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## REVIVING THE NEGLECTED URBAN SPACES USING RECREATIONAL FACILITIES

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## REVIVING THE NEGLECTED URBAN SPACES USING RECREATIONAL FACILITIES

### Abstract

Neglect is the act of failing to care about something, it is the act of carelessness and forgetting. Adding to that in the same context, neglected urban spaces are barren lands that have been forgotten by the government making these lands gaps scattered in the city like rivers that are natural freshwater streams that flow into a canal that leads to the sea, a lake, or another river. Harmonizing these areas into the society will offer opportunities for these spaces to become a liveable, social, urban public spaces. Unfortunately, forgotten, and neglected riverfronts areas are found in the cities, thus spaces that allow socialisation, relaxation, and the experience of different activities for different classes of society are nowhere to be found, but there are detached, unsafe spaces that give the feeling of surviving rather than living. The main aim of this paper is to provide an urban strategy that can revive the neglected riverfronts areas and transform them into healthy social spaces through recreational facilities. The research paper aims to investigate the neglected spaces that are within the area of Beirut's River, which mainly has a context of very active economical spaces. The scientific methodology will be applied through site visiting, quaternary, and analytical studies these procedures will present a clearer view of the field of study of the neglected urban space. The paper ends with a set of conclusions, focusing on reviving neglected riverfronts and re-establishing them to create a sustainable cultural connection with the city and preserve its identity.

### Keywords

Neglected Urban Space, Recreational Facility, Reviving, Forgotten

## 1. INTRODUCTION:

Urban spaces are places that city require on a daily basis, which include paths, squares, gardens, waterfronts. Adding to that, urban spaces improve the quality of life by increasing the security and safety measurements, in addition increasing cultural vitality on social level and promoting social equality and stability for people that form a feeling of belonging to the city. Moreover, on the economic level, where being close to urban spaces increase the economic value of the area, in addition to the properties value around will increase because of the positive impact of urban spaces on the area itself. According to Dr. Mehmet Inceoglu from Eskisehir technical university:

*Urban spaces are in definition architectural public zones that are shared between all the citizens despite their status serving the community, the environment, and the cultural level. Urban spaces define a certain identity for the city giving it a certain representation between many other cities and they are connecting vessels for the people to socialize. (Inceoglu ,2009)*

Riverfronts are dynamic natural places and environmental margins that express city identities while also regulating the balance of nature, culture, and social life to create sustainable cities. Urban spaces are helping elements that reduce the pollution and form a protective shield for the eco-diversity of the region that is in it, also vegetation provide the benefit for people to get back to nature that can give in terms of mental health and the pleasure for people of being around it.

But unfortunately, many cities are facing a great threat from neglected riverfronts spaces. Thus, neglected urban spaces is a terminology used to describe the forgotten spaces in the city, which lost their functionality. Furthermore, neglected spaces that are found in the cities have negative impact on the urban fabric, social life, mental health, and the connection between the person and the city. Besides, these urban spaces are fertile zones for criminal activities since they are forgotten spaces lacking activities, so people rarely come to them. In addition, when there is a lack of spaces that provides the capability to express and to reveal energies, the person enters a phase of depression and sadness as if they are machines trying to survive rather than to live. Moving forward, urban spaces should share this social experience together since it is a basic need and a fundamental right to feel belonged and a part of the social community and the urban fabric. According to Yu Hui Sung from Texas Tech university:

*Neglected spaces are not just empty lots, they can be old and incomplete sidewalks, spaces under bridges and even allies between buildings. Reusing and redesigning these spaces can bring beauty and quality to the cityscape and promote a healthy and safe lifestyle. It takes a great amount of imagination and potential to find a suitable activity or usage for the forgotten spaces. (Sung ,2009)*



Fig.1: A pile of garbage lies on the bank as trash floats on the Beirut River, in Karantina, east of Beirut (A/P Photo/ Hassan Ammar, 2015)

Table1: Characteristics of functional urban space and the urban void (Source: Ndubisi Onwuanyi, 2021)

	<b>Functional Urban Space</b>	<b>Urban Void</b>
Basis	It is a part of the modern urban design	Not always a part of the urban design
	Has an assigned urban function	Has no assigned urban function
Function	Performs an urban function	Does not necessarily perform an urban function
	Receives official & regular attention	It is neglected /occasionally remembered space
Impact	It is positively used	It is negatively used
	Enhances the urban environment	Tends to produce urban blight

The main aim of this research is to generate strategic urban solutions for solving the problem of neglected riverfronts areas that is facing the cities by creating, studying, and designing strategies for applying recreational spaces in these urban spaces. The case study that this paper will be focusing its application on, is the river of Beirut and its shore, firstly by recognizing the different aspects of the problem till lastly reaching to a proposal of creating a recreational complex that will revive the zone of the river from different aspects. The research hypothesizes that developing a recreational space or complex in neglected riverfronts spaces can enhance the city positively and return the feeling of belonging of the people to the urban fabric.

## 2. LITERATURE REVIEW

### 2.1 Definition of Neglected Urban Spaces

The definition of neglected spaces goes far beyond abandoned lots, thus unfinished walkways, spaces under bridges, parking lots, alleyway, and much more are also all under the same title of neglected spaces. The term neglected spaces is used to refer to forgotten, unused and abandoned urban locations and areas within the region of the city. In addition, the social, environmental, and economical issues can have a negative effect on metropolitans through their direct effect on the composition of these spaces “neglected spaces” which varies between the cities depending on their urban development. Furthermore, neglected areas can have a direct or an indirect negative effect on the urban fabric. Community degradation can be caused by extensive criminal behavior which threatens the residents and visitors making it unwanted areas. According to Yu Hui Sung from Texas tech university:

*The departure of main users of spaces, the social purpose influence, and the amorphous urban growth of the city may be a cause for the increase in the emerging of neglected urban spaces. (Sung ,2009)*

### 2.2 Historical Background Of Neglected Urban Spaces

Cities are a loadstone of invention, prosperity, and creativity, formed from societies that are a complex system of the city, which they are a habitat of collaborative elements and systems performing a one whole unit. Urban fabrics of the cities includes gaps and spaces that are apparently beneficial and non-beneficial for the city’s life cycle, thus positive spaces are mainly known as recreational areas that may be open to the public and may not. Furthermore, they can create spaces such as parks, public libraries, and water bodies, thus these spaces are considered as positive spaces. On the other hand, empty lots and abandoned areas are considered as a negative space which also includes unoccupied areas, playgrounds, free parking lots, spaces under bridges and spaces behind the building. (Sung ,2009)

