

LAND-CUT VERSUS LANDFILL AS AN ALTERNATIVE FOR  
CREATING URBAN SPACE ON WATERFRONTS

A THESIS SUBMITTED TO  
THE GRADUATE SCHOOL OF NATURAL AND APPLIED SCIENCES  
OF  
MIDDLE EAST TECHNICAL UNIVERSITY

BY

MURAT YAZICI

IN PARTIAL FULFILLMENT OF THE REQUIREMENTS  
FOR  
THE DEGREE OF MASTER OF SCIENCE  
IN  
URBAN DESIGN  
IN  
CITY AND REGIONAL PLANNING

MAY 2010

Approval of the thesis:

**LAND-CUT VERSUS LANDFILL AS AN ALTERNATIVE FOR  
CREATING URBAN SPACE ON WATERFRONTS**

submitted by **MURAT YAZICI** in partial fulfillment of the requirements for the degree of **Master of Science in Urban Design in City and Regional Planning Department, Middle East Technical University** by,

Prof. Dr. Canan Özgen \_\_\_\_\_  
Dean, Graduate School of **Natural and Applied Sciences**

Prof. Dr. Melih Ersoy \_\_\_\_\_  
Head of Department, **City and Regional Planning**

Assoc. Prof. Dr. Baykan Günay \_\_\_\_\_  
Supervisor, **City and Regional Planning Dept., METU**

**Examining Committee Members:**

Assoc. Prof. Dr. Adnan Barlas \_\_\_\_\_  
City and Regional Planning Dept., METU

Assoc. Prof. Dr. Baykan Günay \_\_\_\_\_  
City and Regional Planning Dept., METU

Assoc. Prof. Dr. H. Çağatay Keskinok \_\_\_\_\_  
City and Regional Planning Dept., METU

Assoc. Prof. Dr. Bahar Gedikli \_\_\_\_\_  
City and Regional Planning Dept., METU

Inst. Can Kubin \_\_\_\_\_  
Urban Planner, PROMIM

Date: 03.05.2010

**I hereby declare that all information in this document has been obtained and presented in accordance with academic rules and ethical conduct. I also declare that, as required by these rules and conduct, I have fully cited and referenced all material and results that are not original to this work.**

Name, Last name : Murat YAZICI

Signature :

## **ABSTRACT**

### **LAND-CUT VERSUS LANDFILL AS AN ALTERNATIVE FOR CREATING URBAN SPACE ON WATERFRONTS**

Yazıcı, Murat

M.Sc., City and Regional Planning in Urban Design

Supervisor: Assoc. Prof. Dr. Baykan Günay

May 2010, 120 pages

The main concern of this thesis is to evaluate the land-cut as an alternative urban design tool instead of landfill in the creation of shore in waterfront areas in terms of improving space quality, increasing the shoreline length for the use and benefit of public, decreasing the risks of natural disasters while increasing the marine ecosystem and habitat, and promoting the development of the land economy.

The development of the idea dates back to an urban design studio study carried out in 2005 in Eceabat, Çanakkale by Middle East Technical University Urban Design Master Program. During the study, it was observed that the interaction of small town of Eceabat with water was partially blocked by a seaside road and a ferry port created by landfill. Therefore, the ways of integrating the town life with water was searched and in the design schemes proposed after the analyses, the possibility to create a new shore by land-cut method in Eceabat was evaluated.

Within this framework, the possibility of using land-cut method is evaluated in a more detailed case study of Kuşdili Meadow and Kuşdili Stream (Kurbağalı

Dere) located in Kadıköy, Istanbul where there is a potential to create urban space with an approach which has not been used so far in Turkey.

Prior to the analysis, the life near waterside has been studied in order to clarify how people from different geographies developed settlements near waterside and how those settlements existed with water.

The reasons and the problematic of landfill has been evaluated with specific examples in order to put forward from what aspects the use of an alternative method be considered is necessary. Therefore, the legal and administrative aspects which resulted in the creation of landfills as problematic spaces on the waterside have also been discussed.

At the end of the study, the potentiality of the site has been studied to find out from various urban design aspects with a specific reference to the applicability of land-cut method. Therefore, the analysis of the site has been carried out. And the thesis has shown that land-cut may possibly be an alternative to landfill in the development of waterside urban spaces from various spatial, social, and economic aspects.

Keywords: Water, Land-cut, Landfill, Creation of a Shore.

## ÖZ

### KIYIDA KENT MEKÂNI YARATIMINDA ALTERNATİF BİR YÖNTEM: KIYI DOLDURMAYA KARŞI KIYI KAZMA

Yazıcı, Murat

Yüksek Lisans, Şehir ve Bölge Planlama, Kentsel Tasarım

Tez Yöneticisi: Doç. Dr. Baykan Günay

Mayıs 2010, 120 sayfa

Bu tezin amacı su kenarı yerleşmelerinde kıyı yaratmada, kıyı kazmayı kıyı dolgusunun yerine mekânsal kalitenin arttırılması, kıyının uzatılarak kamu kullanımı ve yararının yükseltilmesi, su ekosistemi ve habitatını geliştirirken doğal afet risklerinin azaltılması ve alan ekonomisinin desteklenmesi yönlerinden alternatif bir kentsel tasarım aracı olarak ele almaktır.

Bu fikrin gelişimi 2005 yılında Orta Doğu Teknik Üniversitesi Kentsel Tasarım Yüksek Lisans Bölümü öğretim üyeleri ve öğrencileri tarafından Eceabat, Çanakkale'de gerçekleştirilen bir stüdyo saha çalışmasına dayanmaktadır. Saha çalışması süresinde küçük bir ilçe olan Eceabat'ın su ile olan ilişkisinin dolgu yolu ile üretilmiş bir sahil yolu ve feribot iskelesi ile kesildiği gözlemlenmiştir. Bunun üzerine kent yaşamını su ile buluşturmanın yolları aranmış ve yapılan analizler sonrasında önerilen tasarım şemalarında Eceabat'ta kıyı kazma yöntemi kullanılarak yeni bir kıyının yaratılabilirliği değerlendirilmiştir.

Bu çerçevede kıyı kazma yöntemi, Türkiye'de daha önce denenmemiş bir yaklaşım ile Kadıköy, İstanbul'da yer alan ve kent mekânı yaratma

potansiyeli bulunan Kuşdili Çayı ve Kuşdili Deresini kapsayan bir saha çalışması üzerinden detaylı bir biçimde değerlendirilmektedir.

Analiz öncesinde, farklı coğrafyalardan insanların kıyıda nasıl yerleşmeler oluşturduklarını ve bu yerleşmelerin su ile beraber nasıl var olduklarını açıklamak için su kenarında yaşam olgusu çalışılmıştır.

Alternatif bir yöntemin düşünülmesinin hangi açılardan gerekli olduğunu ortaya koyabilmek açısından kıyı doldurma sebepleri ve sorunsalı çeşitli örnekler üzerinden ele alınmıştır. Dolayısıyla, kıyı kenarında sorunlu mekânların yaratılmasına neden olan yasal ve yönetsel olgular da tartışılmıştır.

Çalışmanın sonunda, çalışma alanının potansiyelleri çeşitli kentsel tasarım yaklaşımları üzerinden kıyı kazma yönteminin uygulanabilirliği referans alınarak çalışılmıştır. Bu nedenle çalışma alanının mekânsal analizi yapılmıştır. Tez çalışması sonunda kıyı kazmanın kıyı dolgusuna karşı kıyı kenarında kent mekânı geliştirmede mekânsal, sosyal ve ekonomik açılardan bir alternatif olabileceği görülmüştür.

Anahtar Sözcükler: Su, Kıyı Kazma, Kıyı Doldurma, Kıyı Yaratma.

To My Family

## ACKNOWLEDGMENTS

I would like to express my gratitude to my supervisor Assoc. Prof. Dr. Baykan Günay for offering intellectual guidance and prudent criticism throughout the study. His insightful comments and suggestions have released my vision in the congestive stages of my study. I would also like to thank my other committee members; Assoc. Prof. Dr. Çağatay Keskinok, Assist. Prof. Dr. Bahar Gedikli, Assoc. Prof. Dr. Adnan Barlas, and City Planner Can Kubin for their comments and suggestions.

I would like to thank for their precious assistance of Mr. Yalçın Demirtaş and Ms. Leyla Alkan through their comments and valuable help they provided me.

I would also like to thank Ms. Gülsen Yılmaz for her valuable comments, and my colleague, Mr. Öner Açikel for his precious idea easing my way to find the right study area.

I would like to thank also to my colleague Mr. Yılmaz Döner for his valuable support for finding the documentation without which it was impossible to develop this study and also to my colleague Ms. Silvia Cassese for her support.

I finally would like to thank to my family and Ms. Milda Kilinskaite for their endless patience and support which gave me the power to pull this off.

## TABLE OF CONTENTS

ABSTRACT.....	iv
ÖZ.....	vi
ACKNOWLEDGMENTS .....	ix
LIST OF TABLES.....	xii
LIST OF FIGURES .....	xiii
CHAPTERS	
1. INTRODUCTION .....	1
1.1. Problem Definition .....	1
1.2. Methodology .....	2
1.3. Stages of the Research .....	4
2. LAND-CUT AND LANDFILL: DEFINITIONS, PRINCIPLES AND AREAS OF USE .....	7
2.1. Role of Water in Human and Urban Life .....	7
2.2. Land-cut and Landfill in Waterfront Developments .....	27
2.2.1 Areas of Use.....	29
2.2.2 Advantages and Disadvantages of Landfill and Land-cut.....	35
3. LEGAL AND ADMINISTRATIVE BACKGROUND OF COASTAL DEVELOPMENT IN TURKEY.....	42
3.1 Development of Legislation Regarding the Coastal Development in Turkey.....	42
3.2 Landfill and Land-cut Methods in Coastal Legislation in Turkey .....	46
4. KUŞDİLİ STREAM AND KUŞDİLİ MEADOW IN ISTANBUL .....	49
4.1. Location and Physical Characteristics .....	51
4.2. History of the Site .....	53
4.3. Analysis of Kuşdili Meadow and Kuşdili Stream .....	59
4.3.1. Spatial Components of Kuşdili Stream .....	60
4.3.2. Spatial Components of Kuşdili Meadow .....	76

5. LAND-CUT FOR THE CREATION OF A SHORE IN KUŞDİLİ MEADOW .	86
5.1 Area Problematic .....	87
5.1.1 Loss of Natural Character and the Decline of the Area: Pollution of the Meadow and the Stream .....	91
5.1.2 Planning Problems .....	92
5.2. Planning Strategies.....	98
5.2.1 Land-cut for the Discovery of Archaeological Richness.....	100
5.2.2 Creation of the Shore .....	104
5.2.3 Integration of Urban Life with Water .....	109
5.3. Urban Design Guidelines .....	110
6. CONCLUSION .....	114
REFERENCES .....	118

## LIST OF TABLES

### TABLES

Table 2.1 Coastal Area Uses .....	15
Table 2.2 Relationship between Port Development and Connection with Water .....	25
Table 2.3 The Relationship Between the Types of Waterfront and The Use of Land-cut and Landfill Methods .....	28
Table 2.4 The Potential Areas of Application of Land-cut Method in Urban Areas .....	34
Table 2.5 Advantages/Disadvantages Matrix for Landfill and Land-cut Methods .....	40
Table 3.1 The Development of the Coastal Law in Turkey .....	44
Table 3.2 Legislation about Coastal Lands .....	45
Table 4.1 The spatial Characteristics of the Sections of Kuşdili Stream .....	76
Table 5.1 Relationships between Uses and Activities and the Functions ...	107

## LIST OF FIGURES

### FIGURES

Figure 2.1 Nyhavn in 1780 (a) and 1870 (b) respectively. ....	11
Figure 2.2 Nyhavn (a) and (b) at present. ....	12
Figure 2.3 Amsterdam (a) and (b) at present.....	13
Figure 2.4 Typical Port Development Phase 1: The existence of a safe harbour. ....	18
Figure 2.5 Typical Port Development Phase 2: Period of Rapid Growth and Development.....	18
Figure 2.6 Typical Port Development Phase 3: Waterfront Emerging as a Port. ....	19
Figure 2.7 Typical Port Development Phase 4: Start of landfilling phase.....	20
Figure 2.8 Typical Port Development Phase 5: Losing of interaction between the city center and the water. ....	21
Figure 2.9 Typical Port Development Phase 6: The central city was detached from the shoreline. ....	22
Figure 2.10 Typical Port Development Phase 7: If Shipping Declined. ....	23
Figure 2.11 Typical Port Development Phase 7: If Shipping Increased. ....	23
Figure 2.12 Typical Port Development Phase 8: Increase in the Scale of the Waterfront. ....	24
Figure 2.13 Typical Port Development Phase 9: Reopening of the Waterfront to the Public. ....	25
Figure 4.1 Aerial photo showing the location of Kuşdili Meadow (in green) and Kuşdili Stream (blue line) in Istanbul. ....	49
Figure 4.2 Aerial photo showing Kuşdili Meadow (in red) and Kuşdili Stream from Kalamış Bay entrance.....	52

