Urban Regeneration of the port of Beirut

Master's Thesis in Architecture for the Sustainability Design

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And lastly, to our Beloved Beirut, our undeniable bond will never fade away no matter where we go, we will always look after you and try our best to make you again a better place.

With love,
Soha and Mohamad

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Acronyms

- **ADPRDM:** Abu Dhabi's Public Realm Design Manual
- **BBB:** Build Back Better
- **BCD:** Beirut Central District BCD
- **BURA:** British leading independent urban regeneration association.
- **CABE:** Commission for architecture and the Built Environment
- **DGA:** Directorate General of Antiquities also known as La Direction Générale des Antiquités et des Musées is a Lebanese government directorate, technical unit of the Ministry of Culture and is responsible for the protection, promotion and excavation activities of all Lebanese national heritage sites.
- **DPNA:** Development for People and Nature Association
- **EU:** European Union
- **GCC:** Gulf Cooperation Council
- **HHG:** HafenCity Hamburg GmbH
- **IRC:** International Rescue Committee
- **KPIs:** Key Performance Indicators
- **LBP: Lebanese** Pound
- **MSW:** Maritime Single Window
- **NGOs:** non-governmental organizations
- **NRC:** Norwegian Refugee Council
- **PoB:** Port of Beirut
- **PPE:** personal protective equipment
- **RDNA:** Rapid Damage and Needs Assessment
- **SMEs:** Small and medium-sized enterprises
- **SIA:** Social impact assessment
- **SWOT:** strengths, Weaknesses, Opportunities, and Threats
- **SIPOC:** Suppliers, Inputs, Process, Outputs and Customers.

- **TGW:** TorgeGaaWerker Architekten
- **UN:** United Nations
- **UNHCR:** United Nations High Commissioner for Refugees
- **VASyR**: vulnerability Assessment of Syrian Refugees
- **WBG:** World Bank Group
- **WHO**: World Health Organization

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Abstract

On August 4, 2020, a massive explosion in the Port of Beirut devastated the city, killing at least 200 people, wounding thousands, and displacing around 300,00, injuring over 7,000 others, causing US$3.8-4.6 billion in material damage. (World bank, 20)

The onset of COVID-19 exacerbated an already severe financial crisis that was already affecting Lebanon. The explosion exposed the instability and inconsistent development plans of Beirut. This thesis looks at how the explosion affected Beirut's social, economic, and urban settings, with a focus on the city's destroyed port. It also looks at how the aftermath was managed and how private organizations played a crucial role in restoration efforts. In the months that followed, several plans and proposals—many with foreign and international sponsorship—were made to imagine a future for the Beirut Port and its immediate surroundings that would place more of an emphasis on development than on recovery and preservation. To provide the divided city of Beirut with a redevelopment and reconstruction geopolitical and local policies for the port of Beirut, the study is organized by the findings from the literature, which also provided a framework of the fundamentals of successful urban regeneration policies. The evaluation focuses on the long-term implementation of urban policies as well as their logic, impact, and effectiveness. Besides that, it specifically examines and compares successful examples and frameworks in other cities and similar context cities in history with urban/social disruptions, evaluates current planning initiatives, analyzes the case study of the recent World Bank report on reforming Beirut port, and conducts interviews with local stakeholders. The masterplan proposal at the end of the thesis tests the feasibility and clarifies an application of the research conclusions and gives guidelines for local actors and future vision that can improve the city of Beirut holistically.

keywords: Beirut - explosion- port- city- urban regeneration- sustainability future port – waterfront renewal – social renewal - Inclusive- economic development- participation

"This eradication caused a distortion in the sociocultural ***Beirut*** *framework and a* ***huge gap in people's*** *everyday public lives. The post-war efforts to rejoin the* ***divided city*** *and reinstate its public spaces were limited to unrealized intentions. Beirut's few public spaces* ***struggled to regenerate*** *or else changed their publicness according to their disposition in the city" (Madi, 2014).*

*“The **happiest depressed** people you'll ever meet” (Lebanon protest slogan)*

*"The **explosion** has had a major political impact on **the country** and its people, leading to more divisions and a certainty that the current ruling parties **cannot** be trusted to **provide safety** and **security** for the local population," "I will never give up on this **city**"*
(Doreen Toutikian, founder of Beirut Design Week)

Chapter 1:

1.1- Introduction

The explosion at the Beirut Port on August 4, 2020, marked a turning point in the histories of Beirut and Lebanon. The majority of Beirut's grain stockpiles' silos, as well as a sizable portion of the port's infrastructure, were destroyed. In addition to five important hospitals, several nearby residential neighborhoods were also damaged by the blast. The majority of government buildings also sustained damage. The Medawar, Karantina, Al Badawi, Mar Mikhael, Rmeil, Gemayzeh, were all affected by the catastrophe. Along with St. Nicolas neighborhoods, areas can be found in Burj Hammoud, Ashrafieh, Bashoura, and Zuqaq El Blat.

More than 6,000 structures were destroyed, causing complete or partial destruction and displacing tens of thousands of people as it spread to other parts of the city, killing more than 200 people and injuring hundreds more. In response to this tragedy, numerous professionals, researchers, businesses, government agencies, and NGOs have organized their efforts. In the current turbulent and unstable socio-political environment created by the blast of the 4th of August, Beirut has been impoverished by a series of mismanagements, even with the help of international and national organizations.

The aftermath of the explosion presents an opportunity to reconsider the connections between a number of crucial aspects of city planning, including but not limited to: the relationship between the city itself and other suburbs, the historical city center, the waterfront, the absence of local planning and cross sectorial master plans; the preservation of the heritage versus the complexity of its urban development; the city growth and increased haphazard urbanization; the infrastructure/service systems that have evolved over time. (Aouad & Kaloustian, 2021).

The lack of regional planning and interdisciplinary master plans led to the formation of clusters within the city of Beirut . The city center, isolated from the waterfront and coast, became one of them. Furthermore, the conflict between the desire to protect heritage and the complexity of urban development has resulted in urbanization and urban sprawl, infrastructure and service systems becoming increasingly sparse over time with cumulative and detrimental effects on the quality of urban life, the lack of public space's negative effects on the urban climate, urban fragmentation, and inequality were further exacerbated after the bombings (Aouad and Kaloustian, 2021).

Chapter 2: Thesis framework: Beirut Lebanon post Blast 04 August 2020

2.1- The Problem addressed by thesis

In Lebanon, there is no such thing as urban policy as a distinct subset of public policy.

Lebanese laws hardly ever use the word "urban" in their language. Identifying and creating urban policies that serve as guiding frameworks for economic development and urban planning and design will be extremely difficult considering this.

The city center was rebuilt after the war by a private land company, but whose interests were public. Here and now, the Lebanese people refuse to integrate public order in the reconstruction of the affected neighborhoods, and resist. The bet is therefore made: what reconstruction for tomorrow’s Beirut?

Based on this main problematic a sequence of sub-questions must be answered first.

1- How this explosion impacted the city at various levels (economically, socially, urban impact, health, and environmentally)
2- How can we learn from previous rebuilding project in Lebanon?
3- How this explosion can be an opportunity to re-shape the city in a better way, more socially sustainable, inclusive...?
4- What are the successful strategies of a good urban regeneration according to theorists? And how can we learn from it in the case of Beirut?
5- What further improvements can be recommended for the urban regeneration in Beirut?
6- How can the waterfront contribute to the social sustainability development of the city overall?

2.2- Aim and Objectives:

The aim of this study is to lay the groundwork for the reforms required to turn the Port of Beirut into a productive economic center for Lebanon, in additional to that enabling Beirut to recover from the blast and regain its resilience with the aid of a mixed strategy that addresses a variety of sectors in geographically constrained areas with cities, places culture heritage at the forefront of the reconstruction process by incorporating cultural heritage into place and people-based policies, and finance urban reconstruction.

Hoping that the proposed local policies to rebuild and regenerate the Port and its Spaces and makes it a starting point for new urban planning and serve as a guide for investors and policymakers alike.

2-3- Research Hypothesis:

This Master's Thesis hypothesizes that the appropriate action of urban regeneration process after the blast will solve many problems in Lebanon in general and in Beirut specifically. Thus, the study considers the explosion as a big opportunity to rebuild the city following a more sustainable strategy that increases the potentiality of a resilient city, community oriented, inclusive, economically developed and environmentally friendly.

2.3- Methods and tools of the research

To conduct the research enough correlating data was needed for this thesis, like scientific articles, online websites documentaries, interviews with local stakeholders, journals, scientific books, Cartography.

The research is split into four major parts: Literature review where the researchers start by reviewing the current situation at the port and the city of Beirut as well as anticipated demand and throughput.
Theoretical part about Urban regeneration and urban Waterfront regeneration, main overviews, and useful experiences for the case of Beirut.

Then, the sociological part where the researchers will employ qualitative techniques in an unstructured interview to help clarify, comprehend, and explore the beliefs, actions, experiences, and phenomena of the research participants.

And the practical part where they create practical options and a strategic plan for developing the port based on a site analysis and previous investigations.

Part 1: Beirut, Lebanon pre & post blast Situation.

Chapter 3: Lebanon to Beirut overview

3.1- Territorial Context: The Mediterranean Sea and its cities:

An inland sea surrounded by the Mediterranean Sea, Europe, Africa and Asia. It averages about 2,500 miles (4,000 km) from east to west and about 500 miles (800 km) from north to south.

The Mediterranean Sea covers approximately 970,000 square miles (2,510,000 square kilometers). The maximum depth is about 16,000 feet (4,900 m). To the west, the Strait of Gibraltar connects the Mediterranean and Atlantic Oceans. In the northeast, the Sea of Marmara, the Dardanelles and the Bosphorus are connected to the Black Sea. The Suez Canal connects the Mediterranean Sea with the Red Sea to the southeast. The ridge of the sea floor between Sicily and Africa divides the seas into eastern and western divisions, into the Adriatic Sea, the Aegean Sea, the Tyrrhenian Sea, the Ionian Sea and the Ligurian Sea. The largest islands are Mallorca, Corsica, Sardinia, Sicily, Crete, Cyprus, and Rhodes. The rivers Rhone, Po and Nile form the only major delta (Salah, 2022).

The average depth of the Mediterranean Sea is 1,500 m, and its length from east to west is about 4,000 km from the Strait of Gibraltar to the Gulf of Iskenderun on the southeast coast of Turkey. The north-south length varies greatly depending on the coastline. Also, including variations in longitude, the average north-south distance between Croatia and the southernmost coast of Libya is about 800 km.

The Mediterranean Sea is very inclined due to the different gulfs: the Gulf of Lyon, the Gulf of Valencia, the Gulf of Genoa, the Gulf of Sicily, the Gulf of Trieste and the Gulf of Haifa. Except for many large islands. Eastern Mediterranean: Cyprus, Crete, Euboea, Rhodes, Lesbos, Chios, Kefalonia, Corfu, Limnos, Samos, Naxos, Andros. Central Mediterranean:

Sicily, Cres, Krk, Brac, Hvar, Pag, Korcula and Malta. Western Mediterranean: Sardinia, Corsica and the Balearic Islands (Boxer & Salah, 2019).

Figure 2 *Picture of Protaras - Cyprus, Kavo Greko (Antigoni Karakoulli, 2020)*

The Mediterranean Sea is well-known for being a vital historical commerce route and a driving force behind the development of the region around it. The Mediterranean Sea region has a rich and illustrious history dating back to ancient times. Archeologists have uncovered Stone Age artefacts along its beaches, and it is thought that the Egyptians began sailing on it about 3000 B.C.E. The Mediterranean was used by the early inhabitants of the region as a commerce route and a mean of migration and colonization of other areas. As a result, the sea was ruled by variety of ancient civilizations. The Minoan, Phoenician, Greek, and later Roman civilizations are among them.

Furthermore, with the opening of the Suez Canal (built in 1869) , the Mediterranean Sea became a key strategic site for several European nations, prompting the United Kingdom and France to establish colonies and naval stations along its coastlines. The Mediterranean is becoming one of the world's busiest seas. There is a lot of trade and shipping traffic, and there is a lot of fishing activity going on in its waters. Furthermore, tourism contributes significantly to the region's economy due to the region's climate, beaches, cities, and historic monuments (Salah & Boxer, 2019).

The Mediterranean ports are used in a variety of ways. Ports such as Valencia and Algeciras in Spain, Tanger-Med in Morocco, Marsaxlokk in Malta, and Damietta, Port Said, and Alexandria in Egypt serve as transshipment hubs not only for freight moving throughout the Mediterranean region, but also as a connector to ports as far away as the Americas and the Far East. Other ports, such as Genoa and Marseille, connect to Northern European markets and serve their own industrial "catchment" areas (Lauriat, 2019).

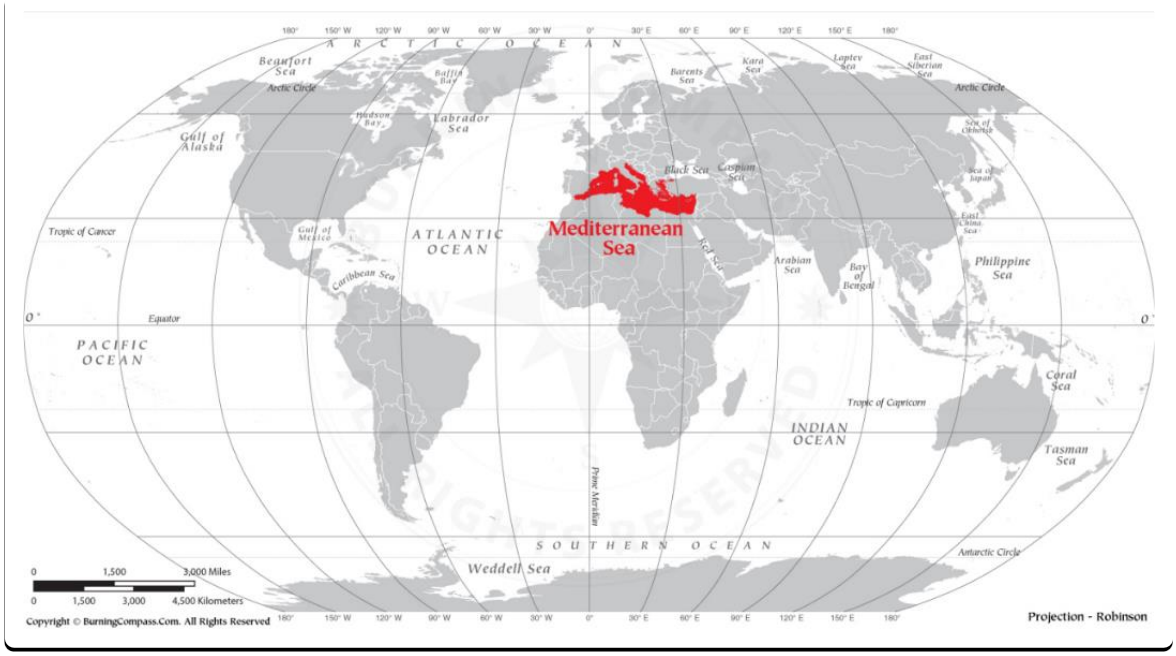

Figure 3 Mediterranean Sea on World Map HD (Robinson, 2022).

As we can see, the Mediterranean region comprises three continents: Europe and the peninsula from south to north, Asia from southwest to east, and the Maghreb region of North Africa to the south. Overall, it is a densely populated area with a complex political history involving various ethnic groups. The result is a complex and fragmented political map. Today, the Mediterranean Sea has coastlines from 21 countries, with an area between 2 km2 and 2.4 million km2. Albania, Algeria, Bosnia and Herzegovina, Croatia, Cyprus, Egypt, France, Greece, Palestine, Italy, Lebanon, Libya, Malta, Monaco, Montenegro, Morocco, Slovenia, Spain, Syria, Tunisia, Turkey (UN Enviroment programme, 2017).

Below, a list of the major Mediterranean cities located on the Mediterranean Sea coast: (figure 4)

1) Alexandria, Egypt, 4,546,231 inhab.
2) Algiers, Algeria, 3,415,811 inhab.
3) Rome, Italy, 2,866,793 inhab.
4) Izmir, Turkey, 2,847,691 inhab.
5) Beirut, Lebanon, 2,226,000 inhab.
6) Tripoli, Libya, 2,127,000 inhab.

# Port	Country	2018 TEUs	2017 TEUs	# Port	Country	2018 TEUs	2017 TEUs
1. Valencia	Spain	5,104,000	4,832,136	11. Port Said	Egypt	2,610,000	2,528,000
2. Algeciras	Spain	4,772,000	4,380,849	12. Alexandria	Egypt	1,757,000	1,589,000
3. Marport	Turkey	1,591,983	1,711,357	13. Haifa	Palestine	1,464,000	1,343,000
4. Piraeus	Greece	4,908,000	4,060,000	14. Ashdod	Palestine	N/A	1,525,000
5. Gioa Tauro	Italy	2,301,000	2,448,570	15. Beirut	Lebanon	1,300,000	1,305,038
6. Marsaxlokk	Malta	3,310,000	3,150,000	16. Marseille-Fos	France	1,400,000	1,362,204
7. Genoa (Savona - Vado)	Italy	2,609,000	2,622,187	17. Izmir-Alsancak	Turkey	610,908	610,908
8. Barcelona	Spain	3,423,000	3,006,872	18. Tanger-Med	Morocco	3,472,451	3,312,409
9. Mersin	Turkey	1,723,000	1,591,983	19. Damietta	Egypt	1,150,132	1,131,226
10. La Spezia	Italy	1,543,000	1,473,571	20. Koper	Slovenia	988,501	911,528

Figure 4 *Mediterranean Sea– Competition Pushes Expansion - Graphics managed by authors.*

7) Mersin, Turkey, 1,773,852 inhab.

8) Barcelona, Spain, 1,620,943 inhab.

9) Antalya, Turkey, 1,203,994 inhab.

10) Nice, France, 1,005,230 inhab.

11) Naples, Italy, 959,574 inhab.

12) Marseille, France, 850,726 inhab.

13) Valencia, Spain, 809,267 inhab.

14) Tangier, Morocco, 793,776 inhab.

15) Thessaloniki, Greece, 788,952 inhab. (Lang'at Junior, 2018)

Figure 5 *Major Mediterranean Cities - Graphics managed by authors.*

The Mediterranean ports are used in a variety of ways. Ports such as Valencia and Algeciras in Spain, Tanger-Med in Morocco, Marsaxlokk in Malta, and Damietta, Port Said, and Alexandria in Egypt serve as transshipment hubs not only for freight moving throughout the Mediterranean region, but also as a connector to ports as far away as the Americas and the Far East. Other ports, such as Genoa and Marseille, connect to Northern European markets and serve their own industrial "catchment" areas (Salah & Boxer, 2019).

From an environmental and commercial standpoint, the Mediterranean is one of the world's most valuable waters. With 17 percent of known marine mammals present in a region covering less than 1% of the world's oceans, it is home to a diverse range of ecosystems and species. The Mediterranean Sea is also an important source of employment and plays an essential role in the economies of its neighboring countries. In the Mediterranean, it is estimated that 420,000 people work in fishing and aquaculture, with another 550,000 in maritime

transport. Its coasts also receive 30% of all international tourist arrivals.(International Tourism Receipts, 2015 Source UN-WTO)

Figure 6: *Picture of Cruise liner near Salerno Amalfitan coast in Italy (Nata Rass, 2018).*

3.2- Lebanon To Beirut

Lebanon is a small Arab country situated on the Asian continent. Since it formed the link between the Arab world and Europe, its location on the Mediterranean Sea has always been an asset. Because it contains 18 confessions, it has the most diversified population among Middle Eastern countries. This religious diversity is a result of Lebanon's long history, which dates back to prehistory and continues now. Over time, the territory was inhabited by Phoenicians, Romans, Greek Arabs, Crusaders, Ottomans, and French. Since 1975, Lebanon has been engulfed in a 15-year civil conflict fueled by religious divisions as well as foreign meddling.

The Civil War resulted in the destruction of cultural legacy, particularly in Beirut, the capital, which was primarily the scene of conflict for the majority of

the war's duration. Many of the surviving historical sites were damaged and replaced by modern buildings rather than being renovated at the end of the conflict. A masterplan was created to restore and redevelop a large region in the centre of Beirut, dubbed the Beirut Central District BCD at the time (Yammine, 2011).

3.3- Beirut main Historical overview:

Humans have left their mark on the Middle East since the earliest prehistoric times. Where Beirut grew up is no exception. Excavated at Ras Beirut, northwest of the Lower Promontory, Acheulean double-edged tools date from 600,000 BC. At this time, at the end of the Lower Paleolithic, the two largest hills of the present city were islands, and the mouth of the river flowing into the Mediterranean Sea was at Furn al-Shubbak, at its southeastern tip. The Cape as we know it today was formed in the Middle Paleolithic with sand dunes and sandstone substrates. However, despite the fluctuations of the river and other adaptations, traces of people can be found from all prehistoric times. In addition to about a dozen settlements found at Ras Beirut, other settlements were found at Furn al-Shubbak, Sinn al-Fil and Antelia, where Upper Paleolithic human skeletons were found (Kassir, 2010).

Since then, this area appears to have been uninhabited. Late Paleolithic to Mesolithic (c. 10,000-8,000) left traces of numerous open-air settlements in the sands south of Beirut in the Levant, identified with numerous flint artifacts and broken debris. However, the Neolithic revolution was not far away. Originally from the Euphrates-Phrynia countries, it quickly spread to the Mediterranean coast. In Beirut, in the late 1940s, traces of Neolithic villages were discovered under Roman settlements on the site of Beirut International Airport. Other Neolithic remains were also found in the heart of the modern city, between the Martyrs' Square and the sea.

The flint at Rauche Rocks opposite Pigeon Rock attests to a Chalcolithic (4000 BC) settlement contemporary with the Byblos catalog site.Soon after, at the end of the 4,000 and beginning of the 3,000 years, the Fertile Crescent saw the emergence and history of writing.

During this second revolution, cities appeared on the eastern shore of the Mediterranean, known as the Land of Canaan (Kassir, 2010).

***Figure** 7 Map of Lebanon - Graphics managed by authors.*

3.3.1 Beirut the capital:

With a population of over two million people, Beirut is the country's largest metropolis. It is surrounded by mountains and overlooks the Mediterranean Sea. The coast of the city is diversified, with rocky beaches, sandy coasts, and cliffs coexisting. The city has Mediterranean climate, with hot,dry summers, nice fall and spring seasons, and chilly, rainy winters.

The old settlement is nestled between two Sassine (Al-Ashrafiyah) and Basta hills in a valley (Al-Musaytibah). Because it was destroyed and rebuilt seven times, it is compared to the Phoenix. Beirut is Lebanon's and arguably the Middle East's most religiously diverse metropolis. Sunni Muslim, Shiite Muslim, Druze, Maronite Catholic, Greek Orthodox, Greek Catholic, Armenian Apostolic, Armenian Catholic, and Protestant are the nine largest religious communities in Beirut. For its touristic, cultural, and intellectual prominence in the Middle Eastern region, as well as its substantial contributions in business, fashion, and media production, the city was dubbed "Switzerland of the East." Beirut is one of Lebanon's busiest cities, with a population of 1.5 million people (Kassir, 2010).

Figure 8: *BEIRUT, LEBANON - September 2018: Hamidiya Clock Tower at Najmah Square, Beirut downtown, Lebanon (Source: Maurice Brand)*

Figure 9*: Beirut Seaside (AL RAWSHE) Source Piotr Chrobot 2017 .*

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3.3.2 Beirut Before the civil war

Beirut has a long and illustrious history dating back over 5,000 years. Remains of Ottoman, Mameluke, Crusader, Abbasside, Omayyad, Byzantine, Roman, Persian, Phoenician, and Canaanite Beirut can be found beneath the city's downtown area. The Lebanese take pride in their tradition of cosmopolitanism.
Beirut's age is shown by its name, which is derived from the Canaanite word Be'eröt (Wells), which refers to the subsurface water table that is still tapped for general use by the locals (Yammine, 2011).
In 635, the Muslims conquered Beirut and rebuilt it from the ruins. It remained financially minor until the 9th or 10th century and was famous only for the careers of two local jurists. The importance of the town was resurrected in the 10th century when marine commerce returned to the Mediterranean, especially after Syria fell under the Fatimid caliphs of Egypt in 977. In 1110, the military troops of the First Crusade seized Beirut, which was thereafter constituted as a fief of the Latin kingdom of Jerusalem, along with its coastal suburbs. Beirut thrived as a crusader outpost, trading with Genoa and other Italian cities; but its strategic position was risky, as it was vulnerable to assaults by Druze tribesmen from the mountain region.
In the year 1291 Beirut became the main port of call in Syria for spice merchants from Venice under Mameluke authority. The Turks came after the Crusaders and the Mameluke; Beirut, along with the rest of Syria, fell under Ottoman administration in 1516. However, by the 17th century, the city had resurfaced as a major exporter of Lebanese silk, primarily to Italy and France. Beirut was technically part of the Ottoman province (eyalet) of Damascus at the time, and then of Sidon after 1660. Beirut was seized by the Allies at the close of World War I, and the city was founded by French obligatory authorities in 1920 as the

capital of the State of Greater Lebanon, which became the Lebanese Republic in 1926 (Yammine, 2011).

View of Beirut in the nineteenth century Beirut was a battleground during the Lebanese civil war (1975-1990); the ancient city center, along with its historic churches, mosques, and public buildings, was subjected to 15 years of combat.

3.5.1- Post- Civil War

Beirut lost the majority of its archeological sites and numerous historical structures were either fully destroyed or partially damaged as a result of the war. A Canaanite city wall, Crusader fortress walls, and an Iron Age tomb have all been lost. Politics and money played an outsized role in the reconstruction of Beirut; rather than preserving the surviving monuments, the "concerned party" decided to demolish them. "We're in a haste to rebuild," the argument went. The city's archeological sites were destroyed and crushed into cement in under 14 months. The destruction of mosaics, walls, columns, the historic markets that protected Beirut's 2,500-year-old municipal grid, and other archaeological sites was reported in the Lebanese press. Over 7 million cubic feet of historic Beirut have been lost for all time. Sadly, many archeological sites were bulldozed to make way for hotels, restaurants, shopping malls, and office towers. Archaeologists pushed to save the city's historic sites, but the response was, "Whether we like it or not, it will be demolished." (Yammine 2011).

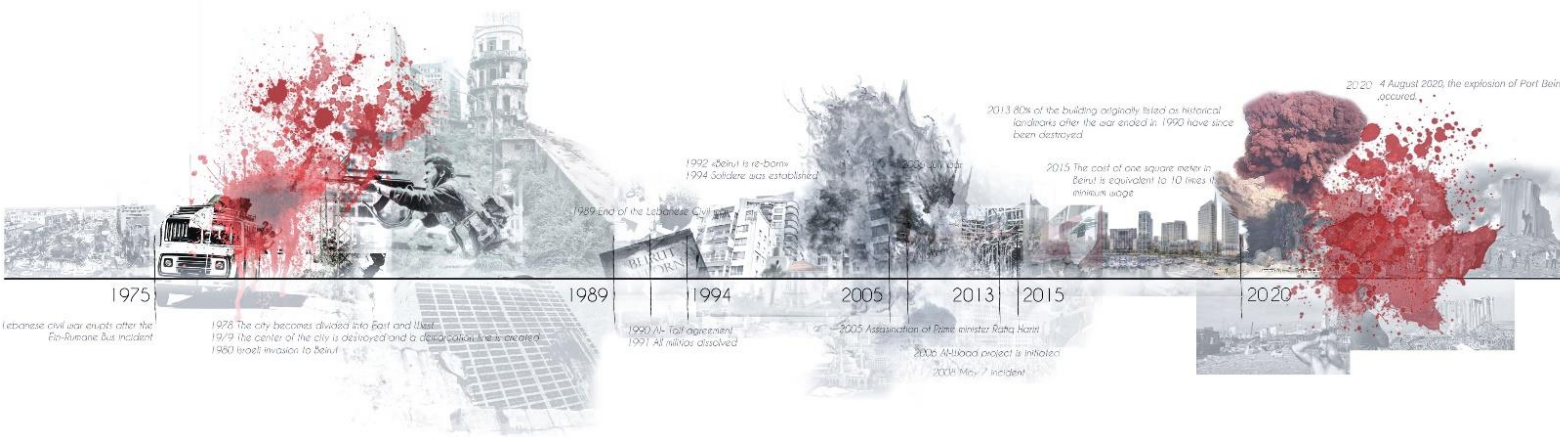


Figure 10: *Timeline of Beirut post the Civil War till the Port explosion - Graphics managed by authors*

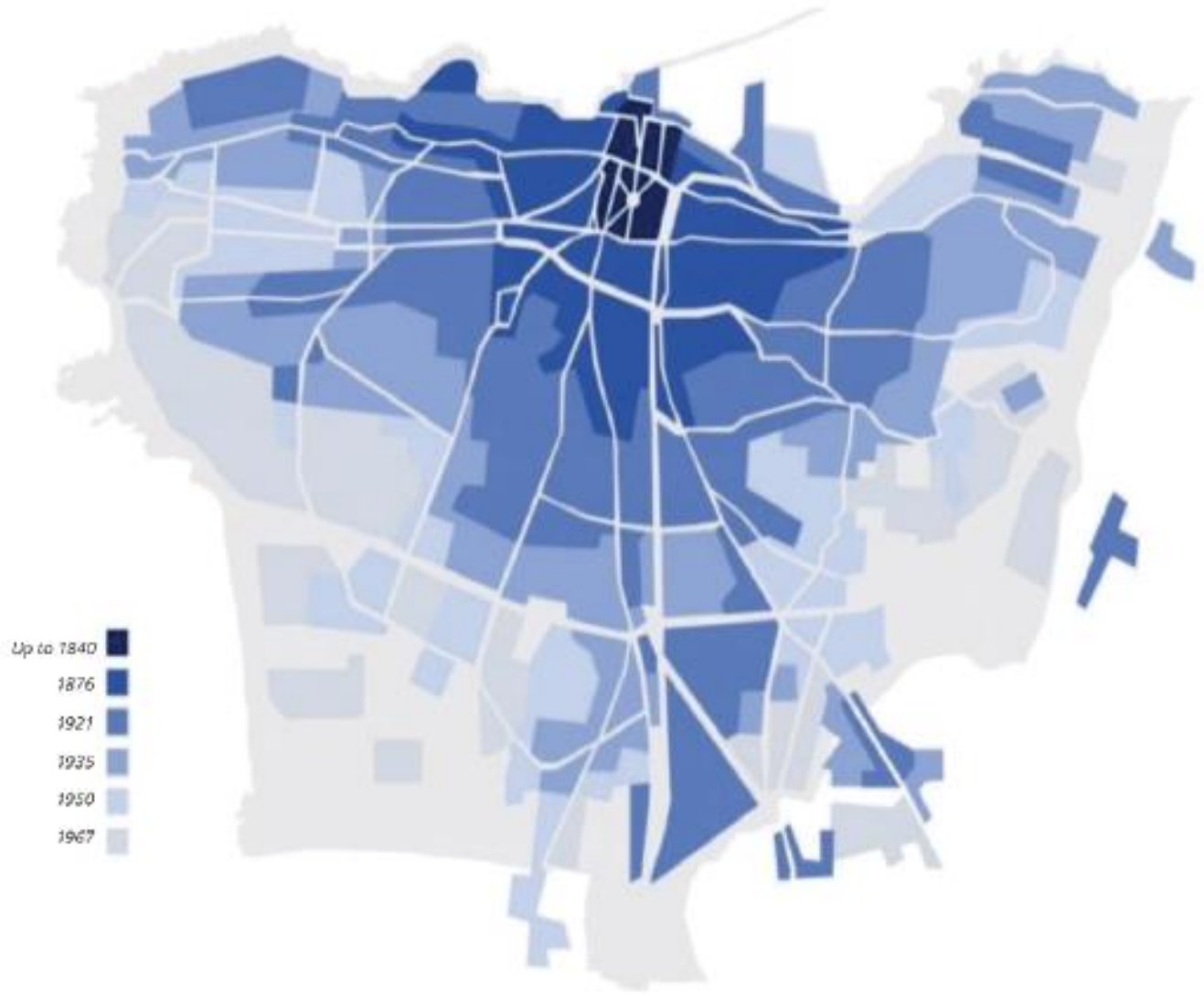


Figure 11: *Map showing the growth of Beirut 1870 - 1975 (Chami ,2013)*

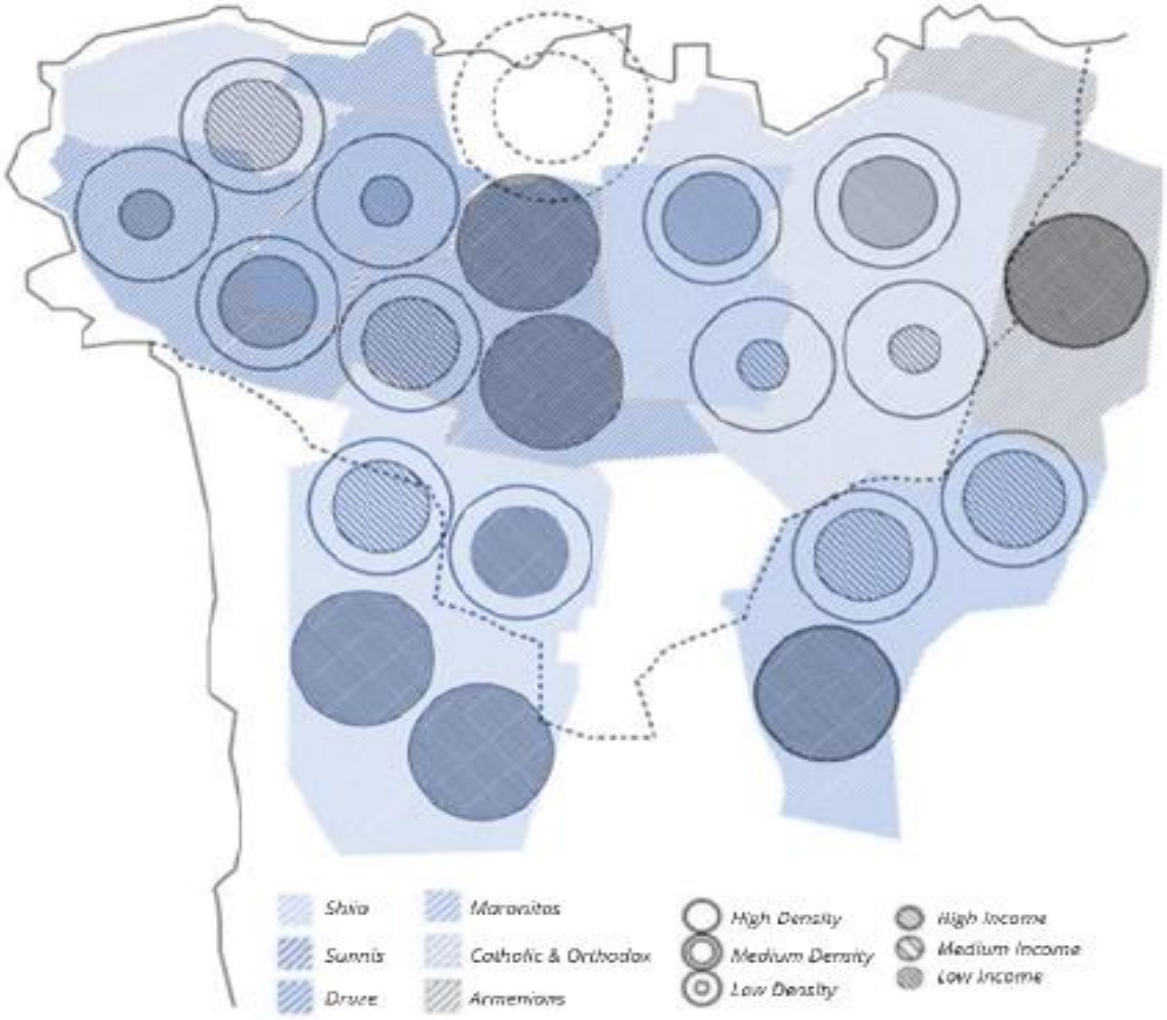


***Figure 12**: Map showing Beirut as Sectar ian Enclaves after the Civil War (Chami ,2013)*

3.4- Beirut: Society, Economy, Infrastructure.

3.4-1. Society:

For a long time, Lebanese society was able to maintain an appearance of economic stability. In addition to the political and social validity of blood ties, religious and community bonds, the existence of a significant middle-income group enhanced the veneer that covered the growing socioeconomic dislocations.

The interplay of these variables obscured the growing class polarization, particularly around Beirut's industrial belt. The fact that the government system was insensitive to significant socioeconomic problems and complaints contributed to the outbreak of civil unrest in 1975 and the subsequent state of chaos.

In Lebanon's post-civil war period, the challenges of growing socioeconomic imbalance and government inertia persisted. Despite the apparent success of some components of Lebanon's reconstruction program, the country's postwar economic status is marked by a shrinking middle class and the enslavement of many Lebanese individuals.

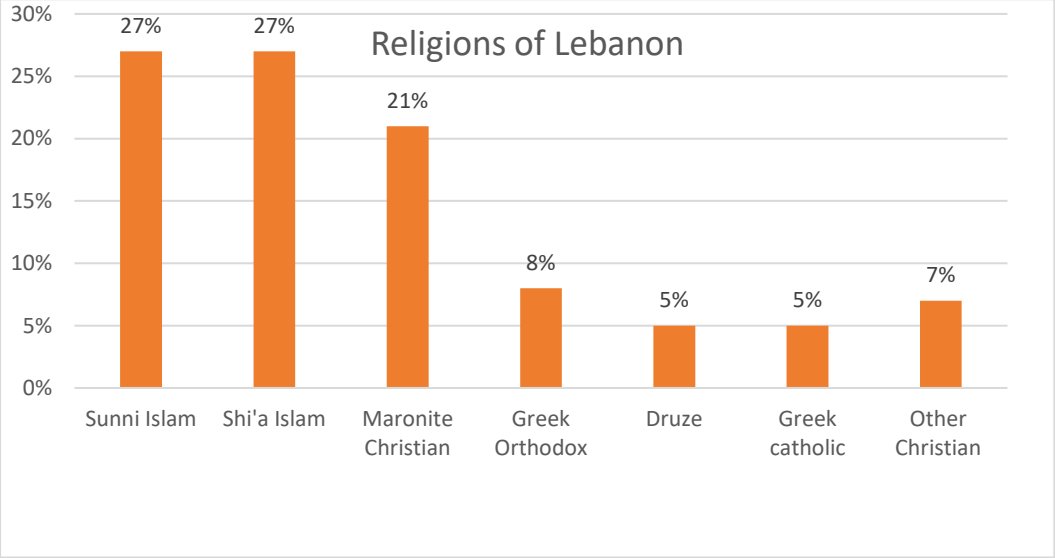


Figure 11: *Religions of Lebanon 2021 Graphics managed by authors..*

3.4-2. Economy (Economical crisis):

Lebanon has been hit by a series of interconnected crises for nearly two years, starting with an economic and financial crisis, then COVID-19, followed by Beirut Port's Explosion on the 4th of August, 2020.

The economic crisis has had by far the most significant (and long-lasting) negative impact among those three. According to the Spring 2021 Lebanon

Economic Monitor, the economic and financial crisis in Lebanon is expected to rank among the top ten, if not the top three, most catastrophic crises occurrences worldwide since the mid-nineteenth century. GDP of Lebanon has plunged from around US$55 billion in 2018 to a projected US$20.5 billion in 2021, with a 37.1 percent drop in real GDP per capita. Conflicts or wars are generally connected with such a violent contraction.

The banking sector has stopped lending and does not accept deposits after enacting ad hoc capital constraints. Instead, it exists in a segmented payment system that distinguishes between older (pre-October 2019) dollar deposits and new inflows of "fresh dollars" that are at a minimum. De facto lirafication and haircuts have resulted in a substantial deleveraging of the former (up to 85 percent on dollar deposits). The continuing adjustment and deleveraging is highly regressive, with smaller depositors and SME's bearing the brunt of the strain (SMEs). As long as inflation rates remain in the triple digits, the Lebanese lira (LBP) continues to lose value. Inflationary impacts are highly regressive, hitting the poor and middle classes disproportionately (ESCWA, 2020).

The socioeconomic consequences, which are already bad, might be disastrous; more than half of the country's population is expected to be poor. Unemployment, like poverty, is on the increase. Basic services in Lebanon have collapsed dramatically, owing to depleted foreign exchange (FX) reserves and the high cost of FX import subsidies on food, fuel, and medication. Acute fuel shortages have resulted in widespread power outages. In addition, medication is in short supply, and health services have been severely impacted.

Lebanon has also been dealing with the COVID-19 pandemic by implementing periodic lockdowns and other steps to reduce the virus's impact on both individuals and the country's already weakened health system. The National COVID-19 Deployment and Vaccination Plan is guiding vaccination, which began on February 14 with initial funding given from the World Bank. By the end of 2022, the goal is to vaccinate 70% of the total population, both citizens

and non-citizens, in a multi-phase deployment. COVID-19 vaccination coverage is being expanded, and immunization deployment is being supported.

Despite its geographical concentration, the impact of the Port of Beirut explosion has had ramifications at the national level, in addition to the human tragedy. These add to Lebanon's long-term structural vulnerabilities, which include poor infrastructure—a dysfunctional electricity sector, water shortages, and insufficient solid waste and wastewater management—as well as poor public financial management, large macroeconomic imbalances, and deteriorating social indicators (ESCWA, 2020).

3.4-3. Refugee Crisis:

Lebanon's growing socio-economic and health crisis has hit the most vulnerable Lebanese and refugee families. Preliminary results of the 2021 Vulnerability Assessment of Syrian Refugees (VASyR) in Lebanon show the dire situation of 9 out of 10 Syrian refugees still living in extreme poverty.

Research shows that by 2021, most family members will have low-wage, high-risk jobs or extra services to earn the same income as their families in 2020. These coping strategies have a negative impact on stability and earning potential. Refugee families are vulnerable to food insecurity, making them dependent on humanitarian aid in the future.

"Over the past 18 months, the Lebanese currency has lost more than 85% of its value. Prices have skyrocketed and simple survival is out of reach for Syrian refugee families. The crisis will have a long-term impact on the well-being of refugees and the future of their children and threatens past achievements such as access to basic services," stressed Ayaki Ito, UNHCR Representative in the country. *"Lebanese families are also in difficulty. Increased support for Lebanese, refugees and other vulnerable communities is urgently needed at this extremely critical juncture. We cannot abandon them now,"* he added.

Inflation has had a major impact on food prices. Between October 2019 and June 2021, food costs increased by 40%, creating food insecurity for Syrian refugee families. As of June 2021, 49% of Syrian refugee families were suffering from food insecurity. About two-thirds of families had to limit their meals or reduce the number of meals per day.

Syrian refugee children are the most affected by this crisis. 30% of school-aged children (6-17 years) have never been to school. In 2021, school attendance of children aged 6-14 dropped by 25%. Additionally, the upward trend in child labor among Syrian children continued in 2021, with at least 27,825 Syrian refugee children currently involved in child labor. The survey also found that one in five girls between the ages of 15 and 19 is married. More than half (56%) of children between the ages of 1 and 14 have experienced at least one form of violence. (UNHCR, 2021).

The idea that the Syrians have priority in the distribution of aid supplies makes the Lebanese unfair to the poor Lebanese. Cash aid allows Syrians to work for lower wages. Lebanese consider this to be a labor market price in some regions and sectors.

With the current crisis, inter-municipal relations, especially in vulnerable places, are deteriorating and are at the lowest level since 2017, when monitoring of relations began (LCRP 2021).

The consequences of the presence of refugees in host countries vary according to the characteristics and challenges of the countries. Several studies and figures show that the flow of Syrian refugees has a negative impact on the Lebanese economy (ILO, 2014).

The survey of 400 Lebanese respondents revealed that 50% of respondents perceive Syrian refugees as harmful to the Lebanese economy (Hamdar et al. 2018). After the massive influx of refugees, Lebanon suffered a slowdown in economic growth private investment, a widening of the country's trade deficit and a slowdown in the real estate and tourism sectors, which are considered the

two main economic sectors in Lebanon (ILO 2014). A counter channel as described by David et al. (2017), leading to an increase Lebanese economic growth is the flow of humanitarian aid. However, claims of negative or positive economic impacts on the Lebanese economy resulting from Syrian refugee flows are invalidated by Granger's causality findings reported in this article.

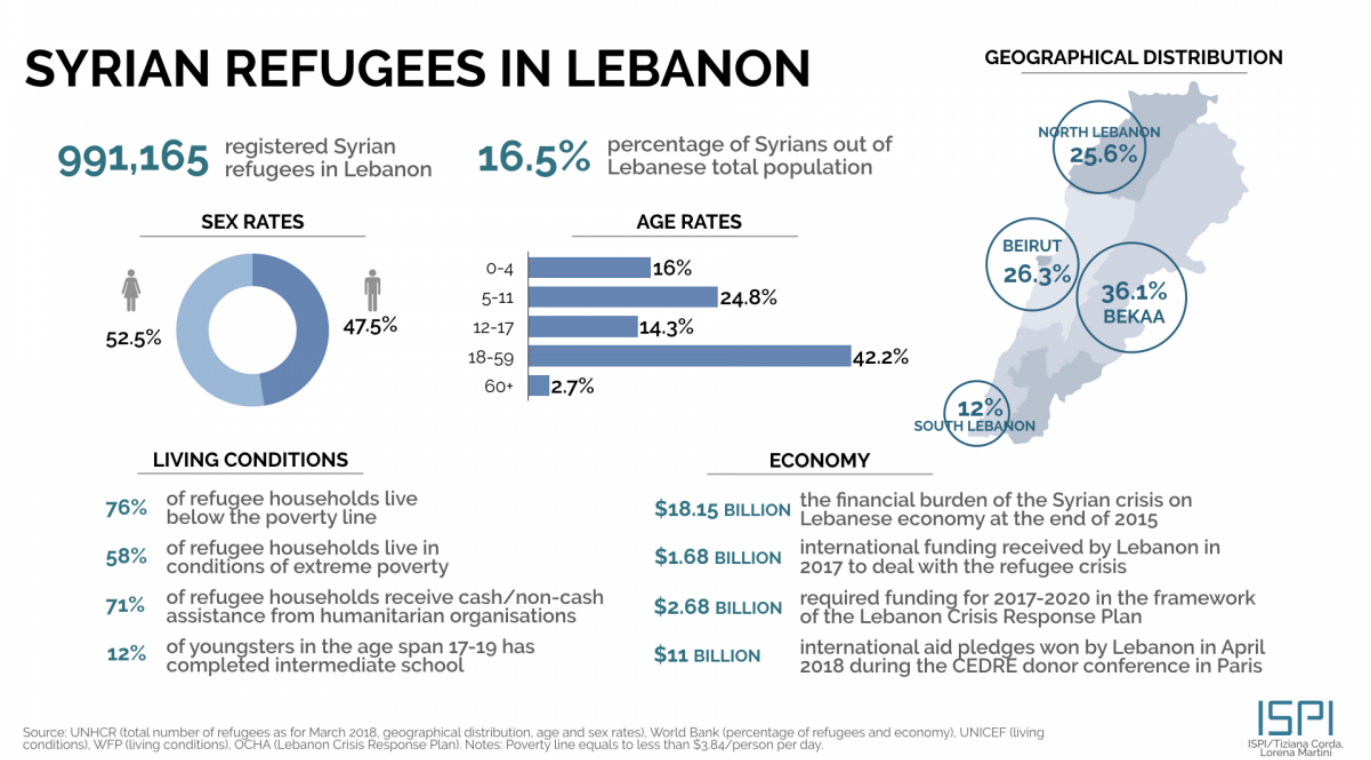


***Figure 12**: Chart shows the Syrian refugees in Lebanon (UNHCR, 2018).*

Conclusion:

The arrival of refugees has put pressure on infrastructure, housing prices (in some areas), labor and livelihoods. However, as we show in this report, the economic downturn at the macro level is not caused by the arrival of refugees but is a "humanitarian crisis within an economic crisis".

3.4-4. Infrastructure:

Lebanon's economy increased at an astronomically fast rate for several years after the 2005 peace deal. Between 2007 and 2010, the economy grew at an annual rate of more than 8%. Even at that time, though, the country's needs were enormous. Lebanon's current gross domestic product is $47 billion, but the estimated cost of needed infrastructure spending in 2010 was more than $20 billion. Projects to connect towns beyond the city with Beirut, as well as the construction of a transportation corridor spanning the country's north-south axis, were mentioned by one government minister at the time as the most beneficial development endeavors.

The results of a $30 million program to repair and improve Lebanon's infrastructure were documented in a 2013 study. The initiative, which was coordinated by the World Bank, resulted in the restoration of 175 kilometers of roads and the reconstruction of 17 public buildings. It was anticipated that 178 municipalities around the country benefited from it (Verdeil, 2018).

3.4-5. Environmental system:

Lebanon made dramatic advances to repair the scars of the wars after the post-war rebuilding phase began in 1990-1992, investing substantially in public infrastructure, roads, highways, airports and harbors, communications, business estates, and high- and middle-income housing. Environmental neglect had a negative influence on the economy, resulting in a loss of US$ 565 million in 2000, or 3.4 percent of GDP, for the local environment, and US$ 655 million, or 3.9 percent, when the global environment is factored in. The environment has remained a secondary priority, with an unfinished legislative and administrative structure, as well as insufficient policies to address difficulties and political obstacles to change implementation.

These are the difficulties:

1) Poverty gaps between regions are large.

2) In 2007, wastewater connections were available to 66 percent of households, but wastewater treatment was lacking.

3) Municipal solid trash collection appears to be under control, but disposal remains a problem.

4) The natural heritage of Lebanon is being harmed.

Changes in the way Lebanon conducts its social and economic development, as well as how it makes decisions among conflicting issues and objectives, are required in order for Lebanon to fulfill its environmental difficulties.

Figure 13: *Photo shows the flood in Lebanon in the winter.(Benjamin Redd, 2013)*

Figure 14: *Photo shows the pollution in the soil.(Amer ghazzal, 2017)*

Chapter 4: Learning from the past

4.1- Solidere: “The Reborn of Beirut”

For many, Lebanon's Downtown Beirut Development and Redevelopment Company (Solidere SAL) was the savior of the downtown area. One commenter said: In the fall of 1990 till the mid-1990s, Beirut and Lebanon began to be mentioned again, this time in travel magazines” (Kassir, 2003).

The company transformed the city center from a war-torn "slum" into a vibrant, world-class area frequented by tourists, residents, businesses, and families. The history of the Solidere project is that the center initially occupied 1.8 million m² of land and is constantly expanding (for example, the launch of the Beirut market in October 2009 with additional commercial space of 163,000 m² and the dynamic placement of the international Armani brand, Fendi, Tommy Hilfiger, Timberland).

The story of Soldier’s founding begins at the end of the Lebanese civil war, when the Lebanese government opted for a "third choice" plan that would allow private companies to oversee the reconstruction of the city center. In

October 1990, under the influence of Rafik Hariri, a new director was appointed to the Development and Reconstruction Committee. Rafiq Hariri was a Lebanese citizen and a citizen of Saudi Arabia. He estimated the wealth in Saudi Arabia in the early 1990s at between $3 billion and $4 billion (Walden, 1994).

4.1-1. Dealing with reconstruction processes (Solidere):

Beirut, as we have seen, is a stratified territory. Rich in symbols and stories, it was destroyed and rebuilt many times in order to serve the civilization of the time. Over time, this territory has been included in a broader scope, especially for the studies and the various master plans established.
During the civil war of 1975-1990, many personalities and many offices, mostly Lebanese and French, worked on this space, so rich and complex at the same time. Thanks to them, studies and master plans were created, but never in their entirety (Mango, 2003).

On the other hand, Solidere, a land company created in the aftermath of the war to ensure the reconstruction of the downtown core, is not universally supported. While many praise its merits and are happy to find a city center in Beirut, others deplore its expropriation logic. Then, of course, Lebanon had no choice but to entrust the reconstruction to a private company while the state is in debt, but the majority of the population believes that the reconstruction is not up to their expectations (Mango, 2003).
For most Lebanese, expropriation was perhaps not the most interesting choice. Some people in the city center saw their homes survive during the war, without too much damage. And it is in the aftermath of the war, for reconstruction, they are told that their house will be destroyed, and that they will be compensated in

exchange for shares. To which many Beirut disagreed. But they had no choice; and were forcibly expropriated.

In addition, the work of Solidere made it possible to recreate a new downtown, in disagreement with the pre-war downtown. Here and now, the Lebanese no longer feel at their place in this space, which is no longer theirs, which no longer resembles them.

