AMERICAN UNIVERSITY OF BEIRUT

AN INTEGRATED URBAN DESIGN APPROACH: THE CASE OF NORTH BASSATINE, TRIPOLI – LEBANON

by
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AN ABSTRACT OF THE THESIS OF

Abdallah M. Ghassan El Hajj for Master of Urban Design
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Title: An Integrated Urban Design Approach: The Case of *North Bassatine*, Tripoli – Lebanon

This thesis investigates the issue of urban sprawl at the expense of natural and open areas. Urban design and planning become more challenging if development occurs in a market-oriented and laisser-faire context. Many social and environmental problems result from inappropriately planned urban growth. Such problems are related to the quality of life, incompatible land uses, traffic congestion, pollution, loss of open green spaces, and fragmentation of ecological habitats.

The study explores urban growth management and urban containment strategies in both the international and the Lebanese contexts. Containment strategies applied internationally throughout the world could be accomplished through a variety of planning mechanisms such as: Urban Growth Boundaries (UGB), urban service areas, acquisition of conservation easements, transfer of development rights and greenbelts.

This thesis adopts a holistic ecological landscape approach in dealing with the issue of urban sprawl. This inter-disciplinary approach covers the total urban landscape, and tackles its social, economical and ecological dimensions. Vertical coordination through the different levels of governments is also essential for making this approach successful. It is necessary to link the different scales of planning, from national to regional to local.

The case of *Bassatine Al-Saqui Al-Shimali area* in Tripoli-Lebanon proved the possibility of preserving ecologically valued lands taking into consideration the need to provide for potential urban expansion. Such objective could only be achieved through an urban design scheme that is guided and supported by an integrative planning approach coordinated among the different scales of governance.

After setting the design vision and intervention objectives, the study explores the appropriateness of the planning tools in the Lebanese context and the design strategy formulation is based on quantitative methods of projection.

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ABREVIATIONS

BSSDA	*Bassatine Al-Saqui Al-Shimali Development Agency*
CDR	Council for Development and Reconstruction
DGA	Directorate General of Antiquities
DGU	Directorate General of Urbanism
ERR	East Ring Road of Tripoli
FAR	Floor to Area Ratio
HCU	Higher Council of Urbanism
IAURIF	Institut d'Aménagement et d'Urbanisme de la Région d'Ile de France
IFPO	Institut Français du Proche Orient
LAF	Lebanese Armed Forces
MOE	Ministry of Environment
NPMPLT	National Physical Master Plan of the Lebanese Territory
PAH	Pan – Arab Highway
PPP	Pubic – Private Partnership
SAR	Surface to Area Ratio
SDRMB	Schéma Directeur de la Région Métropolitaine de Beyrouth
TOD	Transit – Oriented Development
UGB	Urban Growth Boundaries
WRR	West Ring Road of Tripoli
WWTP	Waste Water Treatment Plant of Tripoli

CHAPTER 1

INTRODUCTION

1.1. Urban Sprawl: an Overview

"Today's development practices – both economic and physical forms of development practices – consume enormous amounts of land and natural resources, damage ecosystems, produce a wide variety of pollutants and toxic chemicals, create over-growing inequities between groups of people, fuel global warming, and undermine local community, economies, and quality of life. Since the changes are incremental, it is hard to appreciate how rapidly our world is being transformed and how fundamentally these processes affect our lives and the choices available to us."[1]

Urban expansion is the inevitable result of economic and social development. The shape and pace of this phenomenon is subject to the type and model of development processes – whether it is a supply-demand model or a political economy model as discussed by Ali Madanipour in his book *Design of Urban Space* – and the extent to which it is open to market forces. It is also subject to social relations and how people use and perceive the space:

"The physical space that we perceive, create and use is embedded in our daily practices and it is through charting the process of its making that we can understand this environment."[2]

Today urban sprawl – and in most cases suburban sprawl – is a form of uncontrolled urban expansion where development processes take over open areas without clear strategies of urban growth. The resulting relation between cities and their hinterland changed, and what was once productive countryside immediately surrounding the city is now subject to land speculation and haphazard development.

[1] Wheeler, 2004.
[2] Madanipour, 1996.

This type of development is not only specific to automobile-dependent communities in the United States, Canada, and Australia, nor is it specific to industrialized cities of developed countries; it is taking place in many other places of the world. Although it is characterized by low-density development mainly in North American cities, suburban sprawl occurs also at moderate and high-densities levels especially in developing countries. In many cases, this type of development is fragmented in the sense that projects are not related to one another, detached and dispersed in homogenous and mainly residential areas. These projects are poorly connected and separated by wide street networks, and most importantly ecologically destructive with no consideration for natural areas.[3]

This thesis deals with the issue of urban sprawl at the expense of natural and open areas in the context of Lebanon for which there are no protective measures. Agricultural and green areas are shrinking especially those surrounding major coastal cities as a result of rapid suburban expansion and the booming of real estate market on the one hand, and the weak agricultural sector and its limited economic income on the other. The urban expansion of the city of Tripoli, Lebanon will be the focus of this research and the city's northern *Bassatine* suburb will be considered as a case study. Historically, Tripoli relied on agricultural produce from its surrounding orchards. Today the city's famous *Bassatine* is threatened by urbanization following a newly approved zoning plan in addition to a couple of new projects of land subdivision. These plans will open the area for potential future low-density development that lacks social and environmental qualities. Knowing that urban expansion is inevitable – as mentioned above – this thesis objective is to preserve the landscape value of the green orchards in the area taking into consideration the need to provide for potential urban expansion.

[3] Wheeler, 2004, 3.

1.2. Research Problem, Research Question and Hypothesis

Except for a handful of protected national reserves, open and green areas are under continuous threat of imminent construction developments without consideration of their social, environmental impact. Even in areas like waterbeds and areas prone to landslides, developments are occurring without serious control from the responsible public authorities especially in developing countries such as Lebanon. It is imperative that residential areas be specified and concentrated only where appropriate geographic and climatic conditions are available; so that people who might want to live in/using these areas remain protected from potential natural hazards.

Urban sprawl in Tripoli is most obvious in the form of land subdivision patterns (Fig.3). It also takes the form of informal settlements resulting from rural exodus especially on the city's periphery on its northern and eastern plateaus as well as in some areas next to the waterfront (Fig.2). Ribbon developments along existing roads could also be found especially in El Qobbe along the road to Zgharta (Fig.1).

Fig. 1. Ribbon development, Tripoli – Zgharta Road

Source: 2007 Google satellite photo.

Fig. 2. Informal development, Tripoli, El Mina.

Source: 2007 Google satellite photo.

Fig. 3. Subdivision development, Tripoli, Western Bassatine.

Source: 2007 Google satellite photo.

The research problem in this thesis revolves around the following three main issues:

- Urban expansion in Tripoli and surrounding is threatening the last remaining green and agricultural areas in the city suburbs.
- Existing and previous master plans fail to provide a vision of green areas preservation; instead, these plans (especially those of 1971 and 2008) replace

‘Agricultural Zones’ by urban ‘Expansion Zones’, opening the door for urban expansion and land speculation in these areas.

- Land subdivision projects in the city have always been prepared with little or no consideration of social, environmental and aesthetical values.

Given the abovementioned issues, and guided by the existing zoning and newly proposed subdivision plans, the city suburbs will develop during the next decades into an irreversible high density urban areas that will lack substantial social and ecological qualities affecting people’s life in these new areas as well as in the city as a whole.

Although much of Tripoli’s orchards have already been replaced by new streets and high towers, and their economic value is not considered to be as important as it used to be in the past it is important to investigate the ecological and environmental importance of the remaining green areas and propose a scheme that consider them as part of any future expansion plans (Fig.4). Hence this research addresses the following question:

- How urban design strategies can preserve the existing landscape value of green and agricultural areas and control the urban expansion within Tripoli region suburbs?

Unlike Beirut, most of Tripoli’s urban development has been largely the result of the municipality’s planned initiatives of land subdivision. However, these initiatives failed to preserve the city’s landscape heritage represented by the citrus orchards. The currently proposed zoning and subdivision plans for Tripoli suburbs show the lack of vision within public administrations for a strategic plan that should consider social, economical, and environmental costs when dealing with urban expansion issues. Thus it could be concluded that planning mechanisms do exist in the context of Tripoli’s urban

expansion, however, these mechanisms allow for expansion yet fail to protect green and agricultural areas.

In the light of the above, this research hypothesis is an inter-disciplinary approach that combines urban design, urban planning and ecological landscape approaches yielding a balanced approach that allows for planned urban expansion yet with protective measures targeting green and agricultural areas.

This hypothesis is based on a holistic theoretical framework that will take into consideration ecological landscape concepts and study human-related, socio-economic and ecological processes. This vision would be realized through the implementation of an urban design scheme that is guided and supported by a strategic framework.

First, the strategic framework will provide general guidelines for urban expansion areas throughout the city. This plan that could be named as *'Tripoli Green Corridors Plan'* considers preserving parts of the existing green areas in the form of green wedges/fingers following environmentally sensitive spots and incorporating them with the expansion zones inside and around the city, taking into consideration the city's socio-economic status, its patterns of demographic evolution, and its major transportation networks.

Second, the urban design scheme will be elaborated within the general guidelines of the abovementioned strategic framework. The urban design intervention will focus on the area of *Bassatine Al Saqui Al Shimali* (Fig.5 & 6). The main objective of the site intervention will be preserving and restoring the landscape ecological and cultural (aesthetic, visual) value of *Al Saqui Al Shimali* area while taking into consideration the need to accommodate for potential urban expansion. This objective could be achieved by preserving a substantial part of *Al Saqui Al Shimali* in the form of

a multi-functional open space that will form with the proposed *Abou Ali Ecological Corridor;* the spine around which, future urban expansion could take place.

The feasibility of the plan relies on a set of existing and potential new urban planning tools, urban regulations (including zoning and land subdivision), and strategic policy formulations. However, within the context of an open market economy and a laisser-faire political culture, not to mention clientelistic politics and patronage relations, it is imperative to adopt an urban design scheme that would respond to market dynamics without underestimating the social and environmental costs.

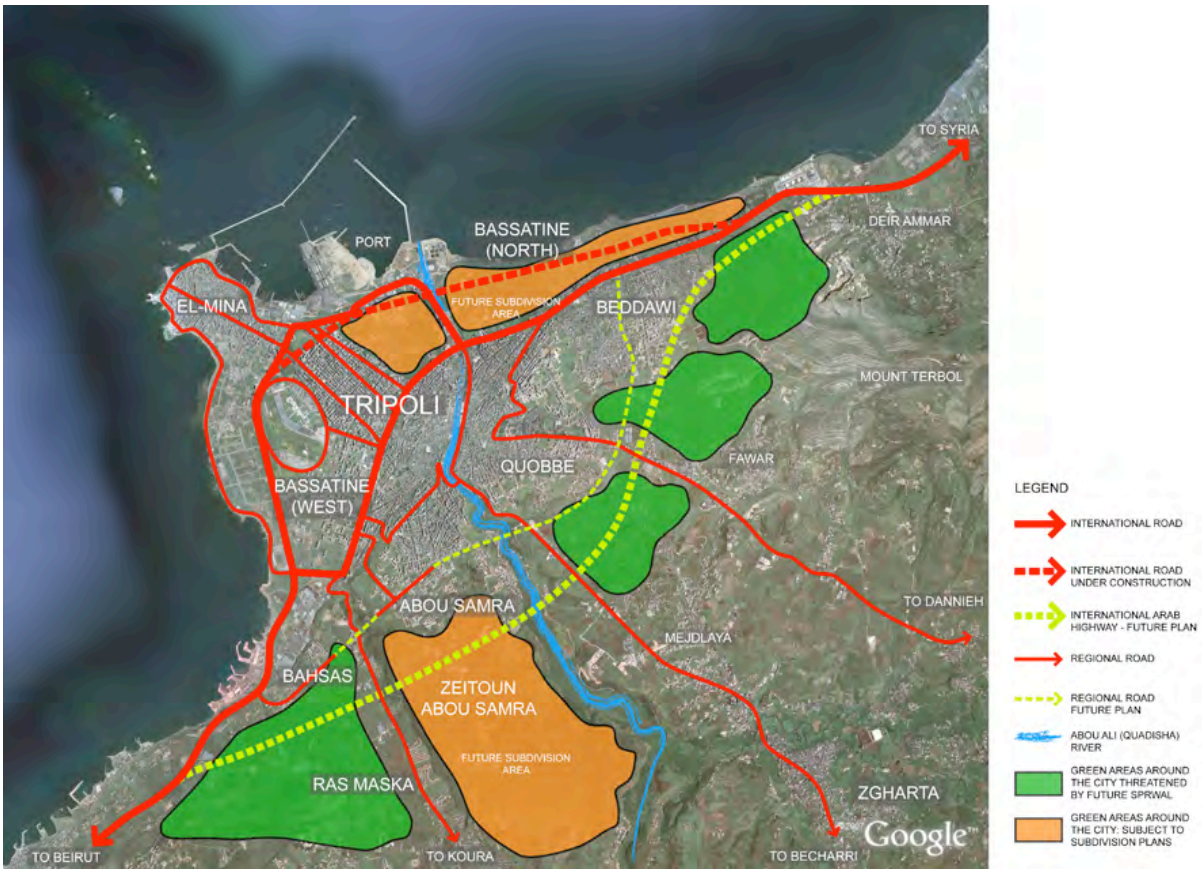


Fig. 4. Tripoli: plan showing the main circulation network vis-à-vis the surrounding green areas (by author based on a 2007 Google satellite photo)

Fig. 5. Location of *Bassatine Al Saqui Al Shimali* area in the city context.
(by author based on a 2007 Google satellite photo)

Fig. 6. Intervention site of *Bassatine Al Saqui Al Shimali* area.
(by author based on a 2007 Google satellite photo)

1.3. Thesis Significance

First, by addressing the infrequently used existing legislative tools, this thesis explores new approaches in urban growth management within a highly politicized and open market context, and opens a window on alternative solutions for green areas preservation especially in the vicinity of suburban areas.

Second, this research sheds light on the city's social, economic and environmental status. This will help in understanding the importance of the landscape dimension (including ecological, visual and heritage dimensions) in the urban design field. In addition, it helps in understanding relations among local developers on one hand, and between these developers and local and national public administrations on the other. By understanding these relations urban designers and planners will be more equipped with the appropriate tools to be able to take planning and design decisions.

Third, given a number of vital and substantial projects on the city level – the Pan-Arab highway and the city circular highway – are still unimplemented and need to be updated to meet current economic as well as environmental and social concerns, adding to the previously mentioned subdivision plans, this research could be considered as an opportunity to propose an alternative holistic approach that includes an updated and coherent vision of all of the above mentioned. Such study would serve as a reference for future plans in the city especially in *Zeitoun Abou Samra* and elsewhere in Lebanon such as Sidon, Tyre or Byblos where urban expansion threatens green and agricultural areas.

1.4. Methods of Investigation

The research work is divided in three phases, the first of which is dedicated for the exploration and analysis of theoretical models and case studies along two main themes: urban growth management and ecological management. Relevant literature that is found in a variety of sources, mainly books and periodicals, is examined and critically evaluated. The relation between the above-mentioned themes is the focal point of the literature review. The study in this phase evaluates the issue of urban sprawl and the continuously evolving interface between city and nature throughout the 19th and the 20th centuries till present. It also explores the evolution of planning tools and urban regulations in the developed countries as part of the evolving urban land management. Several past and contemporary case studies of urban containment strategies are examined and evaluated in order to establish the thesis theoretical framework.

In the light of the literature review and the adopted theoretical framework, the second phase is dedicated for the investigation, data collection and in depth analysis of Tripoli region and *Bassatine Al-Saqui Al-Shimali area*. During this phase the research investigates existing and currently proposed plans for the city and its green suburbs. This study is mainly meant to critically analyze the objectives behind developing these plans and their appropriateness to the city based on the adopted holistic theoretical framework. The work during the second phase focuses, among other issues, on Tripoli Region Master Plan, sections of the Lebanese National Master Plan that are relevant to the city, and the proposed subdivision plans. In order to understand the patterns of urban change in the city's suburban areas, site-specific spatial and physical analysis is conducted. The study includes transportation networks and their relations with land uses. Socio-economic study and real estate market analysis are conducted, the

ecological components are identified, and species and habitats are evaluated and classified. The methodological approach that is used for this phase relies on several tools of investigation. Structured open-ended interviews are conducted with key stakeholders including professionals from Tripoli and Beddawi municipalities, the Ministry of Agriculture in addition to professionals and researchers in the field of urban planning and environmental studies. Literature on related topics, existing official documents, newspapers, maps, and photo archives are investigated. Gathered information from different sources is overlapped and cross-referenced for reliability reasons. Several field visits are conducted for data collection and observations help in assessing the site existing conditions.

By building on the findings from the second phase, the third phase is dedicated for design strategy formulation and proposal making. After setting the design vision and intervention objectives, the appropriateness of several planning tools is explored and assessed based on quantitative methods of projection. Elements such as urban densities, amount of green open spaces and real estate values serve as parameters of projection that helps in evaluating the quality of the proposed urban design scheme in comparison with the projected development. After presenting the adopted design strategy, the proposed urban design scheme is elaborated and explored in detail. The scheme covers a wide range of design elements such as urban blocks, circulation networks, building massing, land use, open spaces and pedestrian networks.

CHAPTER 2

LITTERATURE REVIEW

2.1. The Industrial Revolution: The Urban Revolution

The issue of urban sprawl at the expense of natural and open spaces is not new. Rapid urban expansion first started with the development of the modern industrial city during the industrial revolution era between the late 18th and early 19th century. It has been increasingly accelerating ever since. The population and the size of the main cities of industrial nations – London, Paris, Berlin, New York, Boston, and others – expanded at unprecedented rates with population immigrating from rural areas as well as from abroad. As a result, industrial apartments – buildings within walking distance to factories and mills accommodating workers – increased, sanitation deteriorated, crime and disease proliferated, and life expectancy declined[4].

In response to these degrading social and urban environments, public authorities, inspired by the utopia movement that flourished in the United States and Europe at that time, undertook major reform projects along three principle lines:

First, the regulation of building and sanitary conditions that yielded to building and sanitary codes to be applied by local public authorities to new constructions.

Second, the redevelopment and expansion of urban infrastructure that fostered the development of new streets and residential districts, water systems, sewers, parks, and other infrastructure.

And third, the relocation of workers to new planned industrial villages in rural settings, among which were the ones implemented according to the theory of “garden

[4] Platt, 2004.

cities" (which we will talk about later in more details). Such communities, it was argued, "would promote health, happiness, productivity and morality"[5]. Paris Grand Boulevards and the new construction codes that were introduced by the famous Paris prefect Baron Georges-Eugene Haussmann were among the leading flagship projects that swept across Europe in the mid-19th century. This controversial project, at that time, radically changed the medieval city's urban fabric preparing the physical environment for the introduction of new means of transportation especially the private car (Fig.7).

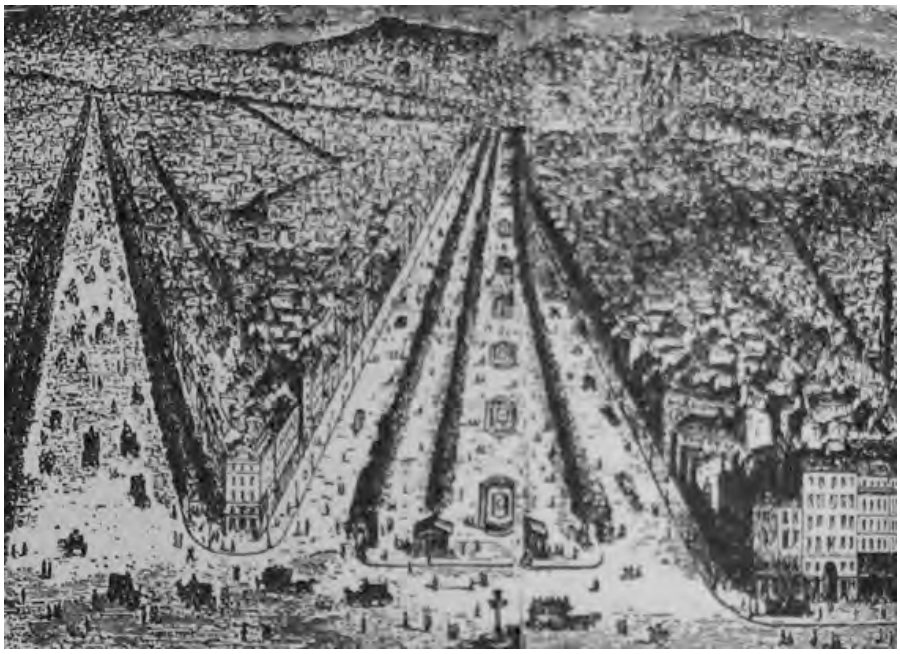


Fig. 7. Bird's-eye view of two Haussmann boulevards, Paris, circa 1870's.
Source: Platt, 2004.

2.2. The New City - Nature Interface

The relation between the evolving urban environment and nature during that period (2nd half of the 19th century) could be seen from two broad distinctive viewpoints. The first, which later developed into the early forms of landscape

[5] Platt, 2004.

architecture, considered nature as the alternative “cure” from the degrading urban environment, and as a sort of refuge for city dwellers who suffered from bad sanitary conditions not to mention overcrowding. This view was manifested in the new concept of urban parks in Europe that many of which were originated as royal lands or were created by royal initiatives as hunting grounds (London’s Hyde Park and Regent’s Park, and Paris’s Bois de Boulogne and Bois de Vincennes) and then were re-planned for public use[6]. While in the US, urban parks were established as deliberate public action and developed especially with Frederick Law Olmsted whose two legacies, New York’s Central Park in the 1850s and Boston’s Emerald Necklace in the 1880’s (Fig.8), presented an important contribution to modern city planning. The former involved the use of open space as an “oasis” around which the city would grow allowing people to benefit from “a specimen of God’s handiwork”. While the latter involved the use of a series of connected major and minor open spaces to interrupt urban sprawl. Olmsted believed in the benefit of open space and outdoor recreation on the physical and mental health of the city dweller7.

Fig. 8. Olmsted’s “Emerald Necklace” plan for the Boston park system, ca. 1885. *Source*: Platt, 2004.

[6] Platt, 2004.
[7] Ibid.

The second view, which remained within the limits of developing scientific discipline, is based in the early concepts of "ecology the science" as heralded by the natural history movement. This latter could be seen as a reaction against the industrial society and new methods of scientific analysis which where described as causes for the alienation of mankind from nature. Natural history emphasized studying all nature as a single integrated unit and stressed the importance of "holism", a notion that was later (during the 1980s of 20th century) adopted as the central concept of "landscape ecology"[8]. Coined by Ernst Haeckel, one of Charles Darwin's disciples, "oecologie" appeared in 1866 and was identified as "the science of the relations of living organisms to the external world and their habitat"[9]. This second viewpoint influenced to a limited extent, at least until the emergence of the environmental movement in the 1960s, the disciplines of urban planning and architecture. However, with its maturity in the early decades of the 20th century, ecology provided an understanding of natural processes and consequently assisted in the formulation of preservation and conservation strategies especially in the UK during the 1940s.

2.3. Garden-City Ideas and The Emergence of The Greenbelt Concept

Attempts to achieve a better balance between city and countryside started to appear at the turn of the 19th century. Ebenezer Howard, originally a stenographer, turned to be an influential visionary whose book *Garden Cities of To-morrow* left its mark on the history of urban planning[10]. First published in 1898 entitled *To-morrow*, and then reissued four years later under the new title of *Garden Cities of To-morrow,* Howard's book provided a detailed strategy to address the problems of the industrial

[8] Makhzoumi, Pungetti, 1999.
[9] Ibid.
[10] Wheeler, Beatley, 2009.

city. His vision was to systematically decentralize the industrial city by attracting its population into a ring of carefully designed garden cities surrounded by countryside and connected by railroads. His theory was successfully applied later, yet in the establishment of only two new communities: Letchworth and Welwyn. *"I have taken a leaf out of the books of each type of reformer and bound them together by a thread of practicability"* [11]. As stated in his own words, he was influenced by his predecessors: Robert Owen, whose theory of cooperative socio-economic organization led to the building of "villages of cooperation", and George Pullman, who built a new town for his Pullman Palace Car Company as a model of "enlightened corporate planning and good employer-employee relation" [12]. Howard's theory was represented in his "Garden city and Rural belt" and the "Three Magnets" diagrams (Fig.9 &10).

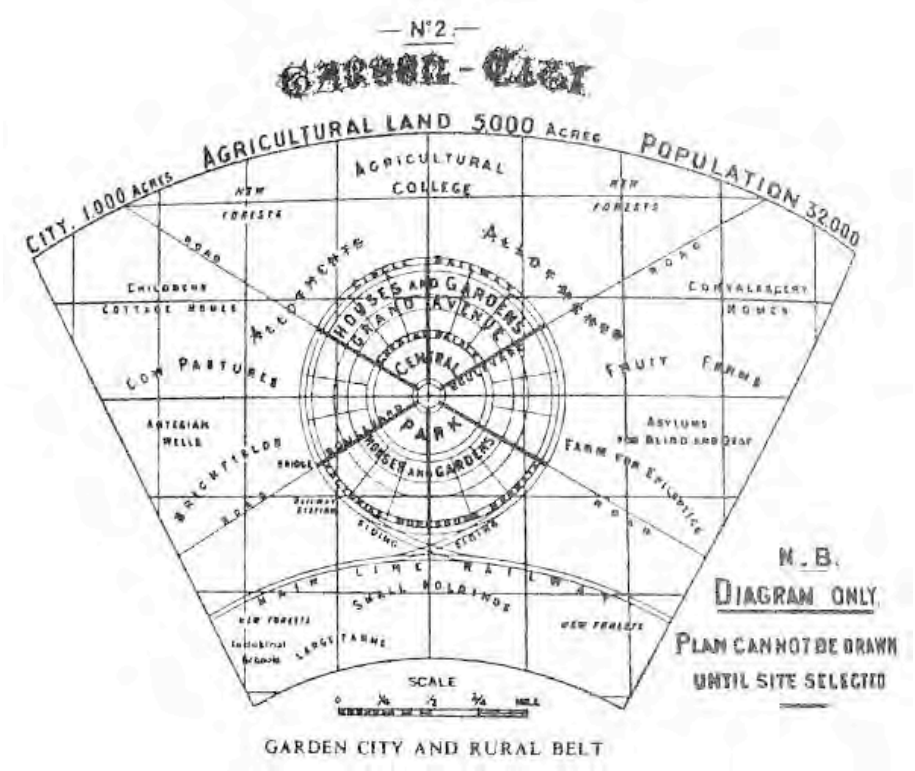


Fig. 9. Howard's diagram of "Garden City" and it's "Rural Belt".
Source: Platt, 2004.

[11] Platt, 2004.
[12] Ibid.

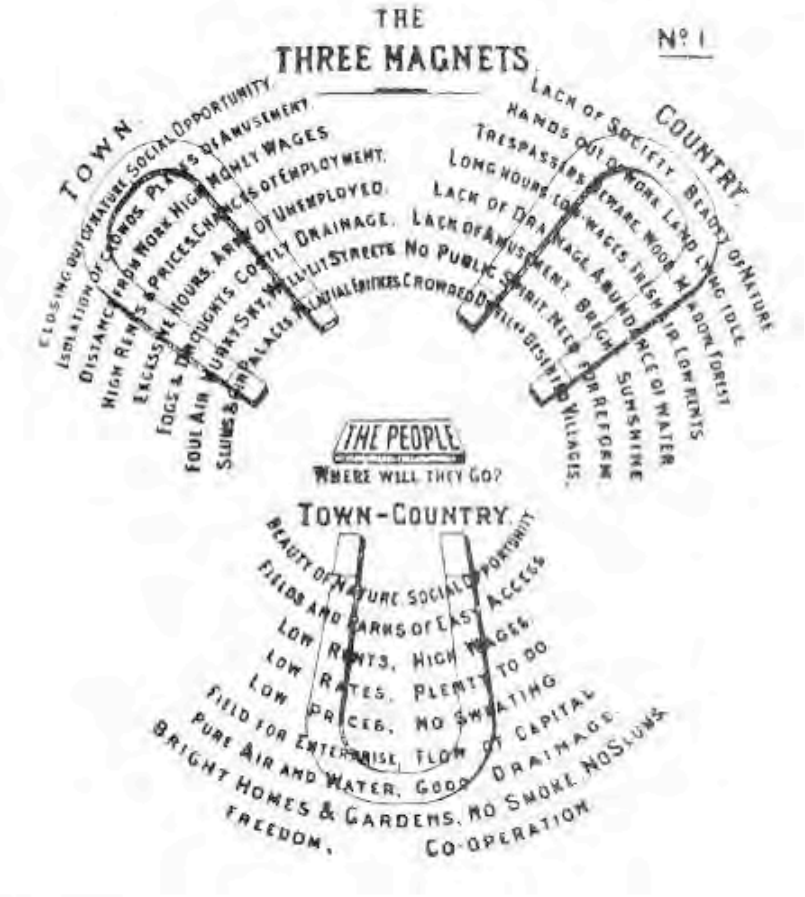


Fig. 10. Howard's "Three Magnets" diagram: Town, Country, and Town-Country. *Source*: Platt, 2004.

In the magnet metaphor 'Town' and 'Country' are represented as two opposed entities. The former offers economic and social opportunities at the expense of good health, expensive living, and high density, whereas the latter affords a healthy environment but also boredom, low-wages and 'lack of society'. Howard's alternative solution was represented in a third magnet, 'Town-Country', which incorporated the advantages of the other two and reduced their disadvantages. His concept inspired to a large extent the post war New Town and Greenbelts programs in many cities around the

world, and most notably the British New Town program that constructed eleven satellite cities around London between 1940s and 1960s[13].

2.4. The Evolution of Planning Tools and Urban Development Regulations

During the 1st half of the 20th century, remarkable changes happened in the respective role of government and the private market concerning the evolving nature of cities and their relation to the surrounding countryside.

In the US, the first National Conference on Planning was held and yielded the nation's first zoning ordinance in 1916 and new planning and zoning legislation was adopted in the 1920s (after it was already adopted in Germany in the 1890s). Starting from the 1930s, influenced by The City Beautiful movement, The Garden City movement, in addition to the progressive movement that included visionaries' ideas (like Le Corbusier's Radiant City and F. L. Wright's Broadacre City), low-density automobile-dependent suburbia emerged and was characterized by the segregation of housing, shops, and workplaces. Land use planning (Fig.11), as part of comprehensive plans that include among other elements traffic circulation, sewer, housing, economic development etc, started to dominate planning practices especially in the U.S. A land use plan usually consists of a text and a map where the text includes policies, and the maps illustrate the spatial application of these policies specifying certain types of use for specific areas. Zoning ordinance (Fig.11) is the type of regulation most commonly associated with the implementation of land use plans. Zoning maps divides a community into districts, and the accompanying text lists the types of uses permitted in each district and sets forth regulations governing the way in which these uses may

[13] Wheeler, Beately, 2009.

occur. In other words, Zoning provides envelop for development[14]. On a more detailed level, subdivision regulations and development controls provide standards and a set of procedures for dividing land into separate parcels. Land subdivision became the primary tool shaping the public as well as private spaces. Its main objective is to protect future owners or occupants of newly developed land from unhealthy, unsafe, inadequate developments[15]. It provides detailed standards governing the geometric shapes; sizes and configuration of lots, access to roads; the minimum widths and design of streets; required sewer and water lines; requirements of street lights and trees; and dedication of land for public use (Fig. 12&13).

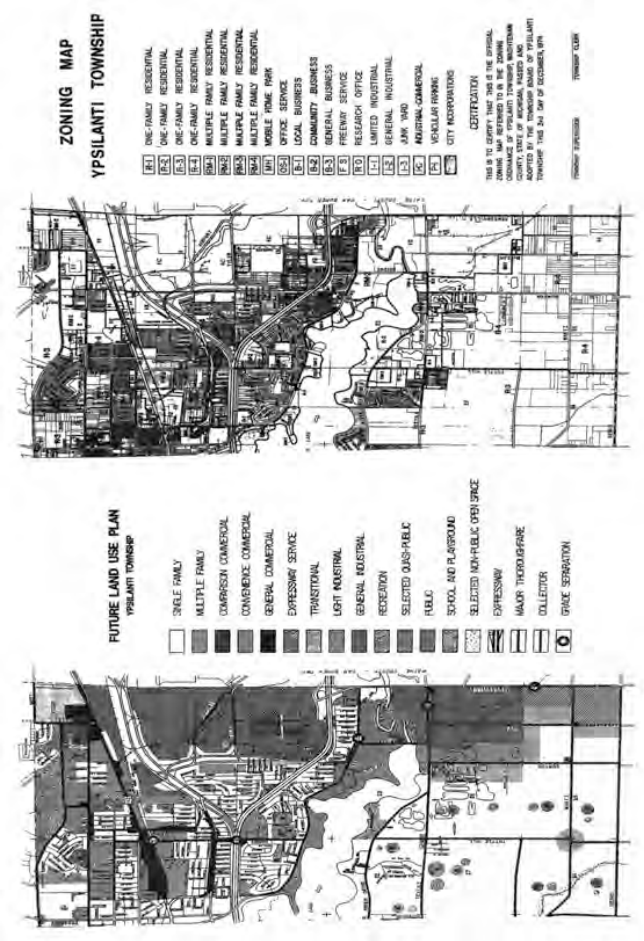


Fig. 11. Example of Land use and zoning maps.
Source: Catanese, Snyder, 1988.

[14] Catanese, Snyder, 1988.
[15] Toner, Gil & Lucchesi, 1994.

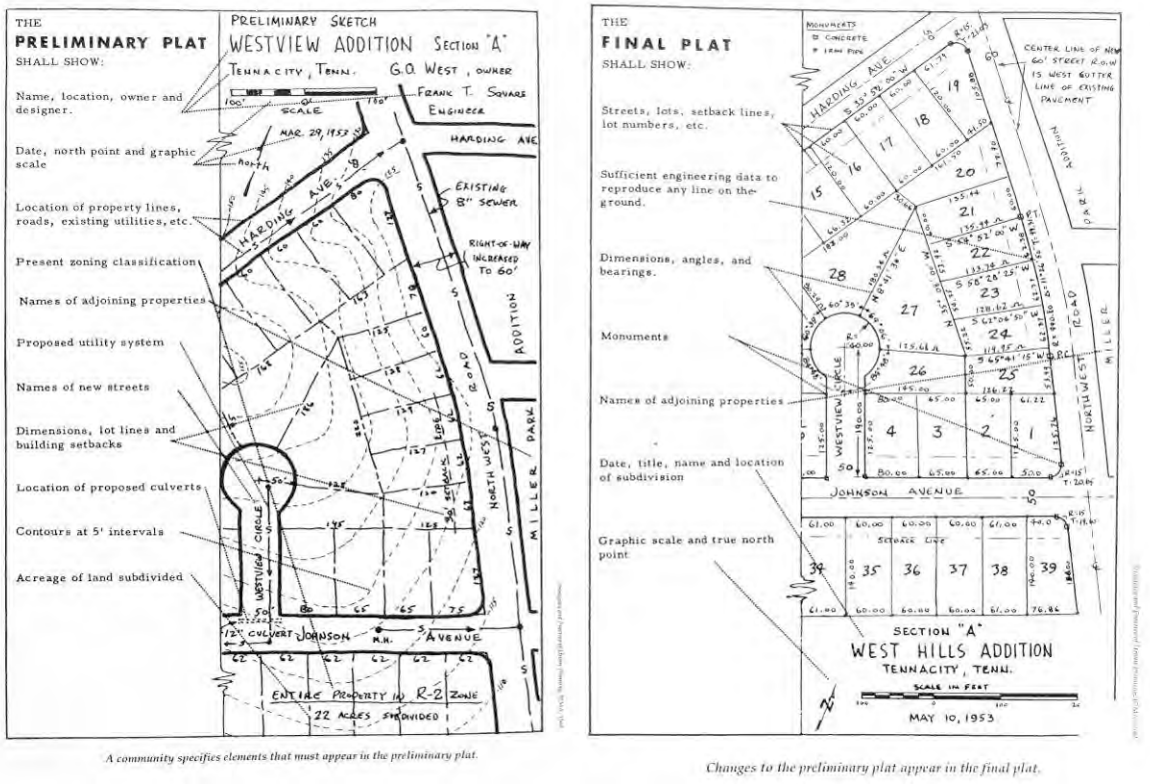


Fig. 12. Example of a preliminary and final "platting" as part of subdivision process in the 1950s. *Source*: Toner, Gil, & Lucchesi, 1994.

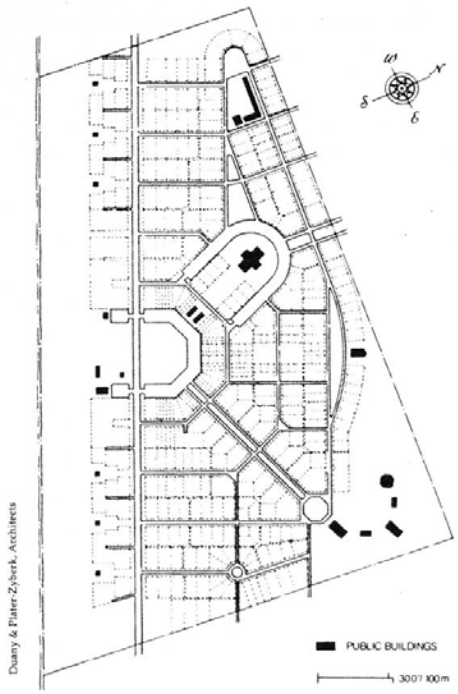


Fig. 13. Example of a subdivision plan in Seaside, Florida.
Source: Toner, Gil, & Lucchesi, 1994.

2.5. Urban Containment Strategies & Case Studies

As a result of the rapidly and increasingly expanding urban areas at the expense of natural and open spaces, many efforts were undertaken to try to control urban sprawl and strategies were adopted to prevent or at least to slow down developments that are invading rural and agricultural areas. In Britain, Planners and policy makers, inspired by Howard's ideas, came up with urban containment strategies as part of regional plans. Howard's ideas were implemented in Abercrombie's Greater London Plan of 1945, which imposed a tight urban development boundary, beyond which a broad strip of land was classified as 'Green Belt' area (Fig.14&15), within which development would be strictly implemented[16].

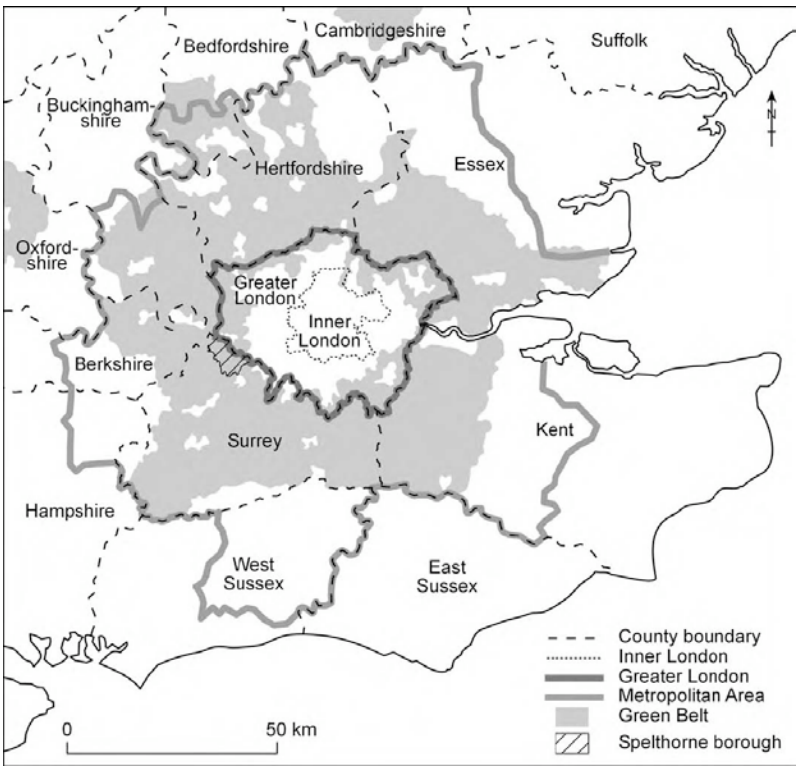


Fig. 14. London's Metropolitan Green Belt.

Source: Gant, Robinson, Fazal, 2011.

[16] Milward, 2006.

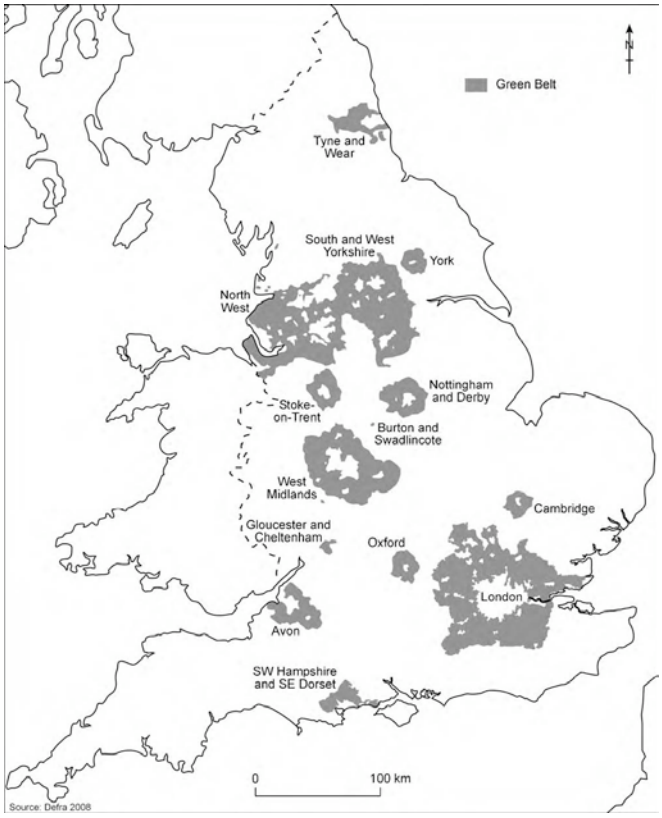


Fig. 15. The UK's 14 Green Belts.
Source: Gant, Robinson, Fazal, 2011.

Following their successful implementation in Britain, greenbelts as tools to contain urban growth were widely adopted in many other places in Europe, Asia, Oceania, and North America[17]. Greenbelts, as proposed in the Greater London Plan of 1945, had originally three main objectives: the restriction of urban growth, the definition of an outer limit or boundary to restriction, and the provision of recreation as a primary use of the land. Later in 1955, through a series of circulars and planning policy guidance notes, additional aims for greenbelts at the national level were introduced: to check the further growth of a large built-up area; prevent neighboring towns from merging together; preserving the physical setting and special character of historic towns[18] (Fig.16).

[17] Ali, 2008.
[18] Amati, Yokohari, 2006.

Throughout the 20th century till present time, although proved successful in containing urban growth, preserving agricultural lands, providing recreational opportunities and improving urban settings, a different viewpoint argues that greenbelts has been accompanied by unintended negative consequences in terms of economic and social costs resulting from restricting land supplies by greenbelt regulations, most notably is the increase in land prices within inner cities that would lead to what has been termed as "leapfrog" development: pushing new development to areas beyond the greenbelt area where land prices are cheaper and no restrictions exist[19].

Fig. 16. Western part of London's greenbelt.
Source: Google satellite photo, 2007.

In the aftermath of World War II and the development boom that resulted from relevant reconstruction projects, an increased number of critics like Jane Jacobs, William H. White, and Lewis Mumford, in addition to a number of environmental movements, started campaigning against the unrestrained post-war development practices including the automobile-dependent suburban sprawl (Fig.17). In the US,

[19] Ali, 2008.

during the early 1970s, these efforts yielded the creation of the National Environment Policy Act together with new agencies, programs, and funding commitments to restore and protect the nation's land, air, and water resources. In Britain and other European countries like Germany and The Netherlands, new urban containment strategies were adopted, and crucial environmental laws were enacted. In the late 1980s and early 1990s, following a number of international conferences on the earth's degrading environmental conditions, new planning and design tools such as Smart Growth control, Transit-Oriented Development (TOD), not to mention the New Urbanism movement, started to appear especially in North American cities trying to provide alternative development practices to suburbanization trends that relied heavily on highway systems and the advanced street networks connecting them.

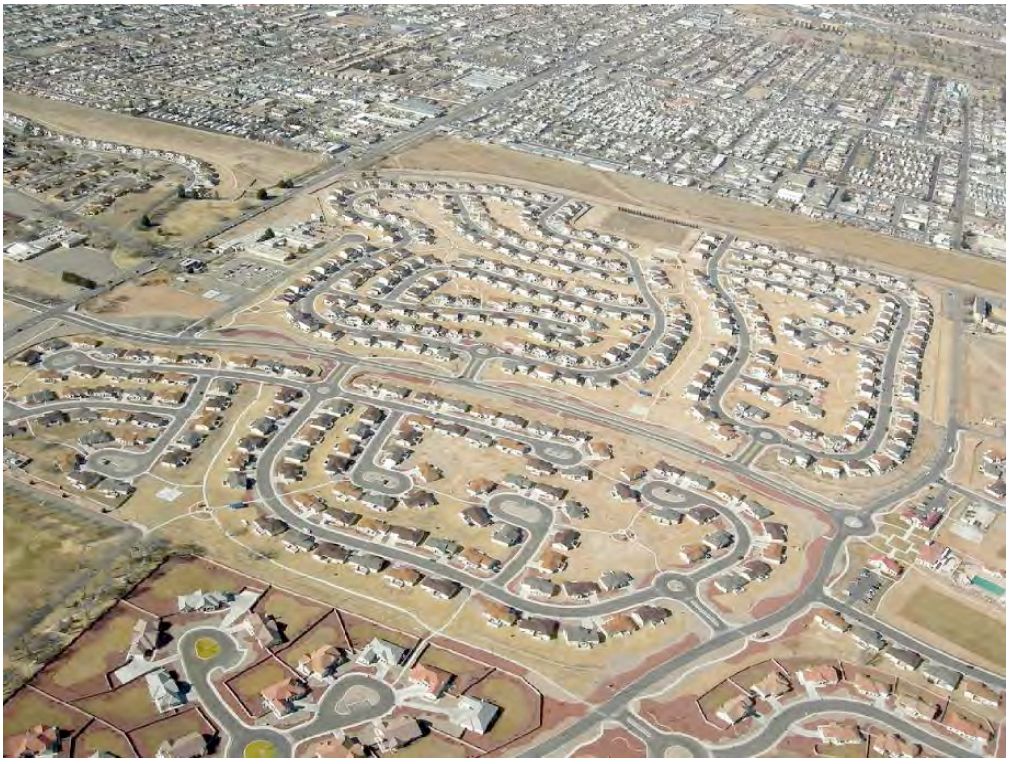


Fig. 17. Suburban sprawl in North American cities.

Today, urban containment strategies' main concern is to prevent the outward expansion of urban development and forces it inward, and in order to keep the metropolitan area within a certain geographical form, a number of public policy tools that control "push" and "pull" factors are adopted. Objectives of urban containment policies include, among others, preservation of natural land, as well as farmland. In general, metropolitan growth could be shaped by using three different types of tools: Greenbelts and urban growth boundaries (UGBs) are used to act as "push" factors, whereas urban service areas are used to act as "pull" factors[20].

While effective in controlling urban sprawl, some argues that greenbelts and urban growth boundaries' fundamental planning motivation is usually social and economic rather than ecological: although the protection of farmland and natural features is certainly an important factor, green areas are usually preserved to serve mainly as the city dwellers recreational space rather than a productive space, and to guide development into a specified area[21].

Finally, as mentioned earlier, ecology the science inspired and informed planning approaches and provided an understanding of natural processes. The result of this influence could be found with the emergence of a more integrative approach, landscape ecology, which encompasses the total urban landscape and the people who live in. First appeared in 1986 as a book title published by Forman and Gordon[22], landscape ecology "is a branch of modern ecology that deals with the interrelationships between man and his open and built-up landscapes"[23]. "Its integrative approach takes into consideration human-related, socio-economic and ecological processes, (…)"[24].

[20] Jabareen, 2006.
[21] Hough, 2004.
[22] Makhzoumi, Pungetti, 1999.
[23] Ibid.
[24] Ibid.

Landscape ecology "operates within a holistic framework, understanding wholes or systems without necessarily knowing all their internal details. This holistic and trans-disciplinary approach overcomes the traditional distinction between rural and urban landscapes and offers instead an interrelated whole"[25].

Another result of the influence of ecology on planning approaches is the emergence of the sub-discipline of urban ecology. This latter's goal is "to understand the full complexity of the relationship between the biological community and the urban environment"[26]. Its approach requires cooperation between different professions and "works for both society and nature to improve human and ecological well-being"[27]. It examines "how multiple components – physical, socioeconomic, and biotic – interact to form urban ecosystems that can be planned and designed for conservation, aesthetic, and other purposes"[28].

According to the above, it could be concluded that an integrated approach that considers the totality of the landscape is necessary to tackle the issue of unrestrained urban sprawl. I argue that only through such an approach is it possible to tackle the issue of inappropriately planned urban expansion in the case of Tripoli Bassatine area. This approach would provide a balanced scheme that allows for urban expansion as well as green and agricultural protection. Hence, this thesis adopts a holistic ecological landscape framework that evaluates not only the existing built environment but also open natural and agricultural landscapes[29]. This approach is an inter-disciplinary one that integrates both cultural and natural processes and is the result of the interface between ecological landscape and urban design and planning [30].

[25] Makhzoumi, Pungetti, 1999.
[26] Douglas, Goode, Houck, Wang, 2011.
[27] Ibid.
[28] Ibid.
[29] Farina, A., 2006.
[30] Makhzoumi, Pungetti, 1999.

CHAPTER 3

URBAN EXPANSION AND LAND MANAGEMENT IN THE LEBANESE CONTEXT

3.1. Late 19th Century: Late Ottoman Reforms

In Lebanon, controlling urban sprawl has always been, and still is, hard to achieve by public authorities. Unlike Europe and North America, rapid urban expansion in Lebanon didn't occur in the early 19th century but in the 1860's when Ottoman reform programs (*Tanzimat*) took place in the relatively slowly growing city-ports of Beirut and Tripoli in addition to other places in the region. Booming trading relations between the Levant and Europe required the enhancement of decaying and outdated urban infrastructure. Among these reform projects were: the establishment of municipal councils, expansion of ports (especially in Beirut)[31], upgrading of existing roads to accommodate new means of transportation and to facilitate trading activities, in addition to paving regional roads connecting coastal cities with each others and with their hinterland.

During the first half of the 19th century, Lebanese coastal cities had a strong and interrelated link with the sea as well as with their immediate rural hinterland. Their economy was mainly based on trading activities through their ports to export products such as silk, soap, and citrus fruit produced in the surrounding rural areas[32]. It was not until the middle of 19th century that the local economy started to change: it was not able to sustain anymore the increasing penetration of European mass produced products.

[31] Saliba, 2004.
[32] Gulick, 1976.

This resulted in the deterioration of essential sources of income in rural economy as a consequence of the weakening of the local markets for handicraft and artisan skills that were traditionally based in rural areas[33]. Besides modernization projects, the establishment of private foreign missionaries' schools on the outskirts of the main cities attracted people from the surrounding villages and from different rural areas contributing to, on one hand, the growth of these cities, and on the other hand, the decline of rural areas[34].