As an example, during the preservation of the national sites, the national park service started as assessment in the 1966 on the historical structures found in the national parks. The study analyzed the masonry work and stone restoration of the Jefferson memorial in Washington

D.C. In the late 1980s the idea of reusing old structures spaces and voids had gained affirmation leading to a conservation trend. By the end of 1988, the conservation and reusing old architectural buildings had taken an expansion from a single building to include a group of buildings, several neighborhoods, a whole region, and a complete town. The term repurposing does not only refer to restoration and repair but also to giving purpose and identity to a space that was and still neglected in the urban city. Thus, the idea of redirecting neglected spaces is taking it through a transitional phase and redesigning its purpose for a lifetime service. Adding to those designers, architects and urban planners have become aware and realized the huge problem and the different problems and possibilities that these neglected spaces have on the societies and the communities that they are found in, since it is known now how misusing these spaces can have a negative effect on the environment, the socio-cultural aspects, and the economic value of the community and vice versa. Excessive research has been conducted on localizing and reusing lost neglected urban spaces to enhance the community. Hence, these spaces are open to alternative possibilities that can be designed and carved to fit a specific use that elevates a certain street, neighborhood, or city. (Nefs.M,2006)

### 2.3 Typological Criterias for Urban Spaces

Preserving social equality, increasing social safety, promoting sustainability, and enhancing socio-cultural mentality and health are preserved using fundamental criterias to revive and save neglected urban spaces.

*Areas that are considered public are in many times neglected and even lost their value, but through time these areas are being considered more and more as an important spine for the city. There are many open public spaces which are far from business aims, such as parks, sidewalks, streets, markets and play areas. (UN-habitat,2011)*

#### 2.3.1 Place for all

Equal, healthy, and devoted communities are a result of public spaces that unite the whole citizens giving them the opportunity to be creative and supporting them with several opportunities to improve a wholesome society. Every single person in a community should have the advantages of a public space, thus the designing and planning of any public space should be developed in a sense to ensure community involvement fundamentals. Moreover, fairness and justice should be served for everyone of all classes in public spaces to keep the society striving and flourishing. (Camila,2019)

#### 2.3.2 Improving Health and Well-being

Encouraging and discouraging certain lifestyles can be achieved through planning and designing influential urban spaces to create a great effect on their health and well-being leading to a healthier city and community. Cities could have restrictions over the usage of public spaces due to the compacted structure and formation of the elements in the city, the unplanned infrastructure and the local climate influencing in an indirect way on the health and lifestyle of the people. To ensure a healthy urban living, the urban planning of public spaces and architecture should take contextual climate into consideration to prevent unfortunate consequences of extreme weather conditions. (Tavares, 2020)

#### 2.3.3 Providing Safety

When designing a public space, every individual and their needs should be put in mind to provide their safety. The people inhabiting any urban space should feel safe and in ease while practicing their daily chores and while living inside their homes. Thus, public laws of urban public spaces should not be based on the standards implemented by the ruling class, but they should reflect the uniqueness and the individuality of the citizens living in these areas. In addition. Respect and equality should be shown by the people in power to the users of the public spaces to keep the society in harmony and to provide a

safe and polite public space to engage in. Furthermore, people should have the mentality to show carness to each other and to the urban spaces, in addition to people should motivate and support one another to reach a safe community. (Benjamin,2021)

### 2.4 Neglected Urban Spaces In Architecture

Many studies have proven the redesign and arrangement of public spaces can be a way to integrate regional areas together. Public areas during the pre-industrial era were a place that gave cities their identity and personality due to the permission of everyday contact, sociability and trade. After the industrial revolution, modern urbanization has led to drastic changes to public spaces in both developed and developing countries. As a result, the urban fabric has separated and public spaces decreased leading to significant changes in urban spaces, in addition to public spaces becoming a commercialized space with a different motive. Adding to that, western cities faced changes by the industrial revolution changing and altering the shape and forms of the public domain, the nature of the social sphere and ancient towns, these changes altered with the lifestyle of these cities. The shattering of ancient social fabrics is a cause of this modern urbanization making cities much more expandable and providing them with a huge population of different races. Throughout the industrial countries, after the World War II several techniques were used to design houses and transportation systems. The urban fabric and public spaces changed and were divided due to the implementation of certain traffic systems and zoning of the urban areas restricting the unity of the urban environment. (Mandeli,2019)



Fig.2: Book of Cities volume 119 (sciencedirect.com)

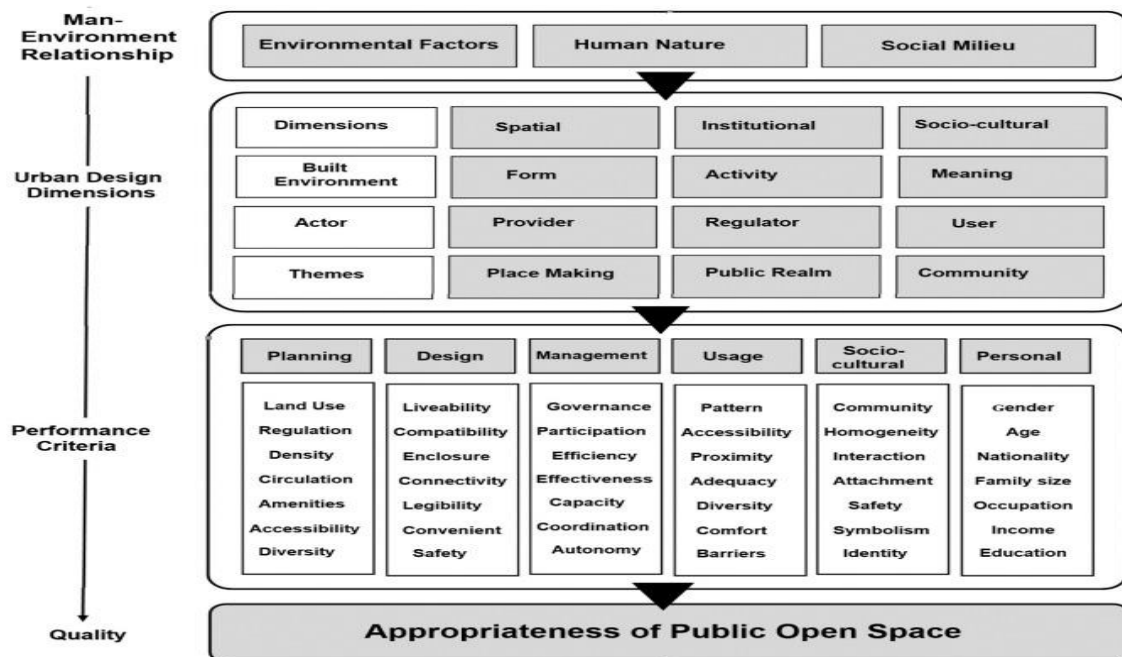


Fig.3: Multi-dimensional Urban design Approach (Mandeli,2019)