In terms of programs, that territory has evolved over time. Moving from a city primarily focused on leisure and recreation during the Roman period, with its many thermal baths and its forum, it has gradually changed, until no longer accommodating its own population. The primary functions of the city, namely, to live, work, entertain and circulate, are erased, leaving room for an agglomeration as complex as it is incomprehensible. Here, the old mixes with the new and the restored; housing towers rise close to more traditional dwellings, and dilapidated buildings still reign, as if to recall the city's past, still marked in the memory of an entire generation. With the introduction of such high prices per square meter in the city center, new centralities have emerged in the suburbs of the agglomeration.

Beirut thus becomes a polycentric city; the city center is only one of many, despite its historical and symbolic value. The decentralized city thus created makes it possible to put all the nuclei of concentration at the same level of importance, thus eliminating the «power» that the heart of the city could have.

In his study on Berlin, O.M Ungers focused on this question, giving a particular answer. According to him, and according to a prospective vision, the fall of the Berlin Wall will generate a demographic decrease, which will thus create clusters of concentrations of various typologies, positioned on the territory and connected to each other thanks to a road network. The freed space would then be transformed into green expanses. Berlin would thus become a «agglomerate of various urban fragments» 152, thus creating this vision of «city in the city» (Mango, 2014).

On the other hand, Beirut's city center has received special attention as part of the reconstruction. Those responsible at the time: mainly politicians and people involved in construction - were convinced that the reconstruction of the city center would allow a return to normalcy and stabilization of the situation in the capital. Nevertheless, despite the almost identical reproduction of the pre-war city, the population has still not reclaimed space. Why concentrate so much effort for reconstruction on a given territory, even if it means forgetting its periphery, when it is in the latter that housing and leisure were developed by and for the inhabitants?

While the majority of the destruction occurred in the aftermath of the war, as part of the reconstruction, how can the Lebanese still find themselves in this city center? How can you not feel like a stranger in your own city?

The desire to rebuild the city center after the war was, for most of the actors of the project, the ultimate way to give back to the Lebanese population this territory, while erasing or reducing the importance that the new centralities could have had during and after the war.

Nevertheless, the idea of reconstructing the image of the city center, through new constructions, renovations and the reproduction of the urban typology of pre-war, does not necessarily reconstruct a city center and a good appropriation of the latter. A hypothesis would then be to imagine the city center as a space punctuated by gardens and public spaces; thus, allowing exchanges and meetings between members of different communities, while ensuring the function of living to different social classes, especially the middle class. The public space, in the hypothesis of a city center that would function properly, would materialize in different forms, ranging from the garden to the square, through the street or the terrace of restaurants. This would reduce the number of built-up plots in the city center, thus encouraging meetings (Mango, 2014).

We can thus say that by trying to put Beirut's city center back on the world map, by promoting international trade and investments from foreign countries -

Solidere, in particular in the Gulf, has lost the primary vocation of a city center, restoring a common character and identity to the Lebanese.
The only thanks is for the Revolution, that expresses what's in the heart of every Lebanese, that this population, abandoned in this center, has reappropriated spaces, moved and expressed in this territory that has been forbidden to them for so many years.
Forbidden by the privatization of certain sectors including the Place de l'Étoile and the Rue des Banques - but also forbidden by a mismanagement of typologies and programs; at the level of the souks and the Place des Martyrs mainly (Beyhum, Salaam and Tabet, 1996).

4.1-2. Solidere as a Monopoly:

Critics argued that having a single REHCO in the central district would provide a "public interest" monopoly. The state's participation in the company was limited to the approval of the basic structure of REHCO.
Approval of the amount of cultivated land; and the accommodation area. "Lebanon's fate may now be in the hands of private real estate companies," lamented a leading editorial24.

Solider's budget was about half of the national annual GDP. If Solider runs into financial trouble at some point (due to cash flow issues, for example), the government is unlikely to step in to save the company (Mango, 2003).

4.2- Conclusion:

The master plan for the reconstruction of Beirut's city center has undergone many changes since it was approved in 1993, until it became virtually static in 2011. Since that date, no future projects have been planned on the territory; except those already drawn up on the master plan and which are or will be built. The city center

as we know it today is likely to be the one that the future generation will know. ... unless another war starts in the meantime and thus generates a new opportunity for reconstruction!

While Beirut is struggling to reclaim this city center, on August 4, an explosion took place in the port of Beirut and resulted in the destruction of entire neighborhoods in the city. Broken buildings, broken windows, mourning population, heritage in ruins, dreams gone...

So many elements resulting from this explosion. As unhappiness never happens alone, a week after this dramatic event, a group of developers survey the most affected neighborhoods, in order to propose to the inhabitants willing to sell their properties, the aim is to change the demographic status of these neighborhoods.

This subject has already been discussed by Naomi Klein, who defines the strategy of shock as «systematic raids against the public sphere in the aftermath of cataclysms». They occur when people are too focused on urgency, on survival, to protect their interests. For Naomi Klein, the first effort of resistance would be to refuse to erase our collective memory. And this is what happens in Beirut. Beirut is not for sale! The citizens are afraid that with the consequences of the explosion, the neighborhoods near the port will undergo a reconstruction, a Solidere version 2.0 project.

They therefore prefer to entrust the reconstruction to non-governmental organizations.

The city center was rebuilt after the war by a private land company, but whose interests were public. Here and now, the Lebanese people refuse to integrate public order in the reconstruction of the affected neighborhoods, and resist. The bet is therefore made: what reconstruction for tomorrow’s Beirut? (Mango, 2014).

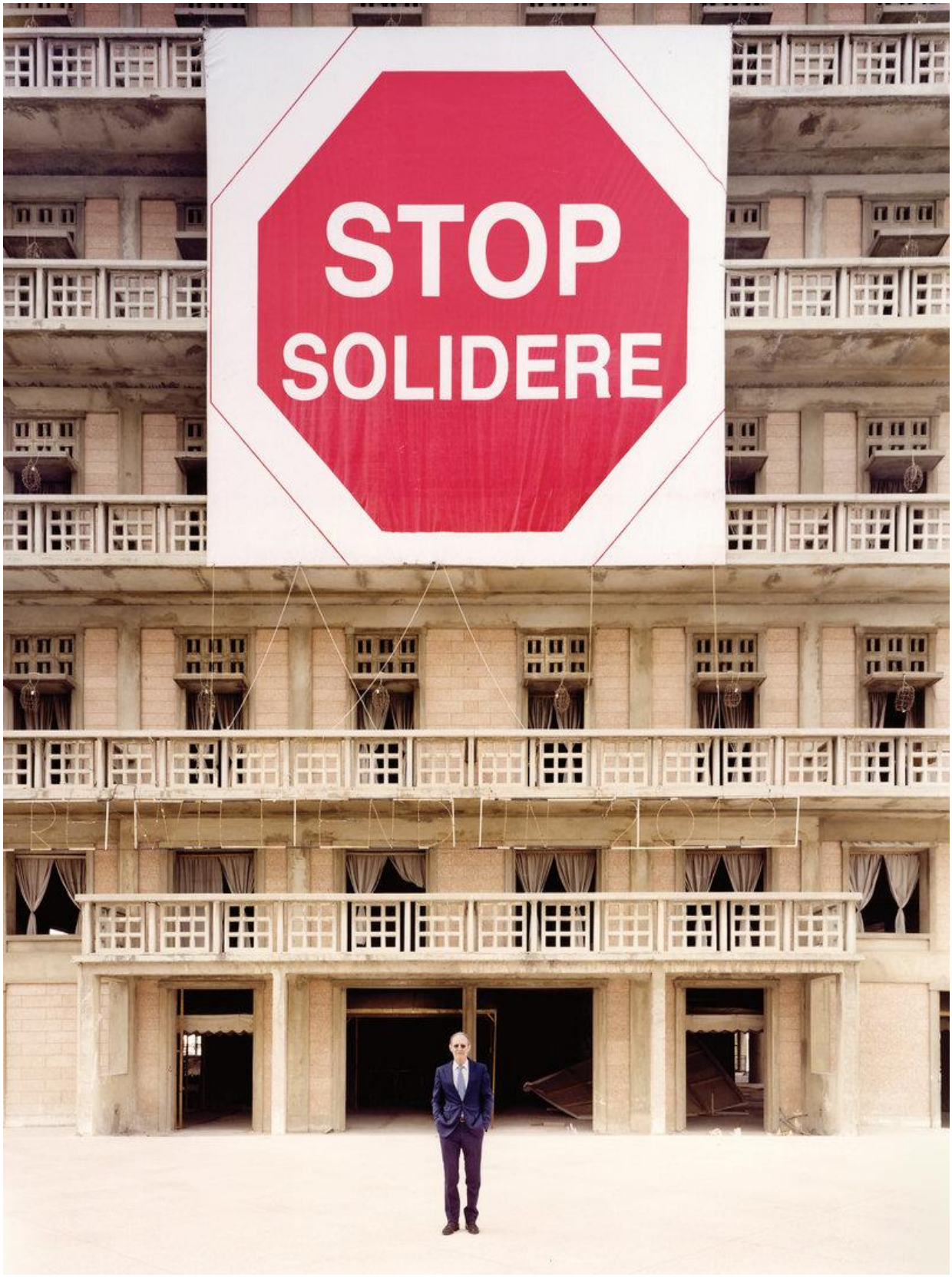


Figure 15 *Photo shows the Solidere project hold.(photo Credit STOP SOLIDERE 2016)*

Chapter 5: Divided and Polarized Cities

In recent years, researchers, planners, developers, and policy makers have turned to the idea of a segregated city as a fertile model for understanding social, cultural, economic, and political differences. A divided city is a physical crisis based on a political crisis (Calame & Charlesworth, 2009). The physical characteristics of cities are derived from local spatial, psychological and economic dynamics that operate semi-autonomously and distinguish them from the wider political environment.

In many cases, segregated societies ultimately lead to segregated urban environments, which create clear connections between segregated societies and segregated cities. It refers to the relationship between social distribution and social inequality on the one hand and spatial segregation on the other. Inequality can exacerbate inequality and disadvantage the most vulnerable in society (van Kempen, 2007).

Bollens (2007) discusses the potential role of cities in unifying fragmented societies, arguing that urban design can play a useful role in bringing fragmented cities together:

"Division—whether it is physical or psychological— is an extremely difficult emotion that spawns hatred, grief, denial, depression, and forgiveness […]. Characterized by potent political, spatial, and social- psychological contestation [cities] are usefully described as "polarized." Where almost all cities are divided socioeconomically and culturally, polarized cities contain a depth of antagonism and opposition beyond what the word divided connotes". (Bollens, 2012, pp. 16-17)

5.1- Beirut: a divided society/city:

"Beirut's recovery is similar to that of other divided cities within contested states which are subject to regional pressures and international interventions," Craig Larkin writes in his special about this issue (Larkin, 2013).

State building in Lebanon has always been difficult. Beirut experienced colonial reconstruction after the French mandate. The Secret Bank of Beirut has made Beirut the financial capital of the region, with a lot of trade through the port and visitors coming through the airport to enjoy the beach hotels and nightlife. Beirut has become the Disneyland of the arab world.

It was also a haven for dissident Arab intellectuals, including Syrian refugees fleeing the Baathist dictatorship, where they founded a publishing house and taught at universities.

There are 17 or 18 religious sects and secular organizations in Beirut. Although some areas were religiously mixed, they coexisted in other areas for centuries.

Although the historic walls and walls of Beirut are no longer in use, the 19th century defensive walls and Phoenician archaeological remains play a major role in distinguishing the Christians of the East and the Muslims of the East, south and west. These borders were further strengthened during the sectarian violence of 1956-1958 and the turmoil of the constitutional power-sharing regime.

Beirut's southern suburbs are inhabited by migrants from the rural highlands and Palestinian refugees. This "camp city" (Agier, 2007) emerged after the "Black September" of 1970, when Jordan deported many Palestinians. 250,000 Palestinian refugees are not citizens. They are also prohibited from owning property or holding a job. In the public debate, migrants are portrayed as aggressors and outsiders, premodern people unfit for

city life, and "between" and "between" exiles from their own cities (Sawalha, 2003).

From 1975 to 1990 there was a civil war between Christians, Druze and Muslim Lebanese.

By the end of 1975, downtown Beirut had become a battleground guarded by high-rise snipers. The road is closed. The sale has ended. Residents of mixed areas were driven from their homes. Downtown Beirut has become a rubble-covered wasteland.

By the end of the civil war, a quarter of Beirut's houses had been damaged or destroyed, some demolished for military vehicles, and half of its residents had temporarily or permanently left their homes (Sawalha, 2003, p. 272).

Long-term displaced persons seeking refuge in abandoned condominiums and ownership of damaged buildings were confused. In 1990, the civil war ended, elections were held, and the military checkpoint guarding the Green Line was dismantled.

Just as a damaged city was a material expression of the stalemate of the Civil War, rebuilding meant rebuilding an entire country. By the mid-1980s, Beirut's elite wanted to rebuild the center as a public space for interfaith exchange, just as the old trading post had served Muslims and Christians, Arabs and Westerners.

The post-war government, led by Prime Minister Rafik al-Hariri, began rebuilding central areas, including airports, ports and roads. He founded the Joint Stock Company for the Development and Reconstruction of Beirut to plan and supervise the renovation. The unified theme of this public-private partnership was "The Ancient City of Beirut for the Future".

The holding company was given shares to help establish the company and additional shares were provided to help open markets to Lebanese and Arab. The agency has been granted eminent domain rights to breathe new life into the city centre.

Again, the shopping complexes centered on Martelerenplein are beginning to encourage public participation, or at least the presence of diverse groups.

The transformation of urban centers into modern but socio-economically isolated neighborhoods created new playgrounds for the world, especially for the prosperous Arab elite (Shwayrik, 2008).

In effect, Solidere became Disney's Beirut and an urban planning model for other Arab cities such as Amman; International construction companies such as Sama Dubai in the Arabian Gulf are building image cities in this area. The "popular" class has not completely disappeared from the center of the "global city". Before the civil war, Beirut had the same political tradition as before the civil war Paris. A political party that marches from the poorer parts of the South to the seat of power and holds large rallies to express its views.

The end of the war, which was closed to parades for much of the 1970s and 1980s, brought new forms of popular expression to the city (Chaoul, 2007). Craig Larkin's interpretation of post-Civil War Beirut explores how post-war youth remember, imagine and encounter a city that was previously divided into uninhabited lands. Stopped by restricted areas. Beirut later rebuilt the center, but some remnants of the conflict remain in the city's landscape as part of the official representation. The story of the journey of a phoenix that rose from the ashes. The practical, local and political uses of the city's reconstructed public spaces reflect the emergence of new local identities and social interactions that transcend deep and enduring boundaries. Rebuilding a divided city requires selective memory, forgetting and nostalgia, past and future expectations.

In addition to concrete memories and social connections in public places, Beiruti teenagers see the city through a prism of memory that is passed down from generation to generation, but connected to contemporary situations. A space of a new generation, full of memory and self-

consciousness, Larkin found that Lefebvre uses three forms of socially produced space in new ways to reproduce and transcend the old social and spatial boundaries of the city. Observe, imagine, live - Zukin talks about real urban space and the difference between history and heritage.

Borders during Civil War Divides Urban Planning (Green Line), 2022, Vol. 7, Issue 1, pages 129-141 131 Christian East and Islamic West, hundreds of such lines cross the city today (Bow Akar, 2018); Urban faults, physical landmarks or invisible lines shape behavior and integrate identities with territories (Bollens, 2012). Although these lines of demarcation have officially disappeared, the atmosphere of rupture created by these borders is still deeply embedded in the mental maps of the inhabitants. This mind map can be used for psychological discord, sectarian confusion, racial unrest.

Alternatively, political barriers are more widespread than in the early days of the civil war, providing insight into the fear, division, violence, and marginalization experienced in many large cities (Calame & Charlesworth, 2009).

As a result of these invisible signs, Caner and Bölen (2016) describes the production of functional, structural, socio-economic, and physical outcomes, all of which are unique and cannot be ignored (Table 1).

Type	Consequences
Functional Consequences	Decline in central functions of the urban core Segregation of residential areas, ethnic enclaves Bipolarization of commercial areas Fading primacy of capital city administrative functions Duplication of urban functions (transportation, services, etc.) Change of functions in urban space
Structural Consequences	Change in urban development patterns Road-dominated environment and proliferation of cul-de-sacs Presence of frontier landscape Proliferation of vacant land Deterioration of buildings Division of everyday artefacts
Socio-Economic Consequences	Economic depression and chronic fear Population exchange, homogeneous zones Socio-economic divisions parallel with ethnic divisions

Note: The patterns highlighted are the result of the study of four cities: Berlin, Belfast, Jerusalem, and Beirut. Source: Caner and Bölen (2016).

Table 1 *Urban consequences of the divisions in Beirut (Urban Planning, 2022, Volume 7, Issue 1, Pages 129–141).*

Divided cities are shaped by social, political and spatial dynamics, accelerating the occurrence of conflict and violence. For Beirut, this dynamic manifest itself in four aspects:

(a) the role of the urban environment in shaping social relations between communities and social interactions between communities.

(b) the impact of urban conditions on the formation of political processes and the politicization of communities.

(c) the consequences of conflict and violence in reforms Cities and the Environment (Yassin, 2008).

Although neighborhoods have caused poverty, displacement, and urban violence (Bou Akar, 2018), Beirut has always seen individual settlements coexist within neighborhoods (Figure 16) and practiced sectarian consciousness among its residents (Silver, 2010). There is a term "biocide" (Fregonese, 2009).

It has been used critically to describe the role of the built environment in determining the tactical maneuvers of opposing forces during the civil war of

1975-1976. The militia used a variety of tools to reconstruct urban spaces and territories according to evolving political, sectarian, and military realities.

As urban planners, militia leaders reimagined the city and its contexts, transforming commercial and public buildings to create new spatial plans. It mainly aims at asserting a new social and political order under their control (Yasin, 2012).

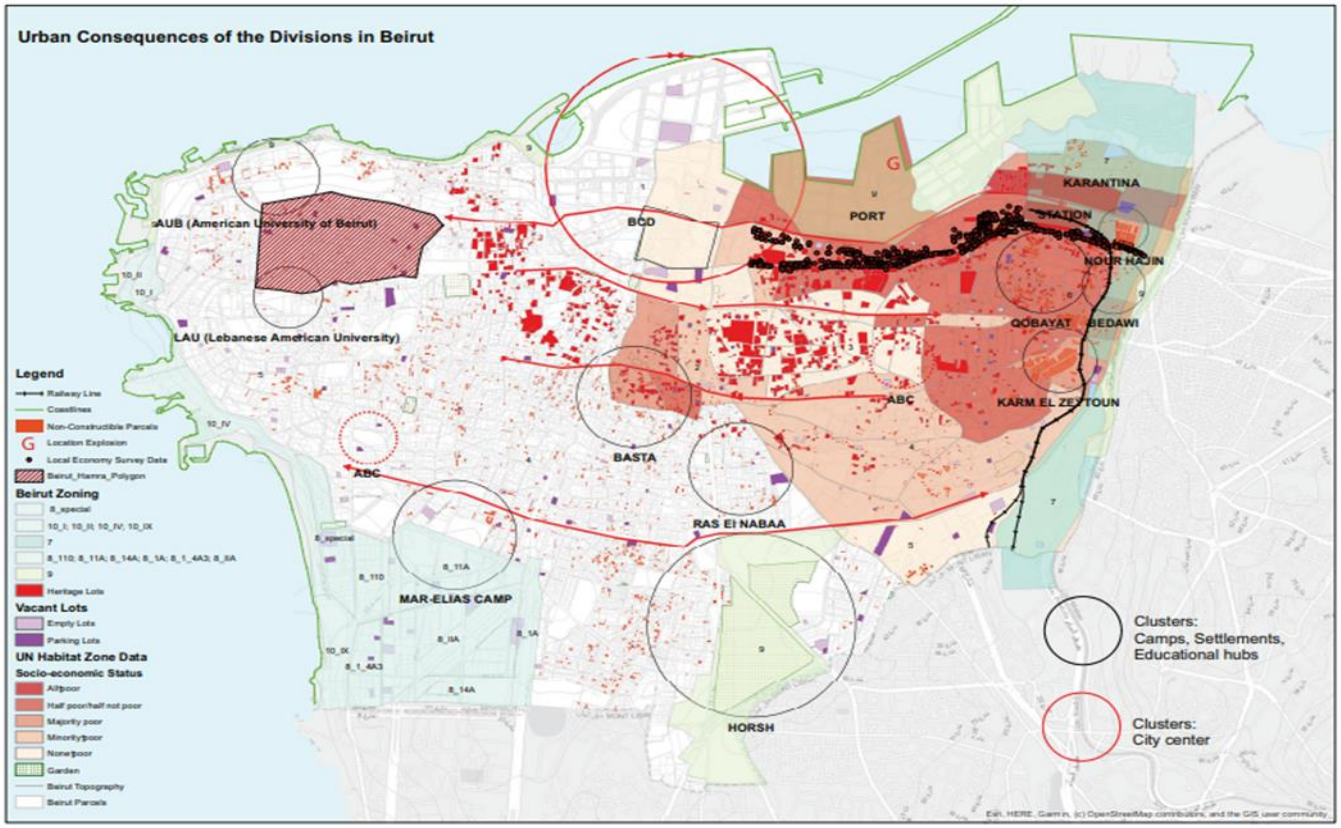


Figure 16 *Shows Urban consequences of the divisions in Beirut (OpenStreetMap contributors ,2018).*

Chapter 6: Port of Beirut

6.1- Historical context:

The name of the port of Beirut has existed since the 15th century BC. Mentioned in the mutual letters of the Pharaohs and the Phoenicians, it developed in Roman times into a center of trade and commerce. During the Umayyad period, the port

of Beirut became the center of the first Arab fleet. During the time of the Crusaders, the port of Beirut played an important role in maritime trade between East and West. This role was reinforced during the Mamluk era when it was transformed into a commercial center frequented by pilgrims from the Holy Land. The current port of Beirut was founded at the end of the 19th century (Gestion et Exploitation du PORT DE BEYROUTH, 2013).

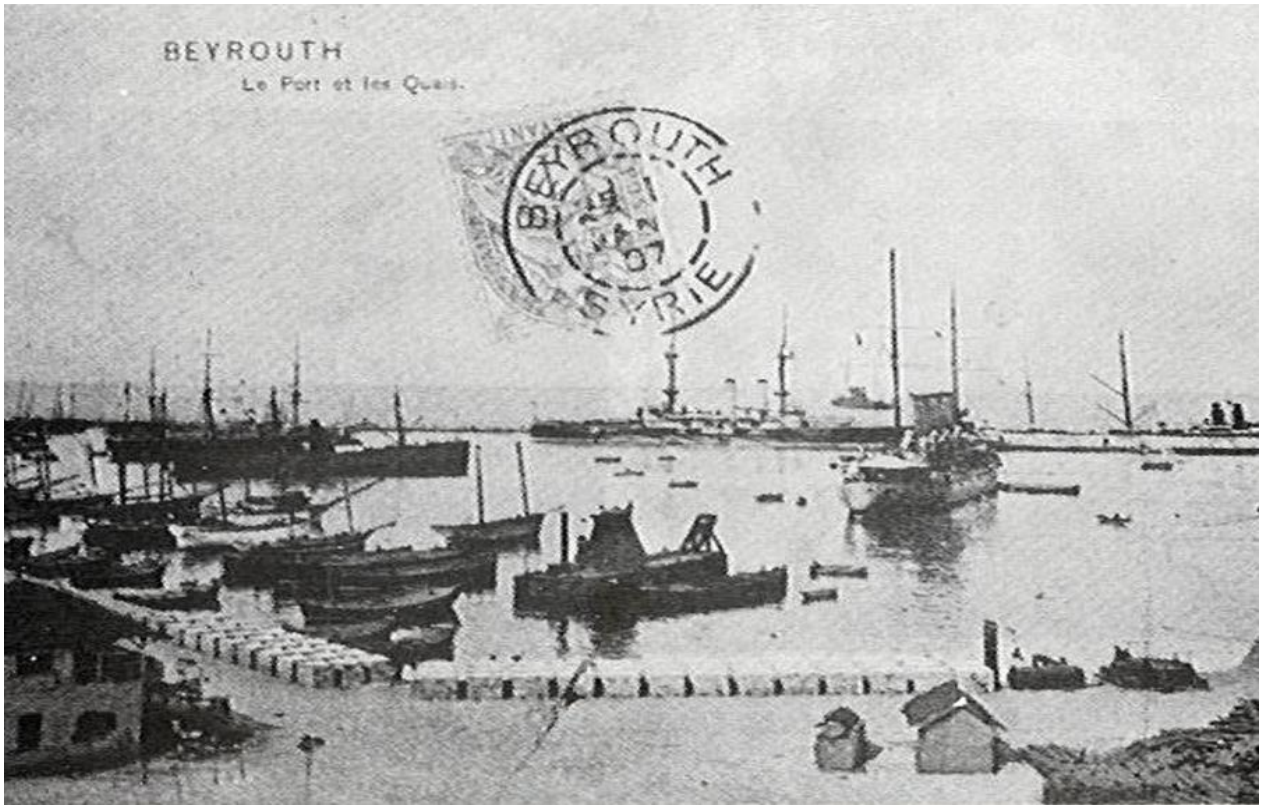


Figure 17 *Historical picture of the Port of Beirut (Gestion et Exploitation du port de Beyrouth,2013).*

6.2- Concession of the Port of Beirut:

On 19/6/1887 the Ottoman authorities gave the port in concession to the Ottoman company “Compagnie du Port, des Quais et des Entrepôts de Beyrouth”. The concession was subsequently strengthened when the customs company was granted the exclusive right to store and transport all goods in transit in transit through customs. The construction works or a sea dam for the expansion and

development of the port were completed and the opening on the occasion of the completion of these works was celebrated at the end of 1894, basins were developed and spread between Ras Al Shamiah and Ras Al Mudawar .

On 20/5/1925 the “Compagnie du Port, des Quais et des Entrepôts de Beyrouth” acquired French citizenship.

On 13/4/1960 the company name was changed and a 30 year concession was given to a Lebanese company called “Compagnie de Gestion et d’Exploitation du Port de Beyrouth”, which was working on the extension of Môle 3 and the breakwater and the finishing quay 14.

The concession expired on 12/31/1990 when the Lebanese government imposed a temporary commission for the management of the port of Beirut (Gestion et Exploitation du PORT DE BEYROUTH, 2013).

***Figure 18**: Historical picture of the Port of Beirut (Gestion et Exploitation du PORT DE BEYROUTH, 2013).*

6.3- Port of Beirut: the success stories:

After the end of the civil war in Lebanon, various plans and investments were made and the port underwent a major renovation of its latest infrastructure, such as the new container terminal and the reconstruction of many existing foundations to increase its production capacity, that will increase its revenues and thus increasing state revenues. Today Port of beirut has a total area of 1.2 million square meters and 4 basins, 16 docks and a container terminal capable of handling 1.1 million TEUs per year.

The implementation of these projects was accompanied by the development of new port activities, such as the automation of the port's services and the logistics activity through the Zona Franca, which have contributed to the growth of the manufacturing industry in the region. This made Beirut the regional commercial center for the distribution of goods.

The Port of Beirut was awarded the Gold Award in Information Technology for the best port IT solution in the world in 2015. The Port of Beirut is recognized worldwide for the high quality of its port management and operations solution, a forward-looking solution for port authority, freight, terminal operations, real estate, billing, and community management port (Gestion et Exploitation du PORT DE BEYROUTH, 2013).

Figure 19: *Satellite Picture of the Port of Beirut (Gestion et Exploitation du PORT DE BEYROUTH, 2013).*

6.4- Valuation Process and Results:

6.4-1. Comparable Business Valuation Ratios.

As a result, the 8.5x price-to-cash ratio shown below can be used as a valuation ratio of fairly indicative reference for 2017 and 2005 (Gestion et Exploitation du PORT DE BEYROUTH, 2013).

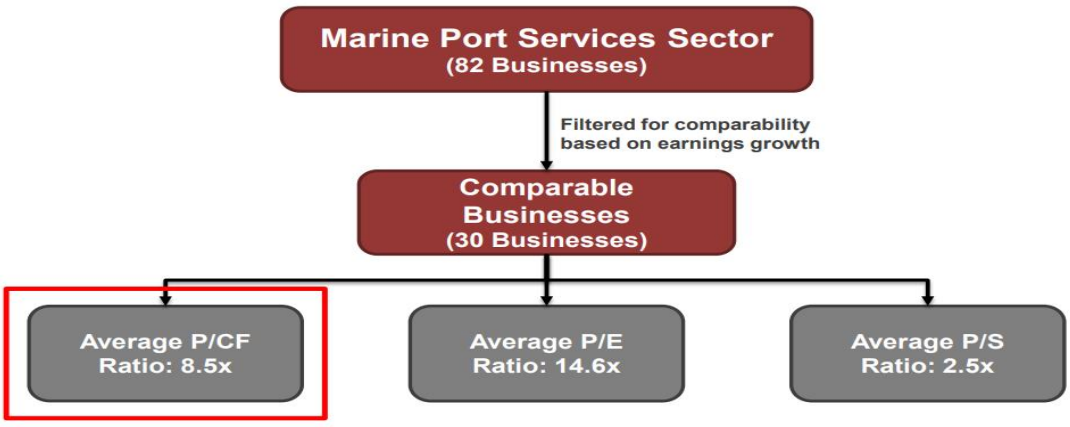


Figure 20: *The chart below shows the key metrics for the valuation of the comparative companies according to data obtained by Reuters on companies in the global port services sector in March 2019 (Gestion et Exploitation du PORT DE BEYROUTH, 2013).*

6.4.2- Computation of Indicative Value of Operations in 2005 and 2017.

Charts based on previously calculated valuation multiples and port financial data. Revenues increased by 3.5 times, operating expenses by 2.5 times, and operating profit by 5 times, which is quite a high indicator for port operation (Gestion et Exploitation du PORT DE BEYROUTH, 2013).

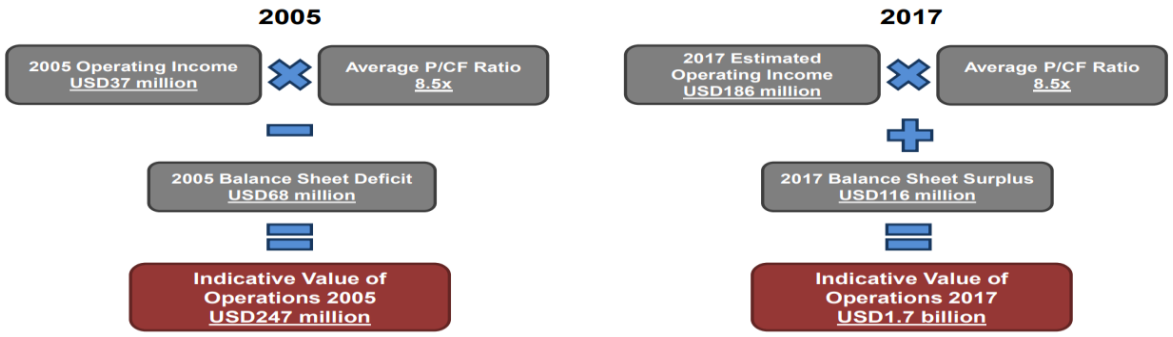


***Figure 21**: The chart below shows port operating costs in 2005 and 2017 (Gestion et Exploitation du PORT DE BEYROUTH, 2013).*

6.4.3- Drivers of Indicative Value of Operations.

Figure 21 and table 2 show the correlation between the underlying drivers of port value and the resulting indicator values

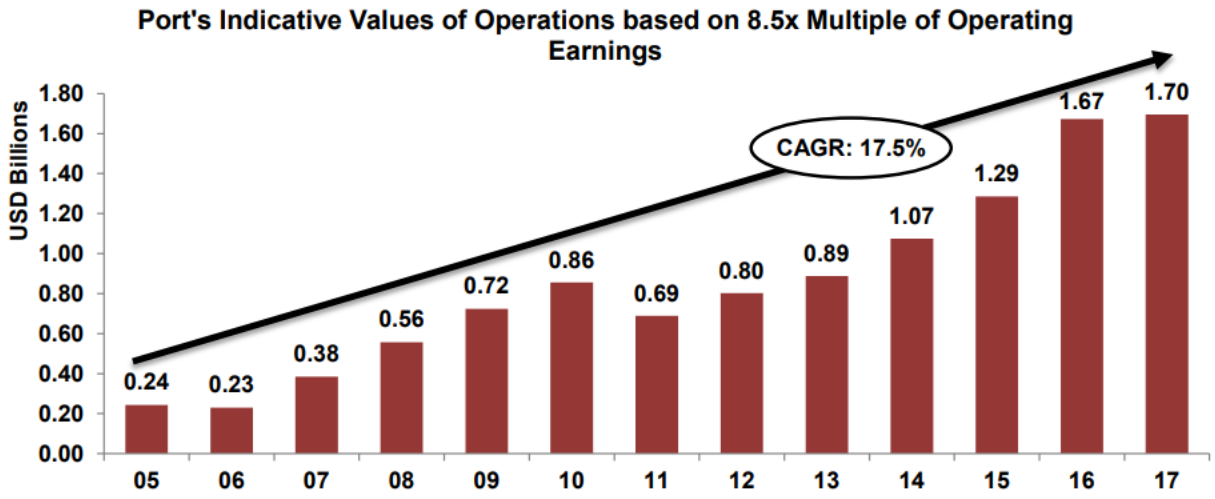


***Figure 22** show the correlation between the underlying drivers of port value and the resulting indicator values of port activities. (Gestion et Exploitation du PORT DE BEYROUTH, 2013).*

of port activity.

The operating cash flow multiple for the 13-year period ending 2017 is 8.5x (Gestion et Exploitation du PORT DE BEYROUTH, 2013).

Drivers of Value													
Measure	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Revenue Growth	-1%	-5%	38%	17%	23%	3%	-4%	10%	23%	-1%	11%	14%	13%
Operating Expenditures Ratio	59%	61%	56%	49%	47%	42%	49%	47%	50%	40%	38%	32%	41%
Operating Income Ratio	41%	39%	44%	51%	53%	58%	51%	53%	50%	60%	62%	68%	59%
Operating Income Growth	-5%	-10%	56%	34%	29%	12%	-16%	15%	14%	20%	14%	25%	-2%

Table 2: *show the correlation between the underlying drivers of port value and the resulting indicator values of port activities. (Gestion et Exploitation du PORT DE BEYROUTH, 2013).*

6.5- Port expansion:

The readiness of work at the berth of the containers station, which is specialized to receive ships carrying containers, is open 24 hours a day, so that the station provides direct and uninterrupted service for any ship arriving at the mentioned berth, from the hour of its arrival until the completion of its loading or unloading operations with containers.

The ship's unloading operations are also accompanied by storing these containers in the backyards of the station until they are taken out later and handed over to their owners.

As for the readiness of work on the docks designated to serve ships carrying general goods, it is limited to the regular work hours of the Customs Administration, i.e. from seven a.m until four p.m, given that most of these goods

are stored within the customs warehouses within which work is subject to the mentioned working hours.

The general merchandise subject to the direct delivery system, the most important of which is the iron consignments imported through the port. The readiness to serve the ships carrying these consignments is also confined within the regular work hours of the Customs Administration as well as the running times of the trucks that take out these goods from the port campus and consequently the traffic on the external roads, so that the service of iron-carrying ships currently does not exceed eight hours during each regular working day in the port. Therefore, because of the currently adopted method of work on the berths of general goods in the port, the productivity of these berths is very low and does not comply with the standards applied in this field in modern and developed ports. Thus, if the productivity is not improved in handling general cargo in the port, and plans aren't made to accommodate the expected increase in the movement of containers, the port will face major problems as a result of overcrowding and its inability to accommodate this growing and expected movement in the coming years.

This is what the administration seeks to avoid by implementing the current phase of the port development project, which deals with the construction of a multi-purpose terminal that combines the movement of containers and general merchandise, through the new developed berth 14 and its backyards for storage, which were developed because of the filling in the fourth basin. The readiness of work on this new berth will be open 24 hours instead of "8 hours currently", which means that the productivity of the mentioned berth will increase significantly to match the standards in developed ports (Gestion et Exploitation du PORT DE BEYROUTH, 2013).

The importance of creating a new multi-use berth 14 as a result of backfilling the fourth basin:

1) Establishment of a new multi-use terminal (for containers and general merchandise) with new storage areas of approximately 140,000 square meters- Construction of a new and advanced berth with a length of 500 m and a depth of 15.5 m.

2) Increasing the annual capacity of containers by about 200,000 standard containers

3) Increasing the annual carrying capacity of general merchandise by about 500,000 tons.

4) Designing new yards with enough flexibility to allow handling the increasing movement of general cargo or containers as needed.

5) The ability to receive giant ships that require a depth of between 15 and 16 m.

6) Finding additional storage spaces, which allows the increase in productivity in unloading ships.

7) Reducing shipping costs due to reduced docking times and the ability to receive giant ships that require great depths.

8) Establishing a specialized station for handling and storing iron consignments, thus increasing the capacity from one million tons annually to about 1.5 million tons in the short term, and up to the possibility of greater absorption on the long term.

9) Equipping the new station with modern and advanced equipment that will increase productivity in handling both general merchandise and containers.

10) Creating new job opportunities for the Lebanese workforce, as this station will operate 24 hours a day.

11) This increase in productivity will increase the port's imports and, consequently, the profits of the Lebanese government. It will also enable the port of Beirut to rank Number 7 or 8 in the general ranking of ports in the Middle East, instead of "ranking Number 13 now." (Gestion et Exploitation du PORT DE BEYROUTH, 2013).

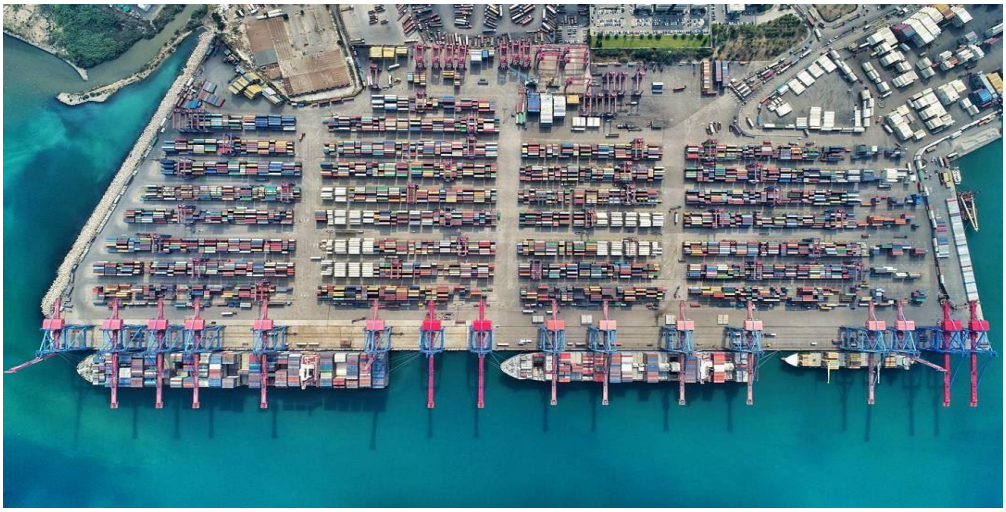


Figure 23: *Top view picture of the Port of Beirut (Michokhoury, 2017).*

Chapter 7: Port of Beirut Explosion 04 Aug 2020

7.1- Port of Beirut explosion impacts:

The world witnessed one of the deadliest explosions in history on the evening of August 4, 2020 (around 15:00 GMT).

The fire and subsequent explosions were initially observed and reported by civilians in the Lebanese Republic and posted as videos and posts on various social media sites, with news and reports pouring in.

The large explosion occurred in a warehouse storing ammonium nitrate and dozens of bags of fireworks. Two consecutive bombs, one smaller and one larger, created pressure and shock waves that spread to various areas around the port.

Figure 24*: Photo shows the damage after the explosion. Thibault Camus/POOL/AFP via Getty Images*

7.2- Post-explosion damage:

The explosion occurred near the port of Beirut, on the northern outskirts of the city. It devastated surrounding structures, grain silos and warehouses. The ceilings have fallen, windows and walls exploded, and debris was thrown up to two kilometers from the port (BBC News, 2020). In addition, cars and a cruise ship had capsized, and the streets were littered with wrecks of damaged surrounding buildings. A ship was blown overboard near the blast site and landed on a dock (BBC News, 2020). This shows how powerful the explosion was and how much damage it caused. Given that the blast took everyone by surprise, the

blast's ability to demolish such massive infrastructure shows the damage to which humanity has been subjected.

According to sources, one ship was also completely taken out of the sea and onto the quay (BBC News, 2020). The grain terminal and grain silos in the port were destroyed by the blast. The demolished silos contained a significant amount of grain that was part of the country's strategic grain reserves, posing a direct threat to the country's economy (Somwanshi, 2020). The silos, which had a total capacity of 120,000 tons of grain and consisted of 48 large and 50 small cells, contained 85% of the country's grain (Somwanshi, 2020).However, it is thought that the silos were not full at the time of the explosion, as the country was trying to cope with the bread shortage caused by the recent financial crisis. Around 15,000 tonnes of grain were burned, leaving Lebanon with less than a month's supply of grain.

Figure 25: *Picture shows the comparison before and after the explosion (Cnes 2020, DistrIbution Airbus DC ,BBC).*

The port has long been an important element in Lebanon's freight supply network, handling 60% of the country's imports (Somwanshi, 2020). The explosion it was huge, destroying the immediate port area and leaving behind a 140-meter-wide crater (BBC News, 2020). The ammonium nitrate warehouse

was completely destroyed, while the adjacent grain silo was severely damaged, as can be seen in Figure 25 (BBC News, 2020).

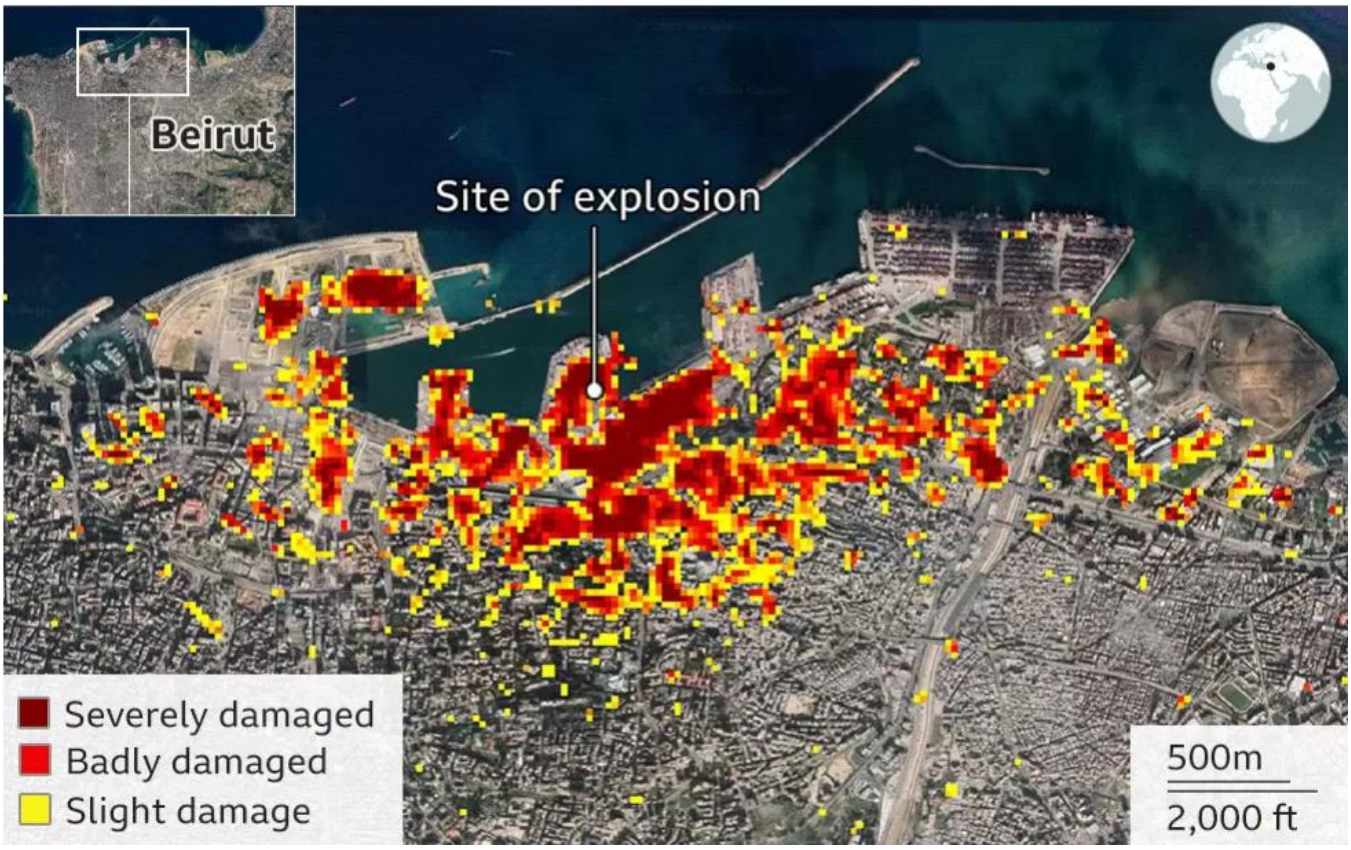


***Figure 26**: Shows the damaged part of Beirut after the explosion (ASA/JPL - Caltech/ Earth observatory of Singapore/ESA, BBC).*

Based on an analysis of videos, a team from the University of Sheffield estimated that the explosion was equivalent to 1,000 to 1,500 tonnes of TNT, about a tenth of the intensity of the atomic bomb dropped on Hiroshima in 1945. The areas closest to the port of Beirut where the explosion occurred (Mar Mikhail and Karantina) were completely destroyed, while the areas further away (Saifi, Ashrafiya and the city center) were partially or slightly damaged.

7.2-1. Damage statistics

The damage statistics reached after the explosion:

1) 52% of the houses located within the radius of the explosion were damaged.

2) Out of a total of 14,324 residential units identified, 864 (6%) were destroyed.

3) 55% of the 143 schools within the radius of the explosion were damaged, 18 of them seriously damaged or destroyed.

4) 43% of cultural heritage sites (including museums, places of worship, cinemas, etc.) were damaged.

5) Out of 3,430 cultural heritage sites, 359 (10%) have been destroyed.

Damage Level	No.	%
Minor	2,236	33.81
Moderate	1,364	20.62
Major	2,981	45.08
Severe	31	0.47

Table 3: *shows survey from a total of 6,612 damaged buildings (Order of Engineers and Architects ,2020).*

Figure 27: *Shows damaged buildings in the area (BBC News,2020).*

7.3 - Social impacts:

Six months later, the extent of the unseen psychological aftermath of the explosion is still unknown. Several reports have highlighted the collective trauma experienced by blast survivors, including nightmares and fatigue, as well as an increased need for mental health sessions. Even in the months following the blast, there were reports of growing depression, as well as higher rates of suicide and calls to suicide hotlines – many of which were attributed to the deteriorating situation. The blast also brought back memories of earlier trauma suffered by generations of Lebanese citizens who endured multiple civil wars, displacement and, more recently, escalating violence and unrest during mass anti-government protests. Those on the front lines have been particularly affected, including health workers already overwhelmed by the rapid rise in COVID-19 cases and untrained in the fallout from the outbreak explosion.

Aid workers and volunteers who responded immediately after the blast, such as those from the Lebanese Red Cross, described the devastation they had while they were digging in the rubble to save the victims, as well as the pain of the rescuers who had also lost friends and family.

Children, around 100,000 of whom were directly affected by the blast, were also believed to have been significantly affected by the blasts, with more than half of those surveyed in a UNICEF survey after the blast showing signs of trauma. In fact, child specialists in Beirut have observed symptoms of post-traumatic stress disorder in young children, such as: involuntary urination and social withdrawal. According to Dima Wehbi, political adviser to the International Rescue Committee (IRC) in Lebanon, the explosion had a particularly devastating impact on children and young people (Al Tahrir, 2021).

Figure 28: *Shows Post - Explosion.(AP Photo/Hassan Ammar, 2020)*

"First, on psychosocial support, which is a major programmatic priority: In a rapid needs assessment conducted by UNICEF and partners, which took place between 10 and 17 August, half of respondents reported that children in their households were showing changes in behavior or signs of trauma or extreme stress following the explosions. These behaviors and symptoms can include severe anxiety; quietness or withdrawing from parents and families; nightmares 38and trouble sleeping; and aggressive behavior. One-third of households also reported negative symptoms among adults.

It is clear the needs are immense. Many children will require urgent and sustained psychosocial support to address the trauma of the explosion. UNICEF's psychosocial support comes in the form of psychosocial kits for children and parents; setting up child-friendly spaces in affected areas; and the provision of more specialized, intensive, and longer-term support for those who need it." – (UNICEF, 2020)

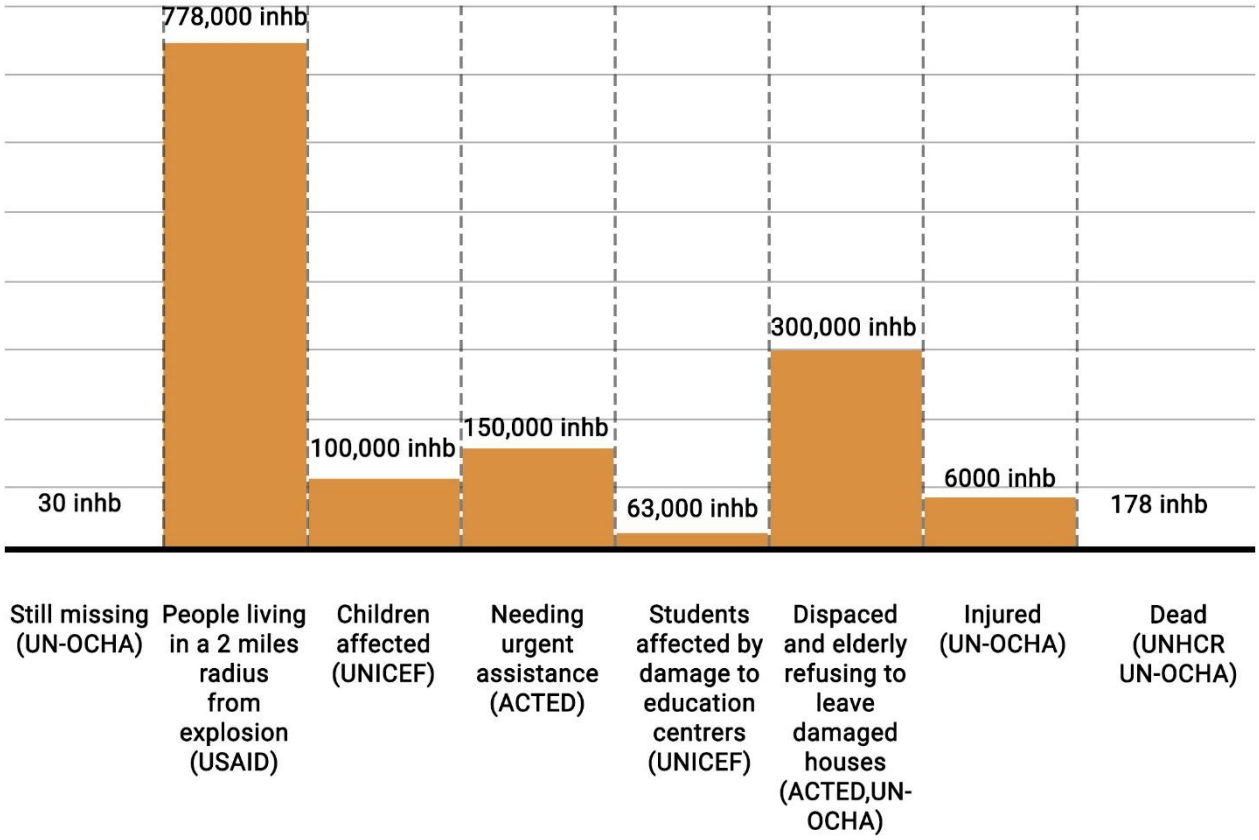


Figure 29: *Shows affected People (Booz & CoMpany, 2020) Graphics Managed by Authors.*

Several days after the explosion, there were much broader issues that were not addressed, like:

a) It is estimated that 5% of the buildings involved are disconnected from the main water supply. Families lack of clean water due to damage to connections between water sources and buildings, as well as inside buildings.

b) Waste management services are limited and inefficient, increases the risk of waterborne infection.

c) six large hospitals and 20 clinics suffered partial or serious structural damage, reducing the collective health capacity by 500 beds; the Ministry of Education and Higher Education reports that 159 public and private schools, as well as 20

technical and vocational schools, serving 50,000 children and young people, suffered from minor to significant damage.

