization in valuable areas. *HBRC Journal*, 14(3), 321–333. <https://doi.org/10.1016/j.hbrcj.2017.02.003>

PAP/RAC. (2016). *The way to a regional framework for ICZM in the Mediterranean 2017-2021*. UNEP/PAP-RAC.

Priority Actions Program (PAP). (2004). *Guidelines for Urban Regeneration in the Mediterranean Region*.

Ragheb, R. (2017). Sustainable Waterfront Development—A Case Study of Bahary in Alexandria, Egypt. *Journal of Civil Engineering and Architecture*, 11. <https://doi.org/10.17265/1934-7359/2017.04.007>

Rodier, D. (2005). *Saïda: Histoire et Société*. UNESCO.

- Schubert, D. (2010). Waterfront Revitalizations: From a Local to a Regional Perspective in London, Barcelona, Rotterdam, and Hamburg. In *Transforming Urban Waterfronts*. <https://doi.org/10.4324/9780203841297-12>
- Sengupta, D., Chen, R., & Meadows, M. E. (2018). Building beyond land: An overview of coastal land reclamation in 16 global megacities. *Applied Geography*, 90, 229–238. <https://doi.org/10.1016/j.apgeog.2017.12.015>
- Solh, L. (2012). *The Politics of Location and its Impact on Municipal Amalgamation – the Case of Saida and el Zahrani Union of Municipalities* [Master’s thesis in Urban Planning]. American University of Beirut.
- Stauber, J. L., Chariton, A., & Apte, S. (2016). Chapter 10—Global Change. In J. Blasco, P. M. Chapman, O. Campana, & M. Hampel (Eds.), *Marine Ecotoxicology* (pp. 273–313). Academic Press. <https://doi.org/10.1016/B978-0-12-803371-5.00010-2>
- Tanrikul, A., & Hoşkara, Ş. (2019). A New Framework for the Regeneration Process of Mediterranean Historic City Centres. *Sustainability*, 11, 4483. <https://doi.org/10.3390/su11164483>
- Trans-Arabian Pipe Line Company. (1951). *Tapline—The Story of the World’s Biggest Oil Pipeline*. Al Mashriq. <http://almashriq.hiof.no/lebanon/300/380/388/tapline/>
- Tudor, C. (2014). *An Approach to Landscape Character Assessment*.
- UN. (2017). *The Ocean conference*. United Nations. oceanconference.un.org
- UNEP. (2008). *Protocol on Integrated Coastal Zone Management (ICZM) in the Mediterranean*.

UNESCO. (2002). *Petites Villes Côtières Historiques Développement urbain équilibré entre terre, mer et société*. UNESCO.

<https://unesdoc.unesco.org/ark:/48223/pf0000142291>

Verdeil, E. (2012). Michel Ecochard in Lebanon and Syria (1956–1968). The spread of Modernism, the building of the independent states and the rise of local professionals of planning. *Planning Perspectives*, 27(2), 249–266.

<https://doi.org/10.1080/02665433.2012.646774>

Yin, R. K. (2014). *Case study research: Design and methods* (5th ed.). Sage Publications.

<http://aub.summon.serialssolutions.com/2.0.0/link/0/eLvHCXMwdZw9b8IwEIZ>

PfCxsNIAKpcgjDFSR7cS5GTVizAConVCMbXVALKj_n7PjNFLVjhdLlhyfc7

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Yfpn1Ms_nn-AiOq8LLRDJYwdJTT9jWsbhXe2QN8XWsH

Zaatari, G. (2011). *توقيع إتفاقية إنشاء فندق صيدون في المدينة على أرض تملكها بلدية صيدا*. Saida

Online. <http://www.saidaonline.com/newsg1.php?go=fullnews&newsid=42643>