#### 2.4.1 Types of neglected urban spaces:

Neglected spaces come in different forms, these are spaces that are detached, disorganized, unoccupied, and purposeless. In addition, these spaces come with many problems that affect the lifestyle and health of the city, people become unconnected socially with their surroundings, the study lists below the main neglected spaces:



- a. Water fronts: they are found on the coastline and the shores of seas and rivers; they could be forgotten lands or unurbanized shores.
- b. Oversized streets: large streets that are made for cars with no humane connections, no trees are found and even no place to sit, paly, and to socialize.
- c. Socially inefficient green spaces: land plots that are poorly designed mainly made as a green park, but time and carelessness led to their deterioration.
- d. Military sites: some cities have military sites that are found in an unorganized manner mainly in the growing cities. Some have abandoned military sites that become a place of danger and a place for cults to hang out.
- e. Industrial sites: industrial zones are spaces of gloominess and chaos, where waste from factories is thrown away, and are filled with polluted spaces and brown fields are a result.
- f. Parking lots: areas where vehicles are parked temporary which shape unnecessary scattered voids in the city between the buildings.

## 2.5 Similar Examples

### 2.5.1 Cheonggyecheon River, Seoul, South Korea

Cheonggyecheon river linear park located at the center of Seoul. Between the concrete jungle emerged a magnificent achievement in urban redevelopment making a drastic change in a jammed highway with traffic and slabs of concrete to a lush of a green corridor that extends to 3,6 miles attracting more than 60000 people in a daily basis. The acceleration of the economy growth and the increase of the biodiversity in the local area was a result of this restoration project. This public area is known for the drastic change to a green urban space after being a gloomy industrial devastation.



Fig.4: Cheonggyecheon River, Seoul, South Korea (Alexander, 2010)

### 2.5.2 Rhone Riverbanks Lyon, France

The design of Lyon riverbank that was designed by IN SITU architects Paysagistes was once a parking lot known as the left bank located directly on the riverfront, nowadays it is a public space full of diversity promoting socialization, encouraging Lyon citizens and inhabitants to live a sustainable life and providing comfort to the users. The design was completed in 2005 proposing a design that connects people with river and nature free off car parking's, reclaiming public areas and to implement sustainable transportation methods that cannot be interrupted along the river's side mostly by walking and cycling. Rather than automobiles which are non-sustainable transportation system, which will park in a different area in a safer multistory, parking.



Fig.5: Rhone Riverbanks Lyon, France (David, 2011)

## 2.6 Parameters of Analysis

Based on the preceding research some of the deduced parameters of reviving the neglected urban spaces are summarized in the following table:

Table 2: Table of parameter of analysis

Architectural Parameters	Urban Space Parameters
Sustainable factors	Health and well-being
Open green spaces	Providing Safety
Recreational activities	Social Cohesion and equality
Pollution reduction	Cultural Identity

These parameters can be considered while researching architectural principles to revitalize neglected urban places, as seen by similar examples.

## 3. METHODOLOGY

The paper operates a case study that acquires many types of research methodologies to revive the Beirut River waterfront and turn it from a neglected to a livable urban space. Along with the methods that the author will take into consideration: First, the inductive method used provides the data collection and information about the chosen case study “The Beirut River”, the acknowledgment of different transitional phases throughout time. Second, the field method, the author drops in many parts of “Beirut River”, taking live photos, and immediate interviews with the inhabitants and visitors around the chosen site. Aside from the interviews, a detailed questionnaire was spread to a group of inhabitants to receive a quantifiable treatment of the problems that are facing Beirut River and how it can be solved. Third, the analytical method, the paper examines the results from the interviews and the questionnaire. Fourth, the deductive method which deduces several solutions and strategies to revive the neglected rivers by using recreational facilities on the river fronts. The four main methodologies are listed in order throughout the paper:

### 3.1 Introducing the Case Study of “Reviving Beirut River”

The necessity of public places in Beirut is not a new difficulty; walking spaces, promenades, cycling infrastructure, and many other amenities have been developed throughout the city. Furthermore, public spaces in Beirut are minimal, which are a result of the illegal trades and wars during several years while denying habitats from their beneficial rights in these spaces. Studies have shown that nine square meters of green spaces is recommended as a minimum space by the world health organization, but Beirut has only 0.8 square meters of these spaces which are not all of them are accessible to the public.





Fig.6: Beirut Public Parks and squares  
(Jadaliyya,2020)

Beirut River, a coastal river runs down from an altitude of 1580 meters from the high peaks of Mount Lebanon. It flows a roughly 20km to the west side from the upper hills that it came from, then it directs its path to the northern side passing through an absolutely urbanized overpopulated crowded city of Beirut heading to the Mediterranean Sea. Beirut river flow mainly is provided from the rainfall and snowmelt with an approximate yearly release of 100 million cubic meters, which makes the river a fast and vigorous river. The river's basin gets a proper amount of rainfall which reflects the hydrology of the river. The river has a hydrological cycle consisting of a dry season from May till November and wet season from December till April varying through its flow rates between 0.01m<sup>3</sup>/Sec and 16 m<sup>3</sup>/Sec as shown in figure 7.