The explosion also injured many refugees in Beirut, estimated at over 1.5 million. It is estimated that almost 60% of Syrian refugees lost their jobs during the blockade in the months before the bombing, and the proportion of refugees below the poverty line increased from 60% before the bombing to 65% about 90-95%. Palestinian refugees living in the Beirut region face high levels of poverty and limited employment opportunities. Pressure on Beirut's refugee population increased after the bombing, fueling anti-refugee sentiment and increasing anger among host communities and Lebanese politicians.

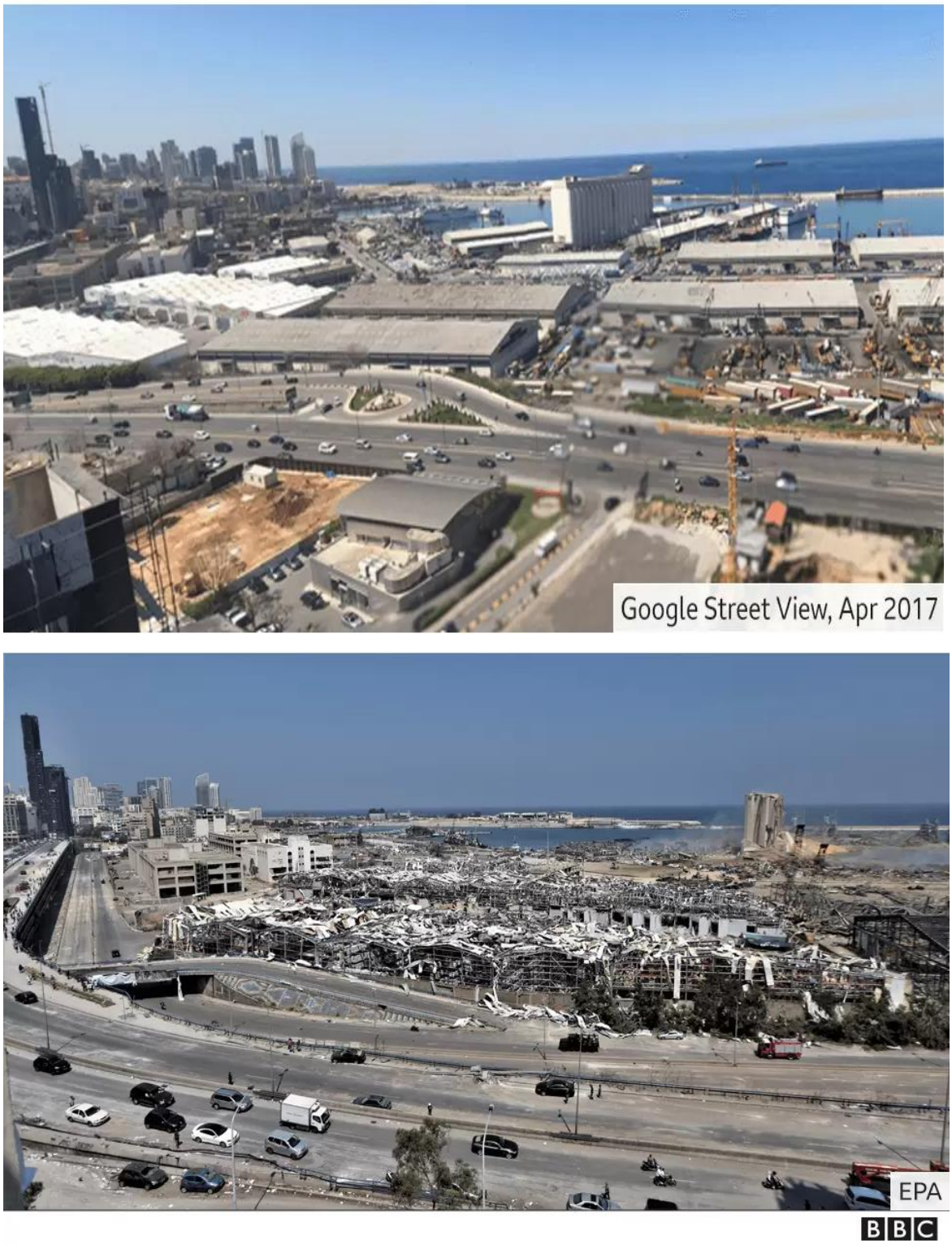


***Figure 30**: Shows devastation on Beirut Dockside (BBC News, 2020)*

7.4- Economic impacts:

Since mid-October 2019, Lebanon has been hit by a series of compound shocks, including civil unrest, financial turmoil, and the COVID-19 outbreak. The social and economic conditions of the population and refugees in the country have deteriorated as a result of these shocks.

The explosion at the port of Beirut has worsened the socio-economic situation of the country.

WFP had forecast an increase in the number of Lebanese and refugees requiring assistance to meet their needs and livelihoods by the end of 2020 before August. In this regard, WFP conducted numerous remote surveys to measure the food insecurity of Lebanese and refugees during the early stages of the spread of COVID-19. According to the results, the pandemic and associated containment measures have pushed nearly one in three Lebanese into unemployment, while a fifth of the population has faced wage cuts. This resulted in the fear of not have enough to eat, with 50% of Lebanese, 63% of Palestinians and 75% of Syrians fearing not being able to eat.

The economic crisis has had the most significant (and longest lasting) negative impact of the three. According to the Lebanon Economic Monitor 2021, Lebanon’s economic and financial crisis is probably among the top ten, if not the top three, in the world since the mid-19th century. Lebanon's GDP was about $55 billion in 2018 to $20.5 billion in 2021, a 37.1% decline in GDP per capita. These steep declines are usually associated with conflict or war.

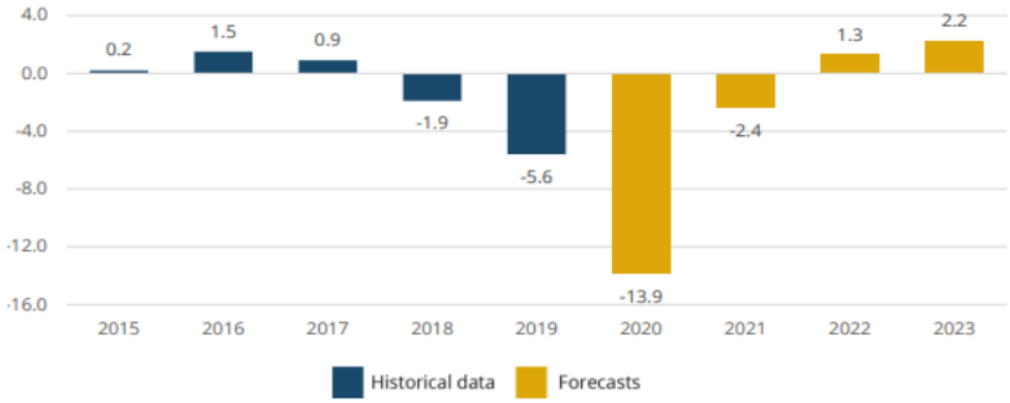


Figure 31: *Shows GDP Annual variation 2015-2023 (WFP, 2020).*

The $4.6 billion in damage didn't stop at home. In addition to the port, more than 120 schools, 6 hospitals, 22 medical facilities and several monuments and cultural heritage were destroyed to varying degrees. (Figure 29) With an annual turnover of 300 million dollars, the port of Beirut is important for imports of essential products and is one of the most profitable sources of income in Lebanon. These losses will be difficult for the country's already declining economy and will complicate the recovery process.(Figure 32)

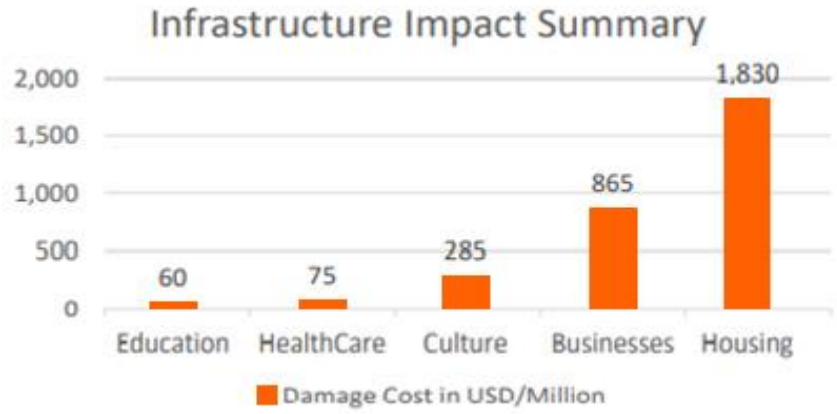


Figure 32: *Affected Sectors (BOOZ & COMPANY, 2020) – Graphics managed by authors*

Additionally, the port warehouse, which housed medical supplies and personal protective equipment (PPE), was destroyed. Lebanon is grappling with new

shortages due to its severe economic crisis and the devaluation of the country's currency, according to Human Rights Watch, while the world grapples with shortages of PPE. With the ongoing COVID-19 pandemic and the urgent need for these supplies, port closures are further untying the country's vulnerable health sector. Many efforts and organizations around the world with various forms of humanitarian aid are working together to rebuild Beirut for the eighth time. The national and international communities have come together to attempt thissaves the country's failing economy and resources restricted health sectors. Therefore, effective coordination is now essential to properly meet the needspeople in need and to avert a humanitarian crisis.

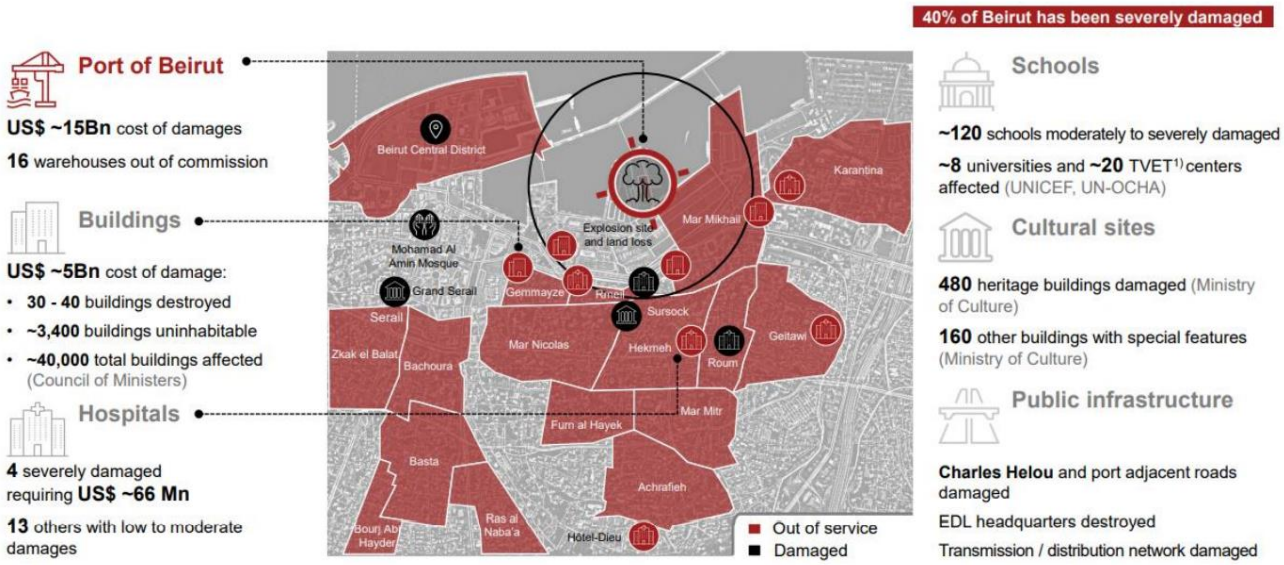


***Figure 33**: Shows Infrastructural damage (BOOZ & COMPANY , 2020).*

7.4.1- Cost estimation of losses due to the explosion

The World Bank Group (WBG) in cooperation with the United Nations (UN) and the European Union (EU), has conducted a Rapid Damage and Needs Assessment (RDNA) in close cooperation with Lebanese ministries, organizations of civil

society and other key stakeholders to identify the global urgently needed to help guide the response.

Preliminary estimates by RDNA estimate that the blast caused property damage ranging between $ 3.8 and $ 4.6 billion, while losses, including the changes in economic flows due to the decline in production in the economic sector are estimated between 2.9 and 3.5 billion dollars. accommodation, transport, tangible and intangible cultural heritage are the most affected sectors.

The public sector reconstruction and recovery needs for this year and next are estimated at $ 1.8 to $ 2.2 billion, with an immediate need between $ 605 and $ 760 million until December 2020 and a need for short term of 1.18 and 1.46 billion dollars in 2021. The transport sector has the greatest need, followed by culture and housing.

The three economic effects of the explosion are: reduction of economic activity caused by the destruction of physical capital; trade disruptions; and cuts in government tax revenues. Before the explosion, Lebanon faced a series of crises, including pre-explosion forecasts of negative double-digit real GDP growth in 2020 due to the conflict in Syria, which still has the highest number of refugees per capita inhabitant in Lebanon. A financial and economic crisis with a weakened financial sector, a currency crisis, extremely high inflation rates, a public sector default and the effects of VOC. The disaster will not only aggravate the economic downturn, but will also reduce poverty rates, which were already 45 percent of the population before the explosion. (World Bank, 2020).

7.4.2- Lebanese Food Security

In addition, the blast severely damaged the port's main grain silos, which contain more than 80% of the cereals imported from Lebanon. With only 10% of Lebanese grain the consumption of domestic production puts the country's food security at risk. According to the United Nations Economic and Social

Commission according to the latest report from West Asia, nearly half of the Lebanese population is concerned about their ability to get enough food. About a third of the population reported not being able to consume nutritious foods all year round. With recent blast losses, these figures are expected go up even more. After the outbreak of public unrest in Lebanon, an inflation rate of 56% was recorded between September 2019 and April 2020. The first results revealed that the cost of shopping for groceries increased by nearly 50% between mid-March and the last week of May due to the impact of previous economic and financial disruptions as well as containment measures related to COVID-19 . The cost of the grocery basket, which includes eight items from the Minimum Survival Expenditure Basket (SMEB), has increased steadily over time. When the current SMEB food component price was compared to the September 2019 price, the cumulative inflation was 109%.

People were asked if they were able to hoard food due to the national emergency and lockdown measures to capture the change in shopping behavior. Many people said they couldn't afford to hoard food because they couldn't afford it. It was clear that the observed price increase had a negative impact on the ability of households to shop. Only 30% of Lebanese respondents said they had food on hand, the highest percentage of any demographic group. (Food of the world program, June 2020).

Of all population categories, the percentage of Syrian respondents unable to provide food due to budgetary pressures was the highest. other they said they didn't because prices are constantly changing and stocking up on food is useless. This is due to the rapid depreciation of the Lebanese pound in the illegal market since mid-October 2019. Although the Lebanese pound is linked to the US dollar, it has lost almost 62% 2 of its value on the black market, resulting in a sharp increase in costs.

Only 13% of Syrians said they had hoarded food as a result of the pandemic, the lowest of the three population groups. Only 23% of Palestinians had emergency food supplies.

People where then asked how long they thought their food supply would last (Fig. 34), with the majority claiming to have a supply of less than a week. Syrian refugees reported that their food supply would allow them the shortest time of a group.

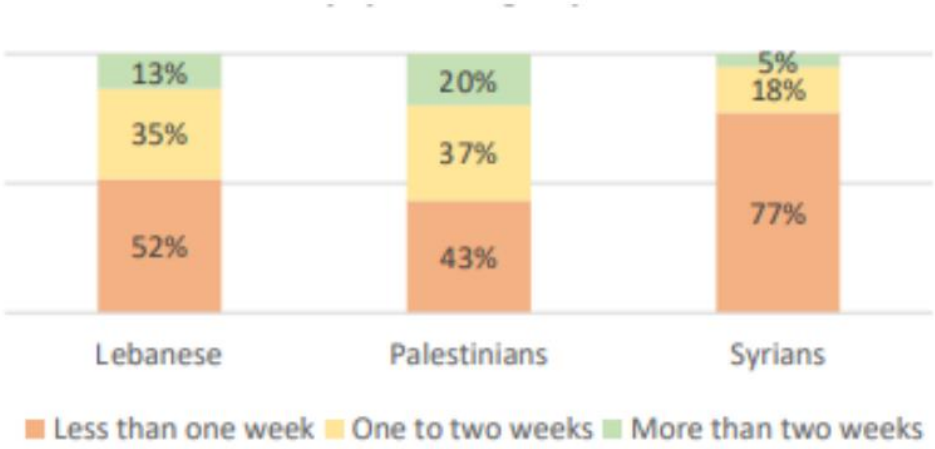


Figure 34: *Shows duration of food stocks reported by population groups (World Bank, 2020).*

The economic crisis, high inflation, COVID-19 and finally the explosion in Beirut have forced Lebanon's most vulnerable groups - including Syrians - to flee Refugees - to the breaking point, with thousands of families sliding further into poverty and vulnerability. One of the most worrying signs of the impact of the worsening of the crisis facing Syrian refugees in Lebanon. Currently surviving on less than LBP 308,728 per person per month, less than half the Lebanese minimum wage (WFP, 2020).

Mireille Girard, UNHCR representative in Lebanon, said: "Subsequent crises have affected all communities in Lebanon - Lebanese, refugees, migrants and others - and the most vulnerable have been the hardest hit. The situation of Syrian refugees in Lebanon has deteriorated for years, but this year's survey results are

a dramatic indication of how difficult it has become for them as another day passes ". She added: "Key findings are released as Syrian refugees are experiencing their worst winter ever in Lebanon (PAM, 2020).

Figure 35 shows that Syrian refugees have the least food resources. Half of the Syrian refugee households surveyed experienced food insecurity. This compared to 28% in the same period last year.

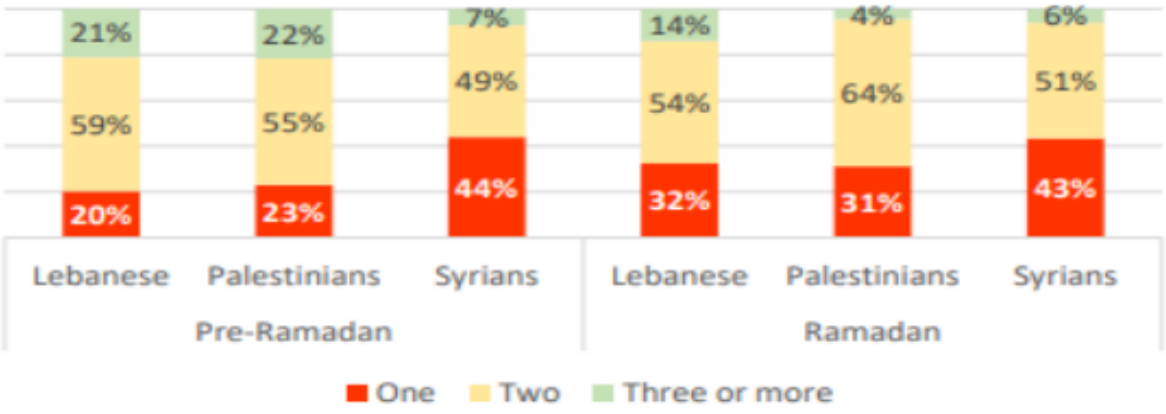


Figure 35: *Shows number of meals consumed per day. (World Bank, 2020).*

The number of undernourished households has doubled in the past year (25% in 2019 to 49% in 2020) and more people are using unhealthy methods of food processing, such as limiting the number of meals a day or cutting back on food consumption.

Responses before Ramadan showed that a higher proportion of Syrian refugees ate a single meal than other groups. For the Syrians, this amazing effect continued until Ramadan, indicating that they were starving until the month of fasting and could no longer afford to eat.

The level of food security changed according to the main criteria of the respondents. The differences are summarized in Figure 36.

Large Lebanese families of eight or more are more concerned about food security than small families, according to a World Food Program survey. They also employ stricter food management mechanisms and limit their food

intake, most likely prioritizing young children. Moreover, the professional situation of Lebanese households is a significant variable, with unemployed households being more concerned and using extreme dietary coping mechanisms than those who remain employed.

Moreover, there were clear differences between families with at least one dependent and those without. Families with at least one youngster and at least one an elderly person said he compromised his food consumption and more frequent use of strict coping mechanisms.

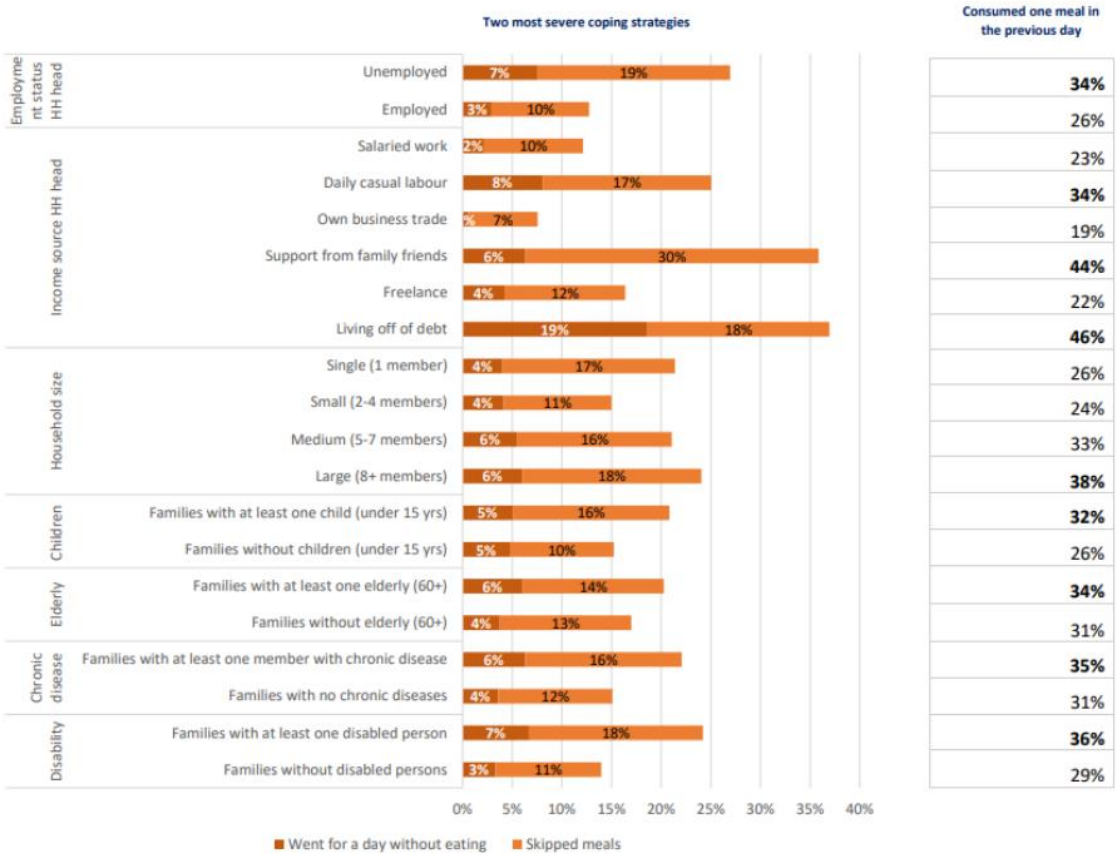


***Figure 36**: Shows food based coping and food consuption by Lebanese households (World Food Programme,2020).*

10.5.3 - Storage and Transportation Safety

Port of Beirut violated safety rules while storing ammonium nitrate. It is necessary to implement and strictly enforce port security procedures and policies to prevent ships from anchoring in foreign ports.

Ships operating between international ports must comply with international inspection and maintenance requirements and safety standards. Off-site storage facilities are critical to public safety (Mokdad, Kazzi, Al-Hajj, 2021).

7.5- Anatomy of the blast

Blasts can cause serious injury to many parts of the body, leading to serious complications such as fatal bleeding and trauma-induced coagulopathy.

Urgent assistance from Lebanese medical and non-medical (volunteer) communities due to poor infrastructure and limited resources is important to save many lives. Blast injuries generally fall into four main categories, all of which occur after an explosion (Figure 37).

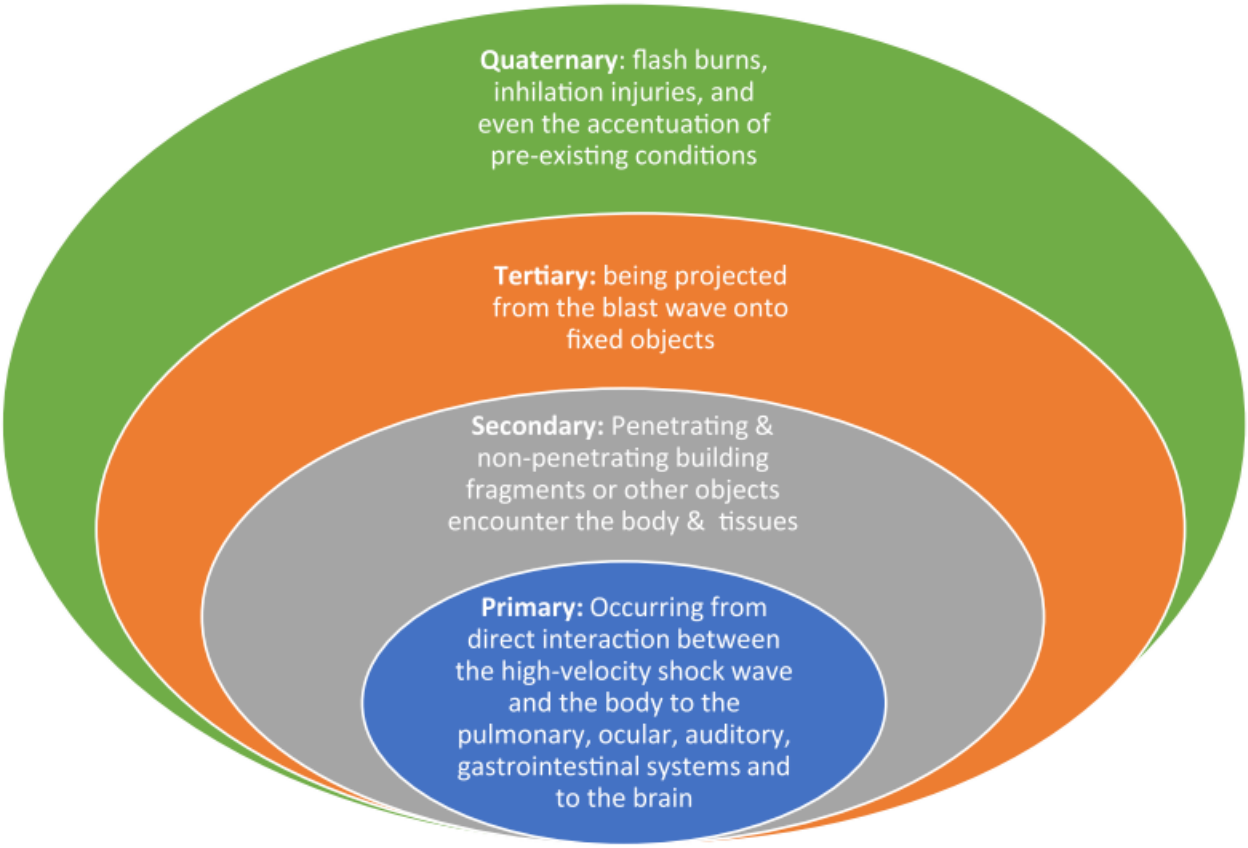


Figure 37: *Shows Blast injury categories (Landry et al. BMC Health Services Research, 2020).*

In addition to these categories of injuries, there are also explosions. For example, the explosions forced many pediatric cancer patients to undergo significant chemotherapy, and transport to other hospitals becomes increasingly difficult as the number of injuries increases. Data on the types of injuries and the frequency of explosions in Beirut were not readily available because documentation was generally insufficient. However, according to unofficial reports collected by international organizations, the injuries caused by the explosions were primarily multiple trauma, tendon ruptures, upper limb injuries, and ophthalmic, facial, and skull injuries. In the **long** term, public and private health systems in all sectors must be prepared to promote health and private health.(Landry et al. BMC Health Services Research, 2020).

Also, after the explosion, the medical and community sectors were mobilized voluntarily to provide relief and support construction. This may have masked some of the fragmentation and structural weaknesses of the health system, particularly with regard to international aid and supply flows. Two months after the explosion, vulnerability resurfaced, and health and social services collapsed.

7.5.1- Mental Health in the Aftermath of the Beirut Blast

In this context, the mental health response must recognize this collective suffering and emphasize that justice is central to healing. Helping individuals alleviate their emotional distress should come with a mental health analysis and responses based on socio-political and socio-economic contexts people's wants and needs.

In addition to treating individual symptoms of suffering, long-term collective healing requires imaginative mental health focused on the needs and rights of people to defend justice and build the foundations for social security and the health of their communities. The explosion in Beirut came as the pandemic made

it clear that a meaningful response to this global health crisis must recognize the structural causes of social, economic and health inequality.

It also happened in Lebanon, the economic crisis and socio-political unrest continue, and the negative impact of social, economic and security issues and the concept of collective suffering and power dominate. The mental health response to the Beirut bombing must be based on this reality. It should include mental health interventions with community interventions that address social stress and promote awareness of Lebanon's awareness of social, political and economic challenges as an integral part of its needs. Focusing on individual symptoms and ignoring the systems that support them can negatively impact both acute and long-term care for individuals and communities.

Mental health professionals, researchers and policy makers in Lebanon are responsible for recognizing the structural causes of collective stress. Their work should move beyond clinical interventions on individual symptoms to integrate awareness and intervention efforts that focus on social suffering, recognizing that suffering is experienced collectively and is not an isolated experience that is unique to the individual. A long-term, community-focused strategy that addresses the needs of different strata, builds capacity to respond to community needs, and supports equity is key to rebuilding Lebanese mental health. (Psychiatric Services, 2021).

7.5.2- Hospital Emergency Preparedness

Although most hospitals have formal emergency and disaster preparedness plans, serious deficiencies in disaster preparedness were identified before the explosion. The Beirut Port explosion highlighted the importance of distributing the storage of medical supplies, equipment and drugs across multiple locations to avoid a single loss of all critical response components, such

as grain and drug storage facilities at the Port of Beirut. Future initiatives should focus on:

Investigate and address any deficiencies in the reformed post-blast health care system and improve system response and preparedness based on existing resources and capabilities. Lebanon desperately needs a plan for economic recovery and conflict resolution. Other countries must prepare for natural and man-made disasters and avoid Lebanon's mistakes in coordinating responses and emergency preparedness (Mokdad, Kazzi, Al-Hajj, 2021).

7.5.3- Build back better' in the health sector?

The explosions are systematic geopolitical and Lebanon's health problems continue. 'Build Back Better (BBB), which originated in the UN SENDAI system and was adopted by the UN General Assembly in 2015, is an approach that sees disasters as an incentive to develop greater "resilience".

Disasters of this magnitude highlight deficiencies in planning and execution, but also provide opportunities to: Improving the health system. The community can and should play a role. Lebanon will decide the direction. Given the large number of existing financial and infrastructure conditions, it is curious whether the health sector will play a central or secondary role in the restructuring process .(Landry et al. BMC Health Services Research, 2020).

7.6- Urban impacts:

In a situation reminiscent of the post-civil war, and while the inhabitants of Beirut and its suburbs are still traumatized by the loss of their homes, businesses, neighborhoods and loved ones, the numerous proposals for the reconstruction of the port of Beirut have begun.

Among the many expressions of interest in this reconstruction process by various international actors - be they private companies, such as the French maritime

transport giant CMA-CGM (headed by the Franco-Lebanese Rodolphe Saadé), or governments, such as China or Russia - the most famous proposal to date is that of four German companies (Hamburg Port Consulting, Colliers International, Fraunhofer and Roland Berger Institute). Presented at a press conference on April 9, this multi-billion dollar initiative aims to rebuild and improve the port of Beirut and adjacent areas. (figure 37)

The proposed plan envisions the construction of a high-end port that would restore Beirut to its traditional role as a gateway to other Lebanese provinces. He intends to move the Port to the east side, with the storage area being moved from the city center to the industrial area near the Beirut River (currently occupied by the Bourj Hammoud landfill) and the main access point to the port being moved from the city center towards the east of the bank of the Beirut River. The proposal includes calls for the development of several skyscrapers overlooking the sea, as well as large tourist-oriented structures. According to the developers, the money invested in these facilities should be used to fund other public infrastructure such as park trees, sports facilities, kindergartens, and schools.

***Figure 38**: German proposal for the port of Beirut and St. Michel district. (source: https://ginosblog.com/port-of-beirut-plans-by-german-investors-renders-more-c2e6813339c5)*

Beirut have been impacted by urban sprawl since a very long time, and this expansion in Lebanon is an outcome of two fundamental factor which are respectively the high demand on residential and commercial facilities as a result of the population growth in urban areas brought by the presence of jobs and work and the second is the availability of resources, services and quality of life in urban areas. In turn, this causes Lebanese cities to grow outside of their administrative boundaries into the suburbs and the countryside, erasing their distinct identities. So, moving the port activity to different place will be a main contributor in the process of urban sprawl which some aim to avoid it.

The Beirut Urban Lab, as part of its aid to the rapid analysis of six neighborhoods published on April 4,Beirut Rescue Efforts: Karantina, Mar Mikhael, Geitawi, Badawi, Bachoura and Karm el-Zeitoun are just a few of the names that come to mind as shown in (Figure 38).

Each of the six urban snapshots places the impact of the explosion among the broader urban dynamics that have shaped the neighborhood studied over the past three decades. It achieves this by providing preliminary urban documentation and an analysis of neighborhood conditions, including a historical overview and insights contextual urban trends, significance profiles stakeholders and a brief overview of socio-spatial conditions.

***Figure 39**: Shows Beirut buildings after the blast (Milad Ayoub, 2020).*

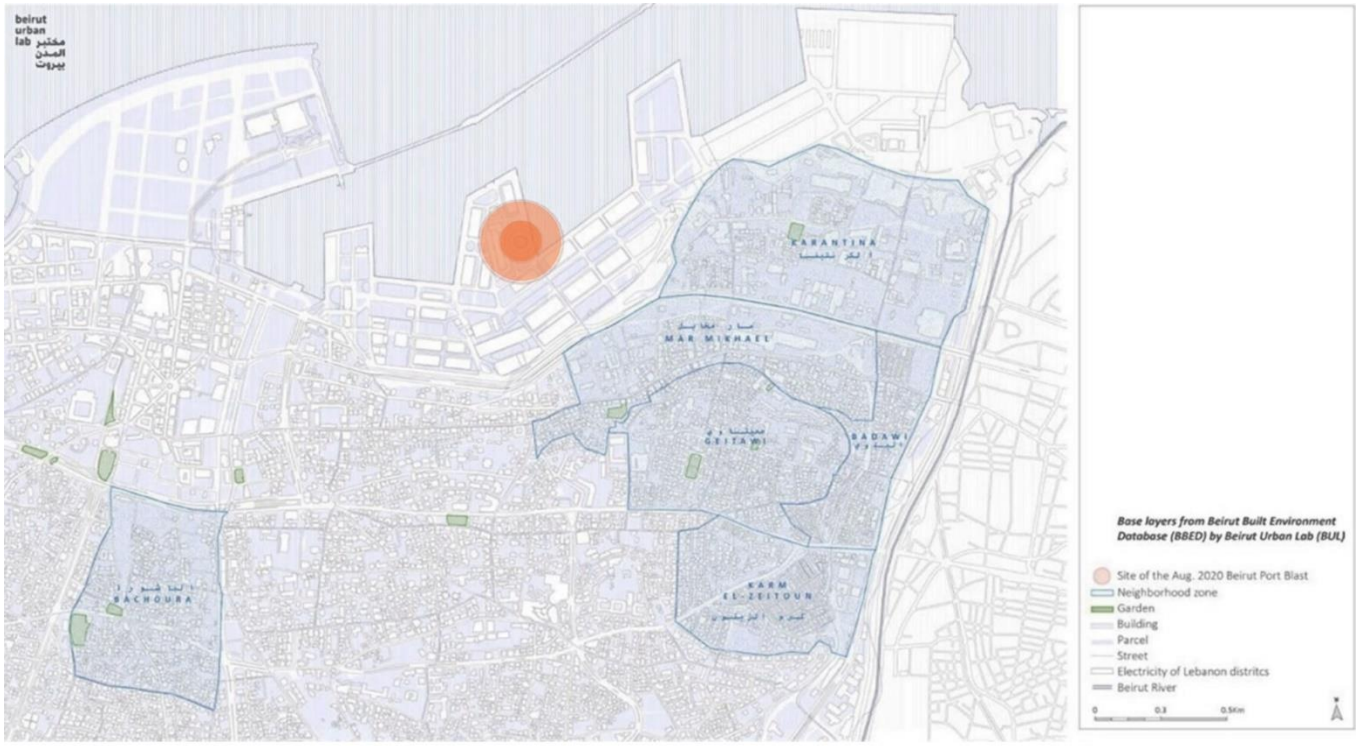


***Figure 40:** Map showing zone limits in all neighborhoods (Beirut Urban Lab, 2020).*

7.7- Theoretical proposals for port reconstruction:

Government institutions and structures will need to be rebuilt, as well as repairing and rebuilding damaged buildings and infrastructure as part of the reconstruction efforts. For example, the report calls for the port to be rebuilt holistically and according to current standards, with better siting and sizing and according to the most effective and open procedures.

RDNA proposes a “Build Back Better” strategy based on a reform, recovery and reconstruction framework that combines structural reforms related to macroeconomic stabilization, governance, business environment and guaranteeing human safety with: interventions that prioritize the needs of people, especially the poor and the most vulnerable.

International aid and private investment will be essential for Lebanon’s long-term recovery and reconstruction due to its insolvency and lack of adequate foreign exchange reserves. To give Lebanon access to both international development aid and external and private sector funding, a credible reform agenda needs to be implemented.

The World Bank, the United Nations and the European Union are working with Lebanon and the Lebanese people to rebuild a better Lebanon that puts the needs of the people first.

Figure 41: *Map showing Neighborhood landmarks in Mar Mikhael, Geitawi, and Badawi. (Beirut Urban Lab, 2020).*

7.8- Port Infrastructure Impacts:

Beirut is among the oldest cities in the world and has been continuously inhabited for more than 5,000 years. The city has several coastlines and a safe harbor. Extension and recovery period. The port of Beirut has seen growth and change in function/role in different eras. Roman occupation (64-6 BC), it was a commercial and economic center serving the "colonies".

The "modern" incarnation that led to Beirut Port's current size began in the late 1800s, when Ottoman authorities gave a private company permission to expand and manage the facility. Following the French mandate in Syria and Lebanon after World War I (ie, a period of supervision by French local governments), the Port Authority was reorganized in 1925 and given a new license which expired in 1960. From 1960 to 1990 the port was managed by a Lebanese company and then returned to the state.

Figure 41 shows the significant expansion of port facilities from 1875 onwards, including the number and size of docks, deeper draft and larger trading areas and warehouses.

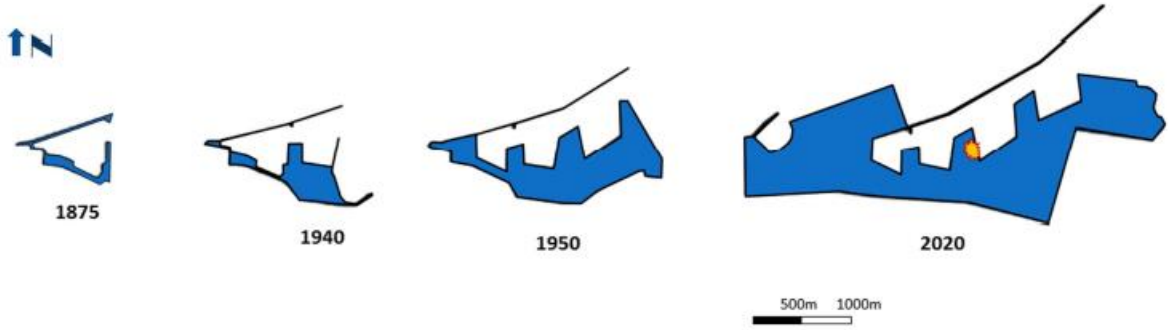


Figure 42: *Scaled representation of Beirut Port expansion from 1875 to 2020. Explosion location marked in 2020 map. (ASCE, 2022).*

A much more significant expansion of the port has taken place in the last 30 years. This allowed for larger container facilities and larger and deeper water tanks, allowing the facility to accommodate the largest container/cargo vessels. In 2019, the port of Beirut accounted for more than 60% of Lebanon's total imports (New York Times 2020), or about 25% of its GDP. Figure 42 will feature different watersheds and berths until August 4, 2020.

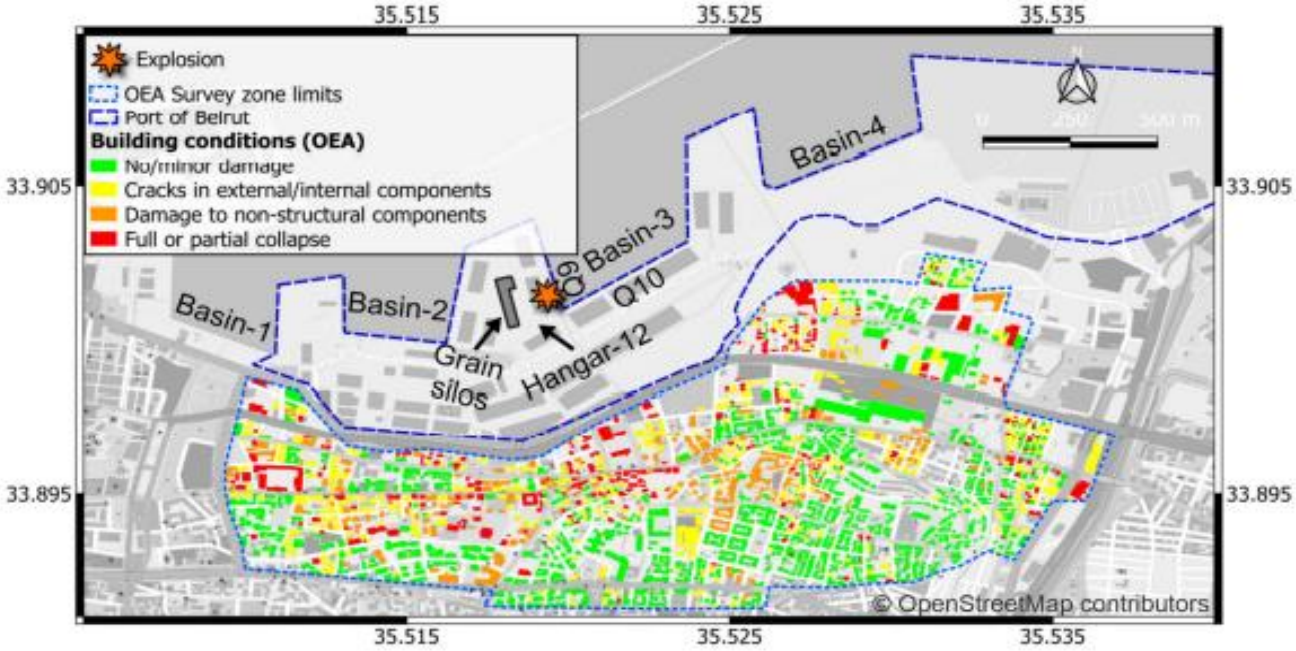


Figure 43: *Map of Beirut showing location of explosion, Port of Beirut, and condition of buildings surveyed by the OEA; basin and quay wall numbers are provided for the port. (Data from OEA 2020; Base map © OpenStreetMap contributors.)*

Given the original footprint of the harbor and the order in which it expanded over time, construction methods and associated complexity varied widely. In earlier versions, the port was located in a natural "deep water" bay on the rocky part of the coast.

The earliest defensive dykes were built by throwing stones from the limestone quarries at the foot of the mountain near the coast. A modern extension to the 1950s (Figure 38 Basins 1, 2 and 3) were based on concrete blocks to form a quay wall with various fills to form a breakwater behind the newly constructed breakwater. As the harbor expanded to the east, large diameter piles were used to form the foundations of the walls and docks, particularly for Basin 4 and the newer deep-sea breakwaters to the north slabs, especially in the working area of container cranes and loading equipment. The use of these foundations was accompanied by land improvements in the general area

of the container terminal wharf. These consisted of preloaded filter drainage placed in some areas of the subsea sediment and additional dynamic compaction of the granular load.

In the mid-1960s, plans to build such barns on a large scale were established and implemented in the area. Phase 1 of the project consisted of 8 silo columns 3 rows deep. Phase 2, completed in 1969, expanded to three rows of 14 deep silos capable of handling a total of 105,000 tons of grain (Figure 43).

Figure 44*: Phase-I grain silos completed and Phase-II silos nearing completion. (Ministry of Public Works and Transport 1970.)*

The Beirut Port Silo was considered an engineering feat at the time.

As seen in the Figure 45, they consist of 3 parallel rows. 14 cylindrical concrete silos supported on 2,900 precast reinforced concrete piles 12-15 m deep, 6 cells were added in Phase III, increasing the total number of columns and capacity to 16.

Figure 46 shows the soil profile of the site based on data from boreholes drilled during phase 1 planning and provided by Forex Sarl (a local field survey company).

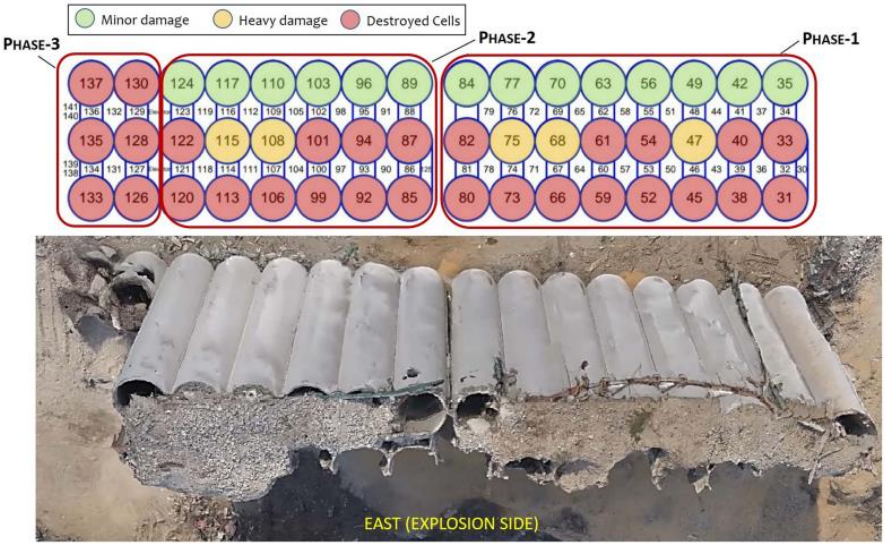


Figure 45: *Plan view showing configuration of grain silo complex. Silo shading indicates blast damage levels. Photo is a composite aerial imagery with laser scan survey looking down. (Image courtesy of E. Durand.)*

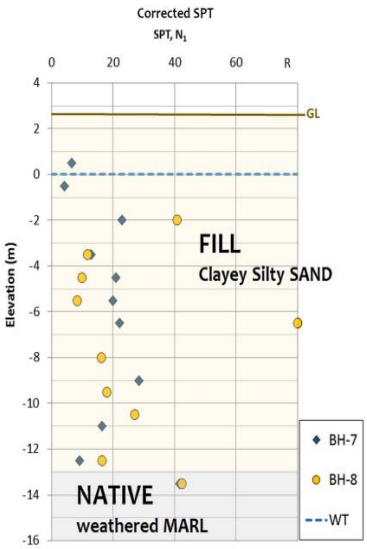


Figure 46 *Subsurface profile;data taken from boreholes below footprint of Phase-1 silos. (Data courtesy of Forex Sarl.)*

An architectural assessment of the seals was carried out in the late 1990s. Significant deterioration of the 17-18 cm thick outer concrete shell of the silo was observed mainly due to the wet and salty coastal environment and subsequent carbonation. The damage was repaired by applying a reinforced concrete jacket with a thickness of 12 cm on the inner wall of the outer/open

silo. This strengthening action improved the silo's response to the explosion on August 4, 2020 (ASCE, 2022).

7.9- Building Impacts:

Beirut has a rich architectural history and includes buildings from many eras. Structures built prior to the 1950s and 1960s were generally small brick, with masonry buildings that did not meet modern building codes. Some of these structures with architectural or historical value are classified as Heritage by the Department of Antiquities (DGA) of the Ministry of Culture. The half-height reinforced concrete frame structure was built in the 1950s. During the Lebanese Civil War (1975–1990), building construction was affected by poor building code design regulations and lack of material quality control (Salameh et al. 2016). Despite Lebanon's high seismic activity, most buildings in Beirut were designed to resist only gravity loads at the time, with little or no lateral consideration.

Seismic standards are included in the building standards implemented in the 1990s, but strictly enforced only in 2013 (Second Edition of Published Lebanese Seismic Standards, LIBNOR 2013).

However, structures built after 1990 can be considered modern. Table 4 summarizes the evolution of Beirut's building stock: typical structural systems, quality of design and construction, and building heights.

Year	Structural system	Likely design and construction quality[a]	Height[b]
Before 1935	Stone masonry bearing walls[c]	GLD; good	Low-rise
1935–1955	Stone masonry bearing walls[c]	GLD; good	Low-rise
	Mixed stone masonry bearing walls and reinforced concrete frames	GLD; good	Low-rise; mid-rise
1955–1975	Reinforced concrete frames	GLD; good	Mid-rise
1975–1990	Reinforced concrete frames	GLD; poor	Mid-rise
1990–2005	Reinforced concrete frames and walls	GLD or SD; good	Mid-rise; high-rise
After 2005	Reinforced concrete frames and walls	SD; good	Mid-rise; high-rise

Source: Adapted from Salameh et al. (2016).
[a]GLD = gravity-load design; and SD = seismic design.
[b]Low-rise: up to 4 stories; mid-rise: 5 to 12 stories; and high-rise: more than 12 stories.
[c]Wood, reinforced concrete, or steel slabs.

Table 4: *Characteristics of Beirut building stock (Salameh et al. 2016).*

This section describes the data collection and GEER results. The collection consisted of a private building immediately after the bombing and a street scene about two months later. Information has been severely affected by the global COVID-19 pandemic, which has curtailed international travel, and by shipping restrictions between the US and Lebanon, which limit imports of IT equipment.

Chapter 8: Project Review Case Study and similar experience

8.1- The Great Halifax Explosion: The disaster that reshaped a city

In this chapter, and after an intense analysis of various case studies suchs as Hiroshima, Japan 1945 and Toulouse, France 2001 , we choose the case study of Halifax, which is the most similar to Beirut's explosion in: Public Authorities responsibilities, Citizens actions, and the Supprot received from surrounding countries and NGOs etc…. The identification and analysis of this case study will contribute to the development of local policies for the recovery and reconstruction of Beirut's urban development following the devastation caused by the non-nuclear bombs that destroyed the port of Beirut and caused great losses.

8.1.1- Introduction of Halifax Explosion

The Halifax Explosion, also known as the Halifax Explosion of 1917 or the Greater Halifax Explosion, was a fatal explosion that occurred on December 6, 1917, in Halifax, Nova Scotia, Canada, when an ammunition ship exploded. The disaster destroyed more than 1.5 square miles of Halifax, killing nearly 2,000 people, and injuring 9,000.

The Norwegian steamship Imo, carrying cargo from the Belgian Relief Commission (a World War I relief organization), left Halifax harbor at 9 a.m. and collided with the French ship Mont Blanc. Before the French war, Mont Blanc

stored 2,925 tons (or 3,224 short tons) of explosives, including 2,367 tons (or 2,609 short tons) of picric acid, 250 tons (or 276 tons) of trinitrotoluene (tortil) and 246 ton of benzene (or 271 short tons) and 62 tons of cotton (or 68 short tons).

Upon receiving the warning signal, the two ships made evasive maneuvers but eventually collided (Figure 46).