3.2. French Mandate: Modernization

Between 1918 and 1943, during the French mandate in Lebanon and Syria, French authorities undertook an ambitious modernization project continuing what the ottoman authorities had already started in the previous century. In addition to upgrading existing roads and building new ones, they introduced new urban planning regulations, projecting and superimposing French urban design styles over existing local and predominantly Ottoman urban fabric. During the late 1920's, new property laws were passed providing more freedom over the use of private property. These laws changed the Ottoman edict that had previously restricted building in agricultural areas[35]. The new construction law of 1940 and its amendment in 1954 included the article 17 – that is still applied in the current law of 2007 – allows construction almost anywhere in Lebanon in both urban and rural areas. Another significant regulatory change was the approval of the law of 7 December 1954 concerning land subdivision (amended in December 9 of 1983 under the decree number 70). This was a significant turning point where rural areas became more susceptible to urban expansion.

[33] Khalaf, Kongstad, 1973.
[34] Khalaf, 2006.
[35] Ibid.

Many examples of French urban design influence could be seen, such as the implementation of the celebrated star-shaped Place de l'Etoile encircled by the Beaux-Arts grids in more than one area (Beirut & Tripoli). During this period, French and foreign professionals were assigned to come up with new plans – many of which remained unimplemented – for major Lebanese cities especially Beirut. These plans included axes of circulation, and for the first time in Lebanon building coefficients, zoning and land-use studies, as well as new housing projects in new suburbs. Among these names were the office of Danger Frères, Camille Duraffourd, and Michel Ecochard. Some of the proposed plans were influenced by the Garden City movement (Danger plan of 1932), and others by the Modern movement (Ecochard plan of 1943). They even included visions of natural features preservation such as the waterfront and the pine forest[36].

3.3. The *Chehabist* Era: Consolidation of Independence and Introduction of New Urban Regulations

Following the independence in 1943, a laisser-faire centralized economic system was consolidated under a "consociational" political regime[37]. These contradictions in the Lebanese context, which caused the failure of many – previous and later – urban planning schemes, could be explained by several factors that are embedded in the country's socio-political culture. Most pronounced of these factors is the persistence of patron-client relations among politicians and their followers and the

[36] Achkar, 1998.
[37] Khalaf, 2006.

resulting social networks that allow selected individuals, especially among developers, to "control the distribution of benefits" through the "manipulation" of planning laws[38].

During the following decade, spatial management, physical planning, balanced development, and most importantly institution building, were among the main concerns of President Fouad Chehab's administration (1958-1964)[39]. '*Chehabism'*, a word that has become the reference to an exceptional era in the Lebanese political history, was characterized by a strong will for state centralization and reform as opposed to laisser-faire approach. Exceptional serious efforts to introduce legal interventions resulted in a series of legislative reforms, most important of which was the first public attempt to control and regulate urban expansion in independent Lebanon by the establishment of the Urbanism Law in 24 September 1962 (amended in December 9 of 1983 under the decree number 69). This law – together with a series of other laws that were enacted later on – provides public authorities with unprecedented powerful planning tools to manage urban sprawl by defining the location, the shape, and the density of development throughout the totality of the Lebanese territory[40].

Earlier in 1959 the Ministry of Planning was created, and then later in 1963, the General Directorate of Urbanism and the Higher Council for Urban Planning were also created as public planning authorities reporting to the president. The most important private urban consultants of this period were Father Louis-Joseph Lebret leading the Institute for Research and Education Oriented toward Development (IRFED), in addition to Michel Ecochard[41]. By adopting a national comprehensive planning approach, IRFED was commissioned to conduct an extensive quantitative study on regional inequalities, and tried to encourage a "harmonized development" by

[38] Khalaf, 2006.
[39] Verdeil, 2003.
[40] Fawaz, Mh., 2004.
[41] Verdeil, 2003.

producing a ‘polarization scheme’ (Fig. 18). The resulting work served mainly as a major reference for later planning projects[42].

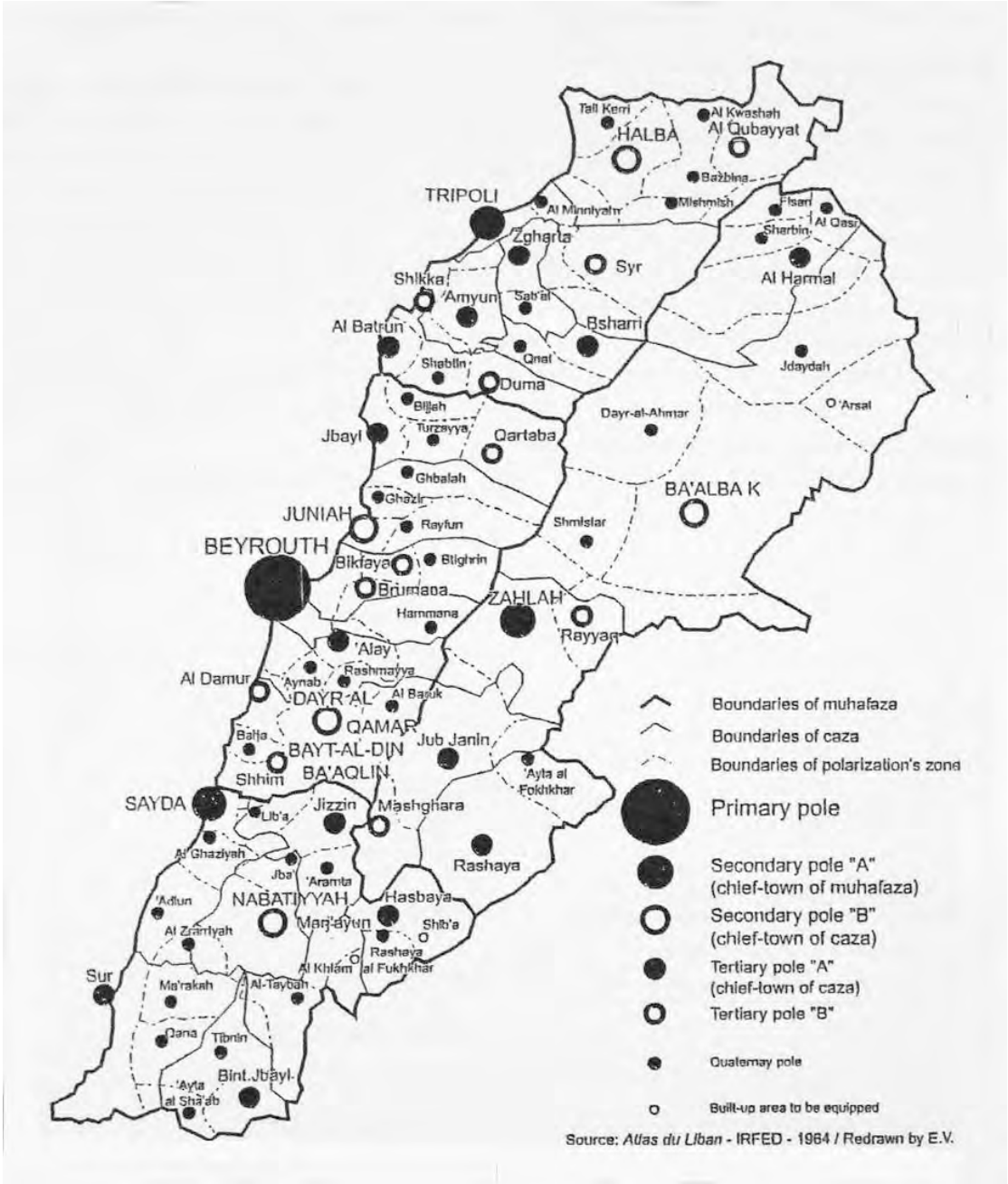


Fig. 18. IRFED’s ‘polarization scheme’ (1964).
Source: Verdeil 2003.

[42] Verdeil, 2003.

3.4. Decentralization and The Influence of The Modern Era

Based on IRFED recommendations that outlined the necessity of decentralizing the country's capital city and transferring important public administrations and ministries from its core to the suburbs[43], Ecochard was commissioned in 1961 to draw a master plan for the 'Governmental Cities" (Fig. 20), and again in 1963 to propose the "Metropolitan Beirut Land Use Strategy" (Fig.21). It is worth noting that, earlier in 1959, another master plan – along the same ideas of decentralization – was also proposed by the Greek urban planner Doxiadis (Fig.19).

Following a functionalist rational approach, influenced by the Modern movement, and emphasizing the importance of infrastructure in guiding the city's suburban growth, Ecochard framed his master plan (Fig.22) around three major circulation systems: the port, the airport, and the road network[44]. And in order to "relieve" the congested commercial center, governmental and administrative facilities were to be situated outside the center. Ecochard' scheme was aiming at: first, absorbing part of the population growth within the new town on the sandy dunes of the southern suburbs, second, protecting the wooded hills around Beirut by imposing low floor-area ratio (FAR) on building constructions, and third, prohibiting new construction on beaches, in surrounding forests[45], foothills and agricultural areas[46] (these objectives were based mainly on IRFED recommendations to preserve green spaces even within private properties)[47]. This Master Plan was partially adopted in 1964 only by accepting the road scheme and the zoning (but with higher FAR than initially proposed), and

[43] Verdeil, 2003.
[44] Saliba, 2004.
[45] Tabet, 1998.
[46] Ghorayeb, 1998.
[47] EL Achkar, 1998.

without developing the new cities to the south of Beirut and the workers' city in Jdeideh to the north[48].

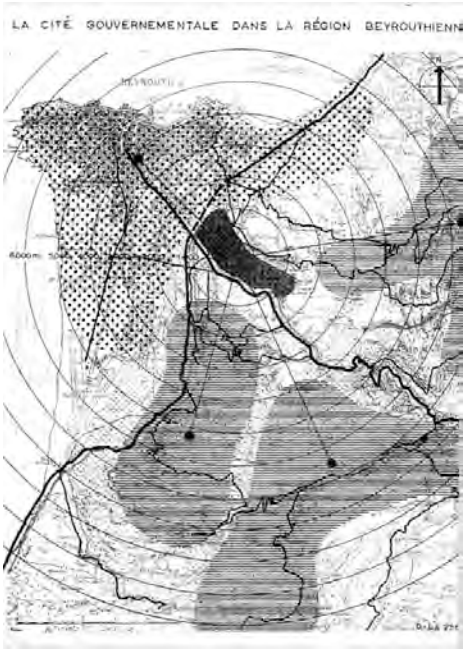


Fig. 19. Doxiadis' "Cité Gouvernementale" Plan (1959).
Source: Saliba 2004.

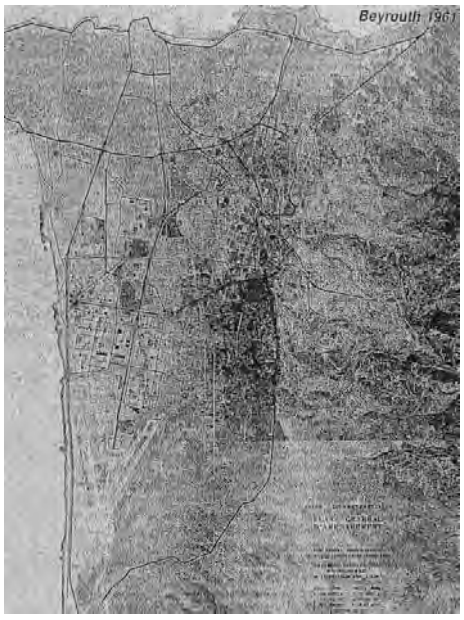


Fig. 20. Ecochard's Master Plan for the Governmental Cities (1961).
Source: Verdeil 2003.

[48] Verdeil, 2003.

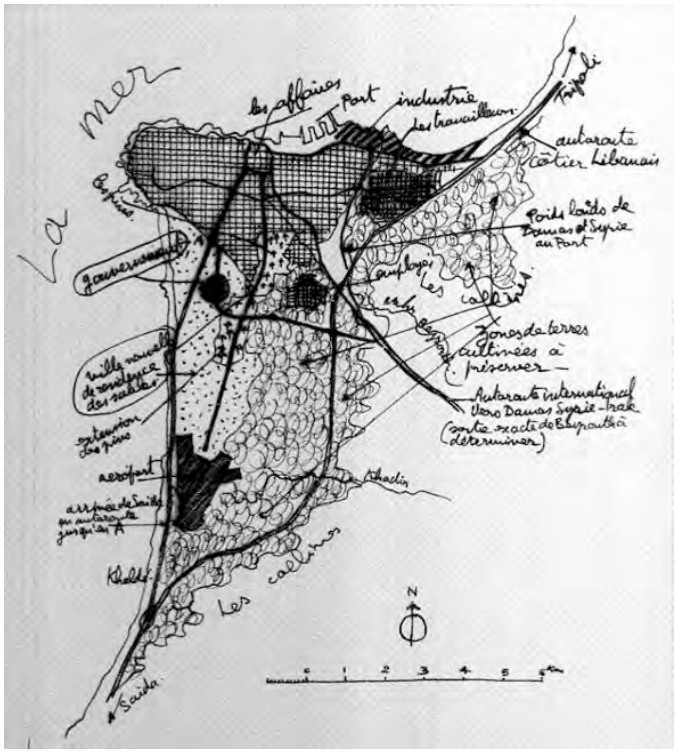


Fig. 21. Ecochard's 'Land Use Strategy' for Beirut (1963).
Source: Saliba 2004.

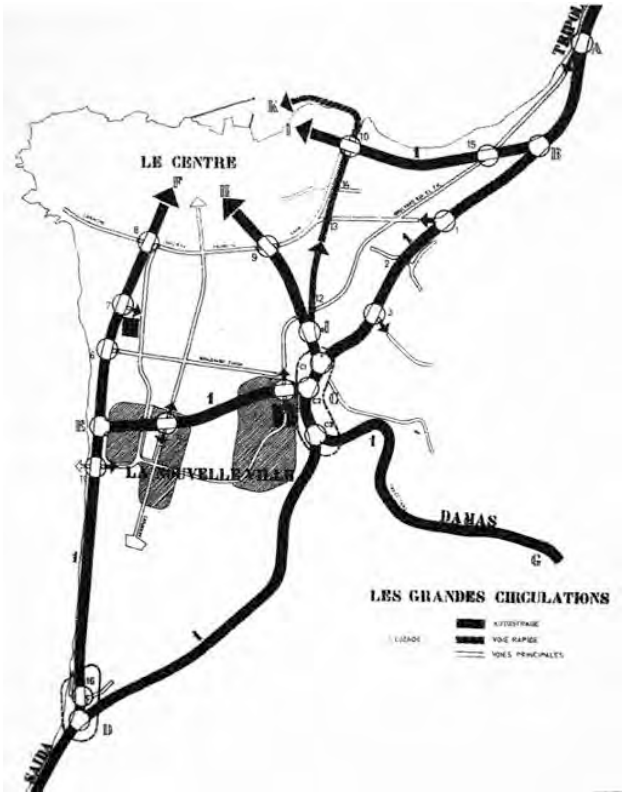


Fig. 22. Ecochard's Master Plan: The Traffic Network (1963).
Source: Verdeil 2003.

However, in his article *"La prise en compte de l'agriculture dans les plans d'urbanisme au Liban (1960-2000)"* (taking agriculture into consideration within urban plans in Lebanon (1960-2000)), Eric Verdeil finds that the IRFED regional analysis, by consolidating the agricultural development mainly in the peripheral regions like *Akkar*, *Bekaa* and the south, and by favoring an urban decentralization approach in major cities towards nearby agricultural plains, implies that little importance was given to coastal agricultural areas especially in the central part surrounding Beirut. It is clear that the agricultural sector, hence agricultural areas, was evaluated from an economic perspective rather than an environmental or ecological one[49].

Agricultural areas in the immediate vicinity of cities were among the issues considered in Ecochard plans for Sidon, Beirut, Byblos, and other coastal cities. Most notably was his proposal for Sidon where it was based on a zoning approach separating between three main areas: the old town, the surrounding agricultural plains to be preserved, and the surrounding hills to be considered as future urban expansion zones. He relied mainly on regulatory measures as tools for preservation (minimum areas for constructible plots should not be less than 1 hectare, the coefficient of exploitation should be 1/50, and lot subdivision should not be allowed). The plan was adopted in 1962 with the principle of agricultural zoning, yet again, with much higher FARs than initially proposed. However, a large subdivision plan for this zone was approved in 1980 opening the ground for future urbanization[50].

During the 1960's, efforts to control accelerating urban growth in several Lebanese cities continued. The state launched numerous urban planning competitions in which local as well as foreign professionals participated. Among these plans was Tyre

[49] Verdeil, 2004.
[50] Ibid.

Master Plan prepared by Pierre Khoury in 1964, Baalbek Master Plan prepared by Henri Eddé, in addition to Tripoli Master Plan also prepared by Henri Eddé in 1964 (this latter was approved by Tripoli municipality in 1971 and will be discussed in more details under the Case Study Profile). In these plans, among the planners' main concerns was the issue of solving the relation between urban growth and archeology or historical sites. A visionary outlook and a utopian approach characterized the proposed projects where abstract forms were superimposed over the built environment: "*For them, the political and social project seemed to indicate that it was possible to start afresh, to rebuild the world anew, and to rid Lebanese society once and for all of the detritus of 'dead old forms"*[51].

3.5. Rapid Urbanization and Urban Sprawl

Environmental concerns started to appear during the early 1970s, namely in the *"Livre Blanc sur l'urbanisation de Beyrouth en l'an 2000"* published in 1973. Importance was given to waterfronts and forests destruction/exploitation. The urbanization on the expense of agricultural areas was not mentioned in this document among the environmental problems[52]. Nevertheless, during the following years urban sprawl accelerated due to many factors. According to Samir Khalaf in his study of the rapid urbanization of Hamra in Beirut[53], the incessant flow of rural exodus has been mainly responsible for the growth of main cities especially Beirut. To this internal factor some external ones could be added: the events in the region that started several years earlier namely the war in Palestine in 1948 and in 1967 that brought into Lebanon waves of tens of thousands of Palestinian refugees many of them were located in camps

[51] Tabet, 1998.
[52] Verdeil, 2004.
[53] Khalaf, Kongstad, 1973.

around the main cities (Sidon, Tyre, Tripoli in addition to Beirut) at that time adding to the 'misery belts' of informal settlements that were forming[54].

The worst happened starting from 1975 with the outbreak of the Lebanese civil war during which uncontrolled waves of destructions and informal constructions, paralleled with unprecedented rural migration and forced displacement, took place for over 15 years. According to a study conducted by Mona Fawaz and Isabelle Peillen in 2003, several types of informal settlements (or slums) formed and developed prior to and during the civil war years (most of them still exist today). The authors classified these areas as follows: first, areas that could be identified as 'slums that began as international refugee camps' (Armenian and Palestinian), second, areas that could be identified as "slums that began as housing areas for rural-urban migrants", and third, areas that could be identified as "slums that began as squatter settlements during the period of the civil war". Poor living conditions characterize these areas where residents usually suffer from the lack of public services, such as proper roads, sewage systems, and clean water. Since these settlements are usually located next to factories and/or in dangerous places not suitable for residential use, their residents are prone to severe health problems[55], not to mention the ecological and environmental damages on green and agricultural areas. Since the 1950's, public authorities' response towards informal settlements has been generally characterized by a laisser-faire approach (which explains the reason for their formation at first place) especially during the civil war. This kind of attitude usually results in keeping the physical structures as is with some on-site upgrading and legal arrangements (Law 324 of March 1994 allows2 to keep illegal structures as is only by paying a certain amount of money as a fine; Law 322 of March

[54] Khalaf, Kongstad, 1973.
[55] Fawaz, Peillen, 2003.

1994 allows "the displaced" in some areas to build on plots regardless of the construction law, this law was extended under the law number 548 in October 2003). However, in some other cases, public initiatives takes more radical moves, such as clearing the informal structures and transferring their residents into new residential units[56].

Despite the ongoing fighting during the war and the consequent weakening of public authorities, there were several efforts trying to deal with the issue of uncontrolled urban sprawl that was intensifying and aggravating the social, economic, and environmental problems. In 1986, the *"Schéma Directeur de la Région Métropolitaine de Beyrouth"* (SDRMB) was an important regional study for Greater Beirut area that was prepared by the Council for Development and Reconstruction (CDR) and the Directorate General of Urbanism (DGU) in association with the private French planning consultant l'Institut d'Aménagement et d'Urbanisme de la Région d'Ile-de-France (IAURIF). Three types of green spaces were highlighted in the study: the coastal agricultural plains that should be preserved, the hills surrounding Beirut city that need to be terraced and irrigated for more profitable agricultural produce, and the urban "natural parks" for recreational purposes. This document served mainly – like the previous IRFED study in the 1960s – as a reference for future plans and introduced new concepts and methods of environmental preservation[57].

3.6. The Postwar Era and The Reconstruction Boom

The early 1990s and the following years witnessed key changes on the regulatory level that affected the urban expansion movement and the quality of both

[56] Fawaz, Peillen, 2003.
[57] Verdeil, 2004.

urban and rural environments. In addition to enacting laws that allows keeping illegal structures and permitting "displaced" to build with no consideration of the construction law, there were other types of laws that were more related to the reconstruction project in the aftermath of the civil war. Among these was the law 117 of December 1991 concerning the creation of real estate companies according to which SOLIDERE (Société Libanaise pour le Développement et la Reconstruction de Centre Ville de Beyrouth) was created under the decree number 2537 of August 1992 and given the real estate rights and management within the limits of "Beirut Central District". This law is based on the previous article 19 of the 1962 law of urbanism that was rarely used given the limited situations where such a plan could be applied[58]. Law 117 also included changes in the responsibilities and scope of the CDR. This regulatory change affected mainly the reconstruction process of Beirut Central District where a comprehensive master plan for BCD was finally approved following several changes in 1994. It is worth mentioning that in addition to SOLIDERE, several real estate companies were created later on including the following companies: SIDON (Société Libanaise pour le Développement du Littoral de la ville de Saida) decree number 7593 of December 1995, LINORD (Société Libanaise pour le Développement du Littoral Nord de la ville de Beyrouth) decree number 8937 of September 1995. In addition, a public agency (Public Association for the Development of the Southwestern Suburb of Beirut - ELISSAR) was created under the decree number 9043 of September 1996 in order to manage part of the southern suburb of Beirut in the area to the north of the airport. However, due to political tensions as well as financial difficulties, this latter in addition to the previously mentioned real estate companies are currently paralyzed.

[58] El Achkar, 1998.

On the environmental level, The Ministry of Environment (MOE) was established by virtue of the law number 216 of April 1993 (amended in December of 1997 by the law number 667) following an increasing role of environmental groups. Environmental concerns in Lebanon started to appear in the 1980's yet was limited to local campaigns of tree planting and waste collection backed by NGOs such as the Friends of Nature (FON). During the late 1980s and early 1990s, a number of environmental activists were able to convince some politicians to assist in the protection of environmentally significant areas in their own regions (Palm Islands off the coast of Tripoli and Horsh Ehden in the north). Some other natural features were later added to the list of the officially protected areas including Arz Al Shouf forest in the Shouf area, Tyre coast, in addition to some other natural features. The MOE and environmental groups in Lebanon focus their efforts on issues of conservation and to some extents the destructive effect of reconstruction related activities such as quarrying and waste disposal. Their piecemeal approach on a case-by-case basis to protect specific natural sites lacks a holistic perspective integrating rural and urban areas. Little attention is given to the issue of agricultural areas and in specific urban agriculture or green spaces surrounding towns and cities.

According to Eric Verdeil, three factors affect, to varying degrees, the preservation of coastal agricultural spaces in Lebanon: first, the regulatory factor, second the pace and the geographical location of urbanization, and third, which is the most powerful, is the real estate market and the involved stakeholders[59]. The case of Damour plain located to the south of Beirut shows the significance of the second and third factors despite the importance of the first one. This coastal agricultural plain is considered to be one of the main large still not urbanized areas that are part of southern

[59] Verdeil, 2004.

greater Beirut zone. It has been under increased real estate pressure as a future urban expansion of metropolitan Beirut since the early 1990s. The main reason behind the preservation of this plain today is not a regulatory one, neither is the lack of demand on real estate, it is due to what he calls *"preservation par inadvertence"*: an unintentional action of preservation caused by a certain power structure among the involved stakeholders[60]. Along the same lines, Habib Debs studied the coastal agricultural areas within or next to classified industrial zones particularly in Beddawi, Dora-Nahr-el-Mott and Choueifat[61]. According to Debs, these agricultural areas are preserved as a result of two factors. The first is real estate speculation: land owners abstain temporarily from putting their properties in the real estate market, hoping to sell their land with higher price once the demand is higher. And second is resulting from contrasting dynamics between adjacent industrial and residential land use and the consequence is a buffer zone between the two that could be invested in agricultural activities[62].

3.7. The National Physical Master Plan of the Lebanese Territory - 2005 (NPMPLT)

Article 3 of the decree–law 5/77 of 1977, according to which the CDR was created, requires this latter to establish *"the general framework for urban planning orientations in Lebanon and submit it to the Council of Ministers for approval."* However, the ongoing conflict at that time made it impossible to continue and complete this mission. It was not until the late 1990s when the idea of a comprehensive national master plan that was pushed forward by a number of CDR experts in coordination with planning experts from Dar al Handassah. After a series of negotiations with the DGU on

[60] Verdeil, 2004.
[61] Debs, 2004.
[62] Ibid.

the institutional setup, IAURIF – Dar al Handassah joint venture was assigned in 2001 as the private planning group reporting to the CDR and conducting the necessary studies for the national master plan. In December 2005, the final report was submitted under the title of *"The National Physical Master Plan of the Lebanese Territory"* (NPMPLT), or *" Schéma Directeur d'Aménagement du Territoire Libanais"* (SDATL).

NPMPLT is considered to be the first of its kind – in terms of its scale and scope– on the national level in the country's history. This report, whose scope covers the totality of the Lebanese territory, evaluates and analyzes the social, economic, environmental, and physical aspects of the different Lebanese regions. In the light of this evaluation and taking into consideration future challenges, the plan provides a general framework for urban planning for the years to come (2 or even three decades). The objectives of the plan are based on what is identified as three "basic choices"[63]. The first is the "unity of the country", where land management should effectively promote economy for the benefit of society[64]. The second is the "balanced development" where an objective principle of equitable development is applied throughout the different regions of the country[65]. And the third is the "rationalization of uses of resources" especially natural resources and public funds.[66]. It also defines the principles of development in these regions and proposes sites of certain activities by specifying their objectives, dimensions and locations (Fig.23 & 24). One of the main stated objectives of land management is the optimal and sustainable use of natural resources, the protection of environment and conservation of heritage.

Urban sprawl as well as the environmental challenges were evaluated carefully based on existing statistics (Fig.25) leading to a projected urban growth of 10 km^2 per

[63] DAR, IAURIF, 2005.
[64] Ibid.
[65] Ibid.
[66] Ibid.

year meaning an additional urban areas (adding to the total urbanized area of 600 km^2) that could be estimated between 250 and 300 km^2 for the next 30 years. According to the plan, urban growth will be located according to 2 main factors: the first is the nature of the real estate market and its pressure which is highly speculative, and the second is the nature of state intervention in terms of legislation and provision of facilities and infrastructure. It is this latter factor that plays a critical role in shaping the urban form that will specify the location and levels of urban densities, the concentration or scattering of urban agglomerations, and hence the quality of life in these future urban or rural areas. Among the conditions that should be taken into consideration for proposed future urban expansion, as stated in the master plan final report, is the avoidance of agricultural terrains, major natural areas, steep slopes, and hazardous zones.

But what about the local master plans in the regions, and what is the nature of the relationship between them and the national master plan? To answer this question, the NPMPLT final report states that "*the recommendations of this study for the urban planning sector, as decreed by the Council of Ministers, will be imposed, among others, on local urban planning master plans that will be elaborated or reviewed afterwards.*" In other words, any local master plan should be coordinated with the national master plan and follows its recommendations.

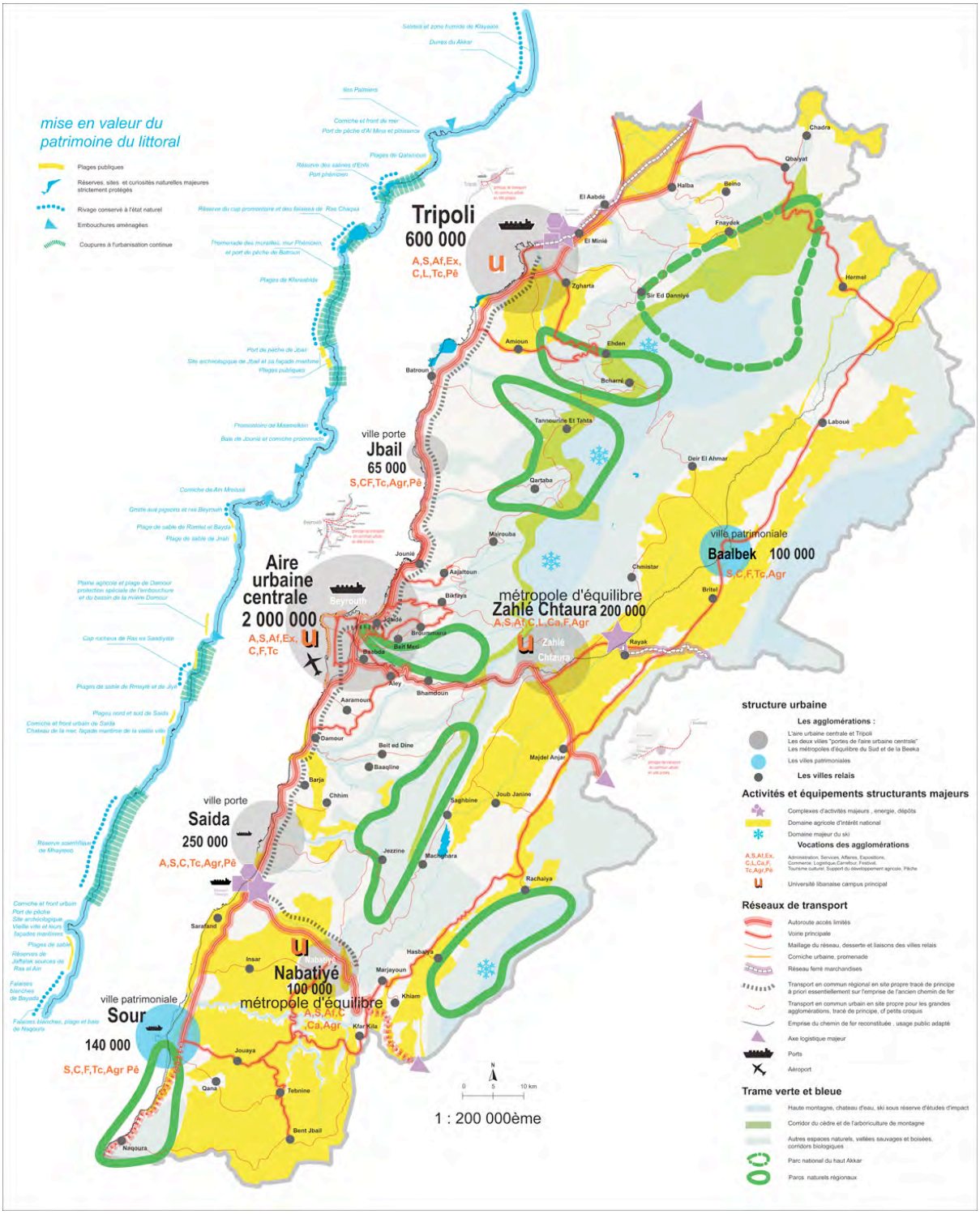


Fig. 23. From the NPMPLT: "Organization of territories". *Source*: DAR, IAURIF, 2005.

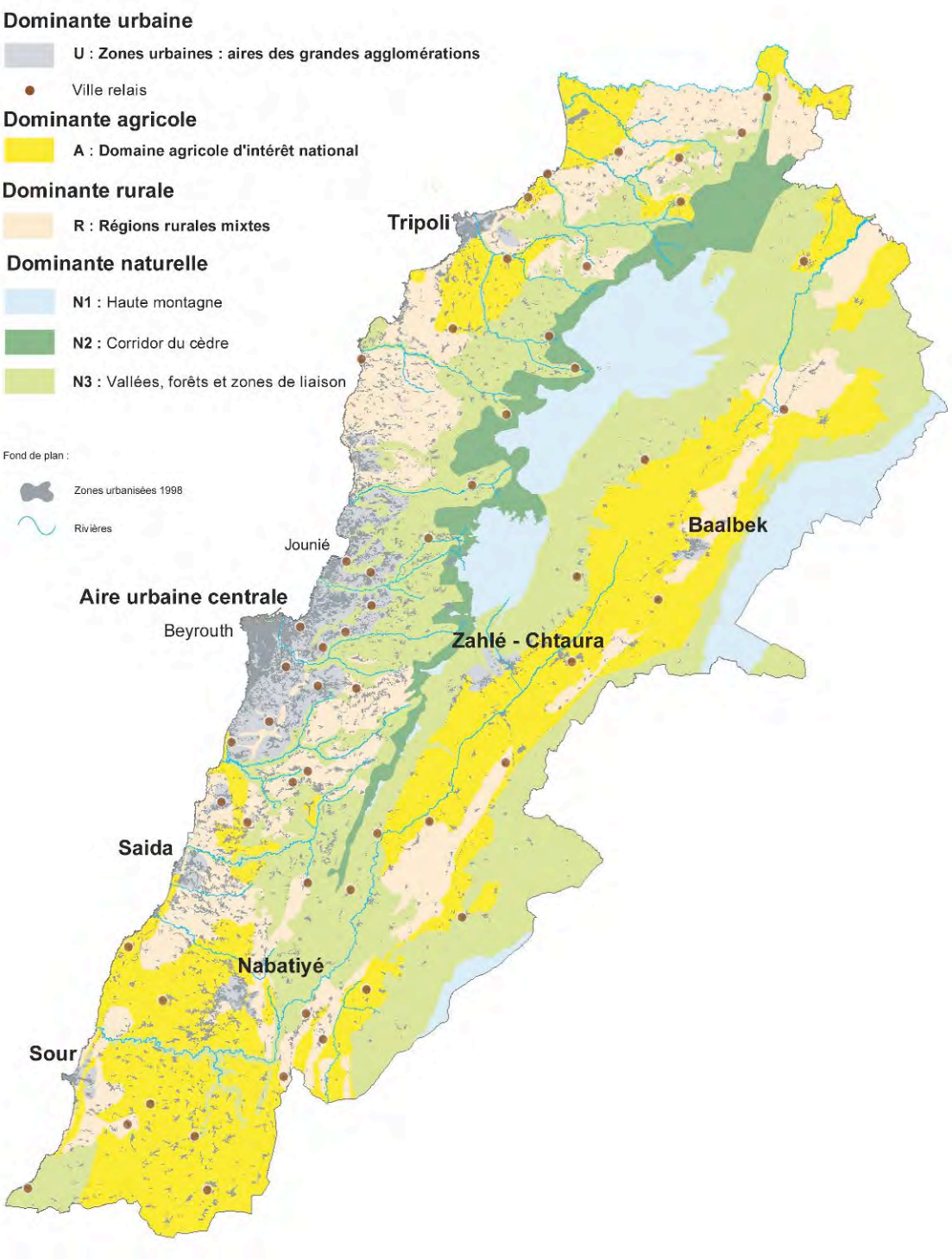


Fig. 24. From the NPMPLT: "Vocations dominates": Proposed predominate land uses. *Source*: DAR, IAURIF, 2005,

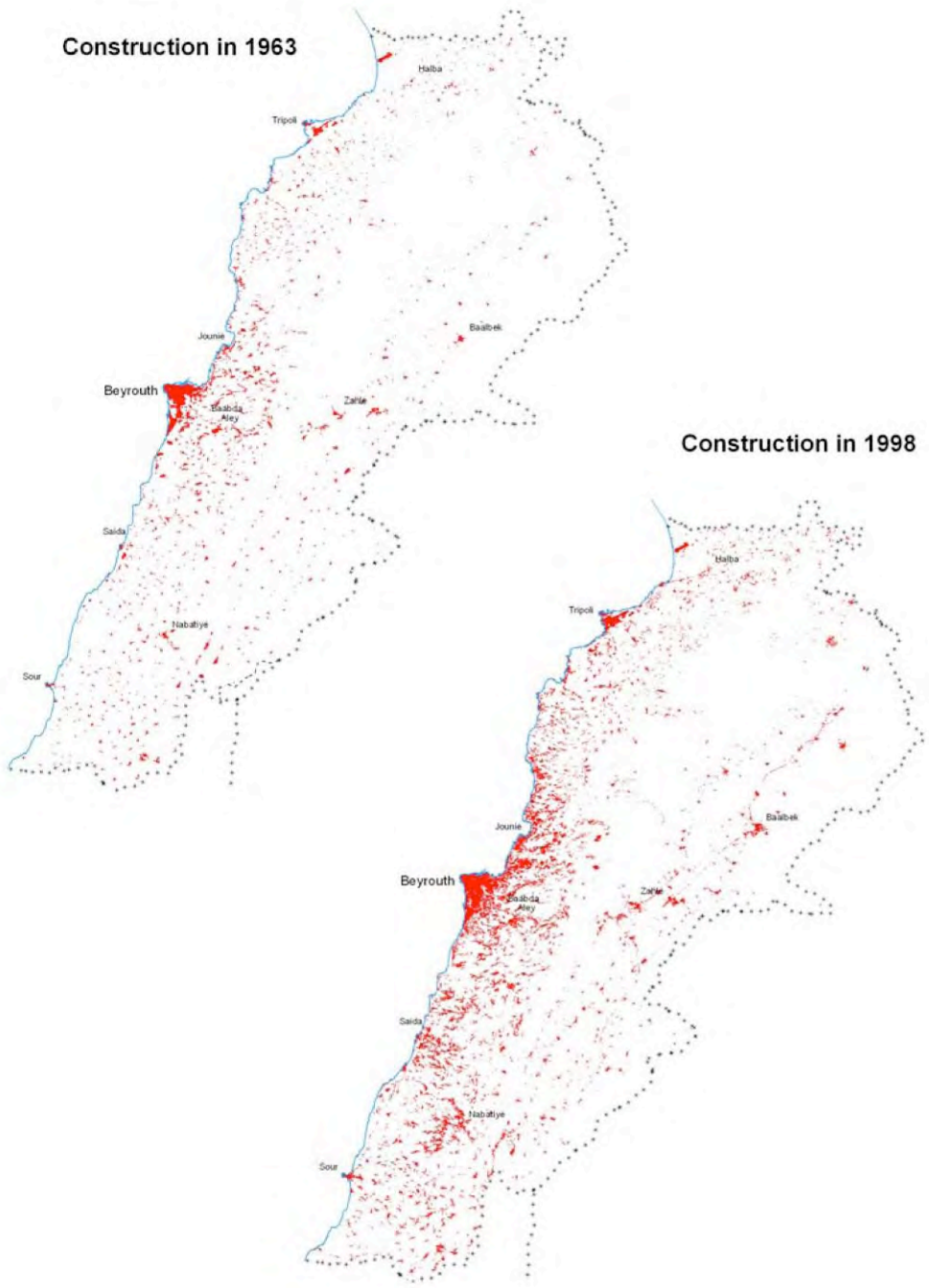


Fig. 25. From the NPMPLT: “Urban Pressure”. A comparative study of urban sprawl between years 1963 and 1998. *Source*: DAR, IAURIF, 2005.

CHAPTER 4

SITE PROFILE AND ANALYSIS

Located on 84 kilometers to the north of Beirut[67], with an estimated population of about 371,000[68], Tripoli is the second largest city in Lebanon after its capital (Fig.27). Known as "the capital of the north" or "the second capital", it is the administrative center of the *North Mohafaza*, or province, one of the five provinces of the Lebanese Republic. Tripoli Caza is made up of the city of Tripoli, *El Mina*, and *Qalamoun*, a town situated further to the south of the agglomeration (Fig.28). It is not to be confused with Al Fayhaa Union of Municipalities, which is the municipal federation of Tripoli, *El Mina* and *Beddawi*. Tripoli is situated at the foothills of *Abou Samra* and *El Qobbe* that are separated by *Abou Ali River valley*, and surrounded by a fertile agricultural plain from the west that was separating it – until recently – from its port *El Mina* (Fig.26).

Fig. 26. Panoramic view of Tripoli taken from Koura a region to the south of the city.
Source: by author.

[67] MoSA & UNDP, 2001.
[68] No accurate census exists today on the population of Tripoli. The total population number has been exaggerated to 500,000 due to many reasons. The inaccuracy is due mainly to the lack of official periodical census. Some researchers, like Issmat Owayda, went on to blame this confusion on the city's officials themselves in return for expected political gains. The above-adopted number (371,000) is based on the analysis and cross-referencing of several sources and is mainly based on the projections in Diran Harmandayan study of 2004. The socio-economic status will be examined with more details under Socio-economic Analysis section.

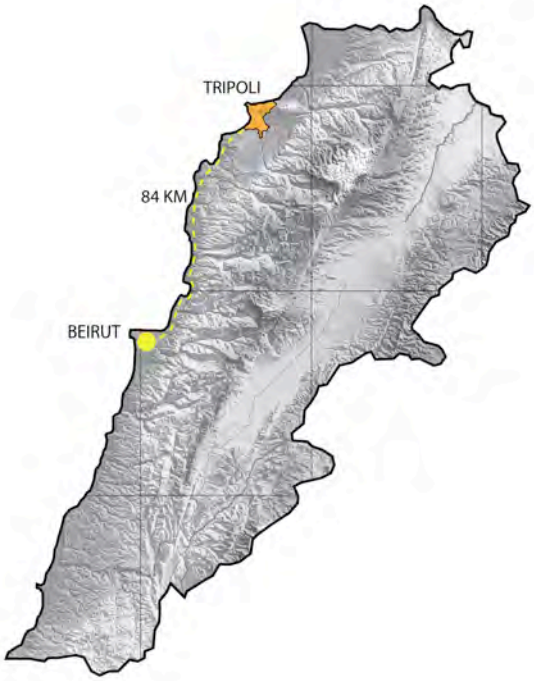
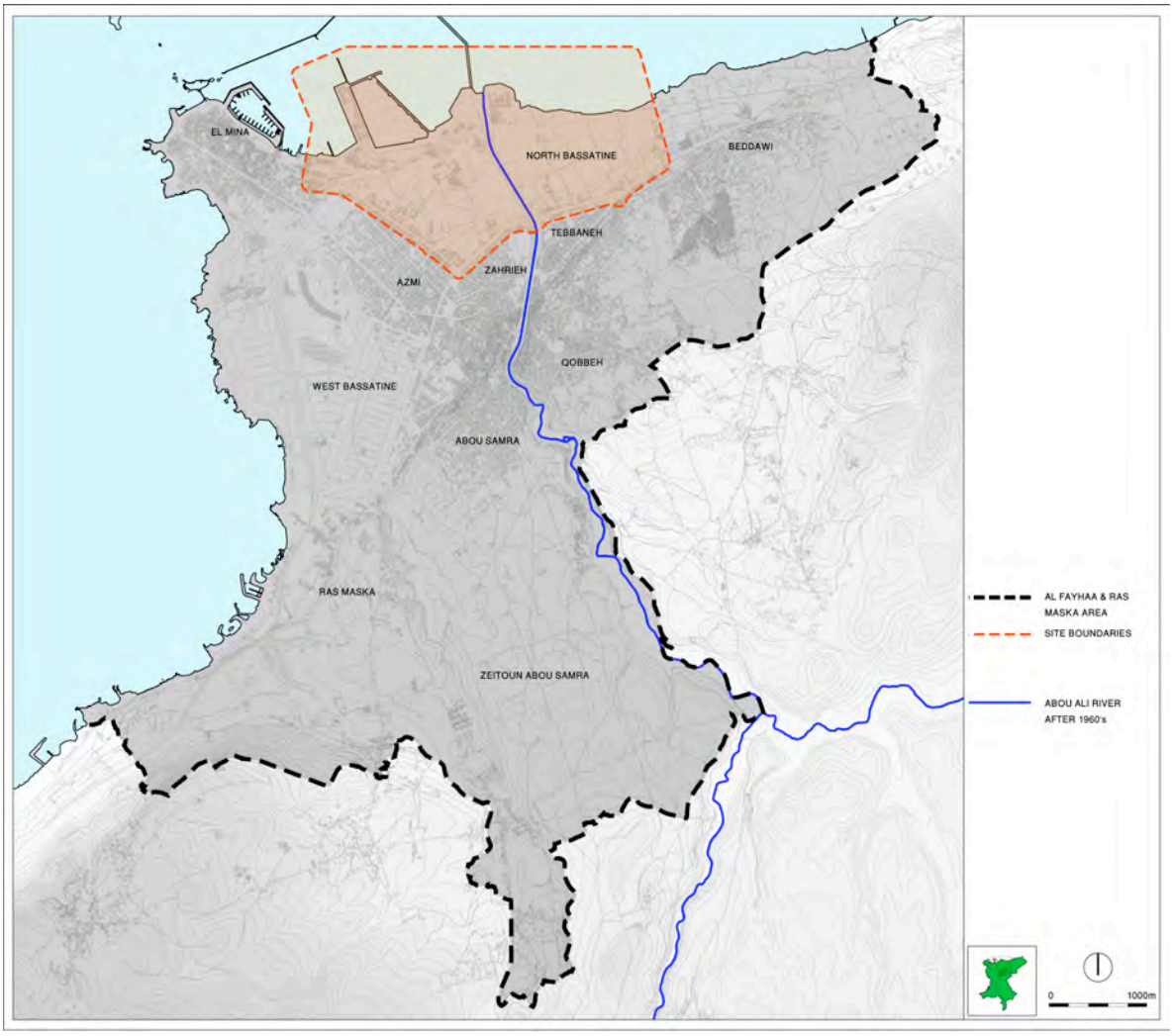


Fig. 27. National context of Tripoli.

Fig. 28. Regional context of Tripoli.



Map.1. Greater Tripoli area.

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The city is best known for its old part as the most preserved, still-functioning historic city in Lebanon (the current city's urban structure dates from the late 13th century). Its famous Mamluk and Ottoman architectural heritage attracts tourists from both national and international origins. Also known as *"Al Fayhaa"*, or "the fragrant city" denoting the sweet-scent of citrus flowering during springtime, the city is famous for its orchards or "*Bassatine*" where citrus fruits and olive have been grown historically. *Bassatine* is separated into *North* and *West Bassatine*, in addition to *Zeitoun Abou Samra* (or *Abou Samra* olive groves) in the southeast.

4.1. Study Area Boundary

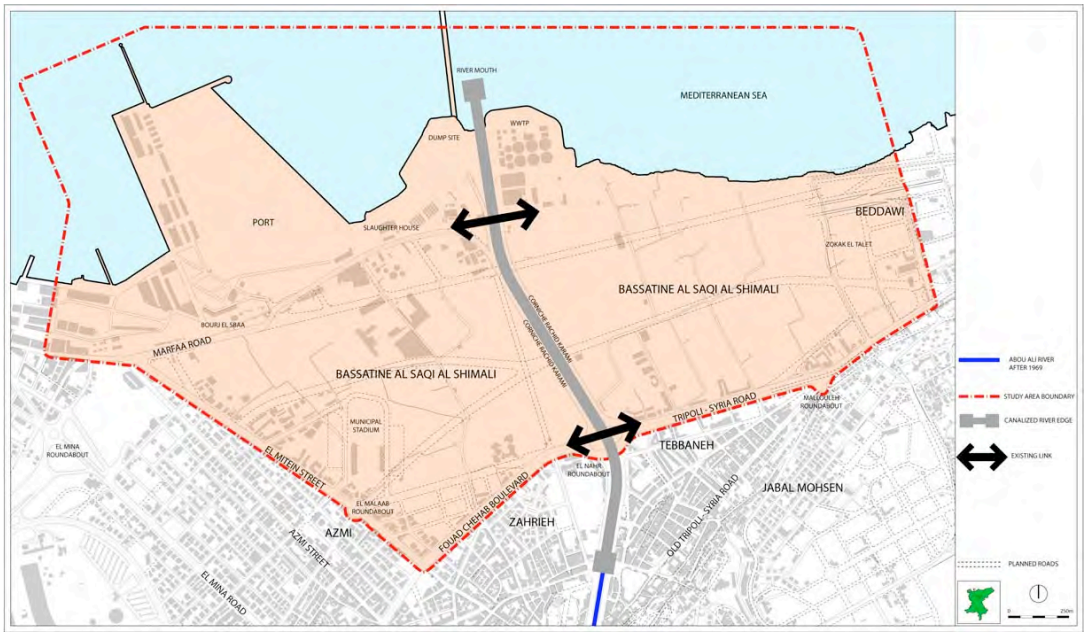
The study area is located on the north edge of Tripoli. It mainly consists of what is known as *Bassatine Al-Saqui Al-Shimali* meaning Tripoli's northern orchards. This area is mostly an open green area in contrast to the adjacent dense city neighborhoods (Map.1 & 2, Fig.29 & 30).

Fig. 29. Panoramic view taken from southwest of *Bassatine Al-Saqui Al-Shimali* with *El Nahr Roundabout* and *Tebbaneh* to the right. *Source*: by author.

The study area is bound by the Mediterranean Sea from the north, *Beddawi* town and orchards from the east. From the south and southeast, it is separated from *Tebbaneh* and *Zahrieh* neighborhoods by the main road (*Fouad Chehab Boulevard*) (Fig.31) running through the city center and connecting it to the Syrian borders in the

north. From the southwest, the study area is separated from *Azmi* neighborhood by *Abdelateef Bissar Street* (*El Mitein Street*) (Fig.32), which is one of the three main roads connecting the city center with its port and *El Mina* area[69].

The main rationale behind selecting this part of the city as study area is the fact that it is one of the few remaining green open spaces in the city that are threatened by the rapidly expanding urban footprint into agricultural areas and about to be extensively developed. The agricultural landscape heritage of the city has been continuously shrinking throughout the 20th century and especially after the civil war. We will explore this threat in more details with comparative maps in the following Historical Background section



Map. 2. Study area boundary.

69 From an ecological perspective, this area (Al-Saqui Al-Shimali) extends eastward through Beddawi town (part of Al Fayhaa Union of Municipalities) till it reaches Deir Aamar area taking the form of a long distorted rectangular shape defined by the main road to Syria in the south and the coastline in the north. However, given the scope of my research, the study area is limited to Tripoli North Bassatine area (Al-Saqui Al-Shimali) excluding the major part of Beddawi area taking into consideration the cadastral boundaries separating the town from Tripoli, in addition to the existing and planned roads network.

Fig. 30. Several views from *Bassatine Al-Saqui Al-Shimali area* (by author).

Fig. 31. Several views from *Fouad Chehab Boulevard* (by author).

Fig. 32. Several views from *EL Mitein Street* with the Municipal Stadium (by author).

Fig. 33. Several views from *Abou Ali canalized river* (by author).

4.2. General Characteristics

The study area (Map.2) is 3.8 square kilometers (383 hectares) that constitutes around 18 % of Tripoli municipal territory and 10 % of *Al Fayhaa* and *Ras Maska* area (Greater Tripoli or Tripoli metropolitan area). The area's widest east-west distance is 3.6 km, whereas its widest north-south one is 1.4 km. Major features of the area include the port and its premises, a number of historical buildings like *Bourj Al Sbaa* (The Lions Tower) and the railway station, in addition to the municipal stadium. It is essentially characterized, as mentioned earlier, by its green and open spaces that still contain a number of citrus plantations. The area is also characterized by the concentration of the city's industrial activities around the port. On its boundaries along the main roads, limited urban development took place during the second half of the 20th century.

The study area is divided in two zones separated by *Abou Ali* canalized river (Map.2 & Fig.33) that runs northwards where it opens on the Mediterranean Sea between the new Wastewater Treatment Plant (WWTP) on the east bank and the solid waste dump site on the west bank. These two zones are currently linked in two locations: in the south by the existing main road to Syria (*Douwar el Nahr*, or *el Nahr Roundabout*) and in the north by the old railway steel bridge.