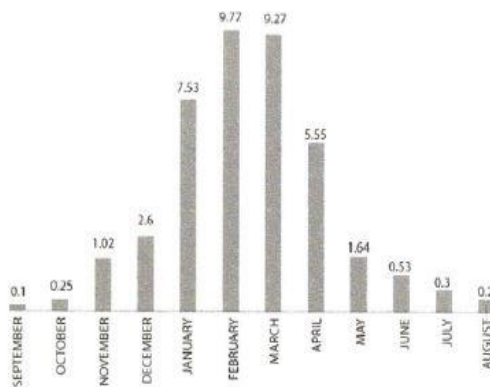


Fig.7: Nahr Beirut Flow Rates  
(Frem.S,2009)

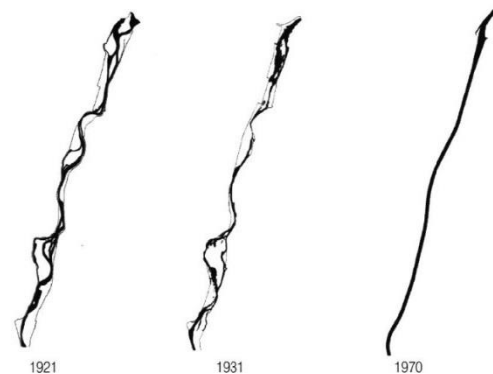


Fig.8: Nahr Beirut Hydrological infrastructure  
(Frem.S,2009)

The Dachouniyye was a continuous source of water for Beirut River during the dry season before directing its water to provide the city with drinking water supply. The upper basin of the river is made of limestone and marl with steep sided ridges through which Beirut River have made its way flowing through valleys and canyons. The geographical nature of the valleys leads to the absorption of most of the rainfall and snow. In addition, the agricultural terraforming reduces surface runoff. Thus, the upper basin did not have any floods by a cause of the geographical slopes and the concentration of the urban buildings on the site. Floods have started in the 1940s on the lower basin due to the overpopulation on the coastal plain of the river. Beirut River crosses through the Beirut peninsula on a flat plain between the hills of the Achrafieh to the north and Sin El Fil to the northeast. Before building the canal, the river was a braided stream with a shallow bank surrounded by flood plains and wetlands which are normal for a braided

typology. The canal broke the ecological system of the river leading to the absence of landscapes and natural life that could be found before building the canal such as pinewoods.



Fig.9: Original condition of Beirut 1904 (Frem.S,2009)

### 3.2 Urban Analysis of “Beirut River”

In ancient Beirut between the hills of Achrafieh and Msaytbeh the Roman city of Beirut was located acting as a strategic port location on the natural defend system but after several earthquakes that whipped the city, the Arabs and the Ottomans used the Roman foundations to develop the new city which expanded to metropolitan Beirut that is known now. The city faced great expansions and numerous increases in the number of population when the Ottomans executed the main port of the city. During these periods, Beirut River was a heavily agricultural area, it had few buildings surrounding the shores. At the start of the 1920s Beirut River and its surrounding started to be heavily populated and urbanized because of immigration, industrial revolution, and the development of infrastructure. The upper part of the basin continued to be a ribbon of buildings that are in harmony, while the lower basin area became a very dense zone. In the present day, the river witnessed great changes due to the heavy pressure of occupation on the last open spaces remaining in the city.

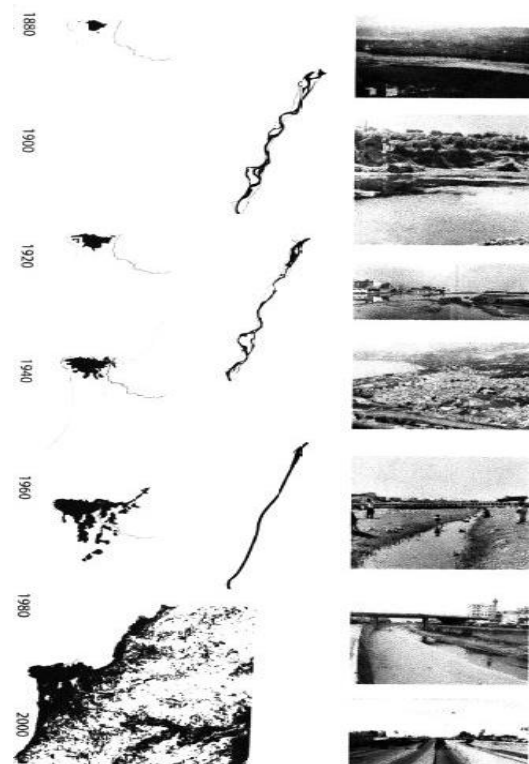


Fig.10: Beirut urban development through time (Frem.S,2009)

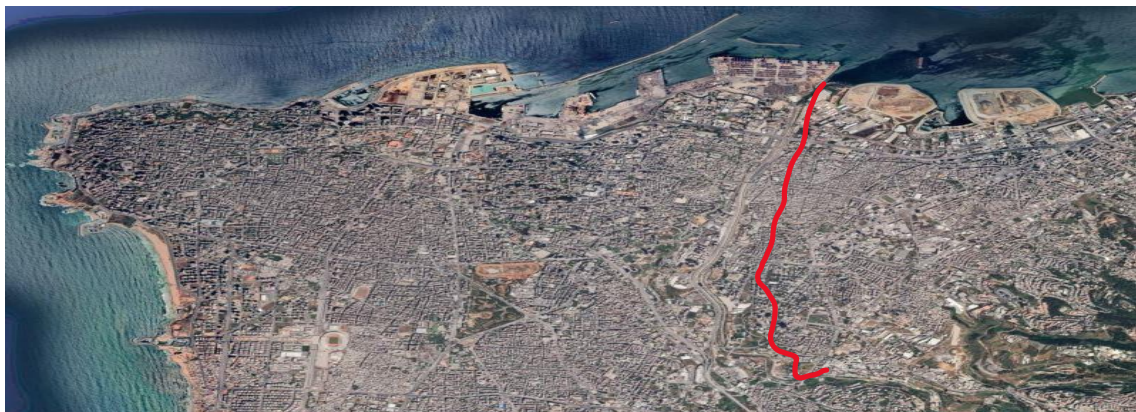


Fig.11: Aerial map of Beirut metropolitan area



As a result of the earlier studies, Beirut River is divided into four different zones: The waterfront, the urban zone, the agricultural zone, and the valley. Usually on a normal bases, the transitions between the river zones takes several miles in between them. But in the case of Beirut River these transitions are taking place approximately about 6km, generating passages between a zone and another that are affecting on the geographical surrounding, the urban mech, and the urban landscape design. Each zone will be explained in detail as shown in the research below.