Figure 4.3 Photo showing the Port of Kalkedon (on lower left side).....	54
Figure 4.4 The aerial photo and illustrations showing the estimated location of the ancient port. ....	55
Figure 4.5 Historical photos of Kuşdili Stream (a), (c) and Kuşdili Meadow (b), (d) circa the beginning of the 20th century.....	56
Figure 4.6 Historical photo of Kuşdili Meadow circa the beginning of the 20 <sup>th</sup> century. ....	56
Figure 4.7 Kuşdili Meadow was used as Tuesday bazaar until 2008.....	57
Figure 4.8 General view of Kuşdili Meadow today as a car-parking area. ....	58
Figure 4.9 Car-parking areas in Kuşdili Meadow. ....	59
Figure 4.10 Map of Sections of Kuşdili Stream. ....	61
Figure 4.11 Photo showing Kuşdili Stream along Ataşehir-Çamlık destination. The stream flows through in between the valleys seen in the front-side. ....	64
Figure 4.12 Photo showing Kuşdili Stream along Göztepe-Uzunçayır destination. ....	67
Figure 4.13 Photo of İETT Hasanpaşa Facility along Uzunçayır -Marmara Sea destination. ....	69
Figure 4.14 Aerial photo along Uzunçayır -Marmara Sea section. Kadıköy Wedding Hall and Söğütlüçeşme Station in the front, and Şükrü Saraçoğlu Stadium, Kuşdili Meadow, and Kuşdili Stream in the further back. ....	71
Figure 4.15 Aerial photo along Uzunçayır -Marmara Sea section. Kuşdili Meadow, Kuşdili Stream, and Yoğurtçu Parkı.....	72
Figure 4.16 Yoğurtçu Parkı (a) and the Boats (b) on Kuşdili Stream. ....	73
Figure 4.17 Yoğurtçu Parkı (a), (b) after renovations done in 2009. ....	74
Figure 4.18 Old Mansion aside Kuşdili Stream. ....	75
Figure 4.19 Yoğurtçu Parkı and Fenerbahçe Club's facilities. ....	75
Figure 4.20 Kuşdili Meadow was an important location for recreation (a), (b) during Ottoman Era.....	78
Figure 4.21 Kuşdili Meadow was started to be used as a car park beginning with 80's which was one of the causes of the loss of the natural character of	

the area. In the photos above taken in 1982 (a) and 1983 (b), there are still trees on the meadow. ....	81
Figure 4.22 After the relocation of Tuesday Bazaar to the meadow, the area started to lose its recreational character due to the extensive and abusive use by the bazaar functions. (photos were taken in 1982 (a) and 1986 (b) )	82
Figure 4.23 Expansion of the bazaar functions along Kuşdili Stream. ....	83
Figure 4.24 Tuesday Bazaar and the traffic congestion viewed from above.	84
Figure 5.1 Study area .....	88
Figure 5.2 Pollution Along Kuşdili Stream (a), (b), (c), and (d).....	90
Figure 5.3 Improper Use of the Meadow (a), (b) as car-parking space .....	91
Figure 5.4 Pollution Along the Stream (a), (b), (c), and (d) .....	92
Figure 5.5 Spatial Change in Kuşdili Meadow (1946) .....	93
Figure 5.6 Spatial Change in Kuşdili Meadow (1966) .....	93
Figure 5.7 Spatial Change in Kuşdili Meadow (1982) .....	94
Figure 5.8 Kuşdili Meadow as of Today (06/2008).....	94
Figure 5.9 Kuşdili Meadow Bazaar, Cultural and Recreational Centre Project Proposal by İBB .....	95
Figure 5.10 Kuşdili Meadow Bazaar, Cultural and Recreational Centre Project Proposal by İBB. ....	96
Figure 5.11 Conceptual development .....	102
Figure 5.12 The Phase 1 Development should consider the parts between Kuşdili Stream and Pazar Yolu Street.....	103

## CHAPTER 1

### INTRODUCTION

***“Water has always been imperative for life. It is the genesis of settlement, controlling the birth, location, and development of cities.”  
(Moughtin, 2003)***

Water is a vital element in human life and it is strongly connected to the development of new human settlements. It is not possible to establish permanent human settlement without water. Apart from its vital role, it has also been an important element with regard to the structuring of the human settlements. The spatial and social interaction with water has been a point of interest in settlements from various aspects throughout the settlement history. The role of water with regard to space and social interaction of people is fairly high and important in coastal urban areas, such as riverside, lakeside cities or seaside urban settlements. Therefore, many different design methods and strategies have been developed through the implementation of different models in terms of making water also an important design element providing different living environments for the people living in the cities.

#### **1.1. Problem Definition**

The rapid growth of cities starting with industrial revolution and increasing population in cities resulted in extensive use of urban lands. Therefore, the land has become scarce and the development of new functions has got limited as the private ownership increased. In the waterside cities where the

land for providing new functions is scarce and there is no possibility to construct new facilities, as a method, the land has started to be reclaimed through water by landfills. New functions ranging from recreational areas (parks, jogging, cycling paths, etc.) and commercial areas (cafes, restaurants etc.) to transportation facilities have been designed and constructed on the filled zones in the cities.

However, the production of urban spaces based on landfill without considering the life with water in waterside settlements has resulted in the production of problematic spaces. The interaction of people and urban life with water has been isolated and public access has been limited as a result of landfills standing as frontiers to water. Within this framework, the aim of the study is to analyze another alternative method, the method of land-cut in Kuşdili Meadow known as former Salı Pazarı (Tuesday Bazaar) on the Anatolian side of Istanbul, in order to create a new shore as an urban space by bringing the water of Kuşdili Stream inside the meadow and discuss the advantages and disadvantages of the method with regard to urban design principles. The interaction of the people living in the city with water from various aspects including creation of new urban spaces, pedestrian zones, marine facilities, recreational activities, etc. can be established better through land cut as well. Furthermore, this method can prove to be successful in terms of enriching the social life in the city by bringing diverse water related activities through the inner parts of the city such as maritime festivals & competitions, aquariums, museums, etc.

## **1.2. Methodology**

The main concern of this thesis is to examine the land-cut as an alternative tool instead of landfill in the waterfront settlements in terms of improving urban quality, increasing the shoreline length, decreasing the risks of natural disasters, and promoting the development of the land economy by the

creation of a new value in the area. This process is analyzed and interpreted by using single case study method in order to present how land-cut could be used as an alternative method to landfill in waterfronts. Single case study method has also been used to be explanatory during the research for discovering the potentiality of the case study area from various aspects such as archaeology, urban quality, etc. Qualitative and quantitative evidences from the study area have been studied by combining both the physical analyses and administrative and legislative concerns in the creation of urban space. For this respect, the area history, current status, and environmental interactions of the Kuşdili Meadow and the Kuşdili Stream have been put forward with regard to the spatial formations which exist in their waterfront areas.

In order to provide a general understanding of the area and its potential as a land-cut zone, the area has been visited twice in order to collect relevant data. The pictures were taken along the Kuşdili Stream and around Kuşdili Meadow to support visually the idea of the application of land-cut. Furthermore, Kadıköy Municipality and Kadıköy Title Deed Registry Office have been visited in order to gain in-depth understanding about the planning process and the ownership status of the area. Moreover, in the analyses, in order to gain a clear understanding of how the land-cut could be an alternative and why it is worth using land-cut as an alternative, the main features of Kuşdili Meadow and Kuşdili Stream are put forward with a reference to their physical settings and uses. These analyses are later combined with the urban design aspects in order to provide a clear and an alternative framework in creation of urban space by land cut method in the study area.

### **1.3. Stages of the Research**

The study will be developed in six steps. The introduction part of thesis study includes the problem definition and research methodology. The second part focuses on a literature review to identify and evaluate concepts of water, waterfront, landfill and land-cut in terms of consists the water-human relationship and life with water in the urban context. The third section analyses the legal and administrative framework shaping the waterfronts in Turkey. The fourth section is dedicated to the definition of the specific characteristics and the analysis of Kuşdili Meadow and Kuşdili Stream. The fifth chapter focuses on the examination of the land-cut method with advantages and potential uses in Kuşdili Meadow with a specific reference to urban planning strategies and urban design principles. The final part of the study is dedicated to the conclusions of the study. In this part, finally, the conclusions are forwarded to provide clues for the possibility of land-cut as an alternative method to landfill. This part also critically evaluates how the legislative framework could be improved to promote land-cut method better in the waterfront developments.

The study will start with a literature review on the specific features of water and water-human relationships in the establishment of an urban form in waterfront settlements. In this sense, a research is made on the function of water in waterfront developments which is followed by the introduction of development types in the waterfront areas. In doing this, different waterfront development methods and strategies in different parts of the world will be discussed and analyzed with a specific emphasis on their physical and administrative settings. In the following parts of the study an analysis is made on land cut and landfill methods with regard to their spatial features, the implementation aspects, and the advantages and disadvantages. All these aspects will be supported by comparisons with the worldwide examples.

The legal and administrative aspects of the waterfront development in Turkey will be put forward in the third chapter of the study. The related legislative framework which is in force at present in terms of shaping the waterfronts will be introduced. In doing this, the legislation related to seashore development and the other related laws such as Tourism Encouragement Law<sup>1</sup>, Zoning Law<sup>2</sup>, etc. will be reviewed and the reasons for the current spatial formations on the waterfronts will be clarified and defined. Furthermore, the deficiencies of the current laws will be discussed with an emphasis on the creation of landfill and land-cut areas.

In the 4<sup>th</sup> chapter, the characteristics of the study area will be presented in order to give a clear idea of the frame of reference of the study. The history of Kuşdili Meadow and Kuşdili Stream will be presented which is followed by an analysis of the spatial features of both. In the analysis, both components will be analyzed in detail in terms of their physical settings and their functions with the use of both qualitative and quantitative data. While going into details about the physical analyses, for graphic representations the maps from Google Earth are being used as well as the photographs from my personal archive.

The 5<sup>th</sup> chapter will aim to develop a discussion on the possible use of land-cut method as an alternative tool for the creation of a shore on Kuşdili Meadow. Particular attention will be paid to the programmatic and physical features of the land-cut method as well as urban design and planning principles. Furthermore, the development types will be examined with regard to the urban space creation by the use of land-cut method in the study area. The ways of applying this method and the proper geographies of application will be defined as well as the advantages of the method compared to landfill technique.

---

<sup>1</sup> Turizmi Teşvik Kanunu

<sup>2</sup> İmar Kanunu

In the conclusion of the study, the results of the spatial as well as legal and administrative analyses will be provided in a format describing why it is worthwhile using land-cut technique as an alternative to or even together with landfill technique in the development of waterfronts. Furthermore, what improvements should be done regarding the legal and administrative framework in order to achieve better results by the application of land-cut technique will be identified in the final part of the study.

## CHAPTER 2

### LAND-CUT AND LANDFILL: DEFINITIONS, PRINCIPLES AND AREAS OF USE

In this section of the study, literature on specific features of water and water-human relationships in the establishment of an urban form in waterfront settlements is investigated. The study will continue with a research on the role of water in waterfront settlements with regard to public use and design issues which is followed by the introduction of the uses and development types of landfill and land-cut methods in waterfront areas. In doing this, different landfill and land-cut types and strategies used in different parts of the world will be presented and analyzed with a specific emphasis on their physical and administrative settings. The study will deepen with the analysis of the related legislative framework which is in force at present in terms of shaping the waterfronts.

#### **2.1. Role of Water in Human and Urban Life**

About 80% of the largest population centers in the world are found on coastal and deltaic areas and the growth of these already densely populated coastal areas exceeds the growth rate of the world population (Waterman, Misdorp, and Mol 1998).