4.3. Historical Background

4.3.1. Development of Tripoli as Al Fayhaa

4.3.1.1. Early Settlements and The Crusaders' Latin State

The present site of the old town of Tripoli with its port dates from 1289 AD, the year when the city was taken over by the Mamluks. However, the city's port, El Mina today, was the oldest settlement that dates back to the 4th century BC. *Tripolis*, a

Greek word meaning the triple city, represents the union of three Phoenician settlements of Sidonians, Tyrians and Aradians between 359 – 338 BC[70].

In 636 AD Arab Muslims conquered the city that was on the site of El Mina today after one year of blockade. During almost five centuries, the city developed and prospered under the Fatimids and it was renown for its schools and fine library[71].

After a period of political unrest, the crusaders were able to capture the city in 1109 AD following a ten-year siege that was initiated by Raymond of Toulouse (or *Raymond of Saint Giles* as mentioned in Baedeker's Guidebook of 1912) in 1099 during which he started building the castle that was named after him and still existing. The crusaders completely destroyed the old Arab town and rebuilt a new city in addition to a secondary small settlement at the foothill of the castle, the site of the present old town of Tripoli. For 180 years the city was the administrative center of the County of Tripoli, one of the Crusader's Latin states on the eastern Mediterranean. Its territory spanned the coastal lands from *Byblos* in the south to *Latakia* in the north including the plain of *Akkar*[72].

4.3.1.2. The Mamluks' New Town

In 1289, the city was conquered by the Mamluks under the leadership of Al Mansour Qalawun, an Egyptian sultan. Again, the city was destroyed, but this time was rebuilt on the site of the small crusade settlement around the citadel and across the *Abou Ali River* (Fig.34). The city became the center of one of the six provinces that were newly established in the region of Syria and Lebanon. Like they did in *Damascus* and

[70] Gulick, 1967.
[71] Ibid.
[72] Ibid.

Aleppo, the Mamluks constructed a number of fine buildings in Tripoli especially mosques, *madrassahs*, *khans* and *hammams*, a number of which still exist today[73].

Fig. 34. Old drawing of Abu Ali River valley showing the Castle of Saint Giles and the old city of Tripoli. *Source*: JideJian, 1973.

During the 14th and 15th centuries, Tripoli developed as a provincial center that had an important political as well as economical role in the region besides *Aleppo* and Damascus. Its population was estimated at about 20,000. Its port regained its prominence in playing a significant role in Mediterranean trades especially with European cities.

4.3.1.3. Ottoman Stagnation and Slow Decline

During the early 16th century, the Ottomans took over Egypt and the Levant. The region was divided in three *vilayets* (provinces), Tripoli being one, and the other two *Aleppo* and *Damascus*. Instead of continuing as a provincial center, the city entered a long period of stagnation followed by decline. It was the port of *Aleppo* until 1612 when other northern ports started to gain more attention. During the second half of the

[73] Gulick, 1967.

18th century, several external factors aggravated the situation, among which were the Turkish-Russian wars in addition to a number of factors most important of which were the growing weakness of the central Turkish government and the resulting corruption in its administrations.

During the 19th century, taking advantage of the situation, European influence grew stronger in the Levant: Tripoli, like other Levantine cities, benefited from an increased commercial movement with Europe, and a number of European-managed missionary schools were established in the city including Roman Catholic as well as American Protestant ones. During this period, Tripoli started to face the challenge of a strong competition with Beirut especially after the former being relegated from a long-time provincial center into a center of a *liwa* (sub-province) of the newly established *vilayet* of Beirut. It was estimated that Tripoli's population was around 30,000 and that of *El Mina* 5,000[74].

4.3.1.4. Late Ottoman Reforms and The Foundations of Modern Urban Expansion

Even though it was growing in terms of its population, Tripoli's urban growth during the 19th century was limited. It was not until the 1880s that the city started to slowly expand beyond its medieval limits when the ottomans under sultan Abdul Hamid II finally started implementing the severely needed reform program, *Tanzimat,* in Tripoli as well as in other regions of the Levant: Tripoli municipality was established in 1877. Four years later, in 1881, a horse tram road connecting Tripoli to its port, *El Mina*, was paved. The link with Beirut, the emerging future capital, was achieved in 1909, in addition to a railroad to *Aleppo* in 1911.

[74] Gulick, 1967.

It was considered a “dangerous adventure” or insecure to live in a house outside the limits of the town into the *Bassatine* for fear of robbers and outsiders. In his study on the city, Mosbah Rajab affirms that one of the main factors that triggered the gradual urban development outside the city’s boundaries and into the surrounding *Bassatine* was the construction in 1890 of the new Serail (which was destroyed in the 2nd half of the 20th century) in *El Tall* area that was named literally after the nearby small hill to the east of the old town[75]. At that time, very few residential buildings started to appear mainly along the new tram road connecting *El Tall*, the east edge of Tripoli, with *Buwwabi* area (gate), the west edge of *El Mina* (Fig.35). *Azmi Street* (named after *Azmi Bey*, one of the last governors of the Beirut vilayet) was another main road connecting *El Tall* to *El Mina* newly expanded port facilities. Next to the new Serail, an elegant clock tower was added giving more importance to *El Tall* area denoting its development into a modern public center around which new public buildings, fine mansions and hotels were erected. The public garden that was established later on in 1924 affirmed the central character of this area.

On the eve of World War I, Tripoli’s economy was based on the commercial activities essentially through its port relying mainly on the production of raw silk, soap, citrus fruits, cereals and olive oil, all of which were the product of the surrounding *Bassatine*. This mostly agrarian aspect indicates the importance that *Bassatine* had in sustaining the city’s economy during this period and throughout its history. However, several factors will change this situation during the next decades.

[75] Rajab, 1993.

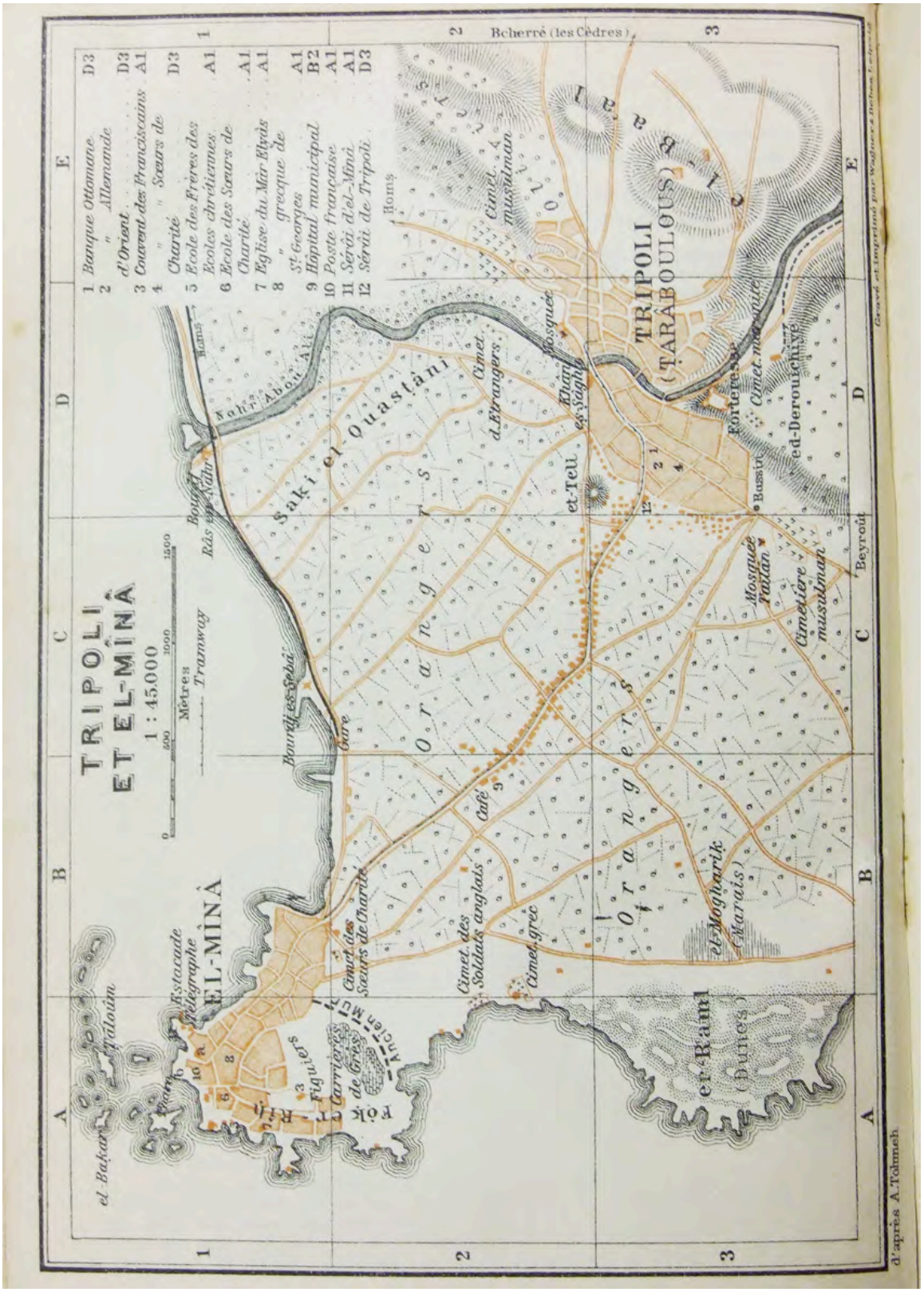


Fig. 35. Tripoli and El Mina in 1912. *Source*: Baedeker, 1912.

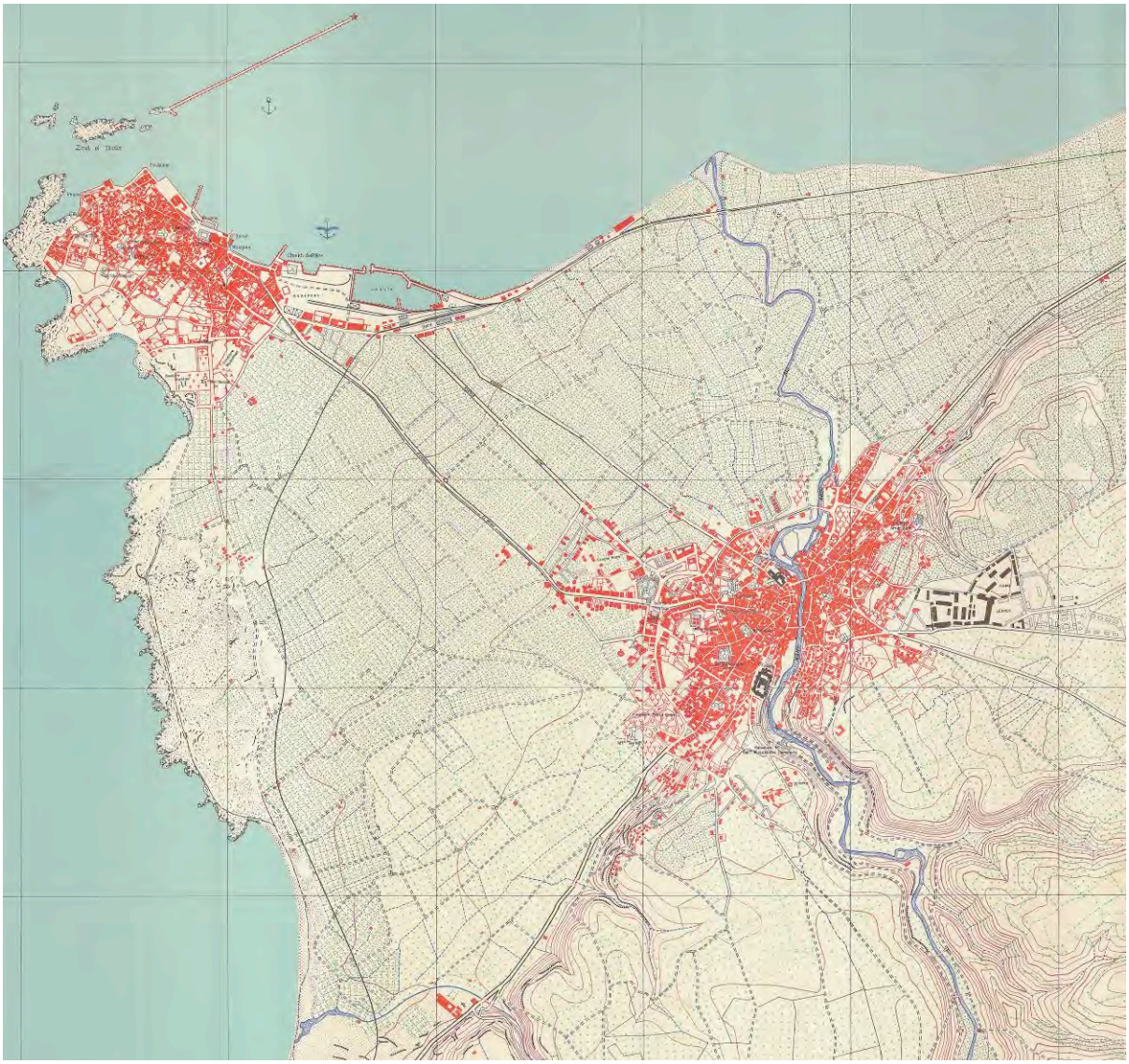


Fig. 36. Tripoli and El Mina in 1938. *Source*: IFPO.

4.3.1.5. French Mandate ‘Modernization’ and The Fading of Agrarian Economy

Having its urban foundations laid during the previous Ottoman era, the city under the French mandate entered the phase of ‘modernization’. The introduction of electrical power into the city in 1929 by *Société Qadisha* was the first and main factor that brought about the establishment of a number of new industries including the large *Arida cotton mill* along the road to Beirut in *Bahsas* area that became later on the city’s

industrial zone (Fig.36). Another factor that played a vital role in the city's growing industrial economy was the establishment in 1934 of the Iraq Petroleum Company (IPC) near *Beddawi* north of Tripoli. In 1941, the railroad between the city and Beirut was achieved. At the same time the port was rehabilitated and improved, and the transit export movement from Syria was prospering due to the absence of custom duties between the two countries during that time (Tripoli was historically relying on importing Syrian cotton from *Hama* and *Homs* for its transit trade). In parallel with this industrial boom, the city witnessed an unprecedented urban and demographic expansion. Tripoli's prominent families gradually moved out of the old town looking for a 'modern' lifestyle in the fashionable new areas where the wide new streets were able to accommodate private cars. In their turn, replacing the aristocratic families that have left the old town, many villagers from the surrounding regions were drawn by the new opportunities in the growing city especially that their source of income in agricultural business was not able to compete with the emerging industrial economy[76]. The official census carried out by the French in 1932 counted the population of Tripoli to be 41,474 and that of *El Mina* 13,402[77].

During the 1940s, new burgeoning neighborhoods, in addition to the still expanding *El Tall*, started to take shape around the old town. To the east, *El Qobbe* area was created resulting from the rural exodus movement originating from *Akkar* in the north and *Koura* in the east. To the south, on the hill named Mont Pèlerin next to St. Giles Castle, *Abou Samra* formed as the middle-class families in their turn decided to leave the old town. To these new neighborhoods, a camp of Palestinian refugees, who

[76] Rajab, 1993.
[77] Gulick, 1967.

fled the war of 1948, was added on the northeastern side of *El Qobbe* next to *Beddawi*[78]. Most of these new urban expansions were taking place along the newly constructed roads or in the form of isolated buildings on the expense of the existing orchards.

4.3.1.6. The Flood of *Abou Ali River* in 1955 and The Following Change

During the first half of the 20th century, the urban growth of Tripoli was taking place progressively and slowly. However, the incident of 17 December 1955 and the ensuing change came about unexpectedly, successively and violently.

Since its establishment by the Mamluks in 1289 on its new location, Tripoli was closely related to *Abou Ali* (or *Qadisha*) *River*, around which the city's small and medieval neighborhoods grew and prospered, and from which the *Bassatine* were irrigated. The flood happened following a heavy rain that caused the water to rise to unprecedented level causing severe damages to many buildings alongside the water. It was estimated that 200 people were killed and 7000 were displaced[79]. There were two direct urban consequences of this incident: the first was the implementation of the canalization of the river, and the second was the establishment of a new public housing project in the area of *Mallouleh* to accommodate the displaced families (still known today as *El Mankoubine*, or the casualties) (Fig.37)[80]. The canalization of the river that starts from the area beneath the castle all the way to the river mouth at the sea disregarded the old town and its historical value leading to the destruction of many historical buildings and monuments and leaving the old city fabric and the Bassatine area cut in two separate entities. In addition, this project resulted in an ecological and environmental disaster by transforming the river into a dumpsite and a sewage channel

[78] Rajab, 1993.
[79] Ibid.
[80] Ibid.

running right in the middle of the city. The old river was an important ecological corridor through which different species were able to move and travel. Today the canalization project radically changed the landscape by transforming the living riparian ecosystem into a biologically dead water channel.

4.3.1.7. Urban Expansion and Proposed Plans During The 2nd Half of The 20th Century

Since the 1920s, Tripoli's municipality had plans to widen a number of alleys in the old town in addition to building new roads linking the new expanding neighborhoods throughout the city. These individual plans were either partially executed or adjusted and included later on in future plans[81].

Following the independence, the first plan for the city was completed in 1947. This plan included a network of streets and boulevards aiming to connect the old city with its expanding parts, and to connect the newly formed neighborhoods with each other. It included also a proposed zoning plan for different uses such as a military zone in *El Qobbe*, an agricultural zone mainly concentrated in the north of the city, industrial zones to the north and south of the city, in addition to a zone of preservation of citrus trees along the *Abou Ali River valley*[82].

However, the plan was not completely executed due to many reservations especially from the Directorate General of Antiquities (DGA), which opposed the plan for the resulting destructions it would cause by widening historical alleys. Few years later, in 1953, a team of historians and archeological experts from the *United Nations Educational, Scientific and Cultural Organization* (UNESCO) was formed in order to

[81] Rajab, 1993.
[82] Lay, 2003.

assess the situation on site. The team's published report highlighted the urban issues that needed to be resolved and criticized the 1947 plan for not respecting the city's historical character. The UNESCO study, that came two years before the 1955 flood, only succeeded in postponing the execution of some of the roads. It also estimated that in 1943 Tripoli had a population of about 80,000.

By 1963, a number of streets and boulevards – that were proposed in the plan of 1947 – were already executed most important of which was *Bechara el Khoury Boulevard* that formed the main north-south axis running perpendicularly to *El Tall Street* and bypassing the historic city further north reaching *Beddawi* area (Fig.32). This boulevard, along which a number of public and administrative buildings were constructed, represented the main circulation artery enhancing the connection of Tripoli to Beirut in the south and Syria in the north. The other two main roads that were constructed during the early 20th century connecting *El Tall* to *El Mina, Azmi Street* and *El Mina Road*, formed the guiding lines along which a regularly planned land subdivisions formed the layout for urban expansion (Map.3).

During the early 1960s, Tripoli was among several Lebanese cities that were subject to planning projects in an effort to control accelerating urban growth. In 1964, Henri Eddé and Georges Doumani were commissioned the preparation of a master plan for the city. Their study covered the regional area of Tripoli agglomeration, and proposed a zoning plan in addition to a network of circulation. The zoning plan was divided in two types of zoning: a land use zoning specifying the general use of a certain area, such as industrial or agricultural, and a detailed zoning with specific building regulations for each zone, especially for the residential zones and the "business district"

zone. This study was characterized by a progressive functionalist approach peculiar to that period[83].

Fig. 37. Tripoli and El Mina in 1963. *Source*: IFPO.

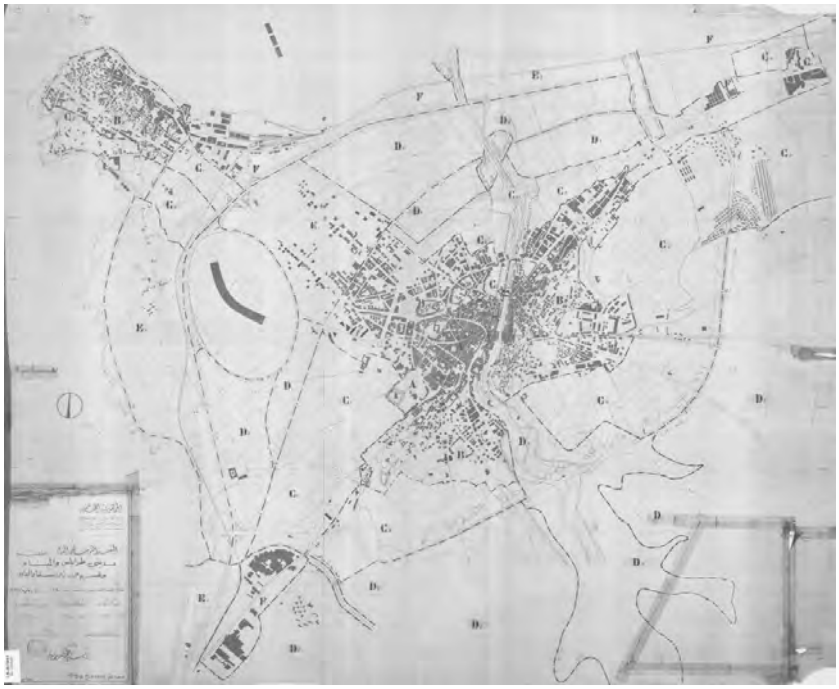


Fig. 38. Master plan of 1971 for Al Fayhaa & part of Ras Maska region. *Source*: IFPO.

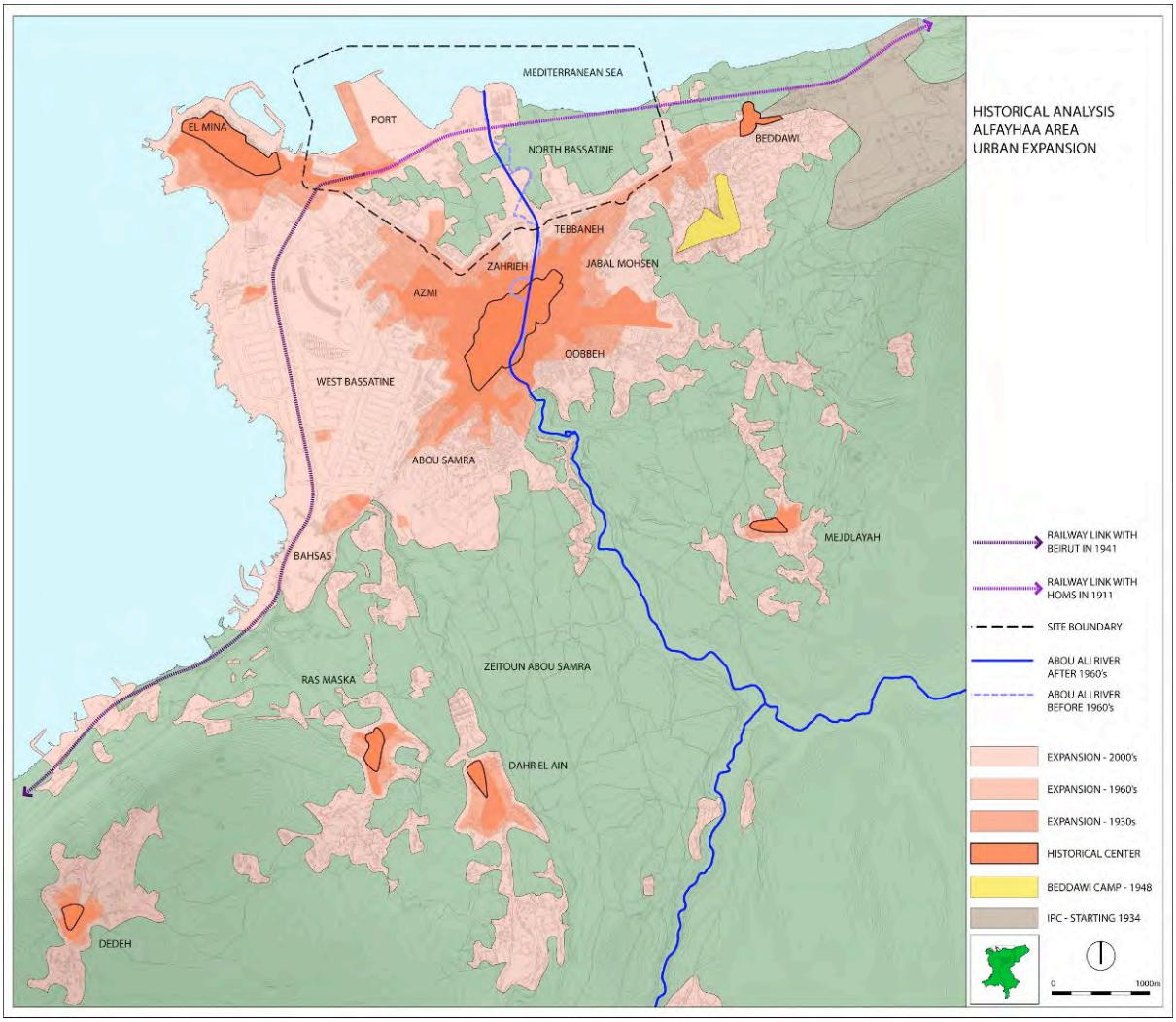
[83] Verdeil, 2011.

The hierarchical circulation network is composed of an international highway cutting through the *Bassatine area* and bypassing the city from the west, a secondary ring road serving the expansion zones of *Abou Samra* and *El Qobbe* from the east, a maritime road serving the city's waterfront including *El Mina*, in addition to internal urban boulevards. This scheme was meant to relief the center from traffic congestion. It is worth mentioning that one of the study's objectives was the preservation of part of the agricultural plains in the *Bassatine*. However, the plan was never approved by the municipality, instead, many adjustments were introduced.

In 1971, an adjusted study of 1964 plan was approved (Fig.38). In this latter, most of the earlier transportation schemes of 1964 plan were adopted. In addition, it included the proposed elliptical location of the International Fair in the middle of *Bassatine*, and a zoning plan. It was according to the last-mentioned zoning plan that all of the previously indicated agricultural zones were omitted and transformed into 'expansion zones' where relatively high FAR could be applied on building construction. This plan opened the door, a few years before the beginning of the civil war, to a radical change in the character of the already shrinking *Bassatine* area.

With the beginning of the civil war in 1975, a reversed population movement happened: after several decades of rural exodus from the surrounding regions, many people left the city back to their villages, and some others moved from frontlines like *El Qobbe* and *Tebbaneh* into more secure areas within the city creating an increased pressure and overcrowding of these areas[84]. Urban expansion during this period slowed down, except for some areas (like *Moharram* project).

[84] Harmandayan, 2004.



Map. 3. Al Fayhaa & Ras Maska area: urban expansion throughout the 20th century.
Source: by Author.

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4.3.2. Development of North Bassatine or Bassatine Al-Saqui Al-Shimali

Tripoli's identity has always been closely related to its citrus fruit and olive groves that date to more than one thousand years[85]. Mostly owned by Tripolitan families, the orchards were managed by villagers from the mountains if not by the owners themselves. *Bassatine Al-Saqui Al-Shimali, or simply Al-Saqui Al-Shimali*, is the popular name of the study area meaning the northern irrigated orchards (other than *Bassatine Al-Saqui Al-Gharbi* or western irrigated orchards). Historically, these orchards were directly irrigated from the nearby *Abou Ali River* through manmade water channels many of which still exist today though in a very bad situation. The orange orchards were densely planted, and rows of tall reeds were used as screens to separate the groves of different owners. For each cluster of lands belonging to the same owner a small flat-roofed farmhouse was built to accommodate the relevant caretaker and his family. The orchards are served by a network of semi-regular footpaths most of which still exist today and are known by their names like *Zokak el Talet* that separates Tripoli from *Beddawi* (Fig.39 & 40).

[85] Gulick, 1967.

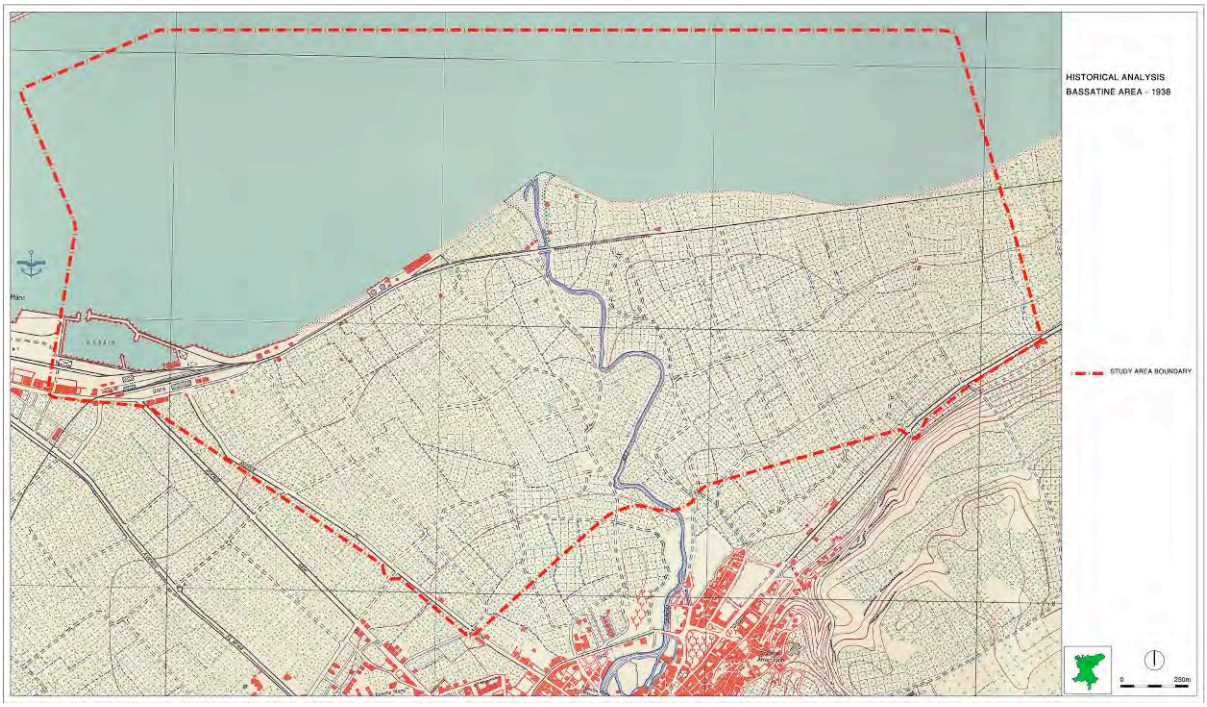


Fig. 39. North Bassatine in 1938. *Source*: IFPO.

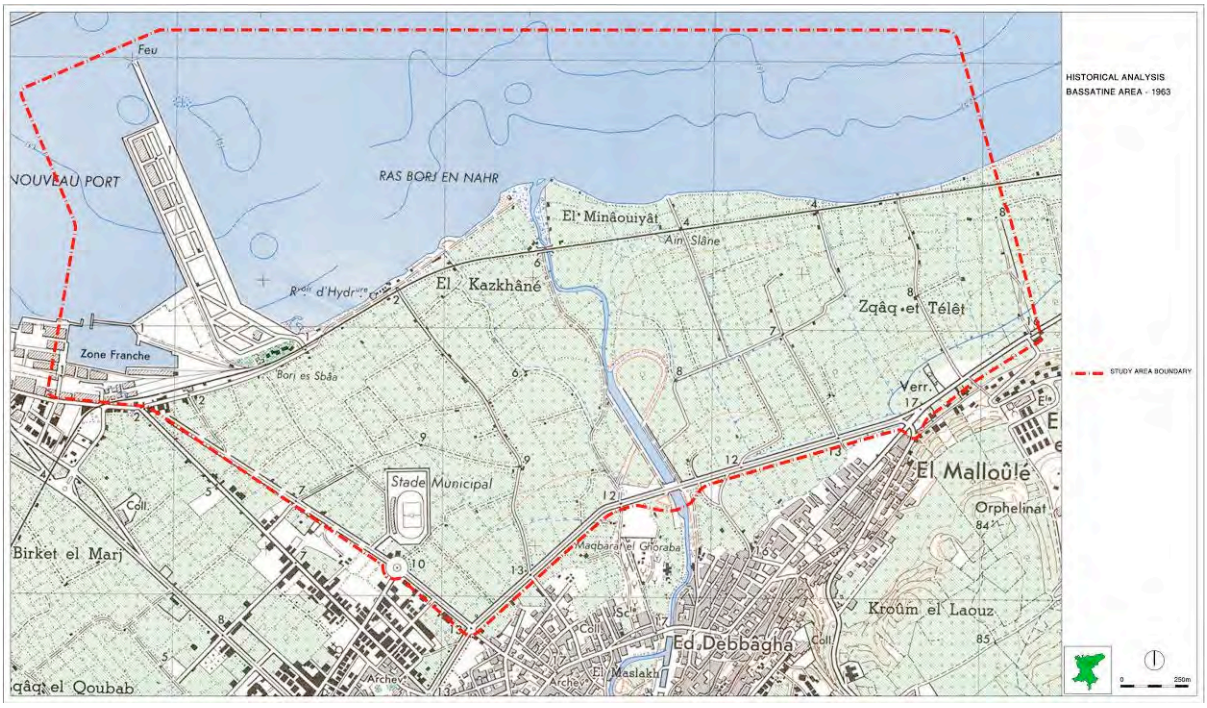


Fig. 40. North Bassatine in 1963. *Source*: IFPO.

However, unlike other areas of the city, and based on the analysis of historical accounts, maps and available photos, the slow and limited urban development of *Al-Saqui Al-Shimali* could be accounted for a number of factors that developed in a relatively extended period of time throughout the 20th century:

a. Tripoli harbor and the adjacent railway station.

Located at the northern part of *Al-Saqui Al-Shimali*, next to the historical military fort known as *Bourj Al Sbaa* (Fig.41 & 42), Tripoli harbor is a major factor whose development affected the surrounding area by turning its dominant aspect into an industrial one, and gradually changing the shape of the city's northern shoreline (Map.5). Throughout its history, it played a key role in the city's as well as the region's economy and development. Nevertheless, it faced fierce competition especially during the first half of the 20th century when Beirut port was increasingly taking the lead. There were several attempts to improve the port condition and expand its premises.

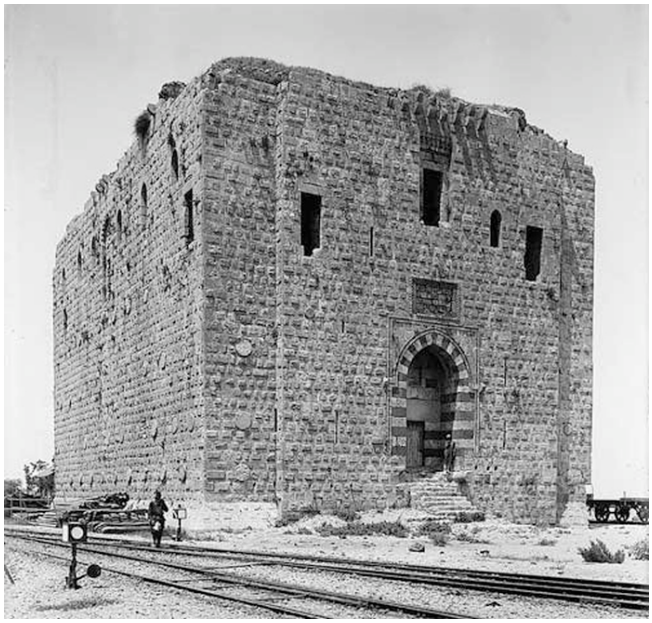


Fig. 41. *Bourj Al Sbaa* and the railway lines in 1910. *Source*: EL Hajj, 2010.

In 1910, a number of steamers and sailing ships were used to clear the docks[86] as part of port expansion works along with the establishment of a new railway station (Fig.43 & 44) that was opened in 1911 and improved the link between Tripoli and the cities of *Homs* and *Aleppo*. The link with Beirut was inaugurated 30 years later in 1941.

For a short period of time of the 1930s, French authorities tried to establish a seaplane base within the port premises (at the place of the Free Zone today) yet it failed when it did not survive World War II[87]. Alternatively, an airport was built later on at *Klayaat* in *Akkar*.

In 1950, the erection of customs barriers between Lebanon and Syria severely affected the port's activity and consequently the city's economy that relied significantly on the transshipment movement with the Syrian hinterland[88]. In an attempt to recover the city's economy, the state launched in 1959 the first port expansion project of its kind by expanding its breakwaters, enlarging its docks and increasing the storage structures.

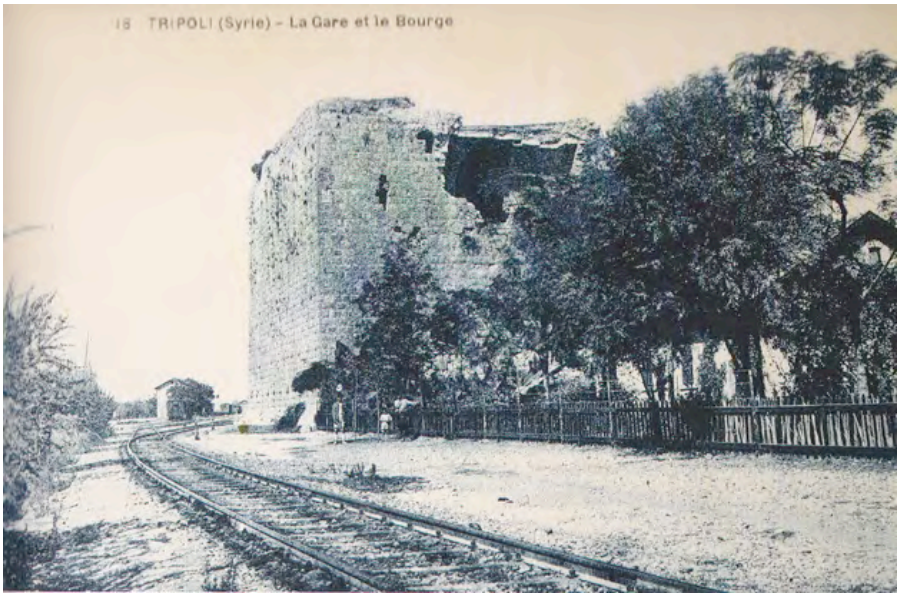


Fig. 42. *Bourj Al Sbaa* and the railway lines in 1920. Partial destruction could be noticed resulting from WWI. *Source*: EL Hajj, 2010.

[86] Baedeker, 1912.
[87] Gulick, 1967.
[88] Ibid.

Fig. 43. Port expansion and railway station works in 1910. *Source*: EL Hajj, 2010.

Fig. 44. Port, railway station and *Bourj Al Sbaa* in 1911. *Source*: EL Hajj, 2010.

b. The gradual construction of new major roads and the municipal stadium starting from late 1940s.

Azmi Street that was paved in early 1920s is considered to be the spine of urban development that took place in the new area between the old city and *El Mina*. Parallel to *Azmi* Street, *Mitein* Street (or *Abdelateef Bissar* Street) was partially paved during late 1940s with the construction of the municipal stadium, the first structure to be erected in the area of *Al-Saqui Al-Shimali,* and the first sport structure of its kind in the city (Fig.45). The section of *Mitein* Street between the stadium and the railway station was not completed before the end of 1960s. Hence the development along this street was slow compared to *Azmi* and *El Mina* streets.

Syria Street in what is known today as *Tebbaneh* was the main link (other than the railway) between the city and the northern region and subsequently Syria. The city's eastern expansion developed along this axis forming the area of *Bab el Tebbaneh* (the hay gate) where merchants of vegetable produce came from *Akkar* to conduct their business. The gradual construction of new Tripoli-Syria Road (*Fouad Chehab Boulevard*) during the 1960s through the southern part of *Al-Saqui Al-Shimali* bypassed the city's historical center and bound the growing neighborhoods of *Tebbaneh* and *Zahriyeh*.

The pavement of *El Marfaa* Road along with the expansion of the port in 1959 allowed for industrial activities to prosper in the area especially between the port and El Mina. In addition, Along *El Marfaa* Road and next to *El Kazkhaneh* (the old oil tanks), the municipal authorities constructed several structures to house the slaughterhouse and the quarantine.

Fig. 45. *North Bassatine* area in 1968. Construction works on the new Tripoli-Syria road (and *El Nahr* Roundabout) still unfinished. *Source*: IFPO.

c. The flood of *Abou Ali River* in 1955.

The impact of the flood of *Abou Ali River* and the subsequent straitening project was not less damaging on the area of *Al-Saqui Al-Shimali* than on the city's historical urban pattern (Fig.46 & 47). The concrete riverbed structure executed during the 1960s cut through the orange orchards with no consideration of the existing pathways or any other natural or ecological component of the area. Consequently, many

species and habitats were irreversibly destructed. The concrete structure includes a six-meter deep and twenty-meter wide riverbed surrounded by two major roads of more than twenty meter wide each[89].

Fig. 46. *Abou Ali River* straightening and canalization works during 1960's. *Source*: EL Hajj, 2010.

Fig. 47. *Abou Ali River* straightening and canalization project after its completion in 1970. *Source*: EL Hajj, 2010.

[89] Rajab, 2009.

d. The issuance of Tripoli zoning plan in 1971.

The zoning plan of 1971 divided the area of *Al-Saqui Al-Shimali* that was previously classified as agricultural into four different zones: D1, D2, E2 and F. D1 and D2 that covers most of the area are classified as “Expansion Zones” with the respective FAR of 0.90 and 0.80. E that covers the eastern area between the beach and the coastal highway was classified as “Tourism Zone” with the FAR of 0.30. F that covers the western area between the port and the coastal highway was classified as “Industrial Zone” with the FAR of 0.3 (Fig.48).

The plan specified the future transportation network including the coastal highway and two roads that cut through the area from west to east. Three public gardens were also specified in the plan: the first was located at the river mouth just next to the already existing slaughterhouse and the quarantine structures; the second occupied the central part of the area and was divided in two sections separated by the riverbed structure; the third was located on the east side of the area along *Zokak El Talet* pathway that separates Tripoli from *Beddawi* (Fig.48).

The following years witnessed the eruption of the civil war, during which many inappropriately planned developments took place in the area especially along the main roads apart from the new dumpsite that occupied the site of the above-mentioned public garden. In addition, industrial activities were not restricted within their specified zones but increasingly spreading within the expansion zones.

It is worth noting that until the 1980s, development affected limited sections of the study area: along the main roads, *Abou Ali River* and around the port. Most of the existing urban development and building sprawl occurred only during the last three decades.

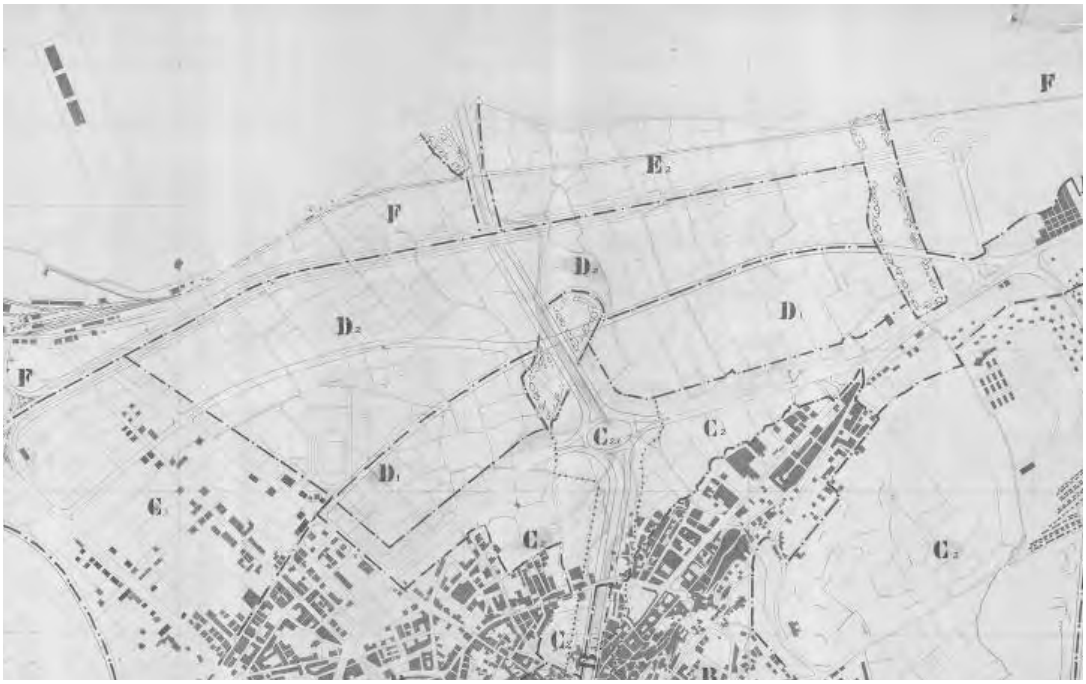
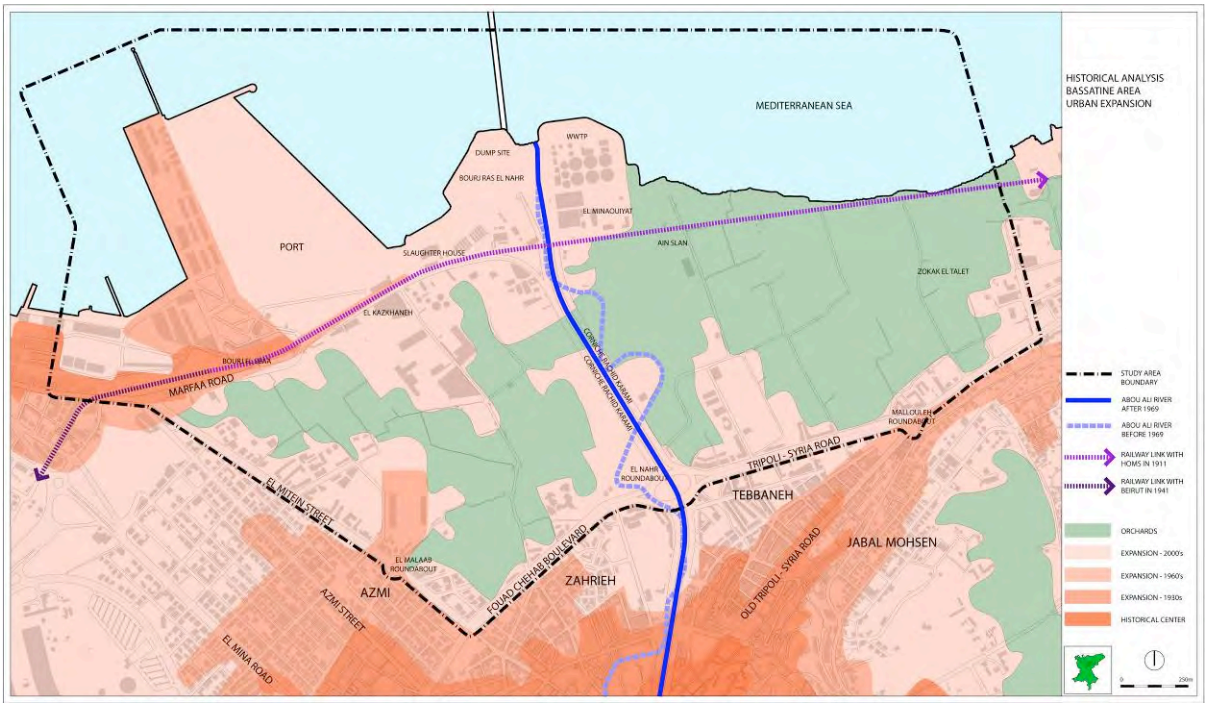


Fig.48. Master plan of 1971. *Al-Saqui Al-Shimali* area. *Source*: IFPO.



Map. 4. North Bassatine: urban expansion throughout the 20th century.
Source: by Author.

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Map. 5. North Bassatine: shoreline change throughout the 20th century.
Source: by Author.

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4.4. Existing Landscape Character

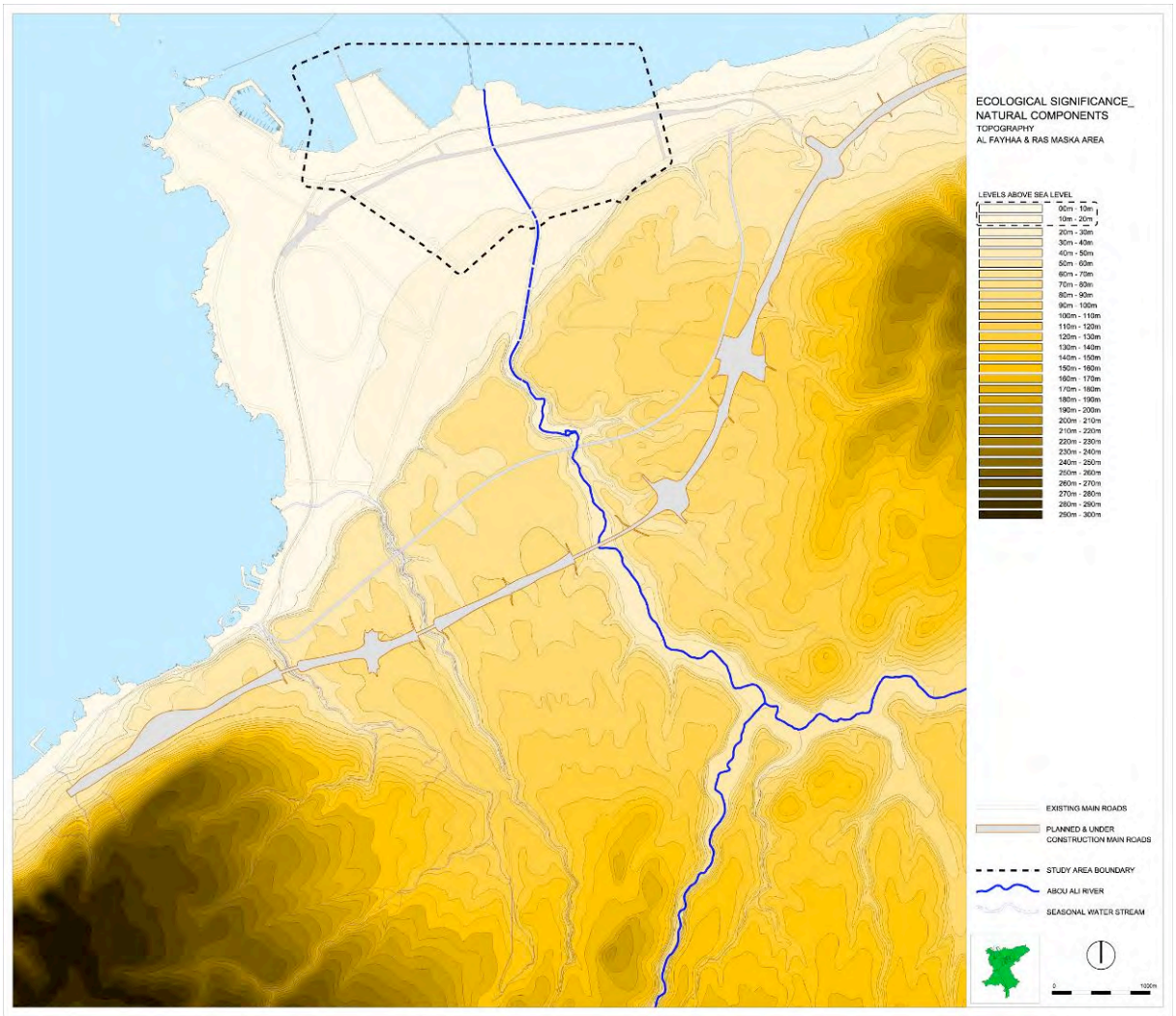
In this thesis, the assessment of the existing landscape stems from the holistic and dynamic approach of landscape ecology that takes into consideration, in addition to the cultural aspects – historical, spatial, socio-economical and other related fields that we will explore later – the abiotic and biotic aspects of the area's landscape.