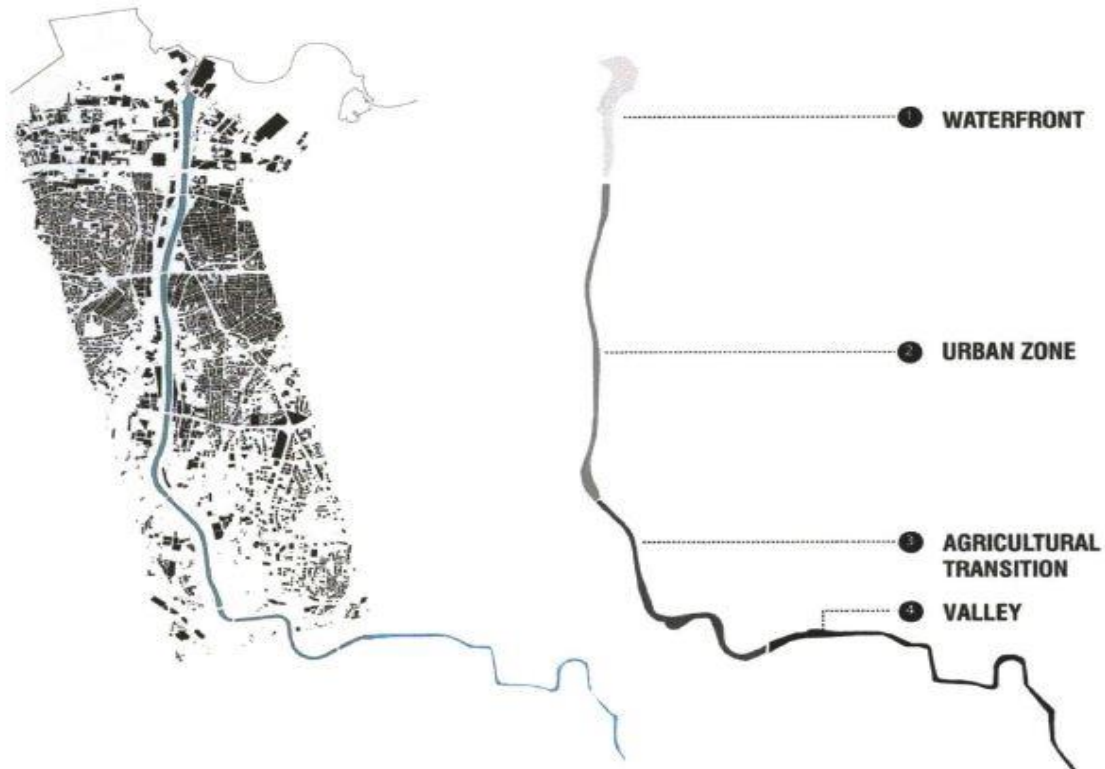


Fig.12: The Four zones of Nahr Beirut (Frem.S,2009)

### 3.2.1 First Zone: The waterfront

The waterfront is dominated by industrial lands and factories, in addition it consists of a landfill that was made 30 years ago, a beach, an old fish market, a fisherman port, and an estuary, which are heavily intoxicated and polluted by the waste treatment plant, the port's market and the industrial factories. Behind the industrial zone at the intersection with the port, a slaughterhouse can be found. The river's channel starts at a profile of 43meters wide narrowing its way to the exit with almost a consistent depth of 3 meters. The water flows with a velocity of 1100 cubic meters/sec in this section. (Frem.S, 2009)



Fig.13: Waterfront estuary (Frem.S,2009)



Fig.14: Waterfront zone

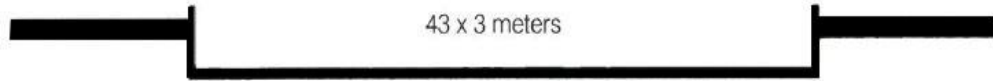


Fig.15: Waterfront zone canal dimensions

### 3.2.2 Second Zone: The urban Zone

This zone is divided into two sections, one that is found on the side of Burj Hammoud and Sin El Fil consisting of packed residential neighborhoods. The second is made up of a group of private equity companies along the strip of the river, behind it there is the residential neighborhood of Achrafieh. In this zone of the river, a regional highway can be found on Beirut's periphery, but on the opposite side in Sin El Fil there is a local road. The urban zone is 35 meters wide and 5 meters in depth, with a span of 1.65 km and a slop of 3.5%. The water reaches a velocity of 8.2. (Frem.S, 2009)



Fig.16: Urban zone canal dimensions



Fig.17: Beirut River Urban zone (agefoto,2010)



Fig.18: Urban zone

### 3.2.3 Third Zone: The Agricultural Zone

The last considerable open space in Beirut is a small group of agricultural fields and railway stations found in this zone. In this section of the channel the walls get higher with a depth of 7 meters, it narrows down to width of 23 meters, and increases to slop of 6.5%. The agricultural lands fill the banks of this strip from this section till the end of the valley zone continuously, acting as a buffering zone to the adjacent roads of each area. On the side of Beirut, the regional highway takes a turn through a great change at Furn El Chebbak, splitting from the channel. On the other hand, between Sin El Fil and Jisr El Basha, secondary roads continue to provide exits and entrances to the Emile Lahhoud Highway. (Frem.S, 2009)



Fig.19: Panoramic of the agricultural transition (Frem.S,2009)



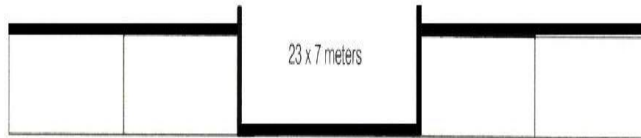


Fig.20: Agricultural zone canal dimensions



Fig.21: Agricultural zone

### 3.2.4 Fourth Zone: The Valley

At the waterfront the channel is built over the ground, the contrary is found at the start of the valley the channel is completely underground. The channel passes through the industrial city of Mkalles and the residential neighborhoods of Hazmieh eventually ending in a wide agricultural land. Starting from this point, the river starts its journey in a canyon flowing in the bottom and with residential buildings peaking to it from the top of the ridges. The archeological historical remains stand in the valley abandoned with no care such as the Ottomans bridge “Jisr El Basha”, the roman aqueduct, roman cisterns, old windmills, and the roman temple Bacchus next to Deir El Kalaa. (Frem.S, 2009)



Fig.22: Panoramic of Valley area (Frem.S,2009)



Fig.23: Valley zone

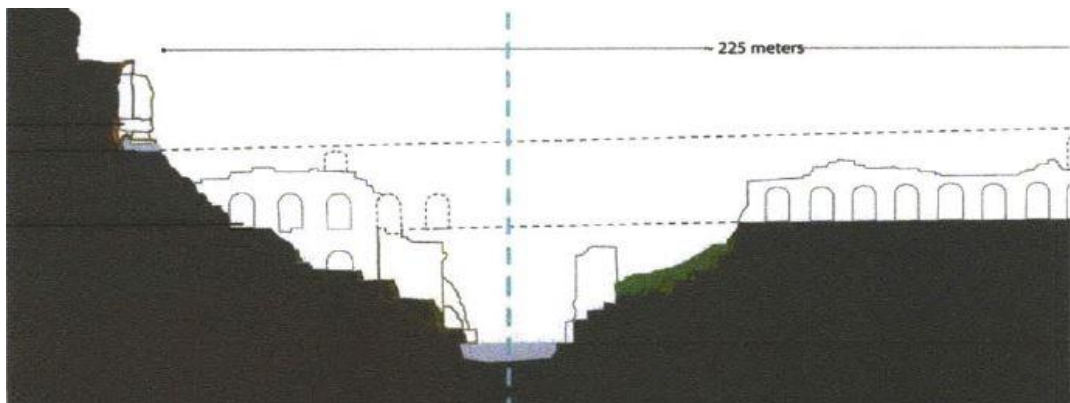


Fig.24: Valley zone Transversal section

### 3.3 Identifying Problems Of Beirut River

Beirut River faces different types of problems especially in the urban zone; thus, it played a very important role in dividing the city through the absence of ecological systems along its chore line. There are three main problems facing the river: Water issues, Accessibility & Connectivity issue, and public space issue.