#### **Water as an Element of Life**

Moughtin (2003) states that water has always been imperative for life. It is the genesis of settlement, controlling the birth, location, and development of

cities. Without water human settlement is impossible.<sup>3</sup> Water is both protective and dangerous. Until controlled and managed, it poses a threat to those who live in close proximity and who depend upon its bounty for existence. The power of water has sculpted many of the world's unique landscapes.<sup>4</sup> The dynamic force of water gives vitality to those built structures designed to contain it, or to those structures designed to harness its great power for sustaining development and for improving the well-being of the community. Water also imbues with quality those buildings, streets, and city squares which incorporate the audiovisual effects of moving water or the calm and tranquility of its reflective mood."<sup>5</sup>

According to Moughtin, (2003) the city is structured by four types of water feature being water point or fountain, pool, linear water course (a river or a canal), and the coast. The first feature, the drinking fountain, is a centre of activity, a gathering place for the community often located at its heart, in the market square. The second is the pool, a place of reflection, contemplation, and recreation. The third type is the linear watercourse which runs through cities in the form of either a river or a canal. A river out of control is an awesome sight, a source of great destruction. A river, therefore, is controlled as it passes from a natural landscape in to the town or the city. The fourth and the last type of water feature associated with the city is the coast. Like the river or canal this is a linear feature which structures urban form: it is the edge of the city, a place where another world begins. It is a place where both dangers and possibilities around (Moughtin 2003).

Water is seen as an important element of life in different cultures. For instance Southeast Asian countries such as Indonesia, the Philippines, and Thailand, the water influences the fortunes of the region. Southeast Asian

---

<sup>3</sup> Moughtin, C., 2003, p.172

<sup>4</sup> *ibid.*

<sup>5</sup> *ibid.*

societies and cultures are confronted with and permeated by 'water from heaven' in the form of rain, flash floods, irrigation water, water in rivers, brooks and swamps, electricity from water-driven power plants, and pumped or piped water, in addition to water as a carrier of sewage (Boomgaard 2007).

Boomgaard states that "Seawater, water from heaven, and water-as-a-metaphor all have in common that they can be 'good' or 'bad'. *The sea is both a barrier and a link*, it brings trade and pirates, and trade itself can bring prosperity or ruin. The sea opens up a region to outside influences, which is usually deemed positive when we think of the exchange of inventions and other ideas, as it may lead to a more versatile people. But, it also renders a region more vulnerable than a landlocked area might have been. People living in such areas, therefore, have to be constantly alive to these two faces of the sea, switching effortlessly from an open, welcoming approach towards it to a defensive one when necessary<sup>6</sup>.

Water had been an important feature in the development of also North American cities. Wrenn (1983) states that "the early settlement of North America was directly tied to the location and accessibility of navigable waters". The movement of materials, products, and people was primarily dependent upon water transportation, and protective harbours were favoured sites for early development and growth. A good harbour provided security and accessibility—a place where a foothold could be gained in an uncharted land.<sup>7</sup>

By the beginning of the 18<sup>th</sup> century, five sea ports had been established along the Atlantic coast namely Boston, Charleston, New Port, New York,

---

<sup>6</sup> Boomgaard, P., 2007, p.2

<sup>7</sup> Wrenn, D.M., 1983, p.3

and Philadelphia.<sup>8</sup> “From the very beginning each city had distinctive characteristics formed by its geographic setting and the nature of its hinterland. The common locational variable supporting the development of these cities was a safe harbour. Each waterfront was a focal point of activity. The waterfront was not only a market place for the transfer of supplies, but also for the exchange of information and ideas. In this respect it served as the primary stage for social interaction. In every colonial port the waterfront was an important meeting place and a symbol of community strength (p4). Each of five leading colonial cities developed distinct characteristics in architecture and overall appearance, in intellectual interests, and in emphasis upon various amenities. However, no matter what the location or the founder’s immediate aims, the lifeblood of each city was commerce, and waterfront its heart”.<sup>9</sup>

In tide-enclosed Boston, it was said that all streets led down to the sea.<sup>10</sup> When Philadelphia rose as an important settlement, once again the waterfront was the catalyst for economic prosperity. In New York, the waterfront was indeed the means of supporting urban growth and development.<sup>11</sup>

From ontological point of view, the existence of water as a natural being is crucial for the survival of the settlements connected to water. Many ancient settlements such as Miletus, Priene, and Troya disappeared when the water disappeared. As Günay states that “in the last decades, those cities who have been able to preserve their cultural beings, have perceived that the survival of those beings, contribute to their survival too”<sup>12</sup>. Similarly, the

---

<sup>8</sup> Wrenn, D.M., 1983, p.6

<sup>9</sup> Wrenn, D.M., 1983, p.6

<sup>10</sup> Wrenn, D.M., 1983, p.4

<sup>11</sup> Wrenn, D.M., 1983, p.4

<sup>12</sup> Günay, B., 2009, p.151

contemporary cities which understood the importance of water and their waterfronts as the continuation of their being, have found the ways of preserving the life brought by water feature. The cities of Northern Europe such as Amsterdam and Copenhagen are between those cities which have been able to perceive the existence of their waterfronts as the basis of their own being.

For instance, Nyhavn district (meaning New Port) in Copenhagen was constructed by King Christian V from 1670-73, dug by Swedish war prisoners from the Dano-Swedish War 1658–1660, as a gateway from the sea to the old inner city at Kongens Nytorv (King's Square), where ships would unload their cargo and the fishermen their daily catch. Notorious for beer, sailors, and prostitution, the area developed an infamous reputation. As ocean-going ships grew larger, Nyhavn was taken over by internal Danish small vessel freight traffic. After World War II land transport took over this role and small vessel traffic disappeared from the Port of Copenhagen, leaving Nyhavn largely deserted of ships.



(a)



(b)

Figure 2.1 - Nyhavn (a) in 1780 and (b) 1870 respectively.<sup>13</sup>

<sup>13</sup> <http://www.copenhagenet.dk/CPH-Nyhavn.htm>, accessed on 2010, April 9.

The people of Copenhagen were aware of the fact that the disappearance of the waterway meant the termination of the culture and the life there. Therefore, in the mid-1960s, the Nyhavn Society was founded with the aim of revitalising Nyhavn. It invited the older Wooden Ship Association to conduct some events in Nyhavn. The harbour authorities opened the Nyhavn Bridge and the otherwise deserted canal filled with the association's old vessels. From the foundation of the heritage harbour in 1977, the south side of the canal has been reserved for museum ships owned by the Danish National Museum. The district is now a colourful waterfront, canal and popular entertainment district in Copenhagen.



(a)



(b)

Figure 2.2 - Nyhavn (a) and (b) at present.<sup>14</sup>

---

<sup>14</sup>[http://www.prettypop.net/photos/2003/20030903-13\\_denmark\\_germany\\_austria/20030911\\_copenhagen\\_nyhavn\\_2.jpg](http://www.prettypop.net/photos/2003/20030903-13_denmark_germany_austria/20030911_copenhagen_nyhavn_2.jpg), and [http://eu.concours.org/over\\_the\\_pond/over\\_the\\_pond\\_2006/034\\_copenhagen\\_nyhavn1.JPG](http://eu.concours.org/over_the_pond/over_the_pond_2006/034_copenhagen_nyhavn1.JPG), accessed on 2010, April 9.

Similarly, Amsterdam owes its being to the water and a cosmopolitan life which is the result of its relation with the water. As Günay states that “It was through the port cities that cosmopolitanism came to thrive where different cultures clashed or became integrated. It is a space of captains, sailors, and fishermen; of boats, ships, sails, flags, lighthouses, fishing nets, oars; of farewells or welcomes. If it were not for this culture, the Red Light District of Amsterdam, with its sailors’ pubs and other drinking establishments would not have come into being”<sup>15</sup>.



(a)

(b)

Figure 2.3 - Amsterdam (a) and (b) at present.<sup>16</sup>

Amsterdam became one of the most important ports in the world during the Dutch Golden Age in the 17<sup>th</sup> century, a result of its innovative developments in trade. During that time, the city was the leading centre for finance and diamonds. In the early 17th century, when immigration was at a peak, a comprehensive plan was developed that was based on four concentric half-circles of canals with their ends emerging at the IJ bay. Three of the canals were mostly for residential development, whereas the fourth and outermost

<sup>15</sup> Günay, B., 2003, p.203

<sup>16</sup> <http://en.wikipedia.org/wiki/File:KoninginnedagAmsterdamPrinsengracht.jpg>, and <http://en.wikipedia.org/wiki/File:FietsLeidsestraat.jpg>, accessed on 2010, April 9

canal served the purposes of defense and water management. At the end of the 19th century, the Amsterdam-Rhine Canal was dug to give Amsterdam a direct connection to the Rhine, and the North Sea Canal was dug to give the port a shorter connection to the North Sea. Both projects dramatically improved commerce with the rest of Europe and the world. At present, as being the financial and cultural capital of the Netherlands, Amsterdam is one of the main attraction points in Northern Europe.

As observed in the previous pages, water as an element of life;

- controls the life-cycle of the cities,
- gives vitality to the built environment,
- serves as a center of activity and a gathering place for people,
- is also a place for exchange of information and ideas.

### **Water as a Design Element**

Water is a structuring element is central to the art of city building.<sup>17</sup> The creative act of developing city form which expresses the needs and aspirations of its citizens is predicated on an appreciation and understanding of the myths we associate with water and of the symbolic meaning we attach to it (Betsky, 1995 cited in Moughtin, 2003).

The use of water as a focal point is commonplace in dockland redevelopment schemes and marina developments in North America and Europe (Wood and Handley 1999). Similarly, Hoyle (2002, 2) states that “the waterfront was usually the focal point of urban as well as port activity, and the symbiosis between water-related and urban-based functions, well established in ancient times, persisted worldwide until the mid-20<sup>th</sup> century and is not uncommon today, especially in smaller city ports and in less economically-developed regions”.

---

<sup>17</sup> Moughtin, C., 2003, p.172

The development with water has always been on the agenda of many countries throughout history. Many different development models have been proposed to live with water in many different levels.

For instance, Netherlands is one of those countries implementing different models of development by water in national scale. The principle of 'building with nature' is applied in order to integrate land in sea and water in land in such a way that future generations will be able to use coastal resources in a sustainable way, including a minimal effort to maintain the coastline and the promotion of a multiple-use system (Waterman, Misdorp, and Mol 1998).

Furthermore, Cicin-Sain and Kenecht, 1998 cited in Ceylan, 2006 points out to the utilization of land and sea on the coastal systems as:

Table 2.1. Coastal Area Uses:<sup>18</sup>

Maritime Sector
Vessel transportation
Harbour and maritime business enterprises
Establishing communication channels
The Resources of Water Products
Fishing
Raising and harvesting sea products
Bio-technology of sea products
Mining
Petroleum and gas production and usage
Mining the different metals and minerals such as gold and magnesium
Tourism
Hotels and recreational areas
Establishment of tourism infrastructure
Arranging swimming activities and forming scuba parks
Preparing recreational fishing activities
Energy
Preparing the structure of the plans in order to prevent damage from the natural disasters such as waves and storms

<sup>18</sup> Cicin-Sain and Kenecht 1998, p. 21-22 cited in Ceylan E.Ç., 2006, p. 11

Table 2.1 Coastal Area Uses (continued)

Defense
Determination of the naval forces' manoeuvring areas
Identifying military areas
Transportation
Developing roads, bridges and other transportation facilities
Evaluating and utilizing the water sources
Developing the infrastructure
Industrial Sector
Industrial facilities
Raw material resource facilities
Vessel industry facilities
Investment and storage facilities
Studies toward Protecting the Quality of Water and Coastal Environment
Protecting waters against pollution
Protecting waters against pollution of vessels and other means of transportation
Declaring special protection areas and parks
Protection of marine flora and fauna
Protection of cultural resources around the coasts
Protection of the coastal resources
Protection of eco-system quality and prevention of marine flora and fauna which will harm the eco- system
Scientific Research
Oceanography
Geology of water and the coast
Research on marine flora and fauna
Archaeology
Research on the usage of marshy areas

Urban waterfronts are special cultural resources. They are unique in their potential to provide diversified opportunities for economic development, public enjoyment, and civic identity. Until recently, however, urban waterfronts were one of North America's most neglected resources.<sup>19</sup>

<sup>19</sup> Wrenn, D.M., 1983, p.2

As patterns of commerce have changed, the nature and use of urban waterfronts have changed. Technological innovations affecting air, land, and water transportation made the port facilities of many cities obsolete. Urban waterfronts were allowed to deteriorate as the result of old age under utilization, and lack of investment.<sup>20</sup>

The effective reuse of waterfront sites, buildings, and piers, both for necessary economic development and for recreational and cultural activities, has already occurred in several cities.<sup>21</sup>

To gain an overall perspective of the changes that have taken place along urban waterfronts, it is useful to trace the typical pattern of port development<sup>22</sup>. The sequence of the events is similar in different cities, therefore as such does not correspond to any particular city. The typical pattern of port development is summarized in the following pages below:

The first prerequisite for establishing a port is *the existence of a safe harbor* (see *fig. 2.4*). Development starts with site selection and construction of a small wooden jetty. The anchoring is offshore. Cargo transport is done to the jetty by smaller boats. The waterfront was nothing more than where primitive inland trails converged at the location of the jetty. Later on, a street pattern was slowly established. Throughout this period of settlement, inhabitants had direct contact with the natural shoreline.