4.4.1. Abiotic Aspects of Tripoli and Al-Saqui Al-Shimali

Today *Al Fayhaa area* stretches partly on the coastal plain (*Bassatine*) and partly on the surrounding hilltops of *Ras Maska, Abou Samra* and *El Qobbe,* the northwestern edges of *Zgharta Plateau* (Map.6). This latter is bounded from the northeast by *Mount Terbol* that culminates at 681 m.a.s.l., and from the southwest by *Mount Kelhat* that peaks at 403 m.a.s.l[90]. The coastal plain that has a triangular shape slightly rises in a southeastern direction from *El Mina* at sea level to reach 20 m.a.s.l. at the foothills of *Ras Maska, Abou Samra* and *El Qobbe,* facing a clear cliff-edge along a southwestern – northeastern axis.

The geological formations of *Bassatine* area mainly consist of Quaternary unconsolidated alluvial deposits in the area surrounding Abou Ali River, in addition to moving and fixed dunes of calcareous sand especially in the southwestern part of *Bassatine*[91]. Whereas the surrounding hilltops consist of fulvio-marine deposits and Miocene Reefal limestones[92] (Map.7). The soil type in *Bassatine Al-Saqui Al-Shimali* consists mostly of Mollic and Endogleyic Cambisols (Map.8). This type of soil is clay

[90] Carte Geologique, 1951.
[91] Oueida, R. S., 1992.
[92] Ibid.



Map. 6. Al Fayhaa & Ras Maska area: Topography.
Source: by Author based on Lebanese Armed Forces Topography Map.

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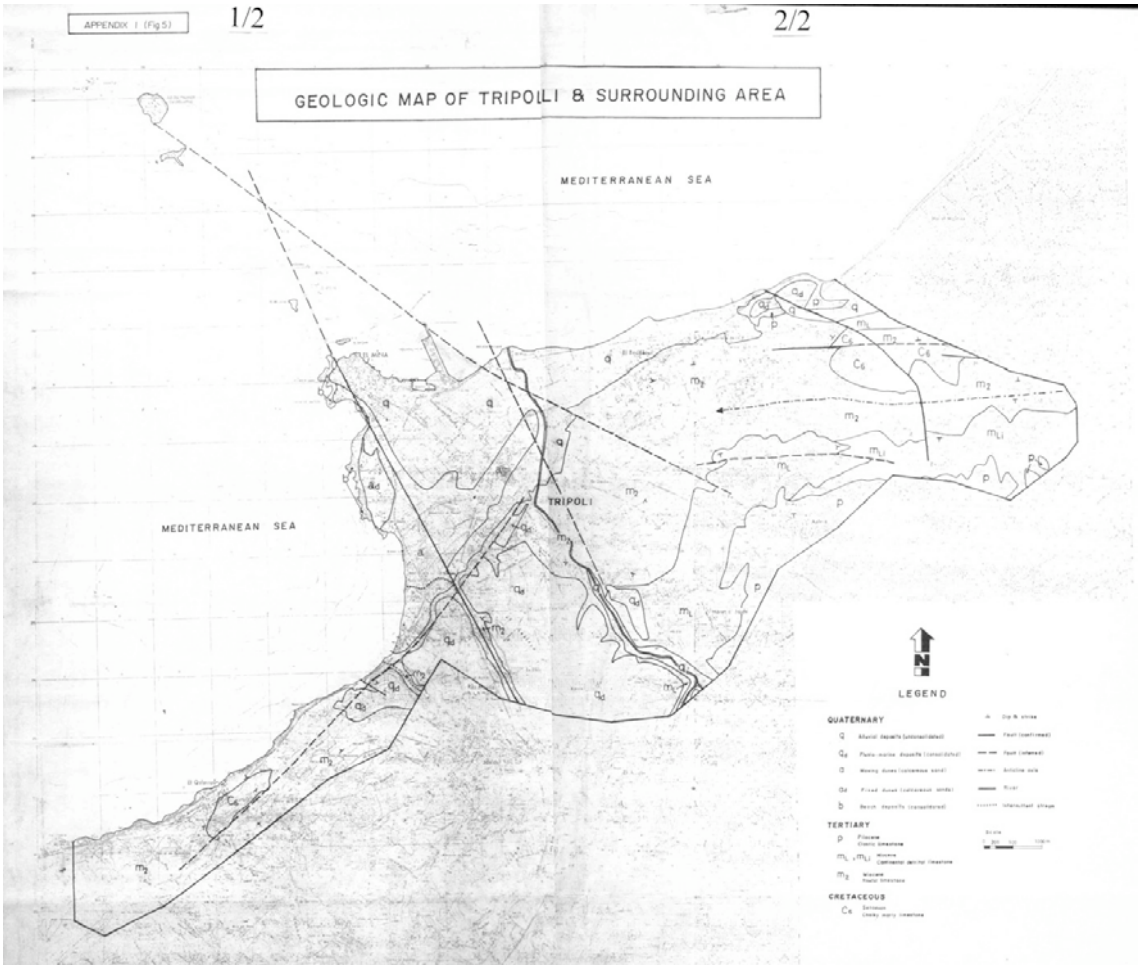

Map. 7. Al Fayhaa & Ras Maska area: Geology.
Source: Raghida S. Oueida Thesis, AUB, 1992.

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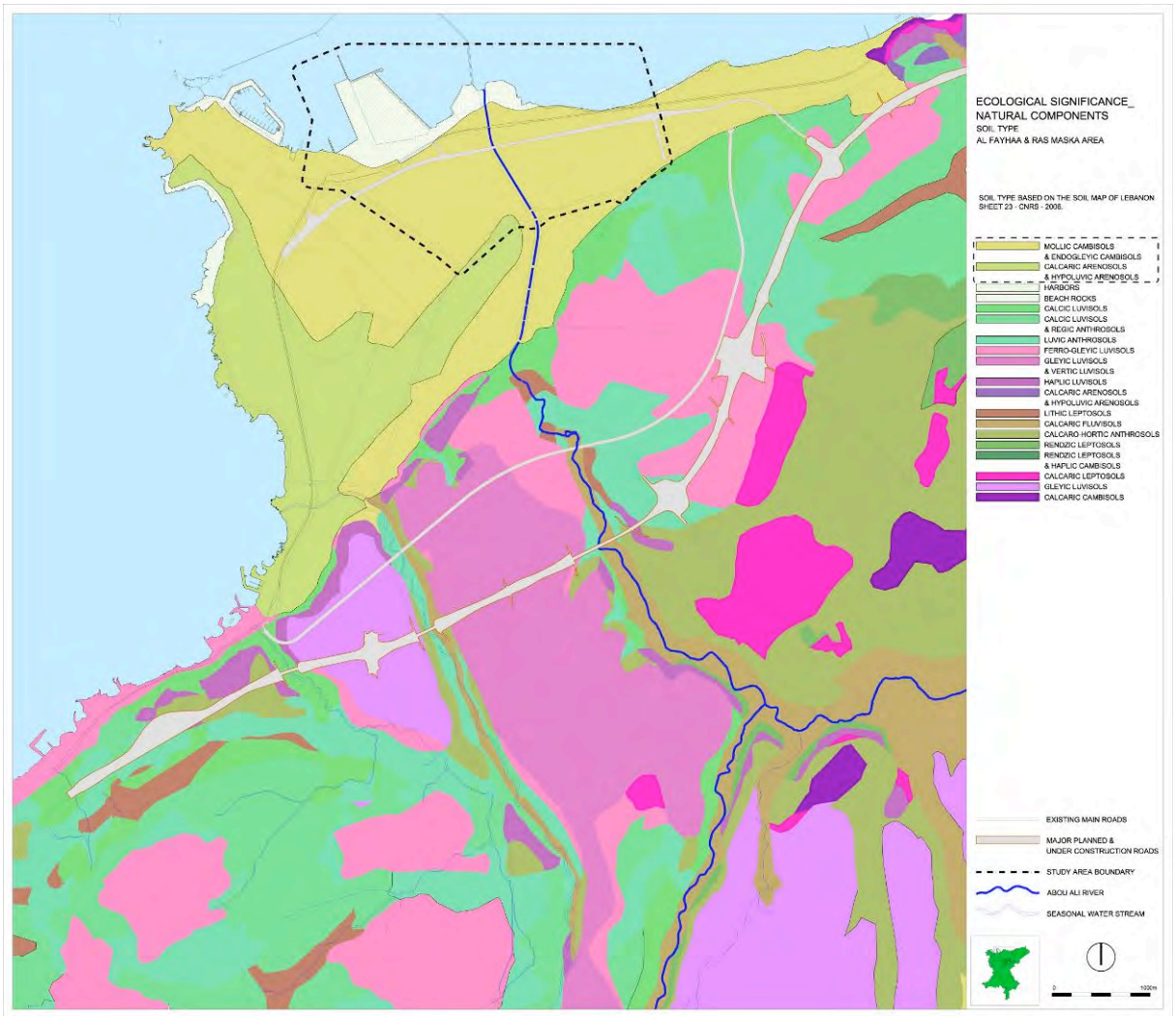

Map. 8. Al Fayhaa & Ras Maska area: Soil type.
Source: by Author based on The Soil Map of Lebanon Sheet 23 - CNRS, 2006.

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loamy, very deep and characterized by a dark color, soft and dry consistency in addition to the high content of organic matter in its upper layers[93], thus most suitable for agriculture[94].

Tripoli area belongs to the northern coast climatic region that is characterized by a typical mild Mediterranean weather. This area has two distinct seasons: a rainy cold perturbed season and a humid hot summer season with transitional periods of about 50 days (from 15 April to 30 June and from 15 September to 15 November)[95]. The area's average annual precipitation is about 930mm with an average annual temperature of 19˚C[96] and an average humidity of 73%[97]. The wind, whether in winter or in summer, is mostly southwesterly and comes from the sea[98].

4.4.2. Biotic Aspects of Tripoli and Al-Saqui Al-Shimali

4.4.2.1. Flora

The remaining vegetation cover in Tripoli is mostly agricultural. And as mentioned earlier, citrus fruit orchards are cultivated in the coastal plain of *Bassatine Al-Saqui Al-Shimali* and along *Abou Ali River Valley*, while olive trees are covering the surrounding hills of *El Qobbe* and *Abou Samra* extending to *Koura* area (Map.9).

A wide range of citrus fruit trees could be found in *Al-Saqui Al-Shimali*. Major species include Orange (*Citrus sinensis*) [local name: *laymoun*], Lemon (*Citrus limon*) [local name: *hamodh*], Grapefruit (*Citrus paradisi*) [local name: *bomali*] and Mandarin (*Citrus reticulata*) [local name: *afandi*] [99]. Each of these citrus species consists of a number of varieties among which we can identify the following: Orange varieties

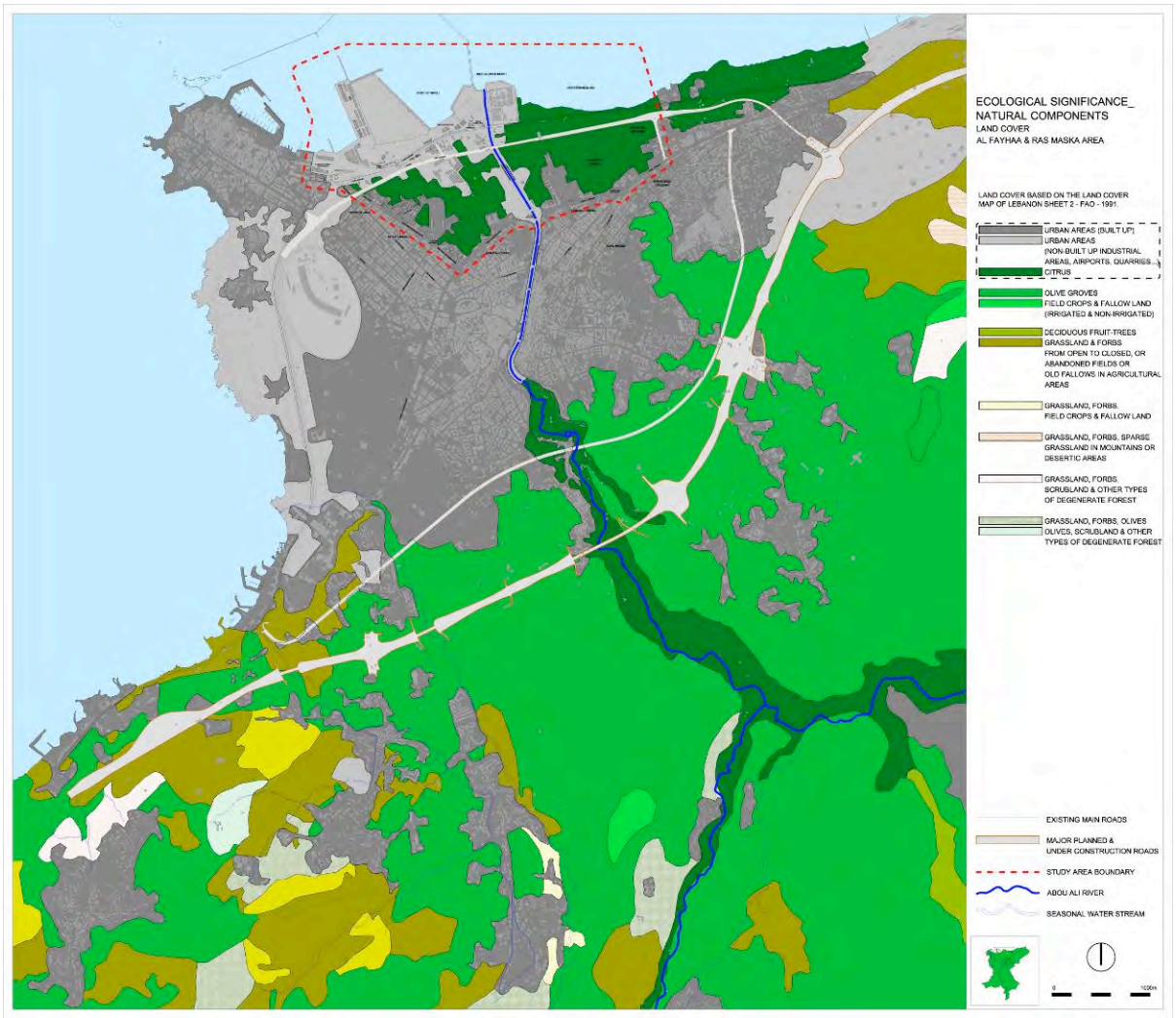
[93] Soil Map of Lebanon Sheet 23, CNRS, 2006.
[94] Interview with Michel Issa el-Khoury in October 2011.
[95] Atlas Climatique du Liban Tome I, Second Edition, 1977.
[96] Ibid.
[97] Atlas Climatique du Liban Tome II, Second Edition, 1982.
[98] Atlas Climatique du Liban Tome III, 1982.
[99] Interview with Michel Issa el-Khoury in October 2011.

include *Baladi, Mawardi, Ifawi, Shamouti, Washington Navel, Frost Navel, Thomson Navel* and *Valencia*. Mandarin varieties include *Common Mandarin, Kara Mandarin, Temple Mandarin, Kinnoo Mandarin, Wilking Mandarin, Satsuma* and *Clementine*. Lemon varieties include *Saasali, Meyer, Monachello, Interdonato, and Lime Palestina.* And finally Grapefruit varieties include *Pomelo Ruby* and *Shaddock*[100] (Fig.49). A large amount of citrus production is for local use particularly *Ifawi* and *Valencia,* and the remaining is exported abroad especially to the Gulf region (KSA, UAE, Bahrain and Qatar)[101].

Besides the citrus fruit trees, other types of agriculture could found in *Al-Saqui Al-Shimali* yet in smaller quantities: Date Palm (*Phoenix dactylifera*) [local name: *nakheel*], Banana (*Ensete ventricosum*) [local name: *mawz*], Almond (*Prunus dulcis*) [local name: *lawz akhdar*], Loquat (*Eriobotrya Japonica*) [local name: *akkedene*], Pomegranate (*Punica granatum*) [local name: *roumman*] and Common fig (*Ficus carica*) [local name: *teen*][102] (Fig.50).

The abovementioned flora is threatened by continuous urban expansion especially in *Bassatine Al-Saqui Al-Shimali* area. This latter that once was connected with *Beddawi Bassatine area* to the east forming one ecosystem, now they are almost separated by urban development (Map.10 & 11).

[100] Interview with Michel Issa el-Khoury in October 2011.
[101] Ibid.
[102] Interview with Samer Fatfat in October 2011.



Map. 9. Al Fayhaa & Ras Maska area: Land cover plan.
Source: by Author based on Land Cover Map Sheet 2 - FAO, 1991.

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Citrus sinensis


Citrus limon


Citrus paradisi


Citrus reticulata


Mandarin


Satsuma


Valencia


Clementine


Washington Navel

Fig. 49. A variety of Citrus fruit types in *Al-Saqui Al-Shimali*.
Source: Michel Issa el-Khoury, 2011.


Phoenix dactylifera


Ensete ventricosum

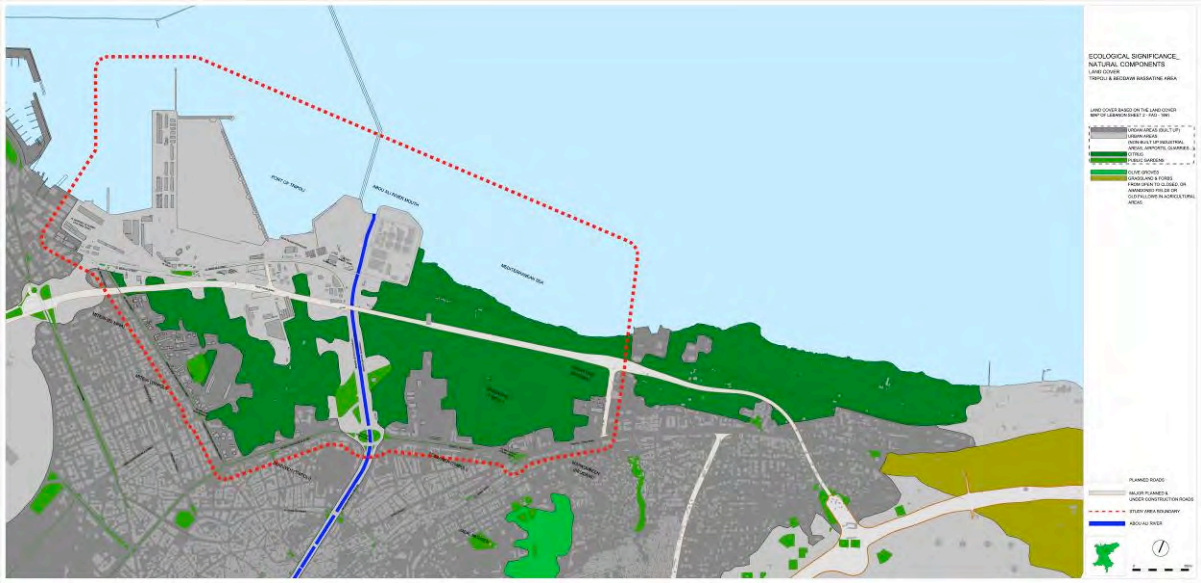

Prunus dulcis


Eriobotrya Japonica


Punica granatum


Ficus carica

Fig. 50. Other types of agricultural species in *Al-Saqui Al-Shimali*.
Source: Samer Farfat, 2011.



Map. 10. North Bassatine and Beddawi area: Land cover plan.
Source: by Author based on Land Cover Map Sheet 2 - FAO, 1991.

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Map. 11. North Bassatine area: Land cover plan.
Source: by Author based on Land Cover Map Sheet 2 - FAO, 1991.

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4.4.2.2. Fauna and Avifauna

According to Samer Fatfat, an agricultural engineer and researcher, it is not common to find wild animals in *Bassatine area* especially after the urban development in the surrounding areas except for some amphibians like the Common Green Frog (*Rana leventina*) [local name: *dofdah*] in addition to a variety of insect species. However, a number of native bird species could be found in Tripoli in general like the House Sparrow (*Passer domesticus*) [local name: *douri*], the Laughing Dove (*Stigmatopelia senegalensis*) [local name: *yamam*] and the White-spectacled Bulbul (*Pycnonotus xanthopygos*) [local name: *bulbul*][103] (Fig.51).

Besides, there could be found non-native bird species that migrate through the area and use *Al-Saqui Al-Shimali* and the islands located off the coast of Tripoli as transitional zones on their migratory route. Among these species the following could be identified: Common Quail (*Coturnix coturnix*) [local name: *somman* or *ferri*], Common Blackbird (*Turdus Merula*) [local name: *shahrour*], Bee-eater (*Merops apiaster*) [local name: *warwar*], Turtle Dove (*Streptopelia turtur*) [local name: *terghal*], Pacific Reef Heron (*Egretta sacra*) [local name: *aarnook*], Common Shelduck (*Tadorna tadorna*) [local name: *batt*], White Pelican (*Pelecanus onocrotalus*) [local name: *bajaa abiad*], Collared Dove (*Streptopelia decaoto*) [local name: *matwak*], Orphean Warbler (*Sylvia hortensis*) [local name: *aasfour et-tine*] and Common Snipe (*Gallinago gallinago*) [local name: *shenkob*][104] (Fig.52).

[103] Interview with Samer Fatfat in October 2011.
[104] Ibid.

Passer domesticus

Stigmatopelia senegalensis

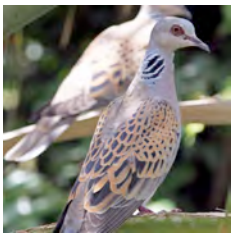
Pycnonotus xanthopygos

Fig. 51. Native bird species in *Al-Saqui Al-Shimali*.
Source: Samer Farfat, 2011.

Coturnix coturnix

Turdus Merula

Merops apiaster



Streptopelia turtur

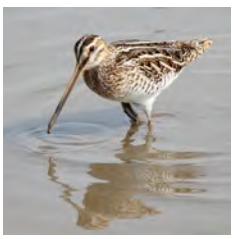
Egretta sacra

Tadorna tadorna

Pelecanus onocrotalus

Streptopelia decaoto

Sylvia hortensis



Gallinago gallinago

Fig. 52. Migrating bird species in *Al-Saqui Al-Shimali*.
Source: Samer Farfat, 2011.

4.5. Townscape and Land use Analysis

As mentioned earlier, most of the area in *Al-Saqui Al-Shimali* is an open space in contrast to the adjacent dense city neighborhoods. The center has a rural aspect with its narrow roads and pathways that serve the orchards. Small individual farmhouses are scattered throughout the area that used to accommodate the orchards' caretakers and their families. Today many of these structures are abandoned and almost in ruins or in bad conditions. On the other hand, most of the development is occurring on the edge of the study area. These developments are starting to infiltrate within the orchards despite the lack of the necessary infrastructure such as roads network, electrical, water and sewer systems, etc…In general, plots in the study area are rectangular in shape and, as in rural areas, they are separated and served by a network of man-made irrigation channels (Map.12). Blocks in the area are relatively large in comparison to adjacent neighborhoods (Map.13).

A variety of uses could be identified in the study area in both open and built up spaces. In open spaces (Map.16), a large part is still agricultural yet with little consideration from the landowners due to the low profitability in this sector compared to other types of businesses. It is noticed that these agricultural plots are mainly concentrated in the central part of the area especially where there's a lack of vehicular accessibility. Whereas other plots that are well served by roads and pathways are either developed or used for several purposes other than agricultural. The northern part of the study area – in addition to some fragmented lots in the center – is dominated by industrial activities as a result of its proximity to the Port and railway station. Thus the main uses of the surrounding plots are port-related, industrial or vacant. For instance, a large number of these plots are used as steel or plastic junkyards some of which are

exported abroad, while other plots are used for construction materials stock or retail. It is also common to find some open-air plots that are used for construction vehicles or second-hand cars retail.

In built-up spaces (Map.17), or developed lots, we can distinguish between two major types of development or land use: residential-commercial and industrial.

The residential-commercial development (and mixed-use in some locations) is mainly located along the southwestern and southeastern edge of the study area namely along the main roads –Tripoli Syria Road and *Mitein Street* – that delineate the edge between the city and its northern orchards. This type of development could be considered as an extension of the surrounding neighborhoods of *Azmi* from the southwest, *Zahrieh* and *Tebbaneh* from the southeast with some nuances among these areas. The building type is mostly contemporary residential apartment with mid to high-rises (between 5 and 12 floors) (Map.14 & 15). On the southwest side along *Azmi* neighborhood, the development is higher, mixed between residential in the upper floors and commercial in the lower and ground floors. Two hospitals exist in this area in addition to a number of health facilities such as infirmaries and special clinics that could be found in lower and ground floors of residential buildings. Commercial activities in this area vary from neighborhood- scale to city-scale retail (home appliances, furniture, construction materials…). Educational facilities are also among the uses of this area; four schools exist along *Mitein Street* one of which is *El Malaab Public High School* next to the Municipal Stadium that were both among the first structures to be erected in the area during the 1940s. On the southeast side along *Zahrieh* and *Tebbaneh* neighborhoods on Tripoli-Syria Road, the development is more fragmented. Among the

commercial activities in ground floors it can be identified agricultural-related retails that cater for the farmers coming from *Akkar*.

As stated earlier the industrial development is mostly situated in the vicinity of the port to the north with some fragmented industrial sites within the orchards and next to *Beddawi* to the east. This type of development is mainly port-related and it relies on the transshipment aspect of it. It consists of a number of industries such as wood & paper stocking and processing (*Jabwood*), furniture making, construction material stocking and retail, and petroleum storing and processing (*Al Faisal Reservoirs*) for local and regional use.

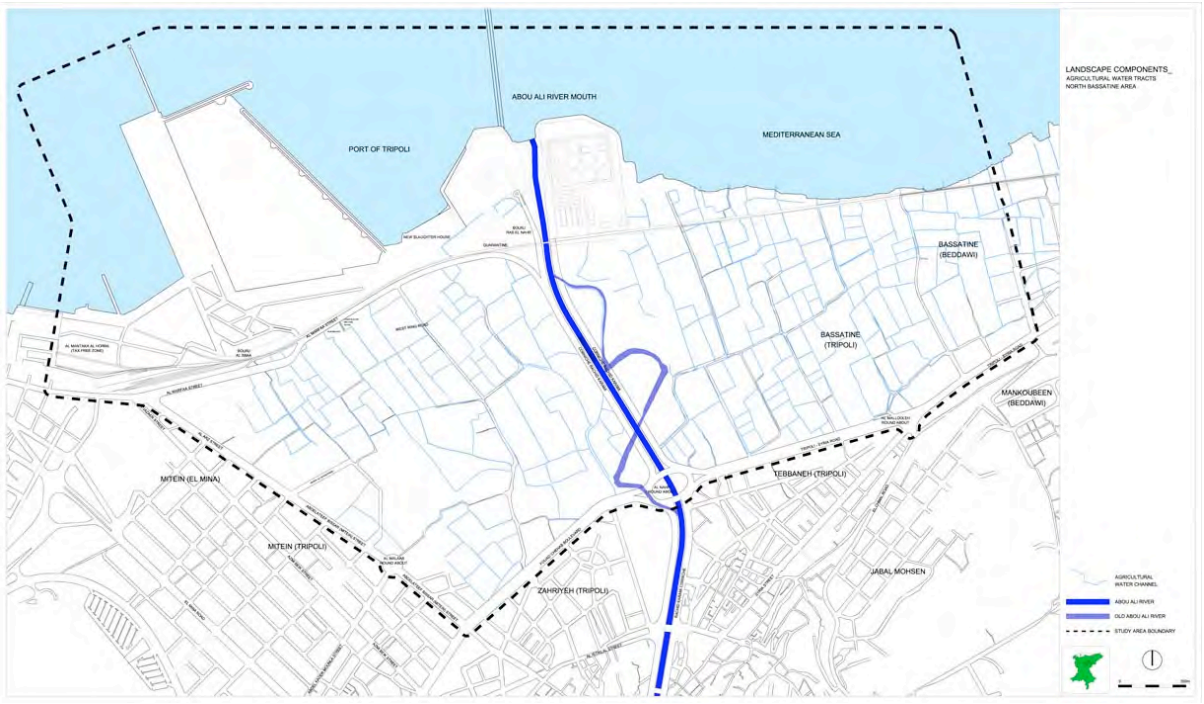
Major landmarks in the area are: The Port, The Municipal Stadium, The historical Railway Station and the *Lions Tower*, *Abou Ali River*, and *Rawdat Al Fayhaa School and Mosque*.

Accordingly, three land use concentration zones could be identified (Map.18):

- A concentration of industrial activities in the port and its surrounding area.

- A concentration of agricultural activities with some industrial activities fragmented in the center of the study area.

- A concentration of residential and mixed-use activities especially along *Mitein Street* and Tripoli-Syria Road. This zone is the growing “edge condition” of the adjacent neighborhoods of *Azmi, Zahrieh* and *Tebbaneh*.



Map.12. North Bassatine: Existing irrigation water channels.
Source: by Author.

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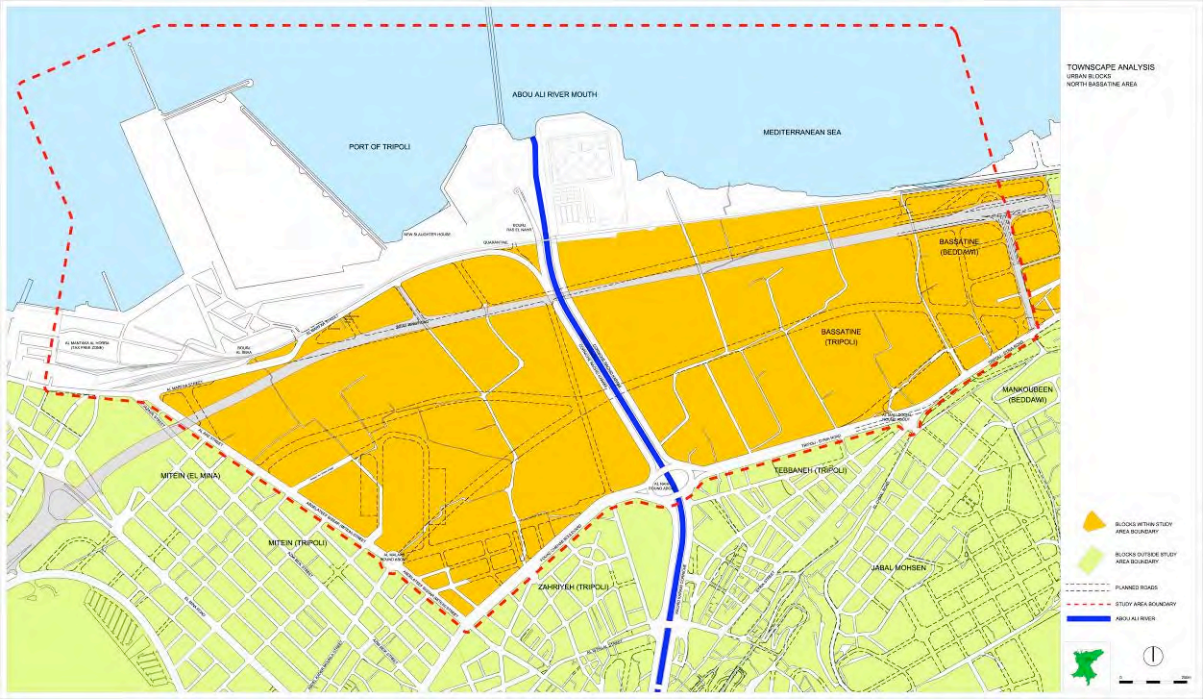

Map. 13. North Bassatine: Existing urban blocks.
Source: by Author.

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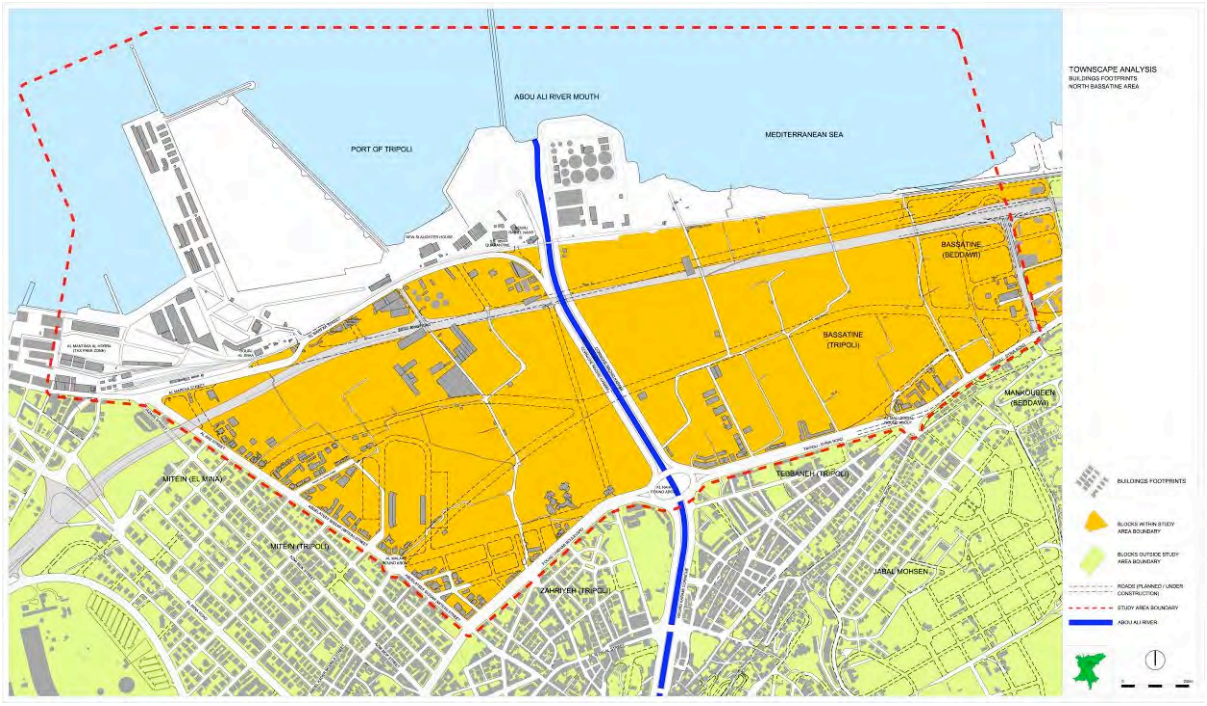

Map. 14. North Bassatine: Existing buildings footprints.
Source: by Author.

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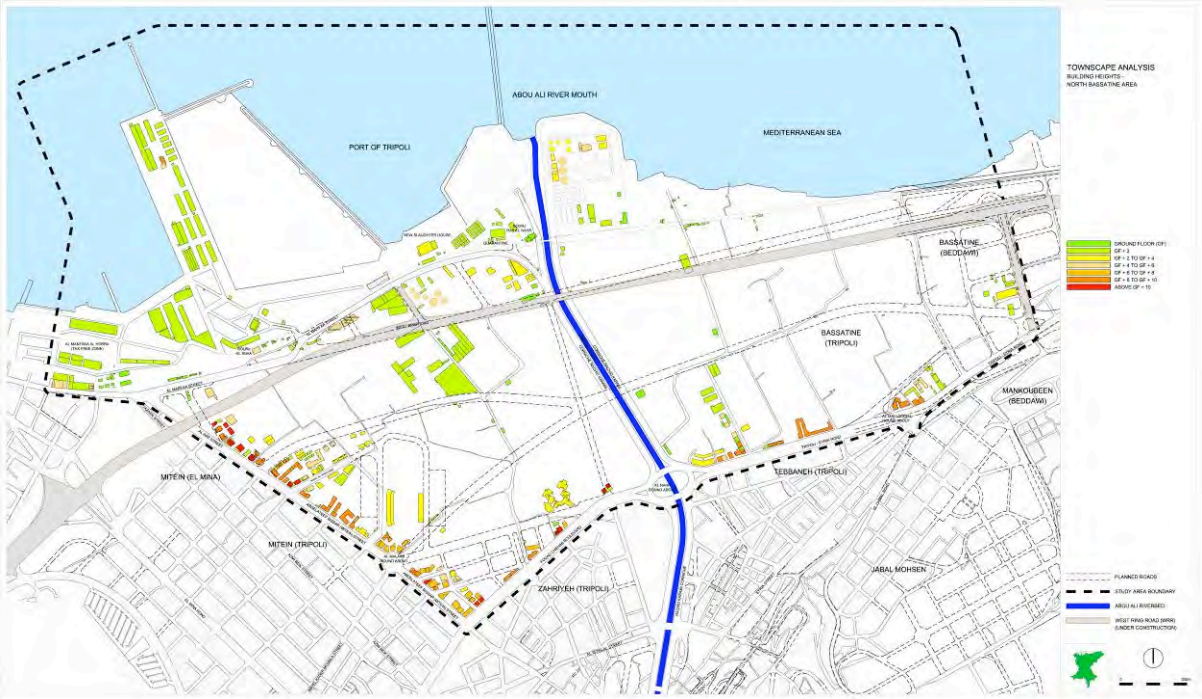

Map. 15. North Bassatine: Existing buildings heights.
Source: by Author.

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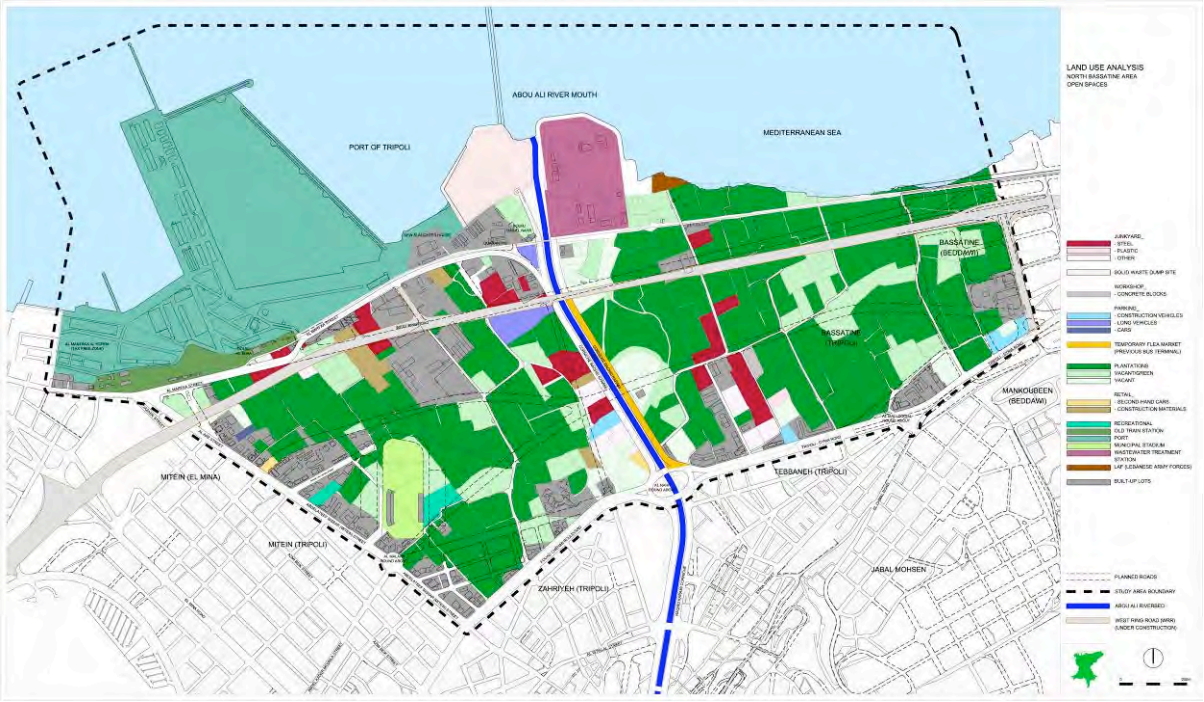

Map. 16. North Bassatine: Existing open spaces land use.
Source: by Author.

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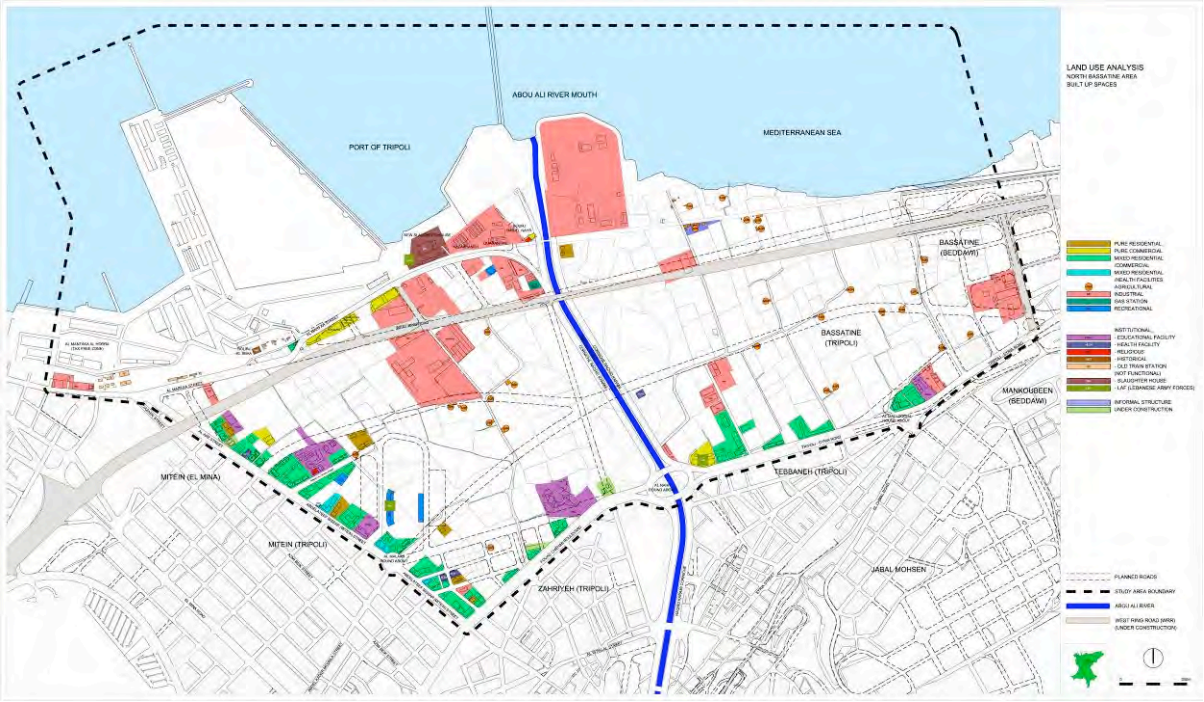

Map. 17. North Bassatine: Existing built-up spaces land use.
Source: by Author.

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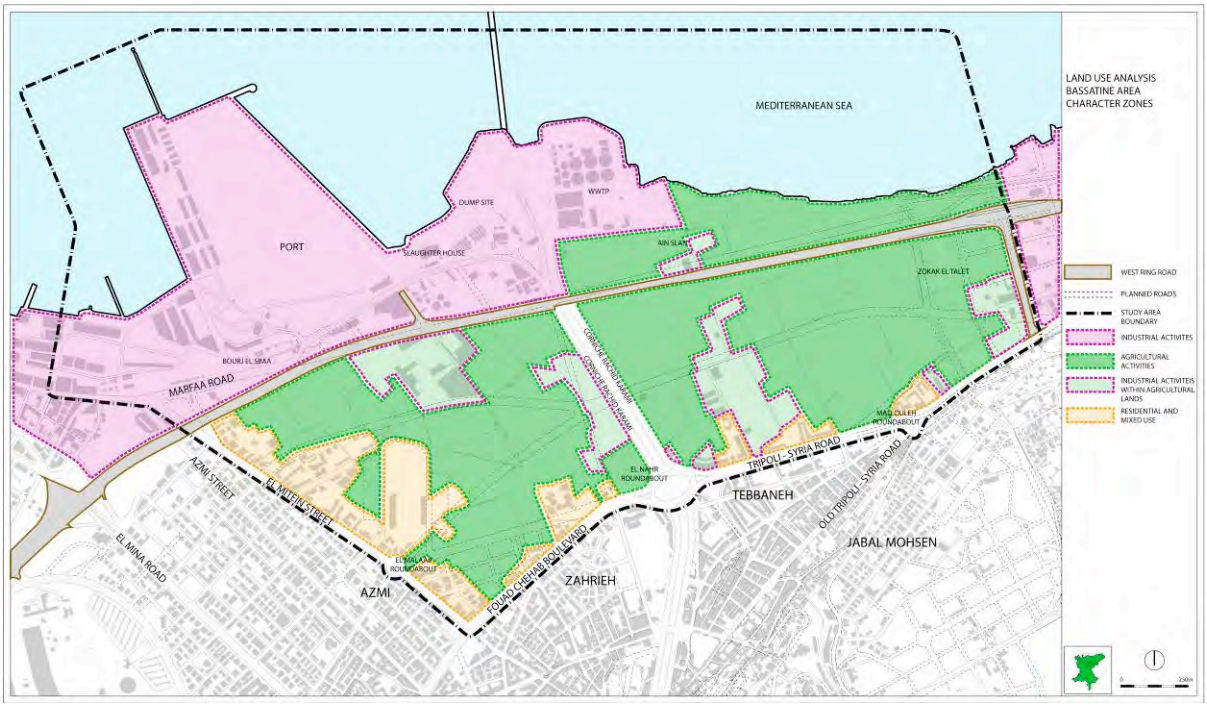

Map. 18. North Bassatine: land use concentration zones.
Source: by Author.

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4.6. Transportation Network

On the national scale, the city is equipped with a road network that links it with the capital in the south through the coastal highway that was not completed until mid-1990s and it ends abruptly in the middle of the city north of *Rachid Karami International Fair* (Map.19). In the north, it is connected with *Akkar* and consequently the Syrian border through Tripoli-Syria Road (*Fouad Chehab Boulevard*) that was completed late 1960s and extends to be linked with the northern coastal highway starting from *Deir Aamar* area. The city is also connected with its regional hinterland in the east through three major regional distributors linking it with the regions of *Dannieh, Zgharta/ Becharri* and *Koura*. As mentioned in the historical analysis, the railway links with *Homs* in the north and Beirut in the south ceased functioning during the civil war.

In addition to the railway restoration and its expansion to include a bus terminal, three major road network projects have been put forward till present, one of which – the West Ring Road (WRR) that runs through the study area – is currently under construction. The two other projects – the Pan-Arab Highway and the East Ring Road (ERR) – are still on hold. Once completed, each of these projects will play a role in enhancing the city's economy, connecting its neighborhoods and relieving traffic congestions.

The WRR (also known as Tripoli North Exit Expressway) is the missing link between the city and the northern coastal highway. This section, that starts north of *Rachid Karami International Fair* and ends near *Deir Aamar*, was not completed in the 90s due to the lack of funds and the complexities of land expropriation. TEAM International was commissioned the study by the CDR and the European Bank of

Investment financed it [105]. The importance of the project lies in the fact that it will be serving a number of traffic-generator nodes of regional as well as national importance such as the port, the railway station and the future bus terminal, the International Fair and the Municipal Stadium in addition to linking all of the above with *Qoleiaat Airport* in *Akkar*. However, although the project is currently under construction, some problems still hinder its completion. Tripoli Municipality is still negotiating the CDR over the character of this road whether it is a highway with limited accessibility to its surrounding – as it was originally designed – or an urban boulevard with full accessibility to adjacent plots[106].

The Pan-Arab Highway is a project of international dimension and part of a network of highways that connect major Arab cities. It was agreed upon during an Arab summit in the year1990[107]. The part related to Tripoli starts in *Qalamoun* south of the city, bypasses it from the east and continues northwards connecting it to *Homs* and *Tartous* in Syria. The CEGP (Conseil Exécutif des Grands Projets) was in charge of this project before it was merged with the CDR in the year 2001. Once completed, this highway will keep regional and international through-traffic movement outside the city thus relieving its internal road network from unnecessary traffic. The project is currently on hold due to its high cost (land expropriation and hilly nature of the area east of Tripoli).

The ERR is one of the main roads that were proposed in the 1964 master plan. It is designed as a primary distributor that surrounds the city from the east connecting the dense city neighborhoods. According to the CDR, the difference between the ERR and the Pan-Arab Highway is that the former has a connecting role (urban boulevard)

[105] Mansour, 2003.
[106] Interview with Azza Fatfat, June 2012.
[107] Mansour, 2003.

while the latter has a diverting role and that these two functions could not be merged into one single road [108]. This project is also on hold again due to lack of funds and because the area has become more or less urbanized.

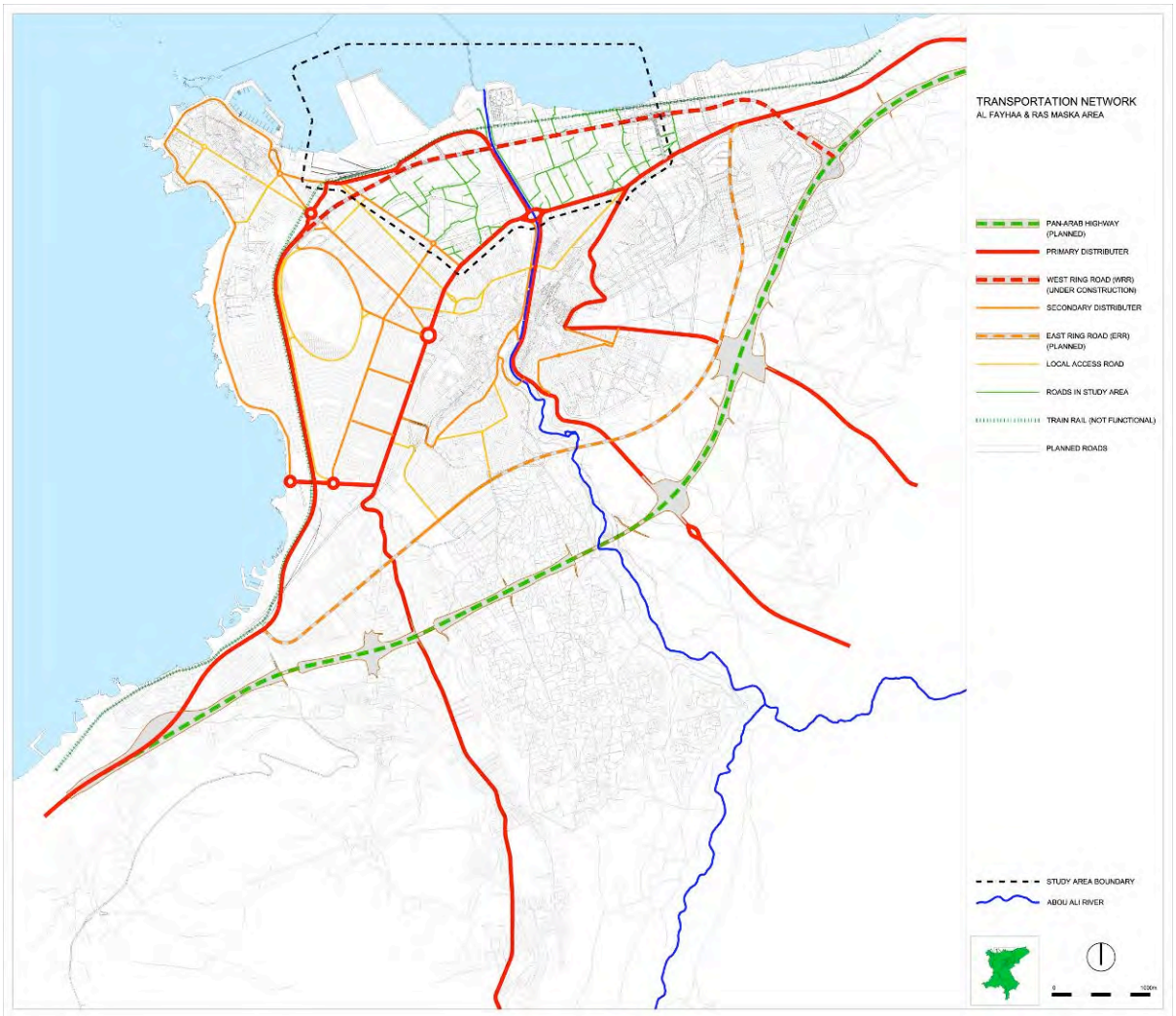
On the local scale in the study area, and based on the classification of the CDR in addition to field observations performed by the author, four types of street hierarchies can be identified: international road or primary distributor, secondary distributor, local access road and rural pathways (Map.20)[109].