### 3.3.1 The Water issues

#### A. Irregular Flow

The water of Beirut River has by nature an irregular flow. The main sources of fresh water have been eliminated for the consumption of providing drinking water for the metropolitan city and irrigation. Thus, its current sources of water are from the storms, snow, and the wastewater. During the year the flow of water tragically changes from 16 cubic meters/sec during the wet season to 0.1 cubic meter/ sec in the dry season.

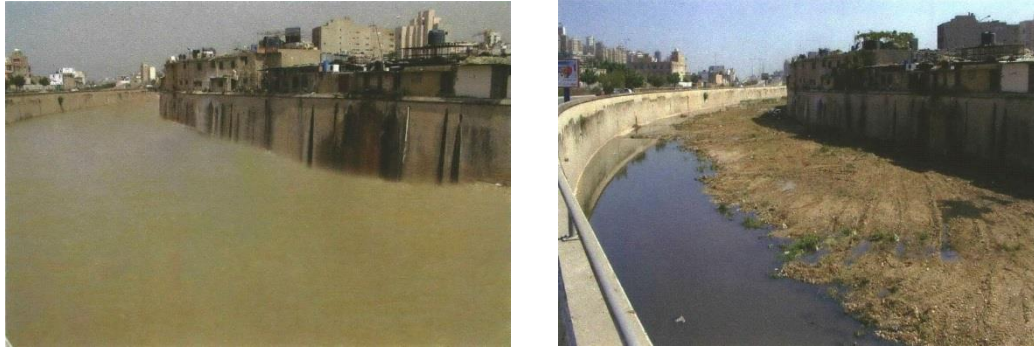


Fig.25: Wet and Dry season condition of Beirut River (Frem.S,2009)

#### B. Flooding

Beirut river reaches a maximum flood of 1571 cubic meter/sec over a span of time over 30 hours. The channel is designed to contain a flow of 1100 cubic meter/sec. As a result, this channel does not need and adapt to the full flood capacity when it is raining at an average of 10 cubic meters/sec. Moving forward, the tip of the river increases the flooding risk due to the bottleneck effect. As an example, in 2005, when a flood broke after 100 years flooding the slaughterhouse and port.

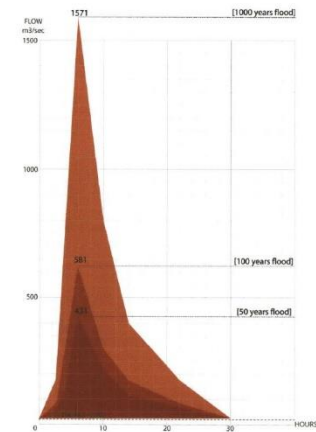


Fig.26: Flood rate of Beirut River (Frem.S,2009)

#### C. Pollution

During the summer, due to the absence of water the river turns into an open-air sewage. This is because of three main pollution sources found along the shore of every section of the river: Industrial chemical waste coming from three industrial cities, sewage, and agricultural chemical pesticides from the irrigation water. Adding to that, it acts as a dump for the construction materials from Mkalles, and organic animal debris from the Quarantina slaughterhouse. In the zone valley underground water reservoirs and surface water are contaminated due to the discharge of domestic waste and wastewater into the Beirut River





Fig.27: Beirut River Pollution (Najib,2015)



Fig.28: Pollution by type and zone (Frem.S,2009))

### 3.3.2 Accessibility & Connectivity

Beirut river is completely isolated from Beirut city because of the Emile Lahhoud highway which is an important economical and transportation spine linking Beirut to Damascus. There are little access points to Beirut River and a very high hostile walking environment which prevents people from passing through it.

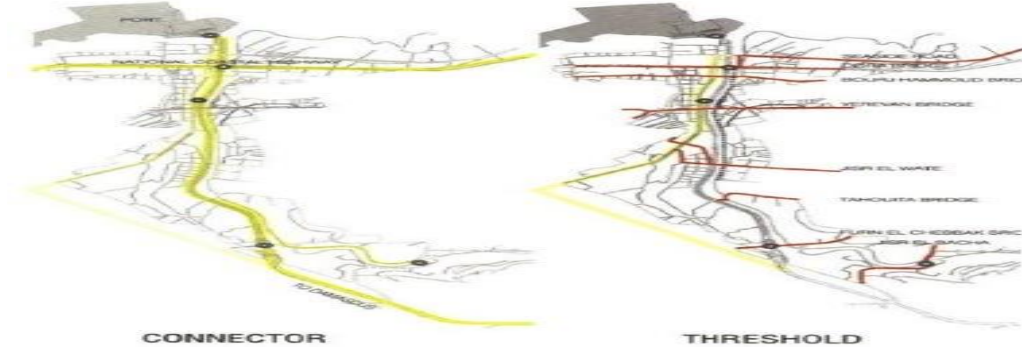


Fig.29: Connectors and Threshold (Frem.S,2009)

### 3.3.3 Public spaces issues

Green and public spaces in Beirut are rarely found or completely absent. The person living in Beirut have a ratio of accessibility of 0.5 square meters, as shown in Figure 30, which is one of the least in the world. Furthermore, any green or public space found in Beirut is suffering from very poor conditions, accessibility and proper landscaping making, them a place of danger. The public spaces found adjacent to Beirut River are made by the surrounding community such as the Sunday market that is found on the Jisr El Wate and the children's playgrounds that are set near to Yerevan