---

<sup>20</sup> Wrenn, D.M., 1983, p.2

<sup>21</sup> Wrenn, D.M., 1983, p.2

<sup>22</sup> The typical pattern of port development was adapted from *Waterfront Precedents* (Toronto: City of Toronto Planning and Development Department, 1976), pp. 2-5 cited in Wrenn, D.M., 1983, p.9-12.

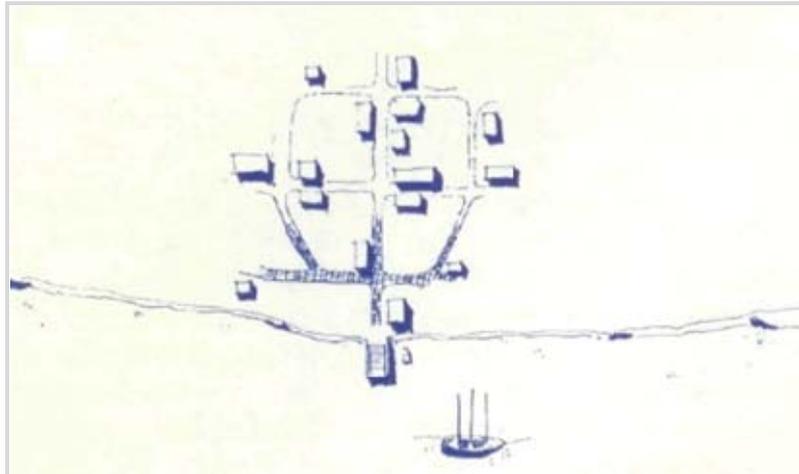


Figure 2.4 Typical Port Development Phase 1: The existence of a safe harbour.<sup>23</sup>

The second phase is the period of rapid growth and development. During this phase, a larger pier was usually installed to allow ships to dock, the street grid began to be filled in with buildings, and seawalls and bulkheads were constructed to stabilize the shoreline and improve anchorage facilities. The settlement still clung to the waterfront with a shoreline road providing primary access (see *fig. 2.5*).

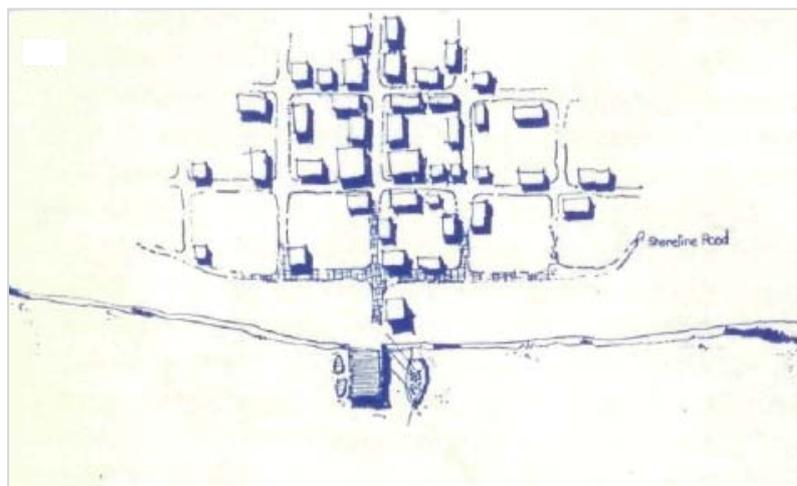


Figure 2.5 Typical Port Development Phase 2: Period of Rapid Growth and Development.<sup>24</sup>

---

<sup>23</sup> Wrenn, D.M., 1983, p.10

On the third phase, the settlement was fast becoming a city and its waterfront emerging as a port (see *fig. 2.6*). Maritime commerce stimulated urban development and the shoreline road was a busy street providing services, supplies, and office space for merchants and the shipping trade. Rows of newly constructed warehouses blocked the water's edge from the street.

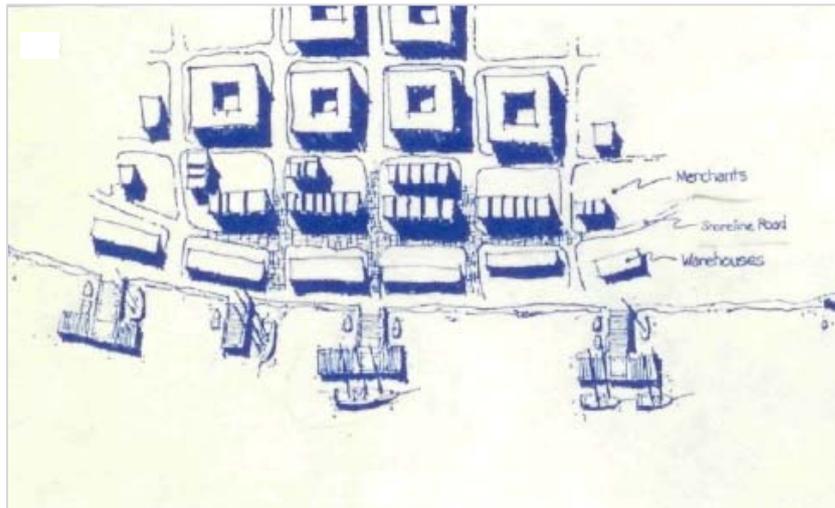


Figure 2.6 Typical Port Development Phase 3: Waterfront Emerging as a Port.<sup>25</sup>

On the fourth phase, wooden piers were gradually replaced by bigger docks made of stone and fill material. By filling out into the water to expand docking and storage facilities, the distance between the city's center and its shoreline was significantly increased (see *fig. 2.7*).

---

<sup>24</sup> Wrenn, D.M., 1983, p.10

<sup>25</sup> *ibid.*

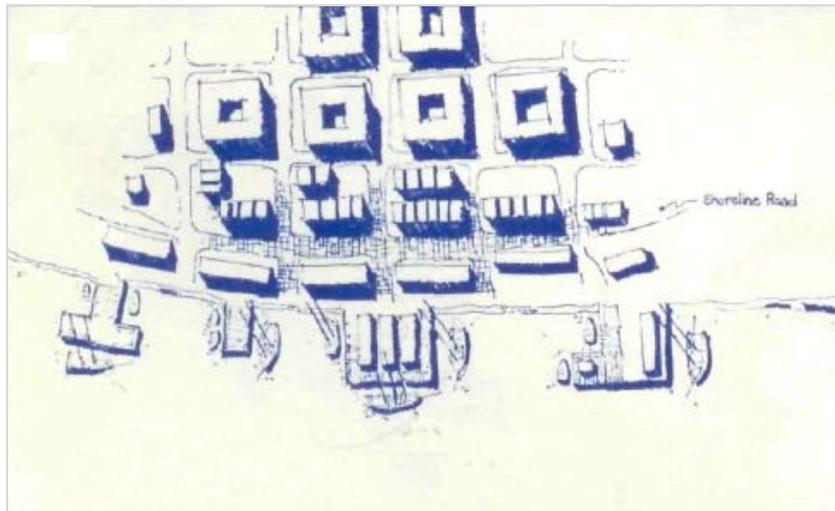


Figure 2.7 Typical Port Development Phase 4: Start of landfilling phase.<sup>26</sup>

The port continued to thrive; more warehouses were built and railroads first appeared on the fifth phase (see *fig. 2.8*). The introduction of railways required a great amount of waterfront land. Space was needed to service docks and install tracks, thus, even more land was created with fill material (often generated by dredging operations) to satisfy the spatial needs of the railroad. This change effectively severed the central city from the waterfront.

---

<sup>26</sup> Wrenn, D.M., 1983, p.10

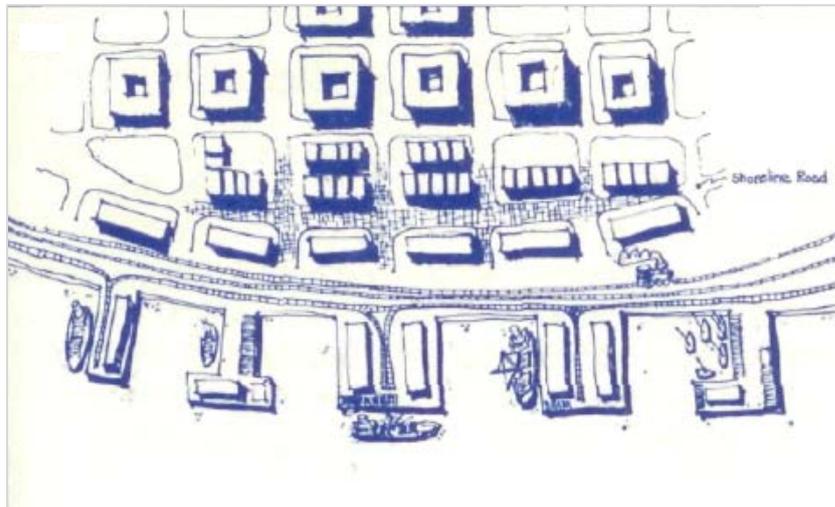


Figure 2.8 Typical Port Development Phase 5: Losing of interaction between the city center and the water.<sup>27</sup>

On the sixth phase, the original shoreline road became functionally less useful as the distance between it and the water increased. The central city was effectively detached from the shoreline and the waterfront was congested and difficult-to maneuver through. To alleviate congestion a new elevated highway was built near the shoreline with limited access to the city. Offices and stores along the old shoreline road were consequently converted to warehouses (see *fig. 2.9*).

---

<sup>27</sup> Wrenn, D.M., 1983, p.11

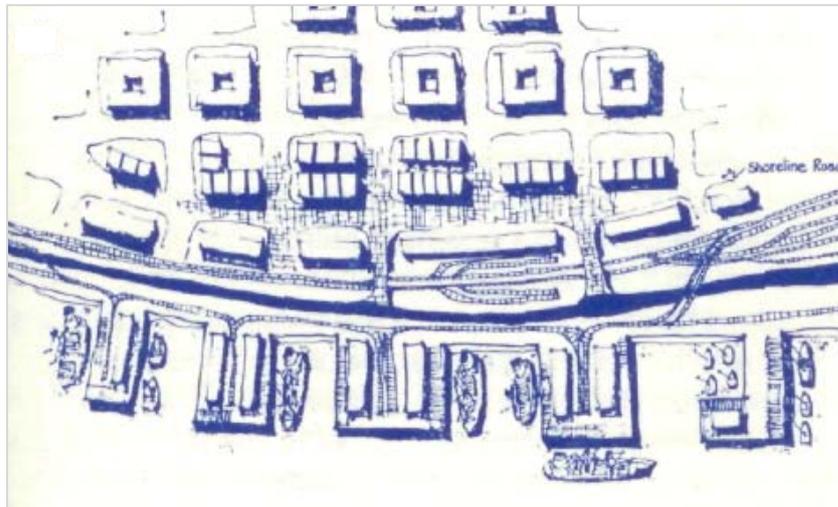


Figure 2.9 Typical Port Development Phase 6: The central city was detached from the shoreline.<sup>28</sup>

On the phase seven, there are two different ways of development being either the shipping is declined or increased in the city.

If the shipping was declined, the shoreline remained unchanged and the buildings along the old shoreline road were subsequently demolished and the expressway widened (*see fig. 2.10*). If the shipping was increased, the port activities were expanded, more industrial uses were introduced, and wider piers were constructed (*see fig. 2.11*).