Fouad Chehab Boulevard or Tripoli-Syria Road south of the study area is classified as international road and it is a primary distributor. It is the main road currently linking the city with Beirut in the south and Syria in the north. Other primary distributors in the study area are *Marfaa Road* and the west section of *Rachid Karami Avenue* (along *Abou Ali River*) that connect respectively the port with the coastal highway at *El Mina Roundabout* and Tripoli-Syria Road at *Al Nahr Roundabout*. The east section of *Rachid Karami Avenue* is not used today as a road[110]. Another primary distributor is the WRR in the north of the study area where it is expected, when completed, to divert all port-related traffic outside of the city's internal streets. To the west of the study area, *Mitein Street* (*Abdelateef Bissar Street*) is considered a secondary distributor, it is a major link between the two primary distributors: *Marfaa Road* and Tripoli-Syria Road. To the east of *Mitein Street* and into the study area, a few number of local access roads such as *Rawdat Al Fayhaa Street* branches out laying the ground for new urban expansion. In the center, most of the roads are rural pathways whose main purpose is to serve the orchards, and not suitable for any urban expansion.

[108] Mansour, 2003.
[109] It is worth noting that official road classification in Lebanon does not always reflect the real road character on the ground, for example the coastal highway could not be classified as highway anymore with all the developments taking place along its sides and the direct vehicular access to adjacent plots.
[110] During the 90s Tripoli Municipality decided to use the space as a temporary bus terminal where light structures were erected as shelters. Today, after the failure of the temporary bus terminal project, these structures are used as flea market space during the weekend.

Other than the existing roads, there are a number of planned roads that were not executed or partially executed. The most important ones are those running through the center of the study area, and the ones to the south of the study area and around the Municipal Stadium, in addition to the ones around the cadastral boundaries between Tripoli and *Beddawi* to the east of the study area (Map.20).

The study area includes a number of traffic generator structures especially on the west side around *Mitein Street*: Tripoli port, the Municipal Stadium, *Rawdat al Fayhaa School, El Malaab High School, Azm Educational Complex,* in addition to three other schools, two hospitals and the temporary flea market on the east section of *Rachid Karami Avenue*. Added to through traffic, street vendors, and vehicular-pedestrian conflict nodes, these structures contribute to the traffic problems experienced mainly on *Mitein Street* and Tripoli-Syria Road. The case of Tripoli is no different from other areas in Lebanon; the absence of appropriate public transportation and the lack of safe pedestrian environment make people rely mainly on their private cars for transportation. As a result, traffic jam occurs during daytime especially at peak hours (morning and evening) around the main nodes of transportation (Map.21).



Map. 19. Al Fayhaa & Ras Maska area: transportation network.
Source: by Author.

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Map. 20. North Bassatine: Existing transportation network.
Source: by Author.

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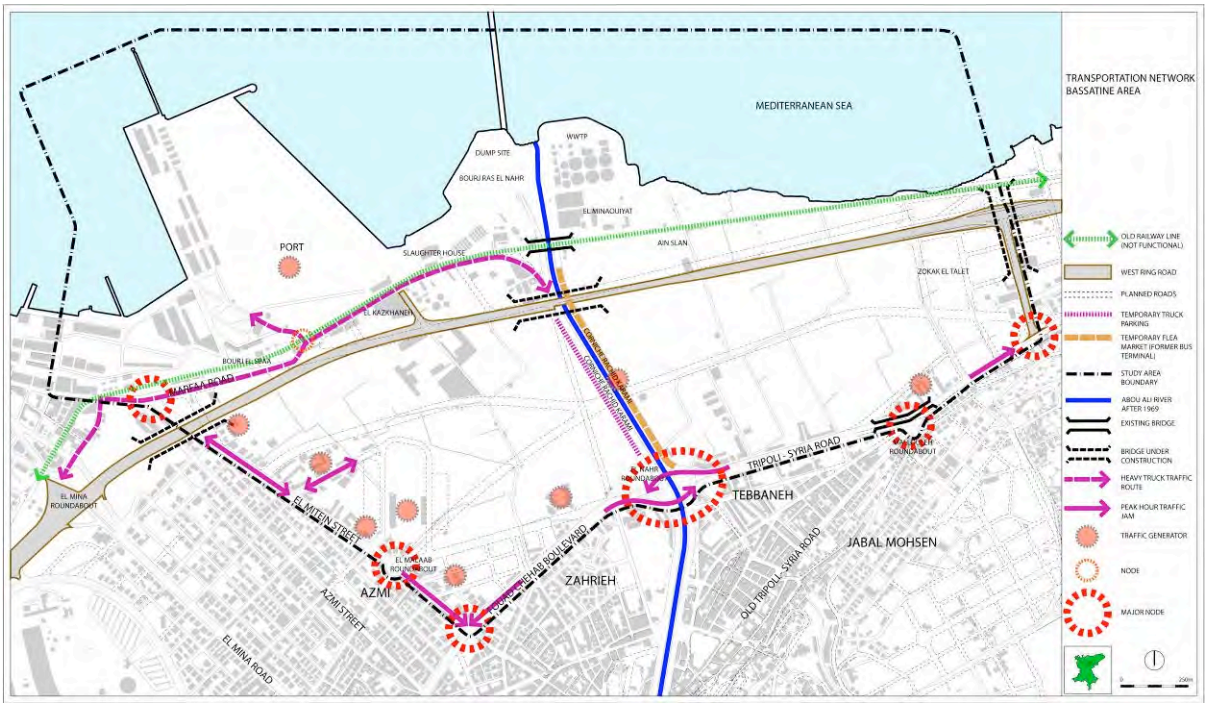

Map. 21. North Bassatine: transportation network analysis.
Source: by Author.

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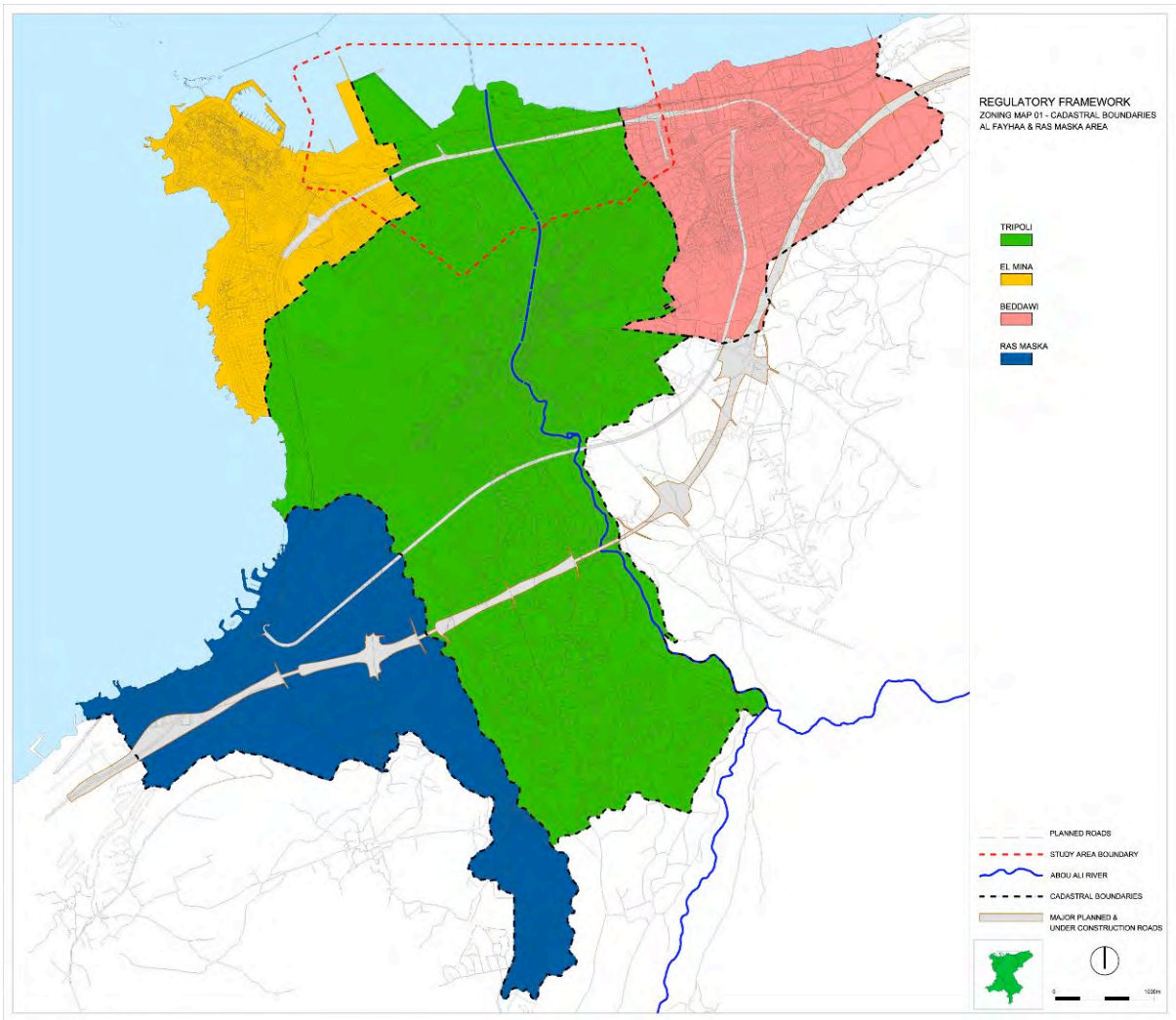
4.7. Regulatory Framework and Existing Proposals

4.7.1. Postwar Construction Boom and New Plans

During late 1990s postwar construction boom, and as a result of the rapid and chaotic expansion of the city towards the southern (*Ras Maska*) and northern (*Beddawi*) suburbs, and after the municipal election in 1998, the newly elected municipal council of Tripoli, under the supervision of the Mayor Samir Shaarani, asked the DGU to update the existing master plan of 1971 that covered *Al Fayhaa* region (Tripoli, *El Mina* and *Beddawi*) in addition to *Ras Maska* area (Map.22). In 1999, the DGU commissioned Diran Harmandayan Architecture, Planning and Engineering Consultants (DHAPEC) the preparation of the study. Harmandayan's office divided the study in two phases: the first was conducted between 1999 and 2001, and was concerned with an analysis of the different historical, geographical, socio-economical, and urban aspects of the agglomeration, whereas the second phase, which was conducted between 2001 and 2002, was specified for the development of the master plan proposal. According to Harmadayan report, the plan "*seeks to put directions to reestablish the balance between the urban development' needs, the basis for the natural environment and the city's cultural heritage."*[111] Following these general guidelines, the study proposed an updated zoning plan consisting of a number of zones with different regulations and building height restrictions specific to each area. These zones included a variety of mixed used residential, commercial and touristic land uses. Regarding the remaining green/agricultural areas, the plan proposed the preservation of *Abou Ali River valley* as an agricultural area, in addition to considering *Zeitoun Abou Samra* as a mixed agricultural and residential area with a low FAR (Fig.53). The plan proposed also a number of public gardens and parks throughout the agglomeration.

[111] Harmadayan, 2002.



Map. 22. Al Fayhaa & Ras Maska area: Existing cadastral boundaries.
Source: by Author.

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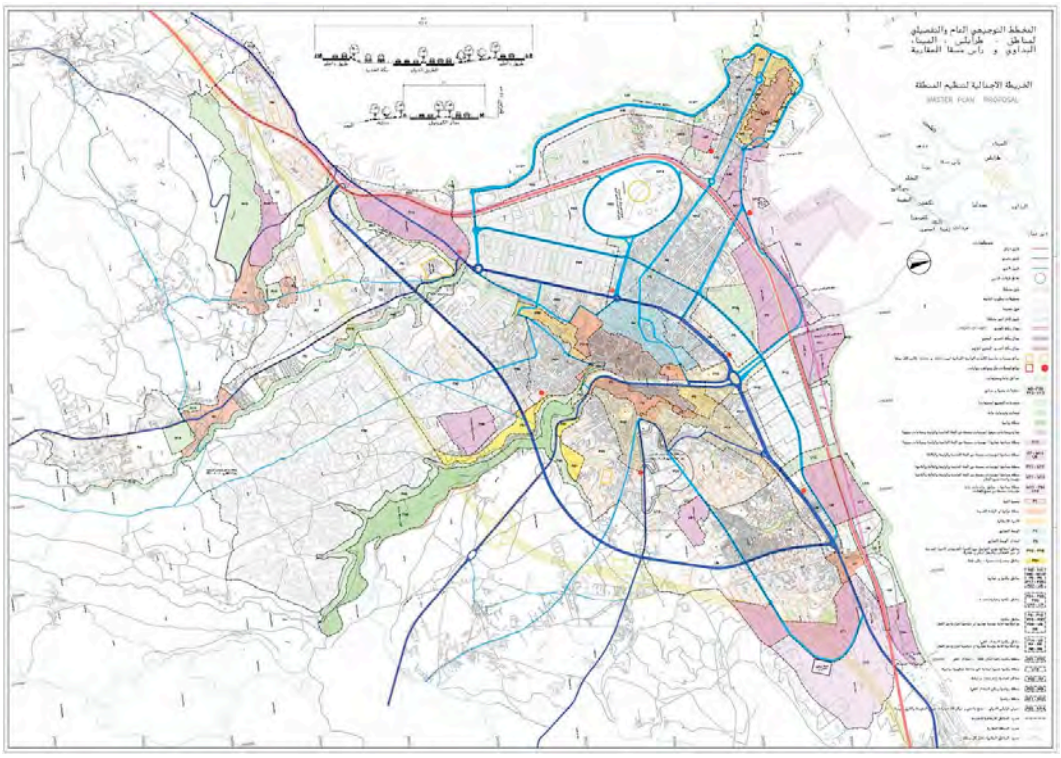
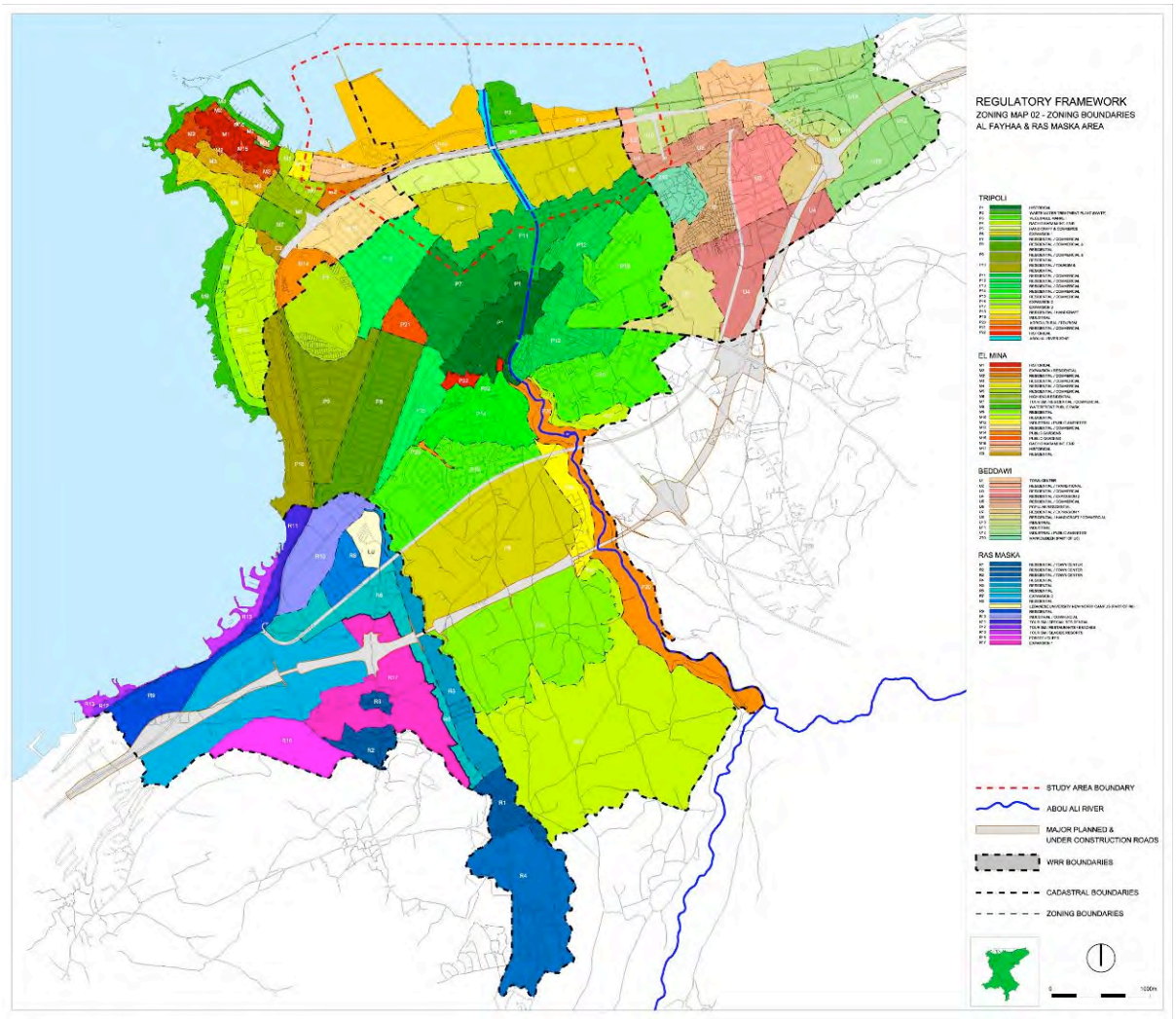


Fig. 53. “Tripoli region Master Plan” as proposed by Harmandayan Office for Al Fayhaa Union of Municipalities. *Source*: Harmandayan, 2002.

However, all *Bassatine* areas (western and northern areas) that were already considered in the 1971 plan as ‘Expansion Zones’ were considered in Harmandayan’s plan either as residential or industrial zones[112]. As for the transportation network, the plan adopted all of the 1971 proposed network of streets and boulevards (a number of which were already constructed) with some slight modifications, in addition to proposing some new streets.

After two years of discussions, Tripoli municipal council rejected the final proposal mainly because of political tensions within the council[113]. An amended version adopting higher FARs with reduced number of zones was approved by the municipality in May 2008 and issued in 2009 (Map.23 & 24, Table.1).

[112] It is worth mentioning that the *western Bassatine* area was already booming after a controversial land subdivision project was implemented during the 1990s where the zoning was adopted with much higher FAR than it was previously proposed.
[113] Interview with Jalal Abs in May 2008.



Map. 23. Al Fayhaa & Ras Maska area: Final zoning plan.
Source: Tripoli Municipality, 2009. Translated and drawn by author.

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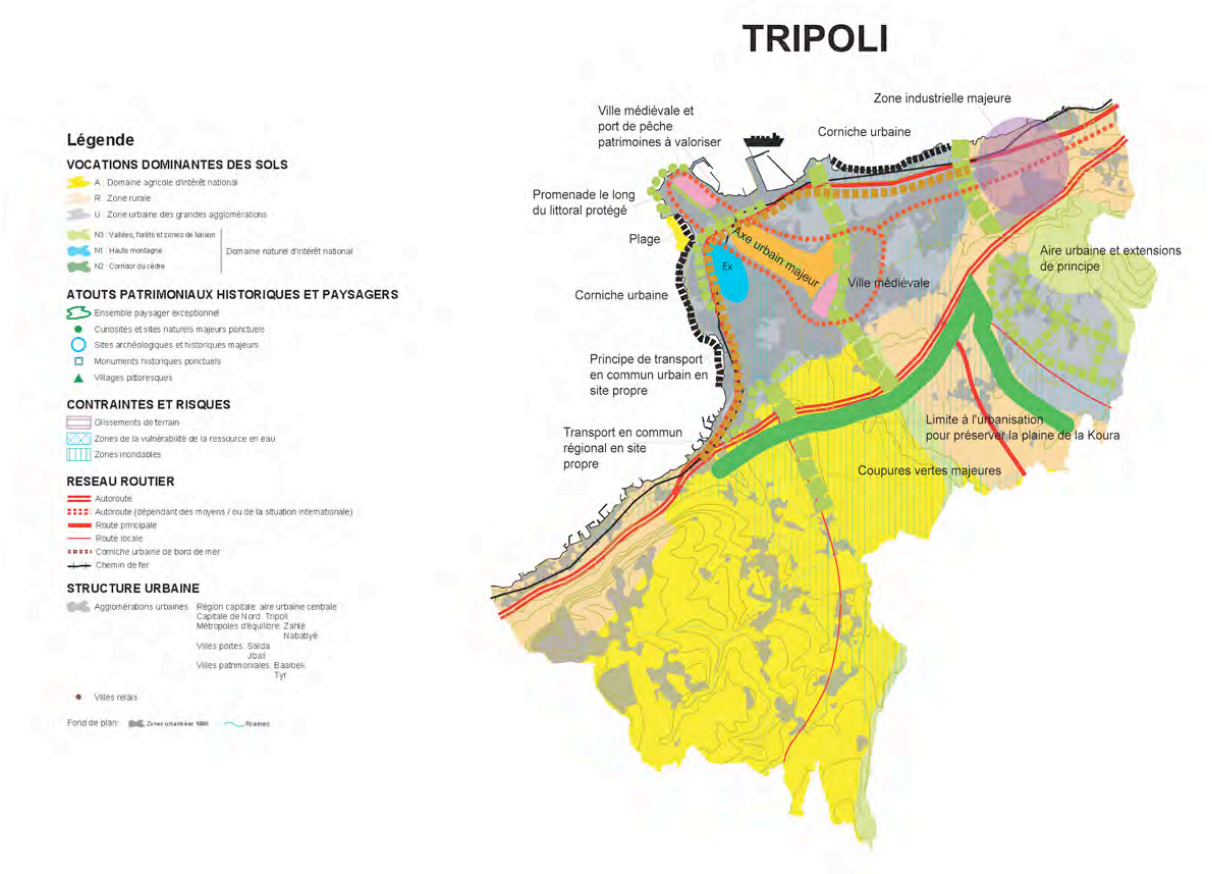


Fig. 54."Regional Approach of Tripoli" as proposed by the NPMPLT (2005).

In addition to the local plans, the NPMPLT of 2005 specified general guidelines for the expansion of the agglomeration of Tripoli (Fig.54) that are worth mentioning:

- All industrial activities are concentrated outside the city in the northeastern area between *Beddawi* and *Deir Aamar* on the present location of the IPC and oil refinery.
- The transportation network is adopted as per earlier plans without any changes including the location of the Pan-Arab Highway to the east of the city.
- The urban expansion should be limited within the boundaries of the Pan-Arab highway, in order to preserve the agricultural areas of *Zeitoun Abou Samra* that is a natural expansion of the agricultural plain of *El Koura*.

- Green corridors are consolidated along the natural valleys and streams all the way to the waterfront including *Abou Ali River valley*.

Even though this national plan and recommendations are supposed to be imposed on local plans, unfortunately, it might not be included in future plans and adopted by the municipality for lack of administrative coordination among the different authorities in the country.

4.7.2. Zoning in Bassatine Al-Saqui Al-Shimali

To the north of the study area, the region between the WRR and the shoreline becomes completely industrial (Map.24 & Table.1). The new zoning plan of Tripoli municipal territory keeps Zone F (that includes the port) as industrial (renamed Zone 19), but changes Zone E2 (tourism) into an industrial area. In addition to Zone 19, this area includes a zone for the future Wholesale Vegetable Market (Zone P3) and the Waste Water Treatment Plant (Zone P2).

To the south and southwest of the study area, the neighborhoods of *Azmi* and *Zahrieh* are divided into three different zones of the same character – residential/commercial – yet with three different densities. Zone P11 that is the least dense among them covers the stretch along Tripoli-Syria Road, and the south part of *Mitein Street*. Zone P13 that is the densest covers the middle part of *Mitein Street*. Whereas Zone M13 that is part of *El Mina* municipal territory covers the north part of *Mitein Street*.

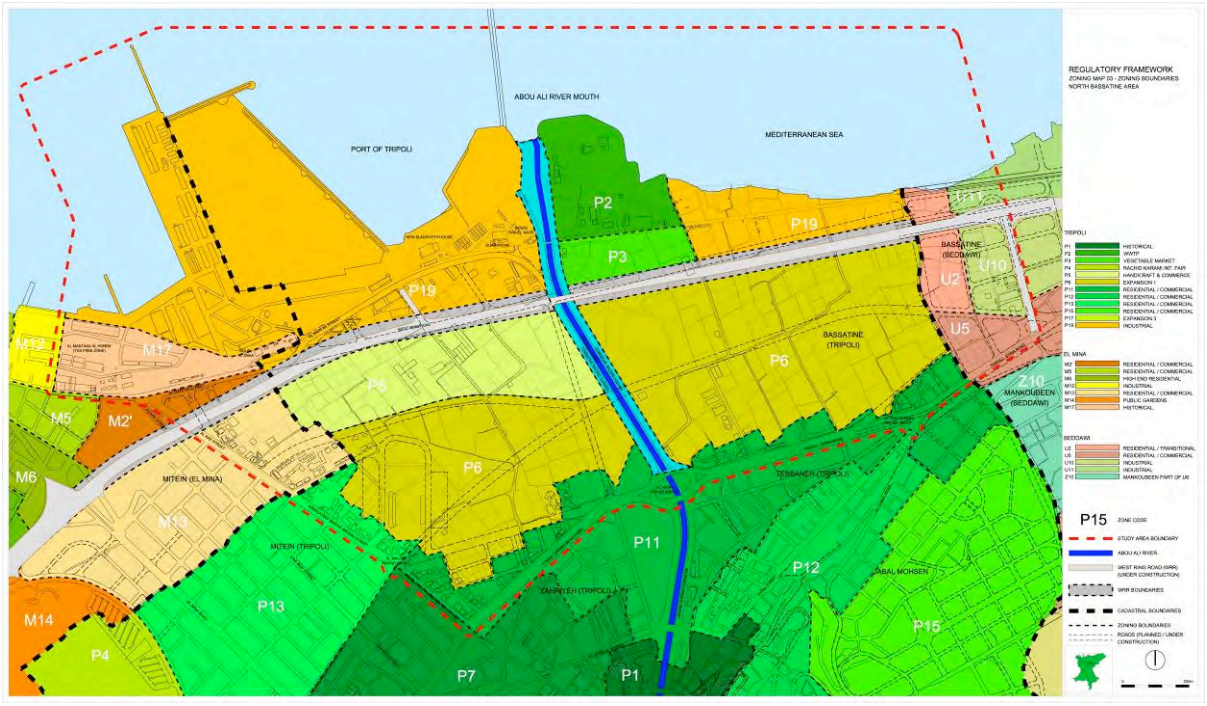
In *El Mina* zoning plan (Map.18 & Table.2), it is noticed that the old railway station site and the old part of the port are considered ‘historical’ (Zone M17). The plan states that the site is to be restored with the approval of the Directorate General of Antiquities (DGA) and the Higher Council of Urbanism (HCU).

To the east of the study area in *Beddawi* zoning plan, most of *Beddawi Bassatine* area was classified in 1971 as "industrial" (Zone F) except for the stretch along Tripoli-Syria Road that was "residential" (Zone C2) (Fig.48). Today, the new zoning plan of *Beddawi* municipal territory keeps the industrial area yet under Zone U10 and Zone U11, (Map.24 & Table.3). However, the most drastic change in the new plan is the cancelation of the public garden along *Zokak El Talet* pathway that was specified in 1971 plan, and turning it into residential/transitional (Zone U2) and residential/commercial (Zone U5). According to Majed Ghomrawi, former Mayor of *Beddawi* Municipality[114], the decision was taken to cancel the garden based on an opinion that considers its location as "inappropriate and on the outskirts of the town (*Beddawi*), whereas it is supposed to be in the middle to be used by the residents". Another reason stated by Ghomrawi was that "since most of *Beddawi*'s waterfront became classified as industrial, it was necessary to have at least a small stretch of residential area where the residents could benefit from the beach".

In the central part of the study area to the south of the WRR the new plan divides the *Bassatine* area into two different zones: a new one as Handicraft and Commerce Zone P5 in addition to the existing Expansion Zone P6 (previously named D1 and D2). This latter received an increase in its development capacity (from 0.8 FAR / 0.2 SAR / 20m Maximum Height, to 0.9 FAR / 0.3 SAR / 16m Maximum Height). It is worth noting that all the public gardens that were proposed by Harmandayan study were not taken into consideration.

Accordingly, and based on the final zoning plan, most of the area in *Al-Saqui Al-Shimali* will soon be developed into a low density urban area where it will be impossible to preserve the orchards as an ecological value.

[114] Interview with Majed Ghomrawi, December 2011.



Map. 24. North Bassatine: Final zoning plan.
Source: Tripoli Municipality, 2009. Translated and drawn by author.

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TRIPOLI ZONING - DECREE NO **2282** DATED 15.06.2009

ZONE	LAND USE	MINIMUM AREAS AND DIMENSIONS OF CONSTRUCTIBLE PLOTS						CONSTRUCTION SET-BACK (M)			MAXIMUM ALLOWABLE PERCENTAGE OF FLOOR USE	COEFFICIENT OF BUILT UP AREA (OUT OF TOTAL PLOT AREA)	MAXIMUM ALLOWABLE CONSTRUCTION HEIGHT (M)	MAXIMUM ALLOWABLE NUMBER OF FLOORS
		PLOTS RESULTING FROM SUBDIVISION			EXISTING PLOTS			FROM ROAD LIMIT	LATERAL SET-BACK	REAR SET-BACK				
		AREA (M^2)	FACADE (M)	DEPTH (M)	AREA (M^2)	FACADE (M)	DEPTH (M)							
P1	HISTORICAL CENTER	REFER TO DECREE NO 1029 DATED 24.11.2007												
P2	WASTE WATER TREATMENT PLANT	REFER TO DECREE NO 8396 DATED 07.08.2002												
P3	VEGETABLE MARKET	ACCORDING TO DECREE NO 16027 DATED 26.12.2005						3	3	3	30%	0.6	6	
P4	RACHID KARAME FAIR	TO BE DECIDED WITH THE HIGHER COUNCIL OF URBANISM (H.C.U.)												
P5	HANDICRAFT & COMMERCE	1000	25	25	800	20	20	5	4.5	4.5	40%	0.8	12	
P6	EXPANSION 1	1200	25	25	800	20	20	5	4.5	4.5	30%	0.9	16	
P7	RESIDENTIAL / COMMERCIAL	600	18	18	300	15	15	0	0	0	60%	4.2	30	
P8	RESIDENTIAL / COMMERCIAL	1200	25	25	800	20	20	3	3	3	60% IN GF / 40% IN 1ST F	3	34	
	RESIDENTIAL										50%	3.5		
P9	RESIDENTIAL / COMMERCIAL	2000	35	35	1200	25	25	6	3 IN B / 6 IN GF & 1ST F	3 IN B / 6 IN GF & 1ST F	30%	0.9	18	6
	RESIDENTIAL											1.2		
P10	RESIDENTIAL / TOURISM	3000	40	40	1500	30	30	5	3 IN B / 5 IN GF & 1ST F	3 IN B / 5 IN GF & 1ST F	40%	1.2	18	6
	RESIDENTIAL											1.6		
P11	RESIDENTIAL / COMMERCIAL	800	20	20	400	15	15	3	3	3	40%	2.4	24	
P12	RESIDENTIAL / COMMERCIAL	600	18	18	300	15	15	3	3	3	50%	2	20	
P13	RESIDENTIAL / COMMERCIAL	800	20	20	400	15	15	3	3	3	60% IN GF / 40% IN 1ST F	3	42	
P14	RESIDENTIAL / COMMERCIAL	600	18	18	300	15	15	3	3	3	50%	3	40	
P15	RESIDENTIAL / COMMERCIAL	800	20	20	400	15	15	3	3	3	40%	1.6	28	
P16	EXPANSION 2	1500	30	30	800	20	20	5	6	6	20%	0.8	14	
P17	EXPANSION 3	1500	30	30	800	20	20	5	6	6	10%	0.2	7.5	
P18	RESIDENTIAL / HANDICRAFT	1500	30	30	750	20	20	5	6	6	25%	0.75	9	
P19	INDUSTRIAL	1000	25	25	800	20	20	3	3	3	60%	1.2	12	
P20	AGRICULTURAL / TOURISM	5000	50	50	2000	30	30	5	6	6	20%	0.2	4.5	
P21	RESIDENTIAL / COMMERCIAL	600	18	18	300	15	15	0	3	3	60%	4.2	ACCORDING TO 'GENERAL RULES'	
P22	HISTORICAL	NOT ALLOWED EXCEPT FOR ENHANCEMENT			200	12	15	NO SET-BACK. OBLIGATORY BUILDING ADJACENCY WITH PLOTS ALONG ELEVATION			60%	1.8	14 INCLUDING TEKKIAH MONUMENT	

TRANSLATED & DRAWN BY AUTHOR

Table. 1. Final zoning plan for Tripoli municipal territory.
Source: Tripoli Municipality, 2009. Translated and drawn by author.

MINA ZONING - DECREE NO **16353** DATED 10.02.2006 WITH ITS AMENDMENT DECREE **3620** DATED 17.03.2010

ZONE	LAND USE	MINIMUM AREAS AND DIMENSIONS OF CONSTRUCTIBLE PLOTS						CONSTRUCTION SET-BACK (M)			PERCENTAGE OF MAXIMUM ALLOWABLE FLOOR USE	COEFFICIENT OF BUILT UP AREA (OUT OF TOTAL PLOT AREA)	MAXIMUM ALLOWABLE CONSTRUCTION HEIGHT (M)	MAXIMUM ALLOWABLE NUMBER OF FLOORS	NOTES
		PLOTS RESULTING FROM SUBDIVISION			EXISTING PLOTS			FROM ROAD LIMIT [2]	LATERAL SET-BACK	REAR SET-BACK					
		AREA (M²)	FACADE (M)	DEPTH (M)	AREA (M²)	FACADE (M)	DEPTH (M)								
M1	HISTORICAL*	NO SUBDIVISION ALLOWED			100	10	10	*			*	1.6 [1]	12	3	PILOTIS' FLOOR NOT ALLOWED
M2	EXPANSION / RESIDENTIAL*	600	18	18	200	12	12				60 [1]	2 [1]	17.5	5	PILOTIS' FLOOR NOT ALLOWED
M3	RESIDENTIAL / COMMERCIAL	800	20	25	400	15	15	3	3	3	50	2.8	27.5	8	
M4	RESIDENTIAL / COMMERCIAL	800	20	25	400	15	15		3	3	50	2.4	20	6	
M13	RESIDENTIAL / COMMERCIAL	800	20	25	400	15	15		3	3	60 IN GF / 40 IN UF	3	37	11	
M6	RESIDENTIAL / COMMERCIAL	800	20	25	400	15	15		3	3	60 IN GF / 40 IN UF	3	30	9	
M10	HIGH END RESIDENTIAL	1500	30	30	1000	22	22	5 [3]	5 IN GF & UPPER FLOORS / 3 IN BASEMENT		40	1.6	18	6	
M9	TOURISM / RESIDENTIAL / COMMERCIAL*	1500	30	30	1200	25	25				60	1.2	14	4	MINIMUM AREA FOR A HOTEL IS 3000 M²
M5	HANDICRAFT / COMERCIAL	1200	25	30	600	16	16	3	3	3	60	1.8	14 / 16 FOR COMMERCE	4 / 5 FOR COMMERCE	ON STREETS WHERE COMMERCIAL USE IS NEEDED
M7	RESIDENTIAL	800	20	25	600	16	16	3	4	4	40	1.6	18	6	EXHIBITION ROOMS ARE ALLOWED IN GROUND FLOORS
M2'	RESIDENTIAL*	600	18	18	200	12	12	3	_____	_____	_____	1.8	17.5	5	A 3D MODEL FOR THE AREA IS NEEDED
M12	INDUSTRIAL / PUBLIC AMENITIES	_____	_____	_____	_____	_____	_____	6	4	4	60	1.2	11	_____	
M8	WATERFRONT PUBLIC PARK	NO SUBDIVISION ALLOWED						NO CONSTRUCTION ALLOWED							
M15 / M16	PUBLIC GARDENS	NO SUBDIVISION ALLOWED						NO CONSTRUCTION ALLOWED							
M14	RACHID KARAME FAIR	NO SUBDIVISION ALLOWED						NO CONSTRUCTION ALLOWED							
M17	HISTORICAL														SUBJECT TO RESTORATION WITH THE APPROVAL OF D.G.A. AND H.C.U.
C3	RESIDENTIAL	800	20	20	400	15	15	MINIMUM OF 3M, REFER TO GENERAL NOTE 2.	3 M ACCORDING TO DECREE NO 4071 DATED 16.06.1981		40	1.6	REFER TO BUILDING CODE		REFER TO DECREE 1915/1971

GENERAL NOTES

* REFER TO 'SPECIFIC AND GENERAL RULES' ANNEXED TO THIS DECREE

1. ALL BUILT-UP AREAS SHALL BE ACCEPTED AS IS. REFER TO 'SPECIFIC RULES'

2. REFER TO SET-BACK DECREE AS SPECIFIED ON THE ROAD NETWORK MAP

3. OBLIGATORY BUILDING ADJACENCY/CONTIGUITY ALONG THE CORNICHE SET-BACK

TRANSLATED & DRAWN BY AUTHOR

Table. 2. Final zoning plan for El Mina municipal territory.
Source: El Mina Municipality, 2010. Translated and drawn by author.

BEDDAWI ZONING - DECREE NO **1051** DATED 24.12.2008

ZONE	LAND USE	MINIMUM AREAS AND DIMENSIONS OF CONSTRUCTIBLE PLOTS						CONSTRUCTION SET-BACK (M)			PERCENTAGE OF MAXIMUM ALLOWABLE FLOOR USE	COEFFICIENT OF BUILT UP AREA (OUT OF TOTAL PLOT AREA)	MAXIMUM ALLOWABLE CONSTRUCTION HEIGHT (M)	MAXIMUM ALLOWABLE NUMBER OF FLOORS	NOTES
		PLOTS RESULTING FROM SUBDIVISION			EXISTING PLOTS			FROM ROAD LIMIT	LATERAL SET-BACK	REAR SET-BACK					
		AREA (M^2)	FACADE (M)	DEPTH (M)	AREA (M^2)	FACADE (M)	DEPTH (M)								
U1	TOWN CENTER	600	18	18	300	13	13	OBLIGATORY BUILDING ADJACENCY	3	3	40	1.6	14	4	
U2	RESIDENTIAL / TRANSITIONAL	2000	30	30	1000	20	20	> 4	4	4	30	0.9	16	———	
U3	RESIDENTIAL / COMMERCIAL	800	20	25	400	15	15	> 3	3	3	40	1.6	30	9	
U4	RESIDENTIAL / EXPANSION 2	1500	30	20	800	20	20	> 3	3	3	30	1.2	16	5	
U5	RESIDENTIAL / COMMERCIAL	800	20	25	400	15	15	OBLIGATORY BUILDING ADJACENCY	3	3	60	2.4	30	9	
U6	POPULAR RESIDENTIAL	1000	25	30	500	16	16	> 3	3	3	40	1.2	13	4	
U7	RESIDENTIAL / EXPANSION 1	800	20	25	400	15	15	> 3	3	3	40	1.6	24	7	
U8	RESIDENTIAL / HANDICRAFT / COMMERCIAL	1500	30	30	1000	20	20	> 3	4	4	40	1.6	HANDICRAFT/ COMMERCIAL: 15 RESIDENTIAL: 24	HANDICRAFT/ COMMERCIAL: 4 RESIDENTIAL: 7	
U10	INDUSTRIAL	1500	30	30	1000	20	20	> 4	3	3	60	1.2	INDUSTRIAL: 10 INDUSTRIAL / COMMERCIAL: 12	INDUSTRIAL: 3 INDUSTRIAL / COMMERCIAL: 4	
U11	INDUSTRIAL	1500	30	30	1000	20	20	> 4	3	3	60	1.2	INDUSTRIAL: 3 INDUSTRIAL / COMMERCIAL: 4	INDUSTRIAL: 3 INDUSTRIAL / COMMERCIAL: 4	
U12	INDUSTRIAL/ PUBLIC AMENITIES							> 4			40	0.8	10		

TRANSLATED & DRAWN BY AUTHOR

Table. 3. Final zoning plan for Beddawi municipal territory.
Source: Beddawi Municipality, 2008. Translated and drawn by author.

4.7.3. Land Subdivision Projects in 'Expansion Zones'

Following the approved zoning plan in 2009, the municipality started the process of two subdivision projects in *Bassatine Al-Saqui Al-Shimal*i and *Zeitoun Abou Samra* areas (Fig.55, 56 & 57). These areas were identified as 'Expansion Zones' in the amended plan and it is worth mentioning that these are the only remaining green/agricultural areas in the city, in addition to the narrow *Abou Ali River valley* (Zone P20). In fact, following the master plan of 1971, it appears that 'Expansion Zones' were meant to replace 'agricultural zones' in previous master plans, leaving these areas exposed to real estate speculation and threatened by urban expansion.

Since the approval of the law of 7 December 1954 concerning land subdivision (which was amended in December 9 of 1983 under the decree number 70), this urban planning tool has become a significant factor in shaping the urban and rural form in Lebanon. The law states that public administrations, municipal bodies, and landowners have the right to apply for an operation of land subdivision in order to achieve, among other objectives, landscaped areas or organize expansion zones in cities and villages. In brief, the process consists of listing the value of properties in the area to be organized and then calculating the total surface of the area out of which 25 % will be allocated for the necessary public facilities including among other services roads, public squares and gardens. The remaining area will be divided into regular parcels, which then acquire different value from what they previously had. Accordingly, if a landowner's new land value increases, then he/she must pay back the additional value to the subdivision fund. In case the value decreases, this fund pays back the landowner.

Fig. 55. Final zoning plan for Tripoli municipal territory showing subdivision zones.

Source: Tripoli Municipality, 2009.

Back to the proposed projects for *Bassatine Al-Saqui Al-Shimali* and *Zeitoun Abou Samra* areas, several specific issues should be highlighted: In the northern *Bassatine* area (Fig.56), the proposed plan does not seem to consider, on one hand, the relation between the concrete riverbed of *Abou Ali River* and the surrounding 'Expansion Zones' (Zone P6 and Zone P17), and on the other hand, the relation between these expansion zones and the coastal highway, which occupies the northern edge of the subdivision area and is currently under construction.

In the southeastern *Zeitoun Abou Samra* area (Fig.57), the proposed street layout does not follow the existing street layout in the adjacent *Abou Samra* neighborhood to the northwest; in addition, the plan does not consider the relation with the international Pan-Arab highway that cuts the area in two separate regions.

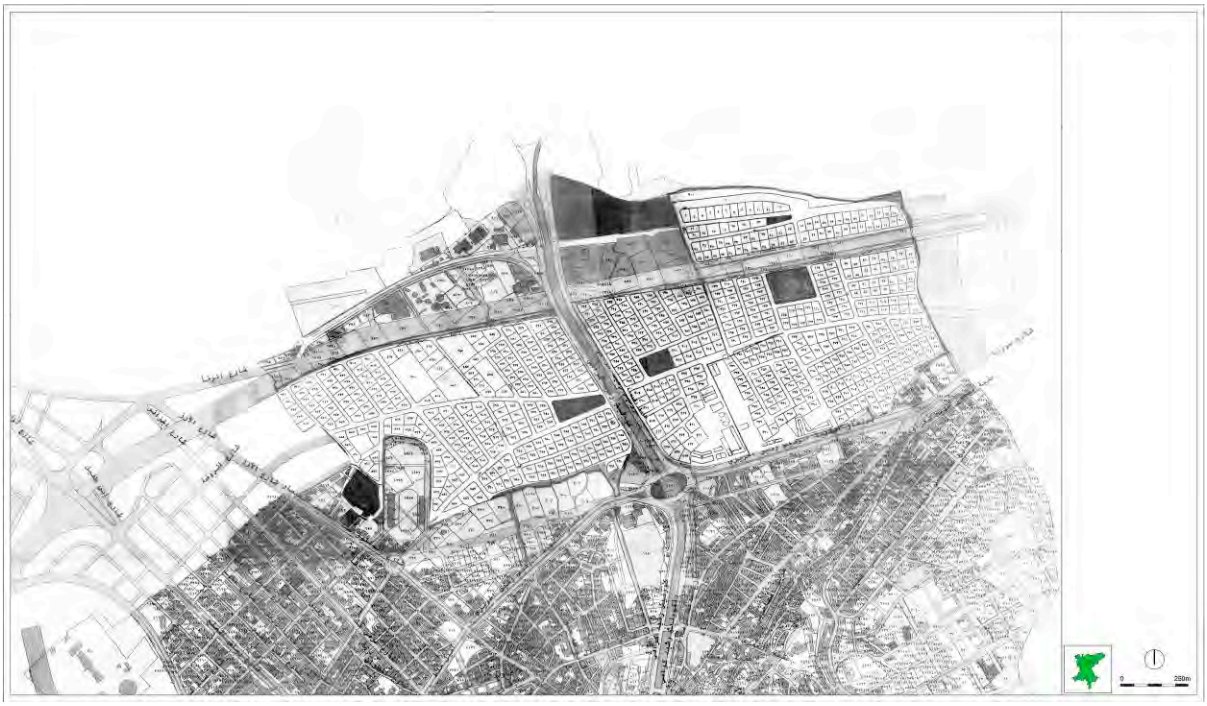


Fig. 56. North Bassatine area: Subdivision plan as proposed by Tripoli Municipality. *Source*: Tripoli Municipality, 2009.

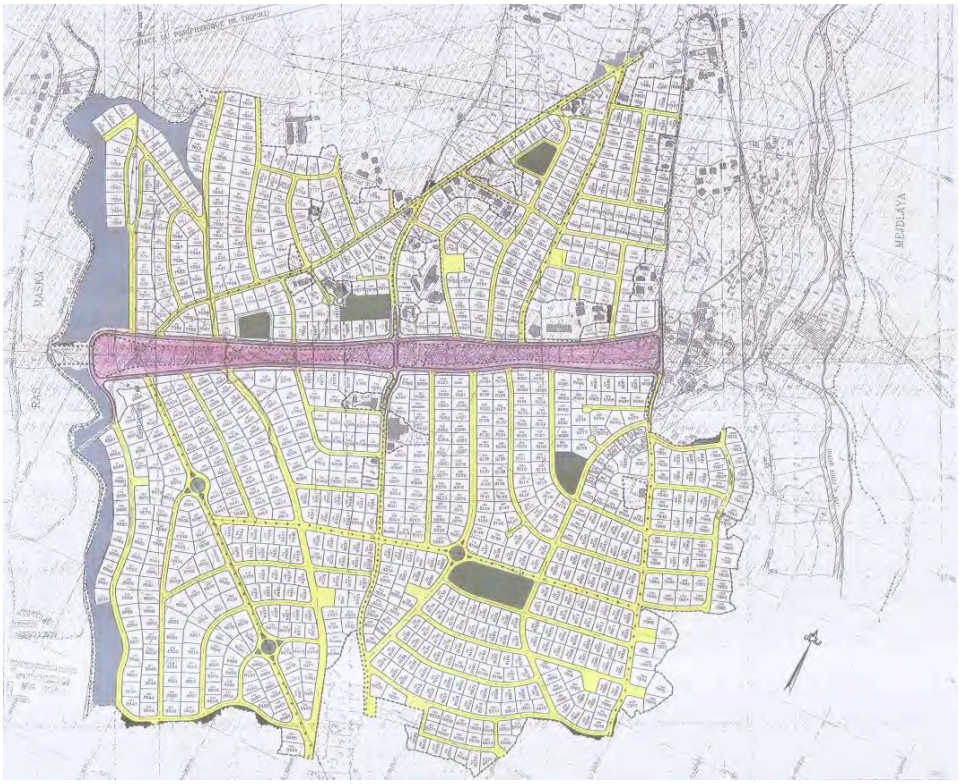


Fig. 57. Zeitoun Abou Samra area: Subdivision plan as proposed by Tripoli Municipality – Pan Arab highway is highlighted in pink.
Source: Tripoli Municipality, 2009.

4.8. Socio-economic Analysis

4.8.1. Economic Profile

Tripoli's economy has always been associated with its port and related commercial activities. Nonetheless, as mentioned earlier in the historical analysis section, the city did witness a short period of industrial boom concurrently with the continuous decline of the agricultural role.

During the 1950s and 1960s until the eruption of the civil war in 1975, the industrial sector in the city evolved especially with the establishment of the petroleum pipeline terminus and refinery known as IPC[115] in *Beddawi* that carried Iraqi crude oil through the Syrian territory to be exported through the Mediterranean. In addition, the refinery was used to meet domestic oil requirements as well as one-third of the country's gasoline[116]. Thus, this equipment played a key role in boosting the local and national economy and providing job opportunities for thousands[117]. Yet, local and regional issues – the civil war and tensions in relations between Syria and Iraq – put an end for the equipment's role in mid 1980s[118]. Today, most of the equipment's facilities are damaged except for a part of the storage tanks that are used to store imported fuel and natural gas[119]. There was an attempt to rehabilitate the station in 2008 with the help of a Qatari team but didn't succeed due to the political situation at the time[120].

Now, the city's industrial sector is not as strong as it was in the 50s and 60s of the last century. According to the Industrial Census – Final Report that was published by The Ministry of Industries and Petroleum in 1994, the industrial sector is plagued by many problems among which we can briefly identify the following:

[115] Established and owned by the Iraqi Petroleum Company until it was nationalized in 1973. Federal Research division – Library of Congress, edited by Thomas Collelo, 1987.
[116] Ibid.
[117] Harmandayan, 2004.
[118] Federal Research division – Library of Congress, edited by Thomas Collelo, 1987.
[119] Harmandayan, 2004.
[120] Interview with Majed Ghomrawi, December 2011.

- A weak and neglected industrial infrastructure after years of conflict.
- Industrial investments are negatively affected by the unstable political situation.
- Low productivity resulting from the lack of skilled workers and outdated means of production.
- The lack of a clear national industrial policy that supports the exportation of industrial products.

Despite the above, it was noticed, according to the census, that the number of industrial establishments has increased during the 1990s[121], and that there are around 4585 industrial units in North Lebanon that is 19.5% (second after Mount Lebanon) of the total units in the country (Fig.58). In addition, the number of industrial workers in North Lebanon is 18415 that is 13.18 % of the total industrial workers in Lebanon. The number of industrial workers in Tripoli Caza is around 6605 that is almost one third of the total number of industrial workers of the Caza (Fig.59). These figures might help in explaining the intention behind expanding the industrial areas in the latest official zoning plans of *Al Fayhaa* area especially next to the port.