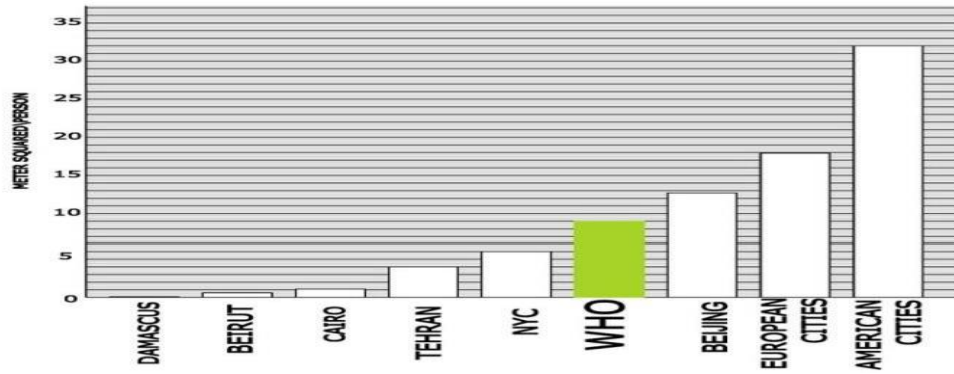


Fig.30: Percentage of green areas per capital (Rishani,2014)

### 3.4 Selection of specific area in “Beirut River”

The study area that the research will be concentrating on is “The Urban Zone” which is the most densely populated zone. This zone suffers greatly from the absence of recreational facilities, cultural and social activities, and public green spaces, the research below shows the figures of the study area.



Fig.31: Beirut River Urban zone

#### 3.4.1 Specific Site Dimensions

The Chosen Site is in the middle of the Urban Zone, and it is divided into 2 zones, firstly the commercial zone named by the Lot 1 with an area of 2755 m<sup>2</sup>, in addition to the second zone which is the cultural zone named by Lot 2 with an area of 5768m<sup>2</sup>.

#### 3.4.2 Context and Surrounding

The site is surrounded by a numerous number of factories and residential buildings that were built after the construction of the canal and the refugee camps of Nabaa and Karam El Zeitoun. The site is in an urbanized area that is directly in front of the river with a highway that separates the river from the urban fabric, the other parts of the area is small lands of agriculture that used before to be spread all along the river.



Fig.32: Beirut River Urban Zone Chosen Sites

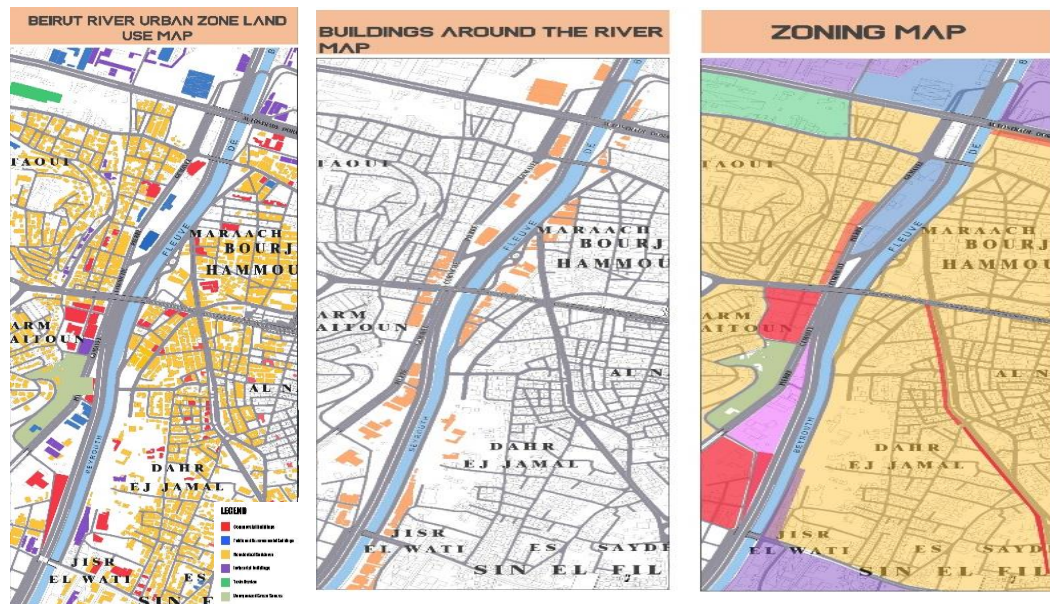


Fig.33: Beirut River Urban Zone Analysis

### 3.5 Different Perspectives of The Public on “Beirut River”

It is important in this research to get credible sources from people who are living and working in the selected area of the “Beirut River” since it is important to know the needs of these people to know how the river and its surrounding should be designed, the research follow two simple field methods: Live interviews and distributing a questionnaire.

#### 3.5.1 Live Interviews

Between the dates from 25th of October till the 6th of November 2021 live interviews were held with fifteen people ranging in age between 58 to 72 years. During the interview four main questions were asked:

- How do you remember Beirut River during your youth?
- What are the present activities on the river chore?
- How can you compare the current situation of the river with its past?

The answers that were mostly similar can be presented through the following answers to the questions.

Tony Chamoun 60 years old:

I used to go with my friends when we were little boys to the river to swim, it uses to have fresh clean water that we used to drink from and used to collect to bring back home for our mothers to cook with. My sister had a lover that used to meet her over the bridge and used to bring her flowers, during the sunset they sat over the bridge looking at the sunset that connected the river with the sea.

Marita Haddad 72 years old:

I remember sitting on the shore of the river feeling the sand between my feet and beside of me sat my grandfather that used to go with me there to teach me how to catch frogs. At night we used to hear their sounds and we used to see fireflies havoring over the lake that was used by our family to irrigate our tomatoes, lemons, and oranges. My father went during the day to collect timber from the pine trees that used to be shading the river to use them in his workshop where he



made glass for the wooden louvred windows, also I remember my two brothers helping him in carrying the timber over the donkeys back.

Sirvart Harutian 65 years old:

Everything has changed after the civil war, it was a place of beauty and filled with green nature, various types of animals would come to the river to drink. I remember on Sunday's families come to have picnics, boys will swim in the water and the girls would be sitting on the chore gossiping about them. When the tramway passed over the bridge you could see the children running after it, screaming and waving trying to catch it. The tramway used to pass by our house and dropped deliveries for the workshop that my mom and dad opened together, they used to make jewelry to be sold in "Souk El Dahab" of Beirut.