---

<sup>28</sup> Wrenn, D.M., 1983, p.11

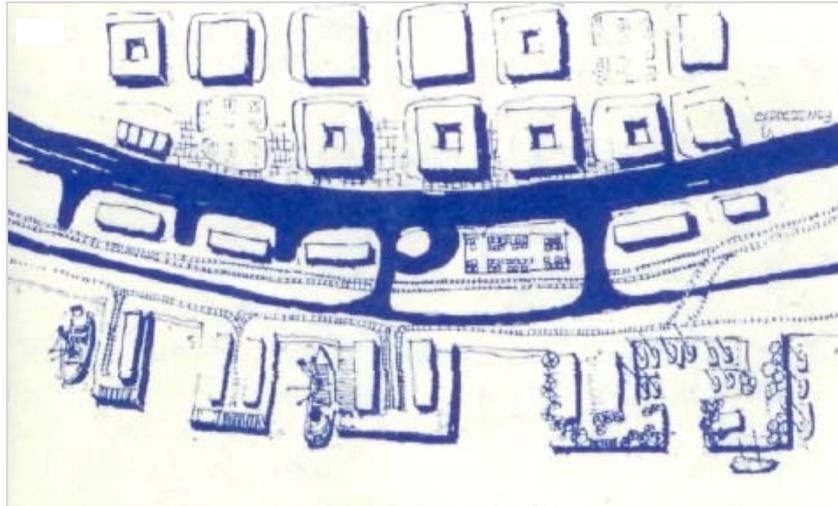


Figure 2.10 Typical Port Development Phase 7: If Shipping Declined.<sup>29</sup>

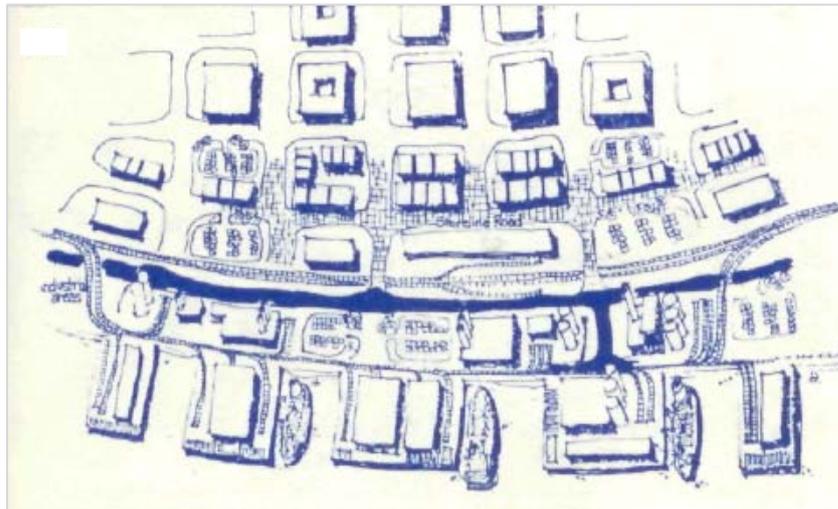


Figure 2.11 Typical Port Development Phase 7: If Shipping Increased.<sup>30</sup>

The eighth phase is the phase under the condition that the shipping was continued to increase. On this phase, the scale of the waterfront increased

---

<sup>29</sup> Wrenn, D.M., 1983, p.11

<sup>30</sup> Wrenn, D.M., 1983, p.11

significantly with the size of the elements of industrialization (trains, cranes, ships) in use (see *fig. 2.12*).

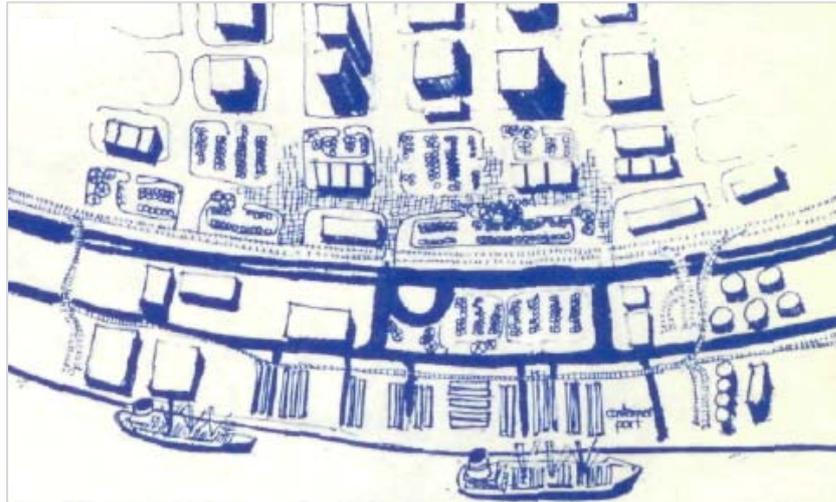


Figure 2.12 Typical Port Development Phase 8: Increase in the Scale of the Waterfront.<sup>31</sup>

On the ninth and the last phase, the old port area lost its original usefulness, and private developers and city governments discovered a relatively inexpensive supply of downtown waterfront land ripe for redevelopment (see *fig. 2.13*). Due to port's commercial failure, there was a chance to open the waterfront once more to public use. Therefore, blend of recreational, residential and commercial uses were developed.

---

<sup>31</sup> Wrenn, D.M., 1983, p.11

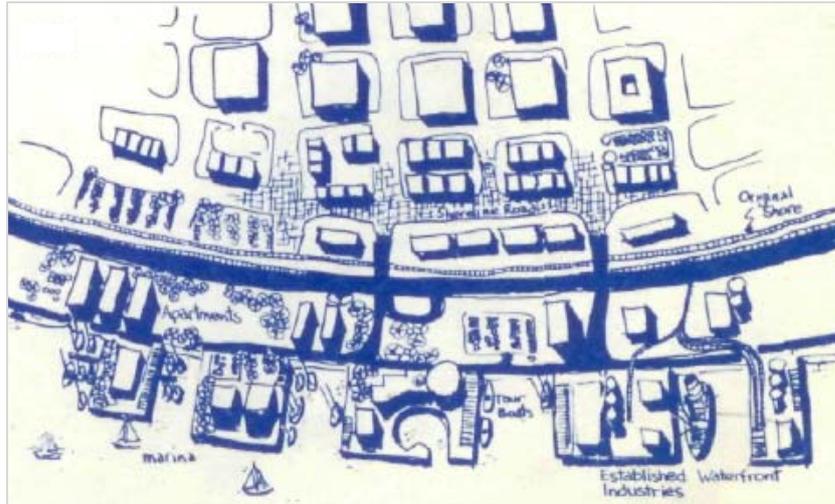


Figure 2.13 Typical Port Development Phase 9: Reopening of the Waterfront to the Public.<sup>32</sup>

As the typical pattern of port development summarized, the connection of the city center has been lost especially in the last century with the introduction of intense sea trade and port activities resulted in the alienation of the settlements to marine life. The table below summarizes the process of how the port development affected the connection of the city center to the water's edge.

Table. 2.2 Relationship between Port Development and Connection with Water

	<b>Development Process</b>	<b>Connection with Water</b>
<b>Phase 1</b>	Existence of safe harbour for the development of a port	Direct contact with the natural shoreline
<b>Phase 2</b>	Period of rapid growth and development	The settlement still clung to the waterfront with a shoreline road providing primary access
<b>Phase 3</b>	The settlement emerging as a city and its waterfront as a port	Rows of newly constructed warehouses blocked the water's edge from the street

<sup>32</sup> Wrenn, D.M., 1983, p.11

Table. 2.2 Relationship between Port Development and Connection with Water (continued)

<b>Phase 4</b>	Replacement of wooden piers by bigger docks made of stone and fill material	The increasing of the distance between the city's center and its shoreline significantly
<b>Phase 5</b>	The introduction of railways which required a great amount of waterfront land.	Creation of more land with fill material which severed the central city from the waterfront
<b>Phase 6</b>	The original shoreline road became functionally less useful as the distance between it and the water increased	The central city was effectively detached from the shoreline and the waterfront was congested and difficult-to maneuver through
<b>Phase 7</b>	Decline of shipping activities	Demolition of the buildings along the old shoreline road subsequently and widening of the expressway
	Or Increase of shipping activities	Expansion of the port activities and the introduction of more industrial uses
<b>Phase 8</b>	Shipping was continued to increase	The scale of the waterfront increased significantly with the size of the elements of industrialization
<b>Phase 9</b>	The port area lost its original usefulness	Chance to open the waterfront once more to public use by developing recreational uses

Rapid decline of traditional industry over the last 30 years together with technological change has released large areas of land for redevelopment.<sup>33</sup> This has made it possible to re-use waterside locations to promote regeneration. Regeneration, however, depends upon finding new uses for the land and buildings adjacent to the water frontage. More importantly, it also means finding a new function for the water itself which may provide the impetus or *raison d'être* for regeneration (Moughtin 2003).

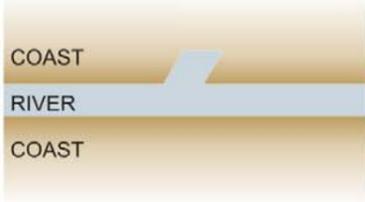
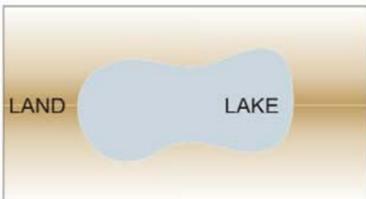
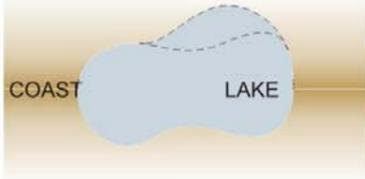
<sup>33</sup> Moughtin, C., 2003, p.174

## **2.2. Land-cut and Landfill in Waterfront Developments**

In the following pages we will put forward the different uses of land-cut and landfill methods with references to the world experiences. This analysis aims to present the space-water relationship in the coastal settlements and water related uses. By this way, the further discussions are made upon the use of the advantages and disadvantages of both methods in waterfront areas.

Different types of waterfront developments have been realized in all over the world by the use of land-cut and landfill methods. In the development schemes the type of the waterfront was the crucial component which shaped the development. The type and scale of the developments have been varying according to the type of the waterfront. The table below summarizes and explains the relationship between the type of the waterfront and the use of land-cut and landfill methods.

Table 2.3 The Relationship Between the Types of Waterfront and The Use of Land-cut and Landfill Methods.

TYPES OF WATERFRONT	LAND-CUT AND LANDFILL DEVELOPMENT IN WATERFRONTS
<p><b>SEASIDE</b></p> 	<p><b>LAND-CUT</b></p>  <hr/> <p><b>LANDFILL</b></p> 
<p><b>RIVERSIDE</b></p> 	<p><b>LAND-CUT</b></p>  <hr/> <p><b>LANDFILL</b></p> 
<p><b>SEASIDE &amp; RIVERSIDE</b></p> 	<p><b>LAND-CUT</b></p>  <hr/> <p><b>LANDFILL</b></p> 
<p><b>LAKESIDE</b></p> 	<p><b>LAND-CUT</b></p>  <hr/> <p><b>LANDFILL</b></p> 

As seen in the table in the previous page, there are 3 different types of waterfronts defined as;

1. Seaside,
2. Riverside,
3. Lakeside

Seaside and riverside has been also presented because this type fits into the spatial characteristics of the study area. The land-cut method in above mentioned types of waterfronts has been realized by the use of different excavation techniques and models, whereas landfill requires the use of extensive land reclamation techniques. The following pages will put forward the areas of use of both methods according to specific examples from different cities in the world.

### **2.2.1 Areas of Use**

As summarized above, the typical waterfront development covers diverse range of functions developed by different methods. Land-cut and landfill methods are also used for many different purposes in the development of the waterfront areas as well as water related activities such as transportation and commerce.

The use of both methods is mainly for public, commercial, industrial, transportation, and residential purposes. The methods are used either separately or interconnected in the development of above mentioned activities.

By the use of landfills extra land is gained for urban expansion. This paves the way for the development of more buildings and infrastructure. There are various examples of cities which have realized development scenarios on landfills which include the parts of New Orleans; Washington, D.C. (which is partially built on land that was once swamp); Mexico City (which is situated at

the former site of Lake Texcoco); Helsinki (of which the major part of the city center is built on reclaimed land); the Cape Town foreshore; the Chicago shoreline; the Manila Bay shoreline; Back Bay, Boston, Massachusetts; Battery Park City, Manhattan; the port of Zeebrugge in Belgium; the southwestern residential area in Brest, Belarus, the polders of the Netherlands; and the Toronto Islands, Leslie Street Spit, and the waterfront in Toronto. In the Far East, Japan, the southern Chinese cities of Hong Kong, Shenzhen and Macau, the Philippine capital Manila, and the city-state of Singapore, where land is in short supply, are also famous for their efforts on land reclamation.

In Netherlands to prevent flooding a lot of land has been reclaimed. Netherlands is actually situated below the water level as a result it is prone to flooding. These lands are called polders, where the land is also *below* the water level. Almost 20% of its land is reclaimed land<sup>34</sup>.

In Dubai, both land and artificial islands are created by land reclamation. Examples are the Palm Islands, The World, The Universe and the island which Burj al-Arab is situated on. The Palm Islands are developed for housing. The Palm Deira will be the largest man-made island when completed. This has definitely increased Dubai's land area, as well as its coastal perimeter.