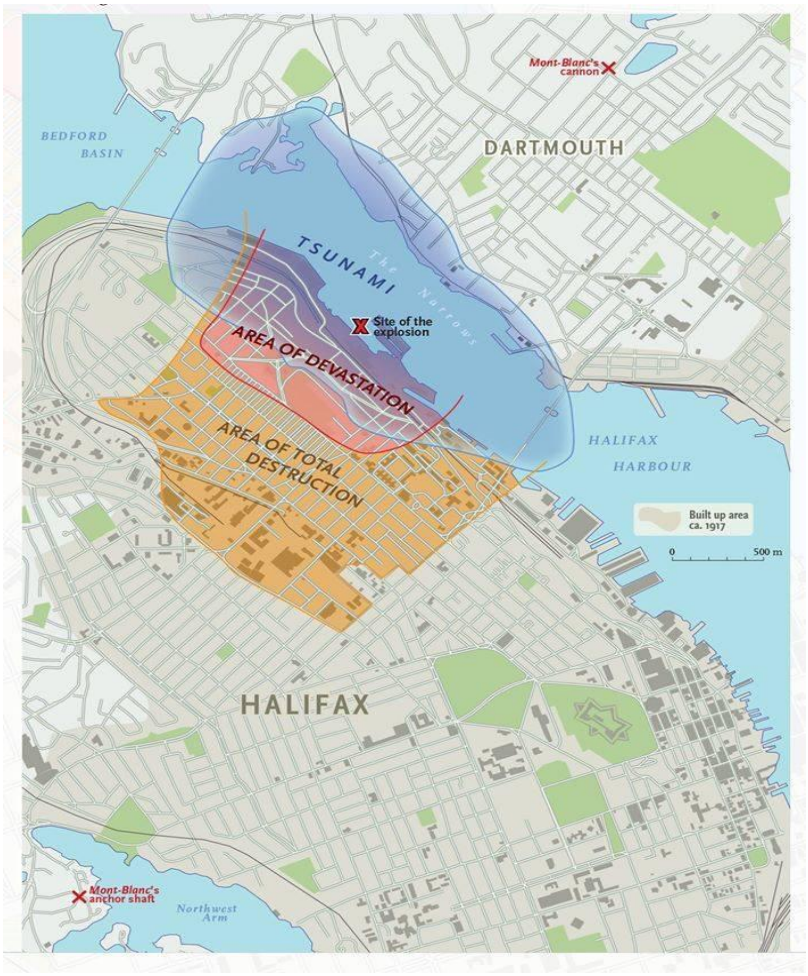


***Figure 47**: Map showing the extent of the impact and destruction caused by the Halifax Explosion of Dec. 6, 1917. (Reddit, 2020)*

Several barrels of benzene, a highly flammable automobile fuel made from coke oven gas, fell on deck and spilled their contents, setting a French ship on fire and sliding into the dock.

Look for damage when people gather in a cloud of smoke. However, Mont Blanc erupted shortly after 9:04 a.m. The explosion and the waves that followed pushed

three blocks into the city and raised the water level about 18 meters above the peak. The tsunami destroyed more than 1,600 structures and scattered debris for miles. Imo was pushed ashore by the force of the waves, where it hit the ground. (Brittanica, n.d.)

8.1.2- Damages

Halifax and north Dartmouth were the hardest hit. The area north of Dartmouth is almost undeveloped. Richmond was apocalyptic. Trees and utility poles were uprooted. The house collapsed, partially collapsed or burned. Trees and telephone poles were broken. Railroad yards along the coast and many large breakwaters to the original harbor were removed. Larger structures of stone or concrete, such as the Richmond Printing Company, completely collapsed. Survivors, including those who were injured or shocked, walked or crawled through the wreckage to find out what happened.

The massive blast killed more than 1,800 people, injured 9,000 others - 200 of them blindingly - and destroyed nearly the entire north end of Halifax city, including more than 1,600 homes, flattened more than 1 square mile (2.5 square km) of the city of Halifax. The resulting shock wave shattered windows 50 miles away, and the sound of the blast could be heard hundreds of miles away.

More than 1,500 structures were destroyed, with another 12,000 being damaged. Following the explosion, 25,000 people were left homeless or lacked adequate shelter,a problem compounded by the winter snow that hit Halifax next time day. The total damage to the property was expected to be over $35 million (The Canadian Encyclopedia, 2011).

8.1.3- Management after Explosion

Public authorities in Halifax were unprepared for the tragedy. Before the eruption, there were few social services, and most were provided by private charities rather than governments. Since the mayor

was away at the time, Deputy Mayor Henry Colwell took over the emergency. It had no reliable police and fire department, and to make matters worse, the town's only fire engine was damaged and the town's fire chief, Edward Condon, was executed.

Despite these obstacles, Halifax managed to attract well-trained military personnel to the city by accident and provided a workforce ready and willing to provide support and command. Sailors from ships that survived the bombings or that were anchored in port after the explosions came ashore to assist in rescue and relief operations. Many homeless or injured victims took shelter and received medical treatment from Canadian, American and other ships in the ports. Survivors from all over Halifax came to Richmond to rescue people trapped in their homes, rescue shocked and traumatized residents, distribute clothing and clear road debris. In the first period after the incident, local contractors supplied the necessary tools and supported the workforce (The Canadian Encyclopedia, 2011).

Aid and supply workers from almost every community in Nova Scotia poured into Halifax. The explosion became world news. The train was loaded with medical aid, doctors, nurses, food, clothing, building materials and skilled workers from overseas as well as central Canada and New England. Of particular importance was the Halifax Massachusetts Relief Committee, based in nearby Boston. Many health care workers in Canada and the United States, especially young people, have nightmares about the injuries they have treated.

Funding for Halifax comes from special requests from the city and donations from governments around the world, including Australia ($250,000 allocated by central government).

In total, more than $20 million has been donated by governments, companies, and individuals around the world. From 1918 to 1976, the fund was administered by the Halifax Relief Commission, established by the federal government in 1918 to handle claims for loss and damage, housing replacement and rehabilitation

of victims of the explosion. The committee was responsible for many relief and rehabilitation efforts. He provided ongoing medical and psychotherapy. It provides medical care, travel and housing for the poor. I took care of housekeepers for relatives who had to go back to work. Or they gave money to people who could not return to work because of their injuries.

8.2- Comparison with Beirut Blast

8.2.1- Waves and Wind:

The types of injuries sustained in the Halifax and Beirut bombings are very similar. Blast waves directly or indirectly interact with humans and affect many physiological systems.

The physics of explosions helps us understand the danger. Shock waves travel at speeds several times the speed of sound and are accompanied by large explosions, invisible phenomena that reach pressures above 10 atmospheres.

The wind immediately following the shock wave is short but very strong, carrying debris. Sound waves or large shocks travel slowly and reach the observer last. The sequence of events is moving too fast for the 90 to respond. Depending on how close you are to the explosion, you may not have time to escape. Debris and glass from the Halifax killed or injured many people. The rate of penetrating eye injuries was unusually high.

8.2.2- Injuries:

Mont Blanc burned for 20 minutes just before the explosion, and many people watched the boat burn. In December, observers watched through the windows as events unfolded. During the mass shooting, many people were injured by broken glass. The Halifax explosions are commonly referred to as the "glass explosions".

8.2.3- Reconstruction:

Public authorities in Halifax were unprepared to deal with the tragedy, but immediately after the explosion efforts were made to clear the debris, repair buildings and create temporary shelter for survivors who lost their homes in the blast.

At the end of January 1918, about 5,000 people were still homeless. A reconstruction committee headed by Colonel Robert Lowe built 832 new houses provided by the Massachusetts-Halifax Relief Fund. On 7 December, auxiliary train service was resumed at the temporary railway terminal in the south-east of the city.

On December 9, full service resumed, North Street Station reopened, and Rail Canada established a special department to clean and repair rail yards and restore balds and ship yards. Most of the levees were opened in late December and repaired in January. The Halifax area of Richmond's North End was hit hard by the blast. In 1917, Richmond was considered a working-class neighborhood and had few paved roads.

After the bombing, the Halifax Relief Commission saw the rebuilding of Richmond as an opportunity and potential to improve and modernize the northern part of the city. British urban planner Thomas Adams and Montreal architectural firm Ross and Macdonald were commissioned to develop a new housing plan for Richmond.

The true nature and extent of Adams' work is unknown, as it has not been subjected to serious research or analysis. Perhaps less well known. An important partnership between Adams and the Halifax Relief Commission is a federal agency established to take full control of emergency management in the seven weeks following the tragedy.

Adams submitted a "Preliminary Report on the Halifax Damage Area" to President Rogers on July 6, which included:

1. Introduction
2. General economic considerations
3. The new street proposal
4. Barrington Street Extension (East of Blight Area)
5. Barrington Street Fix
6. land to be confiscated
7. open space,
8. Apply for approval from the Nova Scotia government urbanism.

His proposal was approved and "blighted area replanning, Halifax N.C." proposing a plan. It ended in August 1918. Adams visited Halifax and presented it directly to the committee.

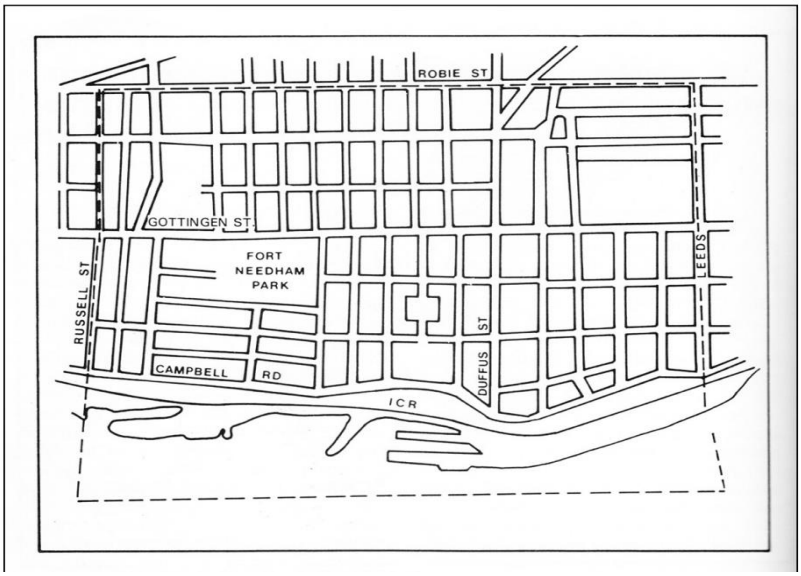


Figure 48: *Richmond District Street Plan before the Disaster. Reproduced from John C. Weaver, "Reconstruction of the Richmond District of Halifax: A Canadian Episode in Public Housing and Town Planning, 1918–1921," Plan Canada (March 1976): 38*

The 20th century urban planning movement known as "the Victorian garden city movement", Inspired Adam in his design. In his proposal, however, he wanted to create a low-rise, low-density, multifunctional urban neighborhood that would provide public access to green space.

The main feature of this preliminary plan for the redevelopment of the devastated area is the replacement of the old rectangular layout by diagonal streets. Two diagonal thoroughfares are planned [Dartmouth and Devonshire Avenues], 80 feet wide, with grades generally ranging from 4 to 5.5 percent, replacing the 8 to 20 in the old street layout. While 508,370 square feet of land is included in these new diagonal streets, there is a potential saving of 433,140 square feet of roads, brownfields, etc. Fort Needham, one of the highest points in the city, is being transformed into a park. The proposed site for a bridge over the bottleneck at Dartmouth is shown in the northwest corner of the devastated area (Figure 49) .

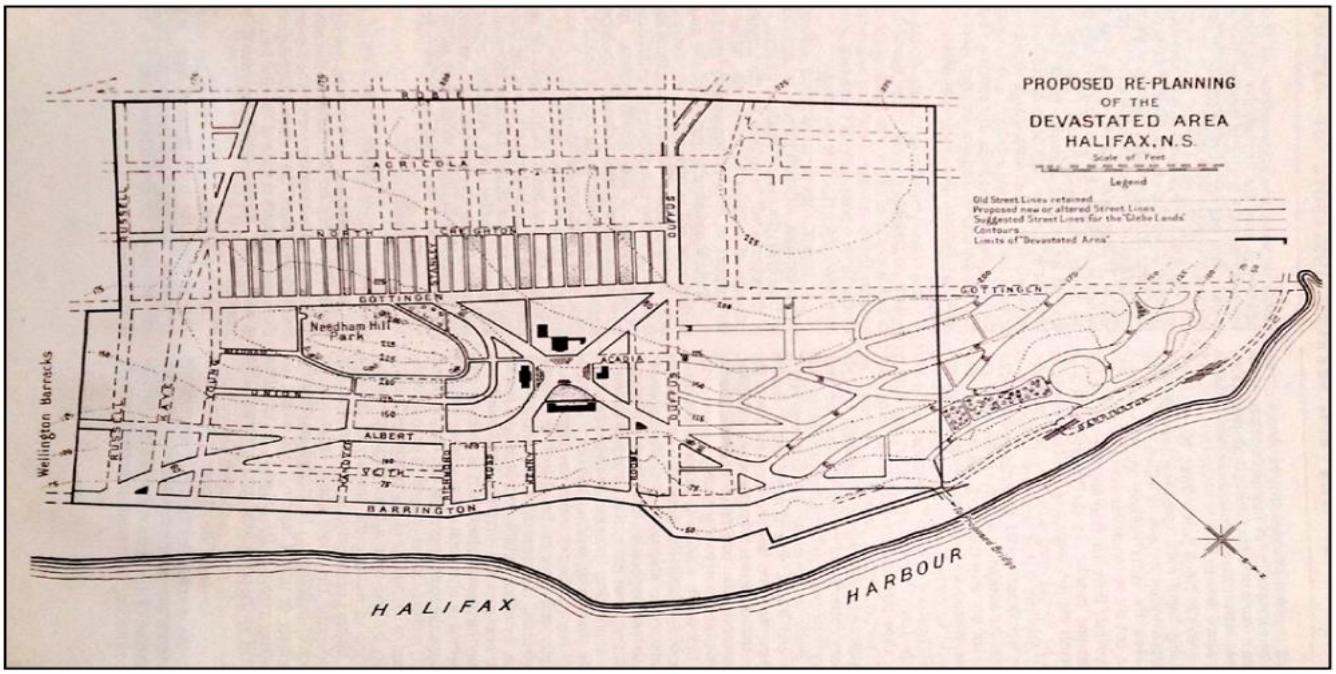


Figure 49*: Thomas Adams's Plan for the Devastated Area, showing elevation contours (broken lines) as well as streets. Reproduced from Horace Llewellyn Seymour, "Town Planning in Halifax and Vicinity," Journal of the Engineering Institute of Canada 1, no. 5 (October 1918): 264*

In September 1918, Adams's assistant Known as Horace Llewellyn presented at the conference of the engineering Institute of Canada the seven's objectives of their plan.

These objectives are:

- A diagonal path to Gottingen Street provides more direct access in a northwesterly direction at an easy grade from Barrington Street at its southern end, closest to the city.
- More direct access from Barrington Street to Gottingen Street in a southeasterly direction, near the point where it will connect with any bridge that may be built over The Narrows [of Halifax Harbour].
- Albert Street was extended to the city's far southerly edge to assure its connection with the eventual continuation of Brunswick Street... making Albert Street a through road from the city's heart.
- Laying out curved streets in areas that have not yet been subdivided or developed, to achieve simple gradients and convenient building sites, as well as to connect with the rectangular development that has already begun.
- Provision of a central square for the construction of public structures
- As much as feasible, existing paved streets, sewers, and water mains will be preserved
- Increase the industrial sector and shoreline as much as possible while keeping Barrington Street's convenience and directness.

8.2.4- Conclusion:

According to the findings of this investigation, planning for the reconstruction of the devastated Halifax region was a complicated process involving several agents, all of whom were allegedly overseen by the Halifax Relief Commission. Therefore, It wasn't an individual work.

Some questions were asked, such as:

1- What about Thomas Adams?

2- As his efforts grew in scale and importance, and his plans for the blighted area only partially realized, what legacy did he leave to Halifax's urban landscape?

The first is that Adams' planned rebuild was overlooked by Garden City tire experts. Adams did not come to Halifax with the intention of turning a wasteland into a garden city or suburb. He came with the conviction that it must be rebuilt according to his concept of "urbanism". This should be done as a whole project, not piecemeal, to ensure that the elements necessary for a healthy community (parks, schools, homes, shops) are located logically and efficiently.

In contrast to Adams' success in expanding the jurisdiction of the Halifax Relief Commission, his success in formulating and executing his plans was generally marginal. *"His reputation could not ensure that his real proposals would obtain complete endorsement,"* Weaver says. No doubt Adam was upset about it. However, it should be remembered that some of his ideas were implemented. Perhaps most importantly, the diagonal of the average degree.

Although it has caught the attention of most non-planners, it will not be easy to make and implement a proposal, especially since it will face opposition as a complete reinvention rather than a return to the pre-disaster area. It is still a representative landmark of the area.

Weaver discovered that he created his own future. The new residential lot overlooking the city encourages social diversity, allowing for larger and more expensive housing for higher incomes.

The proposal appears to have come from the Relief Commission and was officially supported by the architect Ross, but Adams is said to have been involved. Of course, providing housing for a variety of spatially segregated social groups was part of Adams's idea of early British suburbs, which was based on the guiding principles of the Garden City.

As mentioned before, the vast park cannot be attributed entirely to Adams, but it does not matter that it was part of his design. It was what he loved. In this case, it is as surprising that there are no large, monumental buildings or ceremonial avenues.

On the other hand, Thomas Adams's Plan for the Devasted Area excluded the waterfront from its objectives, without any action to be mentioned. And as many other port cities at that time, and despite the blast, recognizing the importance and the enormous benefits of waterfronts to the city was completely ignored, and stayed as distressed areas for several years.

Chapter 9: Roles of Public and Private Institutions

9.1- Overview:

We will examine in this chapter; the major events and participations provided for Beirut and talk about the relevance of the private institution's engagement in the management and recovery procedure following the explosion. on the other hand, after the shock and damage wrought by the explosion in Beirut, the Lebanese people took charge and joined hands. They all helped each other, assisting one another and driving the injured to hospitals. In this chapter, the author will emphasize the government's irresponsibility during this disaster.

9.2- Organizations that took management after explosion:

Following the explosion, a huge number of members of civil society emerged. Removing wreckage, providing aid to those in need, and beginning to determine the extent of damage to people's houses. Some of the participants belonged to neighborhood non-governmental organizations (NGOs), and Offre Joie was one of them to immediately mobilize on the streets (Mirshad, 2020)(Fawaz Harb,2020). *"The breakdown of the Lebanese state throughout the years of civil war had allowed for the development of capable NGOs, many of which are local, to support some of the essential aspects of social life"*. (Fawaz Harb, 2020).
After the explosion and the COVID-19 breakout in early November, when a Syrian man with refugee status lit himself on fire in front of the UNHCR building

in Beirut, observers noted the growing desperate condition of refugees in Lebanon (INFOMIGRANTS, 2020). In fact, a lot of refugees chose to go back to their homes. A total of 38,233 officially registered Syrian refugees had left Lebanon as of December 31, 2020, an increase of over 500% from the previously recorded number of 6,595 departures on July 31, 2020, only days before the Beirut explosion.

With the non-help of the Lebanese government, the Lebanese people flocked to the streets and initiated rescue efforts in addition to the organizations, non-governmental organizations (NGOs), and the Lebanese Red Cross.

The August 4 explosion was unparalleled, despite the fact that Lebanese residents and NGO employees have coped with their fair share of crises and harsh circumstances. With seconds, the geography and history of Beirut were irrevocably changed.

The initial objective of several organizations, including the American non-profit "Anera", was to return people's homes to at least their pre-loss condition and, in some circumstances, to improve them. We follow the basic requirements set by the UN's Shelter Working Group for all home repairs, including installing reliable plumbing systems, doors for privacy, and other elements. This indicates that many of the households' level of living will increase as a result of the repairs compared to the time before the explosion.

Since the days after the explosion, Anera has renovated 500 homes and 80 stores. NGOs like Anera, Development for People and Nature Association (DPNA), Norwegian Refugee Council (NRC), responded, and others were given the duty of repairing damaged residential urban areas in Beirut, as shown in the (Figure 50) below.

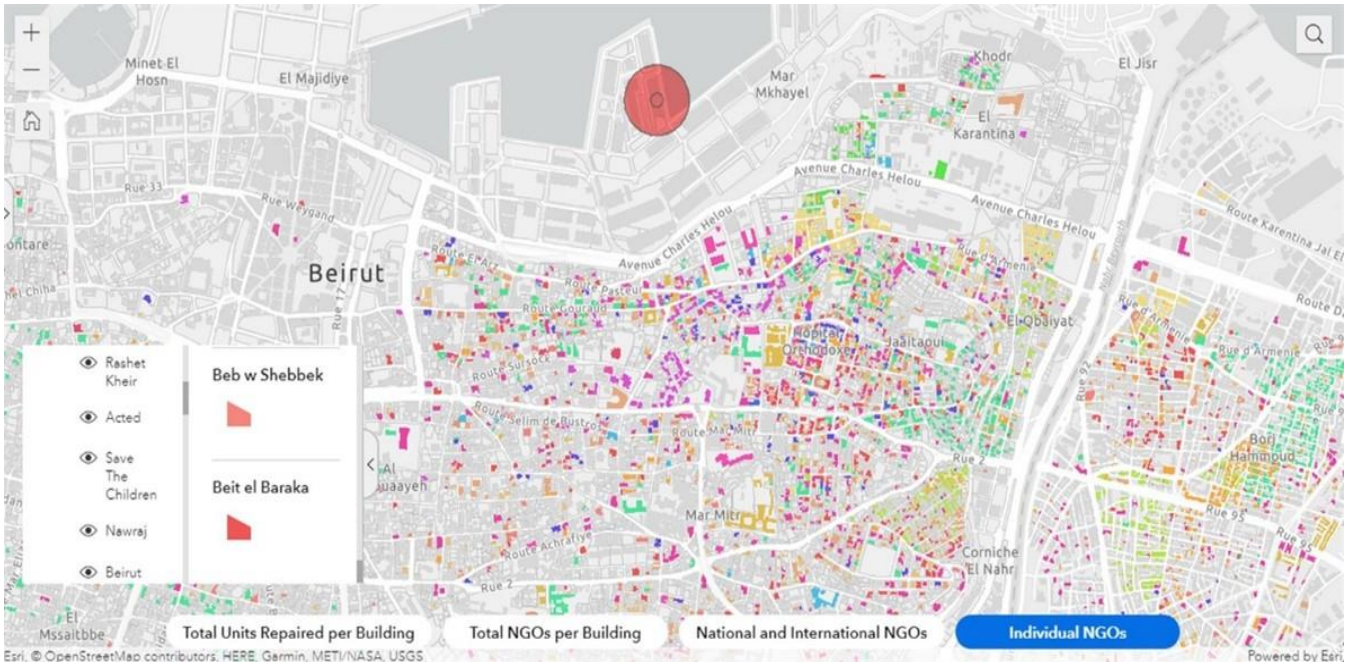


Figure 50: *Map displaying where NGOs conducted post-blast repair works in Beirut (Beirut Urban Lab, 2020).*

Aid for Beirut's disaster response efforts has come from numerous NGOs and charities. For those who are interested in helping or donating, here are some of the most notable organizations and links to their websites.

1. URDA: The URDA has been helping the unfortunate Lebanese since 2012. Today, more than ever, people require aid due to the financial crisis and the Beirut explosion. In the aftermath of the disaster, the URDA is providing water, food, hygiene products, and other necessities to thousands of households.

2. Lebanon 2.0 : Working to improve and strengthen Lebanon is a group of young, energetic Lebanese known as Lebanon 2.0, have been preparing meals every day and giving them to thousands of people in numerous locations across Beirut, including first responders, medical professionals, and local volunteers.

3. The Lebanese Red Cross: The organization provides 24-hour assistance to people in need during the coronavirus outbreak and the current explosion in Beirut. Thanks to a recent foreign donation to the organization, they have been able to assist nearly 6,000 afflicted families.

4. The Lebanese Food Bank : Thousands of households in Lebanon have received food parcels from the non-profit Lebanese Food Bank. And after the horrible events in Beirut, they kept up their efforts. Instead, in order to shield individuals from the ongoing coronavirus pandemic, they have been able to provide food packages and surgical masks to those entering and leaving Beirut.

5. Ahla Fawda : Most Beautiful Mess, also known as Ahla Fawda, is a Lebanese non-profit organization that is led by young volunteers and aims to spread joy throughout Lebanon. By cleaning and rebuilding their homes, the NGO is currently spreading happiness to the people of Beirut.

6. FoodBlessed : A group of volunteers with a strong desire to end hunger in Lebanon founded the Lebanese nonprofit FoodBlessed. FoodBlessed increased its operations during the Beirut catastrophe, which resulted in the destruction of several homes and the displacement of hundreds of thousands of people.

7. Smile & Olive (Basmeh & Zeitooneh) : Is a sign of happiness, serenity, and sustenance. It has been supplying basic food supplies to those persons who have been affected by the incident.

9.3- How Private sectors contribute:

Is it possible for two actors, governmental and non-governmental organizations, to work together to accomplish complementary work and create a society that welcomes all parties and benefits from the outcome?

"Functional prerequisites refer broadly to the things that must get done in any society if it is to continue as a going concern, i.e., the generalized conditions necessary for the maintenance of the system concerned. The specific structural arrangements for meeting the functional prerequisites differ, of course, from one society to an- other and, in the course of time, change in any given society" (Aberle, Cohen, Davis, Levy, Sutton, 1950, 100).

A well-functioning society would not have allowed such dangerous AN deposits in densely populated areas in the first place. As NGOs can make a significant contribution to disaster relief, they cannot replace the government in the prevention phase.

"Does the State have Moral Duties?", Professor Christopher Spencer Lammer-Heindel argues in his thesis. The University of Iowa states that governments and other agencies have moral duties and obligations, and there may also be institutional and ethical obligations. It clarifies the opinion that the country is spread *"a moral duty to protect its citizens from external threats and (more contentiously) it is claimed that it ought to positively promote the welfare of its members."* (Lammer-Heindel, 2012, 1). He goes on to state that *"it is argued that at least some institutional organizations are moral agents in their own right which have duties and 54 obligations that are uniquely their own. According to this antireductive holist approach, at least some institutional duty-claims resist being analyzed into claims about individuals' duties and obligations"* (Lammer-Heindel, 2012, 1).

Lester M. Salamon and Helmut K. Anheier in The Social Origins of Civil Society: An Explanation of the Non-Profit Sector at the National Level. *"the market failure/government failure theory would lead us to expect that the nonprofit sector would be funded mostly out of private charitable contributions. This is so because this theory views the non-profit sector as emerging from demands for public goods not being met by either the market or the state. Under these circumstances, there would be no reason to expect the - 16 - resulting non-profit organizations to be financed either through market transactions or governmental subsidies. To the contrary, to the extent such demands are satisfied beyond the realms of either government or the market, the most likely source of support is voluntary contributions."* (Salamon, Anheier 1998, 221).

Is there a role for non-NGO governments in disaster relief? Was the absence of government operations more evident than after the bombing of Beirut port?

In her essay, Analyzing State-Civil Society Relations: The Lebanese Case, Tanya Haddad addresses the issue of CSO obligations in Lebanon *"…civil society reacting to the paralysis of the government institutions and state failure, developed to fill the space left empty by the retreating state. These in return, became very strong players in the society masking the role of the state."* (Haddad, 2016: 1752). Haddad also adds that *"In the total absence of the state, the lines separating the state and civil society becomes blurry"* and that the role civil society plays is *"…directly linked to level of democracy and the legal framework governing associations in the state… With the absence of the rule of state, civil society adapts to the situation and step into fill the gap."* (Haddad, 2016: 1752-53).

Hundreds of internet fundraising campaigns were set up to assist the victims of explosion, some of them were started by famous people, including Rima Fakih, Lebanese American former Miss USA and her husband raised $1.2 million. within ten days. Most of the money went to well-known and established organizations, like Offrejoie (Joy of Living) or the Lebanese Red Cross, which respectively received $28 million and $8.5 million. Organizations that began to form at the beginning of the economic crisis received a percentage of the cash, and Some organizations, including Beit el-Baraka and Nusaned, which received about $4 million each, demonstrated their value.

Internet links with the names of reputable organizations were posted on social media, guiding Lebanese who were residing overseas and wished to help with the relief effort. The estimated eight million Lebanese living abroad contrast with Lebanon's six million estimated Lebanese citizens.

Locals also started grassroots projects like Basecamp and Nation Station, which gained support and money by transforming their supporters into actual humanitarians. Everything was done to stay away from government agencies and

the political elite, who were held responsible for the port explosion and were seen as corrupt and incompetent.

Private Entities And State Aid	Donations Collected In Millions $$
Beit Al Baraka	4 Million Dollar
The State	5 Million Dollar
Seal / Life and Impact	18+ Million Dollar
Rima Fakih	1.2 Million Dollar
The Lebanese Red Cross	28 Million Dollar
Offre Joie	8.5 Million Dollar
Nusaned	4 Million Dollar

Table 5: *Shows financial aid raised in the aftermath – Graphics managed by authors.*

9.4- The Organizations working in the reconstruction:

Without the NGOs and the thousands of people who volunteered to assist after the explosion at the Beirut port, which devastated half of the Lebanese capital and left hundreds of thousands of people displaced, Beirut would today be a desolate ghost city.Since August 4th, they have been on the ground providing shelter, food, clearing up the debris, mending homes, providing supplies, rebuilding, and providing spiritual and emotional support. Whether through individual initiatives or teams from NGOs, people have been managing the tragedy to the best of their limited abilities, and they have achieved a lot.

Tamanna and numerous other NGOs have been repairing and upgrading homes and businesses. To start the rebuilding process, a collaboration of neighborhood NGOs was set together after the city was divided into damaged zones.300,000 people had to be evacuated because of the 2,750 tons of ammonium nitrate explosion. 67 percent of businesses in Greater Beirut alone were impacted.

100% of the businesses in the Ashrafieh, Gemmayzeh, Mar Mikhael, and Saifi districts were reportedly impacted, according to the Association of Owners of Restaurants, Cafes, Nightclubs, and Patisseries.

Tamanna found themselves in unfamiliar place as they painted, installed new windows and doors, and bought furniture and electrical items. The executive director of the NGO, Soraya Barbir, told The Daily Star that small businesses have advantages over large corporations that are burdened by bureaucratic procedures. *"All we had to do was pick up the hammer and get to work"* Barbir stated.

Barbir claims that Tamanna has yet to receive any foreign donations in order to start repairing the damaged property. *"We heard that glass, wood, and metal were being donated from other countries"* Barbir added. As said, Egypt and the United Arab Emirates were part of it, but *"we did not see anything from anyone"* according to Barbir. (AlBawaba, 2020).

The NGO turned to neighborhood businesses and individual initiatives for assistance. Tamanna has also prioritized recruiting Lebanese people in order to help the neighborhood get through the current economic crisis. *"Even our painters, we hired retired painters to assist because it is a source of income for them." "We made it a point to hire Lebanese people"* Barbir explained.

Despite the rise in demand for products like glass and aluminum, local producers have been gracious. Barbir's team was able to obtain materials at a reasonable cost despite inflation and rising demand. After a property's exterior is repaired, Tamanna focuses on the interior.

To help furnish apartments, Tamanna partnered with the furniture recycling business Min Beib La Beib. Due to the generosity of Lebanese and foreign donors, Min Beib La Bieb was overrun with a quantity of furniture that much surpassed demand.

There has been no official government response or governmental assistance to the catastrophe, which is occurring in the midst of a pandemic and the nation's

worst economic crisis since the Civil War. As a result, NGOs have certainly experienced challenges with fundraising and purchasing power.

Because of the generosity of individuals and foreign aid, many destroyed homes have been rebuilt. 4,000 mattresses were donated to Dafa by donors in Lebanon and other countries, such as the United Kingdom and Malta. Additionally, organizations like kitchen manufacturer Kitwood and home appliance producer Whirlpool gave hundreds of items.

But can Beirut be renovated just by NGOs? *"No, we won't be able to restore anything with NGOs, even the port." "There are massive projects that we can't handle"* Yacoubian remarked. She expressed her wish for an effective government. *"I'm not sure anyone trusts those [politicians]"*, she responded. On the other hand, Yacoubian believes that government involvement in the city's rehabilitation is achievable, citing as an example the three-month repair of Beirut's severely damaged suburbs during the 2006 war with Israel.

Non-governmental organizations' immediate action and tireless efforts have given the victims of the terrible bomb hope and support. Despite these advances, Solh stated that there is still much work to be done, adding, *"Our path to Lebanese people waking up and having a normal situation is quite lengthy." It's a catastrophe."*

Figure 51: *Shows beginning of reconstruction phase (Joseph Eid, 2020)*

Chapter 10: World Bank Policies for Reforming and Rebuilding Lebanon's Port

10.1- Reforming and rebuilding Lebanon's port sector:

The World Bank Group is one of the world's largest sources of funding and knowledge for developing countries. Its five institutions share a commitment to reducing poverty, increasing shared prosperity, and promoting sustainable development.

The World Bank Group immediately after the explosion launched a Rapid Damage and Needs Assessment (RDNA) to determine how the explosion would affect people, property, infrastructure, and service delivery. This was done in collaboration with the UN and the EU.

10.1.1- Guiding Principles

The objectives of the port industry reform in Lebanon are:

Creating a transparent and stable environment means establishing the rules and regulations necessary to run the port.

(1) Provide the most cost-effective services.

(2) Contribute to national economic development 67.

(3) Establish an enabling atmosphere for private sector investment.

All stakeholders in the efficient operation of the port, including tariff and trade facilitation, should be satisfied with this strategy. A new independent port authority will be established to restore trust, with a focus on effective governance and safe port operations, while adding value to the Lebanese community. For this to happen, several conditions must be met, and the budget proposal must include the guiding principles outlined below. Public health and safety must also take priority.

10.1.1.1 Setting the landscape right

(1) Developing a national strategy for ports and corridors, as well as a master plan for the Port of Beirut

(2) Passing a port law that complies to internationally recognized norms:

i. Guidelines are clearly defined: In a port authority, the responsibility of public port policy is formalized in a government department A clear separation of commercial and technical regulatory tasks.

ii. Established Governance Port costs are determined in a transparent manner (informed by cost accounting principles). A clear specification of the professional standards for a Port Manager (or General Manager, Managing Director). A clear explanation of the qualifications, responsibilities, and accountability of members of the Port Board(s).

iii. Accountability and Transparency Transparency in the selection and nomination of members of the Port Board(s), their tenure, and replacements, including nominations from both public and private sector organizations. Minutes

of Board meetings must be made public. Within three months of the end of each fiscal year, the annual independent audit of port accounts is made public; within three months of the end of each fiscal year, the annual port sector report is made public, providing transparency to port operational activities and plans through the publication of Key Performance Indicators (KPIs)

10.1.1.2 Managing the change

The implementation phase should include investment, financial and operational aspects after the framework has been agreed and implemented.

a) Reconstruction of the basic infrastructure that requires updating the Beirut Port Master Plan based on the national strategy for the port sector.

b) Develop strong management practices based on cost recovery principles and cost accounting systems with financial and operational KPIs.

10.1.1.3 Supplementing the port sector reform

Facilitate institutional changes in tariff and border management to enable comprehensive improvements in digital trade and trade facilitation.

a) Supporting structural reform in Lebanon's customs sector and improving the current institutional, legislative and regulatory environment in line with the highest international standards.

b) Development of modern, secure and interoperable Maritime Single Window (MSW), NSW and PCS platforms to facilitate digitization of port processes.

c) Reduce customs clearance times for traders and logistics providers by facilitating integrated border management at Lebanese ports.

d) It provides the capacity building needed to restructure and standardize processes and procedures for port trade and shipping compliance authorities and improve performance.

e) Improving links between border authorities (including customs) and international trade facilitation best practices (RKC, WTO TFA) to reduce trade times and costs through Lebanese ports.

The World Bank has considered four main pillars supporting the rebuilding and rebuilding of Beirut port as shown in Figure 52.

Figure 52: *Building blocks for the reconstruction of the PoB (World Bank, 2020).*

10.2- Smart/Digitized Ports

Smart Port is a digitized gate. "Getting smarter" means getting more attractive, more creative and smarter. They are important hubs for the maritime industry and supply chains of global trade. The port has become a full-fledged community and ecosystem.

Smart Ports are more efficient, effective and economical gates. Residents are also considered important stakeholders in the operation and exploitation of smart ports. Increase security, reduce energy consumption and do more for less with real-time data and a collaborative management approach (Donnelly, 2021).

Therefore, we come up with two important questions:

1) What is the importance of Smart Ports?
2) How is the city affected by Smart Ports?

10.2.1- What is the importance of Smart Ports?

In today's global economy, ships are getting bigger, populations are growing, ports are more complex and goods need to be transported faster.Technological advancements are essential to beautify the surrounding city.

The maritime sector, previously considered resistant to change, will soon embrace powerful technologies that will pave the way for a digitized future. Ports must understand the market, industry participants and stakeholders and develop competitive strategies. Otherwise, we will lose ground as our global supply chains and maritime sector evolve.

The port is also responsible for the safety and security of all parties involved with its personnel. Port authorities are responsible for collision avoidance, environmental protection, pollution prevention and personnel safety (Donnelly, 2021).

10.2.2- How is the city affected by Smart Ports?

Smart Port City recognizes the growing friction between port and hinterland. These areas include residential and industrial sectors. The harbor is dry and under pressure which affects the aquatic environment.

What makes them attractive is the interior space. On the other hand, as the hinterland grows, the port is under pressure. Thus, Smart Port City reintroduces the interaction between port and hinterland and how they can work together symbiotically.

A circular economy is also a characteristic of a smart port city. It's a useless thought. The new idea is that ports have different activity zones, so waste from

one zone is useful and another zone can be reused. The ports of Quebec, Le Havre and Rotterdam are committed to a circular economy.

Because we understand that smart ports are part of a larger ecosystem, we use technology to improve our business while reducing our environmental impact. In addition to specific information and technical know-how, the port community and 74 residents cooperate to become a smart port city. Smart ports not only promote digitization but also introduce port infrastructure to local residents (Donnelly, 2021).

10.3- The World Bank's Digitalization Action Plan for Beirut Port

According to the World Bank, three main pillars for the implementation of a digital platform should be defined in the Beirut Port Digitalization Action Plan. Operational success in the new era of digital gateways is no longer determined by the size of your physical infrastructure. for effective management according to a process defined as a physical asset, ports must invest in hard and soft digital infrastructure. In addition to infrastructure, it is clear that an adequate institutional and regulatory framework is required for continued and successful operation (World Bank, 2020).

Finally, a high level of automation does not negate the need for human intervention. Workers in modern ports must:

(a) be highly skilled; have the ability to effectively manage new skills and

(b) pursue short skill cycles.

In a nutshell, the following three building pieces (pillars) are critical to the achievement of a successful digital implementation action plan:

1) **Institutional Pillar:** The first pillar means a stimulating environment, it includes a public-private data partnership strategy, as well as legal, regulatory and institutional frameworks that support the operational efficiency and long-term viability of digital solutions.

2) **Digital Pillar:** The second pillar is closely related to the secure and efficient architecture of the port's physical assets and the digital solutions needed to help deliver cost-effective port logistics services.

3) **Human Capital Pillar:** Finally, the third pillar focuses on human capital, a technically trained ICT workforce and a range of skills and other competencies required to apply, implement, develop and support new information technologies in port logistics.

10.3.1- The Action Plan:

1. Translating international best practices into successful national implementation: The World Bank draws on lessons learned from its global experience and sets key criteria for effective implementation of digital port solutions. This will provide important support to Lebanese officials in making the necessary adjustments. However, the success of some policies in other countries does not mean that they will work in Lebanon. Lebanese officials should filter this information as much as possible and adapt it to the political and economic environment of the country and the specific needs of the port of Beirut. This requires establishing various top-level diagnostics and studies, identifying current gaps, and managing the efforts of each implementation pillar.

2. Looking beyond the mere IT infrastructure development:

Digital port solutions cannot be seen only as a port IT infrastructure modernization project. Their success depends primarily on managing ports, facilitating trade and, at the same time, adopting reforms to the country's digital infrastructure. World experience shows that the creation of community systems and unique software and hardware tools will not lead to the desired result unless accompanied by the necessary legal, institutional and operational changes. The Lebanese government should prioritize

and prioritize infrastructure development activities to strengthen the revitalization environment.

3. Securing political commitment at the maximum level:

A full and successful implementation of the change management process requires a high level of political commitment. Joint implementation requires strong coordination and cooperation between different ministries. In a politically unstable situation like Lebanon, cooperation between all parties is not an option, it is a necessity. A high level of political complexity, typically based on community and partisan challenges, conflicts of interest, and diverse public and private stakeholder backgrounds, makes consensus building virtually impossible and increases the risk of dramatic resource loss. The Prime Minister will adopt the digital agenda after the election as a symbol of genuine political commitment.

4. Designing a digital port vision endorsed by the port community:

It is also important to develop a strategy through a bottom-up, consultative approach that takes into account the interests and concerns of port users and end users. Digitization affects not only port and maritime management, but the entire port community. As a result, any proposal that transforms current business models and targets automation and digital solutions must be supported by a shared vision and public engagement. This includes a shared vision for the future and a governance structure, as well as defined roles and responsibilities for all key actors (World Bank, 2020).

10.4- Results and Discussion:

10.4.1 Beirut and Halifax:

10.4.1.1: Similarities:

The Halifax explosion caused massive damage to the port, killed 1,946 people and destroyed or damaged 13,500

buildings. The total financial loss is estimated to be around $35 million. Compared to Beirut, the bombing killed 218 people, injured 2,000 people, destroyed 10,000 buildings and destroyed 77,000 apartments. As Beirut is a smaller and more densely populated city than Halifax, the port of Beirut is located in the heart of a densely populated residential area with residential and commercial buildings. The explosion occurred in the middle of all these structures, resulting in estimated financial losses of between $3.8 billion and $4.6 billion, as shown in Table 6 below.

	Damage severity	
Index	Halifax, Canada (2,900 tons TNT)	Beirut, Lebanon (300-400 tons TNT)
Deaths	1,946	218
Affected buildings	13,500	10,000
Estimated financial loss	35 $ Million	3.8 $ - 4.6 $ Billion

Table 6: *Damage Severity Comparison between Beirut and Halifax - Graphics managed by authors.*

The ports of Halifax and Beirut were destroyed, causing significant losses to both countries. With one of the 110 deepest ice-free harbors in North America, Halifax served as a port of call for tens of thousands of Canadian, British and American troops on the battlefield or at home in Europe. The harbor not only housed the Royal Canadian Navy, but also served as a repair and supply port for Royal Navy warships and merchant ships around the world. Beirut Port is also Lebanon's main shipping and customs terminal, through which about 70% of Lebanon's inbound and outbound trade flows. It is in an important position to connect commercial markets.Short trade trips compared to other destinations in Asia, Europe and Africa.

Meanwhile, post-disaster treatment in Halifax was similar to that in Beirut. In both cases, the major steps in reconstruction were taken by the residents themselves, with the help of neighboring countries, neighboring cities and non-governmental organizations. Not only did non-governmental organizations (NGOs) help, but in both cases Canadian and Lebanese residents offered their homes as shelter to those who lost their lives. In Canada, the Halifax Relief Commission handled all donations, but in Lebanon, each group worked individually and was responsible for its own donations. Figure 53 shows the steps taken by both countries to address key governance issues since the crisis.

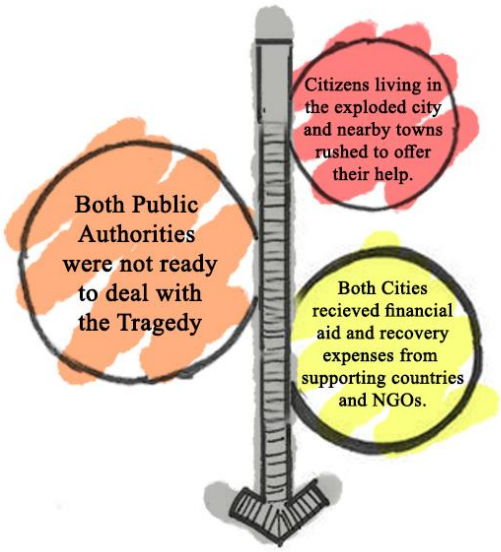


***Figure 53**: Comparison of post disaster management - Graphics managed by authors*

10.4.1.2 - Contrasts:

Although initially unprepared for the disaster, the government seized the opportunity and appointed British urban planner Thomas Adams to draw up a new plan for the city's recovery. Thomas Adams began working on his ideas and later presented them to the Halifax Relief Commission and the federal government. Thomas Adam's suggestion was similar.

Because Hiroshima aimed to reduce building density

and increase green space and open space. The funds raised allowed them to better design, renovate and restore Halifax's urban development while preserving the monumentality of a tragedy like Hiroshima.

Now the question is whether Lebanon has done the same for Beirut. Quite simply, no. Beirut is still covered in ash and bricks, the explosions are forgotten, and life goes on. Instead of redeveloping good ports of the city for the country, the administration is still busy with its own problems. They found that the simplest solution was to move port goods between Sidon and Tripoli.

10.5- Main Outcomes:

The World Bank commissioned a study to determine what policies would be needed to rebuild a viable port in Beirut after the bombing. They started by introducing frameworks and basic guiding principles that Lebanon lacks in terms of frameworks. Their findings show that the four main building blocks or four pillars needed to implement the plan are new port management structures, efficient processes, open and transparent trade and quality infrastructure, all of which have been lacking in Lebanon for years.

They recommended that the city of Beirut be rebuilt and converted into a digitized port due to its strategic location and importance as one of the major ports connecting many cities in the Middle East.

The term "digitization" is not as simple as you might think. According to the World Bank, if Beirut is to become a digital port, it will need structure, connectivity and, above all, political equality and transparency in its administration.

According to them, Lebanon needs to build a basic IT infrastructure, and for this, the Lebanese government needs to pass relevant laws, drafting and operating procedures. On the other hand, the new way of

governing must be guided by strong political commitments that did not exist at the highest level in Lebanon.

The results of this study show that the most important and first digitized ports are in Rotterdam, Netherlands and Quebec, Canada.

Both countries have strong infrastructure and independent energy management, which has facilitated the digitization of their ports. Lebanon does not have all the major policies introduced by the World Bank.

The authors used basic comparison to show the differences and similarities of specific infrastructures between Lebanon, the Netherlands and Canada for port digitization as shown in table 7.

TECHNOLOGIES NEEDED TO ACHIEVE SMART/DIGITIZED PORT		
INDEX	ROTTERDAM, QUEBEC	BEIRUT
BLOCK CHAIN TECHNOLOGY	✓	X
BIG DATA	✓	X
5G NETWORK	✓	✓
ARTIFICIAL INTELLIGENCE	✓	X
INTERNET OF THINGS	✓	X

***Table** 7: Technologies comparison for smart port - Graphics managed by authors.*

As shown in Table 7, the technologies required for smart ports such as big data, artificial intelligence, Internet of Things and blockchain are not yet available in Lebanon, except for 5G networks which are only available in some places due to Lebanon's poor communications network.

Big data companies are available as private companies in Lebanon, but public institutions, especially the port of Beirut, are not responsible

for this research. Countries like Rotterdam and Quebec, which were the first to digitize their ports, have the perfect technology to make these ports work for their intended purpose.

Part 2: Theoretical constructs: Urban regeneration and urban Waterfront regeneration, main overviews, and useful experiences for the case of Beirut.

Chapter 11: Urban Regeneration: main overview

In this chapter we will present a literature review and theoretical framework to explore urban regeneration approaches and strategies. The purpose of this chapter is to identify characteristics of successful urban regeneration, and a criterion of evaluation. The criterion will guide the assessment of the case study of the port of Beirut (POB) and first it will contribute to filling a gap in knowledge about urban regeneration. Second, it contributes to problem analysis and resolution by providing recommendations to local authorities to improve city policy and decision-making.

Urban regeneration is a policy for solving urban problems and decline the problem of the city causes, and effects depend on the circumstances in which many aspects of life are present beside the political, environmental, social, cultural, and economic that have complex relations in the entire system.

Most of the urban regeneration literature focuses on European and examples from the USA. These examples are taken to clarify the causes and characteristics of urban decline. Explain and address the relationship between urban regeneration and sustainability in any case. The Middle East, Europe and the United States are very different in context, but several broad principles and approaches can be highlighted.

Urban spaces are constantly changing. Urban areas reflect the many processes driving physical, social, environmental, and economic change and are themselves important producers of many such transitions.

Urban development is closely linked to theories of urban problems and opportunities (Sykes and Roberts, 2000). Furthermore, Roberts identified six main themes that have derived and shaped the practice of modern urban renewal. However, these themes are:

1- ***Physical conditions and social response****:*

Roberts (2000) points out that although solutions to contaminated sites problems are often technically defined and site-specific, it is important to recognize that there are institutional and physical dimensions to the emergence and persistence of physical problems in cities.

As Roberts (2000) said, this is inevitable because changes in political, social and economic systems always create new demands and opportunities for economic improvement, and it is beneficial because the existence of these important forces allows urban environment conditions to change and improve.

Roberts (2000) argues that this division, reflected in the tension between urban areas as sites and assets for human activity, underlies many urban problems and helps define the boundaries within which solutions can be formulated and applied. (1993) stated that planning systems should include a broader urban management strategy, including investment, physical intervention, social action, and strategic planning.

Major causes include market failures in land allocation and control systems, as well as changing demand from users of urban land and buildings due to deteriorating stocks of buildings and services (Sykes and Roberts, 2000). He argued that the lack of adequate institutional capacity

to intervene in the cycle of physical decline is a major obstacle to recovery in many urban areas. (1993) The relationship between physical problems and planning systems in urban areas. Another reason is that competition for jobs, together with the impact of new housing preferences of workers, provides alternative locations with better services and modern infrastructure, and new locations often offer better land. Value and low cost (Balchin and Bull, 1987). Jeffrey and Pounder (2000) explain that the physical conditions and urban characteristics of cities and neighborhoods are signs of people's prosperity and confidence. Jones and Evans (2013) point out that the history of Britain's development over the past two centuries shows how British cities have attempted to settle and reshape their urban areas in a way that meets the needs of an ever-growing society. McCarthy (2012) noted that the relative importance of each function changes over time, and permanent changes tend to create demand for land, infrastructure, and some related services. In addition, there are several problems associated with the existence of abandoned and contaminated land, and the cost of land development and infrastructure provision is very high.

2- Housing and health:

After recognizing the link between poor physical condition and social deprivation, a series of policy interventions to improve the living conditions of city dwellers emerged from the mid-19th century.

"The eradication of disease, the provision of adequate housing, the supply of pure water and the creation of open space were early priorities, and these areas of activity have proved to be enduring necessities and essential elements of regeneration."(Robert 2017)

This second dominant theme of urban regeneration emerged in response to slums in the Victorian era but continues to require physical intervention to replace dilapidated or unsatisfactory houses and buildings.

In the Victorian era, on-site regeneration was common, but in many cases the density was so high that living conditions steadily improved, accompanied by rapid growth, mainly due to improvements in transport technology.

At the same time, there is a growing acceptance of the lessons and benefits of enlightened experimentation, while reminding us of the possibility and necessity of creating urban conditions where social, economic and physical improvements coexist.

These concerns about the relationship between housing, health and planning deserve further attention. Top of today's renovation priority list is not the physical condition of the house, but the need to promote a healthy lifestyle in urban (and rural) areas. According to a recent report by the Town and Country Planning Association, "Economic growth requires places that improve health" (Ross and Chang, 2013: 5).

3- Social welfare and economic progress *Robson (1988) saw the 'urban problem' as part of a wider restructuring process in which older urban areas suffered greatly from the inherent weaknesses of basic economic hierarchies and their inability to adapt to new commercial needs and infrastructure. According to McCarthy (2012), not only improving the physical environment can solve urban problems, while providing quality housing and reducing overcrowding will gradually improve the situation in urban areas. This profound structural weakness observed in the economies of ancient regions has led some researchers to investigate a variety of random factors, including "urban-to-rural" transitions and "spatial divisions of labor" (Sykes and Roberts, 2000).*

At the time, Cullingworth and Nadine (2002) noted that most urban interventions were related to urban planning rather than urban regeneration. However, Leary and McCarthy (2013) point out that while this getaway to the suburbs has provided relief for the rich and affluent, it has failed to alleviate problems in inner cities and towns, leaving poor and segregated communities with problems. .. Tallon (2013) observed that this allows urban areas to increase their influence and support the process of centralization and concentration.

4- ***Growing environmental awareness****, "Urban regeneration plays an important role in promoting higher environmental standards and the better management of resources. Key issues include encouragement and promotion of better urban drainage and flood management, the provision of open space and the use of improved design to mitigate the effects and impacts of climate change". (Gill et al., 2007).*

5- ***Containment of urban growth and Managing urban shrinkage:***

Significant increases in urban population and developments in transportation systems that allow the concentration and dispersion of people and capital in urban areas have led to the need to control urban growth, leading to urban decline (Tallon, 2013).

Inhibition of urban growth in general is at the heart of modern urban regeneration practices which focus on the inhibition of urban growth and the need to make efficient use of areas that already exist. Pacione (2009) suggests that this process of counter-urbanization began in the 1960s, when influences away from the main cities began to grow faster than the core suburbs and sub-regions. Essentially, Tallon (2013) argued that

suburbanization and semi-urbanization are inextricably linked and have created a continuous expansion.