### 3.5.2 Questionnaire

An online questionnaire was distributed on hundred people of different majors between the ages of 25 and 65 years old, the questionnaire was distributed on the people in the urban zone of the river and the questions that were asked are direct, simple, and specific as follows:

- a. How do you see Beirut River in the future?
- b. What type of facilities do you prefer to be on the river?
- c. How can the river improve?
- d. How much harm do you get from the canal of the Beirut River?

After achieving the field methodology, the paper analyses results, and findings of the answers.

## 4. FINDINGS

The outcomes of replies are shown in a set of sketches, diagrams, and charts through applying an analytical methodology.

### 4.1 Analysis of the Interviews Results

The paper can derive a list of demands from interview responses that could directly enhance and revive the neglected urban spaces as riverfronts. The table 3 is a representation of this list.

Table 3: A presentation of the checklist of needs

Recreational Facilities & Entertainment	Social & Cultural Promenade	Open Green Public Spaces
Museum, Workshops, retail shops, amphitheater	Park and pathways and bicycle tracks	Public Park and open sport facilities

As demonstrated in table 3, reviving Beirut River through adding landscape features, cultural promenade, as well as a recreational facilities & entertainments.

### 4.2 Analysis of the Questionnaire Results

The outcomes are presented in a set of statistics charts some of which are modified on rich cultural, social, and economic backgrounds. The results are represented in the pie charts in Figures 29,30,31,32. The pie charts demonstrates the opinion of inhabitants on the river in the future, with very bad conditions of total above (65%), which cause too much harm to them with a percentage of more than 65% also. The improvement of the Beirut River is provided by applying variety of possibilities such as continued cultural promenade (21%), greenery and landscape (15%), social interactions (18%). As mentioned, the important types of facilities as the demands

and needs of inhabitants are Recreational Facilities & Entertainment (29%), Social & Cultural Promenade (29%). It could revitalize the region with better and healthier and effective activities.

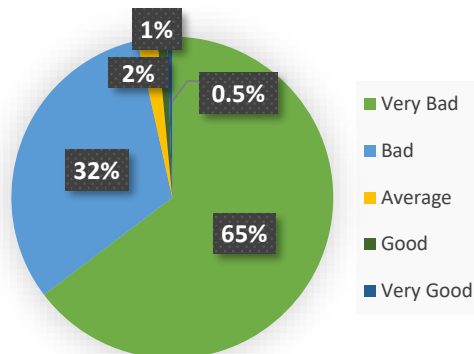


Fig.34: Pie Chart of answering the first question about the opinions of the existing river.

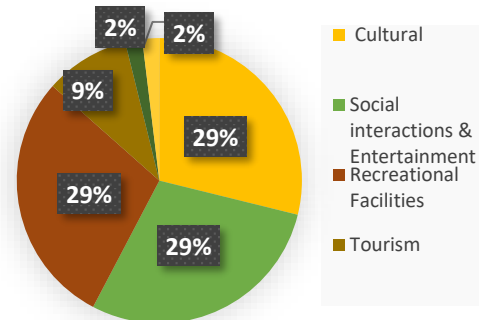


Fig.35: Pie Chart of answering the second question about the type of facilities.

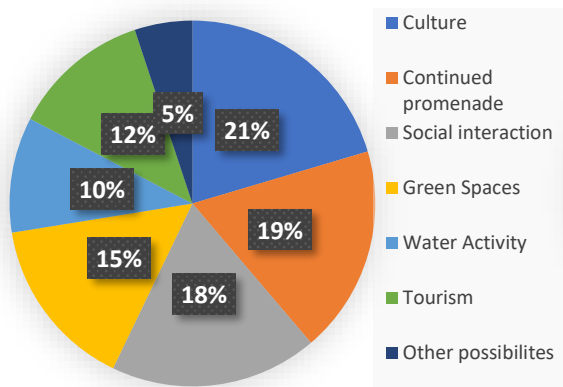


Fig.36: Pie Chart of answering the third question of the improvement of the river.

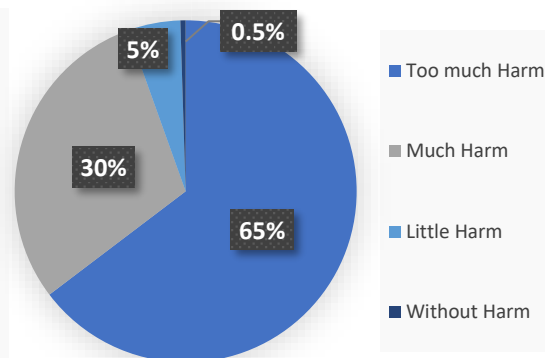


Fig.37: Pie Chart of answering the fourth question about the harm from the canal.

## 5. DISCUSSION

Previous studies stressed the need of developing cultural facilities along the river's borders to create a specific identity again for city. The revitalizing procedure also includes hydrological and ecological systems, as well as pollution removal and social treatments. The cultural promenade, which may assist socialization, economic growth, and supplying green space for congested neighborhoods, is by far the most essential aspect of this approach. This study recommends using the additional actions as an urban approach for sustainable redevelopment and river revitalization plan.

- Creating a continual walkway across river enabling walkers with environmentally friendly modes of transportations such as bicycle trucks.
- Developing a unique image of the water-land relationship by supplying empty lots and modifying the roadway system and ensure the envisioned promenade's continuation.
- Entertainment and cultural components, including an amphitheater explaining historical background, might be incorporated to specific areas of a promenade.
- Landscape features can be installed to offer a clear, healthful, and sustainable environment for promenade visitors.
- Expressing the architectural style of the city by applying within the cultural promenade some of features and elements to establish a strong cultural level and platform.

These actions may be turned into reality by contacting the council of ministers, which could also run an international tournament to select the finest conceptual design for this promenade. The council of ministers may direct those three ministries, namely, the Ministry of Tourism, the Ministry of Environment, and the Ministry of Public Works, participate to the start-up of this initiative.

## 6. CONCLUSION

Overall, the following results are reached in this paper:

- a. Reviving the city's identity and visual image throughout a cultural promenade which reflects the city's sociocultural, economic, tourism aspects.
  - Integration of the various neighborhoods with the riverside throughout bridges along river shores.
- b. The approach of revitalizing rivers should always be founded on three important phases in future intentions:
  - Using the empty lots: making use of undeveloped land near the river.
  - Linkage well with city: through linking public promenade with major buildings across the shoreline as well as developing innovative buildings responsive to local demands & needs and urban planning strategy.
  - Continuity: is provided across the river by a naturalistic walkway promenade & around the river by pedestrian's bridges linking major landmarks.
- c. The river should be focal point in an innovative green environment.
  - The river ought to be important image of society cultural roots.

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