However, the industrial sector in Tripoli comes only second in importance after the commercial sector[122]. Today the city's local economy mainly relies on commercial activities in addition to light industries. Out of the total productive establishments of Tripoli Caza (17243 establishments), 39.19% are general trading, 11.9% are vehicles trading and related services, 7.14% are furniture production, 4.2% are wholesale trading and 5.4% are hotels and restaurants[123] (Table.4), most of these establishments has a small-scale character with five workers or less (Table.5) and depend on manual labor.[124] As for the light industrial establishments, the Industrial Census shows that 42% are

[121] Industrial Census – Final Report, 1994.
[122] UNDP & MoSA, 2001.
[123] Ibid.
[124] Nahas, 2001.

furniture production, 16% are food and beverage production and 9% are clothes production (Fig.60 & Table. 6). These establishments are mostly concentrated in the old city and the surrounding neighborhoods, and at least there are fifty of them in the study area. It is to be noted that there are some discrepancies between the numbers shown in both studies: the Industrial Census of the Ministry of Industries and Petroleum (1994) and the UNDP & Ministry of Social Affairs report (2001).

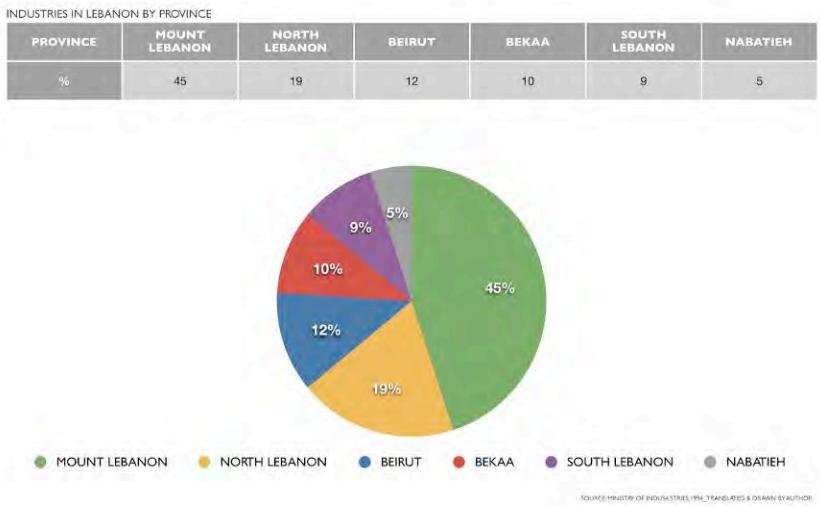


Fig. 58. Industries in Lebanon by province.
Source: Ministry of Industries & Petroleum, 1994. Translated and drawn by author.

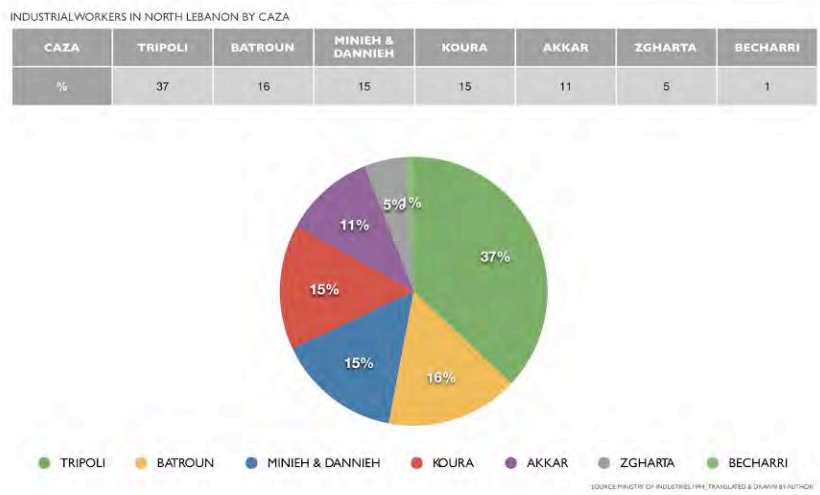


Fig. 59. Industrial workers in North Lebanon by caza.
Source: Ministry of Industries & Petroleum, 1994. Translated and drawn by author.

ESTABLISHMENTS BY TYPE OF PRODUCTION - TRIPOLI CAZA

TYPE OF PRODUCTION	NUMBER OF ESTABLISHMENTS IN TRIPOLI	NUMBER OF ESTABLISHMENTS IN NORTH LEBANON	PERCENTAGE AGAINST SAME ESTABLISHMENT IN NORTH LEBANON	PERCENTAGE AGAINST TOTAL ESTABLISHMENTS IN TRIPOLI
AGRICULTURE	86	5836	1.47%	0.50%
FISHING	590	792	49.74%	3.42%
FOOD PROCESSING AND TOBACCO	403	1116	11.36%	2.33%
LEATHER & TEXTILE	589	1028	30.57%	3.41%
WOOD & PAPER PROCESSING	190	439	43.28%	1.10%
PRINTING & PUBLISHING	70	100	70%	0.41%
NON-METALLIC PRODUCTION	74	509	14.54%	0.42%
METALLIC PRODUCTION	399	1044	38.22%	2.31%
TOOLS & EQUIPMENTS PRODUCTION	111	165	67.27%	0.64%
FURNITURE PRODUCTION	1232	1830	67.32%	7.14%
WATER, ELECTRICITY AND GAS	27	107	25.23%	0.15%
CONSTRUCTION	176	297	59.26%	1.02%
VEHICLES TRADING AND SERVICES	2045	5069	40.34%	11.85%
WHOLESALE TRADING	730	2085	35.01%	4.23%
GENERAL TRADING	6758	16188	41.75%	39.19%
HOTELS & RESTAURANTS	926	2139	43.29%	5.37%
TRANSPORTATION	25	30	83.33%	0.14%
TRANSPORTATION-RELATED	224	270	82.96%	1.29%
MAILING AND TELECOM	39	139	28.06%	0.22%
FINANCIAL BUSINESS	51	83	61.45%	0.29%
INSURANCE	26	45	57.78%	0.15%
FINANCIAL BUSINESS-RELATED	81	122	66.39%	0.47%
REAL ESTATE BUSINESS	80	123	65.04%	0.46%
TOOLS & EQUIPMENTS RENTING	34	84	40.48%	0.19%
COMPUTER SERVICES, RESEARCH & DEVELOPMENT	30	52	57.69%	0.17%
OTHER RETAIL BUSINESS	509	792	64.27%	2.95%
PUBLIC ADMINISTRATION & SOCIAL SECURITY	34	73	46.58%	0.19%
EDUCATION	163	408	39.95%	0.94%
HEALTH & SOCIAL ACTIVITIES	774	1513	51.16%	4.48%
SOCIAL SERVICES ACTIVITIES	48	105	45.71%	0.27%
OTHER ENTERTAINMENT ACTIVITIES	182	487	37.37%	1.05%
INDIVIDUAL SERVICES	514	1191	43.16%	2.98%
NON-REGIONAL ORGANIZATIONS	5	9	55.56%	0.03%
NOT SPECIFIED	18	24	75%	0.10%
TOTAL	17243	44294	38.93%	100%

SOURCE: UNDP & MOSA,1996 - TRANSLATED & DRAWN BY AUTHOR

Table. 4. Establishments by type of production in Tripoli Caza.
Source: UNDP & MoSA, 2001. Translated and drawn by author.

ESTABLISHMENTS BY NUMBER OF LABORS - TRIPOLI CAZA

		< 5	5 TO 9	10 TO 19	20 TO 49	50 TO 99	> 100	NO ANSWER	TOTAL
TRIPOLI	NUMBER	15419	810	202	95	18	17	682	17243
	%	89.42%	4.70%	1.17%	0.55%	0.10%	0.10%	3.96%	100%
NORTH LEBANON	NUMBER	40359	1691	473	225	58	37	1451	44294
	%	91.12%	3.82%	1.07%	0.51%	0.13%	0.01%	3.28	100%
LEBANON	NUMBER	214485	13562	4853	2510	669	538	8783	245400
	%	87.40%	5.53%	2.98%	1.02%	0.27%	0.22%	3.58%	100%

SOURCE: UNDP & MOSA,1996__TRANSLATED & DRAWN BY AUTHOR

Table. 5. Establishments by number of labors in Tripoli Caza.
Source: UNDP & MoSA, 2001. Translated and drawn by author.

INDUSTRIES INTRIPOLI BYTYPE

TYPE CODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
NUMBER OF WORKSHOPS	0	1	287	0	45	163	46	144	2	17	0	7	7	46	22	162	15	51	0	0	13	7	752	1

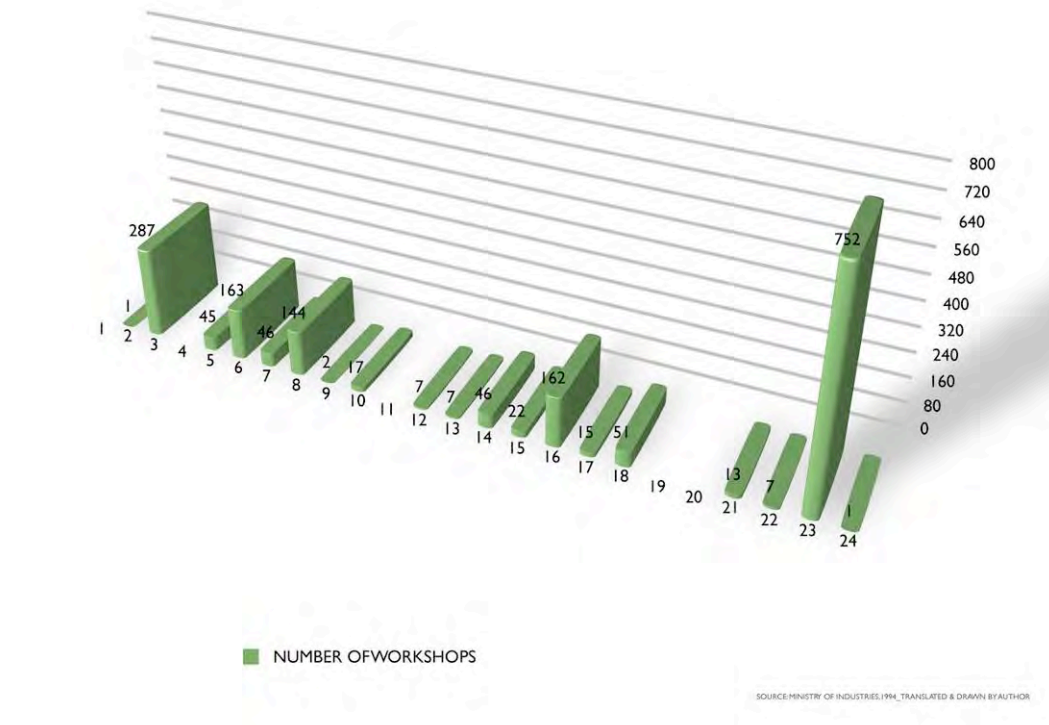


Fig. 60. Industries by type in Tripoli Caza. For type code legend refer to table 6. *Source:* Ministry of Industries & Petroleum, 1994. Translated and drawn by author.

The agricultural sector in Lebanon played a primary role in the national economy until mid 20th century when it started to loose its place continuously for other sectors[125]. In the early 1950s, 380000 ha of the Lebanese territory were occupied by agricultural activities. In the 1980s this area was reduced to 325000 ha. Whereas today the total area of agricultural lands is about 248000 ha that is 25% of the total Lebanese territory and the input of agricultural sector in the national economy is only 7%[126].

In Tripoli, as in all Lebanese coastal cities, the amount of agricultural lands reduced dramatically especially after the 1990s as a result of the construction boom in the wake of the civil war. Table 4, Table 6 and Fig.56 show the negligible size of

[125] Yammout, 2005.
[126] Ibid.

agricultural activities in Tripoli Caza despite the fact that 27.5% of the land of the caza is still agricultural[127]: out of the total number of productive establishments (17243) only 0.5% of them (86) are agricultural, and the number of agricultural workers in the Caza represents only 1.7% of the total number of its workers[128].

TYPES OF INDUSTRIES - TRIPOLI CAZA

CODE	TYPE OF INDUSTRY	NUMBER OF WORKSHOPS IN TRIPOLI	PERCENTAGE AGAINST TOTAL WORKSHOPS IN TRIPOLI
1	AGRICULTURAL SERVICES	0	0%
2	OTHER QUARRIES & MINES	1	0.05%
3	FOOD & BEVERAGE PRODUCTION	287	16.05%
4	TOBACCO PRODUCTION	0	0%
5	TEXTILE PRODUCTION	45	2.51%
6	FUR DYEING, CLOTHES PRODUCTION	163	9.11%
7	LEATHER DYEING, BAGS & SHOOES PRODUCTION	46	2.57%
8	WOOD PRODUCTION EXCEPT FOR FURNITURE	144	8.05%
9	PAPER PRODUCTION	2	0.11%
10	PRINTING & PUBLISHING	17	0.95%
11	COAL & REFINED FUEL PRODUCTION	0	0%
12	CHEMICAL MATERIALS PRODUCTION	7	0.39%
13	RUBBER & PLASTIC MATERIALS PRODUCTION	7	0.39%
14	OTHER NON-METALLIC MATERIALS PRODUCTION	46	2.57%
15	MAIN METALLIC MATERIALS PRODUCTION	22	1.23%
16	PRODUCTION OF MANUFACTURED METALLIC MATERIALS EXCEPT FOR TOOLS & EQUIPMENTS	162	9.06%
17	TOOLS & EQUIPMENTS PRODUCTION	15	0.83%
18	ELECTRICAL TOOLS & EQUIPMENTS PRODUCTION	51	2.85%
19	PRODUCTION OF TELEVISION, BROADCASTING & TELECOM MATERIALS	0	0%
20	PRODUCTION OF MEDICAL & OPTICAL EQUIPMENTS, AND WATCHES	0	0%
21	PRODUCTION OF VEHICLES & TRAILERS AND RELATED ACCESSORIES	13	0.72%
22	PRODUCTION OF OTHER TRANSPORTATION EQUIPMENTS	7	0.39%
23	FURNITURE PRODUCTION	752	42.05%
24	CONSTRUCTION	1	0.05%
	TOTAL	1788	100%

SOURCE: MINISTRY OF INDUSTRIES,1994 _TRANSLATED & DRAWN BY AUTHOR

Table. 6. Types of industries and their respective code in Tripoli Caza.
Source: Ministry of Industries & Petroleum, 1994. Translated and drawn by author.

[127] UNDP & MoSA, 2001.
[128] Ibid.

The remaining agricultural areas in Tripoli Caza consist of *Zeitoun Abou Samra* that is the olive groves, in addition to *Abou Ali Valley* and *Bassatine Al-Saqui Al-Shimali* that are mostly cultivated with citrus fruit trees. Citrus fruit cultivation in Lebanon is one of the most successful – from an economic perspective – among other cultivations, according to Abdel Hadi Yammout[129]. Unlike other types of agriculture in the country it has flourished significantly: in 1956 citrus fruit production registered 103,000 of metric tons, in 1970 it increased to 225,000 of metric tons, and surprisingly, the highest record was in 1987 when it registered 350,000 of metric tons. However, this success does not reflect – as mentioned above – the fact that this type of agriculture is decreasing in the areas surrounding the coastal cities such as Beirut, Tripoli and Sidon. This phenomenon could be accounted for many reasons most important of which is the inappropriately planned urban growth especially during and after the war, in addition to the increase of real estate value in these areas in comparison to other rural areas. Adding to the above, the citrus fruit production in Tripoli is facing a fierce competition with that of the south, which is characterized by a better quality due to the slight difference in weather conditions[130]. Furthermore, the agricultural sector in suburban areas does not seem to be considered by the state as important as in rural areas. The Ministry of Agriculture's stance in supporting the farmers in these areas has changed: the Agricultural Center in Tripoli Serail, that was established for the purpose of helping and supporting the farmers of Tripoli Caza, has shifted its focus from Tripoli towards the rural areas in *Akkar* assuming that the agricultural areas in and around the city are prone to imminent urban expansion and that nothing could be done to safeguard them[131].

[129] Yammout, 2005.
[130] Interview with Michel Issa el-Khoury in October 2011.
[131] Interview with Sonia Abiad in October 2011.

4.8.2. Social Profile

Today, the population of *Al Fayhaa* area is estimated at about 371.000[132]. This number includes the total population of Tripoli, *El Mina* and *Beddawi* (247.000, 53.700, and 42.200 respectively – see Table.7), in addition to the Palestinian refugees (estimated 25.000)[133] that moved in 2007 from *Nahr el Bared Camp* (NBC) to *Beddawi Camp* following the NBC destruction, and the Syrian refugees (estimated 3.000 as of June 2012)[134] that have left their country following the still ongoing fighting that erupted in 2011.

The average household size of *Al Fayhaa* area is 5.4, which is considered to be among he highest in the country and above the national average of 4.7[135]. In *El Mina, Azmi* area and *Mitein Street*, where the residents are classified among the middle-income groups, the household size drops to 4.7. While in *Tebbaneh, Beddawi Camp* as well as the surrounding slums, where these areas are home of the extremely low-income groups, the household size reaches its highest average of more than 6.2[136]. In Tripoli Caza, more than half the households (50.9%) are considered to be under the poor category according to the household income indicator (Table.8). This percentage is 19% higher than the national average (42.8%), and 45% higher than Beirut average (35.2%)[137]. These figures highlight the wide gap between Tripoli's social status and the capital's.

[132] Refer to footnote 68.
[133] Government of Lebanon, 2008.
[134] UNDP, 2012.
[135] Harmandayan, 2004.
[136] Ibid.
[137] Ibid.

FUTURE POPULATION EVOLUTION - AL FAYHAA AREA

	ESTIMATED POPULATION (2004)	1ST SCENARIO: PERSISTENCE OF PREVAILING TRENDS OF DEVELOPMENT			2ND SCENARIO: IMPROVEMENT OF DEVELOPMENT CONDITIONS			3RD SCENARIO: RECESSION OF DEVELOPMENT CONDITIONS		
YEARS	2000	2010	2020	2040	2010	2020	2040	2010	2020	2040
TRIPOLI	208500	247000	283350	347200	259800	313250	424600	235000	256200	283650
EL MINA	45600	53700	61300	74550	56350	67500	90500	51150	55600	61350
BEDDAWI	35700	42200	48250	58850	44300	53200	71650	40150	43700	48250
AL FAYHAA	289800	343000	392900	480600	360450	433950	586750	326300	355500	393250
AVERAGE ANNUAL INCREASE		1.70%	1.37%	1%	2.20%	1.87%	1.52%	1.19%	0.86%	0.51%
POPULATION DOUBLING PERIOD		60 YEARS			40 YEARS			116 YEARS		

SOURCE: HARMANDAYAN, 2004_DRAWN BY AUTHOR

Table. 7. Future population evolution in Al Fayhaa area.
Source: Harmandayan, 2004. Drawn by author.

DISTRIBUTION OF HOUSEHOLDS ACCORDING TO INCOME INDICATORS - TRIPOLI CAZA

INCOME INDICATORS CLASSIFICATION	VERY LOW	LOW	MEDIUM	HIGH	VERY HIGH	TOTAL
TRIPOLI CAZA	20.80%	30.10%	29.10%	14.30%	5.70%	100%
NORTH LEBANON	23.90%	28.20%	28.60%	13.50%	5.80%	100%
LEBANON	19.40%	23.40%	32.40%	16.30%	8.54%	100%

SOURCE: HARMANDAYAN, 2004_DRAWN BY AUTHOR

Table. 8. Distribution of households according to income indicators in Tripoli Caza.
Source: Harmandayan, 2004. Drawn by author.

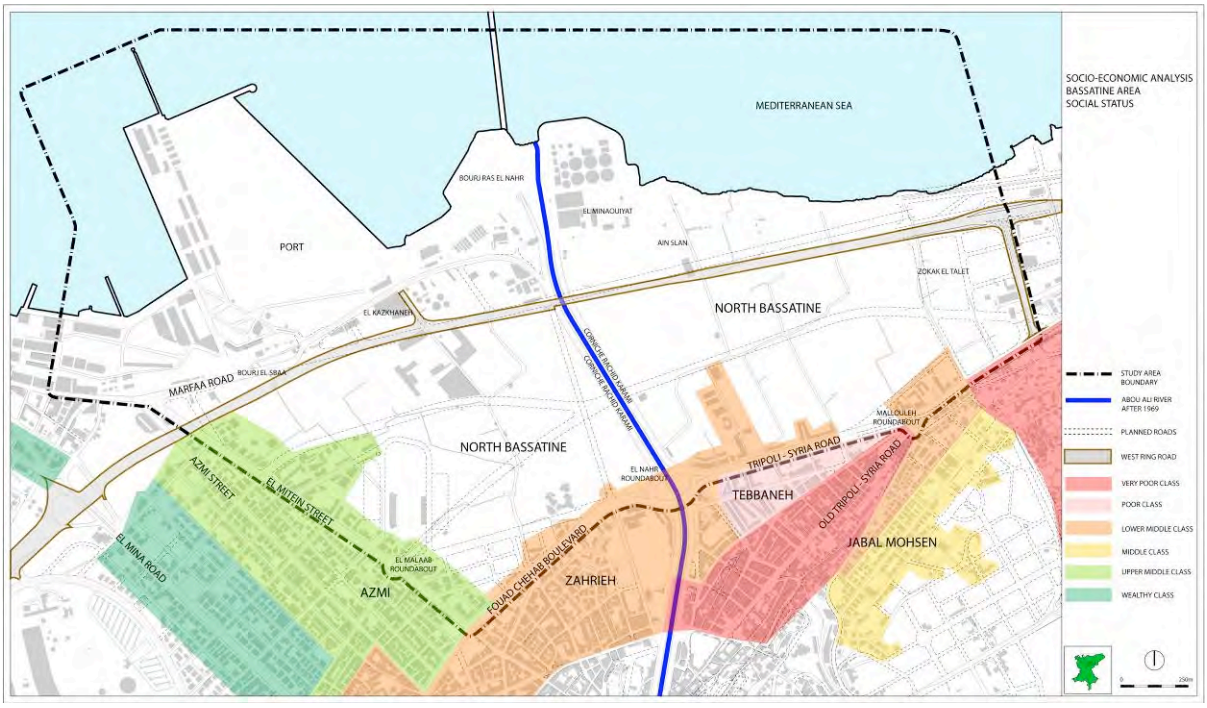
According to Harmandayan study, the social status of the residential areas on the edges of *Bassatine Al-Saqui Al-Shimali* belongs mostly to the middle-income class. Nonetheless, the eastern part of the study area namely Tebbaneh neighborhood includes poor and very poor social groups[138]. Among the occupations of the area's residents there are small local commerce and craftsmanship, service businesses, education and health services. The middle-income group in its turn could be divided in two categories: upper middle class and lower middleclass (Map.25).

- Upper middle class groups occupy *Mitein Street* and *Azmi* Area. Residents of this area are mostly originals of the older adjacent quarters of *Zahrieh* and *El Tall*[139].

- Lower middle class are mainly residing in *Zahrieh* Neighborhood and along *Fouad Chehab Boulevard* or Tripoli – Syria Road. Residents of this area include an increasing number of Syrian workers, immigrants and villagers from *Akkar* and *Dannieh* in addition to the decreasing number of original local residents.

According to *Zahrieh* and *Mitein* area Mokhhtar[140] Kamal Baraka, Tripolitan *Bassatine* landowners and residents of nearby neighborhoods used to spend their Sundays and holidays with their families in the orchards if the weather is convenient [141]. This indicates the recreational aspect that these orchards had for the city' residents in addition to their agricultural role. Today, and based on observations conducted by the author, this social practice has stopped in the area of *Al-Saqui Al-Shimali*, due to the fact that this latter has fallen into decay and is frequented by outlaws and drug users not to mention the industrial aspect that characterizes its surrounding. Yet, this practice is still happening especially during spring season in other areas in Tripoli such as *Zeitoun Abou Samra, Beddawi, El Qobbe* and *Qalamoun*.

[138] Harmandayan, 2004.
[139] Interview with Mokhtar Kamal Barakah in February 2012.
[140] A title given to an elected official on the neighborhood level.
[141] Interview with Mokhtar Kamal Barakah in February 2012.



Map. 25. North Bassatine: Social status.
Source: by Author based on Harmandayan, 2004.

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During the last few years, the city's socio-economic status has severely deteriorated as a result of the persisting social, political and economical problems that are far from being resolved: high poverty levels, unemployment and social marginalization are among the city's social perils[142]. To the above there can be added three major issues of national and regional scale that left their heavy impact on the city's socio-economic as well as security status: *Nahr el Bared* crisis, the Syrian crisis and the ongoing armed clashes between *Tebbaneh* and *Jabal Mohsen* areas.

First, in 2007, in the wake of four months of heavy fighting between the Lebanese Army Forces (LAF) and an extremist group called *Fath el Islam* in *Nahr el Bared Palestine Refugee Camp* (NBC) that is situated 5 km north of Tripoli, NBC was completely destroyed and 15.000 to 25.000[143] of displaced residents fled to the already crowded camp of *Beddawi.* This influx of displaced has exacerbated the socio-economic conditions in *Beddawi* and Tripoli in general, where most of the refugees relied mainly on the construction and service sector competing with the locals especially from the extremely deprived areas.

Second, since the deterioration of the Syrian situation in 2011, Lebanon in general and Tripoli and North Lebanon in particular have been receiving a number of refugees (estimated 3.000 in Tripoli only)[144]. Most of these refugees were either received in hosting households or renting apartments since, for political reasons, the government of Lebanon did not acknowledge their status as refugees and did not establish camps like the rest of the hosting countries. According to the UNDP report,

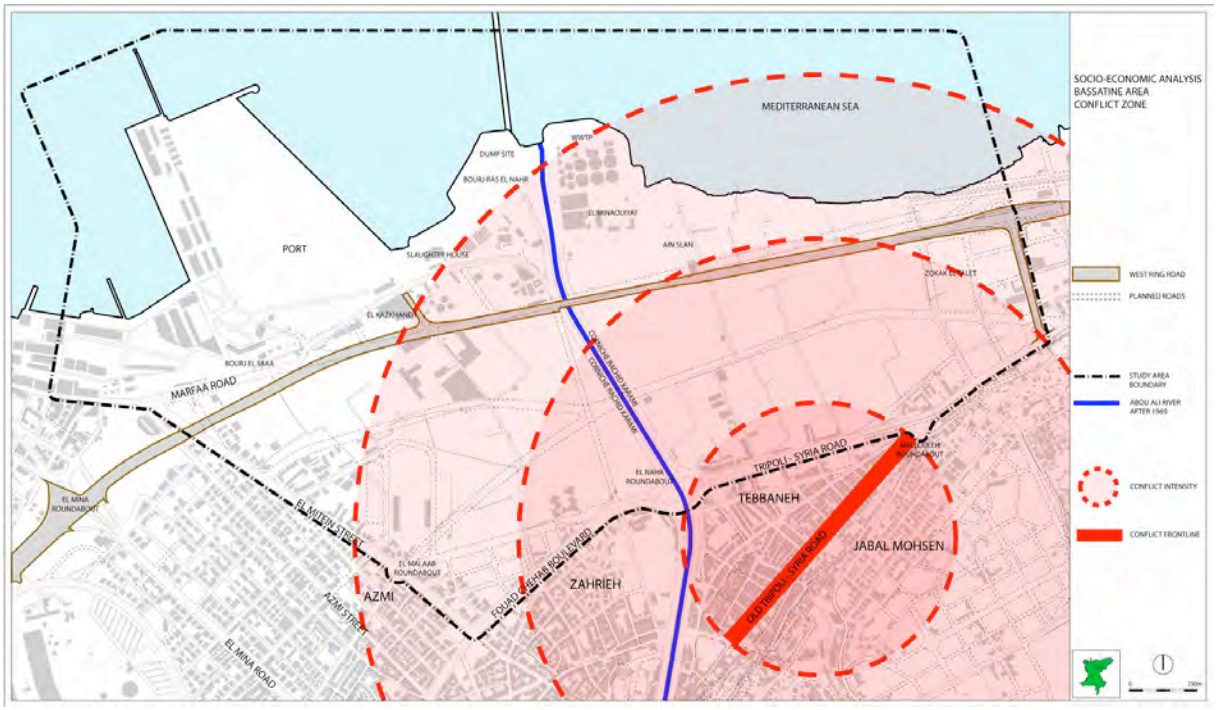
[142] The Daily Star, "Study shows evidence of severe Tripoli poverty", article published in The Daily Star, November 10, 2012.
[143] Government of Lebanon, 2008.
[144] UNDP, 2012.

the socio-economic impact of the Syrian crisis on the city of Tripoli was obvious on more than one level [145]:

- Tripoli Industries that rely on the import of cheap raw materials from Syria is suffering from the border closure.
- Due to political reasons the security situation in the city is worsening affecting the sources of income of its residents.
- As a result of cash injections to the refugees, the local economy is suffering from inflation of prices mostly in rental fees and food items.
- The competition between the local laborers and the refugees that are charging half prices as opposed to their Lebanese counterparts.

Third, since May 2008, in the midst of high political tensions in the country, clashes erupted between pro-March 14 Sunnis from *Tebbaneh* and pro-March 8[146] Alawites from the adjacent area of *Jabal Mohsen* triggered by the bloody fighting in Beirut earlier that month. The fighting between militants from both neighborhoods has since become a recurrent event that lasts for a few days and sometimes weeks before it suddenly ends with a number of casualties, mostly civilians, and late intervention of the LAF. Furthermore, these clashes have intensified since the beginning of the Syrian crisis. The clashes of May 2008 were the first military confrontation between the residents of those neighborhoods since the end of the civil war in 1990 when the Alawites in the Arab Democratic Party (ADP) led by Ali Eid fought alongside the Syrian Army against the Sunni Islamist *Tawhid Movement*.

[145] UNDP, 2012.
[146] March 14 and March 8 are two major political blocks in Lebanon.



Map. 26. North Bassatine: Tebbaneh – Jabal Mohsen conflict zone.
Source: by Author based on collected data.

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The effect of these ongoing clashes on both neighborhoods in particular and the city in general is devastating on the social and economical levels. A number of families fled the area to more safe neighborhoods within the city. During each round of fighting, the city becomes paralyzed: most of the businesses, schools and universities shut down, Tripoli – Syria road – the main link currently between the city and Akkar – in addition to all the streets falling within the conflict zone are blocked (Map.26), not to mention the physical destruction of the buildings and public and private properties.

4.9. Stakeholders, Property Ownership and Real Estate Market

4.9.1. Stakeholders

The area of *Bassatine Al-Saqui Al-Shimali* involves a number of stakeholders from both public and private sectors. On the regional level, *Al-Fayhaa Union of Municipalities* is one of the main public bodies that control a number of public equipments such as the public gardens, the slaughterhouse, the Solid Waste Treatment Plant (SWTP), the quarantine, the dumpsite, the Municipal Stadium and the future Whole Sale Vegetable Market. In addition, the latest zoning plan and regulations were the result of a planning process that was initiated by the municipal council (in coordination with the DGU) that asked several amendments before the latest issuance of the official plans. Thus, any urban proposal and/or intervention in the area could be initiated by the municipal council, which has the authority of either approving or rejecting it.

On the national level, the Ministry of Transportation and Public Works in coordination with the CDR represent another important stakeholder that is in charge of the roads network in the area including the new WRR in addition to the adjacent port

and the railway system that is specifically managed by the O.C.F.T.C. Other public bodies that might have Less important influence in decision making in the area are the Ministry of Agriculture, the Ministry of Environment and the Ministry of Energy, Water & Electrical Resources that is in charge of *Abou Ali Riverbed* and the irrigation water channels in addition to the Ministry of Education that controls a number of public schools in the area.

In the private sector, there are the *Sunni Waqf* [147]and *Eastern Orthodox Waqf* that are in charge of managing a number of large agricultural plots in the area. Furthermore, some civil society organizations control a number of educational establishments like *Azm & Saadeh Association* (part of ex-PM Najib Mikati's associations) that is in charge of *Azm Educational Complex* located to the south of the study area. *Makarem Al Akhlak Association* also runs *Rawdat Al Fayhaa School*, one of the oldest private schools of the 20th century in the city located to the west of the study area next to the municipal stadium.

Other stakeholders in the private sector involve commercial and industrial groups such as *JABWOOD* (*Jabadoo* Family) that is a major local wood trading company, and *Al Fayssal Petroleum* (*Karami* Family) located to the north of the study area.

Last but not least, in addition to the local residents on the edges of the study area, there are landowners of private plots in *Bassatine Al-Saqui Al-Shimali* that constitute a major stakeholder that will be directly affected by any urban intervention in the area. This group consists mostly of Tripolitan families like *Mokadem* family, *Hajjeh* family, *Ouwayda* family, *kabbara* family, *El Sheikh* family and others.

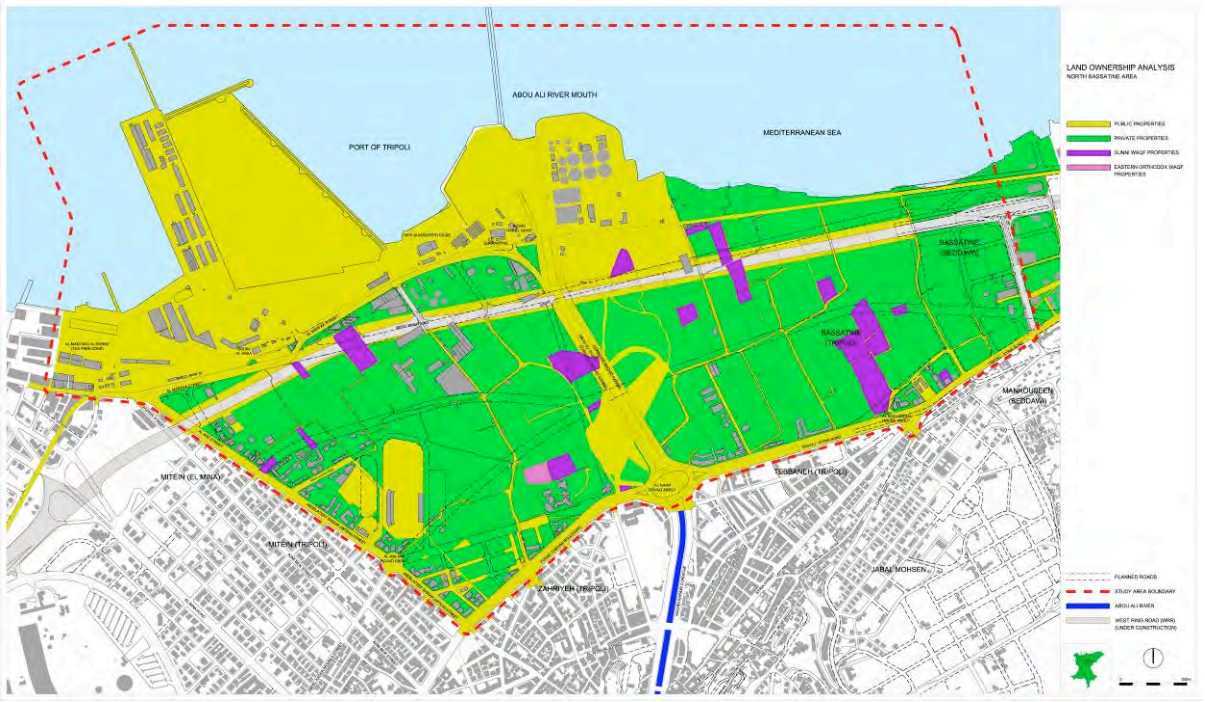
[147] *Waqf* is a form of religious endowment managed by religious authorities.

4.9.2. Property Ownership

In the study area of *Bassatine Al-Saqui Al-Shimali* (3,800,000 sq.m) a large amount of land property percentage belongs to the public sector (Table.9 & Map.27) especially if the port, the adjacent dumpsite, the WWTP, *Abou Ali canalized river*, the future Vegetable Market, and the roads network are included. Most of these equipments of public property are located on the edges of the study area and are saturated from a real estate perspective thus not susceptible to change in the future. On the other hand, the major part of the central area belongs to the private sector especially the agricultural and empty plots that are the most susceptible to change in the future. The highlighted percentages in Table.9 provide an outlook of the property ownership conditions in the study area in general. A more detailed quantitative analysis of the design intervention area – that will be concentrated on the central area that is the most susceptible to change – will be examined in the next chapter.

TOTAL STUDY AREA IN SQ.M	3.800.000	100%
PORT	703.896	18.50%
MAIN ROADS	271.554	7.14%
WRR	256.739	6.75%
WWTP	159.499	4.20%
ABOU ALI RIVERBED	110.622	3%
LOCAL ROADS	96.416	2.53%
RAILWAY	90.469	2.38%
DUMPSITE	79.497	2%
FUTURE VEGETABLE MARKET	66.260	1.74%
PUBLIC GARDENS	57.242	1.50%
MUNICIPAL STADIUM	52.458	1.38%
SWTP & QUARANTINE	38.441	1%
OLD ABOU ALI RIVER CHANNEL	21.665	0.57%
IRRIGATION WATER CHANNELS	30.000	0.70%
NEW SLAUGHTERHOUSE	14.561	0.38%
PUBLIC SCHOOLS	12.465	0.32%
TOTAL PUBLIC AREA	2.012.741	53%
SUNNI WAQF	120.981	3%
EASTERN ORTHODOX WAQF	5.940	0.01%
TOTAL PRIVATE AREA	1.787.259	46.99%

Table. 9. North Bassatine area: Property ownership.
Source: by Author based on interviews and collected official documents.



Map. 27. North Bassatine area: Property ownership.
Source: by Author based on interviews and collected official documents.

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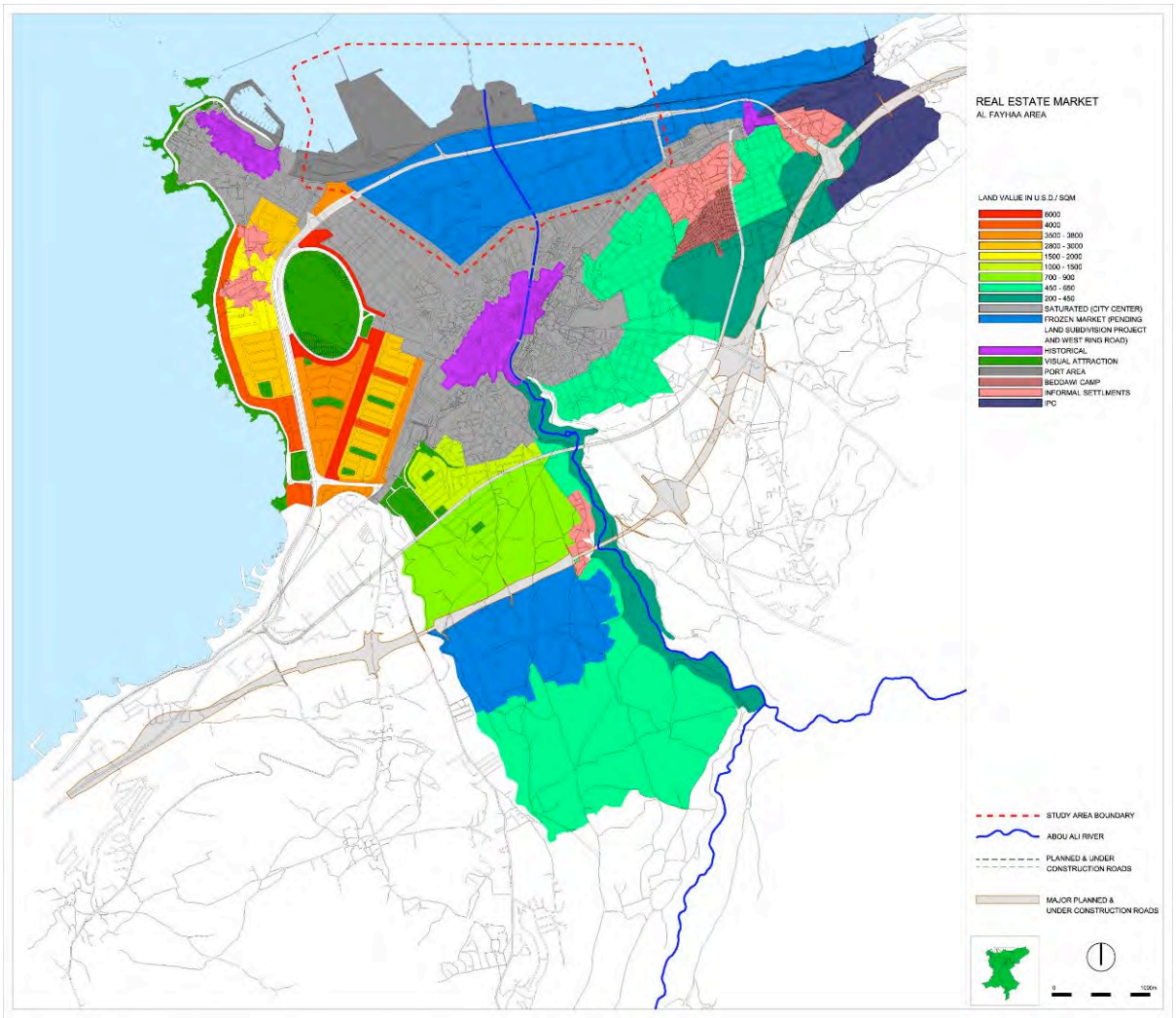
4.9.3. Real Estate Market

Like other economic enterprises in the city, most of real estate development companies are kin-based; they are known by the family name such as *Shahal, Ghalayini, Bakri, Tom, Nashabeh, Safadi* etc… Real estate investments are mostly in the field of residential apartments taking place in the newly refurbished area of *Bassatine Al Saqui Al-Gharbi* (known as *dam w farez*) in addition to the city's suburbs especially *Zeitoun Abou Samra area*.

According to Nabil Aabdeen, civil engineer and developer in Tripoli, the real estate market in *Al Fayhaa* ranges from $450/sq.m to $6000/sq.m.[148] (Map.28). The highest land prices (between $2800/sq.m and $6000/sq.m.) are in *Al Saqui Al-Gharbi area* and the neighboring *Maarad area* (overlooking the International Fair). Less expensive prices (between $700/sq.m and $1500/sq.m.) could be found in the immediate vicinity of *Zeitoun Abou Samra area*. The lowest prices (between $450/sq.m and $650/sq.m.) are in *El Qobbe, Beddawi* and *Abou Ali River Valley.* The market in *Bassatine Al Saqui Al-Shimali area* is currently frozen (around $700/sq.m) pending the ongoing project of land subdivision. However, according to Aabdeen, it is possible that the prices in this area will increase to as high as $1500/sq.m. once the infrastructural works of subdivision are completed[149]. This stagnation of the market in this area could be further accounted for by the phenomena explained by Habib Debs as discussed earlier in Chapter 2 [150]: real estate speculation that results in the temporary preservation of the agricultural areas. Furthermore, the ongoing clashes between *Jabal Mohsen* and *Tebbaneh*, as explained earlier under the social profile, add to the complexities of this market due to the proximity of fighting to the site (Map.26).

[148] Interview with Nabil Aabdeen in October 2011.
[149] Ibid.
[150] Debs, 2004.



Map. 28. Al Fayhaa area: Real Estate Analysis.
Source: by Author based on interviews with a number of developers In Tripoli.

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4.10. Diagnosis: Threatened "Eco-diversity"

According to the above, the analysis of *Bassatine Al-Saqui Al-Shimali* shows that the area is facing a number of issues that needs to be urgently and carefully tackled (Map.29).

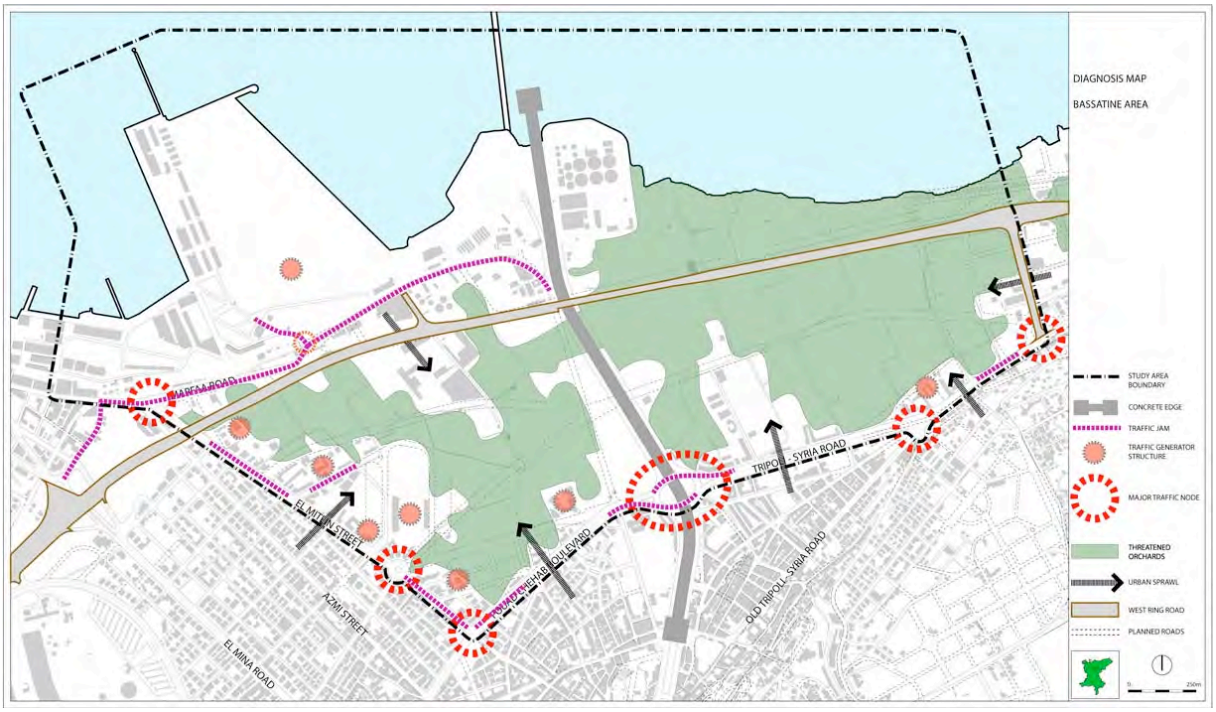
First, the city's cultural heritage of citrus orchards, after which it was named *"The Fragrant"* or *"Al Fayhaa"*, and to which the city owe much of its previous social and economical prosperity, is threatened to become history as a result of chaotic and uncontrolled urban sprawl as it is the case in Beirut. *Al-Saqui Al-Shimali area* is the last piece of land remaining of what was known as *Bassatine tarablous.*

Second, urban sprawl is taking place along existing roads around *Al-Saqui Al-Shimali* as well as within the area and is spreading in the form of fragmented urban developments. According to the existing zoning code, most of the area is classified as low-density expansion zone with no designation whatsoever of any green area.

Third, the area's existing situation is of rural and agricultural character with narrow and unpaved pathways and deteriorated irrigation channels separating and serving the orchards. It is clear that the existing situation is not suitable for any possible urban expansion especially that the surrounding street network and infrastructure that serve a number of traffic generator structures as well as a number of urban structures of national importance (the port, the railway station, the future bus terminal, the International Fair and the Municipal Stadium) need to be upgraded and incorporated with any future plan.

Fourth, according to the ecological analysis, this area represents an invaluable ecological asset that is threatened by urban sprawl and is worth preserving and restoring to become an integral part of the future surrounding urban space. This asset of

ecological diversity, or eco-diversity, not only includes the biological richness of fauna and flora species and habitats, but also the local human land uses associated with the area's semi-natural environment namely agriculture. The practice of agriculture in Tripoli has been continuously degrading during the second half of the last century as discussed earlier. However, with the support of public bodies together with the establishment of a local urban farming program, it is possible to restore and strengthen this practice.



Map. 29. North Bassatine area: diagnosis plan. *Source:* by Author.

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CHAPTER 5

INTERVENTION

5.1. Development Vision

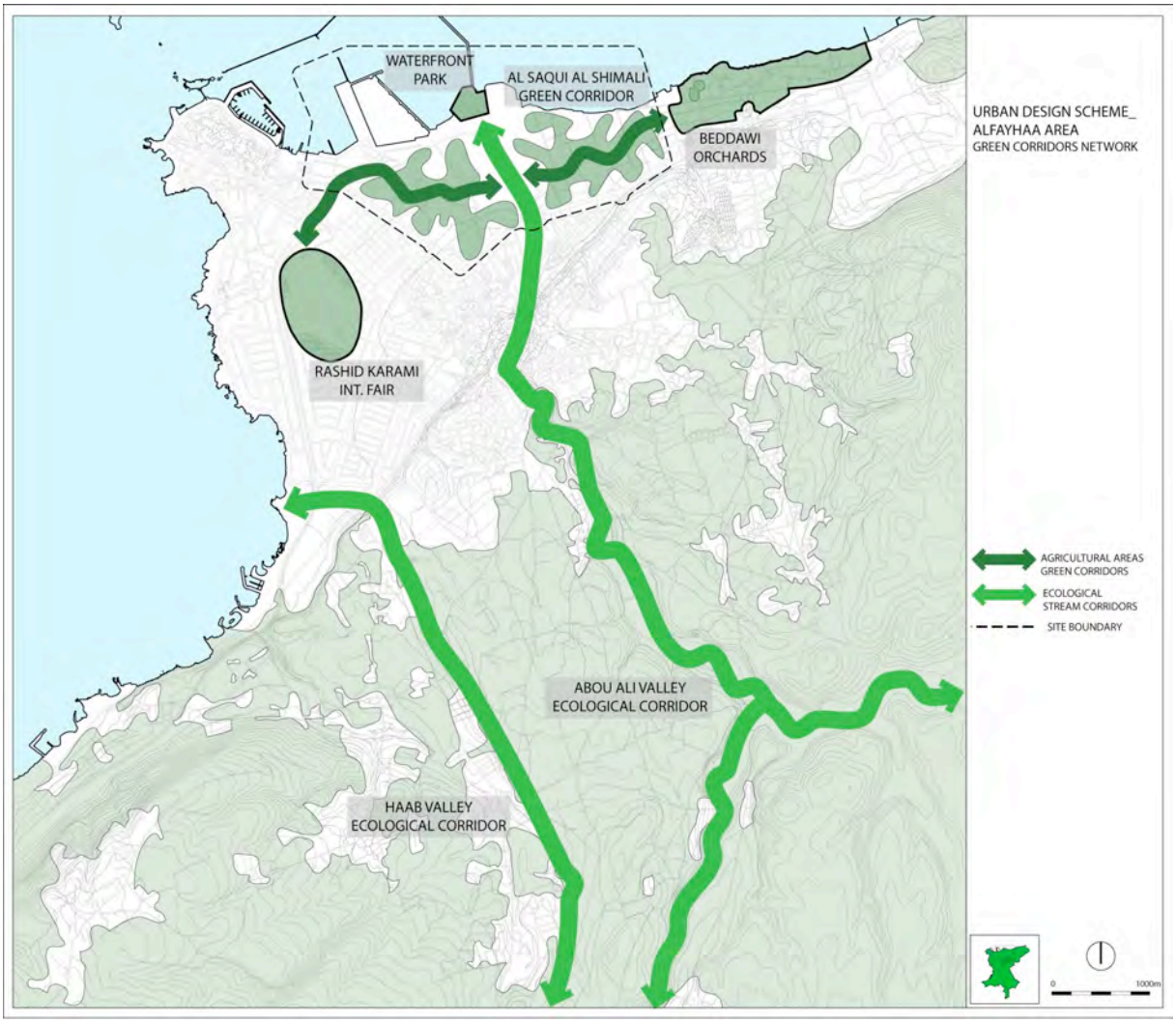
Looking at the development trends in Tripoli, one can conclude that most of the expanding neighborhoods have developed through the process of land subdivision initiated by the municipality. However, even though this process allows the organization of land development regularly around newly conceived public streets, and minimizes – to some extents – chaotic urban expansion along existing roads, all of these projects lacks substantial social, environmental and aesthetic elements. It seems that the main criterion according to which these projects were conceived was simply the calculation of surfaces of lands to be subdivided. Hence, as a result of the laisser-faire aspect of the planning system in the country, market-oriented dynamics predominate the shaping of the urban form in the absence of a sustainable urban vision.