6- ***Change in the role and nature of urban policies:*** *The 1990s saw some changes in the holistic mindset, recognizing a number of new challenges and issues, including accepting the principles of sustainable development, regardless of environmental issues and their nature. Fully charged with the functioning of urban environments (Roberts, 2000Dissatisfaction with the results of previous strategies, such as slum clearance policies that relocated people to the suburbs, focused more on a series of revisions and updates and improvements to previous policies. (Colquhoun, 1995).*

Roberts (2000, p. 15) writes: "From post-World War II reconstruction to the current partnership model, power and responsibility for the task of urban regeneration have changed hands along with widespread conventions of organization social and dominance. The Power of Political Life'. However, Roberts (2000) explained that central government is at the center of the redevelopment phase, with planning departments providing detailed guidance to local authorities.

To help in creating a working definition of urban regeneration, it is also necessary to identify emerging issues and likely future challenges. According to Peter Robert one of the keys to these challenges is the need to ensure that everyone Public and private policy spheres operate in accordance with the economic, social, environmental, and political principles embodied in the concept of sustainable development.

11.1- Definition and main principles of urban regeneration:

Many terms are used to define urban transformations and interventions such as regeneration, renewal, sanitation, redevelopment, recovery, revitalization, framework, gentrification, and restructuring. It is important to clarify the differences between these names and terms.
The use of the term urban regeneration varies around the world. In the United States, the term urban regeneration is rarely used, but other terms describing urban policies are popular like" Community Redevelopment", Neighborhood Revitalization"," Transit Oriented Development", "Sustainable communities", "smart growth", "new urbanism" and "new regionalism".

This *"Urban renewal in the United States tends towards a narrowly economic or neoliberal development rather than a European model of social inclusive participatory regeneration*" (Jonas and McCarthy, 2010).

The definition of renew in the dictionary is to make over again, to regain or to restore. To regenerate is to implement a complete moral reform in, recreate, rebuild, or renew, take up again, especially in better shape or condition. Revitalizing means giving new life or giving new vitality or strength. Restructuring is to change, change or restore the structure of, organize or influence (a system, a company, etc.) in a different way a fundamental change in something. Gentrify is changing the character (of a poor urban area) by moving in better-off people, improving housing and attracting new businesses, often displacing current residents.

"Gentrification (economic and social valorization), revitalization (economic revitalization with significant social effects), regeneration (regeneration of the social fabric), recovery (recovery of existing physical structures through their

requalification), redevelopment (change in the use of town spaces, due to the improvement of parts of the town), renewal (renovation of parts of the city by substituting functions and structures), framework (arrangement of a complex project of town renovation), and restructuring (radical modernization of town spaces through a plurality of interventions of various types and on differing scales)" (Stanghellini & Copiello, 2011, p. 47).

According to Longa (2011*), "renewal requires radical action where it counts urban redevelopment"*; Renewal involves redesigning urban spaces and infrastructure and reflect on a new role for the city.
Urban regeneration focuses on the physical guidelines. Both public and private spending are needed, but public spending is higher. The redevelopment intersects with other terms associated with former industrial areas, on the outskirts, where Urban interventions modify the old functions, the size of the area is limited. The redevelopment is focused on physical policy, but unrelated to social policy. In some cases, the problem lies in remediation projects, it is the content (function) and not the container (physical aspects) that counts in case of renewal.

Regeneration is linked to social capital, participation, and integration, while physical measures are tools and interventions take place in degraded areas. Restoration or the redevelopment does not require demolition but focuses on the existing structure. "Recovery is in each case an exclusive physical aspect of the built property and has an impact on Components of the urban fabric that deal with conservation and conversion" (Douglas, 2006, cited in Longa, 2011).

There are a variety of urban regeneration approaches and strategies. Although local contexts have an impact on urban renewal policies, general principles can be identified.

Peter Roberts (2017) presents urban regeneration as follows:

"Comprehensive and integrated vision and action which leads to the resolution of urban problems which seeks to bring about lasting improvement in the economic, physical, social and environmental condition of an area that has been subject to change".

Furthermore, Roberts (1999) underlined that "urban regeneration implies that any approach to address problems in cities must be developed with a more strategic and long-term goal in mind". There are many other definitions of urban regeneration, but this seems to be the most complete and precise.

It included all the aspects identified by previous scholars. This definition included the global nature of urban regeneration, as pointed out by Mehta (2009) as a process for improving the physical, economic, social, and environmental conditions of an area.

It also included the essential feature that Lichfield (1992) identified as a better understanding of the decay process and an agreement on what one is trying to achieve and how.

Furthermore, as von Hausner (1993) argues, it highlights the weakness of past urban policies in that they tended to be short-term, fragmented, ad hoc and project-based, without an overall vision for urban development, wider improvement of the city.

However, Roberts' definition may be too ambitious when he states that urban renewal can bring about "lasting improvement", in fact this contradicts the inherited nature of the ever changing urban environment which always presents new challenges and opportunities and the need for adaptation.

Furthermore, as Robert (1999) defined that the history of urban areas and their identity “have five main themes that have dominated previous epochs of urban change and politicies. These themes are: the relationship between visible physical conditions in urban areas and the nature of the social and political response; the need to address issues such as housing and health in urban areas; the opportunity to link social betterment to economic progress; the mitigation of urban growth and the changing role and nature of urban policies"As explained the evaluation of urban regeneration in the different periods of the year, as shown in the following Diagram (Figure54).

Figure 54: *The Evolution of urban regeneration (Roberts, 1999) – Graphics managed by authors*

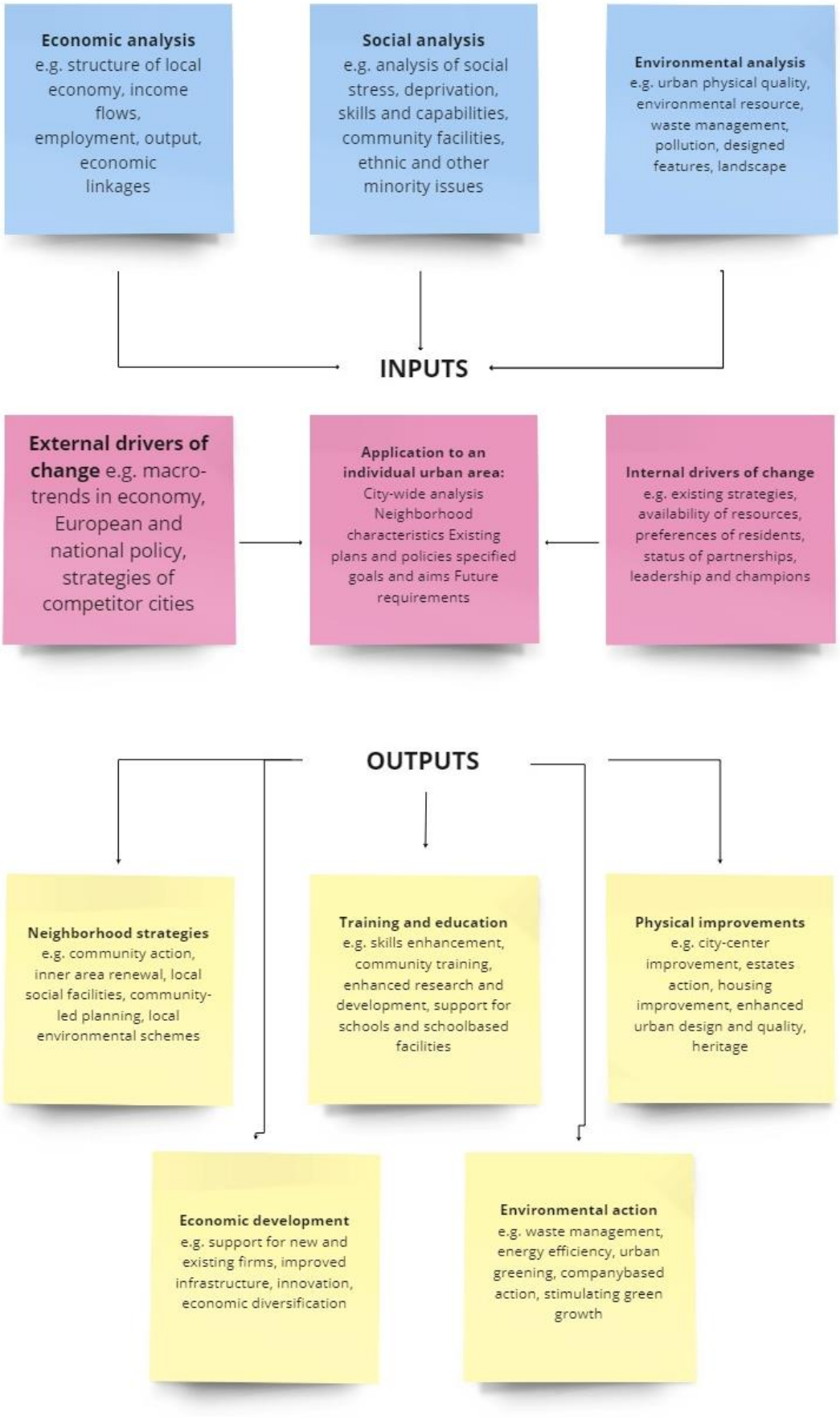


Figure 54: *Urban regeneration Process. (Roberts, 2000) Graphics managed by authors.*

"Urban regeneration is about addressing the symptoms of urban distress through improving declining and disadvantaged areas in towns and cities. It is not just about revitalising derelict places but is also concerned with broader issues such as improved economic competitiveness and quality of life, especially for those who live in deprived neighbourhoods. Ideally urban regeneration involves formulating policy goals, implementing these through programmes of activity, and then monitoring performance over time" (Compendium, 2005).

Hall (2006) identifies 12 key questions as a framework for analyzing urban regeneration:

1 Urban problems

- What urban problem or problems have been identified?
- What has been identified as the cause of the problem or problems?

2 Policy context

- What is the origin of the policy/programme/project?
- What is its relationship to earlier approaches or those being implemented elsewhere?

3 Funding

- Where does the funding for the policy/programme/project come from?
- In what way is funding allocated?

4 The nature of regeneration

- In what ways does the policy/programme/project seek to achieve its aims?
- What are the outcomes of the policy/programme/project?

5 Stakeholders

- Who are the stakeholders involved?
- What are the relationships between the stakeholders?

6 Impacts of regeneration

- What are the impacts of the policy/programme/project?
- In what ways has the policy/programme/project been evaluated?

Hall, (2006), p. 59

Urban regeneration aims to mitigate and counteract the effects of urban decline physical, social, and economic aspects. Understanding urban problems and their causes, in addition to the historical, geographical, and political context, are important in the urban Regeneration programs (Hall, 2006).

The causes of urban decay are different. Urban regeneration approaches in Europe and North America have been developed to address the problems of deindustrialization through economic development and attract new investments in the global economy that affect the economic development and social fabric of cities (Evans & Jones, 2008; Tallon, 2010).

Deindustrialization was the result of Many factors; global competition, where industry has moved to poorer places, the post-Fordist-era, where information technology has reduced human labor and the societies that have been founded outside urban centers, as well as sub urbanization and migration. Unemployment has increased due to dun sterilization, because the service sector has not been able to absorb all the unemployment (Tallon, 2010).

The impact of urban economic policies can be measured quantitatively and qualitatively.

Quantitative assessment concerns the relationship between expenditure and socio-economic outcomes, such as net job changes, percentage change in small businesses and numbers and house price changes and qualitative assessment such as resident attitudes /loyalty (Noon, Smith-Canham and England, 2000). Urban improvement programs can be evaluated by measuring the effect on solving the different aspects of the urban regeneration problems and their impact on employment, urban economy, housing conditions, services, urban security and safety, environment and quality of life,

Socially Disadvantaged Groups, governance, and capacity of civil society organizations (Breda-Vázquez et al., 2001).

11.2- Characteristics of Successful Urban Regeneration

The Institution of Civil Engineers (Group, 1988) carried out a study on urban regeneration in 1988 in the UK. Almost 100 professional engineers analyzed urban regeneration projects in 22 locations with different circumstances and conditions. According to a 1988 study, there are several reasons for the decline of Britain's cities. The decline of the local economy, the transformation of the global economy, and the development of services in convenient locations such as shopping centers near highways.

Case study analysis considered to be an effective organization has important characteristics such as a purposeful and motivated approach, trusted partnerships, effective authority to collect land, effective authority with funding commitment and access to funds and incentives. Organizations must respond to changes in the market and the intentions of developers through the provision of infrastructure and land use. The following are the results of a successful case study of urban regeneration (Group, 1988):

1- *"Flexible approach - different organizations for widely different circumstances in particular areas.*

2- *Realistic use of market appraisal techniques by public and private sectors in the selection of the development strategy.*
3- *Adequate initial investment from the public sector, drawing in private sector funds.*
4- *Effective powers for land assembly.*
5- *Improvement of image of area as an essential first phase.*
6- *Provision of adequate and affordable housing,*

7- *Adequate accessibility for movement of goods and people consistent with development strategy.*
8- *Efficient transportation links with major markets in the UK and Europe.*
9- *Consistency in strategic planning across the region or conurbation.*
10- *Recovery of contaminated land to a standard to enable the development strategy to be viable"*

Successful urban regeneration isn't only linked to market conditions but also to change and has key features such as strong motivation, Flexibility in approach, community involvement and support, public-private partnerships and early public sector investment and incentives. Flexibility has to do with incentives, typologies of organizations and privileges.

Public investment in infrastructure, environmental improvement and land development are important for promoting development. Tax incentives and grants encourage developers to start projects that generally provide immediate benefits when starting high-risk projects. Due to the uncertainty of the regeneration phase, a regeneration project management organization is required to achieve the project objectives. (Group, 1988).

According to Roberts (2017), there is no single theory that can explain urban transformation and regeneration *"Urban regeneration theory is principally concerned with the institutional and organizational dynamics of the management of urban change".*

Urban regeneration comes from experience and practices rather than theory. The main characteristics of urban regeneration are intervention activities involving various parties (state, private and local communities), dynamic changes in

institutional structures to adapt to changes in economic, social, environmental, and political factors and proposed development policies and negotiation.

Urban regeneration theory is concerned with the dynamic forces of urban systems and their economic, social, physical, and environmental aspects. Urban regeneration is the strategic management of urban change, a complex and integrated solution that must have specific objectives and results. It provides a framework of plans and recommendations to guide design and implementation and defines the roles of different actors and organizations.

Hausner (1993, p. 526), cited by Roberts (2017), believes that the weaknesses of regenerative approaches are *"short-term, fragmented, ad hoc and project-based without an overall strategic framework for city-wide development".*
Successful urban regeneration requires a long-term strategic approach and must contribute positively to national economic development and social and environmental objectives (Roberts, 2017).
Urban regeneration is a strategic intervention. Principles and functions correspond to a strategic approach. Roberts (2017) defines the principle of urban regeneration as mentioned below:

•Based on a detailed analysis of the urban area's conditions.

• Aim at the simultaneous adaptation of the physical fabric, social structures, economic base and environmental status of an urban area.

• Seek to accomplish this simultaneous adaptation task by generating and implementing comprehensive and integrated strategy that addresses problem solving in a balanced, orderly and positive way.

• Ensure that a strategy and subsequent implementation programs are developed in line with the Sustainable Development Goals (SDGs).

• Align the regeneration strategy with other initiatives in a local area, such as B. Health and wellness activities.

• Establish clear operational objectives which should be quantified wherever possible.

• Make the best use of natural, economic, human and other resources, including existing land and features of the built environment.

• Seek consensus through the maximum possible participation and cooperation of all interested parties with a legitimate interest in the redevelopment of an urban area; this can be achieved through partnership or other forms of work and through the active involvement of residents.

• Recognize the importance of measuring the progress of the strategy towards achieving the specified objectives and monitoring the changing nature and influence of internal and external forces acting on urban areas.

• Accept the likelihood that initial implementation programs will need to be revised in line with changes as they occur.

• Recognize that different elements of a strategy are likely to progress at different speeds; this may require the redirection of resources or the allocation of additional resources to maintain a broad balance between the objectives of an urban regeneration program and to enable the achievement of all strategic objectives.

• Recognize the importance of making provision for the long-term management of a regenerated area – this implies the need for a monitoring strategy and advancement regulations.

BURA is a British leading independent urban regeneration association.
It brings together a wide range of members from the public, private and resource sectors and provides a forum for the exchange of ideas, experiences, and information on urban regeneration. The association promotes a comprehensive approach in improving the quality of life in urban areas, taking full account of the interdependence of the social, economic, and environmental issues involved. (Planning, Practice & Research, 1995)
BURA wants to lead a new way of thinking about urban regeneration. Identify and promote models of good practice. It highlights opportunities for new projects and serves as a catalyst for building the necessary partnerships and mechanisms. This association offers the BEST PRACTICE AWARD for the best practice in urban regeneration, and to get the award BURA sets out some criteria (Bura,2003):

1- *"The contribution made to the economic regeneration of an area and the financial viability of the initiative;*
2- *the extent to which a scheme has acted as a catalyst for further regeneration in an area; the contribution made to community spirit and social cohesion;*
3- *the contribution made to building the capacity of local people to plan and influence the future development of their area;*
4- *the environmental sustainability of a scheme or project;*
5- *evidence that points to the success of a scheme in the past, at present and into the future;*

6- *the range of partners involved in a scheme;*
7- *the presence of a concern for the longer-term development and management of a scheme;*
8- *qualities of imagination, innovation, inspiration and determination."*

The approved projects or plans have been shown to meet, as far as possible, the following criteria of BURA (2003):

1- *"Improve the quality of life for local people, by addressing a need or dealing with a challenge identified by the community*
2- *contribute effectively to a wider strategy for sustainable communities, including the creation of a safer, cleaner and more efficient environment*
3- *demonstrate a high quality of design for spaces and/or buildings*
4- *demonstrate sustainability through innovation and inspiration in construction processes and procurement*
5- *demonstrate imaginative ways of creating employment and affordable homes for key workers and the local community, and bring them closer together, especially in 'growth areas' and/or to encourage occupancy in 'low demand areas'*
6- *demonstrate the active involvement of the community including business and residents*
7- *demonstrate the creation of appropriate high-density housing*
8- *implement or demonstrate a strategic and integrated approach to transport and traffic management*
9- *promote diversity and social inclusion*
10- *tackle labour shortages and improve the provision of urban renaissance skills at all levels and, in all cases*
11- *are completed to a point where there is a record of success with demonstrable results"*

The European Union (EU) has played an important role in financing urban regeneration projects since the beginning of the 21st century. The pilot project initiatives were URBAN I and URBAN II. Projects must be innovative, contribute to regional development and respond to European interests (Teixeira, 2010). The aim of URBAN II is " to lay down Commission guidelines on the economic and social regeneration of cities and neighborhoods in crisis in order to promote sustainable urban development". Urban regeneration strategies should be guided by the following principles (European Commission, 2005):

1- *"sufficient critical mass of population and associated support structures to facilitate the formulation and implementation of innovative urban development programs;*
2- *strong local partnership to define challenges, strategy and priorities, allocate resources and monitor and evaluate the strategy. Partnerships are wide and include economic and social partners, non-governmental organizations and residents' groupings;*
3- *an integrated territorial approach linked to development strategies for the wider urban area or region;*
4- *integration of the economic, social and environmental, security and transport aspects, including equality of access to education and training opportunities.*
5- *promotion of equal opportunities between men and women;*
6- *complementarity with the main forms of assistance under the Structural Funds and other Community initiatives"*

Urban decline is defined by the URBAN II funding program, where conditions must be met for poor areas to receive funding for redevelopment (European Commission, 2005):

1- *"a low level of economic activity and a specific need for conversion due to local economic and social difficulties;*
2- *a high level of long-term unemployment, poverty and exclusion;*
3- *a low level of education, significant skills deficiencies and high drop-out-rates from school;*
4- *a high number of immigrants, ethnic and minority groups, or refugees;*
5- *a high level of criminality and delinquency;*
6- *precarious demographic trends;*
7- *a particularly degraded environment."*

11.3- Approaches and Strategies of Urban Regeneration

Urban regeneration aims to achieve prosperity and equality, sustainable development, the preservation of local history and distinctiveness, the creation of activities that spur development, the use of strategic, integrated, comprehensive, and sustainable approaches to address urban problems (social, economic, environmental, etc.), the enhancement of culture, knowledge, and new industries, and the use of sustainability to enhance social and economic development, use sustainable solutions like renewable energy, resource efficiency, mobility, air quality, compact cities, higher urban densities, expansion control, flexible solutions, mixed-use, eco-cycle infrastructures, local shopping, and biodiversity, and enlist the help of various partners and community members. (Teixeira, 2010).

The following should be given priority in urban regeneration programs, under the URBAN II program (European Commission, 2005):

1- *"mixed use redevelopment of brownfield sites: protection and restoration of buildings and public spaces, reclamation of derelict sites and*

contaminated land; preservation and enhancement of historic, cultural and environmental heritage; creation of lasting jobs; integration of local communities and ethnic minorities; reintegration of excluded persons; improved security and prevention of delinquency; improved street lighting, closed circuit TV surveillance; reduced pressures on greenfield sites;

2- *entrepreneurship, employment pacts and local employment initiatives: support and services for small and medium-sized enterprises, commerce, cooperatives and mutual associations; creation of business centers, technology transfer facilities; training for new technologies; encouraging entrepreneurship; environmental protection; provision of cultural, leisure and sports amenities; nursery and crèche facilities; alternative care facilities and other services namely for elderly people and children; promotion of equal opportunities between men and women;*

3- *the development of an anti-exclusion and anti-discrimination strategy through actions furthering equal opportunities and targeting notably women, immigrants and refugees: counselling, training schemes and language training oriented to the specific needs of minorities and disadvantaged and marginalized people; mobile units for employment and training advice; improved health services and drug rehabilitation centers; investment in education and health facilities.*

4- *development of more effective, economically efficient, and environmentally friendly integrated public transport systems: safer, more integrated, and more intelligent public transport; public transport links to concentrations of activity and jobs; telematic services for travel information, reservation, and payment; clean and energy-efficient vehicles; provision for cycling and walking; training for transport staff.*

5- *environmental measures: minimizing and treatment of waste, total recycling, selective collecting, and treatment; air quality analysis; efficient water management; noise reduction; reduction in consumption of fossil fuels through use of renewable energy sources; training in environmental management and protection.*

6- *development of the potential of information society technologies targeting small and medium-sized enterprises and citizens: better access to services of public interest, education, culture and other telematic neighborhood services; training and installation of facilities to allow teleworking; information systems for the management of human resources and health services; assistance to adapt to the labor market; supporting local authorities for the transfer of know-how and technology.*

7- *promoting the notion of "urban governance": studies and expertise on the reorganization and improvement of public services; design and introduction of new urban management structures; introduction of indicators for evaluating the sustainability of local management; information campaigns and improved access to information for citizens; measures to involve citizens in the political decision-making process; exchanges of experiences and good practice; development of the European Union database on good practice in urban management"*

11.3.1- Physical Regeneration

Regeneration should “recognize and accept the uniqueness of place"’ (Robson, 1988, p. 102 as cited in Roberts, 2017). Physical regeneration is the visual enhancement of a location: *"The physical appearance and environmental quality of cities and neighborhoods are highly potent symbols of their prosperity, of the quality of life, and of the confidence of their enterprises and citizens. Run-down housing estates, tracts of vacant land and derelict factories, and decaying city centres are the all too visible faces of poverty and economic decline”* (Jeffrey & Granger , 2017, p. 87).

Instead of demolishing buildings to obtain a large plot and "beg developers" to build an area, retaining distinctive features and demanding innovative and high-quality development can spark urban regeneration. (Evans & Jones, 2008). Leading the change; “the very visible nature of new developments means that they can play a significant role in establishing a changed image for an area”. According to Jeffrey and Granger (2017), the following five factors are crucial for achieving physical regeneration.
removing obstacles like the price of redeveloping abandoned and polluted sites, bad access and road design, small sites that are not suitable for large developments, and the cost of relocation, for example. workshop: the requirement for regional roads for significant projects.

leading the change:
1) New construction "flagship projects" have a significant influence on changing the perception of an area and inspiring confidence in developers.
2) improving the physical condition of the existing buildings, The benefit of this strategy is the direct community involvement in the development plans, work,

and training, building on opportunities: utilizing the place qualities and features such as significant buildings, water, docks, and canals.

supply-side investments: access to land and transportation services.
Improved social services in the areas of health care, education, training, and transportation will result in both integrated socioeconomic and physical renewal. Physical regeneration contributes to problem-solving and conflict avoidance by coordinating land uses and services with the market.

Through land reclamation, the provision of infrastructure, or property development, public investment can correct an imbalance between the supply and demand of land. To avoid issues with physical regeneration, such as unequal distribution of subsidies and locating activities, land use planning should be coordinated with the provision of services and infrastructure. Such matters could be coordinated locally by regional development agencies. Physical regeneration calls for environmental enhancements that would draw in the private sector, like amenity upgrades (e. g. landscaping and planting), ground care (i. e. high quality urban design, as well as site access and service improvements (land assembly, acquisition, clearance, and sale). (Jeffrey & Granger , 2017).
The ability of flagship project approaches to change the context for additional investment by reducing an area's negative perception and run-down state is one of their key distinguishing characteristics.
“In many instances the so-called flagship projects have sought to stimulate economic activity and attractiveness of an area by supplying services or tourism and visitor destinations which were not available and hence for which demand was suppressed” (Jeffrey & Granger , 2017).

City living, enhancing project design quality, flagship projects, historical restoration, the public realm, and implementing smart growth principles like

walkability and high-density design are all methods for drawing skilled labor and financial investment to a city center, and are therefore methods for making a center that is livable.

Flagship structures and public realm enhancements like sq.ares, fountains, landscaping, etc. are connected to conventional place-marketing techniques in an effort to boost local economic activity. For instance, new cafés and eateries are signs of a post-industrial urban economy. This strategy aims to develop the urban environment to fuel the knowledge economy by luring the "creative class," which includes designers, media professionals, decision-makers, and ICT workers. (Evans & Jones, 2008).

"Flagship buildings are used to make powerful visual statements about regeneration projects that will put them on the map. Branding and image are increasingly central to regeneration partnerships and are used to market schemes to developers, business and the public.. While hard to measure in quantifiable terms, urban regeneration has generally been judged an economic success, although social critiques of the neoliberal approach highlight the uneven distribution of benefits" (Evans & Jones, 2008, p75).

Architect Richard Rogers, 1999 Towards an Urban Renaissance, with a focus on design excellence, industrial development and high density, identifies the causes of decline and offers practical solutions to achieve sustainable regeneration. One criticism of this policy is that the issue of social injustice has disappeared behind discussions of architectural aesthetics and design planning.

The Urban White Paper criticized the Urban Task Force for being "overly focused on design, undermining wider economic and social factors" (Tallon, 2010). Urban design plays an important role in the development of quality of life and place.

Established in 1999, the (CABE) Commission for architecture and the Built

A place with a character's unique identity	Contributing to the urban landscape and its character, responding to and enhancing the unique development, landscape and cultural patterns of the region.
Continuity and enclosure A place where the lines between the public and private spaces are distinct.	to encourage development that clearly separates public and private spaces and the continuation of street frontages.
A location with successful and appealing outdoor spaces is considered to have high public realm quality.	encourage the creation of attractive, secure, uncluttered, and functional public areas and routes that can be used by all members of society, including the elderly and the disabled.
A location that is convenient for travel and access.	To encourage local permeability and accessibility by creating places that are connected to one another and are simple to navigate, prioritizing people over traffic, and fusing land use and transportation.
Legibility A place with a distinct image and that is simple to comprehend	to encourage legibility by planning areas with recognizable landmarks, intersections, and routes to aid in navigation.
Adaptability **A location that is easily changeable and adaptable.**	Promoting adaptation through development that can respond to changing social, technological and economic conditions.
Diversity and a place of choice	To promote diversity and choice through a mix of compatible developments and uses that work together to create viable places that respond to local needs.

Environment aims to assess projects, comment on the quality of proposals and establish design coding principles and urban planning guidelines. (Evans & Jones, 2008).

Good design is key to achieving sustainable development through more attractive living environments and more efficient land use. support for improving the availability of local amenities and public transport; crime prevention and public safety support; Creating socially inclusive communities; Improving energy efficiency' (DETR, 2001) Urban planning – the quality of design, amenities and public spaces – are the physical, environmental and social dimensions that also influence economic development. CABE defines the objectives of good urban design as: (DETR, 2000):

11.3.2- Economic

The main aim of regeneration is to revitalize the local economy by attracting domestic and foreign private and public investment and by encouraging entrepreneurship (Blewitt, 2005).

Economic revitalization is achieved by attracting investment from outside and encouraging local businesses, with an emphasis on mixed-use development, creating a new economy based on competition between the country's cities and knowledge-intensive industries such as the service and ICT sectors. . (Evans and Jones, 2008). The entrepreneurial city must achieve economic development by capitalizing on the knowledge economy. Economic policy are : improving the knowledge base, encouraging entrepreneurship, training and education, strengthening local businesses and empowerments. *"Small and medium-sized enterprises (SMEs) are important for the economic growth. An important policy for implementing economic development is cluster policy".* (Evans and Jones, 2008).

According to Porter (1990), a cluster policy is *"concentrations of competing, collaborating and interdependent companies and institutions which are connected by a system of market and non-market links".*

Ways to increase investment in urban regeneration strategies include:
Developing the capabilities and technologies of existing companies, Facilitating user and visitor spending in the region through supply-side actions such as providing museums, inward investment and attracting new visitors. Harnessing the power of communities in activities such as environment and infrastructure, housing improvement and real estate development (Jeffrey and Granger, 2017).

11.3.3- Social and Cultural Approach

Improving housing and cultural use is one of the approaches to attract residents, tourists, and developers. Gentrification is an approach for regeneration as mentioned in chapter 3 at the beginning and attract developers and investors to increase real estate values and revitalize areas that attract high-income development.

"Gentrification is about attracting new people and new business to run-down areas, where the wealthy population will attract investors. At the same time, public bodies negotiate the developers to provide some affordable homes, subsidized services, and other social benefits" (Evans & Jones, 2008).

Gentrification leads to a loss of diversity in society by displacing residents by rising rents and changes in housing tenure. Gentrification is not limited to a particular area. It spreads to adjacent areas, creating a "ripple effect". Homes become 'investment products'. Deprivation of affordable housing creates barriers for poor residents and excludes low-income residents (Granger, 2010).

Monolithic strategies such as physical improvement or capital-led regeneration are not effective enough to solve these urban problems. Regeneration policies targeting social housing are only sustainable if they focus on the following (Trott, 2002).

1- *"Diversity and a range in the types, tenures, and ownership of properties;*
2- *Development that is flexible enough to allow residents to grow and adapt to their needs;*
3- *Affiliation to the entire neighborhood, not just one plot;*
4- *Community development, where locals can choose their own priorities;*
5- *Economic growth by lowering imports and boosting the local economy;*
6- *Partnerships that acknowledge the local community's participation in problem-solving ideas, implementation support, and the provision of social housing;*
7- *Gaining knowledge from different programs and experiences".*

For instance, housing has been viewed as a crucial factor in urban regeneration in the UK since the 1990s, particularly in the center of cities and inner cities. Housing development was prioritized to draw customers and develop a market. The café culture fostered evening activities. Gentrification can result from housing regeneration, which may be interpreted as the betterment of abandoned regions or as the removal of lower-income inhabitants. Reduced segregation and the creation of more sustainable developments could be achieved by reusing vacant buildings in the city center and by blending uses and social groups (Tallon, 2010). Other strategies for regenerating areas through leisure, cultural, and commercial offerings are referred to as "Cities of spectacle" and "fantasy cities." Sport, urban tourism, and spectacular, flagship post-modern cultural developments all contribute to urban regeneration, yet culture cannot

immediately regenerate the city in terms of social, economic, and environmental factors. The city's culture draws investment, which results in gentrification and the selling of real estate. Cityscapes are "consumed" by tourists, and amazing architecture helps to establish new urban tourism locations. In many cities across Europe and North America, cultural quarters or areas are emerging as crucial elements of redevelopment initiatives (Tallon, 2010).

Cultural uses are concentrated in cultural quarters. Media and IT enterprises, craft-based businesses, music, graphic design, and art groups are concentrated in cultural quarters. Clustering encourages people to use their creativity, which boosts the economy. "Creation of cultural quarters, trying to group companies in the creative industry in order to build a hothouse of talent built on face-to-face networking." However, there is a criticism that cultural clustering might cause and hasten gentrification (Evans & Jones, 2008).

Identity building is considered essential to "stand out from the crowd and capture a piece of the global knowledge economy." Identity or brand building can be done by building on an existing legacy or creating a new one. Targeting strategies can focus on cultural attractions and industries, world-class sports venues, business or shopping venues (Evans and Jones, 2008). A successful cultural district, according to Montgomery (2003), must mix activities, forms and meanings.

1- Activity: accessibility to education providers, presence of festivals and events, presence of managed workspaces for office and studio users, extent and variety of cultural venues, availability of workspaces for artists and low-cost cultural producers, evening economy (café culture), strength of the small-firm economy (including creative businesses), availability of evening economy.

2- Built form: Examples of built form include fine-grained urban morphology, diversity and adaptability of the building stock, permeability of the streetscape, readability, quantity and quality of public space, active street frontages, and people magnets.

3- A sense of history and development, a sense of local identity, intellectual capacity, and environmental cues are examples of the three meanings.

"Culture is Meaning, after all. Furthermore, a cultural area that doesn't create new Meaning in the form of original artwork, concepts, or ideas is even more likely to be a parody of other locales from different eras, or even of itself from a previous existence. So, a good cultural district will be true to itself while also being progressive and evolving. The most telling point,, is this last one.
Because in order to succeed, a good place, a city economy, or even a single business, must not only stick to what it does well but also be adaptable, flexible, and willing to accept new ideas, methods, and tasks. If this isn't done, the cultural district will either completely vanish, just turn into a collection of facilities and venues supported by the government, or else it will serve as a symbol of past culture—what is known as "heritage." Certain cultural areas will undoubtedly merit to ossify or vanish entirely, to be replaced by competing uses (offices, apartments), or to join the heritage industry." (Montgomery, 2003, p302).

11.4 Urban regeneration as a tool for inclusive and sustainable recovery:

"People who invent, improve and co-manage innovative solutions for new ways of life" (Meroni, 2007, p. 30). Research shows that participation in the planning process has a direct impact on social inclusion outcomes. It helps

break down cultural barriers, build harmony between groups, reduce poverty and increase economic opportunity. The relationship between participation and social inclusion varies across indicators. However, the importance of relationships is very strong for all indicators.

11.4.1- Definition of public participation:

Public participation is important for social inclusion in planning and development. Participatory urban planning is an approach that includes the development of people and communities, as the public mainly participates in urban planning projects. Inviting the public to participate in the decision-making process is seen by the public as a sign that the government accepts public input.

Urban planning in developing countries could not solve the problem of urban planning and urban area management due to the lack of social integration process and urban planning system practice. Most urban planning approaches in developing countries do not seem to address this issue.

Since the mid-19th century, urban historians, planners, and theorists such as John Forester, Mark Brennan, Tom Sanchez, and Susan Feinstein have argued that urban planning is undemocratic and often social, arguing that it falls short of consolidation. The findings of this study are ideal for understanding the relationship between participation and social inclusion in the planning process.

11.4.2- Social Inclusion as an Outcome of Participation in the Plan-Making Process

According to the literature, cities in developing countries are becoming increasingly vulnerable due to economic, socio-cultural and political differences. This has created a demand for socially inclusive urban planning systems. Achieving this outcome of social inclusion requires that the planning process be as comprehensive as possible. The relationship between participation and social cohesion is symbiotic. The more the public is involved in planning, the better the

outcome of social cohesion. Therefore, a high level of public participation is necessary to achieve good social cohesion results.

Many plans in developing countries, with high level participation in the plan-making process are delayed or stalled due to poor leadership and lack of political will.

Without the participation of the public, social inclusion projects and outcomes that have benefited society in the study area could not have been accomplished. The literature and research generally concur that the likelihood of successful social inclusion increases with public involvement.(Nwachi, 2021)

11.4.3- The Relationship between Participation and the Different Aspects of Social Inclusion

This study's main goal is to examine how participation in the creation of plans can promote social inclusion. It will elaborate the relationship between participation and the various indicators of different aspects of social inclusion. (Nwachi, 2021)

a) Public participation in the plan-making process helps to take apart cultural barriers.
b) Public participation in the plan-making process enhances anti-discrimination and inter-group co-operation.
c) Public participation in the plan-making process enhances the provision of education, healthcare, and housing.
d) Social security is ensured through public participation in the planning process.
e) The relationship between participation and the political aspects of social inclusion.

f) Promoting interpersonal safety and security through public participation in the planning process.
g) Public participation in the plan-making process boost and improves government effectiveness.
h) Participation of the public in the planning process deters corruption.

11.5- Summary and outcomes for the case of Beirut.

Urban regeneration strategies ought to be multi-sectoral with a long-term commitment, define a clear vision, integrate initiatives, and utilize resources.
Urban regeneration approaches include real estate-led regeneration (retail-led regeneration, residential-led regeneration), flagship projects and branding, urban regeneration, housing, fantasy cities, entrepreneurship, cultural districts and sustainability. Estate-based regeneration and flagship projects play an important role in enhancing the image of the area, building developer confidence, and attracting investment. But they are short-term, fragmented, ad hoc and project based without an overall strategic framework for city-wide development. “Cities of spectacle” and “fantasy cities” are related to the regeneration of places through activities and facilities for leisure, culture, and consumption.

In order to achieve economic prosperity, a strategy must be developed based on a realistic application of market assessment techniques by the public and private sectors in the choice of development strategy, in addition to public investment. reasonable initial
sector to attract private sector interest. Urban regeneration requires a strong partnership in long-term strategic planning. Partnerships could be developed through different types of organizations such as Business Improvement Districts and Urban Regeneration Companies. Organizations play an important role in

managing the urban regeneration process, responding to market changes, managing financing and land acquisition, developing plans and defining activities for all parties. Urban policy, public intervention, community involvement and collective investment are the main success factors for urban regeneration. The role of public policies is to create a high quality of life and improve market conditions: initiate adequate investments to stimulate development and attract investors through
provision of infrastructure, environmental improvements and land assembly. Opt for a flexible approach (type of organization and power, tax incentives e
grants to encourage developers). Partnerships between public and private. Urban policies for the management of supply and demand for different land uses. Provide adequate and affordable housing. Sustainable urban renewal is an effective approach to improving various aspects
of life. Sustainability and urban renewal share common themes dealing with the balance between social, economic and environmental aspects. The ecological and physical dimensions aim to drive change and offer services to attract investors.

The economic dimensions aim to achieve economic prosperity. The social dimension aims to achieve social inclusion and community cohesion. The results of the literature produce a checklist of the rationality and impacts of urban regeneration (Table 8) will be used for the evaluation of the case of Beirut.
Findings from literature establish a framework to review different stages of urban regeneration policies as follows (table 9) :

Rationality of Approach	
Relevance to the city needs	
Realistic use of market appraisal techniques in the selection of the strategy	
Achieve objectives of good urban design	
Mechanism of Implementation & Main Interventions	
Adequate initial investment from the public sector to attract private sector	
Partnership	
Environmental/Physical Impact	
Sustainable urban form; compact city and urban intensification	
Mixed-use development	
Re-use/ redevelop derelict land and buildings	
Improve environmental quality, provide amenities, enhance quality of life	
Improve accessibility and use integrated public transport systems	
Design excellence and high-quality urban design	
Decrease car use, promote public transportation and walkability	
Use sustainable solutions (efficient Energy resources, renewable energy,)	
Overcome physical isolation of declining areas	
Emphasis on the place character and identity, preserve the heritage	
Economic Impact	
Provision of cultural and leisure amenities	
Create jobs	
Increase contribution of culture, knowledge, and new industries	
Entrepreneurship: Improving the knowledge base, encouraging enterprise, education, and training; and empowering local businesses	
Improve local economy	
Attract investment, improve the urban image and environment	
Social Impact	
Social mixing (in terms of age, ethnicity, family structure and income)	
Inclusive decision-making, respond to local needs, community involvement	
Increase social capacity and skills	
Provide quality affordable housing stock, health facilities and amenities,	
Provide public and improve social interaction	
Social pride	
Improve life experiences	
Increase opportunities and choices for residents	

Table 8: *Checklist of Rationality and Impact of Urban Regeneration. Graphics managed by authors.*

Stage	Principles and Characteristics
Analysis & goals	Identifying the urban problems and their causes
	Detailed Analysis of the urban Area
	Defining clear objectives
	Responding to Local Community Needs
Strategy & Policy Formulation	Policy Context
	Employing Potentials and Opportunities
	A Long-term Strategic Framework
	Providing a Framework of Plans and Proposals
	Approach (Sustainability, urban design and quality, physical improvement, etc.)
Implementation	Have clear outcomes
	Evaluating and Monitoring
	Flexibility in Approach
	Defining Mechanisms, Stakeholders and Resources
	Funding, source
	Strong Institutional Basis
Impact	Physical and Environmental
	Economic
	Social

Table 9: *Principles and Characteristics of Urban Regeneration. Graphics managed by authors.*

Chapter 12: Urban Waterfront Regeneration:

12.1 Research Problem:

Urban Waterfronts around the world are deteriorating due to a variety of environmental, social, and economic factors. Especially in Lebanon, many urban waterfronts do not meet the necessary criteria for a sustainable environment,

which generally has a negative impact on the achievement of sustainable urban design. The functional and aesthetic aspects of the built environment are also negatively affected, degrading the visual image of most Lebanese cities.

"...Waterfront regeneration is in many cases the starting point for the regeneration of the city itself and of its relocation in the international context..." (Giovinazzi, Moretti, 2022)

Given those issues, this part answers the following questions:

1- What are the phenomena and definitions of Urban waterfront regeneration?
2- What are the principles of a sustainable waterfront?
3- What are the applications of a sustainable waterfront in sustainable cities?
4- How can the waterfront contribute to the social sustainability development of the city overall?
5- What further improvements can be recommended for the urban waterfront regeneration in Beirut?

12.2- Research Objectives

This chapter aims to create a new sustainability framework that will assist the city of Beirut in creating guidelines for developing sustainable waterfronts.
This aim will be achieved through the following combination of sub-objectives:

- Ensuring that sustainability principles are incorporated into all aspects of urban waterfront development.
- Putting Beirut at the forefront of global cities in the 21st century as an exemplar of waterfront development by transforming the waterfront into sustainable communities.

- Improve the visual image of cities by emphasizing the importance of creating a sustainable waterfront and providing an attractive urban environment.
- Improve waterfront communities and public spaces that offer a high quality of life for residents and visitors alike.
- Identify the main principles that define a sustainable waterfront.
- Formulate a set of recommendations for developing the urban waterfront of Beirut fit the criteria for sustainable urban development.

12.3- The phenomena and definitions of Urban waterfront regeneration

Water has undeniably been a vital key driver for the development and improvement of human settlements and urban communities, with the waterfront being their steadily evolving highlights.

With the demands of the new, prosperous world economy, every waterfront city is engaged in redevelopment projects with solid political catalysts and enthusiasm from diverse quarters, the reasoning behind the phenomenon of waterfront development and around the world its acceptance, is currently "widely recognized, if imperfectly understood" (Hoyle 2001 p. 297).
The waterfront regeneration is a "priceless opportunity" for the city, and this is due to a several number of Key factors common to the old port area that focus on the location of waterfronts, great availability of vacant land and the function.
Waterfronts have great potentials which is important in attracting new investment and social and cultural development.

"Cities are looking for a waterfront that the public can enjoy. They want a waterfront where there is extensive visual and physical public access - all day, to both water and land. Cities also want a waterfront that serves more than one

purpose: they want it to be a multifunctional place to work and learn and to live, as well as a place to play. In other words, they want a place that contributes in the quality of life in all its aspects - economic, social and cultural" (Seattle Department of planning and design, 2012)

According to Moretti 2008 she defined waterfront as the urban area in direct with water.

"A space relating to the historic city center, a stenographic space with particular visibility, a space for interaction between two different systems – land and water – the urban waterfront has always been especially attractive, not only in real estate terms, but also from a socio-cultural and landscape point of view." (Giovinazzi, Moretti, 2022)

Similar to Desfor et al. (2010) defined the waterfront as a special place where *"water and land meet"*. The urban waterfront can also be understood as "a part of a city that is adjacent to a body of water such as a river or the sea" (Hussein, 2006).

Another definition could be mentioned is that *"the waterfront should not be simply considered as a line but should be more correctly envisaged as a network of places, functions, additions and hinges between the coast and the city, between the port and urban activities"*. (Giovinazzi, 2008)

Kostof et al. (1999) drew attention to the fact that the presence of urban communities along the waterfront has adapted the development to water and city character.

Breen and Rigby (1996) argued that the urban waterfront respected and will continue to be seen as the essence of the city, expressed that numerous urban communities around the world are connected to water bodies that have generally contributed to their foundation, personality and subsystem improvement.

Furthermore, Dovey (2005, p. 10) argues that sustainable urban renewal on the waterfront aims to improve the situations for the population of the city, which is ecologically, economically and socially. For clarification, water regeneration is defined as any large urban regeneration project that took place on urban coasts or water.

12.4- Evolution of Urban waterfront regeneration

Throughout history, waterfronts have been the best living space for individuals to provide for settlement, reproduction, defense, food, and so on. Also, where there are many cities on the water, from the historical background of progress until now.

Many cities in ancient historical ages such as for instance Babylon are cases for early settlement around 6000 years prior. Akköse (2007), who added that urban waterfronts undergo some periods of improvement to meet different human needs over different time periods in America. The first phase, where the waterfront and the city had direct contact. Water plays an essential role in commercial activities and water transport. The growth of the waterfront is the second phase, where the ports have transformed into the port of many activities with an increase in financial years.

At this time, the settlements turned into a city, and ocean trade revived urban development, and the railway was introduced as a new transportation development. Additionally, transportation and industry become the only uses of the waterfront at that time, making the water dirty and losing its natural appeal to many populations. In the third phase, the deterioration of the waterfronts, after the First World War, the stress and speed of loading and unloading increased with the development of containerization technology. As a result, port activity increased and began to require more land, so the ports were moved outside the city. During this period, the waterfront has essentially become an inaccessible and dangerous region, further isolating urban areas from the water, which has led to several problems, all of which stem from the lack of connectivity between urban and waterfronts areas.

In the last phase, development began, in the 1960s people became more aware of the health of the city and the misuse of natural resources. It was during this period that public use and a mix of recreational, residential and commercial uses developed alongside the waterfront. The following figure illustrates the stages of development of the port city. *"The phenomenon of regeneration and development of the urban waterfront has spread geographically since its origins in North America in the 60s and 70s, where the first transformations into industrial buildings, the creation of public spaces and the celebration of festival markets in the cities"* (Smith & Garcia). The waterfronts are dynamic and have undergone constant change since the days when the pioneers settled in the region. Urban waterfronts in particular experience several periods of progress to meet different human needs in different periods.

Urban waterfront regeneration initially started in the United States. This action has effectively led to a transition from modern waterfronts to a more mixed-use activity.

However, waterfront regeneration in the United States has been concerned with restoration and redevelopment, containing an extensive variety of improvements containing private, recreational, business, shopping, administrative, and services, etc.

Jones (1998) states that this large scale was the typical basis for US development, the basis of the “export model” represented in many waterfront improvements in many parts of the world, including Asia, Australia, Europe and Asia. UK. The phenomenon of urban waterfront regeneration began to spread around the world in the 1990s.

Zhang (2002) suggested that many cities today, such as London, Paris, and Venice, are famous for their locations, but some are modern, such as Boston, Sydney, and Hong Kong. Waterfront regeneration has proliferated in recent decades as waterfront cities began to develop strategies for industrialized urban development in the late 1970s. 1980s and 1990s.

“The urban redevelopment phenomenon of our time began in earnest in the 1960s, flourished in the 1970s, accelerated in the 1980s, and will continue unabated for the foreseeable future, including the economic recession.” (Breen and Rigby, 1994).

Therefore, from the previous description it can be concluded that the waterfront has been dynamic and constantly changing since the pioneers settled in this area. Urban waterfronts went through different stages of development to meet different human needs at different times. (Figure 57)

12.5- Waterfront areas as sustainable Regeneration

*"This special issue of Sustainability is devoted to a very important sustainability topic, viz. cities and waterfront infrastructure. The presence of-and access to--water has been a critical factor in the long history of settlement patterns of humankind. Water is not only a necessary consumption good tor survival but has also an important production in an economic sense" (*Grard Kourtit. & Nikamo. 2014).

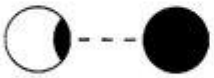
Stage	Symbol ○ city ● port	Period	Characteristics
(I) Primitive cityport		Ancient–medieval to 19th century	Close spatial and functional association between city and port
(II) Expanding cityport		19th–early 20th century	Rapid commercial and industrial growth forces port to develop beyond city confines,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

Figure 55: *The historical model for port-city development. Adapted from Hoyle et al. 1988*

This task must be undertaken to provide a series of actions that improve the socio-economic and environmental resilience of port areas in relation to the urban system and make the historic ports of cities a sustainable and valuable destination through the redevelopment and regeneration in these places.

Today's port areas can serve as a gateway to land and water for users and goods, as well as a central location for the sustainable improvement of various urban systems. The main purpose of the Sustainable Development Standards is to ensure that all stages of development are economically efficient, environmentally sustainable, and socially justified.

12.5.1- Sustainable development of Urban Waterfronts main principles:

The twenty-year research and monitoring project on the theme of waterfront regeneration by the Center of Cities on Water in Venice has made it possible to draw up an inventory at international level and to define an initial assessment which, based on several disciplinary contributions from different points of view, the strongest could highlight elements of this process of transformation.
This image becomes a kind of general guideline from which new interventions in this field can be drawn: the 10 principles for the sustainable development of urban waterfronts. These principles, previously developed by Cities on Water in cooperation with Wasser-Stadt GmbH, Berlin, through international seminars, were adopted as part of the initiatives of the World Conference on Urban Future (URBAN 21) in July 2000 in Berlin and within the framework of the Universal Exhibition EXPO 2000. Recently revised, they have been adopted by several institutions at the international level and still constitute a valid reference for the redevelopment of waterfront. (Giovinazzi, Moretti, 2022)

1 - Ensuring the quality of water and the environment: The quality of water in the system of streams, rivers, canals, lakes, bays, and the sea is a prerequisite for any kind of waterfront development. Municipalities are responsible for the sustainable restoration of dilapidated embankments and polluted waters.

2 - The waterfront is part of the existing urban fabric: The new waterfront must be seen and recognized as an integral part of the existing city and energize it. Water is part of the urban landscape and should be used for specific functions such as water transport, entertainment, and culture.

3- A waterfront redevelopment's character and meaning should be derived from the collective heritage of the city and the water, of events, landmarks, and nature. Sustainable redevelopment must include the preservation of the industrial past.

4 - Mixed use should be prioritized; waterfronts should celebrate water by providing a variety of cultural, commercial, and residential uses. Priority should be given to those who need access to water. In terms of both function and social diversity, housing neighborhoods should be mixed.

5 - Waterfronts must be physically and aesthetically accessible to residents and visitors of all ages and incomes. Public spaces should be constructed in high quality to allow intensive use.

6 -Public-private partnerships should be used to plan new waterfront developments as they speed up the process.. Public authorities are required to provide infrastructure, ensure high design standards, and foster social harmony. Private developers should be involved from the start to ensure knowledge of the markets and to speed the development.

7 - Public participation is an element of sustainability: "*Successful waterfront development happens when the community realizes that the waterfront belongs to them. It happens when they recognize the significance and potential of their waterfront. Community participation can take many forms; generate a community consensus about the vision for the future of the waterfront and develop*

a strategy to address the community's most critical waterfront issues". (New York City 2009).

Sustainable waterfront development should be advantageous for cities socially, economically, and ecologically. From the beginning, the community needs to be kept up to date and engaged in discussions.

"Waterfront provides an opportunity to develop community awareness and understanding around the importance of sustainable water resource management." (Rukiah, Zainora 2012).

8 - Waterfront projects must be undertaken gradually in order for the entire city to reap the benefits of their potential. They present a challenge to multiple generations and demand a variety of characters in art, architecture, and public spaces. To guarantee that the goals are attained despite economic cycles or short-term interests, public administration must provide political impetus.

9- Re-vitalization is an ongoing process: All master planning must be based on the detailed analysis of the principal functions and meanings the waterfront is concerned. Plans should be adaptable, flexible, and include all pertinent disciplines.. The management and use of waterfronts both during the day and at night must be given equal priority to their construction in order to promote a system of sustainable growth.