Furthermore artificial isles are also part of landfilling. The Kansai International Airport in Osaka, Japan, and the Hong Kong International Airport are built on artificial isles off the coast of the main country. However, the development of artificial isles is quite high and very risky.

There are examples of both landfill and land-cut methods being used together. For instance, the building with nature program of Netherlands foresees the implementation of both methods. Waterman, Misdorp, and Mol

---

<sup>34</sup> Wikipedia, [http://en.wikipedia.org/wiki/Land\\_reclamation](http://en.wikipedia.org/wiki/Land_reclamation), accessed on 2009, September 9

(1998) state that “Another solution is provided by land reclamation in front of the coastline by integrating new land in sea and water in the new land (in the form of tidal lagoons, lakes, harbour basins, fresh water lenses under dunes and water ways). In all solutions, both in the hinterland and in the new land, water plays a crucial role. This should demand an integrated care of the condition and use of water systems, comprising the environmental compartments water, air, water-beds, banks and shores, soils and groundwater with their physical, chemical and biological aspects. In short: integrated water management.”

Furthermore, Waterman, Misdorp, and Mol (1998) add that “Within the master plan special attention should be paid, not only to integration of land in water but also of water in old/new land in the form of both salt and fresh water systems wherever necessary. This include tidal lagoons and inlets, harbour basins, lakes, canals, fresh water lenses under dunes, taking into account groundwater levels and water quantity and quality. It should be noted that the concept is not only applied in the field of land reclamation, but also in the existing hinterland by creating inland surface waters through inundation and excavation, for instance behind the coast and also in the river landscape. In these cases new and wide land-water border zones are created for nature development through activities such as mining of raw materials (clay, sand, gravel) and constructing storage basins for water (increasing river storage capacity for freshwater supply and diminishing risks of flooding). It is fascinating that if these activities are carried out (Waterman 1991, 1997) other positive effects follow, such as development of natural ecosystems, tourism and recreation, but also increasing safety against flooding, freshwater storage and providing building materials”.

Another important issue is ecology in the development waterfronts by landfill and land-cut methods. Jones, Ealey, Baca, Livesey, and Al-Jamali (2007) state that “...destruction of coastal ecosystem is proceeding at ever

increasing rates with tidal flats replaced by corniches, marinas, hotels, artificial beaches and most recently, artificial islands.”

In the worse cases several kilometers of tidal flat is reduced to 5 m of vertical concrete wall. Replacement artificial beaches are often steep, unstable and constructed of desert aeolian sand which is not suitable for the development of meiofauna. Al-Jamali et al. (2005) cite several examples of poor construction design leading to further degradation of the coastal zone (Jones, Ealey, Baca, Livesey, and Al-Jamali 2007).

However, these authors also describe coastal developments which may benefit coastal ecosystems by providing new areas of intertidal and shallow subtidal productivity. These developments take the form of residential and recreational developments around lagoons and waterways created from low lying sabkha and desert of low ecological value. Studies on one example, West Bay Lagoon, Qatar, which was opened to the sea in 1996 (Al-Jamali et al., 2005), reveal no significant difference between most intertidal/benthic lagoon marine communities and those in the open sea (Jones, Ealey, Baca, Livesey, and Al-Jamali 2007).

With 170 km of water ways Al-Khiran Pearl City, Kuwait, forms the largest example of this alternative approach to coastal development. In total over 30 km<sup>2</sup> of water ways, beaches and planted areas, including mangrove and salt marsh are planned, which should more than compensate for the estimated 20 km<sup>2</sup> of coastal habitat lost to reclamation in Kuwait during 1975-1994 (Bishop, 1999). The development is staged and Phase A1 representing approximately 15% was opened to the sea in early 2004 (Jones, Ealey, Baca, Livesey, and Al-Jamali 2007).

Present results, taken together with other examples (Al-Jamali et al., 2005) suggest that it is possible to attain similar levels of productivity and ecological

value in artificially created inland waterways to those found on natural shores and in shallow subtidal habitats. If so perhaps such developments should be considered as a compensatory solution for infill and reclamation, and given high priority in future coastal planning and management deliberations (Jones, Ealey, Baca, Livesey, and Al-Jamali 2007).

The method of land-cut could be applicable possibly in several different ways which are;

- Creation of a completely new shore along seaside/riverside/lakeside settlements by excavation,
- Revitalization/transformation of the areas created previously by land-fills in order to provide access of public to the water's edge again,

Potential development zones could include;

- Degraded urban areas located by waterside such as;
  - Former port facility and industrial activity zones (Baltimore),
  - Former derelict/abandoned urban service areas.
- Areas which have a risk of natural disasters such as;
  - Marshlands,
  - Earthquake prone zones with tsunami risk located next to the seaside,
  - Flood plains which carry overflowing risks located next to waterside.
- Vacant urban areas which have a development potential for tourism, recreation, and transportation uses.

The matrix below summarizes the potential areas of use of land-cut method in urban areas.

Table 2.4 The Potential Areas of Application of Land-cut Method in Urban Areas

	<u>Group - 1</u> Degraded urban areas		<u>Group - 2</u> Areas which have a risk of natural disasters or environmentally sensitive			<u>Group - 3</u> Vacant urban areas with a development potential by the waterside		
	Ports & Industrial Facilities	Other Urban Service Areas	Flooding	Tsunami & Earthquake	Marine Habitats & Marshlands	Tourism	Recreation & Other Public Uses	Transportatio n
<b><u>Type - 1</u></b> Creation of a new shore by urban transformation		X	X	X	X	X	X	X
<b><u>Type - 2</u></b> Revitalization/ transformation of the areas created by land-fills	X	X	X	X	X			

The applicability of land-cut method in the study area will be evaluated in detail in the 5<sup>th</sup> chapter in the study. However, it is necessary to mention here that the land-cut method which could be applicable in Kuşdili Meadow and Kuşdili Stream falls into Group-1 of Type-1 development class in the matrix. Furthermore, with its development potential, it is possible to classify the study area partially into Group-3.

### **2.2.2 Advantages and Disadvantages of Landfill and Land-cut**

The use of landfill and land-cut methods carries several advantages and disadvantages depending on the geographies of application and type of development. For instance, the purpose of reclaiming land in Singapore is to expand land area, but for the Netherlands, is to prevent flooding. In the following pages, advantages and disadvantages of both methods are mentioned by providing specific examples from Turkey as well as from abroad.

#### **Landfill**

##### **Advantages:**

- Gaining extra land for urban facilities and amenities where the land is scarce or expensive for;
  - New residential quarters for housing supply,
  - Recreational facilities for the growing population such as parks, walking/cycling paths, and other type of public uses,
  - Expansion of commercial and industrial activities and transport needs,
- Prevention of disaster risks (Netherlands-This approach is very helpful in for effective long-term erosion control as well as for eradication of weed management. All of these benefits provide long-term savings).
- Ownership problems are reduced since the filled area belonged to public or could be transferred to private use easily

- New land means new urban rent. The filled areas are sometimes subject to private development via giving use of usufructs to the private entities.

**Disadvantages:**

- Separation between the coastal zone and the urban core,
- Insensitive and inappropriate development in waterfront zones regarding environmental risk issues (landslides, earthquakes, tsunami, flooding, loss of marine life, etc.)
- reducing the quality of land
- high costs of filling and time taking activity
- redetermination of coastline causing conflicts with the local administrations
- limitation of public access to the water's edge.

**Landcut**

**Advantages:**

- Increasing interaction between the coastal zone and the urban core and the use of sea shore in a more efficient way.
- Prevention of natural disaster risks by the creation of a disaster protection zones while increasing the marine ecosystem and habitat.
- Increase the use of waterside for the beneficiary of the urban residents by the creation of water related uses and activities.
- Production of the quality of waterside spaces by transforming / regenerating / renovating the derelict / degraded / abandoned zones with effective design methods/strategies.
- Increase in the quality of space, which in turn brings the increase in the value of the area since it creates an attraction for more people.
- Realizing the potential for the protection and creation of habitats of marine life interest and amenity value.

- Supporting a marine culture by the creation of sea related social and cultural activities and festivals in the area.

**Disadvantages:**

- Loss of urban land,
- High costs of excavation.
- Ownership problems in the areas of application which requires decisions of expropriation for the lands.
- Lack of legal and administrative rules and regulations regarding land-cut method.

Landfills give the city administrations an opportunity to gain extra land for development where there is a scarcity of urban land proper for further expansion in the coastal settlements. However, there are several risks of developing landfills in the urban settlements as summarized above.

One of the main risks of landfills in coastal settlements is that the increasing separation between the urban centre and the coast. When the coast is extended towards water to provide other services and facilities, in many cases new developments along the coast cannot be integrated within the existing urban network in a proper way which results in the weakening of connection of important urban nodes to the coast, decreasing public access to the water's edge, and increasing alienation of public to a life with water.

Newly constructed highway on the Black Sea coastline is a good example in Turkey in terms of showing the separation of urban cores from the coastal zones. The highway lies 542 kilometers along the Black Sea region of Turkey known as "Karadeniz Sahil Yolu" starting from Samsun province on the northern part to the town of Sarp on the north-east of Turkey. The construction of the highway lasted in 19 years and before, during, and after the construction it was a matter of many discussions in different levels

between the central government institutions and other civil organizations including professional chambers, NGOs, and academic institutions etc. The project has foreseen the construction of 542 kilometers highway including tunnels, viaducts, and landfills on the coast as well. The reasons of why the central government has shown a need to construct for the highway were the easing the connection of north-eastern provinces to the western parts of the country, promoting commerce, industry, and transportation network in order to increase the economic growth in the cities along the new highway network.

Günay (2009) considers the issue as an ontological problem. “A more recent case in terms of man’s enframing of nature is the so called Black Sea Coastal Road (Karadeniz Sahil Yolu). Objection to that portion of the road passing through the town of Fındıklı was carried again to the Council of State. Being a member of the expert team (5), Günay observed the engineer’s approach which caused the termination of a shore-line of thirteen kilometres with very unique beach formations (6) as the engineer fails to see that the seashore (in the original text, the river), as well as himself is sacred and deserves to be heard”.

Günay (2009) discusses that “as a part of the 542 kilometer Black Sea coastal road, the sea fronting Fındıklı settlement was filled for the construction of expressway, although there was an alternative that might be built inland on the south of the settlement, which required three tunnels. The engineers claimed that this would cost three times as much the landfill alternative; a typical process of enframing. Günay (2009) criticizes the approach of engineers that “The Cartesian mind considered the problem as that of cost comparison. It did not perceive that the sea and its shoreline were beings, just like the human being; primal oneness of the four - earth and sky, divinities and mortals.”

Heidegger, Beckman (2000 cited in Günay 2009) criticize such engineering attitudes, and claim that many engineers do not listen. It is not that they do not listen to the environmentalists, but “that, as a being whose very essence is to-be-there, to witness the whole of what is, the engineer fails in that essential task of human fulfillment. The engineer fails to see that the seashore (in the original text, the river), as well as himself is sacred and deserves to be heard”.

As a result of the decision taken by the Trabzon Council of Protection of Cultural and Natural Beings in 2005, the previous decision to protect the shore was cancelled and eventually the sea is filled to destroy the shoreline of the Black Sea in Fındıklı (Günay, 2009).

The conflicts have been raised by the residents of Fındıklı which have taken long lasting courts. In the end, the issue is transferred to the Supreme Court and the court has given the decision favouring the residents in November, 2009. In the decision it is mentioned that the construction of Black Sea Region highway is not in compliance with the planning principles. However, even the decision was positive, the road had already been opened and operating.

Table 2.5 Advantages/Disadvantages Matrix for Landfill and Land-cut Methods

		Land-cut		Landfill	
		Advantage	Disadvantage	Advantage	Disadvantage
<b>Spatial</b>	Gaining extra land for urban facilities and amenities			X	
	Creation and Expansion of a Shore Line	X			
	Production of the quality of waterside spaces	X		X	
	Prevention of Disaster Risks	X		X	
	Increase in the quality of space	X		X	
	Loss of urban land		X		
	Insensitive and inappropriate development in waterfront zones				X
<b>Social</b>	limitation of public access to the water's edge				X
	Supporting marine culture	X		X	
	Increasing interaction between the coastal zone and the urban core	X			
<b>Economic</b>	Creation of Economic Value	X		X	
	High Development Costs		X		X
<b>Administrative</b>	Ownership Problems		X		
	Legal & Administrative Problems		X		X

According to the research above, it could be observed that both landfill and land-cut have distinct characteristics and areas of use. In some cases, both of them are applied and serve as solution tools in the areas of application whereas in some cases only one is used as a solution. At present, landfill is the method which is more appreciated and widely used by public administrations and commercial entities, etc.