In fact, the newly created urban areas do not possess a sense of place that should enhance any possible social urban life. Urban facilities that are necessary for each new neighborhood (such as fire stations, schools, children playgrounds…) do not seem to exist in these new areas. Public gardens, if they exist, seem to be chosen accidentally in one of the many regularly created parcels that do not comply with any environmental criteria. New street layouts and parcels do not follow any specific urban form and do not take into consideration climatic or geographic elements such as sea or mountain views. Furthermore, they seem to be conceived in isolation with little attention to their relation with adjacent neighborhoods.

Today, the resulting urban areas have become high-density concrete jungles congested with traffic jams. Open spaces and public gardens have become very limited, fragmented and isolated islands where ecological functioning is disrupted and the interactions between systems among habitats are inhibited.

This thesis aims to achieve a vision of three main components: (a) reaffirming the genus loci and the specificity of Tripoli as *Al Fayhaa* or The Fragrant City, (b) protecting the urban landscape heritage, both agricultural and natural, and (c) improving the quality of living in the city. This vision would be realized by the establishment of "*Tripoli Green Corridors Network*", a system of ecological and green corridors that re-link *Al Fayhaa area* with its natural hinterland through the valleys of *Abou Ali River* and *Haab River* (Map.30 & 31). This plan would include two types of corridors as identified by Forman and Gordon: the strip corridor (or green corridor) and the stream corridor (or ecological corridor)[151]. According to Forman, a corridor is a narrow piece of land of a particular type that differs from its surrounding and it is mainly characterized by being a conduit for species' movement or a barrier[152]. A strip corridor is a corridor that is wide enough to include an interior environment as opposed to line corridors such as hedgerows[153]. *Al-Saqui Al-Shimali* corridor could be categorized as a strip corridor that is composed of the protected agricultural areas. A stream corridor, however, is the band of vegetation along a watercourse that may cover the edges of the stream channel, the flood plain, the banks above the flood plain, and part of the upland above the banks[154]. This type of corridors is better known for controlling water and nutrient flows[155]. *Abou Ali and Haab Valleys* are categorized as stream corridors.

[151] Forman, R.T.T., Gordon, M., (1986).
[152] Forman, R.T.T., (1995).
[153] Forman, R.T.T., Gordon, M., (1986).
[154] Ibid.
[155] Ibid.



Map. 30. Al Fayhaa area: Tripoli Green Corridors Network.
Source: by Author.

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Map. 31. North Bassatine area: Tripoli Green Corridors Network and intervention boundary. *Source:* by Author.

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5.2. Design Intervention

The design intervention will be focused on the central area of *Bassatine Al-Saqui Al-Shimali* (Map.31) where most of the land is either agricultural or vacant with no further development, thus most susceptible for change in the near future. The edges of the study area where the plots are already developed and saturated, from a real estate perspective, will be excluded from the intervention boundaries.

5.2.1. Intervention Objectives

Based on the site analysis and diagnosis discussed in the previous chapter, and in line with the abovementioned development vision, the intervention objectives are identified as follows:

- To protect and restore the significance of the landscape – including biological, ecological, and cultural diversity – of *Bassatine Al-Saqui Al-Shimali* area: by re-defining the relationship between people and agricultural practices and by conserving a substantial part of agricultural lands to be part of an integral urban agricultural program in the city.
- To create linkages of which connect natural and semi-natural areas and act as movement routes for flora, fauna and people.
- To control and regulate the urban development around *Bassatine Al-Saqui Al-Shimali area* by providing the necessary urban infrastructure – regional as well as local systems – for the expected expansion of urban development.
- To establish pedestrian and cyclist friendly public spaces, street network and permeable mixed-use walkable neighborhoods which cater for all facets of social groups.

- To create a flexible urban form inspired by Tripoli's heritage that maintain a strong link with the existing adjacent neighborhoods yet provide a variety of choices of building typologies integrated within the surrounding public and green spaces.
- To strengthen the area and the community identity by reinforcing existing attributes such as the old *Abou Ali* riverbed, the existing pathways and the area's local names.
- To reclaim the existing dump site – that was designated as public garden in the 1971 zoning plan – and transform it into a new green Waterfront Park that represent one of the major components of *Tripoli Green Corridors Network.*
- To create a strong ecological as well as pedestrian link through *Abou Ali Ecological Corridor* between the city's historical quarters at the foothills of the Castle of Saint Giles and the proposed Waterfront Park in *Bassatine Al-Saqui Al-Shimali.*

5.2.2. Intervention Strategy

In order to achieve the above stated objectives, and prior to adopting the appropriate intervention strategy, it is important to explore the available planning tools of intervention in the case of *Bassatine Al-Saqui Al-Shimali area.* According to the existing Lebanese planning system, the future development of *Bassatine Al-Saqui Al-Shimali area* is subject to three different scenarios that would yield different outcomes. It is important to note at this stage that the following scenarios are not alternative design proposals. The exploration of these scenarios is a critical analysis to show how difficult it is to achieve the objectives within the existing planning laws.

- Scenario 1: No Intervention with Existing Zoning Code.
- Scenario 2: Intervention Based on Existing Land Subdivision and Zoning Laws.
- Scenario 3: Intervention Based on Existing Public Agency Law.

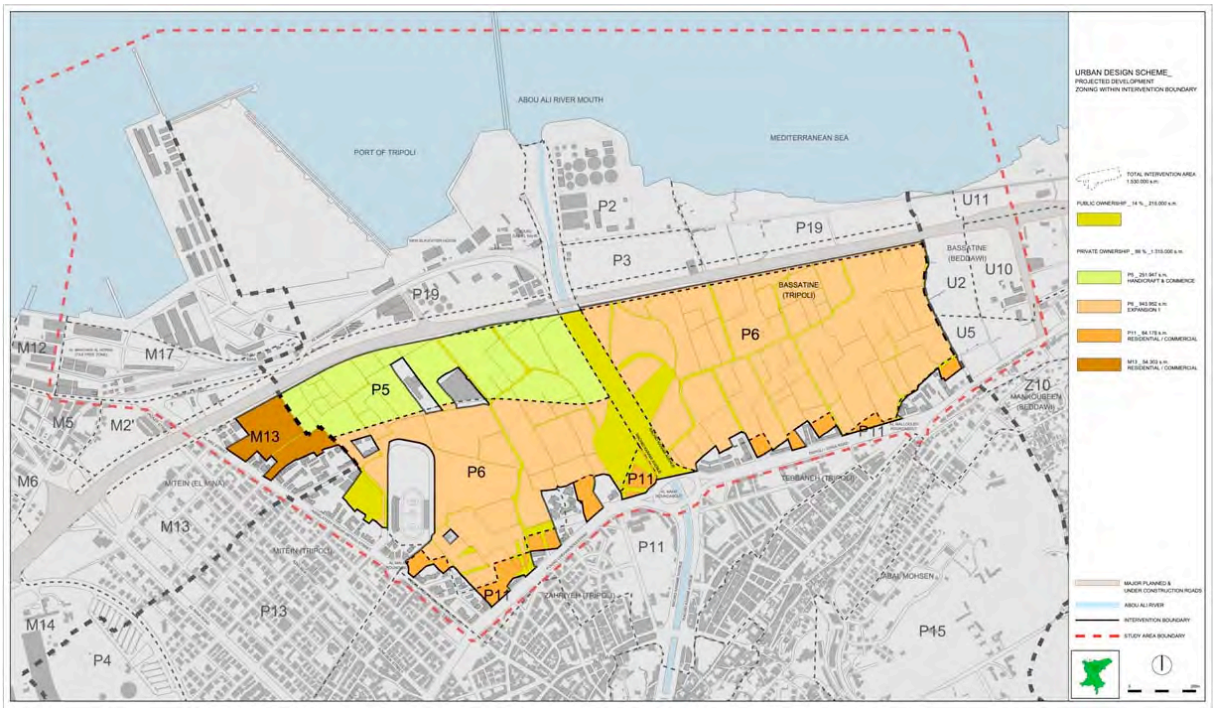
The area within the intervention boundary is 1.530.000 sq.m. According to the existing zoning plan (Map.32 & Table.1 & 2), it is divided into four different zones:

- P6 – "Expansion 1" (943.952 sq.m): low-density residential area.
- P5 – "Handicraft & Commerce": (251.947 sq.m): light industrial area.
- P11 – "Residential/ Commercial" within Tripoli territory (64.178 sq.m): high-density residential and commercial area.
- M13 – "Residential/ Commercial" within Mina territory (54.303 sq.m): high-density residential and commercial area.

Through the following pages, I will address and evaluate each possible scenario vis-à-vis the above stated objectives prior to pointing out the adopted intervention strategy:

5.2.2.1. Scenario 1: No Intervention with Existing Zoning Code

If the area is left with no intervention, it will be subject to uncontrolled real estate market forces and the current development trends under the existing zoning code. Urban sprawl will continue to take place along the existing narrow rural roads, that will result in a type of irregular and chaotic ribbon development zones – and possibly informal settlements – and develop into poor quality urban neighborhoods, consequently yielding all types of social, economical and environmental problems. This is the worst-case scenario and an unsustainable option, thus a meaningful urban intervention in *Bassatine Al-Saqui Al-Shimali area* is imperative.



Map. 32. Projected development: existing official zoning within intervention boundary.
Source: by Author.

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5.2.2.2. Scenario 2: Intervention Based on Existing Land Subdivision and Zoning Laws

As discussed previously and in section *4.7.3.* of Chapter 4, the land subdivision planning tool is one of the most frequent forms of land development in Tripoli when it comes to urban expansion. This option, however, has advantages as well as disadvantages. This planning tool represents a way of regularly organizing the expected urban growth by providing the necessary public facilities (roads, public squares, public gardens, etc.) by allocating 25% of existing private properties to public properties in the new scheme.

The existing private property area within the intervention boundary is 1.315.000 sq.m (86% of the total intervention area), whereas the public property area is no more than 215.000 sq.m (14% of the total intervention area) (Map.33). When applying the 25% formula, the projected private property area becomes 986.250 sq.m (64.5% of the total intervention area), and the public property area becomes 543.750 sq.m (35.5% of the total intervention area) (Map.34).

In the projected scheme, the resulting shapes of blocks and parcels are determined according to only two criteria: the planned roads, and the maximum possible economic profit by the landowners. Consequently, the resulting building developments are shaped by the existing zoning code that produces a total development area of 204.753 sq.m (Map.35). This area includes 162.909 sq.m (12%) of high-density development (Zone M13), 154.027 sq.m (11.5%) of medium-density development (Zone P11), 849.556 sq.m (62%) of low-density development (Zone P6), and 201.557 sq.m (14.5%) of light industrial development (Zone P5) (Map.36 & Fig.61). Whereas the public gardens, they could be dispersed throughout the area with very little

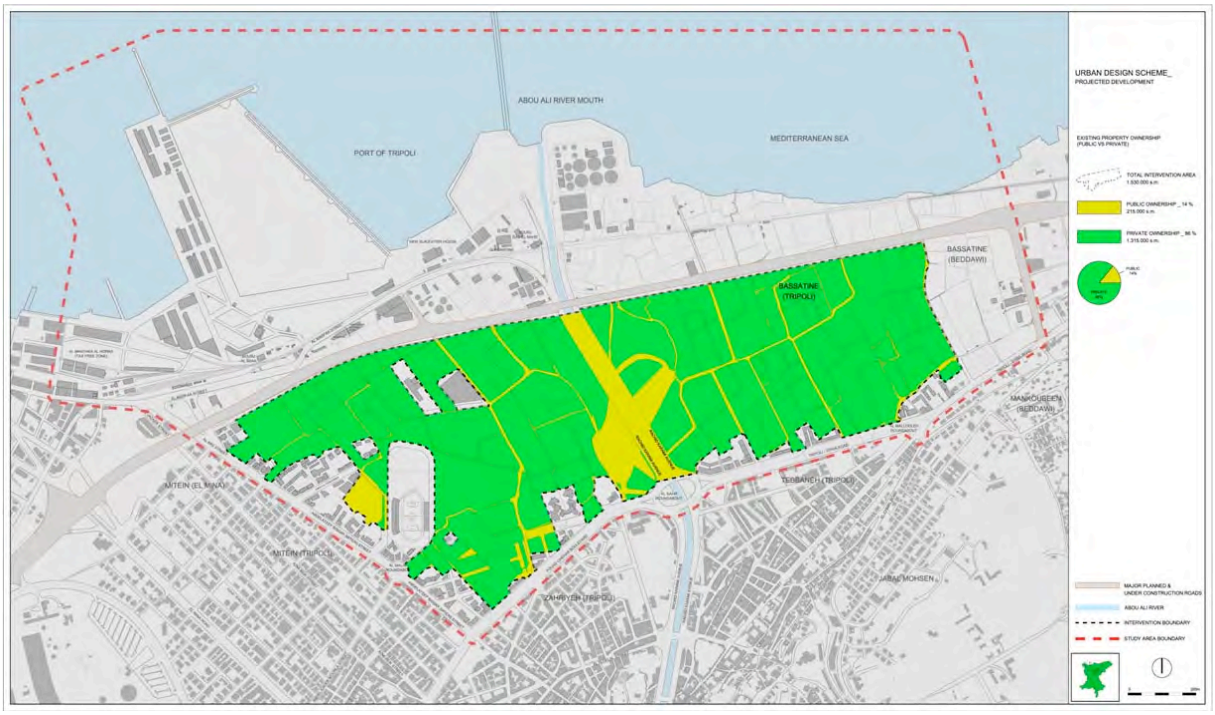
ecological value, and the projected percentage of the total public gardens area is only 8% out of the total intervention area (Map.37).

As for the expected real estate values in USD/sq.m, land prices are listed as follows (Map.39):

- 1% of land properties, have prices ranging between 3500 – 3800 USD/sq.m
- 4% of land properties, have prices ranging between 2800 – 3000 USD/sq.m
- 19% of land properties, have prices ranging between 1500 – 2000 USD/sq.m
- 59% of land properties, have prices ranging between 1000 – 1500 USD/sq.m
- 17% of land properties, have prices ranging between 700 – 900 USD/sq.m

It is clear from the above that at least 76% of land properties in the area have their projected prices, under the land subdivision scenario, less than 1500 USD/sq.m. If compared to the overall real estate market analysis discussed earlier under section *4.4.3.* of Chapter 4 (Map.22), this shows that this area is not among the commonly suitable locations for development, especially that it is situated within a proximity to the unsecure conflict zone between *Tebbaneh* and *Jabal Mohsen*.

One of the main objectives of this thesis as stated earlier is to protect and restore the ecological significance of the area by conserving a substantial part of agricultural lands in the form of public properties that could be developed by public authorities as productive agricultural and/or recreational spaces. Looking at the potential outcomes of Scenario 2, it becomes clear that this goal as well as the abovementioned objectives could not be achieved only through the land subdivision tool; hence a more elaborate planning mechanism is necessary.



Map. 33. Projected development: existing public vs. private property ownership.
Source: by Author.

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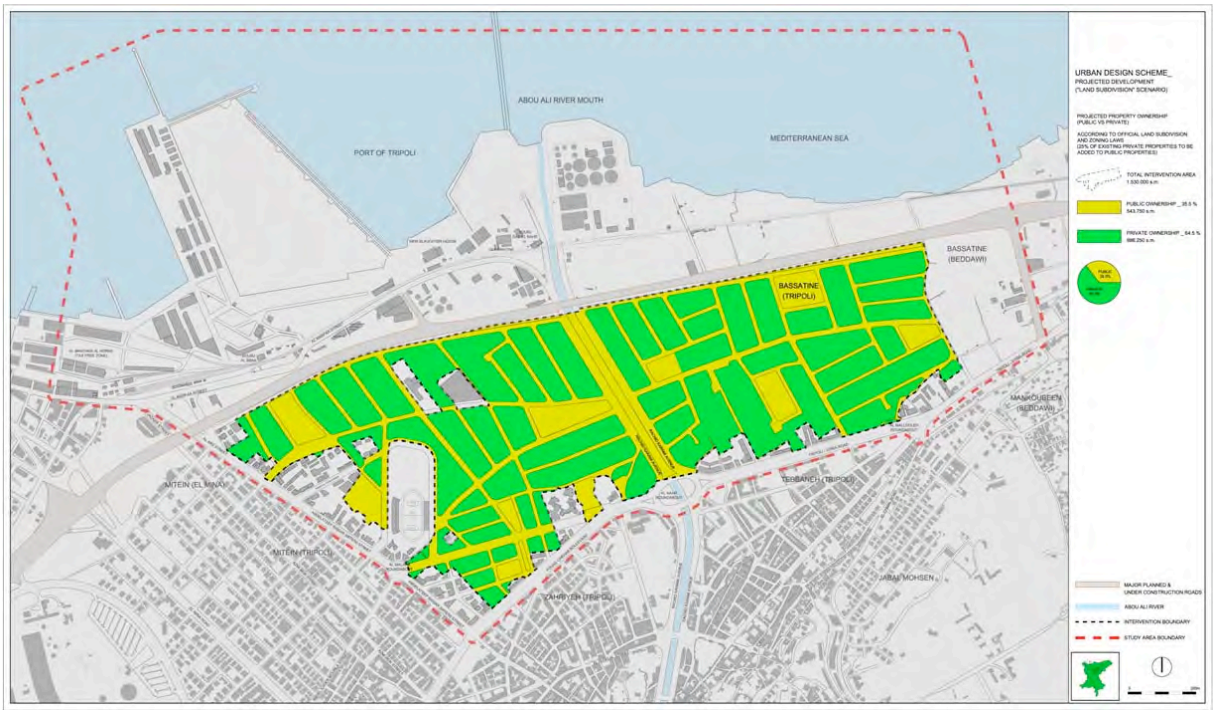

Map. 34. Projected development: projected public vs. private property ownership according to official land subdivision and zoning laws. *Source:* by Author.

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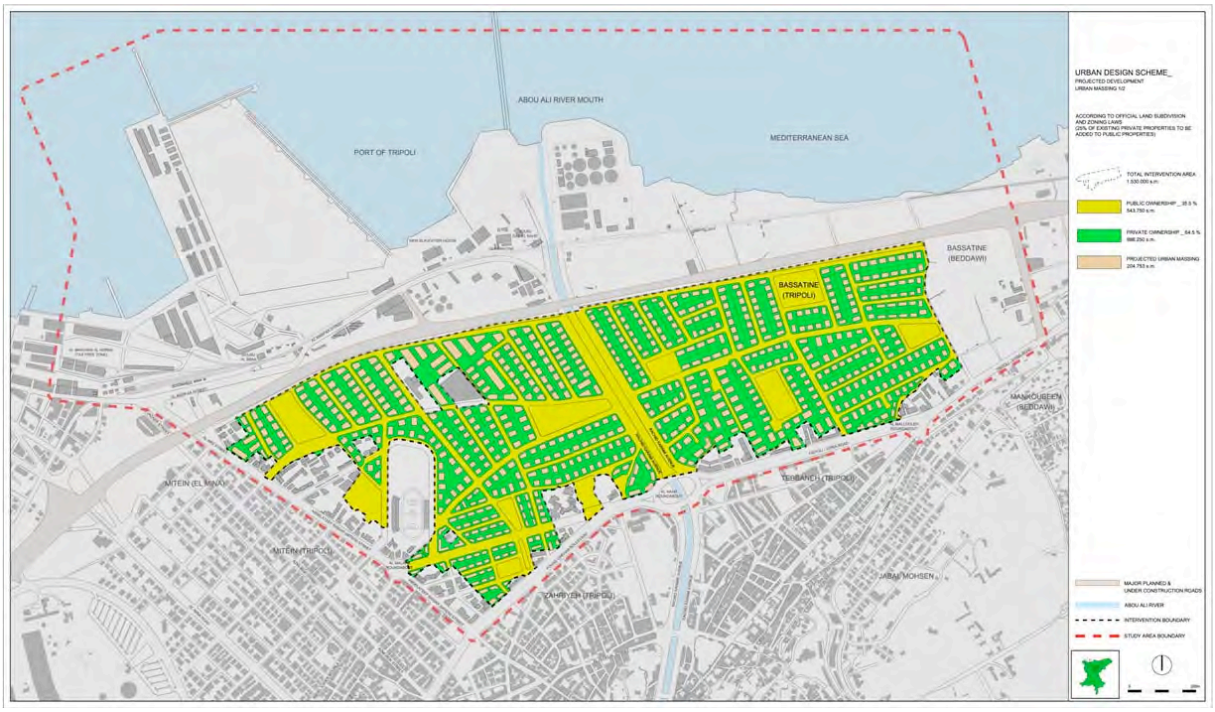

Map. 35. Projected development: projected total urban massing according to official land subdivision and zoning laws. *Source:* by Author.

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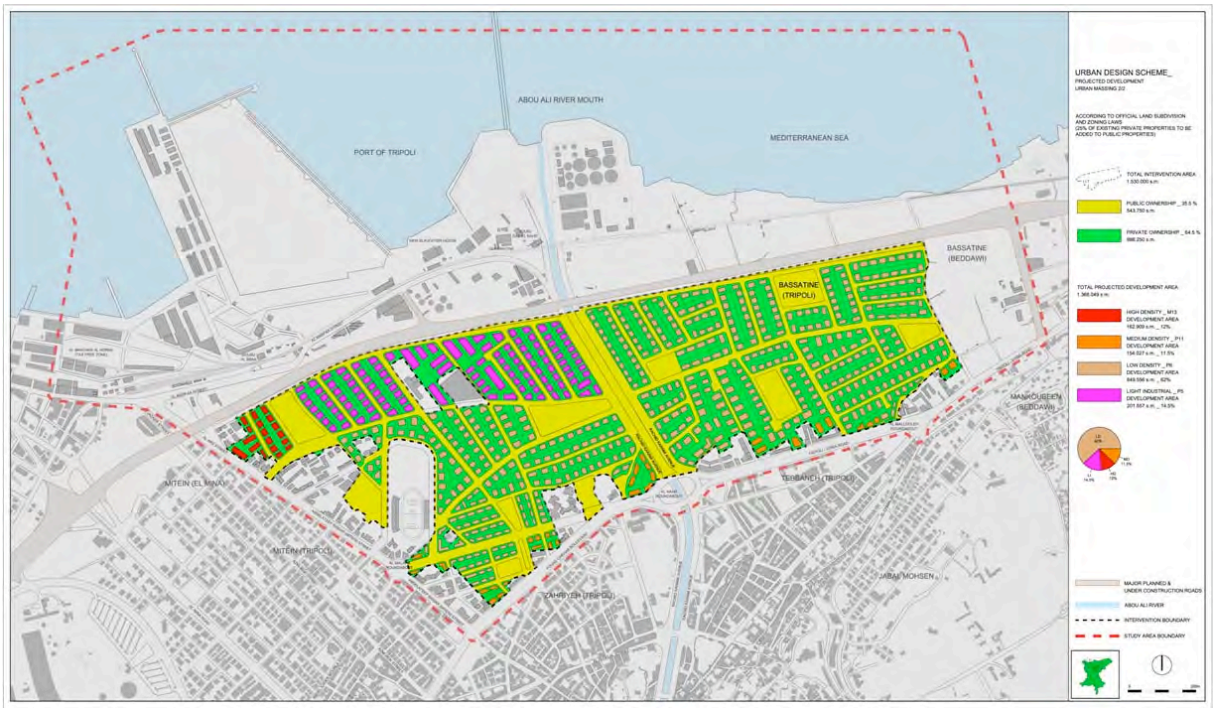

Map. 36. Projected development: projected urban massing (with expected densities) according to official land subdivision and zoning laws. *Source:* by Author.

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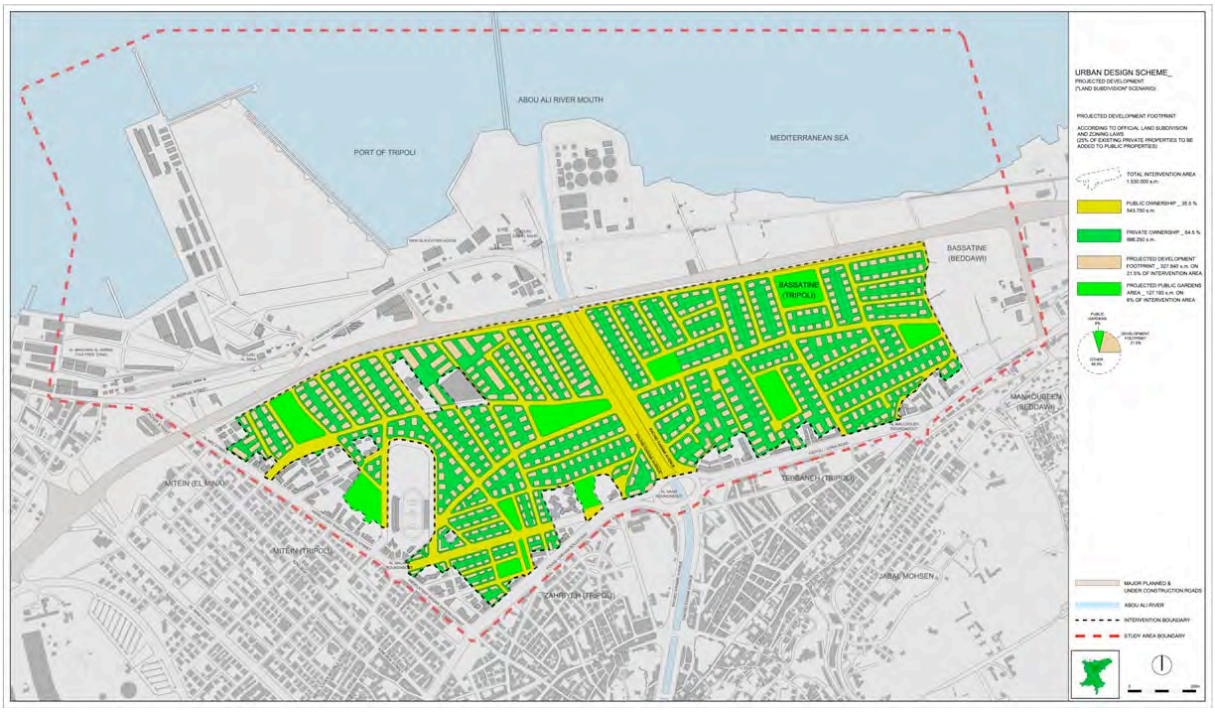

Map. 37. Projected development: projected total development footprints according to official land subdivision and zoning laws. *Source:* by Author.

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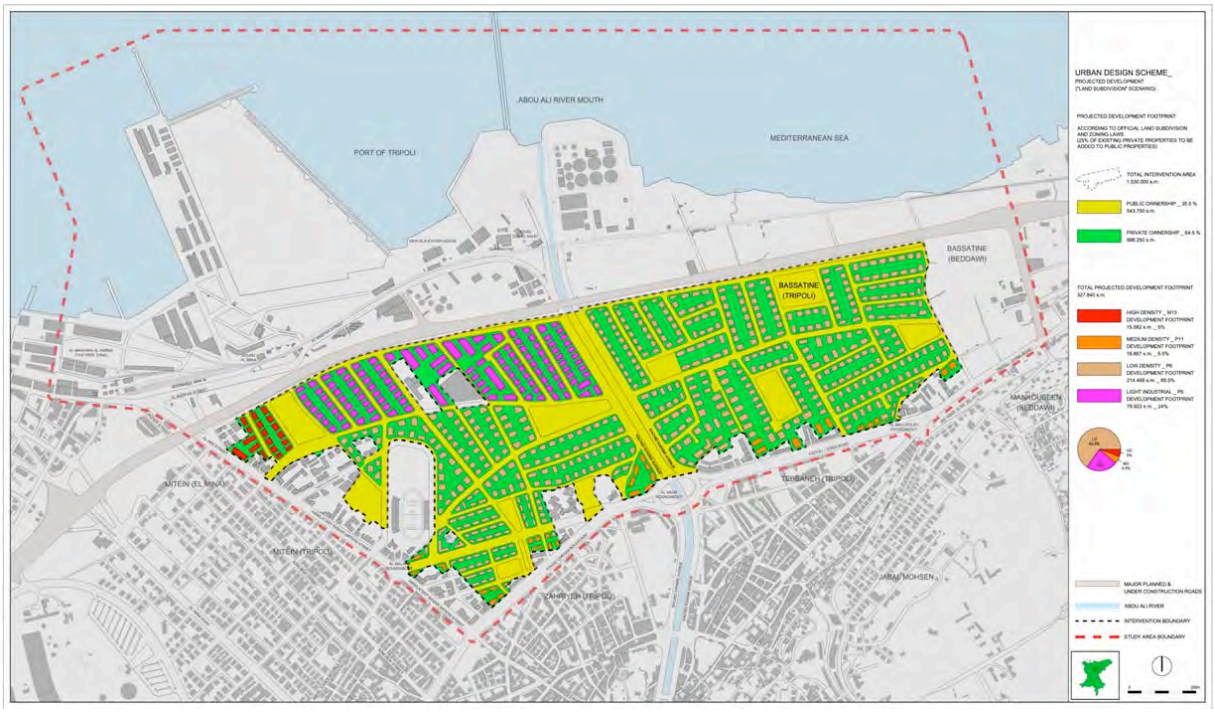

Map. 38. Projected development: projected development footprints (with expected densities) according to official land subdivision and zoning laws. *Source:* by Author.

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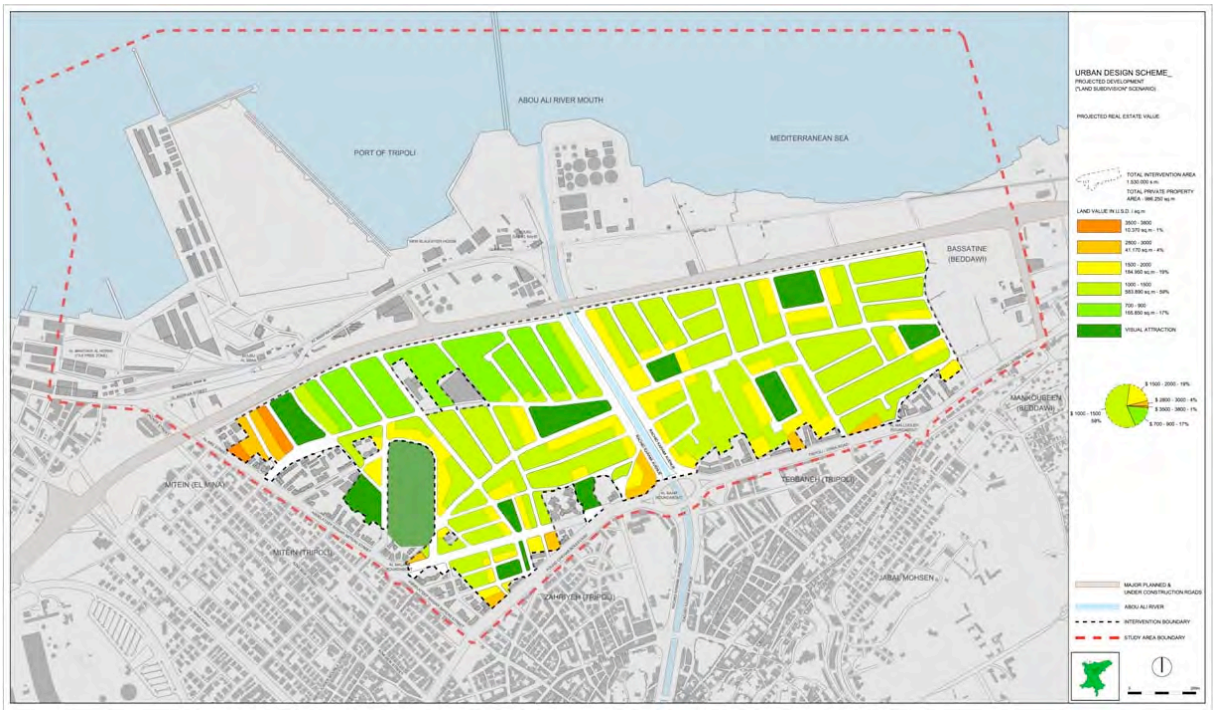

Map. 39. Projected development: expected real estate values. *Source:* by Author.

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Fig. 61. Projected development: massing according to official land subdivision and zoning laws (for color code refer to Map.36). *Source:* by Author.

5.2.2.3. Scenario 3: Intervention Based on Existing Public Agency Law

Acquiring ecologically valued private properties for preservation through the land expropriation tool is the simplest and easiest option. However, public authorities do not have enough financial means to expropriate this amount of private properties. And as discussed in the previous scenario, the amount of land to be preserved could not be appropriated through the 25% formula of land subdivision law.

Furthermore, the existing zoning code within the intervention area does not take into consideration any ecological or environmental concerns, and it allows private entrepreneurs to develop any given plot on the totality of *Bassatine Al-Saqui Al-Shimali area.*

Knowing the limitations of the above mentioned planning tools and zoning regulations, and given the scale and type of intervention needed to fulfill the abovementioned objectives, it is necessary to look into a more flexible planning mechanism. Such tool could be found through the establishment of a public agency. The Lebanese urban planning system allows land management through a public agency that could be created by the Council of Ministers chiefly for this purpose. According to decree number 69 of December 1983 – article number 22, the Council of Ministers has the right to establish a public agency with a commercial aspect for the purpose of managing and organizing all/or part of a specific area. This public agency is characterized by an administrative and financial autonomy that allows it, as a public authority, to negotiate and approve development proposals or enter in partnership with the private sector. And most importantly, it has the ability of managing the development within a public and sustainable vision.

The adopted intervention strategy could be identified by the following four principle strategic planning and design elements:

First, the establishment of a public agency, "*Bassatine Al-Saqui Al-Shimali Development Agency*" (BSSDA), that will manage and develop the area in partnership with a private developer with the purpose of fulfilling the above stated objectives.

Second, transform 50% of the existing private property areas into public areas for the purpose of preserving the necessary amount of agricultural spaces (that will take the form of *Al-Saqui Al-Shimali Green Corridor*) and in return for providing public

facilities necessary for the development of sustainable neighborhoods such as streets, community gardens, community centers, and public spaces.

Third, existing development rights of the central plots falling within the conservation area will be transferred to the surrounding quarters along the edges of the intervention area. This will allow the creation of a central preserved green corridor around which an inner ring of medium-density and an outer ring of high-density areas would develop (instead of one low-density residential area as per the existing zoning code). This approach of a more compact urban form responds to the sustainable objectives of mixed-use and walkable neighborhoods. In addition, it would raise real estate values for all of the plots whether located in medium-density zones next to the green open space or in high-density zones overlooking the green open space and along regional connectors, and consequently, providing landowners with a compelling argument for the above-mentioned 50% public-private property trade off.

Fourth, a substantial part of the preserved green area shall be allocated for urban farming and agricultural activities that could be performed by future private urban farmers through particular land tenures and incentives. Educational activities shall be conducted within the preserved land in coordination with public and private institutions.

5.2.3. Proposed Intervention

5.2.3.1. Character Areas and Proposed Zoning

The intervention area could be divided into five different character areas in addition to *Abou Ali Ecological Corridor* (Map.40). These character areas are mainly based on the resulting land use analysis of concentration zones under section *4.5.* of Chapter 4 (Map.12): the major land use concentration area of agricultural activities

makes the basis of the central preserved orchards area. The residential ‘edge condition’ zones could evolve into well designed and served mixed-use areas with a predominantly residential character. Within these areas, there is the potential of creating enclaves of special character such as the Sport Quarter around the Municipal Stadium where additional sport venues could complement the existing stadium, and the Cultural Quarter around *Al Azm Educational Complex,* where a variety of cultural structures could be added such as museums, public libraries, theatres and music halls to enrich the neighborhood and even the city at large. In addition, the light industrial area could evolve around the existing large industrial *Jabwood* warehouses.

The proposed zoning plan (Map.41) identifies specific zones along the same lines of the character areas, the intervention strategy and the proposed circulation network. The boundaries of *Al-Saqui Al-Shimali Green Corridor* are based on the existing limits of green areas and follow the edges of proposed expansion areas. These edges are conceived in a way that allows the green areas to interact with and infiltrate into the new urban fabric. The zoning plan is different from the existing one: instead of having one low-density residential zone and another high-density residential zone with no central green area, the new plan proposes the following zones:

- B1 – Preserved Orchards (for agricultural and recreational use)
- B2 – High-Density Mixed-Use with Predominantly Residential Character
- B3 – Medium-Density Mixed-Use with Predominantly Residential Character
- B4 – Light Industrial
- B5 – Sport Quarter (only sport structures and relevant facilities are allowed)
- B6 – Cultural Quarter (only cultural structures and relevant facilities are allowed)

Map. 40. Proposed development: character areas. *Source:* by Author.

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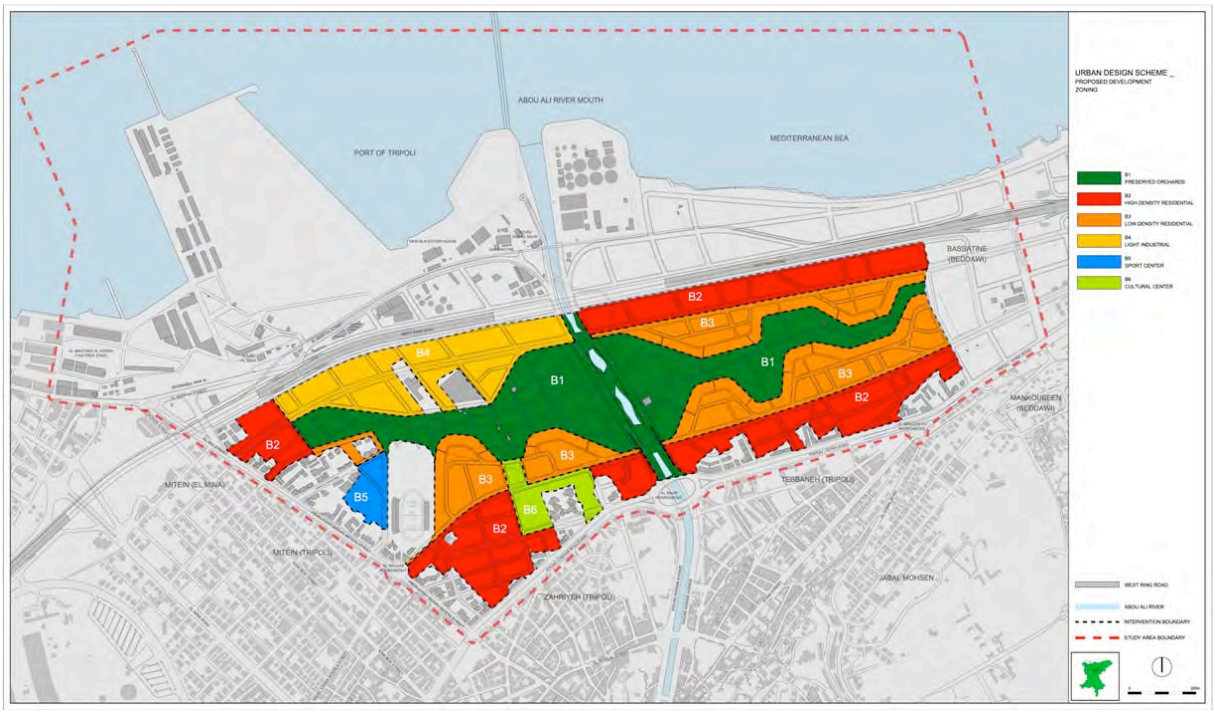

Map. 41. Proposed development: zoning plan. *Source:* by Author.

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5.2.3.2. Public vs. Private Property Ownership

As discussed previously in the proposed intervention strategy, 50% of the existing private property areas will be added to existing public areas, this will result in increasing the public property area to become 872.000 sq.m (57% of intervention area) and decreasing the private property area to become 657.500 sq.m (43% of intervention area) (Map.42). Accordingly, and within a sustainable, holistic and creative urban design vision, the new public property area will be allocated for the different public facilities (streets, public squares, public gardens, community centers, public parking spaces, etc.) necessary for a sustainable new urban neighborhood.

5.2.3.3. Urban Blocks and Circulation Network

Connectivity and mobility of street networks are delicate issues to deal with in urban development, they provide the means for people's movement and consequently ensure the economic development and urban prosperity. However, the location and intensity of street networks could be ecologically destructive if not designed in balance within their environments.

The existing situation of the intervention area is, as it is explored in the townscape and transportation analysis sections (4.5 and 4.6 of Chapter 4), of rural character with narrow roads and pathways that are not appropriate for urban expansion. The proposed circulation network provide the necessary linkages of *Al-Saqui Al-Shimali area* with its surrounding. It takes into consideration, however, the conservation area: the major east-west regional connectors are conceived as to avoid cutting through the central area, and the existing north-south connectors (*Rachid Karami Avenues*) along *Abou Ali River* are to be buried underground as underpasses (Map.43, 44 & 63).

Map. 42. Proposed development: public vs. private property ownership.
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Map. 43. Proposed development: circulation network, streets hierarchy - city scale.
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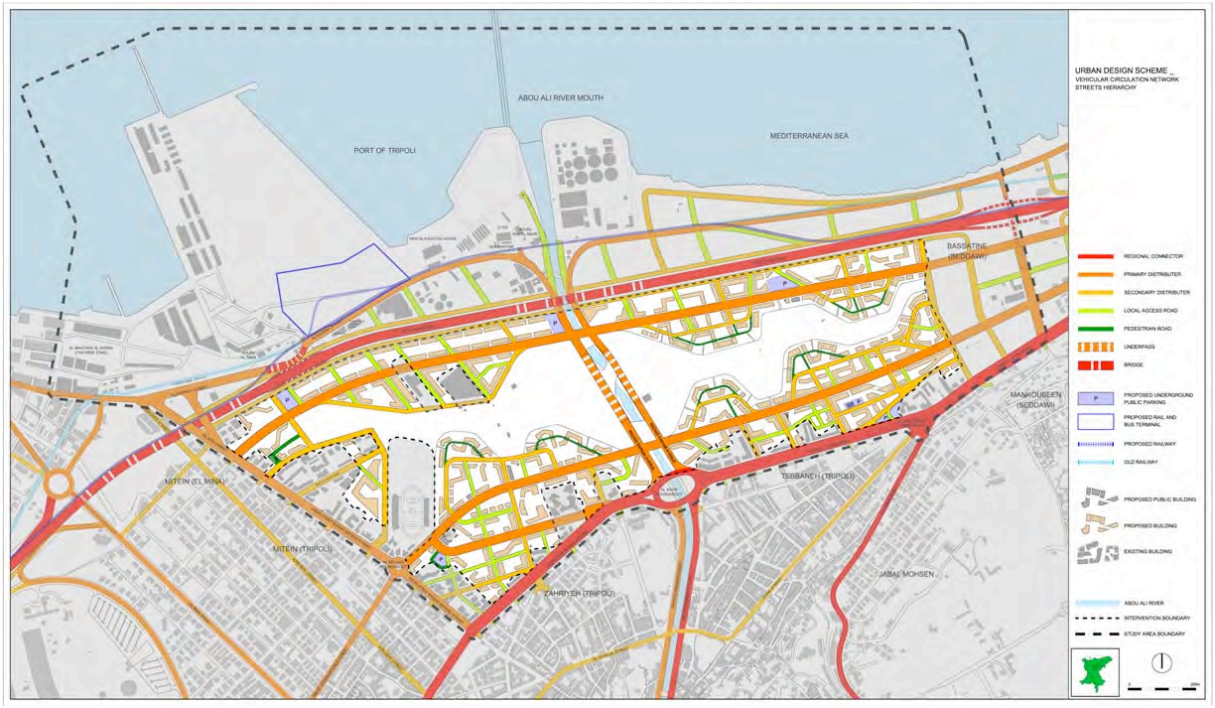

Map. 44. Proposed development: circulation network, streets hierarchy.
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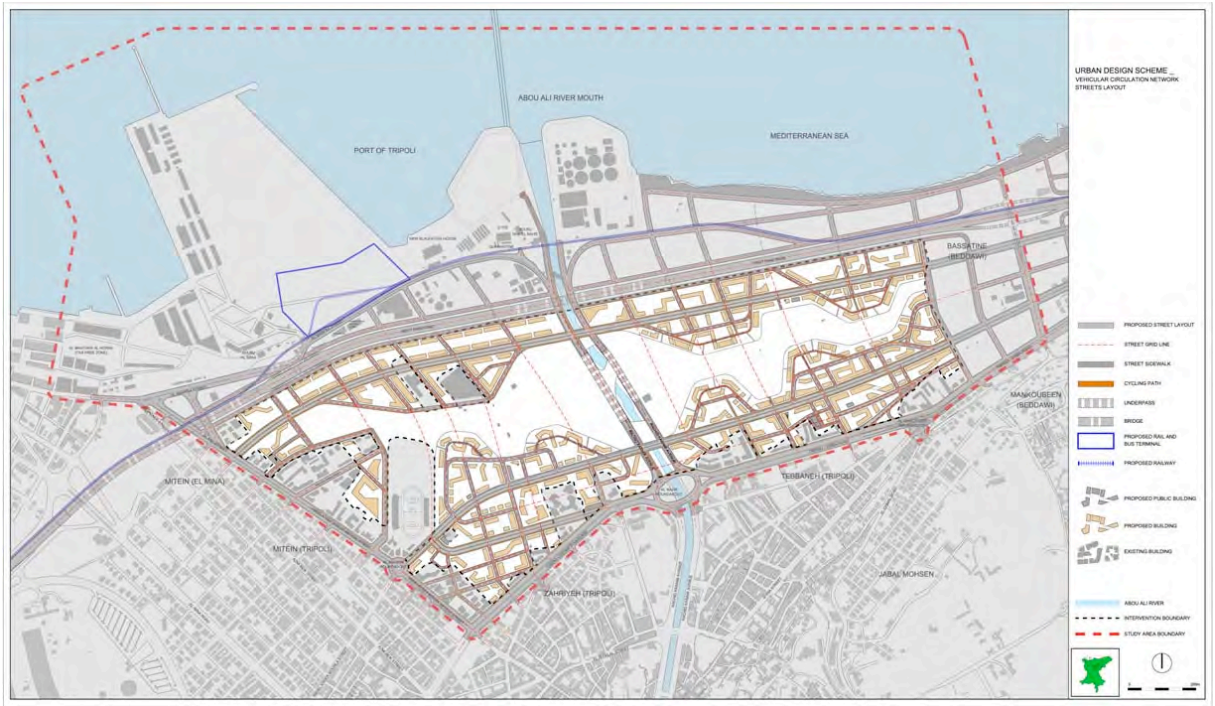
The proposed street network is classified into five categories according to their respective functions:

- Regional connector (Map.60)
- Primary distributor (Map.61)
- Secondary distributor (Map.61)
- Local access road (Map.62)
- Pedestrian road (Map.62)

The proposed street pattern is directed, to some extents, by the surrounding existing street patterns and it maintains a certain kind of permeability and continuity with the city's urban fabric (Map.45). Furthermore, and in order to reinforce the area's identity, a number of the proposed streets follow the existing pathway patterns (that are more or less regular), and bears their respective local names in the new scheme.

The resulting urban blocks are pedestrian and cyclist friendly. They are suitable for mixed-use walkable neighborhoods as well as for a variety of building typologies (Map.46). The relation between the proposed urban expansion and the central green corridor remains flexible allowing the green wedges to interact with and infiltrate into the new urban fabric. The variety of the block shapes and sizes that are adjacent to the central green area provides for a multi-direction building options benefiting from sea and mountain views, and maximizes the interaction between the urban fabric and the green center.

The way urban blocks and streets are designed encourages people to walk, cycle and use public transportation. All streets – except for the regional connector – are equipped with cycling paths, wide sidewalks and bus stops and underground parking spaces at strategic locations and within walking distances (Map.47).



Map. 45. Proposed development: circulation network, streets layout.
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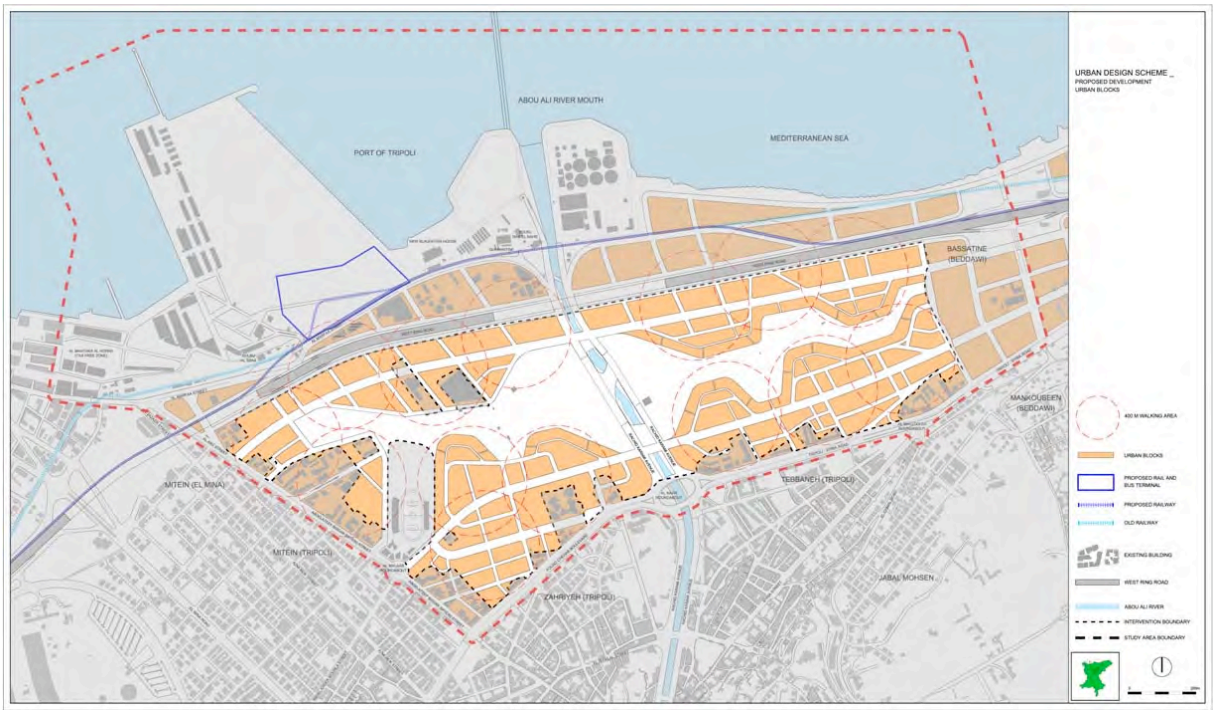

Map. 46. Proposed development: urban blocks. *Source:* by Author.