10 - The redevelopment of waterfronts is a highly complex task that involves experts from many disciplines, so waterfronts benefit from global networking. The sharing of information in a global network of contacts involved in waterfronts on various levels provides both individualized support and knowledge of the most significant projects completed or in progress.

12.5.2- Sustainable development and its social implications: main overview

The theoretical concept of sustainable development was developed through a series of conferences and international collaborations between 1972 and 1992 (Drexhage & Murphy, 2010). Some definitions have been developed over the years, some are better known than others. A textbook article on sustainable urban development by Ngai, Hidefumi, Akihiro, and Masazumi (2016); They found that "the importance of cities and their awareness of their importance, infrastructure and assets have received special attention from the United Nations." Also, as confirmed at the September 2015 Conference on Sustainable Development, .un.org. At a meeting of heads of state or government and senior representatives at the United Nations headquarters in New York, it was decided to achieve 17 new Sustainable Development Goals (SDGs), as shown in Figure 58.

Figure 56: *Sustainable Development Goals by the United Nations. Source undp.org*

The United Nations has made a historic decision on a universal and transformative goal that all nations and peoples must achieve by 2030, inclusive, ambitious and people centered. In addition, the goals of SDG 11 focus on the sustainable development of cities and their inhabitants.

It also aims to provide access to safe, affordable, accessible, and sustainable transport systems for all by 2030. Strengthening inclusive and sustainable urbanization and capacity for participatory, integrated and sustainable planning and management of settlements human beings in all countries, to increase efforts to protect and preserve the cultural and natural heritage of cities, to address urban disasters and loss of life and other casualties to protect the poor and vulnerable, reduce negative environmental impacts of cities related to poor air quality and municipal/other waste, ensuring universal access to safe, inclusive and accessible green spaces and public spaces. Support positive economic, social, and environmental development planning, mitigate climate change by adopting efficiency, mitigation and adaptation strategies, and support cities in least developed countries with financial and technical assistance.

However, a few different definitions have been given to clarify this idea; One was released by Britain's National Affordable Housing Agency and touted as a method to ensure the best quality of life for all, now and in the future. As indicated by this definition, sustainable development begins to reflect individuals, the environment, and the connection between the obligations of the present time with the future times.

Sustainable urban development focuses on the minimum inputs and outputs of urban systems. Saleh and Biswajeet (2017) report "Sustainability; Ever since the United Nations Environment Program (IUCN) declared sustainable development, it has been a major focus of urban growth and development initiatives. The 1980

World Wildlife Fund Declaration on Development and Sustainable Cities and the 1990 Toronto Declaration on World Cities and the Environment."

A sustainable city is defined as a city that is planned with an ecological concept, that uses a minimum of water, energy and food and minimizes waste and pollution of air, water and soil. Urban sustainability can also be described as changing the quality of people life within limited land resources. So as (Newman and Kenworth 1999; Chiu 2008: van Wee and Handy 2016) reported that urban sustainability is the ability of cities to reduce the environmental impact of urban activities while improving social equity and urban livability.

There are many different perspectives and definitions of urban sustainability in the literature. One such definition by the University of Hong Kong is "Sustainable urban development emphasizes the need to reform market mechanisms to achieve environmental goals and balance social and economic considerations."

Additionally, Hui-Ting and Yuh-Ming (2016) found that *"the goal of sustainable urban development has emerged and led to many theories of urban settlement, including "healthy cities", "sustainable cities" and "low-carbon cities", "Transit oriented city", "Smart City", "Compact City", "Green City" and "Livable City". Although these theories may have different interests in different disciplines, they all share a central idea and goal. That is to achieve maximum development with minimum consumption of resources and have an impact on the environment to ensure the well-being of people and the planet."*

Chapter 13: Waterfronts Revitalization and City: Relationships and Overview

13.1- Importance of the Waterfronts for port cities

For technological or transportation reasons, the old harbor was abandoned, and waterfronts stayed as distressed areas for several years. This trend shifted in the 1970s, and waterfront redevelopment became well established in North America.

Many port cities recognized that they were ignoring their waterfronts and that revitalization could provide enormous benefits to the city.

The historical genesis of Man's relationship with water is elusive. Human survival has always depended heavily on access to water. Since the beginning of time, the waterfront has been the center of human activity. Buildings were constructed along the shore when people first migrated ashore from the sea. Several reasons led people to erect structures on the beach.

It could have been for security, trade, travel, or aesthetic reasons. While all of them are correct, the most significant reason is the impact that water has on people.

Water is a necessity of life that has both controlled and provided for human existence as well as all flora and fauna on Earth. Some authors agree that individuals are drawn to living on the edge of society.

While water was viewed solely as a survival element during the “primitive” period, time revealed the various potentials of water. Obviously, the most important function of water is still human survival, but over time, man discovered how to use water for other purposes, ranging from mobility to recreation.

13.2- Why are Waterfronts so special and attractive to Urban development

1-Geographic Location: The element that gives a waterfront its distinct character and, moreover, can determine its potential use is its geographic location. It is a key factor that distinguishes each urban waterfront from another.

2-Urban context: The relationship between the city and the waterfront is referred to as the "urban context.". More than just the waterfront's location, urban context takes into account cultural, social, and historical resources, as well as land use patterns. These factors, unlike geographic and land resource characteristics, can be changed. Waterfronts are considered edges in this context, serving as the boundary between two types of areas, the end of land and the beginning of water. Lynch went on to explain that "the clear shift from water to land at a sea-front, all are powerful visual perceptions." One of the characteristics of city edges is that they frequently aid in orienting the observer.

3-Economic Reasons: Economic reasons-While old harbor areas were abandoned; cities were under pressure to expand. "Old cities are experiencing a tough set of demands to build at the edge as their airways become overfilled with traffic, their infrastructures deteriorate, and an explosion of suburban growth clogging off the chance of growth at the periphery," writes Richard Bender.

4-Social Reasons: Over time, social and cultural customs changed. In recent decades, there has been a huge requirement for more open spaces for entertainment and physical activities. People began to have more leisure time and mobility, which led to an increase in touristic time in general. These factors resulted in the development of a market for recreation and physical activity facilities. Waterfronts are ideal locations for these kinds of activities.

13.3- Conclusion:

The waterfront in sea-port cities is a symbolic place, a geographical area full of cultural stratifications, relationships, and resources, they are hubs for trade, industry, and tourism.

The importance and great potential of these fluid spaces, an edge between land and sea, make it a privileged field of research to imagine the future of the city of Beirut and to identify sustainable paths of urban regeneration.

The role of the urban waterfront "zone of discard" has changed through the years before it was used to deal with heavy activities and development of the port while today is more linked to small, scaled projects that serve the public with a more sustainable direction and function. The focus on waterfront regeneration has emerged through the need to preserve the city's historical heritage, new trends in human behavior like the increase of leisure time, and the awareness of the environmental and social aspects of the urban coast.

The urban waterfront has different roles and changes according to its relationship with
the city and its purposes. For example, it could act as a border that separates the city
from the sea or as a connector between them.

On one hand, usually, the role of the waterfront and its importance is directly related to its relationships with the city, like its proximity to the historical city center, access, and connections with the other part of the city. Additionally, this connection offers great opportunities and potentials for the regeneration of the waterfront.

On the other hand, water is an important attraction for the city offering the direct contact to the sea. Therefore, waterfront is a complex bioregion by nature and socio-economic hubs by their history, providing a real challenge for planning institutions to capture and respond to the trends.

Therefore, "the waterfront could act as an important node for the exchange of goods and people while expressing the city's culture and image, attracting people and investment, and enhancing local economy".

Every Coastal city has different characteristics concerning its waterfront, but there are some common features as its uniqueness and its perception as a border and an important landmark for the city. The most important challenging issues in waterfront regeneration is the spatial competitiveness between urban uses, marine uses, relation between city and port and the economic and social changes in coastal cities (Cook et al, 2001).

Reconnect the waterfront to the territory

Water represents an extraordinary opportunity for the cohesion of territories, which are often divided.

•Waterfront regeneration produces favorable outcomes along the banks and the immediately adjacent areas and fallout across a wider area in terms of available services and amenities.

• For the quality of the intervention, it is very important to make a "*mix between old and new and provide perpendicular axes to access the water; and create public places on the water*".(Moretti, 2008)

Rediscovering the identity of public heritage sites, water is a place we want to enjoy in many ways…;

The protection of the natural environment and the promotion of water as a public space, close to the city center, can create a new urban center that is both economic and touristic.

Local Government Actions and Strategies

• Communication about water as a resource for the development of the territory.

• Drive the territory's potential with quality initiatives based on the interaction between cultural heritage and the environment.

• Develop an articulation program in terms of integrated but independent projects, carried out in successive phases.

• Promoting sustainable operations with public funds and private investment.

• Define projects and uses that can generate economic resources in the short term.

13.4- Port City Example from Northern Europe: Port and it's Spaces as a Starting Point for New Urban Planning

As we mentioned before that Starting from the 1970s many cities across the world, started dealing with the idea of urban waterfront regeneration at different scales from a very large metropolises to medium-sized cities and smaller.

Some of these experiences played an effective role in restoring the image of the city, improving the quality of life of citizens, becoming reference models for subsequent interventions adequately adapted to the context conditions. landscape architecture. Although there is a clear spatial and functional link between the different projects, they remain independent and retain their own identity.

Hamburg, a northern German port city with roots in the Hanseatic League, has a long history of port and urban transformation that can be interpreted as resilient to various natural and man-made disasters. Politicians and merchants have shaped the city together over the centuries. (Hein, Schubert,2021)

We decided to choose the case of Hamburg, because the city faced many human and natural disaster and was totally destroyed as the city of Beirut, and since our aim is to make the port of Beirut a more sustainable and a starting point for new urban planning based on the history of the city and people needs, we found that the case of HafenCity highlights these aspirations as a process involving risk and uncertainty, informing a more sustainable version of the creative city, based on the history and identity of the region, feeding the local economy and engagement of the public in regeneration processes.

This process could be a great model to learn from it and worth to spread.

13.4.1 - Hamburg, Germany:

The city of Hamburg is especially the richest metropolis in Germany. After a fire in 1842 and bombings in World War II, the city was completely rebuilt to meet the needs of a port and relocate residential areas inland. After much demolition and reconstruction in the 19th and 20th centuries, the port was moved to the southern bank of the Elbe, leaving the old suburbs behind.

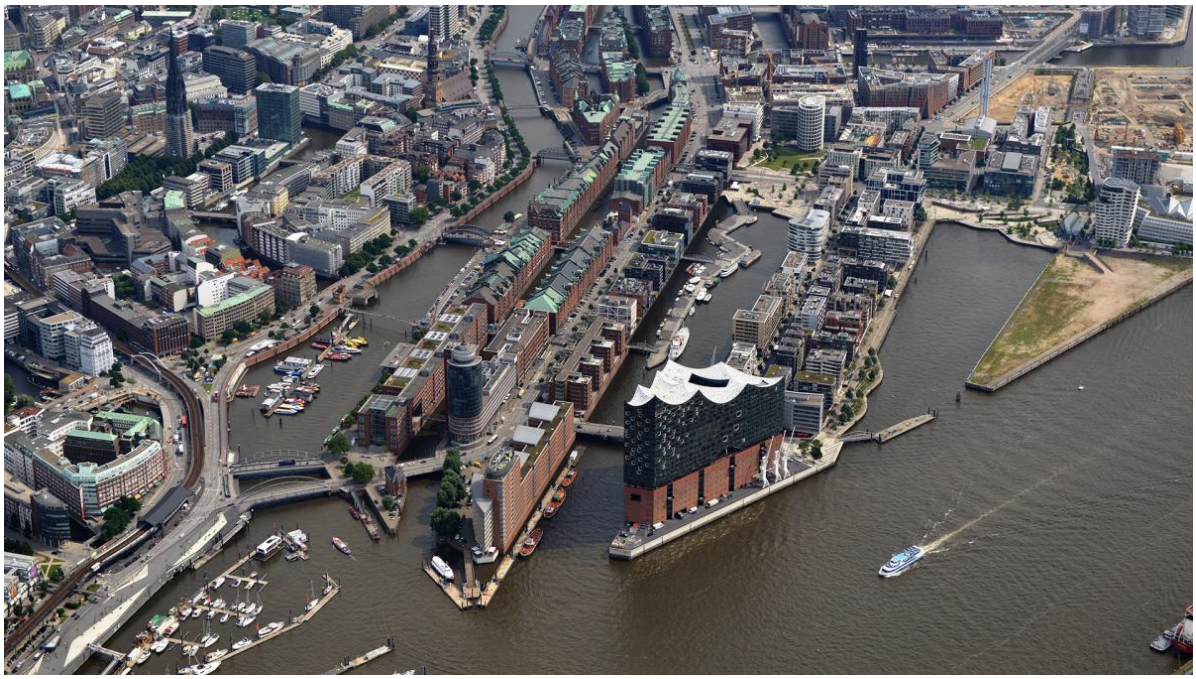


***Figure 57**: Bird view of Hamburg's waterfront (source https://astoc.de/en/projects/urban-planning/masterplan-hafencity-hamburg)*

After the fall of the Berlin Wall and the reunification of Germany, Berlin received a lot of international funding to begin the process of rebuilding the riverbank to reconnect the city with water. The first intervention is between Fischmarket and Museumschafen and is called Perlenkette (Pearl String). Neighborhood with residential and office buildings connected by the riverside promenade. From the beginning of 1990: the process of taking over the port area of the city and the development of the "Vision HafenCity" urban expansion project began.

In 2004, they moved to the operational phase, led by a new urban development company, HafenCity Hamburg GmbH (HHG). The planned activities aim to weave continuity between Hamburg and the Hafencity and between Hamburg and the southern suburbs.

A key feature of the masterplan was its formal neutrality, which benefited from the flexibility offered by subsequent adaptation. The plan covers a whole with a mixture of social, residential, cultural, and economic functions. Apply the principles of environmental sustainability and energy management. The proximity between Hamburg and HafenCity is enhanced by roads, pedestrian walkways and pedestrian bridges suspended over the water.
Time Horizon was originally expected to be completed in 2020, but that date has been pushed back five to seven years. The most important loans come from banks, insurance companies and investment funds.
The goal is not to increase revenue, but to achieve profitability that will help finance new ports in the Altenwerder region. (Hein, Schubert, 2021)

So HafenCity should be synonymous with "high quality". Great selections (international, famous authors, design aesthetics, valuable features) allowed us to sell many lots at great prices.

On the one hand, if the product is guaranteed, on the other hand only limited users have access. This is one of the important recurring themes that is considered as "exclusive centrality”.

At the same time, the space on the pier is attractive but too large, and the underground parking separates the house from the land, undermining life, and social connections. Some issues are still being resolved.

According to this, public companies, whether approved or not, act like private investment companies, creating special urban environments reserved for the specific socio-economic purposes of profit-seeking investors and buyer.

Despite many efforts, HafenCity has not yet been able to remove the label from its urban real estate investment and position it as an integral part of the city. Despite the criticism, HafenCity demonstrates the effectiveness of methods designed to ensure transparency of elections, information, and participation for all who request it. Not only at work, but also when fully operational. This also applies to aspects of financial management. (Hein, Schubert, 2021)

Mayor Klaus von Dohnany's inaugural speech on the so-called "Hamburg Corporation" in early 1983 marked a turning point in the political agenda and governance of the Hanseatic city, which was taking shape in the global race to attract capital and international flowsOne of the four main goals of the 2002 strategic development plan "Metropolis Hamburg - growing city" is still to make Hamburg more attractive to foreign investors, tourists, and the cultural elite. To

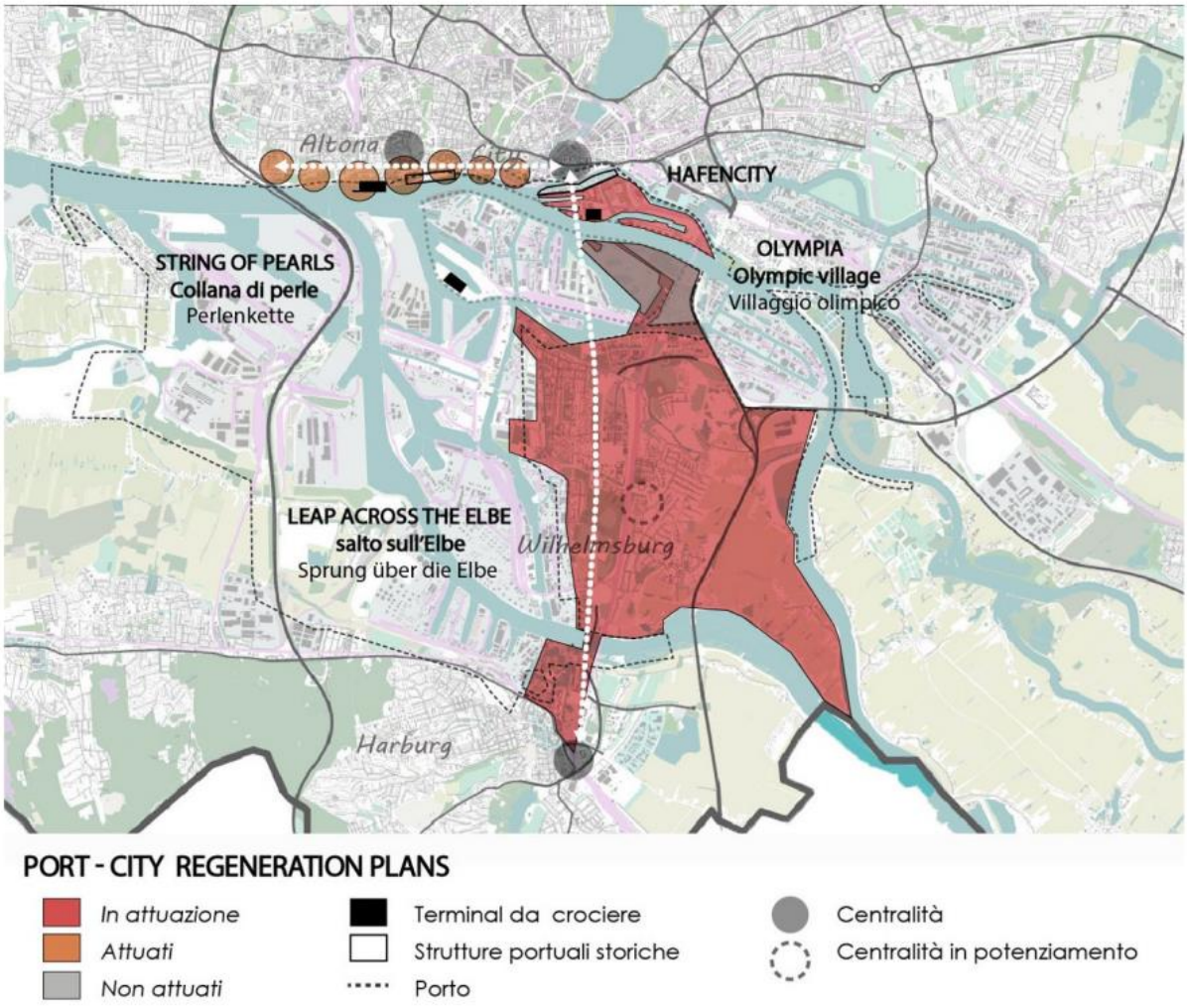


***Figure 58**: Hamburg waterfront regeneration master plan, (Schweppe-May 2017).*

that end, the city established the Hamburg Marketing GmbH city agency and launched the Hamburg brand.

Everyone in the city finds Florida's 2005 book, The Creative Class, to be unpersuasive, and opposition to the city-company's logic began to emerge as early as the 1980s. These early forms eventually developed into the strong sq.atter

movement, which is still active today in Hafenstrasse, close to the river, and at Rote Flora. These areas continue to be focal points of opposition to the city-company's logic and fight against gentrification and for better living conditions in the city,

In its capacity as terminal operator, Cruise Gate Hamburg acts as a point of contact for cruise lines and coordinates each call at the three terminals, offering equal and transparent berthing rules and regulations for all cruise lines in an innovative way in comparison with cruise lines reorganization. Operated by the Port of Hamburg (Schweppe-May 2017).

With these goals in mind, the Cruise Coordination Department of the Hamburg Ministry of Economy, Transport, and Innovation established Cruise Net Hamburg, a group of actors that develops and coordinates new initiatives to increase the attractiveness of Hamburg for private companies and public authorities. cruise destination. vessel. For companies, cruise lines, passengers, and cities.

In Hamburg, the cruise business was restructured several years ago by the Senate Economic Committee, which recognizes and engages players from related sectors such as the maritime industry, ports and travel agencies to fully exploit the potential market in the cruise sector. .(Hein, Schubert, 2021)

The new structures were designed to blend in with the Speicherstadt's historic structures and were built just a few blocks from the brick warehouses, which today continue to house Oriental carpet merchants' shops as they have since the nineteenth century. Finally, a number of structures, including the primary school Katharinenschule, the building for the Spiegel group of publishers, the HafenCity University building, the Commercial Centre building, and the NIDUS joint venture building, received the Ecolabel certification, enhancing the sustainability of interventions. Buildings will occupy 35% of the surface, streets and

transportation infrastructure will occupy 25%, and public and private spaces that are open to the public will occupy 36%.

An agreement guaranteeing and regulating the public's use of private spaces, particularly in areas where there may be the most conflict between visitors, locals, and people who work there, has been defined. By allocating 3% of the available land area to commercial use, 8% to culture, science, and education, 33% to habitation (approximately 5500 apartments for 12,000 people are planned), and 56% to services, tertiary, and tourism, mixed use can be achieved. The public will only be unable to access 4% of private spaces (HafenCity Hamburg 2004, 2006, 2010; Hamburg Port Authority 2006; Tzortzis 2006; Falk 2008; Cavallari 2009; www. waterfrontcommunitiesproject . org.)

The EMBT studio in Barcelona designed it with components and features that blend in with the areas and structures around it, enhancing the sustainability of the undertaking. Here, walkways and promenades at various heights alternate with green areas and open spaces that give access to the wharves and the water (Breckner 2009). Planned elements include sustainability, public spaces, and mixed use (Table 9).

Theme (initiative)	Tangible impact	Intangible impact
Investment leverage	• For EUR 1.53 billion of public funding, HafenCity Hamburg GmbH has managed to leverage EUR 5.5 billion of private sector investment.	• High visibility of the project in the international arena. • Improved quality of urban space.
High-quality public space	• 20% of HafenCity's space will be developed as open areas, and public access rights exist for an additional 20%. 34 hectares of water surface will be used to a certain extent as well (HafenCity Hamburg GmbH, 2008). • A range of waterfront urban spaces has been open since autumn 2007: Marco Polo Terraces, Vasco da Gama Plaza and Dalmannkai Promenades. They were joined by the Tall Ship Harbour in autumn 2008. Large pontoons form a floating walkway over the water, with permanent moorings for about 20 historic tall ships and steamers (HafenCity Hamburg GmbH, 2009).	• Serve as public encounter spaces due to different character and allow for a high degree of social integration.
Linkages with the City Centre	• Construction of the new U4 underground railway line is of extreme importance, as its two stops -Uberseequartier and HafenCity University - will provide the connecting link to Hamburg's underground and urban railway network.	• Opening up the development opportunities in the Speicherstadt area and the southern inner city. Pushing also competition to improve existing buildings. • Socially and economically integrating lower profile urban quarters via employment opportunities and new traffic links.

Table 10: *key performance indicators for Hafen city Hamburg GmbH (From Clark Huxley mountford as cited in Sepe 2014)*

The Am Sandtorkai neighborhood served as the impetus for the construction of HafenCity because it saw the construction of the first homes and offices there. The goal is to make this area of the city livable, connected to the historic city, and a place where people can shop, live, and have access to cultural and recreational opportunities.

Private apartments are offered for rent at affordable rates as well as for sale at prices ranging from 3000 to 3800 euros per square meter. The project's goal is to enable the city center's expansion while also integrating it with the port beyond the Elbe, which for decades has been increasingly relegated to the town's southernmost area. The new Dalmannkai quarter, which is the most diverse part of HafenCity, has grown into a hub for locals, employees, and tourists. To give them a unique view of the city center and the harbor, the buildings constructed here are set apart from one another. Due to this, the area now has a new topography that improves its "port ambiance" (Breckner 2009).

They range from high-end residences, like some created by Philippe Stark, to affordable homes. The new cruise terminal, which will eventually be situated on the neighborhood's waterfront, is expected to draw 40,000 visitors per day. Residential buildings come in a variety of sizes, locations, and architectural styles, all facing the water but serving different purposes. Eight major areas make up the 155 hectares of the project area (Figure 61).

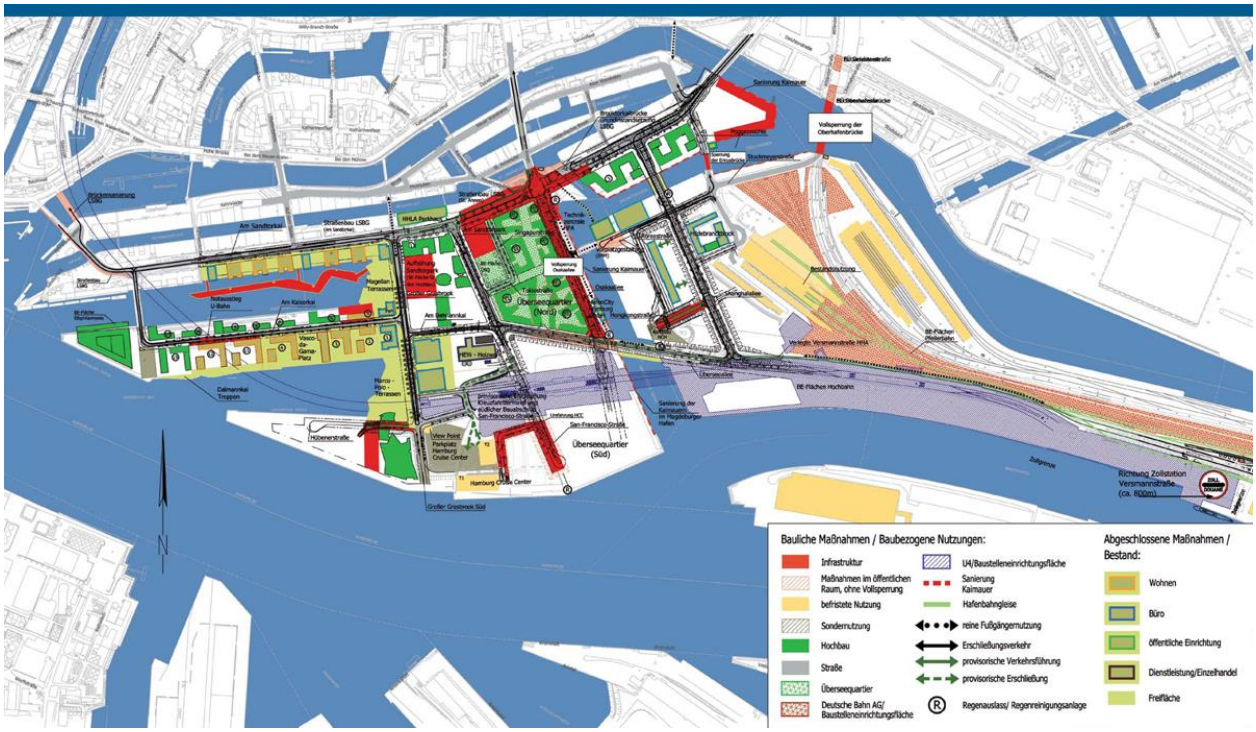


Figure 59: *Status of implementation of the development of HafenCity and construction in 2008*

A concert hall, a hotel, a conference center, a delicatessen, and several residential units will be housed in the sail-shaped building.

13.4.2- Strategic planning and players

Cohesive strategic planning, which helped the Hanseatic City achieve a leading position in the production of services and culture in Europe, was the driving force behind Hamburg's transformation into a modern creative city. Cruises represent all four facets of the tourism industry: travel, accommodations, attractions, and tour desk (Bridah and Zapata, 2009). As a result, Hamburg's strategy as a creative

city has an impact on how actors and decision-making arenas have evolved within the cruise metropolitan frame. (Sepe, 2014)

13.4.3- The socio-economic regeneration and participation

Socio-economic and participatory processes are closely linked in HafenCity. International Journal of Sustainable Urban Development 35 Before the implementation of the HafenCity Master Plan, a statement was made regarding the strategic importance of the waterfront for the development of the Hamburg community. In addition to the general plan, detailed plans such as transportation and land uses plans, green space plans and flood evacuation plans were established.

In the first phase, water was emphasized as a factor in the development of the city's economy. Then, as the shipyard declined, the city moved to the other side, towards the port, waterfront, and river, continuing to open up new fields. Since then, the growth of tourism has played a fundamental role in formulating a strategy to redefine the port system. Finally, there was the communication phase, where an open discussion regarding the port update was initiated. (Sepe, 2014)

Through exhibitions, lectures, competitions, and publications, the local community was engaged. This approach to citizen participation includes: "active participation of citizens, authorities, and different committees during the development process with the purpose of this was to generate confidence, political involvement, and to implement the notion of self-help and self-responsibility; use of the already established Advisory Board for Urban development, which includes representatives of both formally constituted groups and institutions and informal, as well as ad hoc, groups." (Smith & Garcia Ferrari 2012).

The private sector is matching the public sector's investment. The project, whose total costs come to about €7 billion, is anticipated to encourage the creation of

20,000 new jobs in the service sector (Carta 2007). A lot of multinational companies are moving their operations to HafenCity, taking advantage of the city's high standards for sustainability and public spaces in addition to new, efficient office space (Clark et al. 2010).

A limited liability private company, HafenCity Hamburg GmbH, owned by the Free Hanseatic City of Hamburg, manages relations between the public and private sectors and oversees the entire operation. The company is also in charge of communication, public relations, event management, advertising, and the promotion of artistic events on the site. These duties are carried out in part through a website that details the project's various phases and activities. Currently, Hamburg is promoting urban development based on new initiatives and investments with a focus on excellent urban and architectural quality. The ongoing projects aim to incorporate brand-new structures with high-caliber architecture, environmental sustainability, marketing, and consensus-building. (Sepe, 2014)

Additionally, according to Jürgen Bruns Berentelg, CEO of HafenCity Hamburg GmbH, "Urban quality is characterized not only by physical quality, appeal, or attractiveness of the place, but also inclusivity and diversity, as well as its sustainability and mix."

The original Medieval city's surface is expected to increase by 40% in 20 years thanks to the construction of HafenCity.

***Figure 60**: HafenCity waterfront, taken by Marichela Sepe 201.*

13.4.4- Creative city Hamburg as cruise capital

Since the 1980s, Corporation Hamburg has chosen to pursue its goal of being a creative city and an international capital, and today, 30 years later, it can be recognized as Germany's Leading City for Startup and Innovation (2017), second best destination in Germany after the capital Berlin and the European Green Capital in 2011. (Hein, Schubert, 2021)

Although the federal state regime has a significant impact on the independence and cross-cutting nature of the policies and actions that have propelled Hamburg into the top ten cruise ports in Europe, two additional crucial factors can be identified in this process: the coordination and coherence

of the actions in three strategic sectors of urban development, such as Urban Planning, Urban Marketing, and Strategic Planning, as well as the efforts of the decision- and operational-making actors who have facilitated the coherence.

13.4.5- Conclusion

The experience of the city of Hamburg demonstrates the high caliber of outcomes that can be achieved with an approach that, by overcoming the design dimension, brings into play a coordinated set of multiscale actions intended to spread in a capillary manner the effects of change in the spatial, social, and economic fields (Sgobbo, 2017).
Including every potential stakeholder from the concept stage to the management stage is undoubtedly one of the most effective strategies because it fosters a strong sense of community whose beneficial effects extend to even the most peripheral zones and areas.

In the case of HafenCity, the planners began with the location and its history to restore the maritime identity and identify the most suitable strategies for urban renewal. The waterfront project revolves around the theme of water, and new productive industries have been developed as a result of this. To ensure that this new section of the city would fulfill the aspirations of the collective, the citizens were involved in the project from the very beginning. All year long, numerous cultural events are planned to foster a sense of community among locals and draw tourists (Richards and Wilson 2006; Kagan).

The City of Hamburg responds to the crisis in a coordinated manner and with adequate urban planning time (both as an institution and as a community).

It forgoes the quick restyling of the skeleton in favor of a path that puts the citizens first. It accepts to pass through the closure and ruin phases as well as those of self-organization, sq.atting, and temporary use, all without ever conveying the sense of abandonment.
Perhaps the first real act of change was to take ownership. They overcame the barriers that had divided the city for years and firmly established a common good, a non-negotiable position, that is an important lesson to learn that can serve Beirut (divided city).

"We cannot help but wonder if this model of undeniable success can be exported and reinvented in other urban realities like Hamburg, where a large part of its territory is in crisis." (Lepore, Sgobbo, Vingelli, 2017)

The Hamburg model can still serve as a useful benchmark by rejecting easy optimisms, which are themselves sleepers under the weight of decades of failed attempts. It may not work as a product, but it works surely as a process. (Sgobbo, 2016; Losasso, 2016; Tira et al., 2017).

Looking at the city of Beirut, today a redevelopment process comparable to the example mentioned has not been started, according to earlier findings, the procedures for urban redevelopment and the reconstruction of the Port of Beirut (PoB) are challenging. The division of the government to represent different religions is the main problem in Lebanon, lack of public participation as well as . In spite of this, it lacked a holistic approach as exemplified by the principles of sustainable development due to its blatant bias in favor of economic growth at the expense of social welfare (Abdel Kahled, 2003).
For instance, there is no proof that people effectively participate in the decision-making process. According to Fawaz (2003), it is ineffective for planners to

consult the community by presenting the master plan as a final set of drawings that can only be modified cosmetically.

When a project is being completed, it's crucial to avoid putting too much emphasis on tourist development, where the term "cultural" refers to an instrument rather than a quality; for sustainable development to be a true force for change, the "cultural" component must provide quality to tourism rather than the other way around (Smith 2007).

Urban regeneration operations have a greater chance of becoming ingrained in the local fabric and attracting both locals and tourists the more value is placed on the unique cultural characteristics of the area, such as cultural heritage and place identity.

At the end as Landry (2006, p. 10) states that " *in order to thrive, larger cities must compete on a variety of stages, ranging from the closest local to the largest global stage. These diverse audiences, targets, and goals call for various things. They frequently pull in opposing directions while stretching. Working on different scales and levels of complexity is difficult; the challenge is to coalesce, align, and unify this diversity so the resulting city feels coherent and can function consistently*".

Part 3: Sociological Study

Chapter 14: Social Sustainable Urban Development:

14.1- Definition of Social sustainable Urban development

In the general literature in this field, it is generally accepted that the main dimensions of sustainability are economic, environmental, and social and that they are in some way interrelated.

Additionally, McKenzie (2004: 120) defines social sustainability as “a condition that improves life within communities and a process within communities that can achieve that condition”.

According to McKenzie, the condition includes equality of access to essential services (including health, education, transport, housing, and recreation) as well as equality between generations, which means that future generations will not be disadvantaged by the activities of the current generation.

In this understanding, social sustainability is a system of cultural relationships. Further, McKenzie (2004) argues that social sustainability is about accessibility, Intergenerational equity, and perpetuation of culture. Chi (2003) also suggests that social sustainability refers to social norms and circumstances, meaning that any ecological or economic decision should not outweigh the community's tolerance for change. It follows that social sustainability has synergies with social acceptability. Yiftachel and Hedgeock (1993) emphasized the urban perspective in the definition of social sustainability, stating that "urban social sustainability is about the long-term survival of a viable urban social unit".

Polese and Stren (2000) argue instead that "the social sustainability of a city is defined as development (and / or growth compatible with a harmonious evolution of civil society, promoting an environment favorable to the compatible coexistence of groups .. [and] promote social integration, with improvements in the quality of life of all segments of the population.

14.2- Urban Social Sustainability Concepts and Principles

The UK Sustainable Communities Document, adopted in 2003, defines sustainable communities as “places where people want to live and work now and, in the future, and have a high quality of life”.

They are safe and inclusive, well designed, built and operated, and provide equal opportunities and good services for all. According to several sustainability references, various physical factors are associated with social sustainability. For example, Jabareen (2006) links social sustainability outcomes to urban planning and design principles such as compactness, mixed use, density, sustainable transport, and greening.

Dempsey et al. (2011) name physical factors that they associate with sustainability, such as urbanity, attractiveness of public space, decent housing. environmental quality and local amenities, accessibility, sustainable urban planning, neighborhoods. and walkable neighborhoods.
Most of these factors are tangible and measurable and can be easily assessed for successful planning. Furthermore, in their review dedicated to the social dimension of sustainable development, Nicola, Glen, Sinead and Caroline (2011) provide a list of factors considered by theorists and practitioners as contributing to urban social sustainability and the socially sustainable development of urban settlements.

Explained in a table 10 that illustrates the wide range of related concepts and suggests the close conceptual proximity between factors described by some as "social aspects of sustainable development" and others as "sustainable communities", divided into physical and non- physical.

Furthermore, according to Bizenberg, E .. & Jabareen, Y. (2017), in which they proposed a conceptual framework. While. the framework strives to understand social sustainability as an integration of social, economic and environmental aspects. The conceptual framework of social sustainability is a construction of four interrelated concepts, as explained in their article (Figure 58).

Non-physical factors	Predominantly physical factors
• Education and training • Social justice: inter- and intra-generational • Participation and local democracy • Health, quality of life and well-being • Social inclusion (and eradication of social exclusion) • Social capital • Community • Safety • Mixed tenure • Fair distribution of income • Social order • Social cohesion • Community cohesion (i.e. cohesion between and among different groups) • Social networks • Social interaction • Sense of community and belonging • Employment • Residential stability (vs turnover) • Active community organizations • Cultural traditions	• Urbanity • Attractive public realm • Decent housing • Local environmental quality and amenity • Accessibility (e.g. to local services and facilities/employment/ green space) • Sustainable urban design • Neighbourhood • Walkable neighbourhood: pedestrian friendly

Table 11: *Urban social sustainability: contributory factors as identified in the review of literature (in no particular order) Sources include Chan and Lee, 2008; Meegan and Mitchell, 2001; Turkington and Sangster, 2006; Jacobs, 1999; Bramley et al., 2009; Yiftachel and Hedgcock, 1993; Urban Task Force, 1999; Hopwood et al., 2005; Littig and Griessler, 2005 Burton, 2000a.*

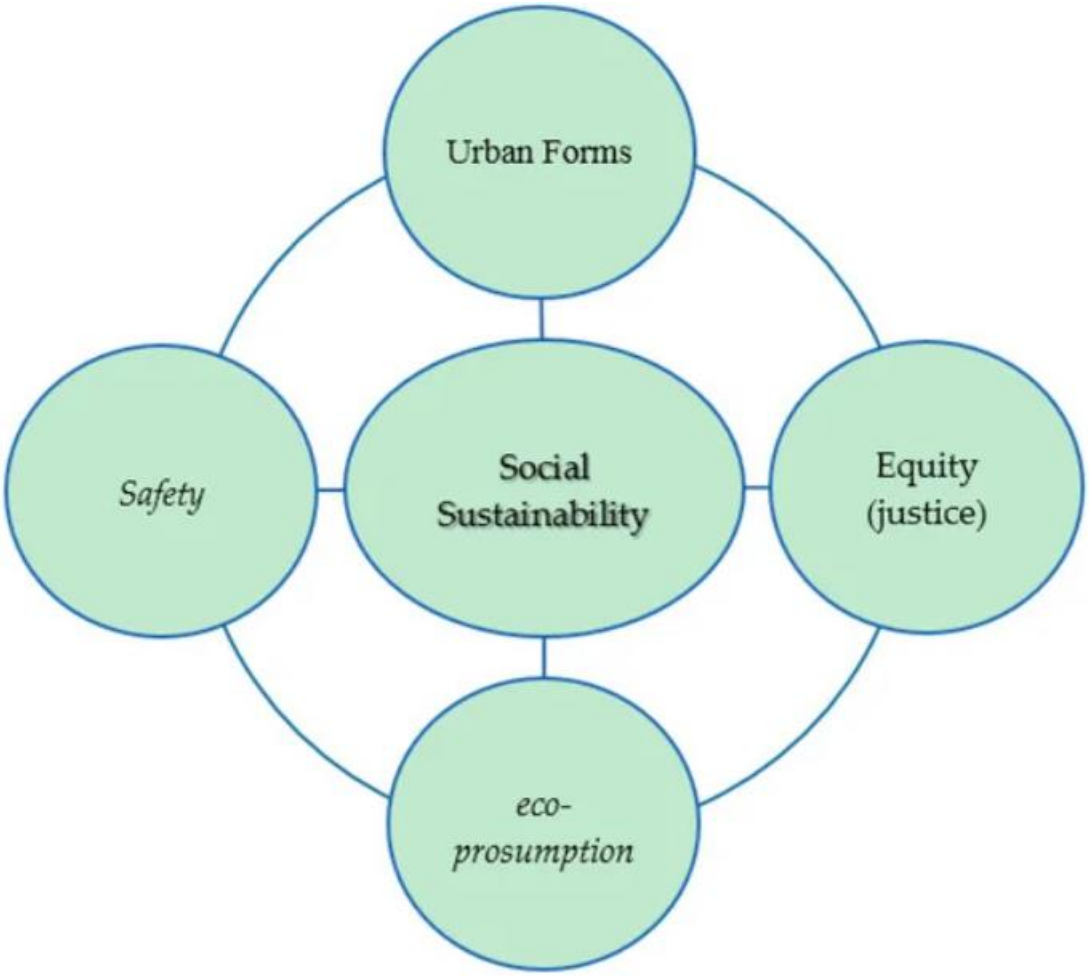


Figure 61: *Concepts of social sustainability Source: Eizenberg, E.; Jabareen, Y. Social Sustainability: A New Conceptual Framework. Sustainability 2017, 9, 68*

How (Eizenberg & Jabareen, 2017) have identified the fundamental principles of socially sustainable urban forms in the main components, as shown in figure 63, which states that *"Sustainable urban forms are the physical dimensions of socially desirable urban and community physical forms. A desired physical shape must have a sense of community, safety, health, and attachment to the place, among other environmental goals".*

Furthermore, the concept of safety is generally defined as the ontological basis of sustainability, especially social sustainability. This means not only the right to be safe, but the right to take all precautions necessary to stop and prevent any future injuries and casualties. The idea of eco-presumption also describes the process of consumption.

Concept	Theoretical Premise	Main Components
1. Safety	Risk is the ontological foundation of the social sustainability framework. Safety and security for humans and non-humans is the fundamental requirement of sustainability and social sustainability	a. Adaptation measures in order to cope with risk and uncertainties b. Urban vulnerability matrix: understanding the social and demographic dimensions of risk
2. Equity	Social, economic, and environmental injustice pose risk to society as well as to the efforts of coping with climate change threats and uncertainties. More just policies and less inequality reduce the alienation of people from their living spaces, enhance their ability to cope with vulnerabilities, and foster the development of feasible environmental objectives.	a. Recognition b. Redistribution c. Participation
3. Eco-prosumption	It is the responsibility of society to reduce future risk and help mitigate local and global efforts.	a. Mitigation measures
4. Sustainable urban forms	Physical urban form is crucial for achieving sustainability, safety, and social agendas.	a. Compactness, b. Mixed land uses, c. Diversity, d. Clean energy, e. Passive solar design, f. Greening, g. Sustainable transport, h. Renewal and utilization

Table 12: *Concepts of social sustainability and their functions and practices. Source: Eizenberg, E.; Jabareen, Y. Social Sustainability: A New Conceptual Framework. Sustainability 2017, 9, 68*

Producing and gaining values in socially and environmentally responsible ways. Which concerns the efforts and responsibility of a society in terms of pursuing mitigation policies. Furthermore, it is understood that social networks bring people together, imbue a common sense of purpose, and provide access to work and other social benefits.

Bramley and Power (2009) propose a conceptual framework for urban social sustainability. It includes two overarching types of consideration: social equity and the sustainability of communities. The latter refers to social interaction through social networks and communities and a sense of place, safety, and

security. Other scholars have described similar or related factors in slightly different terms.

To achieve more successful urban planning and development, a variety of public participation mechanisms can be used. Boelens and Boonstra contend that some of the more progressive methods of citizen involvement in planning have produced favorable outcomes, such as enhanced social cohesion and the growth of social networks that enable people to discuss issues and potential solutions while getting to know one another. From this concept it can be concluded that communities offer different levels of participation in different areas of decision-making. Community involvement is also part of urban development and the intergenerational social sustainability of cities.

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Various mechanisms for public participation in planning can be applied in order to achieve more successful development in terms of urban for, Boelens and Boonstra argue that some of the more progressive mechanisms of public participation in planning have yielded positive results, such as improved social cohesion and the development of social networks that allow people to discuss problems and solutions together and get to know each other. From this concept it can be concluded that communities offer different levels of participation in

different areas of decision-making. Community involvement is also part of urban development and the intergenerational social sustainability of cities.

14.3- Social Sustainable Urban Waterfront Regeneration:

Planning for waterfront urban regeneration is increasingly emphasizing its social dimension. But in a recent research project, Finnish researchers discovered a social dimension of urban waterfront regeneration that can be used to recognize and evaluate the social impact of waterfront urban planning and projects.

The authors can categorize the social dimensions of urban waterfront regeneration into four groups based on prior social impact assessments (SIA) and urban waterfront studies: resources and identities, social status, access, and waterfront activities and experiences (Table 13). The waterfront of all types of towns and cities are referred to as urban waterfronts in this study. Water can be found in rivers, lakes, the sea, bays, streams, or canals.

The social dimensions of urban waterfront planning	
Resources and identity	– Main characteristics and strengths of the area – Opinions of the environmental, cultural or historic values – Significance to the visual, social, and cultural identity (city image, community identity)
Social status	– For whom (social, age or ethnic groups) are the housing and service areas planned and built? – Role of social/private housing – Segregation and/or gentrification processes
Access and activities	– Are the waterfront areas accessible to the public? – What kinds of activities are possible? "Water dependency" – Easy or difficult approach to waterfront? – Traffic and parking questions; waterfront routes
Waterfront experience	– Presence of water (sea, lake, river, etc.) – Restorative experiences, importance of visual messages, physical touch, tastes, voices, moving in the space, sense of transition as identification

Table 13: *The social Dimensions of urban waterfront planning, Source: Sairinen, Rauno, and Satu Kumpulainen. "Assessing Social Impacts in Urban Waterfront Regeneration." Environmental Impact Assessment Review 26.1 (2006): 120-35. Web.*

Since the 1970s, several waterfront areas have been transformed from industrial zones into commercial, residential, and recreational areas. The different ways to experience and use the waterfront represent the social dimension of urban waterfront planning and regeneration, which helps communities understand its benefits.

When it comes to social impact, designing for communities can raise the awareness of planners, decision makers and the whole community about the social impact and aspects of waterfront regeneration.

14.4- Socially sustainable Urban Waterfront regeneration principles

The study has consulted a wide variety of references about sustainable urban waterfront regeneration and about socially sustainable urban development in order to initiate a sustainable urban form matrix of principles and their relevant design elements. The main aim of this study was to extract commonly agreed upon design principles and indicators for sustainable urban development from several sources.

1-Compacted and dense neighborhood:

Densification and compactness of the built environment is a common strategy for creating more sustainable urban forms. Compactness also drives to continuity and connectivity in the city. This means that future urban development must go hand in hand with existing urban structures.

*"The compactness and densification of urban spaces can reduce energy and water transport. Materials, products, and people" (*Yusuf 2011).

Also. "A key strategy for achieving compactness is increasing the density of development and activity to better utilize the city's accolades," he said.

It contributes to a high population density. Yusuf explains that a population density of 50 to 60 people per hectare is sufficient to provide adequate public services and open transportation to the neighborhood. If the result is greater than 1 to measure the density of the mixing region, then it is dense and working.
Burton defines the height of the city as an ideal way to achieve compactness, usually achieved by expanding the density of public activity to make more efficient use of the city. Therefore, when using such a small land in the city, there must be about 1 hectare of neighbors and services.
Arrives in a permanent city. Design values should be dense and compact. Strongly integrated and diverse, Dumreicher (2000). “Area ratio is the ratio of the total area of a building to its land area. The total area of a floor generally considers the total area within the perimeter of the exterior walls of a building, including thickness, interior and interior layers. Exterior walls, stairs, service ducts, elevators shaft, all circulation spaces, etc.” (Cheng, 2010)

2-Mobility (walkability-Cycling-Public Transportation- Vehicules)

As Jabarin suggested, spatial planning plays an important role in achieving this goal. When there is little physical separation of activities, travel demand is considered low and easily met by walking or cycling. eco-friendly modes of transportation. The ADPRDM also stated that bike lanes should be designed with pedestrian path-like specifications and design elements. in addition, the neighborhood assessment suggested a secure connection to the surrounding mobile bike parking, providing transport links, services, and amenities.

One of the main services that significantly contribute to the mobility of the region is public transport. There are different types of public transport, such as trains, trams and buses, but their use depends on several factors, including population density/development. Sustainable transport, as described by Jordan and Horan, is

“a transport service that reflects the global social and environmental costs of transport services. Transport services that respect transport capacity: a balance between mobility and safety requirements and the needs of accessibility, environmental quality and nearby Liveability. “. Spatial planning also plays an important role in achieving these objectives. It is considered a case of little physical separation of activities. Walking, cycling and environmentally friendly means of transport make it easier to meet your travel needs” (Jabareen. 2006).

In addition, the availability of efficient, effective, fast, pleasant, and accessible public transport that provides access to the site (coast) and the city center is essential for the development of sustainable urban design. Thus, Cervero defines it as “compact and transit-centric developments will reduce trips and encourage non-motorized travel.” Central urban areas and high-density areas with many pedestrians. Buildings are usually five stories or more. It includes a commercial front that is typically 0.8m or 0.5m wide and demonstrates priority for pedestrians and cyclists. According to Yosef’s article, parking is reserved for disabled vehicles, taxis and other emergency vehicles and public services. and speed limits in the surrounding area. Another aspect of automobiles to consider when studying social sustainability, as Robert Cervero (2003, 18) argues, is the impact on pedestrians. Utilizing safety precautions - i.e., clear separation of pedestrian paths using speed limits, landscaping features or car parks. and so on.

3-Accessibility

“The importance of accessibility is widely recognized in waterfront planning and design. Accessibility is essential for the waterfront to be considered an attractive or active public space” (Chang. 2011).

Berton suggested walkable areas in the neighborhood can be measured about 400 m distance to services and about 600 m for public transportation point. He also

recommended to centralize all local services and facilities near transport hubs, Consider local services and convenient access for seniors, children and disabled people.

In addition to public transport in nearby areas, buses and services should be included in distant 200m to 300m intervals. As for accessibility, it can be determined in accordance with different functions for access points.

Also, one of the most important indicators of accessibility is the quality of services and the availability of facilities within feasible walking/cycling distances formerly known as walking and cycling. Along with physical and social accessibility, it reflects the extent to which the neighborhood environment encourages residents to walk to their destination.

4-Mixed use

Barton H. (2000) argues that mixed-use districts can improve the social stability of neighborhoods by allowing residents to meet their needs in the neighborhood. In this way, people are less dependent on personal car. Encourage people to go where they want to go easily. Mike Jenks and Colin Jones (2010) argue that spaces accessible and useful to the public, regardless of social class, and adequately supported by a variety of useful services and tools can strengthen and improve the quality of connections and social networks. Common Living and Social Justice (Jenks M., 2010: Lynch K. 1981). Park also noted that “mixed or heterogeneous zoning allows compatible land uses to move closer together, shortening the distance between activities” (Parker1994). Additionally, as Jabareen suggests, “The goal is to reduce air pollution and traffic congestion and encourage resident interaction by increasing foot traffic and the overall appeal of the neighborhood”. According to the UN-Habitat recommendations for sustainable neighborhoods, the recommended distribution of the area is: 40-60% for economic purposes, 30-50% for housing and 10% for public services. In

addition, Barton recommended multipurpose use of the buildings for commercial and residential purposes, which would help minimize the use of cars and provide a comfortable space for employment and users. In addition, community planning includes personal, business, recreational, and urban uses that underpin the daily lives of residents of diverse demographic profiles and are associated with open and private transportation options.

5- Spatial connectivity and Integration:

As V. Dettlaff points out in his description of the definition of integration, also called accessibility, it is a variable that describes how a space relates to other spaces around it. Integration can be seen as an internal connection of a space or an external connection with the surrounding context, which is much more complex and therefore more important. In the light of this principle, "integration" can be defined as the opposite of "separation". This is the result of a sufficiently permeable network that tends to effectively connect and facilitate urban spaces with their surrounding contexts. (Carmona M. 2003). In other words, it refers to the functional and physical connection between the building and other buildings around it, and therefore the cluster. It then connects the cluster to other neighboring clusters (sub-neighbors) and neighboring regions to other neighboring regions (sub-neighbors). Then with the city and finally with the region as a whole: ultimately this should lead to a defined secondary role for each part of the city form in relation to the others and vice versa (Barton H. 2000).