However, taking into consideration the advantages and disadvantages of both methods, land-cut could be an alternative from various aspects mentioned above in terms of creating a different spatial, social, economic, and legal relationships regarding development. In the next chapter, how the legal and administrative structure should be improved to support the creation of those social, economic, and spatial relationships by land-cut method will be discussed.

## CHAPTER 3

### LEGAL AND ADMINISTRATIVE BACKGROUND OF COASTAL DEVELOPMENT IN TURKEY

The related legislative framework which is in force at present in terms of shaping the waterfronts is introduced in this part. In doing this, the Coastal Law<sup>35</sup> is investigated and the reasons for the current spatial developments on the waterfronts is defined and clarified. Furthermore, the deficiencies of the current laws are evaluated with an emphasis on the creation of landfill and land-cut areas.

#### **3.1 Development of Legislation Regarding the Coastal Development in Turkey**

The coastal legislation in Turkey is based on article 641 of the Civil Law<sup>36</sup> numbered 643 which was issued in 1926. According to the article, any unclaimed goods and properties belong to the state and are public property available for public use. Since the coasts are also regarded as unclaimed property, they are open to the use of public. The Municipality, Structure, and Roads Law<sup>37</sup> no. 2290 (1933/1957) and the Development Law<sup>38</sup> no. 6785 were the other regulations in which the coast and the coastline were mentioned.

---

<sup>35</sup> Kıyı Kanunu

<sup>36</sup> Medeni Kanun

<sup>37</sup> Belediyeler Yapı ve Yollar Kanunu

<sup>38</sup> İmar Kanunu

The initial legislation regarding planning and settlement by sea, lake, and riversides and the coastal zones in effect of these was made by supplemental articles 7 and 8 added by the Law no. 1605 dated 11.7.1972 to the Zoning Law<sup>39</sup> numbered 6785.

After Zoning Law no. 1605, the article 43 on Public Interest of 1982 Constitution also includes a provision about utilizing the coasts. According to the article:

- The coasts are areas under the state's sovereignty and disposal,
- In the utilization of sea coasts, lake shores or river banks, and of the coastal band along the sea and lakes, public interest shall be taken into consideration with priority.
- The width of coasts and coastal band according to the purpose of utilization and the conditions of utilization by individuals shall be determined by law.

The Coastal Law<sup>40</sup> no. 3086 dated 01/12/1984 which was prepared according to the article 43 of 1982 Constitution was cancelled by the Constitutional Court and until the new law came into force, Circular no. 110 was effective.

In the later period Coastal Law no. 3621 was accepted on 17/04/1990. However, some of the articles of this law were cancelled by the Constitutional Court in 1991, and the new Coastal Law no. 3830 which brought several changes to the law no. 3621 was accepted and came into force on 11/07/1992. Later on Directives relating to Law no. 3830 dated October 13, 1992 and following Revisions of Directives in 1994 and in 1996 came into force.

---

<sup>39</sup> İmar Kanunu

<sup>40</sup> Kıyı Kanunu

At present, the legislation in force for coastal development is the Coastal Law no. 3830 pursuant to the Amendment on the Coastal Law no. 3621 and the related directives dated 1992, 1994, and 1996. The related legislation about waterfront development in Turkey is summarized below:

Table 3.1 The Development of the Coastal Law in Turkey<sup>41</sup>

<b>Coastal Regulation</b>	<b>Date Issued</b>
Civil Law No. 643, Article 641	1926
Article 4/1 of the Municipality, Structure and Roads Law no. 2293	1933/1957
Supplemental article 7 added by the Law no. 1605 to the Development Law No. 6785	July 11, 1972
Directives of supplemental articles 7 and 8 of Development Law	January 18, 1975
Article 43 of the Constitution of the Republic of Turkey	1982
Coastal Law no. 3086	December 1, 1984
Directives pursuant to the Coastal Law no. 3086	May 18, 1985
Decree of the Constitutional Court pertaining to the cancellation of several articles of the Law no. 3086	July 10, 1986
Circular no. 110	July 15, 1987
Coastal Law no. 3621	April 17, 1990
Directives pursuant to the Coastal Law no. 3621	August 3, 1990
Decree of the Constitutional Court pertaining to the cancellation of several articles of the Law no. 3621	January 23, 1992
Coastal Law no. 3830 pursuant to the Amendment on the Coastal Law	July 11, 1992

<sup>41</sup> Durukan 1997, Büyükvelioğlu 1998 cited in Ceylan, E.Ç., 2006, p.14

Table 3.1 The Development of the Coastal Law in Turkey (continued)

Directives relating to Law No. 3830	October 13, 1992
Revision of Directives	March 30, 1994
Revision of Directives	July 27, 1996

Other legislation related to coastal development is given in the table below.

Table 3.2 Legislation about Coastal Lands<sup>42</sup>

<b>Name and Number of the Law</b>	<b>Date of Acceptance</b>
The Harbours Law No: 618	April 14, 1341
The Law related to Waters No: 831	April 28, 1926
The Civil Law No:743	October 4, 1926
The General Hygiene Law No: 1593	
The Forestry Law No: 6831	August 31, 1956
The Marine Products Law No: 1380	March 22, 1971
Marine Products Regulation No: 7/6719	June 28, 1973
The Constitution	1982
The 1982 Tourism Incentives Law No: 2634	March 12, 1982
The Coastal Security Force Law No: 2692	July 9, 1982

<sup>42</sup> Özhan 2005, Durukan 1997, Alaca 1997 cited in Ceylan, E.Ç., 2006, p. 26.

Table 3.2 Legislation about Coastal Lands (continued)

Conservation of Cultural and Natural Assets Law No: 2863	July 21,.1983
The Environmental Law No:2872	August 9, 1983
The National Parks Law No: 2873	August 9,.1983
The Bosphorus Law No: 2960	November,18,.1983
The Development Law No: 3194	May 3,.1985
The Decree of Cabinet for the Establishment and Responsibilities of the Ministry of Transport No:3348	April 9,.1987
The Water Protection Regulation based upon the Environmental Law	1988
Directives Relating to the Non-Agricultural Use of Agricultural Areas	March 11,.1989
The Decree of the Special Environmental Protection Areas No: 383	October 19,.1989
The Coastal Law No: 3621	April 4,.1990
The Regulation Related to the Coastal Law No: 3830	July 11,.1992
The Decree of the Establishment and Functions of the Undersecreteriat for Maritime Affairs No: 491	August 10,.1993
The Municipalities Law No: 5393	July 3,.2005

### 3.2 Landfill and Land-cut Methods in Coastal Legislation in Turkey

The Coastal Law (no 3621/3830, date: 1990/1992) defines the coast as the area that lies between the coastal line and the coastal edge line. The coastal line is defined as the line that is formed by the intersection point of where water and land meet at natural and artificial lakes and rivers except for the

overflow times. The coastal edge line is the area along the seas, natural and artificial lakes and rivers after the coastal line towards the mainland that draws the natural boundary of sandy, pebbled, stony, rocky, reedy, swampy and similar areas formed by the water's movements (Abacioğlu 1994 cited in Ceylan 2006).

Regarding the landfill and land-cut methods, the legislation on coasts in Turkey describes the context how landfill areas can be developed and how the ownership and uses can be distributed in those areas. At present, there is not any specific description in the laws, parliament decisions, declarations, etc. related to land-cut and its implementation on the waterfront developments. Only in the article 6<sup>th</sup> of Coastal Law, it is written that it is illegal to excavate the coast and to mine sand, gravel etc. at scales which may cause changes at the coast.

The 7<sup>th</sup> article of Coastal Law (number: 3621/3830, date: 1990/1992) describes the rules and regulations for gaining land through landfill and drainage. The article permits landfill and drainage by the acquisition of a land use planning permit along the sea, lake and river coasts only in case of public benefit with attention and care to ecological characteristics. On the areas acquired by landfills, only social facilities such as roads, outdoor car parking areas, parks, open spaces and playgrounds are permitted. However, these landfilled areas are under the state's sovereignty and disposal, and cannot be subject to private ownership. However, acquisition of private property upon coastal filling as specified under article 8 of the Title Deed Act<sup>43</sup> no. 2644 is an exception (Eke 1995 cited in Ceylan 2006).

In addition to these, in reference with the Development Law no. 3194, the Tourism Incentives Law applies to the approval and implementation of the plans for coastal areas and shorelines with the exception of filled areas.

---

<sup>43</sup> Tapu Kanunu

According to the research above, the related legislation should be improved by the introduction of new concepts as well as the modification of several articles which have resulted in the creation of problems in terms of development on the shoreline.

- The creation of waterspaces by using land-cut method should be introduced in the coastal legislation.
- The potential areas of application of land-cut method should be defined clearly.
- The permitted activities and urban functions on the new coastal line and on the new waterspace should be defined.
- The technical aspects of application should be defined especially in terms of the definition of the boundaries of the newly created coastal line. Furthermore, the redefinition of Article 18 of the Development Law could provide an innovatory solution for the creation of land-cuts.
- Different incentives which will promote the use of land-cut method should be provided to the interested actors by the efficient introduction of the added value of the creation of a new shore and water related urban rent.

## CHAPTER 4

### KUŞDİLİ STREAM AND KUŞDİLİ MEADOW IN ISTANBUL

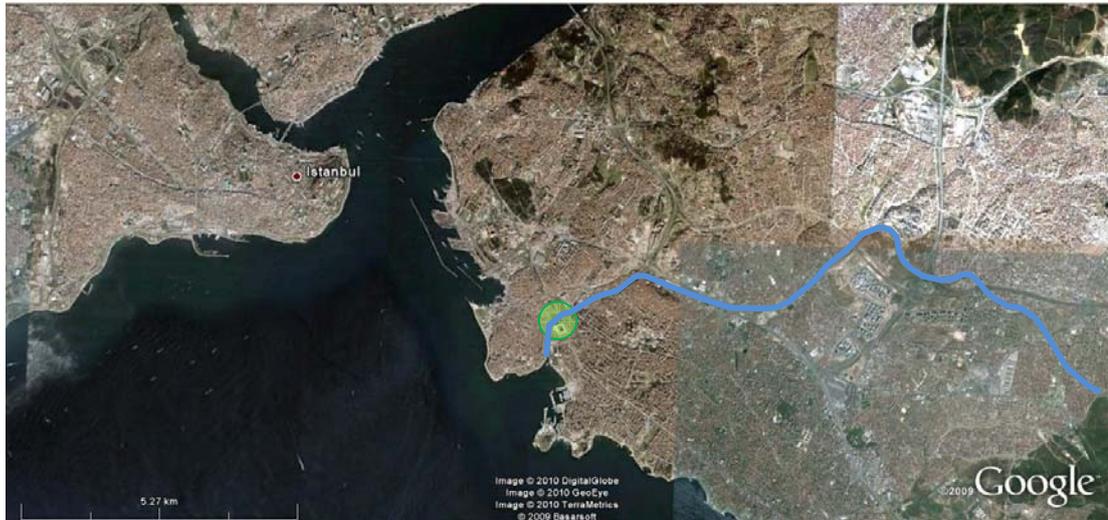


Figure 4.1 Aerial photo showing the location of Kuşdili Meadow (in green) and Kuşdili Stream (blue line) in Istanbul.<sup>44</sup>

As mentioned in the introduction part of the study, Kuşdili Meadow is selected as a case study since the area is found as being interesting in terms of hosting several problematic as well as the potential to be developed as land-cut area. Those features are summarized below;

#### Problems of the Area:

- The loss of its natural character after the use as a bazaar and present use as a car parking space,

---

<sup>44</sup> Google Earth Image.

- Planning problems as being subject to legal disputes between Istanbul Metropolitan Municipality (İBB), Kadıköy Municipality, Protection Boards, and the residents of the area.
- Derelict status of the area without any action taken to improve the quality of space and public realm.

Potentials:

- The existence of Kuşdili stream as a waterway carrying Marmara Sea water through inner parts of Kadıköy for the creation of a new shore,
- The historical and archaeological importance of the area as being the first settlement (habitation) area of Istanbul which could possibly attract public attention from cultural and tourism aspects,
- The existence of recreational urban functions in the close proximity such as Yoğurçu Parkı, Caddebostan Coastal Walking Path, Kalamış Marina, and the sports facilities of several clubs such as Fenerbahçe and Galatasaray.
- Location advantage as being accessible from other parts of the city by means of public and private transport.

Therefore, the method of land-cut could prove to be an urban design solution and tool in Kuşdili Meadow which enables;

- increasing the use of the waterside in a more efficient way for the beneficiary of the urban residents by the creation of water related uses and activities.
- the prevention of natural disaster risks by the creation of a disaster protection zones whereas promoting the creation of a marine habitat in the areas of use.
- the production of the quality of waterside spaces by transforming / regenerating / renovating the derelict/degraded/abandoned urban zones with effective design methods/strategies.