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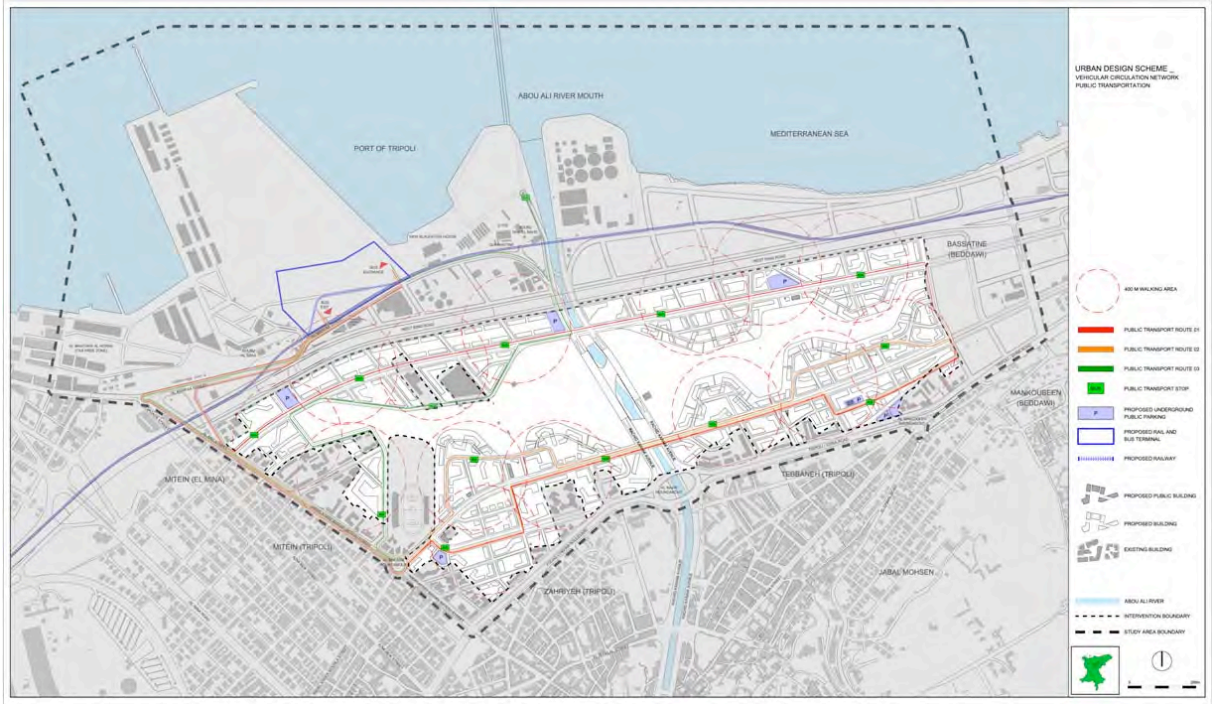

Map. 47. Proposed development: circulation network, public transportation.
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5.2.3.4. Development, Urban Massing and Proposed Land Uses

As mentioned earlier in the intervention strategy, landowners maintain their development rights. However, according to the proposed strategy, *Bassatine Al-Saqui Al-Shimali Development Agency* (BSSDA) has the right – according to the law – to develop the total area and the landowners will be rewarded either through development shares or through property ownership in the developed scheme.

According to the existing zoning code, within the intervention boundary there is a total of 1.368.049 sq.m of development rights (Map.48). The proposed design scheme (Map.49, 50, 51 & 53) redistributes this total development area within the new zones by respecting the following guidelines:

- Within Zone B2: maximum number of floors is 10 with exceptions at key locations, and the surface to area ratio (SAR) is 30% of the total private area (in zones B2, B3, B5 & B6).
- Within Zones B3, B5 and B6: maximum number of floors is 5 with exceptions at key locations, and the surface to area ratio (SAR) is 30% of the total private area (in zones B2, B3, B5 & B6).
- Within Zone B4: maximum number of floors is 3, and the surface to area ratio (SAR) is 35% of the total private area (in B4).

The proposed urban massing is inspired by Tripoli's heritage and the intricate geometric shapes of its urban fabric. It is a flexible urban form that provides a variety of choices for building typologies and at the same time, merges with the surrounding green open spaces. The resulting composition is an interesting and meaningful interaction between solid and void that overlaps, and in some cases contrasts with the urban block yielding a livable and active urban space. This interaction between the urban mass and

the open space creates a series of public and semi-public open spaces where a myriad of activities could take place. The overall proposed buildings' height within the high-density zones is a maximum of ten floors as stated earlier. However, a number of mixed-use and residential high-rise towers, that could rise as high as thirty and fifty floors, are carefully proposed at some key locations in a way that animates the urban realm and creates landmarks (Map.53).

The proposed land use plan of the design scheme (Map.52) shows the location of the different uses within the intervention area. It provides the urban infrastructure necessary for a sustainable neighborhood. For instance, community and religious centers are located in central areas and around public squares creating urban anchor points. A firefighting center and car service stations are located along the main primary distributers, and a number of public parking spaces are located under public gardens and public squares on the edges of the area along major arterial streets.

5.2.3.5. Open Spaces and Pedestrian Network

One of the main objectives of the design intervention is to preserve and restore the existing green spaces as well as to provide the area with high quality urban environment. The existing official public open spaces area in *Al Fayhaa* is 2.835.888 sq.m. However, most of these spaces are fragmented and scattered throughout the region with little ecological value. In addition, many of these areas are used as parking spaces for municipal utility vehicles. The area of the proposed public open spaces within the intervention boundary is 500.000 sq.m that is 18% of the total public spaces of *Al Fayhaa* (Map.54).

Map. 48. Proposed development: urban massing. *Source:* by Author.

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Map. 49. Proposed development: urban massing (with proposed densities).
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Map. 50. Proposed development: development footprints. *Source:* by Author.

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Map. 51. Proposed development: development footprints (with proposed densities).
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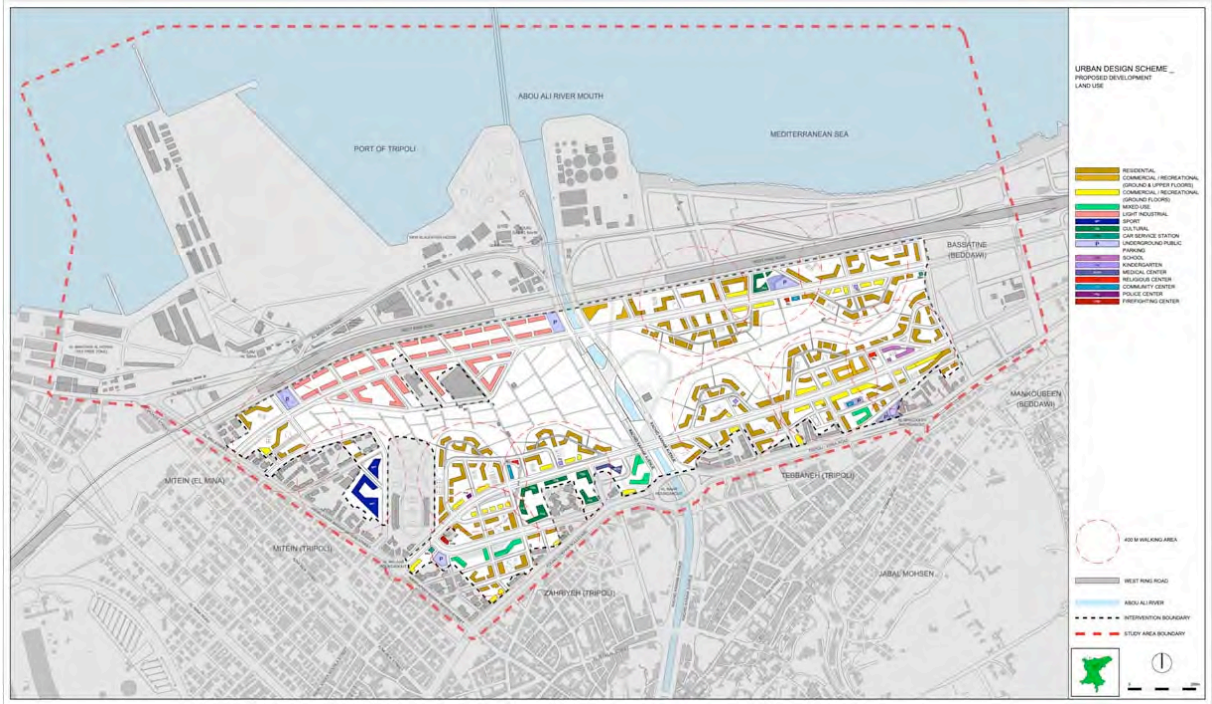

Map. 52. Proposed development: land use plan. *Source:* by Author.

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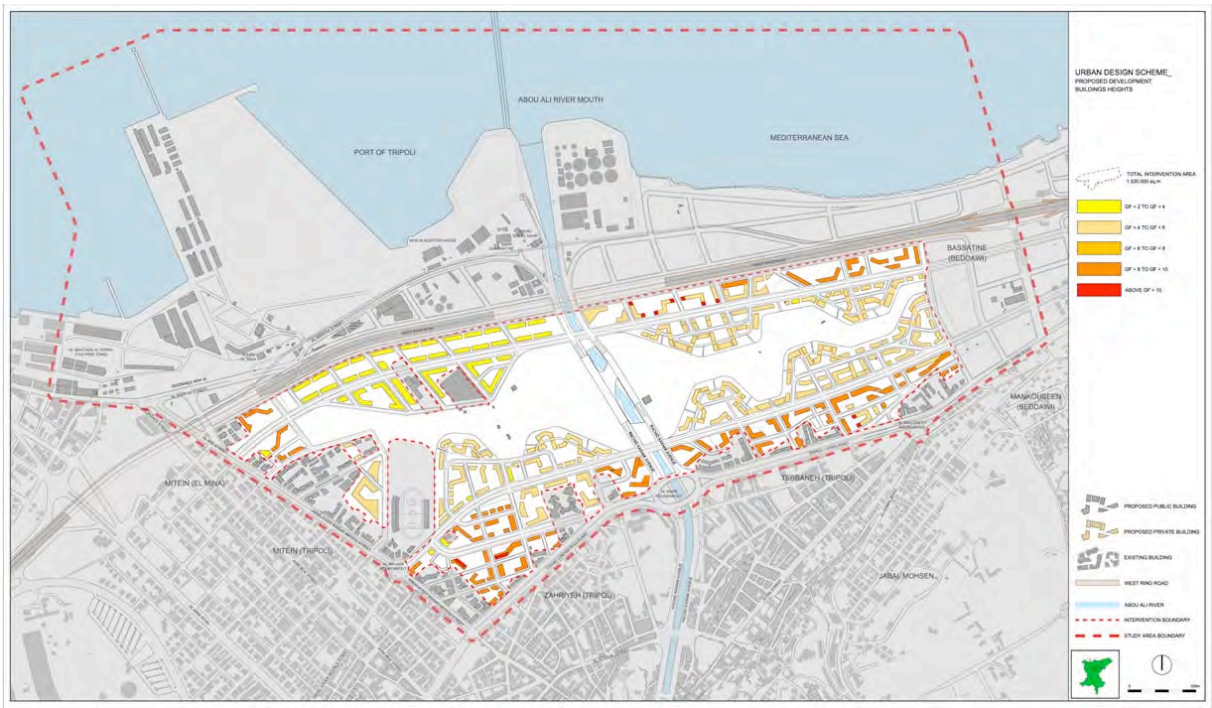

Map. 53. Proposed development: buildings heights. *Source:* by Author.

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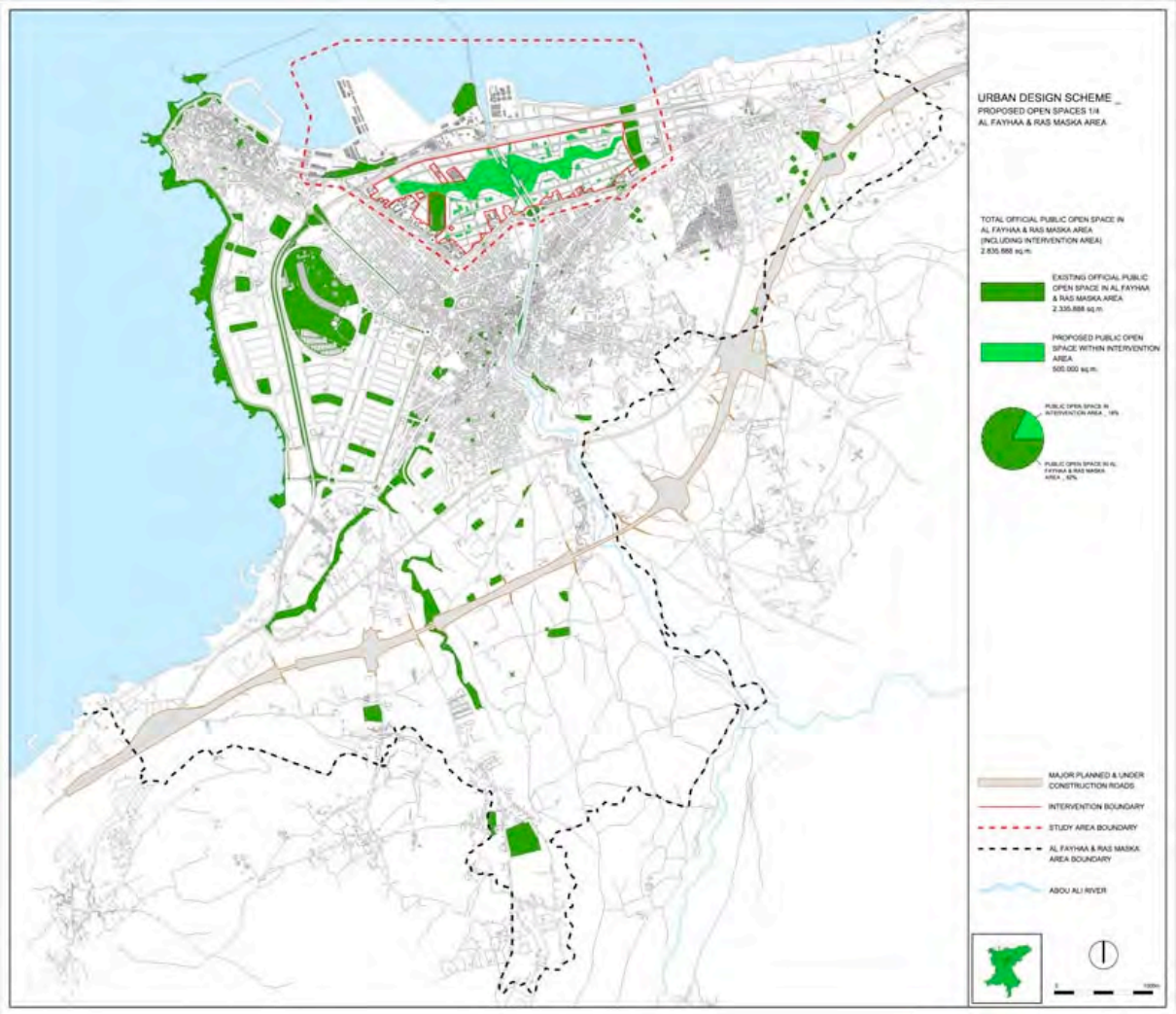

Map. 54. Tripoli and Ras Maska area: official public open spaces.
Source: by Author.

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These proposed open and green spaces (public and semi-public) represent 39% of the total intervention area, whereas the proposed development footprint is only 13% of the area (Map.50 & 56). If added to the existing official public open spaces within the study area, the total area of public open spaces becomes 714.692 sq.m that is 25% of the total public spaces of *Al Fayhaa* (Map.54 & 55).

The design scheme, and as part of the thesis vision, proposes to restore the old *Abou Ali* riverbed together with the existing canalized river as a north-south green pedestrian axis linking the city center with the proposed Waterfront Park in *Bassatine Al-Saqui Al-Shimali*. The canalized river is to be replaced with landscaped terraces, pedestrian promenades and green bridges connecting the separated orchards and forming the east-west axis of *Al-Saqui Al-Shimali Green Corridor* (Map.63). The existing dumpsite is to be reclaimed and transformed into a public urban park (Waterfront Park) overlooking the *Bassatine area,* the sea and the mountains.

Open and built up spaces are conceived as one coherent yet heterogeneous ecosystem where biological, ecological and cultural landscape diversity coexist and interact. Open spaces are classified into city-scale open spaces and local/neighborhood open spaces (Map.57). *Al-Saqui Al-Shimali Green Corridor* is a city-scale multifunctional public open space that includes agricultural as well as recreational spaces. It is the core of the preserved orchards and is divided into *Al-Saqui Al-Shimali Agricultural Fields* and *Al-Saqui Al-Shimali Urban Park*. This space is to be managed by the BSSDA in coordination with *Al Fayhaa Union of Municipalities,* which is responsible for ensuring the proper use of public spaces in the region and consequently the allocated agricultural and recreational spaces. As part of a city-wide urban agricultural program, this thesis proposes the establishment of an urban agricultural

association in which any city resident can participate and would have the right to rent a piece of land to grow food. Priority is given to citrus trees and other types of agricultural species specific to the area of *Al-Saqui Al-Shimali.* Incentives should be given to encourage people to grow these specific species. The agricultural and food produce could be cleaned, wrapped and processed in the adjacent Industrial zone before it is put to trade in the new nearby vegetable market.

This central corridor is connected with a network of smaller local open spaces throughout the intervention area. The edge between this corridor and the surrounding urban fabric is permeable and open at key locations for pedestrian and cyclist movements. The smaller open spaces are distributed within five-minute-walking distance and are designed to serve the multiple uses of the new built up spaces. They vary in size and character and include community gardens, children playgrounds, sport fields and public squares in addition to spaces that could accommodate local group displays and performances.

This system of open spaces is complemented by a network of pedestrian spaces, which consists of the totality of public and semi-public spaces and all the pathways linking them (Map.58). Unlike the vehicular network that defines the shapes of urban blocks, the pedestrian network is spread within and outside the blocks making these new neighborhoods more permeable and in favor of a pedestrian-oriented environment rather than a car-oriented one.

5.2.3.6. Expected Real Estate Values

If the proposed scenario were to be implemented, the expected real estate values in USD/sq.m, land prices would be as follows (Map.59):

- 2% of land properties, have prices around 6000 USD/sq.m
- 6% of land properties, have prices ranging between 1000 – 1500 USD/sq.m
- 10% of land properties, have prices ranging between 2800 – 3000 USD/sq.m
- 11% of land properties, have prices ranging between 1500 – 2000 USD/sq.m
- 23% of land properties, have prices around 4000 USD/sq.m
- 49% of land properties, have prices ranging between 3500 – 3800 USD/sq.m

Consequently, at least 72% of land properties in the area would have their projected prices, ranging between 3500 and 4000 USD/sq.m. This increase in real estate values, compared to Scenario 2 prices discussed earlier, is directly attributed to the proposed high quality urban environment and the maximized interface between this latter and the network of green public spaces.

It could be concluded from the above that protecting the Bassatine orchards as well as providing for necessary urban expansion is feasible through the implementation of "*Tripoli Green Corridors Network*" (Map.65). The connection between *Al Saqui Al Shimali Green Corridor* and *Abou Ali Ecological Corridor* re-links the city's urban environment with its natural and rural hinterland. Restructuring the urban fabric and re-appropriating land use based on the existing agricultural areas was possible as a result of adopting an integrated strategy that tackles social and environmental issues without disregarding the economical dimension.

Map. 55. North Bassatine area: existing and proposed public open spaces.
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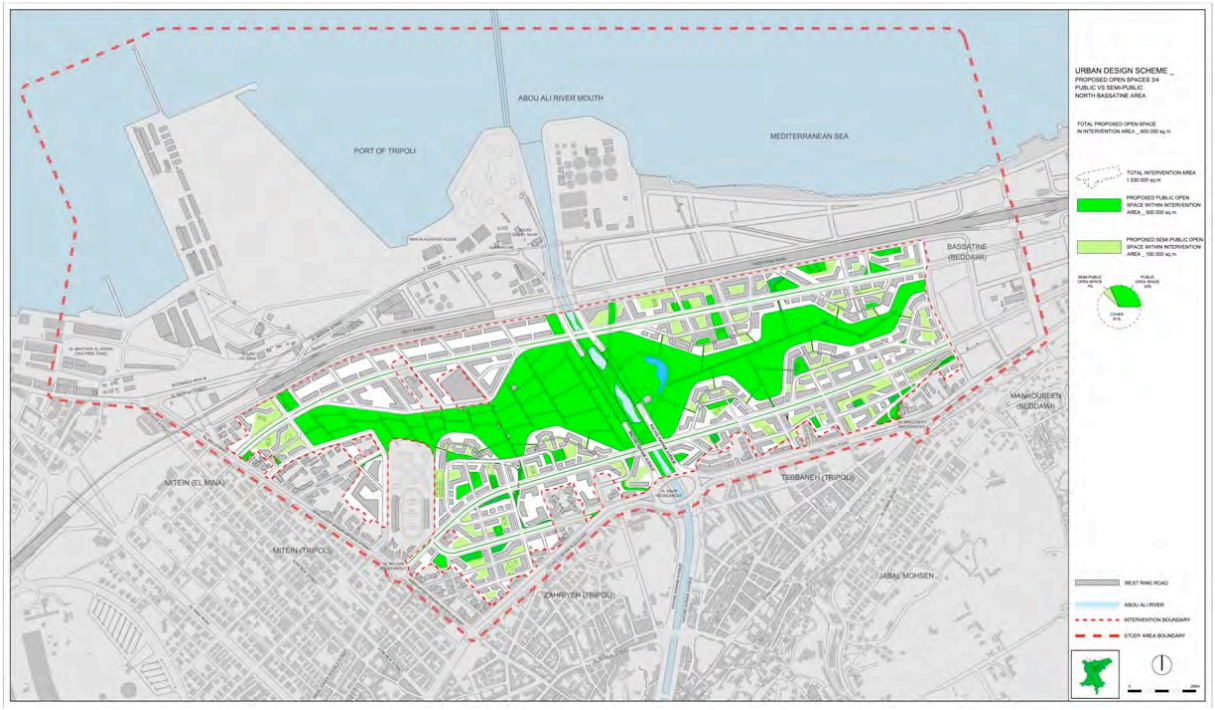

Map. 56. Proposed development: public vs. semi-public open spaces.
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Map. 57. Proposed development: typologies and uses of proposed open spaces.
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Map. 58. Proposed development: pedestrian network. *Source:* by Author.

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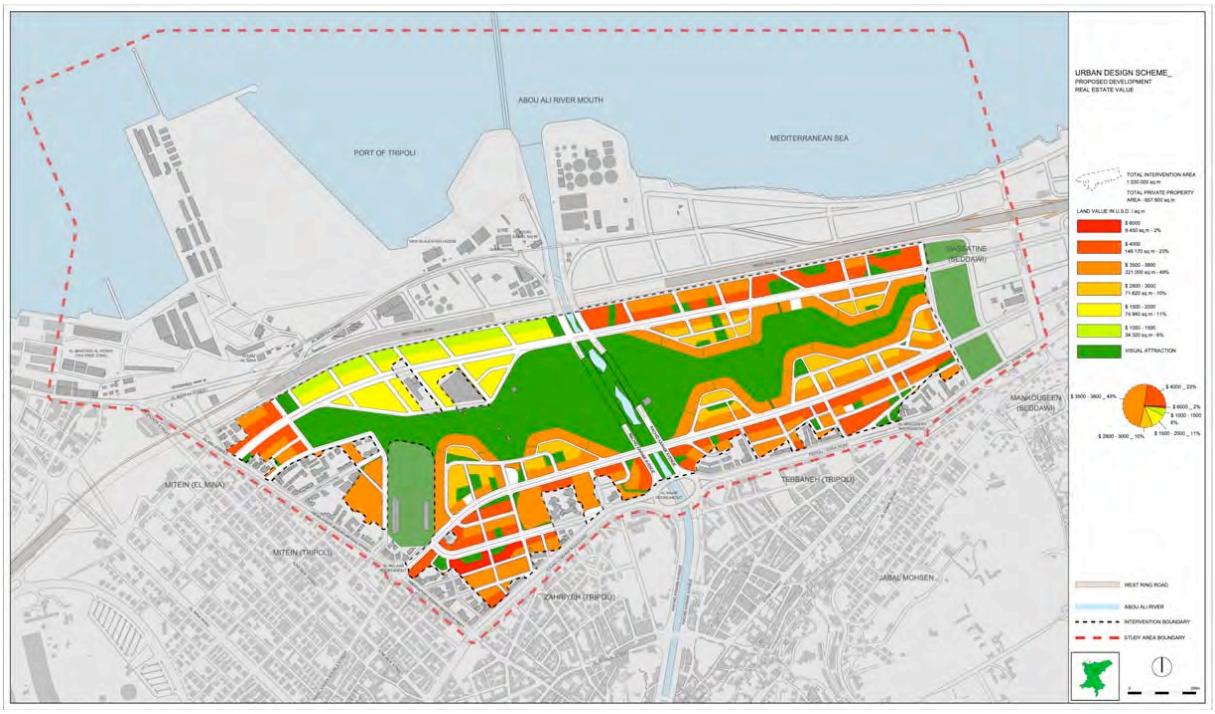

Map. 59. Proposed development: expected real estate values. *Source:* by Author.

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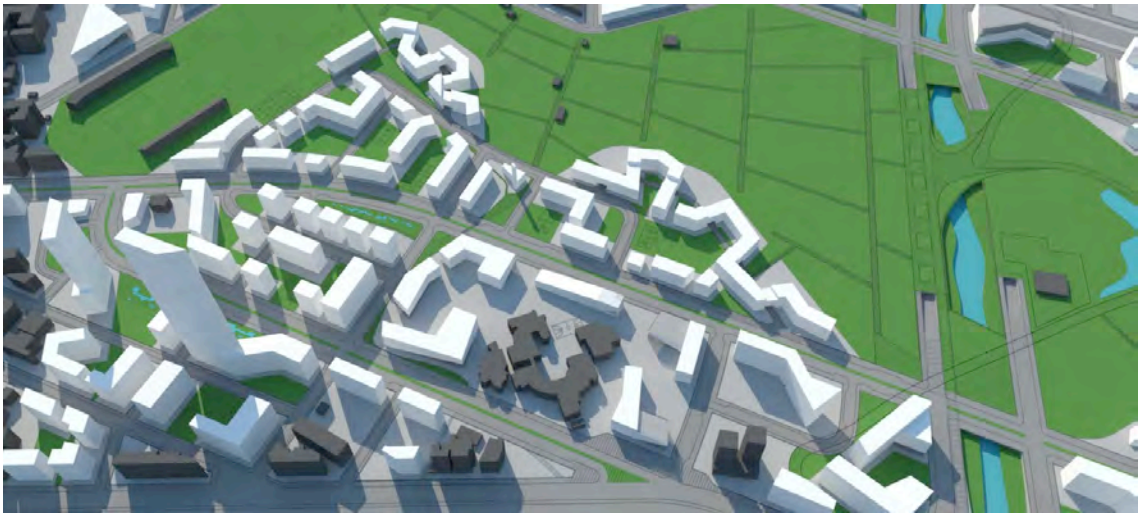


Fig. 62. Proposed development: view of southwestern area and part of Abou Ali Green Corridor. *Source:* by Author.

Fig. 63. Proposed development: view of southeastern area. *Source:* by Author.

Fig. 64. Proposed development: view of southeastern area. *Source:* by Author.

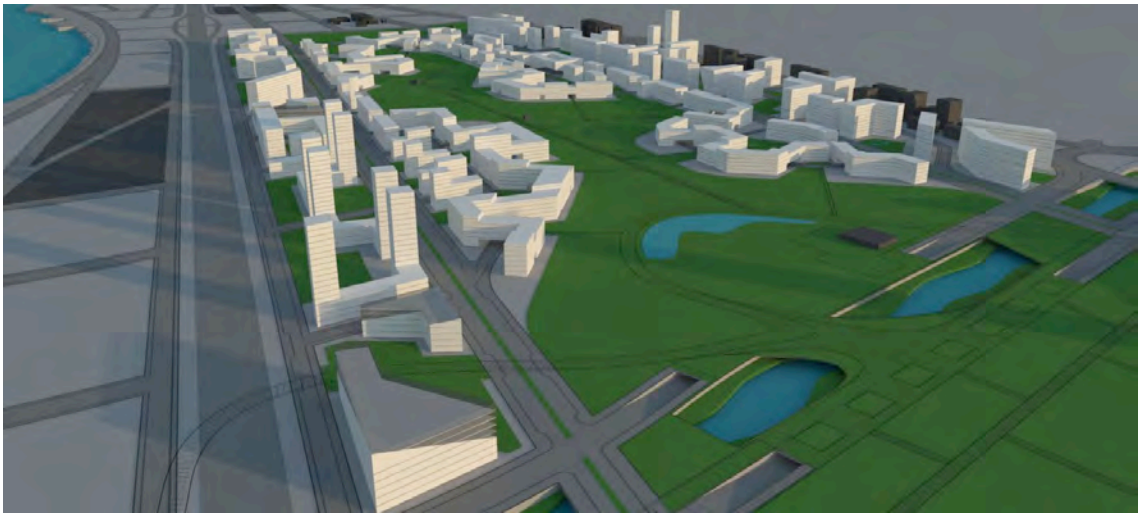


Fig. 65. Proposed development: view of eastern area and part of Abou Ali Green Corridor. *Source:* by Author.

Fig. 66. Proposed development: bird-eye view of southwestern area. *Source:* by Author.

Fig. 67. Proposed development: bird-eye view of northeastern area. *Source:* by Author.

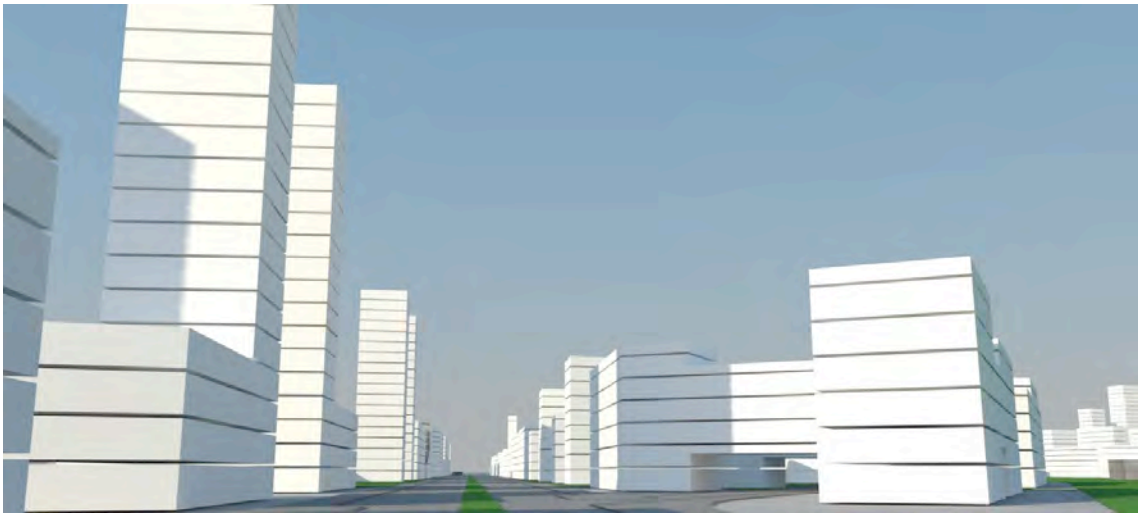


Fig. 68. Proposed development: street view of northeastern area. *Source:* by Author.

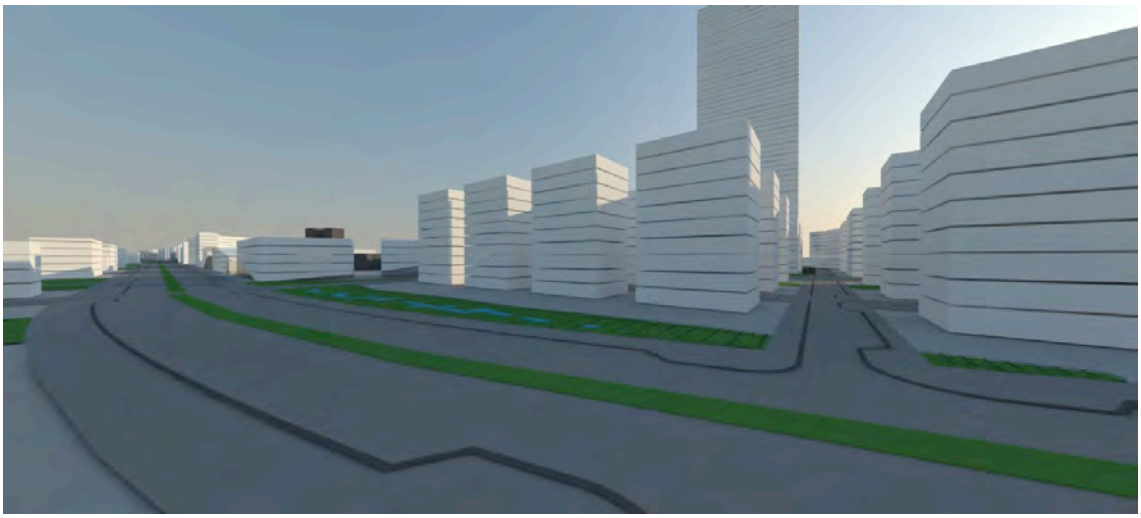


Fig. 69. Proposed development: street view of southwestern area. *Source:* by Author.

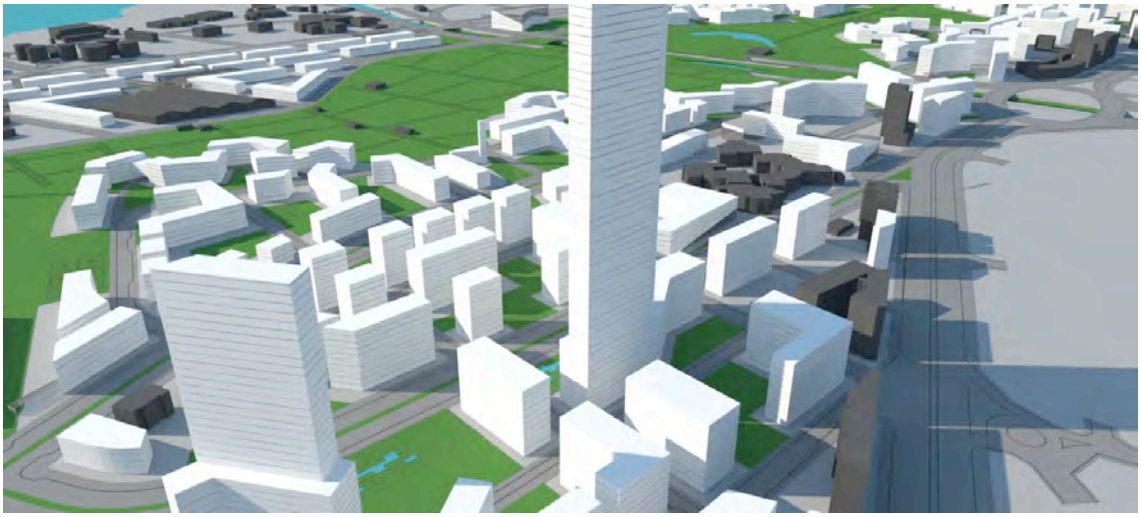
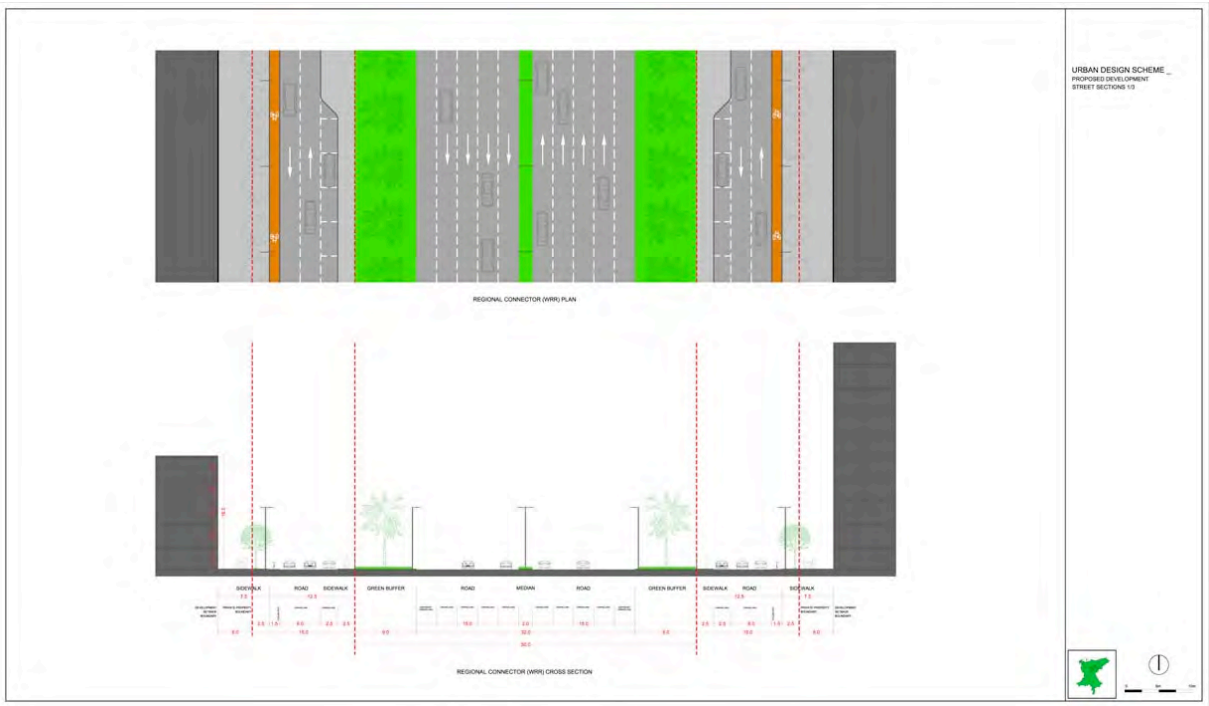


Fig. 70. Proposed development: bird-eye view of southwestern area. *Source:* by Author.



Map. 60. Proposed development: regional connector plan and section.
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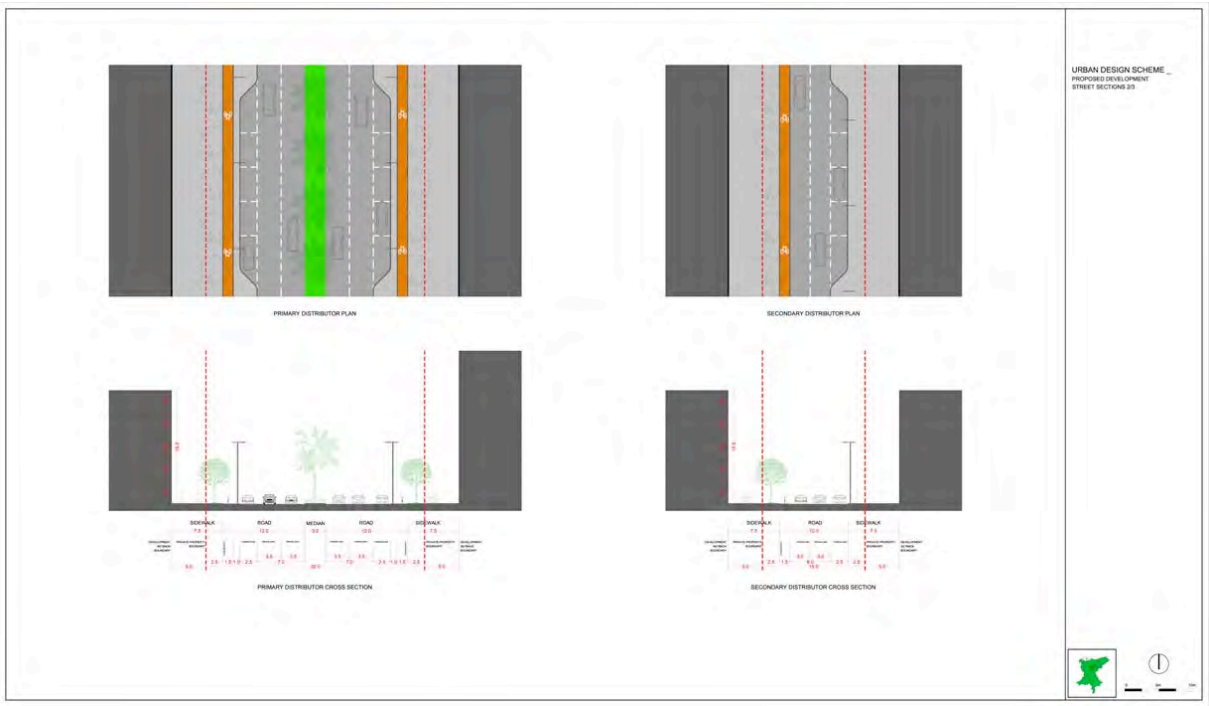

Map. 61. Proposed development: primary and secondary distributors plans and sections.
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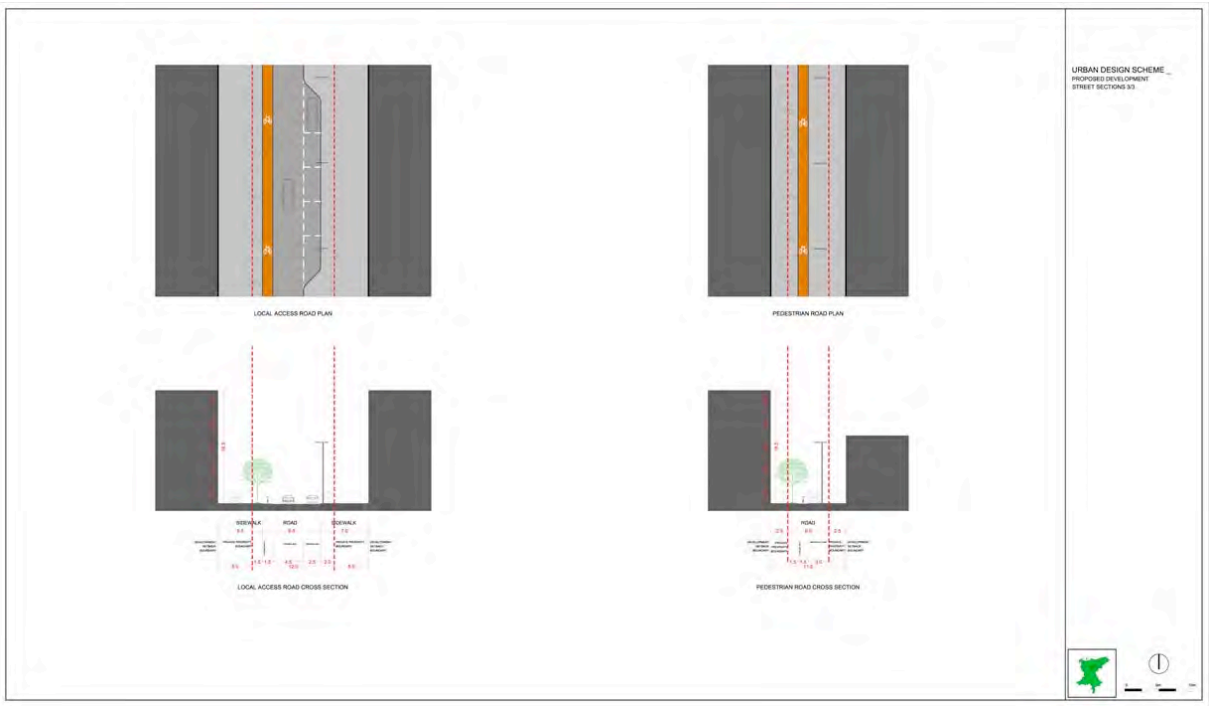

Map. 62. Proposed development: local access road and pedestrian road plans and sections.
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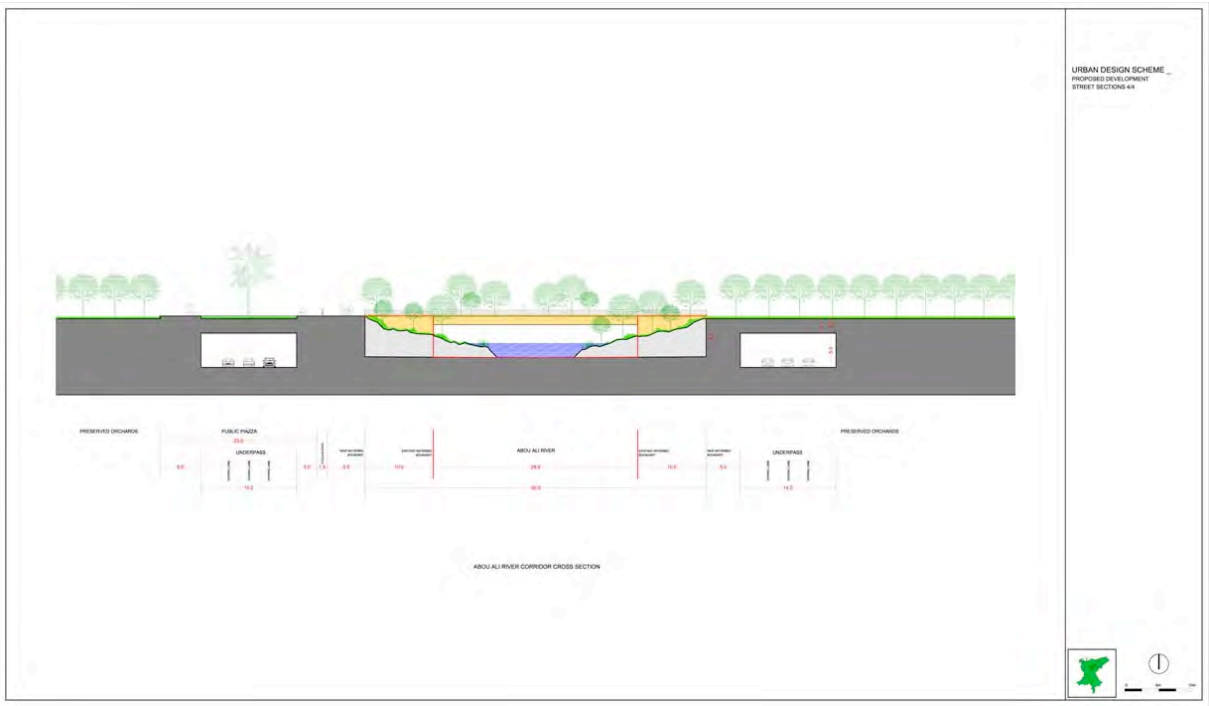

Map. 63. Proposed development: Abou Ali River Green Corridor section.
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Map. 64. Proposed development: general plan.
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Map. 65. North Bassatine area: Tripoli Green Corridors Network. *Source:* by Author.

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CHAPTER 6

CONCLUSION AND RECOMMENDATIONS

This thesis investigated the issue of urban sprawl at the expense of natural and open areas focusing on the Lebanese context. Urban design and planning become more challenging if development practices take place in an open market and laisser-faire setting. Unrestrained urban sprawl causes many social and environmental problems related to the quality of life, incompatible land uses, traffic congestion, pollution, loss of open green spaces, and fragmentation of ecological habitats.

Regulating urban expansion could be accomplished through a variety of planning mechanisms applied internationally throughout the world. Containment strategies include Urban Growth Boundaries (UGB), urban service areas, agricultural zoning, acquisition of conservation easements and transfer of development rights. Another planning tool that has been widely used in growth management is the greenbelt. This latter used in combination with UGB result in what is called the “push” factor that restricts development outside the specified urban boundaries. Whereas urban service areas (inside of which all the necessary urban services are provided) are used to act as “pull” factor to attract development inside the UGB.

In Lebanon, inappropriately planned urban growth result in the irreversible disappearance of agricultural and green spaces in the areas surrounding the coastal cities such as Beirut, Tripoli and Sidon. These cities, where more than half of the country’s population resides, are rapidly developing into high-density urban areas that suffer from overcrowding, traffic congestions, poor quality urban environments, and pollution. The

gravity and scale of the issue necessitates exceptional and radical change in approaching urbanization by planners and public authorities on all levels.

This thesis showed that a holistic ecological landscape approach is necessary in dealing with the issue of urbanization. The adopted approach is an inter-disciplinary one that encompasses the total urban landscape, and deals with its social, economical and ecological dimensions. This approach provides a balanced scheme of urban expansion as well as protection of green and agricultural areas. For this approach to be successful, it is necessary to link the different scales of planning: from the national to the regional scale and finally to the site-specific or local one. The higher levels of governments set general environmental and land use goals and policies while the regional or local authorities are responsible for detailing these goals and implementing them.

Knowing that urban expansion is inevitable, the case of *Bassatine Al-Saqui Al-Shimali area* in Tripoli proved the possibility of preserving the existing landscape value taking into consideration the need to provide for potential urban expansion. Such objective could only be achieved through an urban design scheme that is guided and backed by an integrative planning approach coordinated among the different scales of governance as stated above.

By exploring the available planning tools in the Lebanese context that regulate the development in *Bassatine Al-Saqui Al-Shimali area,* this research concludes the following results that were discussed in more details in the previous chapter:

1- If the area is left with no intervention, real estate market forces will open the door for uncontrolled chaotic urban sprawl in the form of ribbon development along the existing roads with rural character. The resulting

urban space would be closer to irregular informal settlements that lack open and green spaces. Only 4% of the total area will be dedicated to public/green spaces where the population is projected to count around 30.000 persons (2 sq.m of green area per capita).

2- If the area is put under the ordinary process of land subdivision, the projected scheme would result in an urban area where blocks and parcels are determined according to only two criteria: the planned roads, and the maximum possible economic profit by the landowners. The public gardens would be limited and fragmented throughout the area with very little ecological value. In this inappropriately planned subdivision scheme, public/green spaces would constitute only 8% of the total area (4,2 sq.m of green area per capita).

According to the these findings, the intervention with a more elaborate planning framework is necessary in the area of *Bassatine Al-Saqui Al-Shimali* in order to achieve the goal of preserving and restoring the significance of the ecological landscape of the northern orchards in addition to the objectives stated in the previous chapter. The proposed intervention is based on the establishment of BSSDA as the public agency in charge of managing the development and preservation of *Bassatine Al-Saqui Al-Shimali area.* The resulting preserved green area will be ten times more than it is projected in the “do nothing scenario”. It constitutes 600.000 sq.m that is 40% of the total area (20 sq.m of green area per capita).

The essential tool used in the planning framework is transferring development rights from the central preserved areas to the edges of the intervention area. This allows

the creation of a central preserved green corridor around which an inner ring of medium-density and an outer ring of high-density areas would develop.

This thesis vision is based on the spatial and temporal evolution as well as the balance between ecological, social and economical dynamics. Ecologically, it reaffirmed the specificity of Tripoli's landscape heritage not only by protecting the diversity of fauna and the patterns of flora, but also by restoring the processes that create these patterns including human land uses such as urban farming. Socially, it addressed the issue of urban morphology by creating equitable urban neighborhoods where a range of different housing options and a variety of transportation choices are available, and places where compatible mixed uses allow for an array of different job opportunities for all social classes. Economically, this vision takes into consideration the market-oriented setting of urban development, thus capitalizing on the attractiveness of green open spaces as asset for real estate development.

Accordingly, the adopted design intervention proved that it is feasible to manage the urban sprawl in the area of *Al-Saqui Al-Shimali* by privileging an integrated urban design approach necessarily supported by a holistic planning strategy and vision.

This thesis helps in understanding the importance of the landscape dimension in the field of urban design. It shed light on emerging approaches such as landscape ecology and urban ecology that are operating on the boundaries between ecology and the environmental design professions namely urban design and planning. Tackling social, economical and environmental issues necessitates filling the gap between ecological landscape and urban design and planning.

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