6-Sociability and Liveability

According to Leby and Hashim (2010), "a good settlement is one that responds to human contexts and also connects human values with behaviors that affect spatial and physical cities" (Leby & Hashim, 2010). They also said: *"A review of different studies identified several dimensions of Liveability, such as the*

functional, physical, and social environment, which reflect people's shared understanding of the quality of their living environment, plus, housing and security."

Furthermore, in step with the Abu Dhabi Public Realm Design Guidelines, *"Public space contributes to a high quality of life by providing open public space for leisure, recreation and entertainment as an alternative to the urban environment, thus strengthening physical and mental health"*.

It also encourages more sustainable transport by creating car-free zones and providing the necessary infrastructure for integrated public open spaces and integrated transport systems supported by streetscapes. Additionally, as recommended by the ADPRDM, the design and placement of canopy structures and buildings should consider prevailing winds, daytime sun paths, adjacent structures, and landscaping. Livability is broadly defined as "characteristics that reflect the well-being of a community and how people want to live now and, in the future," (Victoria, 2008). Many studies have linked the concept of Liveability to many factors such as quality. Life, health and safety, access to services, cost of living, standard of living, mobility and transport, air quality and social engagement.

7. Environmental quality:

For the development of urban areas, it is important to provide a quality and good living environment for residents to live contentedly and feel comfortable. Holland C. (2007) and Wassenberg F. et al (2011) 'comfort' can be divided into four main themes: physical comfort and psychological comfort. Thermal and visual comfort.

8-Health Environment

Urban planning as an environmental control technique has a systematic effect on health. In the following figure indicates a Human ecological model of a settlement. It reflects the wider environment influenced by the spatial planning of settlements and places, as well as different areas of economic and social life (Barton, 2000). Also, as described in figure 64. Any outer realm can affect the well-being and health of those represented by the inner realm. For example, the natural environment is achieved through clean air and water. The built environment, on the other hand, is the presence, comfort, safety and attractiveness of parks and playgrounds, as well as pedestrian and cycling facilities, and related health. practice; the local economy due to unequal access to work and income; Support the community through social media. Therefore, you can use the following model to understand the relationship between health and planning.

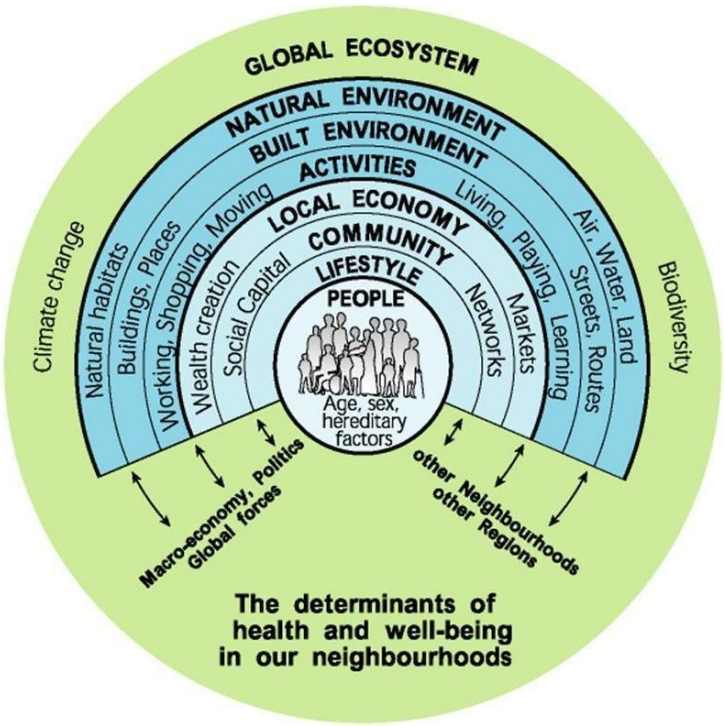


Figure 62: *Human ecology model of a settlement. Source (Barton and Grant, 2006)*

9-Safety

"To ensure safe, secure and accessible public open spaces and safe pedestrian pathways and traffic calming measures for all community members, sustainable urban design must ensure community safety and address safety measures for all" (Area Design Guide public from Abu Dhabi 2017).

Furthermore*, "Safety for all community members can be achieved through inclusive design that takes into account the needs of children. Disabled people and the elderly"* (LEE, William D. Sher, Lee. Michael Y. Mack, Michael J. Ostwald, 2013).

Esenbergand and Jabareen define security as the ontological basis of stability in general and social stability in particular. This means not only being safe, but also the right to take and take all safety measures to prevent future casualties and bodily harm.

And considering the visual control of public spaces through the urban planning of plots and different structures is the main framework measure. Ben Welle (2015) also lists 7 important design aspects for safe cities, 6 of which can be used as safety indicators when considering the built environment.

These six key design aspects are: 1. Prevent urban sprawl: 2. Slow down the traffic. 3. Make sure the main road is safe for everyone, not just cars. 4. Creating pedestrian-friendly spaces 5. Providing safe and connected networks for cyclists: and 6. Ensure safe access to high-quality public transport.

10-Security:

Mixed use and high-density area can highly increase the vitality and Liveability of the area by increasing the number of people and activities in the area which insure the sense of security as well of the area. Besides that, visual surveillance in the public realm through the urban design of houses and other buildings is an important design action (Ben Welle. 2015).

11- Identity:

According to Barton (2000), spatial design should reflect and celebrate the uniqueness of a community's people, culture, heritage and natural history, which is reflected in the urban and architectural design of buildings, streets, streetscapes and green spaces., plants etc.

12- Community Participation

Empel said in his research that contemporary spatial planning recognizes the value of public participation in the development of our environment. We believe that social intervention can have lasting results. He also pointed out that the results of the study show that the effects of citizen participation in urban development appear to be experienced in a variety of ways. The explanation for these different impressions of community investment can be found in a unique perspective of our approach to public engagement. Empel (2008) also states that *"modern planning theory recognizes the value of community engagement in the development of our built environment and suggests the potential of community engagement to achieve more sustainable outcomes"* (C. van Empel, 2008).

Regarding community participation, the European Commission also states that “despite the recognition of the value of community participation in the planning process, the impact of community participation on urban development manifests itself in different ways”. (European Commission DG ENV. 2006).

13- Social Mix

According to UN-Habitat (2014), social inclusion aims to encourage interaction between different social groups in the same community and ensure equal access to urban opportunities. Social engagement helps lay the foundation for healthy social networks and social capital, which are the driving force of city life. Also, social mixing and mixed land use are interdependent and mutually beneficial. Thus, land use combined with appropriate policy orientations leads to higher levels of social mixing. in mixed land use communities. The profession is open to people from a variety of backgrounds and income levels.

A place where people live, work and build different social networks in the same neighborhood.

Also, as Barton (2000) points out, community life is revitalized by creating open spaces for people to meet, green spaces, and pedestrian-only commercial and social centers. These and other social action centers promote community interaction, create social networks, and increase social capital (Barton, 2000).

Chapter 15 . Sociological Survey done by the Authors

15.1 Overview

In this chapter, the authors will discuss interviews related to the Beirut explosion and will present the findings of this study based on the findings and using the comparative analysis approach.

The authors had the opportunity to meet professional urban planners and architects and economist, to discuss the case of Beirut with them to explore ideas and highlight diverse views.

During these interviews, the authors tried to ask the interviewees 7 main questions:

The first question is related to their role in the post explosion urban planning of the port - How much your role was important in post-explosion urban planning?

The second question to understand if for them if the explosion could be an opportunity to reshape the city of Beirut and ensure a sustainable urban development project the is socially sustainable and beneficial citizens

Do you think this explosion is an opportunity to re-shape the city in a better way (more socially sustainable, inclusive...)?

Third question related to the historical image of the city

3- Do you think that the architectural scene will be affected by the explosion?

4-How do you perceive Reconstruction? What should be rebuilt exactly the same and what shouldn't? How would you save the urban Fabric and the collective memory?

5- The citizens are afraid that with the consequences of the explosion, the neighborhoods near the port will undergo a reconstruction, a Solidere version 2.0 project. What do you think?

On April 8, a delegation of German companies presented the Lebanese government with an initiative to underwrite reconstruction of Beirut port. What are your thoughts about this proposal?

In your opinion, what is the ideal design of the port of Beirut?

15.1- Interviews:

Hiba Dghaily, Architect, and environmental Planner,TorgeGaaWerker Architekten, Berlin-Germany.

Miss Dghaily is a former employed architect in TGW architectural Firm. She has many years of experience in the field of renovation, restoration, scanning, planning, execution and design despite her 24 years' young age. She managed to graduate as an Architect from Lebanon and work online aboard –to Lupos3D German Firm- in the field of renovation and restoration at the same time. One of her outstanding projects are Deutsch Oper Berlin, Marienkirche-Alexanderplatz, Tegel airport, Theaters and other monument buildings. She was always concerned on creating a link between history, present and future in the Historical monumental projects.

Once she gained the knowledge she needed in the field of restoration, renovation and scanning, she moved to another chapter in architecture which focuses on modern architecture and its impact nowadays. She is currently working on residential buildings projects as well as she is learning the techniques of combining a well-maintainable structural executional building that could be harmonized with a modern designable planned one. She participated in several competitions, seminars and has RIBA I certificate as well. She Studied architecture at the Beirut Arab University and moved directly to Germany after her graduation to work and explore architecture in other visions. Miss Dghaily completed her Architecture and Built environment degree in Lebanon and is aiming to complete her higher studies furtherly in the upcoming year.

Authors: How much your role was important in post-explosion urban planning?

Hiba: *"My role was focused on reconstructing what the explosion left on an urban scale. The vision of distortion cleared up the architectural value of Beirut how it was and to what it has changed.*

As a student back then, I tried my best to reach all the accessibilities in helping, improving and reconstructing the city. My role was at the beginning through

Engineering NGO's where we scanned the site and the damaged buildings as well, we did surveys to calculate exactly how and what could we manage to build and reconstruct. Forwardly, my role was important in an indirect way by participating in several projects and competitions that focused on reforming the damages on an urban scale. Although my projects may not be constructed but at least I know that I might have inspired other Architects in an idea or concept that could be added to the final planning that could be furtherly worked on."

Authors: Do you think this explosion is an opportunity to re-shape the city in a better way (more socially sustainable, inclusive...)?

Hiba: *"As much as the explosion is a catastrophic experience, but it is sure that at the same time an opportunity to view Beirut on other architectural perspective and level by enhancing its' urban planning and infrastructure. Surely, by reshaping the city a person should take into consideration that the city's identity shouldn't be lost and the connectivity between firstly, it's surrounding and secondly, it's past should always be remarkable while planning. The reshaping is better to be consisted on finding the solutions of the architectural problem that citizens used to suffer from before the explosion and by creating a suitable environment for the people out there; for example, creating more social natural parks that could be formed by representing the memorial explosion in an artistic way, using energy saving techniques, referring by rebuilding the residential units to a sustainable local materials with an accepted budget rate, and planning a well-constructed infrastructure."*

Authors: Do you think that the architectural scene will be affected by the explosion?

Hiba: *"Surely that the scene will never be like before whether no architectural act was taken, or a restoration will take place. In all ways the scene's going to*

be remarkable. Once the rebuilding of the distorted buildings happens, the difference in comparison with the buildings in the larger radical scale will appear, and we are not tackling here the concept of reshaping the architecture forms, but the concept of building a better architectural maintained Beirut in the sectors of infrastructure, sustainability and urban planning. It should be an opportunity to construct a planned city on an urban scale that shapes a healthy safe vision for the citizens."

Authors: How do you perceive Reconstruction? What should be rebuilt exactly the same and what shouldn't? How would you save the urban Fabric and the collective memory?

Hiba: *"It is always better to enhance and upgrade our buildings once there is an opportunity, find it better to preserve the buildings with light damages and protect it in a memorial way. But on the other hand for the other buildings that were totally destroyed it is better to re-build it with the same functional usages but in an advanced architectural way. As for the example the residential buildings should stay a place for the people who lost their shelters and not transform it to other usages."*

Authors: The citizens are afraid that with the consequences of the explosion, the neighborhoods near the port will undergo a reconstruction, a Solidere version 2.0 project. What do you think?

Hiba: *"Being aware enough after the explosion and letting the local architects and engineers to take advantage of it and re-build the site with a proper statistical study, will not transform the neighborhood into Solidere version 2.0. The steps that should be taken is to firstly, let the local companies work on it; Secondly, to do a proper statistical study; thirdly, to do also a proper survey reflecting the citizens' voices and needs and fourthly, is to truly apply these studies."*

Authors: On April 8, a delegation of German companies presented the Lebanese government with an initiative to underwrite reconstruction of Beirut port. What are your thoughts about this proposal?

Hiba: *"Lebanon is in need for a financial aid from other countries, because of the economic crisis, it is clear that no Lebanese company could fund the whole project. Having an aid is a good idea but it is preferable to be in an indirect way through supporting the local companies to work on it and not the foreign countries because reflecting the Lebanese architecture touch and identity could be lost if it wasn't from the architects and people who suffered from the explosion and experienced the Lebanese architecture styles."*

Authors: In your opinion, what is the ideal design of the port of Beirut?

Hiba: *"Redesigning and building the port should be based on several points and strategies. Architects should always consider what is precious enough to leave it as it is after the explosion, what should be reconstructed in the same functional way, and what to totally change. Before thinking deeply on how the Port could look like architecturally, it is important to take into consideration several points that should be worked on, on the bases of design and engineering. Firstly, The Port should be more technologically advanced in the way of safety and structure, to avoid such coincidences in the future. Secondly, moving on to the function and the usable urban space, it is good to have a memorial vision of what happened on that day, and to think in which way could it be reflected. This message could be translated by a museum of memories and for the victims, or a shared public park or a node in the site. Thirdly, designing the landscape in a harmonized designable strategy with the architectural buildings in the port. And fourthly, is by studying the harmonization of the Port with the surrounding. Surely there may be other important points that are followed to reach the ideal design for the port,*

but it is important to shed the lights in the beginning on the points that were missing before the explosion to look forwardly on the strategy on designing and constructing."

May Fawaz, Architectural Engineer with good experience in project management, architecture, landscape and public works. Currently at the end of her course in Mater 2 Professional Entrepreneurship and Project Management, at Le Cnam-Liban, center of Lebanon attached to the Cnam Paris. Initially graduated with a Master's degree in Architecture from the Lebanese University (February 2016), she completed a very rewarding period within several companies, offices and agencies. At JCC she worked for more than 3 years (2016 – 2020) on several projects: Beirut Waterfront Marina, Waterfront City Dbayeh - Infrastructure and Landscape works, Municipality of Beirut - Infrastructure and Landscape works. She was also a Project trainee at "Dar Al-Handassah Shair & Partners S.A.L." (2014). She worked there on several projects in the planning and urban design department: 1. "SDA de la Conurbation Rabat- Sale-Temara et sa zone périphérique". 2. OAPR (urban project in Africa): design of the hotel zone master plan. 3. "Albatinah Regional Planning - Yemen": base maps of the region.

Authors: How much your role was important in post-explosion urban planning?

May*: "I worked on a study according to the Lean 6 Sigma method, of the restoration of the built and cultural heritage of Beirut, after the explosion of the Port which took place on August 4th, 2020. The study include a historical introduction of the city of Beirut, from the Phoenician civilization to the explosion of its port in 2020. The "Stakeholder Analysis" section detailed the roles played by different actors, those who took the initiative from day two, those who played a coordination role, and also those who delayed the work, or represented threads to the rehabilitation project. The process map described all the activities and*

their interactions from the beginning to present. In addition, the study was based on: "SIPOC Analysis", "VOC" and "SWOT Analysis". The "Project Management Life Cycle" part detailed the different steps followed by the project. This part allowed to verify the validity of the project with different actors involved… In summary, this study was a principle based on the cutting of the project into pieces of human size and to launch sprints in the realization of each of its subtasks."

Authors: Do you think this explosion is an opportunity to re-shape the city in a better way (more socially sustainable, inclusive...)?

May: *"The explosion offers a crucial opportunity to re-shape the city in a better way, guided by the principles of transparency, inclusion and accountability. The process should be based on approach bringing together government, civil society, the private sector, activists, the media, academia and the international community around a common vision and strategic objectives. It should ensure the representation of all segments of Lebanese society, including women and vulnerable groups, and to take into account the voices and interests of refuges and migrants. The diaspora remains a strategic resource for the economy, not only in terms of portfolio and other short-term investments, but investments, especially in terms of long-term productive foreign direct investments.*

The "build back better" approach should be based on a framework of reform, recovery and reconstruction. It is important to work on strategic pillars that could include reforms to promote citizen confidence and improve governance, people-centered recovery, and rebuilding essential goods, services, and infrastructure."

Authors: Do you think that the architectural scene will be affected by the explosion?

May: *"The architectural scene is really affected by the explosion. There are many historical buildings that have been completely or partially destroyed and cannot be rehabilitated again. There are many neighborhoods that have completely changed. Even the reconstruction of some buildings will take years, so it will take time to return to the pre-explosion scene."*

Authors: How do you perceive Reconstruction? What should be rebuilt exactly the same and what shouldn't? How would you save the urban Fabric and the collective memory?

May: *"I hadn't recently worked on construction projects in the damaged areas. But from my walks in Mar-Michael and other areas surrounding the Port of Beirut, I was really satisfied with the rehabilitation work. Most of the buildings are very well rehabilitated, you can still see their historical traces, the colors, the traditional element, the greenery… and of course the life that returned to its cafes and clubs."*

Authors: The citizens are afraid that with the consequences of the explosion, the neighborhoods near the port will undergo a reconstruction, a Solidere version 2.0 project. What do you think?

May: *"One week after the explosion, "Rumors" were circulating about the rush of brokers to the neighborhoods of Gemmayze, Mar Mikhael and Achrafieh, offering the owners of the old heritage buildings to buy their dilapidated property against a cash payment in "fresh dollars". They were hoping to persuade the owners of the impossibility of rehabilitating their homes and of the need to demolish them in order to buy them at the lowest price. This allows later on the real estate developers coveting these neighborhoods for a long time to erect their projects of modern towers in their place (as it already happened in the surrounding neighborhoods, especially after the war (1975-1990) during the*

reconstruction of downtown Beirut – aka Solidere Project). Fortunately, more than 30 associations and hundreds of volunteers have mobilized on the ground to conduct a preliminary inventory of the damaged buildings, representing them on schematic plans, a necessary step for the restoration in the second phase. The efforts of the different actors started to unify in order to have a centralized collaboration between the different groups following a methodical work for a greater efficiency in cooperation with the local and international administrative institutions working for the preservation of heritage."

Authors: On April 8, a delegation of German companies presented the Lebanese government with an initiative to underwrite reconstruction of Beirut port. What are your thoughts about this proposal?

May: *"The projects seem very ambitious, but political leaders do not show any intention to provide the simplest reforms set by the international community as a condition for Lebanon to obtain financial support that would launch the reconstruction process. But I wasn't very impressed with the scheme, which aspires to move the majority of the harbor's activities out of the city center and turn the worst-hit parts of it into a residential area. In this way, the city's features, especially the port, will change, and we will turn to solidere 2!"*

Authors: In your opinion, what is the ideal design of the port of Beirut?

May*: "As happened with most of the monuments that were subjected to historical disasters, it is necessary to preserve part of the destroyed silos as a historical and memorial element, along with the reconstruction of the port in an optimally way that ensures the restoration of marine life. As for the destroyed buildings, they must be restored based on laws of urban planning and modern building laws, which take into account the cultural integration between the population and the public space."*

Mohamad Houhou. Lebanese architect.

Houhou graduated recently from Politecnico di Torino wih a master's degree in sustainable architecture. And currently working in Copenhagen in Denmark.

Authors: Do you think this explosion is an opportunity to re-shape the city in a better way (more socially and economically sustainable, inclusive...)?

Mohamad: *"Yes, it is a potential opportunity for a regeneration of the urban fabric. If this is remotely well studied and well invested in, social and economic factors should be the centre of focus. If economic attractiveness will rise, the other will follow.*

Do you think that the architectural scene will be affected by the explosion?

It has been already. Huge deterioration to the existing cone of views is seen, and I personally don't know how much renovation work could restore the state of some historical building that were affected."

Authors: How do you perceive Reconstruction? What should be rebuilt the same and what shouldn't? How would you save the urban Fabric and the collective memory?

Mohamad: *"I know that people are split between leaving a memory, and rebuilding the past, or just moving forward for a modern planning. I suggestively see that a landmark (a monument) as a memory for all the affected living or dead is crucial. But a more inclusive modern design is a must. If it means taking part of the history to ensure a better future, let it be then."*

Authors: The citizens are afraid that with the consequences of the explosion, the neighborhoods near the port will undergo a reconstruction, a Solidere version 2.0 project. What do you think?

Mohamad: *"I can not see that happening honestly. It is so remotely impossible to be true. With the level of existing deterioration there will be a "gentrification" of some roads, say part of neighbourhoods. But that does not mean that it will jot come on the benefit of citizens, or maybe benefit them. Think about the big picture, the poor are never in politicians plans. Hope this will change."*

Authors: On April 8, a delegation of German companies presented the Lebanese government with an initiative to underwrite reconstruction of Beirut port. What are your thoughts about this proposal?

Mohamad: *"I think with the history of corruption in the Lebanese layers of governing, I think a German supervision or even direct to total collaboration or commissioning is a suitable choice."*

Authors: In your opinion, what is the ideal design of the port of Beirut?

Mohamad: *"I don't know if there is a right answer or exact answer. I can throw on some words. Inclusiveness, modernity, respect of the story, respect of the citizens, and mainly a sustainable initiative that should extend into the Lebanese land. We lack that a lot."*

Jana Al Sahily is a PhD candidate and a research fellow at UNESCO (Italy), She holds a master's degree in Economics management and policies for global challenges from University of Ferrara and a Bachelor Degree of Business Administration from Antonine University, Lebanon. Currently she is a research fellow at the department of Economics and Management at University of Ferrara, involved in the PHD program of "Economics and management of innovation and sustainability - EMIS". Her research activity is dedicated to the area of Quality education, Human capital, and development. In the last years she has been

working on the analysis and evaluation of Education data set and analyzing the several forms of development.

Authors: Do you think this explosion is an opportunity to re-shape the city in a better way (more socially and economically sustainable, inclusive...)?

Jana: *"The explosion on August 4th occurred at a time when Lebanon's cultural industry was dying slowly. Following the disaster, several local and international groups hurried to give assistance and to rebuild what had been lost. This, however, showed not just the devastation caused by the bomb, but also the weakness of the region, which was already ailing. Nonetheless, it may provide a little hope of opportunity to press the reset button, allowing for a fresh start with a different strategy and a different set of goals. This is attainable through focusing on important reforms to solve Lebanon's governance and recovery difficulties, as well as investments in critical assets, services, and infrastructure restoration. Progress on governance and socioeconomic changes is required to mobilize foreign assistance for rebuilding beyond the recovery path, as well as to open up new sources of public and private funding:*

- *improving governance and accountability;*
- *jobs and opportunities;*
- *social protection, inclusion, and culture;*
- *improving services and infrastructure.*
- *The reconstruction is not only about rebuilding the city; it is about rebuilding its people and its social fabric.*
- *Providing assessment that will incorporate initiatives and actions targeting a sustainable revived city with better energy and water efficiency, indoor air quality, and material sourcing."*

Authors: Do you think that the architectural scene will be affected by the explosion?

Jana: *"In Beirut, real estate is a valuable commodity. Since the civil war in Lebanon ended two decades ago, the city has been restored and refurbished into a destination of soaring glass condominium skyscrapers, startup art galleries, sophisticated restaurants, and cocktail clubs. However, traditional homes in the downtown area may be counted on one hand, and the façades of some are disfigured from smoke and shelling."*

Authors: On April 8, a delegation of German companies presented the Lebanese government with an initiative to underwrite reconstruction of Beirut port. What are your thoughts about this proposal?

Jana: *"Several countries are said to be interested in rebuilding the port and the surrounding areas, including Turkey, China,Russia, France , and Germany… and these funds are not for free at the end. There are economic and political ambitions of this aid with the purpose of interfering in the affairs of the country. In my personal opinion, Lebanon has to accept the offer that most ensure its economic recovery especially that Lebanon cannot repair itself alone. The problem here is that the country is suffering from external pressure not to accept these offers for the purposes of strengthen the Haifa port in Palestine which was a big competitor for Beirut port."*

Authors: In your opinion, what is the ideal design of the port of Beirut?

Jana: *"The design of Beirut port was already important, but this is a chance to make important modification. For example,*

- *building profiles that are visually arresting yet rooted in the memory of the past.*

- *Build with environmentally friendly materials, that market the GO GREEN trend.*
- *Make the port a landmark and a source of economic growth by attracting investors and properly utilizing the area by constructing a Ferris wheel to draw visitors from all around the city and converting the old silo zone into public parking."*

15.4- Outcomes

According to our interviewees they all agree that the explosion offers a crucial opportunity to re-shape the city in a better way, guided by the principles of transparency, inclusion, and accountability. The process should be based on approach bringing together government, civil society, the private sector, activists, the media, academia and the international community around a common vision and strategic objectives. It should ensure the representation of all segments of Lebanese society, including women and vulnerable groups, and to take into account the voices and interests of refuges and migrants.
This is the ideal chance to reunite this divided city, revitalize it, and turn it into green open spaces while preserving the urban heritage and identity of the city.

They all mentioned the need to focus on empowering public and private institutions, in order to arrive to a successful plan.

Miss Hiba believes that letting the local architects and engineers to take advantage of it and re-build the site with a proper statistical study, will not transform the neighborhood to Solidere version 2, and also she said that Lebanon is in need for a financial aid from other countries, because of the economic crisis, it is clear that no Lebanese company could fund the whole project. But having a

supporting ocal companies with foreign aid would help much better to preserve the identity of the city and will be more aware of the main local problems

Jana mentioned a Progress on governance and socioeconomic changes is required to mobilize foreign assistance for rebuilding beyond the recovery path, as well as to open up new sources of public and private funding and she pointed up 6 main points:

• improving governance and accountability;
• jobs and opportunities;
• social protection, inclusion, and culture;
• improving services and infrastructure.
• The reconstruction is not only about rebuilding the city; it is about rebuilding its people and its social fabric.
• Providing assessment that will incorporate initiatives and actions targeting a sustainable revived city with better energy and water efficiency, indoor air quality, and material sourcing.

Chapter 16- Results and Discussions:

16.1- Overview:

In this chapter the authors will report the findings of the study based upon information gathered in the previous sections. As mentioned previously there are three case studies ready to be analyzed: Solidere, the new proposal for the port of Beirut by the German group. These two cases will be investigated according to the theoretical research carried out by the authors. The results of the conducted studies are analyzed using the analytical methodology and are presented in this section:

16.2 Solidere and the German proposal for the waterfront.

The First Minister Rafik Hariri hired the private company Solidere to rebuild the capital city's center after the war, and the company was established in 1994 with an exclusive public agreement. Sadly, the BCD (Beirut Central District) reconstruction project in downtown Beirut was unable to produce a new urban collective public space.

The offices and business centers housed in the restored historic structures do not serve the needs of the neighborhood. In 2000, Solidere also completed the reconstruction of the Saifi Village district, a residential complex located in the heart of Beirut's historic district, by using a typological reconstruction approach that was inspired by the country's rich architectural history. The goal of François Spoerry and Erga Group's project was to maintain the historic urban landscape. To preserve the city's traditional culture and public spaces, the buildings, which refer to historical architecture, have been rebuilt using pre-existing designs.

The Saifi Village intervention was carried out based on luxurious investments, and similar to the BCD project, it targeted a small group of wealthy users (investors from the Persian Gulf and Saudi Arabia), creating a detached, rarely visited, and exclusive environment. It also followed the restrictions imposed by the private police, which forbid access to unauthorized persons, by privatizing the areas.

Regarding the new waterfront, it delineates the new boundaries of Beirut's central district(fig 65), and reconstruction bulldozers have already erased all traces of the buildings that once bordered Avenue de France, except for a small church that stands out among the new apartment blocks. . Old spaces lost their typologies with the loss of buildings and physical traces (Crinson, 2005: xviii).

Figure 63: *Zaitouna Bay (Source: https://www.sodecosuites.com/zaitunay-bay/)*

Looking today at the proposal from four German firms (Hamburg Port Consulting, Colliers International, Fraunhofer, and Roland Berger Institute), This multi-billion-dollar project, which was unveiled on April 9 at a press conference, aims to rebuild and enhance the Beirut port and surrounding areas.

According to the proposed plan, a luxurious port would be built, returning Beirut to its historic function as a point of entry for other Lebanese provinces. This proposal will relocate the Port to the east side, with the storage area moving from the city center to the industrial area close to the Beirut River (currently occupied by the Bourj Hammoud landfill) and the main entrance to the port will be moved from the city center to the east of the bank of the Beirut River. In the proposal, it is suggested that a number of skyscrapers with sea views as well as tourist-oriented buildings will be built. The developers contend that the funds allocated to these facilities should instead be used to build other types of public infrastructure, such as transportation playground equipment, sports facilities, kindergartens, and schools.

Beirut have been impacted by urban sprawl since a very long time, In turn, this causes Lebanese cities to grow outside of their administrative boundaries into the suburbs and the countryside, erasing their distinct identities.

So, moving the port activity to different place will be a main contributor in the process of urban sprawl which some aim to avoid it.

Besides that, there's no mention to any monument or area or any facility to memorialize the explosion and the victims of the 4th of August.

The new spaces will become "impersonal spaces" in the city, lacking identity (Crinson, 2005), and constantly trying to project a new image if the physical space and its urban memory are not brought together. However, the reconstruction process should put the people harmed by the explosion at the forefront.

There's no doubt that Lebanon is not able to sustain itself financially and an external help is needed, but local actors are much more needed in this process. Architects and urban planners who know Beirut by heart should be part of reconstruction process,

It's very important to discuss the project with all the city's stakeholders from the very beginning of its initial conceptual design.

Besides that we shall highlight the importance of Community engagement: Through the establishment and empowerment of community organizations to participate in the process, community engagement seeks to mobilize the community as a partner in the regeneration and rebuilding process (i. e. community councils, association, workshops..), creating an inclusive consultative process with community representatives that covers the various facets of community participation, producing processes and templates for public private partnerships and private investments, and launching pilot interventions that involve businesses and community participation.

The German proposal has found many critics specially among urban planners, that are aware that this proposal is a repetition of the privatized redevelopment of downtown by Solidere. Abir Saksouk-Sasso, an urban planner described the new project as : *"a privately owned and internationally controlled project that aims to sideline local big developers but in fact does not propose a different model"* as she said too that this project failed to consider who the eventual residents and users of the proposed housing and facilities would be but is rather "a European urban development model parachuted here".

For now, there's no reconstruction policy in Lebanon, however there's a need to have a local discussion about reconstruction policy before asking for any foreign investments and proposals

Part 4: Outcomes of the thesis: Preliminary masterplan for the port of Beirut and surrounding

Chapter 17: Preliminary design guidelines

17.1- Guidelines based on previous investigations

The results of the literature helped us to produce guidelines and principles for urban regeneration and reconstruction that should outline a distinct vision and incorporate initiatives and resources and involve a multi-sectoral strategy and long-term commitment.

These guidelines serve as the foundation for the formulation of the recovery strategy, sector/pillar recovery planning, prioritization, execution, program management, results monitoring, and risk management.

We suggest the following guidelines, which should be consistently followed throughout Beirut's recovery and reconstruction process. These guidelines are based on universal principles, international best practices, and lessons learned from contexts in similar countries.

› Promote integrated and coordinated strategies, plans, and programs for recovery and reconstruction that are explicitly linked to reforms and are owned by all stakeholders. In order to address the needs of both national and local development, the strategy must be adaptable and flexible. All stakeholders need to be involved, and communities, including local businesses and actors, need to be empowered. This will open up opportunities for their meaningful involvement in the recovery process.

› Inclusion and leaving no one behind – prioritize the needs and human rights of vulnerable individuals and groups, including socioeconomically disadvantaged groups, and ensures poverty recovery that provides accessible and affordable services, programs and resources to all, without discrimination.

› Gender Equality and Women's Empowerment - Promote meaningful and active participation of women in planning and decision-making to ensure inclusive recovery. Address the needs, interests and priorities of both women and men to provide gender-sensitive programs and services. Support gender policy and close the gender gap.

› Conflict Sensitivity and Do No Harm - Understand national and local work environments, including the divisive causes of tension and conflict. We are taking steps to reduce these problems to strengthen social cohesion.

› Promote the inclusion and mainstreaming of these issues in recovery planning, programming, and implementation by enhancing the role of oversight, human rights, and rule-of-law institutions. Transparency and accountability, including anti-corruption. Encourage social responsibility and the role of civil society, bolster business ethics, and take advantage of technological advancements and innovation to increase transparency and openness.

› Sustainable livelihoods - Encourage an inclusive, sustainable economic and business recovery; aid in the economic resurgence of affected communities; and foster the growth of a productive private sector.

› Rebuild better, greener, and smarter – Build on current initiatives; use elements of right sizing, right siting, structural improvements to infrastructure, climate change adaptation, climate smart practices, and greening. Use unconventional methods to innovate, experiment, and think outside the box.

› Maximize subsidiarity by encouraging decentralized implementation with sufficient checks and balances and by using bottom-up recovery and reconstruction strategies in line with the priorities of individuals, communities, and local institutions.

› Coherence and coordination - Ensure efficient coordination between various governmental levels and the variety of other stakeholders; create and maintain a distinct interface with the already-existing humanitarian and coordination mechanisms.

› Promote two-way communication that is transparent and clear as well as grassroots outreach to ensure that the public is adequately aware of the recovery program and that expectations are managed.

17.2- Site analysis:

Problem 1: Lack of green spaces in the city of Beirut.

Increasing green spaces should be a top priority in a city like Beirut, which has a dense infrastructure, widespread economic disparities, and a tense social composition.

The city is strikingly devoid of public gardens, playgrounds, and parks.

Statistics support this grim picture (figure 66): Beirut has 0.8m^2 of green space per person, which is 50 times less than what the World Health Organization (WHO) recommends.

The shameful disregard for numerous already-existing public spaces and the absence of any political initiatives to establish new ones are additional factors.

Figure 64: *map showing green areas in Beirut, Graphics managed by authors.*

***Figure 65**: map showing the main and secondary routes in Beirut. Graphics managed by authors.*

***Figure 66:** Daily traffic jam in Beirut Image Credit: Courtesy: Twitter*

A half million cars are said to enter and exit the city every day, according to the Lebanese Council for Development and Reconstruction. ".

"Lebanon needs a new concentrated and reliable public transportation system, with a full strategy requiring efforts of governmental authorities, municipalities, governors, funders, and of course security forces," a source at the Internal Security Forces (ISF) said. ".

***Figure 67**: Spatial analysis of the Port of Beirut and surrounding area. Graphics managed by authors.*

Seize the opportunities offered to launch projects in public spaces in the affected neighborhoods, some of these spaces having potential important to become places of meeting and exchange, such us Martyrs's square. As shown in (figure 69).

In the affected area, there was an old railway Station that have a great potential to function again and to be rehabilitahed letting people of beirut to rediscover the old train station and its historical importance.

Zaytouna bay represent the area that was comissioned to Solidere.

From figure 70 we can clearly see that buildings heights divide the area in 3 major parts High Rise Building Mid-rise Building and Low-rise buildings, But the most affected area by the explosion is the mid rise and low rise

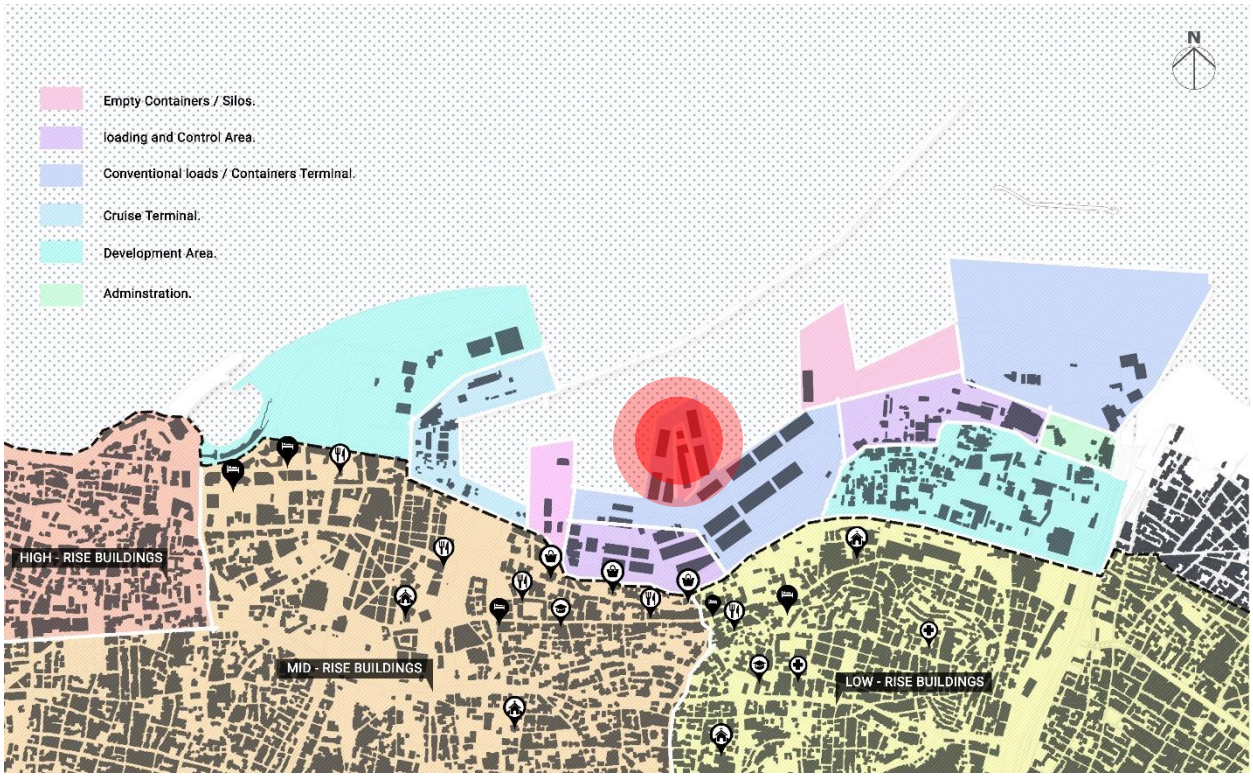


Figure 68 map showing the land uses and buildings heights of the area. Graphics managed by authors.

And these neighborhoods constitute a major component of the urban and social identity of the Lebanese capital.

The key stages in the historical formation of these neighborhoods are as follows:

• The development of the old city of Beirut Bayrout al Qadima outside the walls from the mid-nineteenth century.

• The construction of palaces and rich mansions on the hills of the neighborhoods of Sursock and Zoquaq el Blat built by the notables of the city enriched thanks to their links with the Ottoman power and the European consuls.

• The extension of the city along the major communication routes that connect it to the main cities of the region: Tripoli (the district of Gemmayzeh), Saida (the Basta district) and Damascus (the Bachoura and Nasra districts).

• The development of the port of Beirut and its impact on the neighboring districts.

• The specificity of urban development and the landscape characteristics of neighborhoods of Gemmayzeh, Jeitaoui and Rmeil located to the east of the city center, between Achrafieh hill and the port.

• The historical particularities that determine the formation of the neighborhoods of the Quarantine and Maslakh (The Slaughterhouses).

• The arrival of Armenian refugees fleeing the massacres in Anatolia and Cilicia and the formation of the Mar Mikhael neighborhoods (along Armenia Street) and Badaoui (on the bank of the Beirut river opposite the Bourj Hammoud camp).

• The relative stability that characterizes these neighborhoods that do not experience major transformations from the urban and social point of view since the first years of independence until the end of the 1990s, modern Beirut having developed during the 1950s and 1960s towards the neighborhoods of Hamra, Ras Beirut and Raouché located west of the city.

• The real estate fever which began to spread from the end of the 1990s around the rebuilt city center and the transformation of the urban landscape by the construction of towers on the heights of the Sursock district and on the edge of the station road and avenue Charles Hélou which runs along the port.

• The economic and social transformations experienced by the neighborhoods of Gemmayzeh and Mar Mikhael over the past twenty years with the decline craft activities and small businesses, the opening of restaurants and bars, the development of new cultural and artistic activities and the arrival new layers of younger population that mix with the old ones inhabitants and come to reinforce the social mix in these districts.

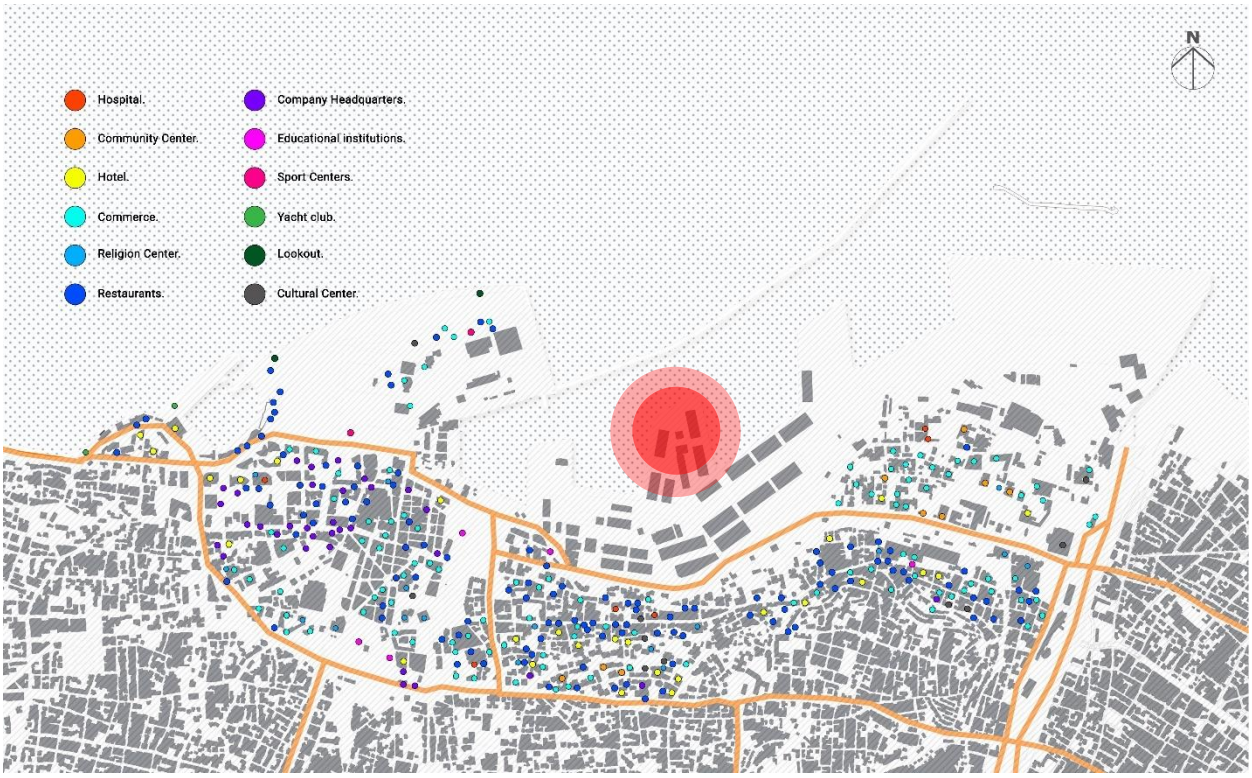


Figure 69: *Map showing land use in Beirut, Graphics managed by authors.*

The importance of social ties is undeniable in Lebanon. Houses, coffee shops, restaurants, shopping centers, and beach resorts are examples of private places to meet. This is primarily because Lebanon has a dearth of public spaces because of poor planning, absence of regulations, and a lack of awareness of urban rights and the value of public spaces. Common practice has prioritized the use of land for real estate development over other uses like public and communal spaces in major cities where land is so expensive. The development of malls in Lebanon in the late 1990s may have served as a substitute for public areas. For a portion of the Lebanese population, malls have replaced downtown because of their abundance of food courts, restaurants, movie theaters, and play areas. Another crucial element is that they are regarded as safe. (Nazzal, Chinder, 2018)

Figure 70: *Map showing main circulation paths. Graphics managed by authors.*

17.3 Objectives and Actions of the intervention:

Traffic jams, urban inequities, and a clear lack of planning plague Beirut's northern coast. The city's center, the sea, and the Karantina area are becoming disconnected from the rest of the city due to the juxtaposition of infrastructure and ad-hoc projects, including the port, highway, landfills, land reclamation, and the railway project. An innovative, integrative urban strategy is urgently required in light of this circumstance.

Based on the results of the preliminary analysis and the previously developed considerations, we went on to define the guidelines for the intervention, which is divided into four main goals: Create- Connect- Improve- Regen.

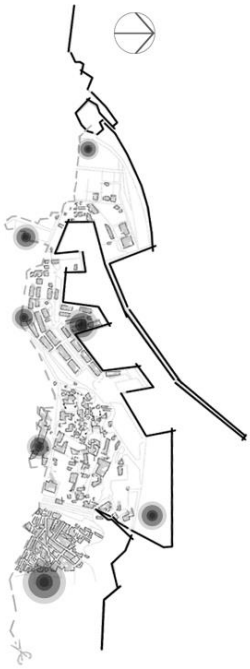
They are divided within them into a number of overarching goals, the accomplishment of which depends on taking the appropriate steps and making the necessary individual interventions on various fronts as well as throughout the entire spectrum.

The first goal focuses on the necessity of reactivating the demolished port area to make sure that it does not continue to be isolated from the rest of the urban system. In order to address this issue, two objectives have been identified: enhancing communication with the waterfront system and developing new public spaces for the city.

As in the first case, this is possible by using the water element to define the public space, producing new, appealing polarities on the water's edge, and creating panoramic points and optical cones close to the sea.

In the second instance, it is necessary to reuse the old pier and yard spaces as squares and green spaces to promote gathering and socializing, to introduce new functions currently lacking in the neighboring neighborhoods, and to create new flexible spaces, both external and internal, capable of hosting temporary structures and events.

An equally essential component for the success of the intervention and to prevent that the area remains impenetrably closed in itself is the integration of the new



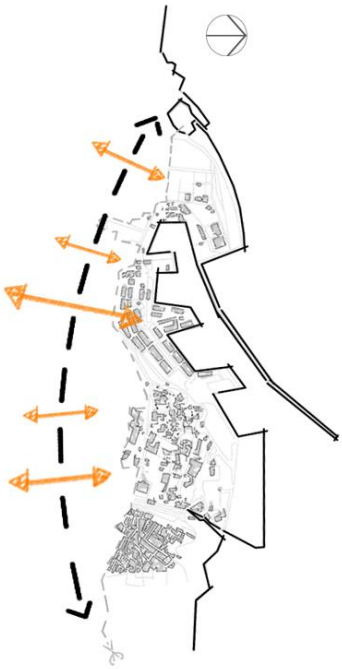
MAP 1: CREATE

INCREASE INTERACTION BETWEEN WATER AND LAND:

- Panoramic views and walkaways near water creation.
- New urban polarities generation.
- Characterize public spaces by using water elements.

CREATION OF NEW PUBLIC SPACES:

- Creation of places to host events and activities.
- Use former shipyards and docks as green areas.
- Adding new functions that is missing in the surrounding.



MAP 2: CONNECT

HARBOR AREA ISOLATION REDUCTION:

- Visual connection between land and sea.
- Physical barriers removal.
- Generation of new roads an connections.

IMPROVE PUBLIC TRANSPORT AND SOFT MOBILITY:

- Creation of continuous cycle/pedestrian path on the waterfront.
- Creating underground train lines.
- Activation of ferry lines.

spaces with the surrounding urban fabric. The goals are to lessen the isolation of the port area and to promote soft mobility and public transportation.

All of this will be made possible by removing the numerous physical and visual barriers that surround the areas, creating new access points and pathways, opening up the currently private areas to the public, and enabling visual

communication between the city and the sea. Additionally, it will be necessary to build a continuous bike and pedestrians' path along the waterfront and build underground parking garages in key locations to support public transportation. Special bike-sharing stations will need to be placed in convenient locations.

To enrich the area, we want to improve the former industrial areas so that everyone can use them and so that the city will look more appealing. The actions identified for the first objective include the addition of various functions and services that cater to the high standards of citizens, the development of spaces in close proximity to established neighborhoods, and the activation of a functional mix that ensures the utilization of spaces throughout the year and throughout the day.
The second goal is to lessen the negative effects on the environment caused by the explosion, industrial pollution, and the possibility of flooding.

In the first instance, this is possible through prompt reclamation in the areas impacted by phase 1 as well as planting of tree and shrub species capable of purifying the area and absorb all the pollution scattered in the water and soil. The planting of the same in phase 1 would benefit the subsequent phases because this process involves lengthy timescales. Additionally, it would begin a purification process in former industrial areas, which would initially be abandoned and will increase green spaces as well.

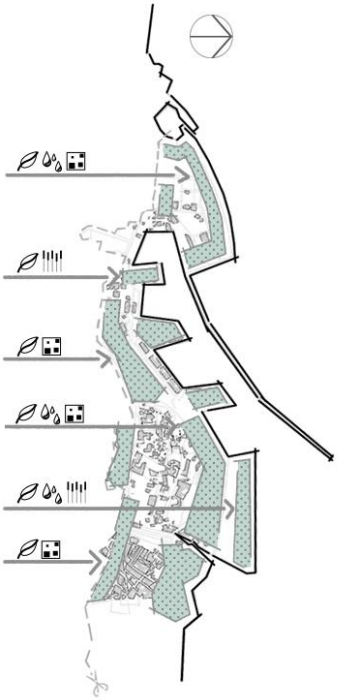
MAP 3: IMPROVE

TAKE ADVANTAGE OF ALL AREA BY THE CITIZENS:

- Mixed functions for same places in different times.
- Connect the space with the neighborhood.
- Placing different functions to meet citizens needs.

ATTRACT PEOPLE TO THE CITY:

- Use former shipyards and docks as green areas.
- New element that indicates a symbol of regenration process.
- Pointing out existing cultural heritage.



MAP 4: REGEN

ABOLISH URBAN SPRAWL TO COUNTRYSIDE:

- Use of large empty places and spaces.
- Remediation processes of poluted areas to guarantee land quality.
- Reuse neglected idustrial buildings.

LIMIT INDUSTRIAL AND ENVIROMENTAL RISK:

- Using specific plant species to decrase pollution.
- Creating rain gardens to counteract the risk of flooding.
- Creating wetland systems.

17.4- Preliminary masterplan

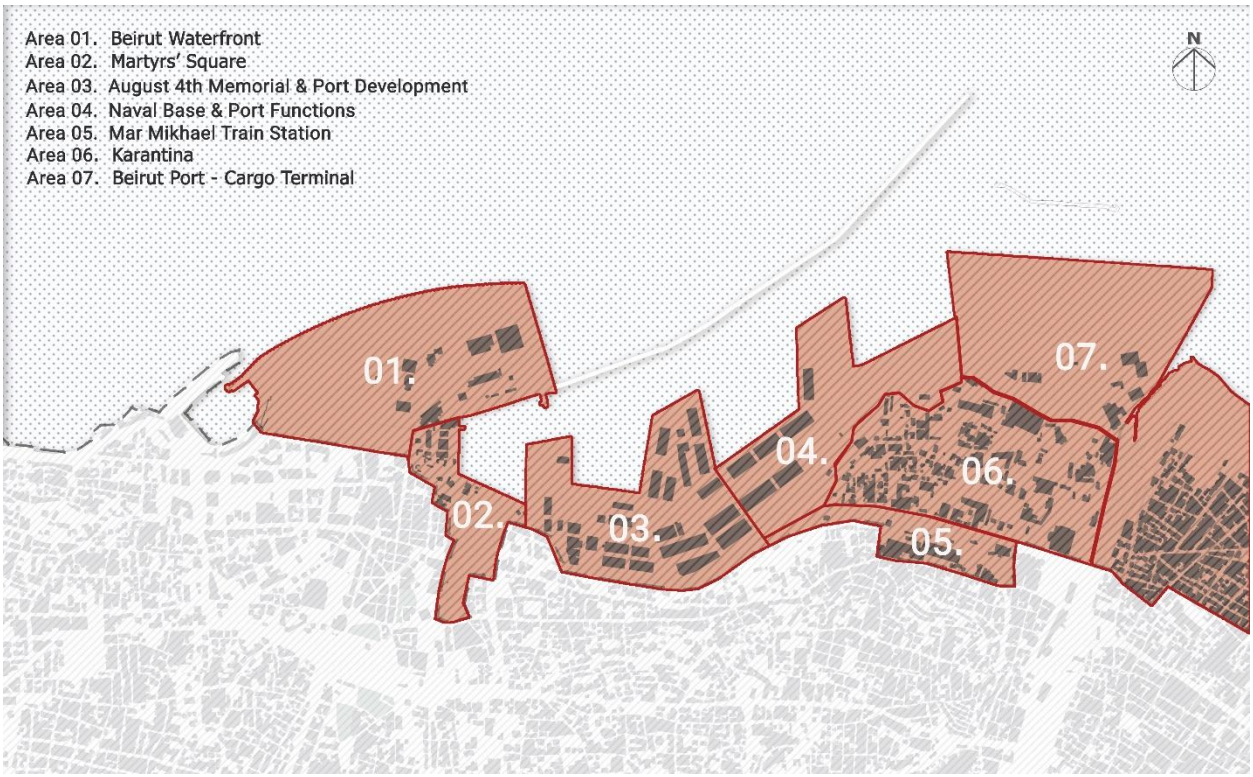


Figure 72: *Map showing the zones of interventions in the city of Beirut. Graphics managed by authors.*

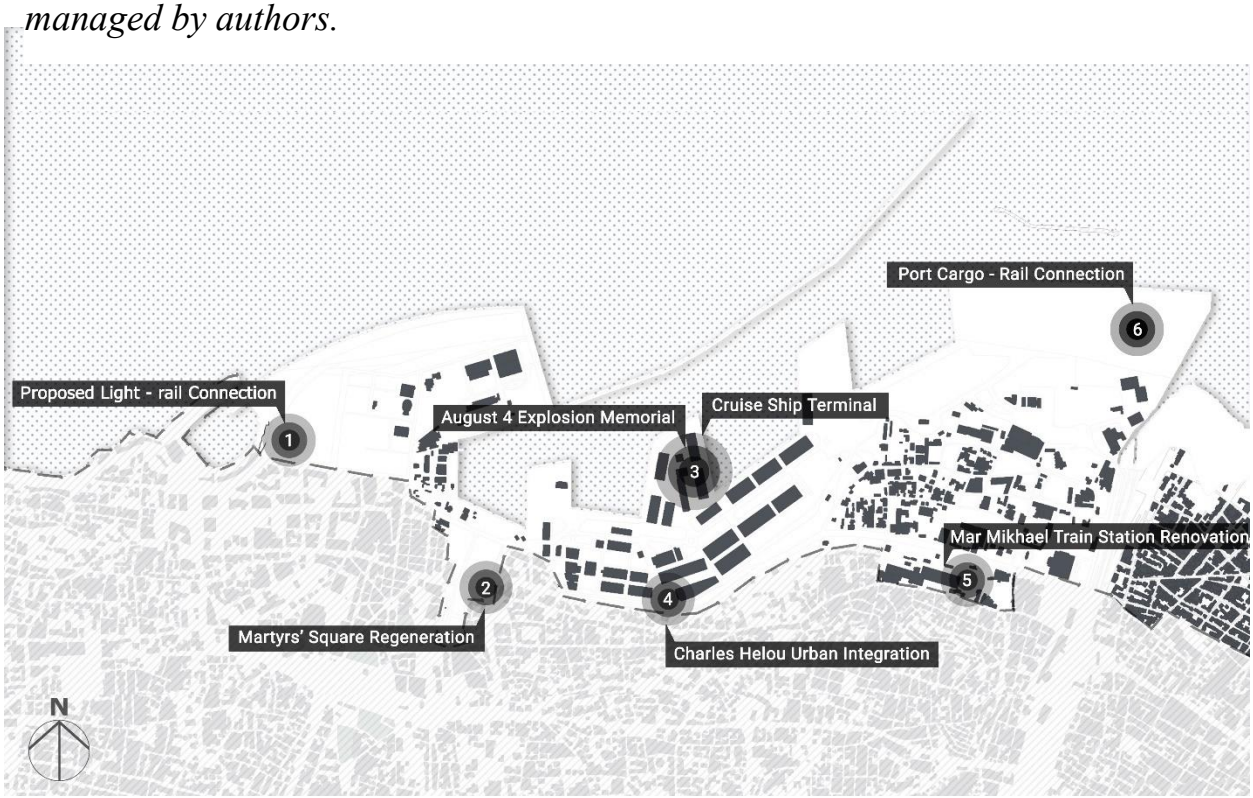


Figure 71: *Map showing the main areas to regenerate. Graphics managed by authors.*

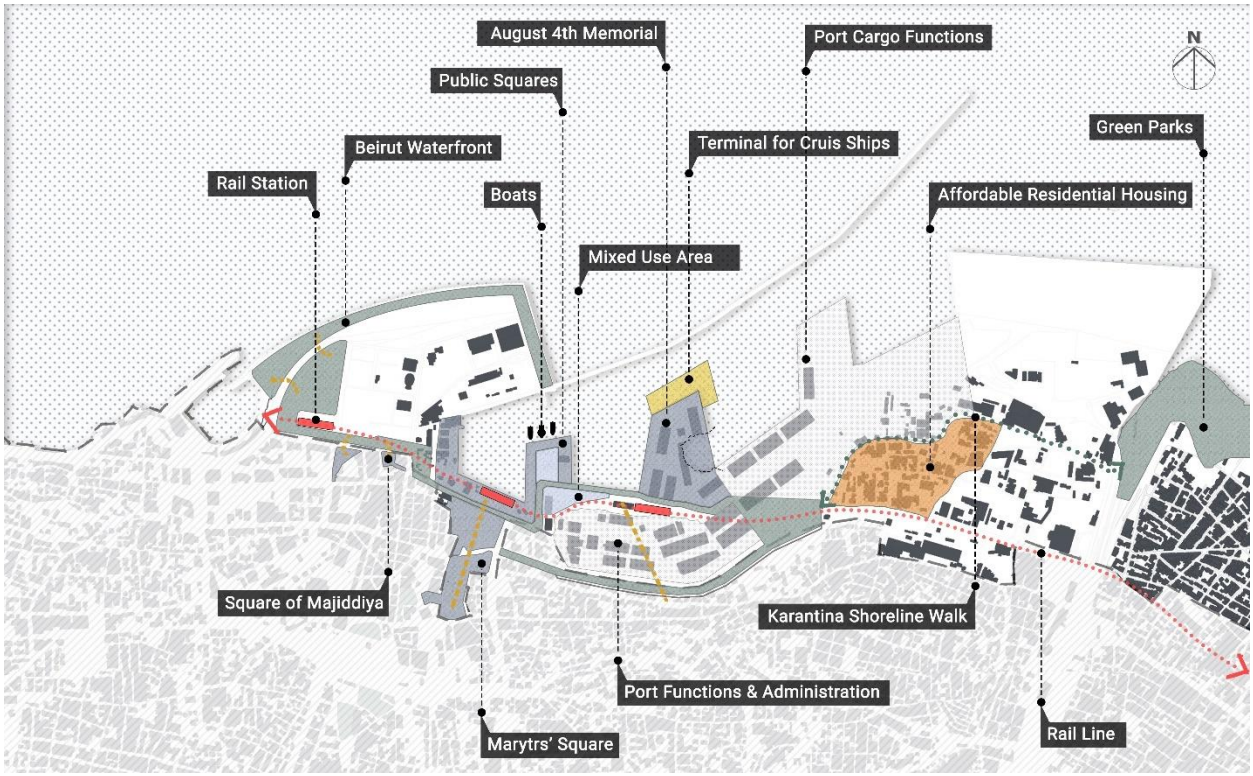


Figure 73: *Map showing the preliminary masterplan. Graphics managed by authors.*

At this stage, the effects of the problems on the users of the space, interrelations between the possible and actual usage of space were analyzed, and possible solutions were discussed with respect to these problems. Needs that had been determined to be used in the design were placed in the sketch plan and based on the last planning decisions, a preliminary master plan was prepared in consideration with the spatial standards

1- By creating an urban strategy and framework that is community-based, socially conscious, and infrastructure-efficient, we hope to remove barriers to urban living brought on by infrastructure and a lack of public space.
2- Part of the site as a significant landmark that memorialize the explosion of the 4th of august 2020
3- Redesigning the surrounding areas of the port is a must such as Square of Majiddiya, Marytrs' Square. The strategy, which includes the most important public space in the city center, Martyrs' Square and the historic core, aims to highlight the historical richness of the large area east of the

squares and reconnect it with the city to ensure a direct link. . Between the square and the harbor water basin 1. This strategy also prioritizes and consolidates some of Solidere's failed/unrealized plans for public spaces in the historic center, such as the Garden of Forgivenes.

4- Fixing the old railway project, The extension of the light rail line to Zeytouna Bay will free up car traffic in the city center, serving as a catalyst for a car-free city and returning more public space to the city.
5- In accordance with the railway project, we suggest rearranging the main arterial access into the city from the north through a phased decongestion.
6- Affordable housing
7- Increase green spaces and creation of green connection with the exciting ones
8- Creation of a seaside promenade and improve the visual attraction of the area
9- creating a monument in memory of the victims of the explosion of Beirut
10- create a more secure port since it’s beside the city to avoid any future similar disaster and not moving it to other part of the city to avoid urban sprawl
11- The reconstruction and the regeneration of the area mentioned above will lead to job creation, starting from the very early implementation phases of the project, till the opening of facilities that will boost the economy and ensure the mixite of the area.

Chapter18: Conclusions and suggestions for future work

According to earlier findings, the procedures for urban redevelopment and the reconstruction of the Port of Beirut (PoB) are challenging. The division of the government to represent different religions is the main problem in Lebanon.

When problems arise in Lebanon, each religious group defends its own government officials, never holding them responsible for their negligence and corruption, but rather blaming the leaders and representatives of other religious groups. In addition to enabling corruption to spread, this has also fueled sectarianism and the division that have become so pervasive in Lebanese society. (Jana,2021)

Government corruption is a problem in and of itself, but it has also had negative economic repercussions; some claim that it is the main cause of Lebanon's economic decline. Due to these circumstances, Lebanon's citizens have grown more dissatisfied with the standard of living in their country.

In 2018, Lebanon's economic growth was only 0.2 percent, and the youth unemployment rate was 30 percent. Although the coronavirus has only made matters worse, government corruption is to blame for Lebanon's dire situation. Since the initial epidemic, Lebanon has experienced numerous lockdowns, all of which have had a negative impact on the country's economy. The Lebanese Pound's devaluation, which had already lost a significant amount of value prior to the pandemic but has now lost nearly 75% of it, has had the most devastating effects.

Entire neighborhoods in the Lebanese capital were destroyed by the explosion at the Beirut Port on August 4, 2020. The cause of the explosion has not yet been determined until today.

Due to government corruption and disregard, Lebanon has been on the verge of a catastrophic collapse. As the nation descends further into political, social, and the people of Lebanon have grown more and more convinced that the government is unconcerned about their safety or quality of life.

In the months that followed, a number of plans and proposals were presented, the majority with foreign sponsorship, to envision a future for the Beirut Port and its immediate surroundings. The focus was on development rather than restoration and conservation.

On the other hand, despite the fact that the World Bank's proposal is distinct, and we all desire a Smart or Digitized port with cutting-edge technology, Lebanon needs to make a number of infrastructure upgrades, or, to put it another way, implement an infrastructure renewal plan, in order to equip this Digitized port with the required technology. We must also look at the nation's plentiful 24/7 electricity, which is seen as a major barrier to any digital strategy proposed for Lebanon.

With the recent hiring of the French company CMA CGM to oversee the renovation and operation of the cargo terminal at Beirut Port, as well as the ongoing railway rehabilitation projects and studies, we draw attention to the fact that these studies lack coordination with the city as a living urban fabric and other ongoing recovery initiatives as well as the German proposal.

Urban inequalities, heavy traffic, and a clear lack of comprehensive planning plague Beirut’s northern coast that goes to the historical center of Beirut.

In 2030, Lebanon's population is projected to grow significantly in urban areas with a higher percentage of the total population. It has been noticed that this trend is most pronounced in the areas surrounding the country's major cities and along the coast, which has a negative impact on the natural and economic balance of the nation.

A new holistic and integrative urban strategy is desperately needed given the proximity of the port to the old railway, the historical city center that is disconnected from the other part of the city, the abandoned neighborhoods, the landfills, the numerous impromptu reclamation projects, and the main highways leading to Lebanon’s north.
We aim to create enduring relationship with the community’s civil society, academic institutions, public, and private stakeholders, and directing the multidisciplinary involvement of local actors and stakeholders.

We support having a new port masterplan that would include expanded cargo terminals, light industry, offices, warehouses, and regeneration of areas that give back to the city.

At the end of this study, we can only say that this is the best opportunity to reshape the city of Beirut and to recreate a self-sustained and sufficient urban model “ a disaster that reshaped a city” that can ensure the economic prosperity of the country and it’s balance, with social and environmental benefits, since the port is strategically located and is considered one of the best connected ports in the Mediterranean.

Graphic Novel

In this part the authors will visualize the idea of this Thesis in a symbolic visual representation. The content based on analysis; previous investigations supported by the interviews done by authors as well.

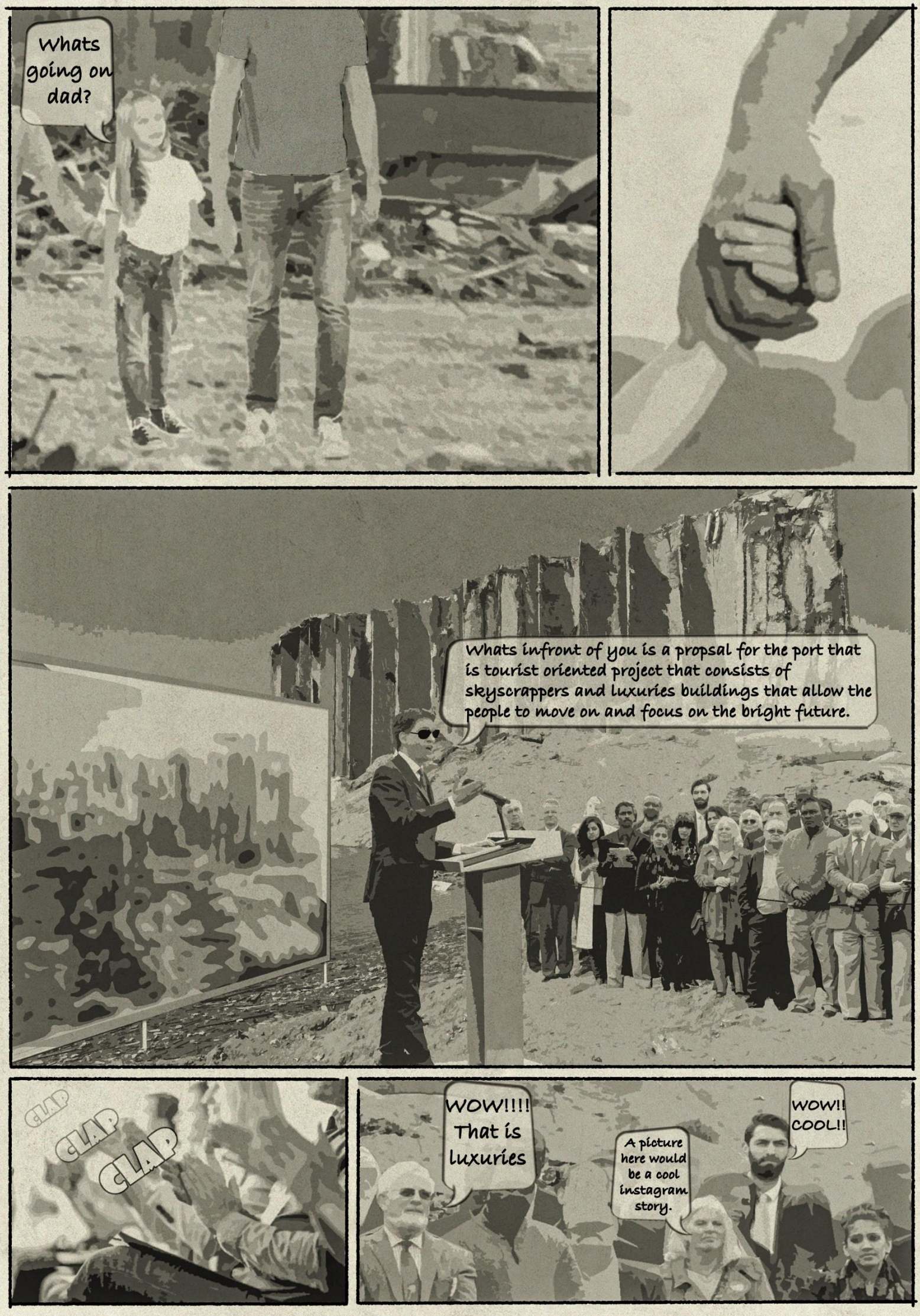

THE VOICE OF HOPE

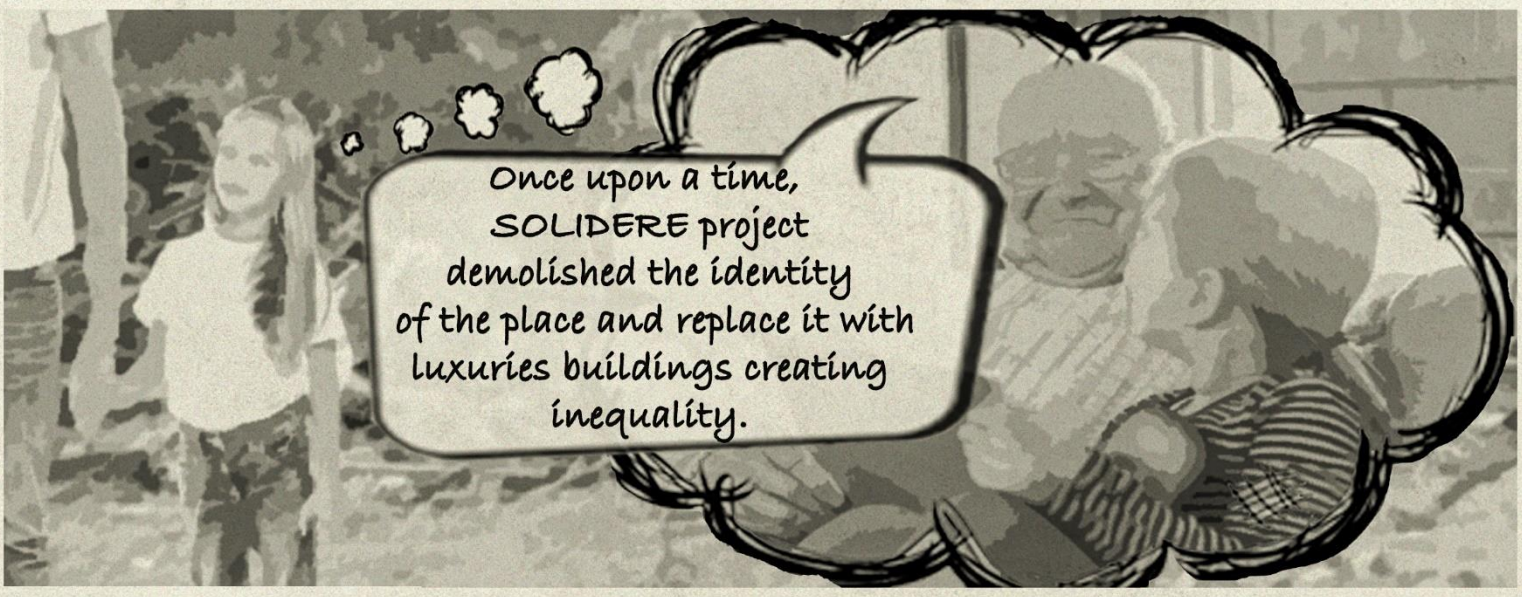
This graphic novel talks about a father and his two children, going around the rubble of the exploded port that was their neighborhood once, filled with precious memories. They ran up into a businessman who's presenting to a group of people an investment project similar to previous scam projects that people are sick of and till now regret. The family chooses to stand up against this kind of projects, addressing to the people what they should really ask for, and what this place is truly missing according to the people that live there.

The Thesis and the graphic novel reach to the same conclusion, and that is what people truly want to see at that area. We reached this conclusion according to our intensive analysis and studies, interviewing people, and our personal opinions as two young lebanese architects.


Where are we going?


To recall some memories son.


Whats going on dad?
Whats infront of you is a propsal for the port that is tourist oriented project that consists of skyscrappers and luxuries buildings that allow the people to move on and focus on the bright future.
CLAP
CLAP
CLAP
WOW!!!! That is luxuries
A picture here would be a cool instagram story.
WOW!! COOL!!

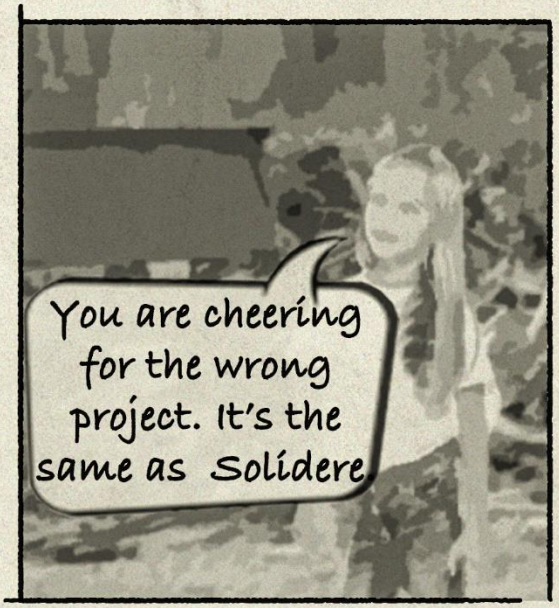

Once upon a time, SOLIDERE project demolished the identity of the place and replace it with luxuries buildings creating inequality.


STOP USING MONEY IN YOUR BENEFITS AGAINST OURS!!!
I HAVE THE RIGHT TO BE HERE AND LIVE HERE EVEN WHEN I AM POOR!!!!
STOP SOLIDERE!!!!! STOP INEQUALITY!!
STOP

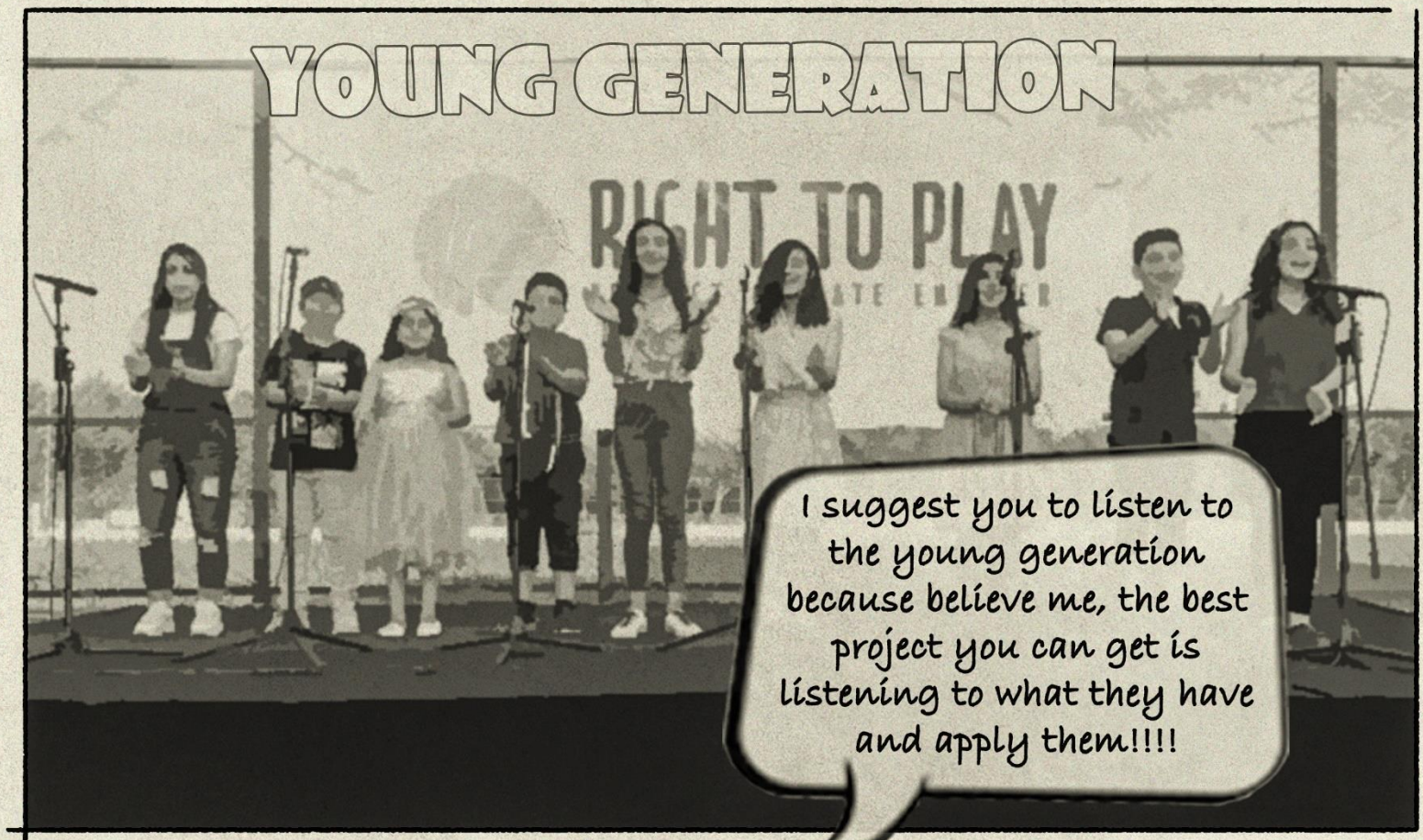

NO TRUST

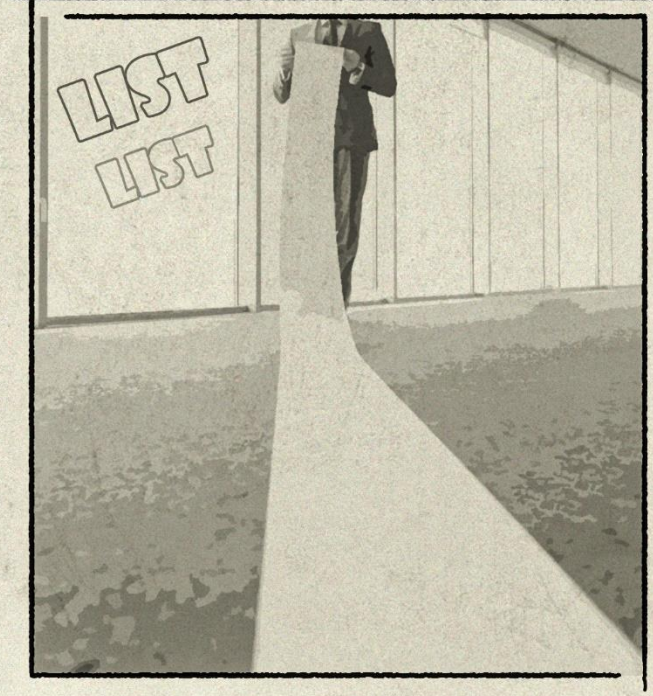

DEAL
Come on, lets go to see mommy.
What a good place to buy my suit from.
WOW PAUL, lets get a decent breakfast here.
FENDI
PAUL


WAIT
WAIT
?!
?!
?!
I got your back ,little sister.
It's our time to speack , brother.


You are cheering for the wrong project. It's the same as Solidere


What do you know? you're just a kid!!.


YOUNG GENERATION
RIGHT TO PLAY
I suggest you to listen to the young generation because believe me, the best project you can get is listening to what they have and apply them!!!!


LIST
LIST

TO DO LIST

AVOID GENTRIFICATION & ENHANCE EQUALITY

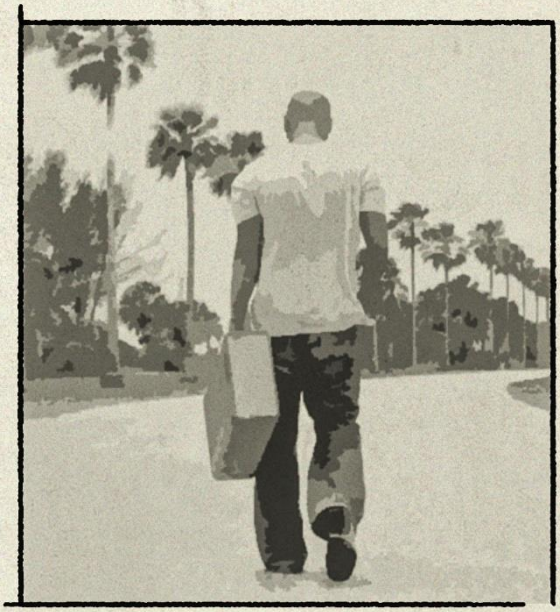
One of the main things that we demand is to avoid gentrification and enhance equality.

Gentrification and inequality has been a serious issue that divides sociatities and enhance the idea of rich & poor, and it has to stop in order to build a place that is livable for all people.

EQUALITY

EQUALITY

Now that the neighborhood is nice, why do I have to move?



TO DO LIST

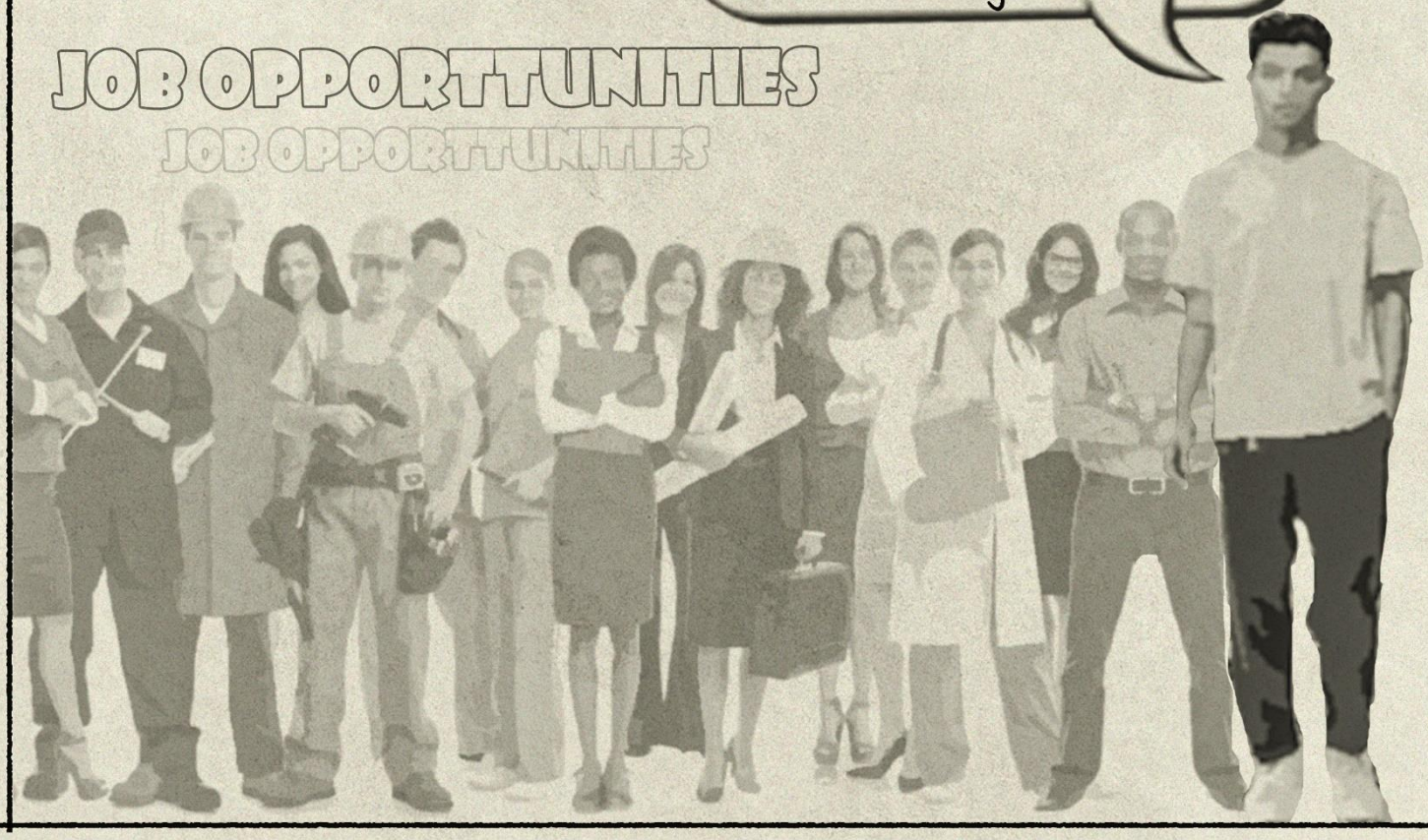
AVOID GENTRIFICATION & ENHANCE EQUALITY

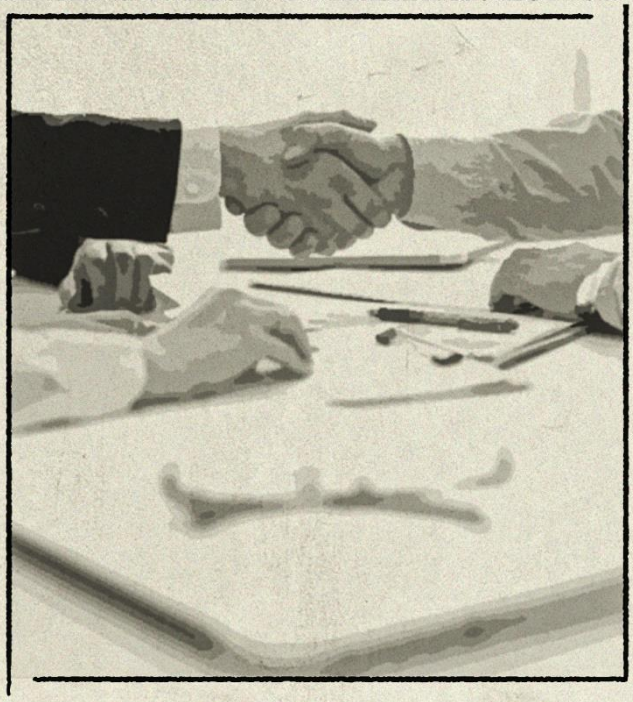
PROVIDE JOB OPPORTUNITIES

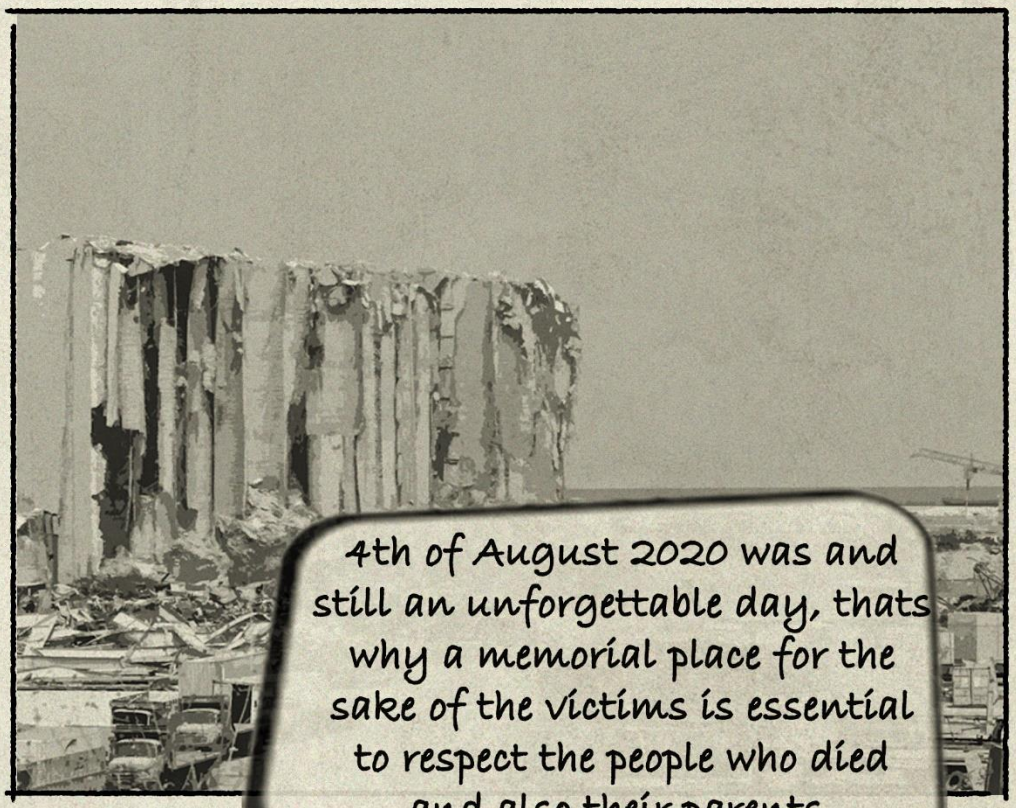
Job opportunities mus be provided for all people who lost there jobs and for people who live near by so they don't have to waste alot of time to reach their jobs.

JOB OPPORTTUNITIES

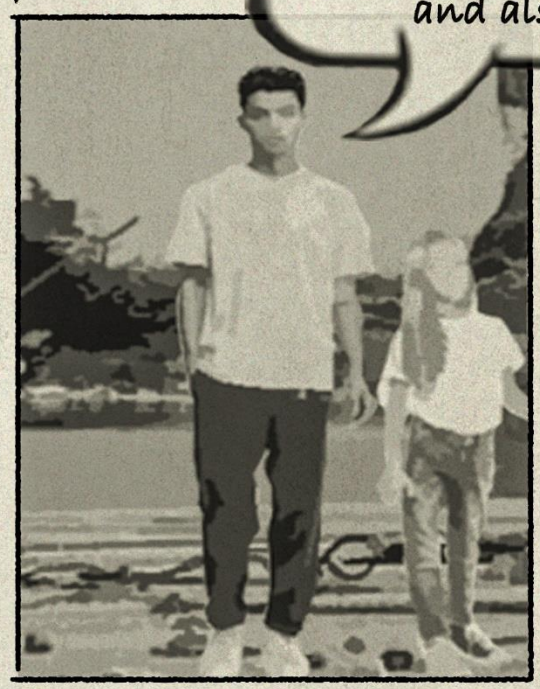
JOB OPPORTTUNITIES







4th of August 2020 was and still an unforgettable day, thats why a memorial place for the sake of the victims is essential to respect the people who died and also their parents.

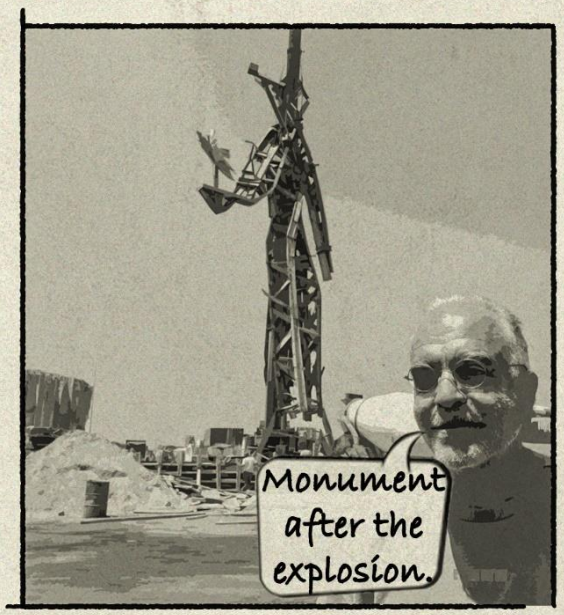


TO DO LIST

AVOID GENTRIFICATION & ENHANCE EQUALITY

PROVIDE JOB OPPORTUNITIES

MEMORIAL PLACE FOR EXPLOSION VICTIMS



TO DO LIST

AVOID GENTRIFICATION & ENHANCE EQUALITY

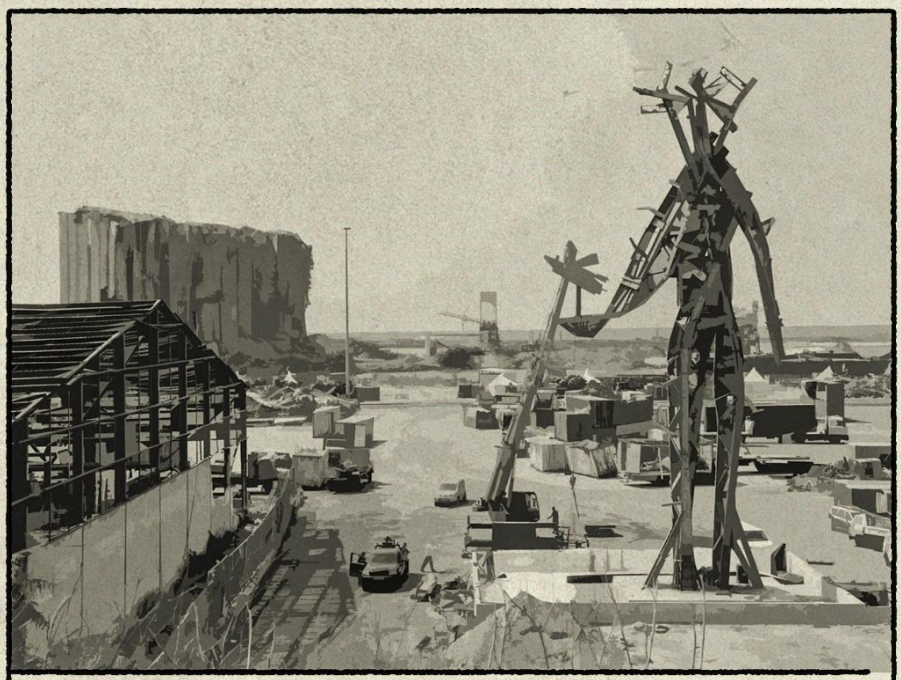
PROVIDE JOB OPPORTUNITIES

MEMORIAL PLACE FOR EXPLOSION VICTIMS

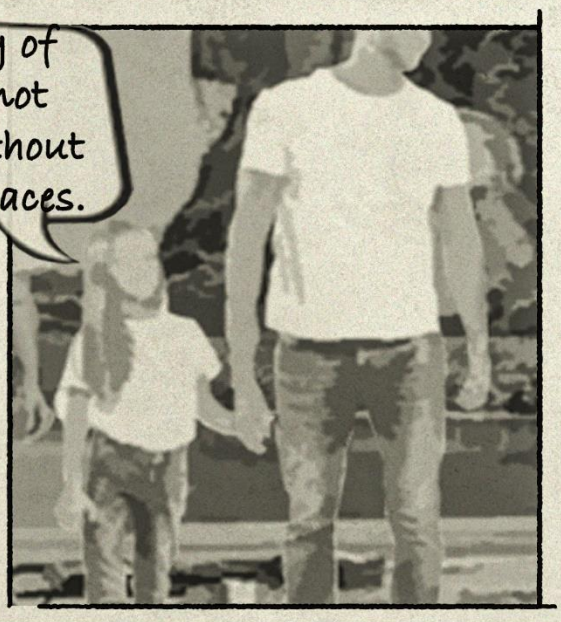
PRESERVE MONUMENTS

During the regeneration phase, we should keep in mind to preserve the monuments that plays an important role in preserving the identity of the place.

KEEP THE MONUMENTS !!!!!



The beauty of Beirut is not complete without it's green spaces.



TO DO LIST

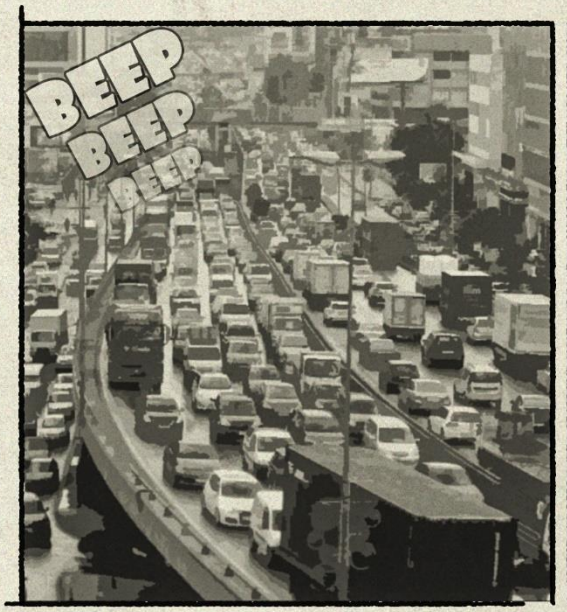
GREEN & MIXED USE AREAS

The lack of green spaces is evident in the urban fabric of Beirut. We need more green areas to play, to breath clean air, and to decrease our anxiety from our stressfull life.

YES!!!

FOR MORE GREEN

GREEN + MIXED USE



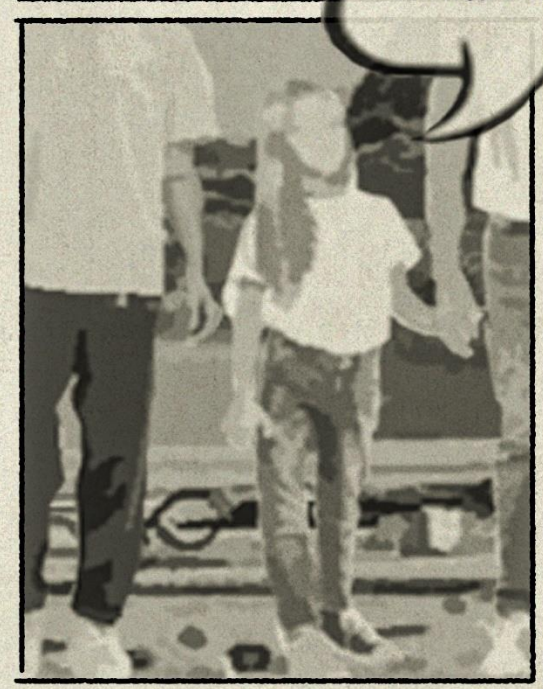
TO DO LIST

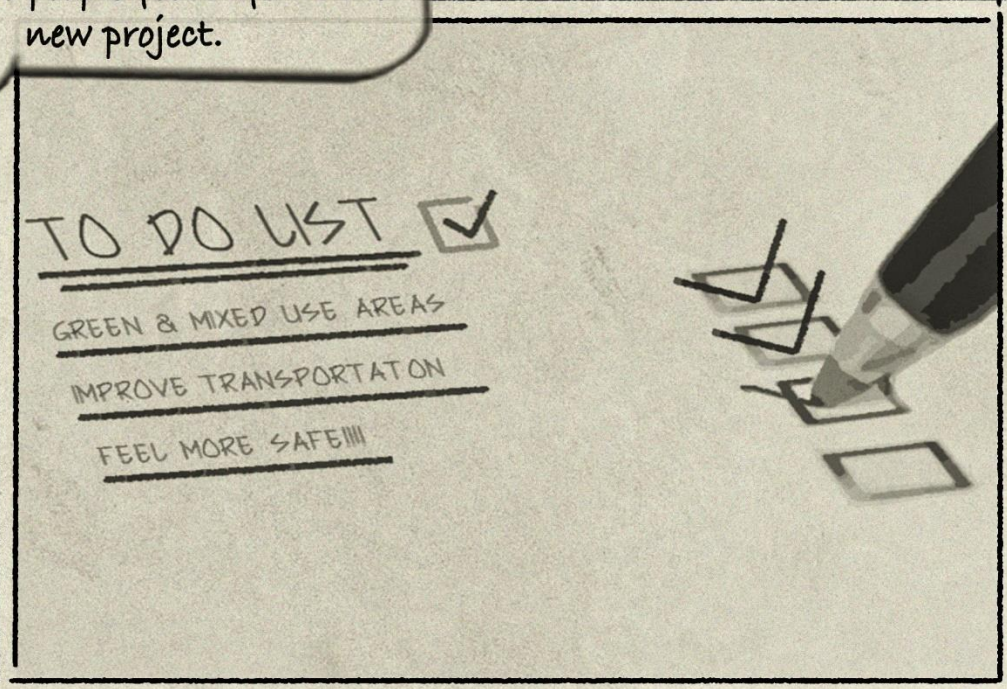
GREEN & MIXED USE AREAS

IMPROVE TRANSPORTATON

Although it may seem that the lebanese people are used to traffic everyday, that does'nt delete the fact that this issue must be solved. A train station that passes from the biggest traffic highways can be a solution, which decrease the number of cars & pollution, and save alot of time.

After the explosion, people are not the same as before. They are always in fear that it will happen again. Our roles is to make the people feel safe in the new project.





TO DO LIST

GREEN & MIXED USE AREAS

IMPROVE TRANSPORTATON

FEEL MORE SAFE!!!!

BE PART OF DECISION MAKING

My generation wants to feel that we are a part of the decision making.Hear us & you will have the best project that serve the people before serving their pockets.

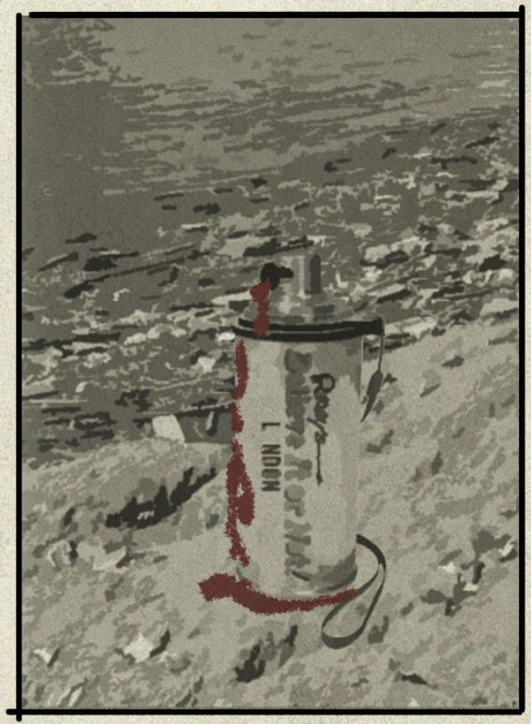
WE HAVE THE RIGHT TO MAKE DECISIONS !!!!!

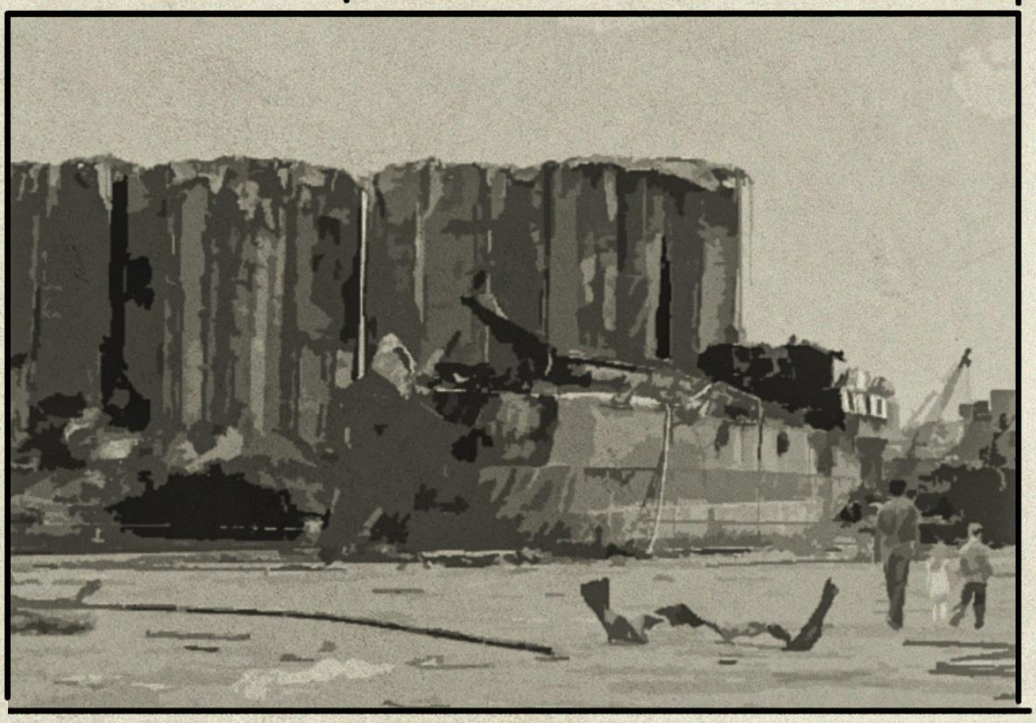

Not luxuries skyscrapp ers !!!!!!
These are the things that you should clap for when seeing in a project!!!!!


LETS GO HOME DAD!


We are tired of repeating the same senario!!!!
They have a point!!How stupid we are.
They are the future!!


CLAP
CLAP






GOOD.BYE


THANK YOU ....

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