- the discovery of the potential archaeological richness of the area through excavations.
- creation of a new value to the area since it creates an attraction for urban residents by promoting land economy.

#### **4.1. Location and Physical Characteristics**

Kuşdili Stream rises from Çoban fountain in Kayışdağı located on the Asian side of Istanbul on the south-eastern part of Maltepe district. On its spring, it is named as Şerif Ali stream and continues flowing as Taşlıdere and gets strengthened with the inclusion of other small streams named Kireçocakları and Kapanalı, and gets the name *Kurbağalı Dere (Kuşdili Stream)*; passes through Hasanpaşa and meets Marmara Sea on Kalamış Bay. The stream widens as it approaches to Kuşdili Meadow where it once shaped the alluviums of the plain easily.

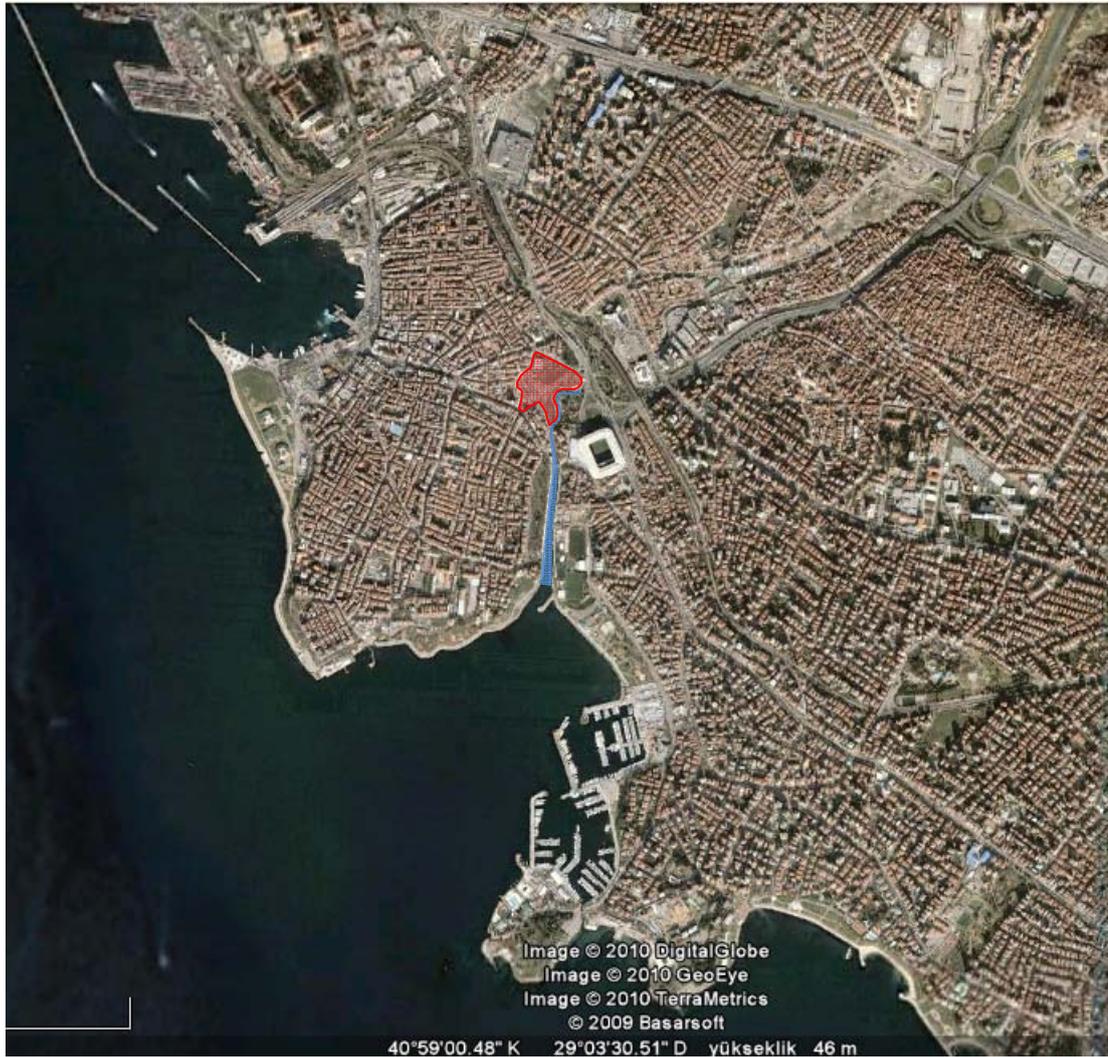


Figure 4.2 Aerial photo showing Kuşdili Meadow (in red) and Kuşdili Stream from Kalamış Bay entrance.<sup>45</sup>

Kuşdili Meadow was formed with the alluviums which had been brought by Kuşdili Stream. The meadow spread along the area which is known at present as Osmanağa neighbourhood. The meadow got smaller in terms of area during the rapid urbanization process of Istanbul especially after 1960s. The fertile lands of the meadow were covered by new houses, transport links, and commercial uses. At present, the remaining part of meadow has an area

<sup>45</sup> Google Earth Image.

of approximately 45,000 sqm having a smooth slope through west-east axis. This remaining part is located in the borders of Osmanağa neighbourhood of Kadıköy district.

The meadow is surrounded by Mahmut Baba Street on the north side, Tulumbacı Asım Street on the north-west and western side, Salı Pazarı Street and Dere Gazinosu Street on the south, and Kuşdili Stream on the east side. Pazar Yolu Street which passes through the meadow from southwest-northeast direction divides it into two pieces.

At present, the meadow is covered with asphalt and is used as a car-parking area by İBB. Furthermore, Kadıköy Fire Fighting Department is located on the northern corner of the meadow.

#### **4.2. History of the Site**

Despite some evidence found in the area which has shown the clues that there had been people living around Kuşdili Stream 1,500-3,000 years BC. the site has never been subject to a deep archaeological investigation. Therefore, the findings in the area were discovered either during a small archaeological excavation on Fikirtepe or during construction works of buildings and roads. Most of the findings were extracted from 2 m. below ground and are mostly the equipment which was made of stone, soil, and glass. However, Yoğurtçu Parkı area is regarded as the location of the first settlement of Istanbul estimated to have been in 675 BC.

It is known that a trade colony named Harhadon was established around 1000 B.C. by Pohenicians. Kuşdili Stream was more like an estuary at that time and the shoreline was far behind the actual shoreline between Fikirtepe-Hasanpaşa. Later on another settlement named Halkedon meaning *land of copper* was established which was lying on where Kadıköy district is at

present. Halkedon was famous for its Apollon Temple at that time. After the Byzantines established themselves on European side, they called it Chalcedon (Kalkedon) meaning *land of the blind* since they thought those who choose to live there instead of European side, must be blind.



Figure 4.3 Photo showing the Port of Kalkedon (on lower left side – circa 1696) .<sup>46</sup>

The archaeologists claim that according to some written sources Kalkedon had two ports one opening to Haydarpaşa Bay and another to Kalamış Bay at the entrance of Kuşdili Stream. Therefore, there is a considerable interest from archaeologists to the area.

<sup>46</sup> [http://historic-cities.huji.ac.il/turkey/istanbul/maps/nicolas\\_de\\_fer\\_1696\\_istanbul.html](http://historic-cities.huji.ac.il/turkey/istanbul/maps/nicolas_de_fer_1696_istanbul.html)  
accessed on 2009, November 17



Figure 4.4 The aerial photo and illustrations showing the estimated location of the ancient port.<sup>47</sup>

In Ottoman era, Kadıköy and surroundings were popular resorts and recreation areas among high level administrators as they had also been in Roman and Byzantine era. Many high level rulers including Ottoman sultans had mansions and palaces in the area lying until Bostancı. Especially in the 18<sup>th</sup> century, during Tulip Era in Ottoman rule, the importance of Kadıköy and its surroundings increased in terms of recreation and relaxation. Haydarpaşa, Çamlıca, Uzunçayır, Moda, Yoğurtçu, and Kuşdili meadows were between the areas which took public attraction (see fig. 4.5). Apart from being used for recreation, the area was also an important agricultural production zone. (see fig. 4.6)

<sup>47</sup> [http://www.kesfetmekicinbak.com/arkeoloji/08657/imperiaflex\\_0\\_7\\_0.jpg](http://www.kesfetmekicinbak.com/arkeoloji/08657/imperiaflex_0_7_0.jpg) accessed on 2009, December 2.



(a)



(b)



(c)



(d)

Figure 4.5 Historical photos of Kuşdili Stream (a),(c) and Kuşdili Meadow (b), (d) circa the beginning of the 20<sup>th</sup> century.<sup>48</sup>



Figure 4.6 Historical photo of Kuşdili Meadow circa the beginning of the 20<sup>th</sup> century.<sup>49</sup>

<sup>48</sup> <http://wowturkey.com/forum/viewtopic.php?t=37900> accessed on 2009, November 17

As being one of the important plains in Istanbul, Kuşdili meadow was being used as a recreation area by the residents of the Asian side of Istanbul for many centuries. However, during the rapid urbanization process of Istanbul, the meadow started to be used as a bazaar area until the relocation of Tuesday Bazaar to Uzunçayır located in Hasanpaşa neighbourhood recently.

Kuşdili Meadow has been used as Tuesday Bazaar in Kadıköy district of Istanbul since late 1970s. The bazaar was located in Yeldeğirmeni Street until 1970s. Later on it was used to be laid along İskele Street on Saturdays and along Uzun Hafız Street on Tuesdays. Saturday bazaar moved to Uzun Hafız Street due to the congestion it created along İskele Street. After the relocation of Saturday bazaar to Uzun Hafız Street, having two days of bazaar in a week created problems for the residents of the district. Therefore, both bazaars first relocated to Taşköprü Avenue, then to Kuşdili Meadow.



Figure 4.7 Kuşdili Meadow was used as Tuesday bazaar until 2008.<sup>50</sup>

<sup>49</sup> <http://wowturkey.com/forum/viewtopic.php?t=37900> accessed on 2009, November 17

<sup>50</sup> <http://www.mimdap.org/w/?p=12787> accessed on 2009, October 28

In the beginning, the bazaar was laid on Saturdays, however, due to the football competitions in Fenerbahçe Stadium in the weekends and the need for parking space for the vehicles, the bazaar started to be laid on Fridays and later on also Tuesdays. Throughout time the bazaar area paved with asphalt, a new road passing through the meadow (Pazar Yolu Street) was constructed, the trees of the meadow were cut, and the area lost its character as a recreational zone. After being used for nearly 25 years, Tuesday bazaar has been moved to its new location in Hasanpaşa recently and Kuşdili Meadow remained vacant. At present the meadow is being used by car parking area by Istanbul Metropolitan Municipality (see *fig. 4.8 and fig. 4.9*).



Figure 4.8 General view of Kuşdili Meadow today as a car-parking area.



Figure 4.9 Car-parking areas in Kuşdili Meadow (a), (b).

### 4.3. Analysis of Kuşdili Meadow and Kuşdili Stream

In this part of the study, the further understanding of spatial features of Kuşdili Stream and Kuşdili Meadow are put forward. For a clear understanding of the spatial components, qualitative (maps, satellite images, etc.) and quantitative materials (images, etc.) are used.

Since Kuşdili Stream is a linear watercourse its analysis covers wider area starting from its source until where it meets Marmara Sea. However, more emphasis is given to the analysis of spatial interaction where it meets the sea and Kuşdili Meadow.

As being located in one of the most densely populated districts of Istanbul, Kuşdili Meadow was used as Tuesday Bazaar area until the relocation of the bazaar to Hasanpaşa recently. At present, it is a car-parking area managed by İspark which is a company of İBB. Therefore, the analysis of the meadow is centred on the changes on its function which resulted in the current status of the area.

#### **4.3.1. Spatial Components of Kuşdili Stream**

As indicated in the previous parts, Kuşdili Stream rises from Kayışdağı on the eastern part of Kadıköy district. The stream passes from various districts of the Anatolian side of Istanbul along its approximately 14 km. course. For a better understanding of its spatial interaction with the settlements, this study analyzes the stream in four different sections along its course between Kayışdağı and Marmara Sea. These can be considered as;

- Kayışdağı-Ataşehir section
- Ataşehir-Göztepe Junction section
- Göztepe Junction-Uzunçayır Junction section
- Uzunçayır Junction-Marmara Sea section

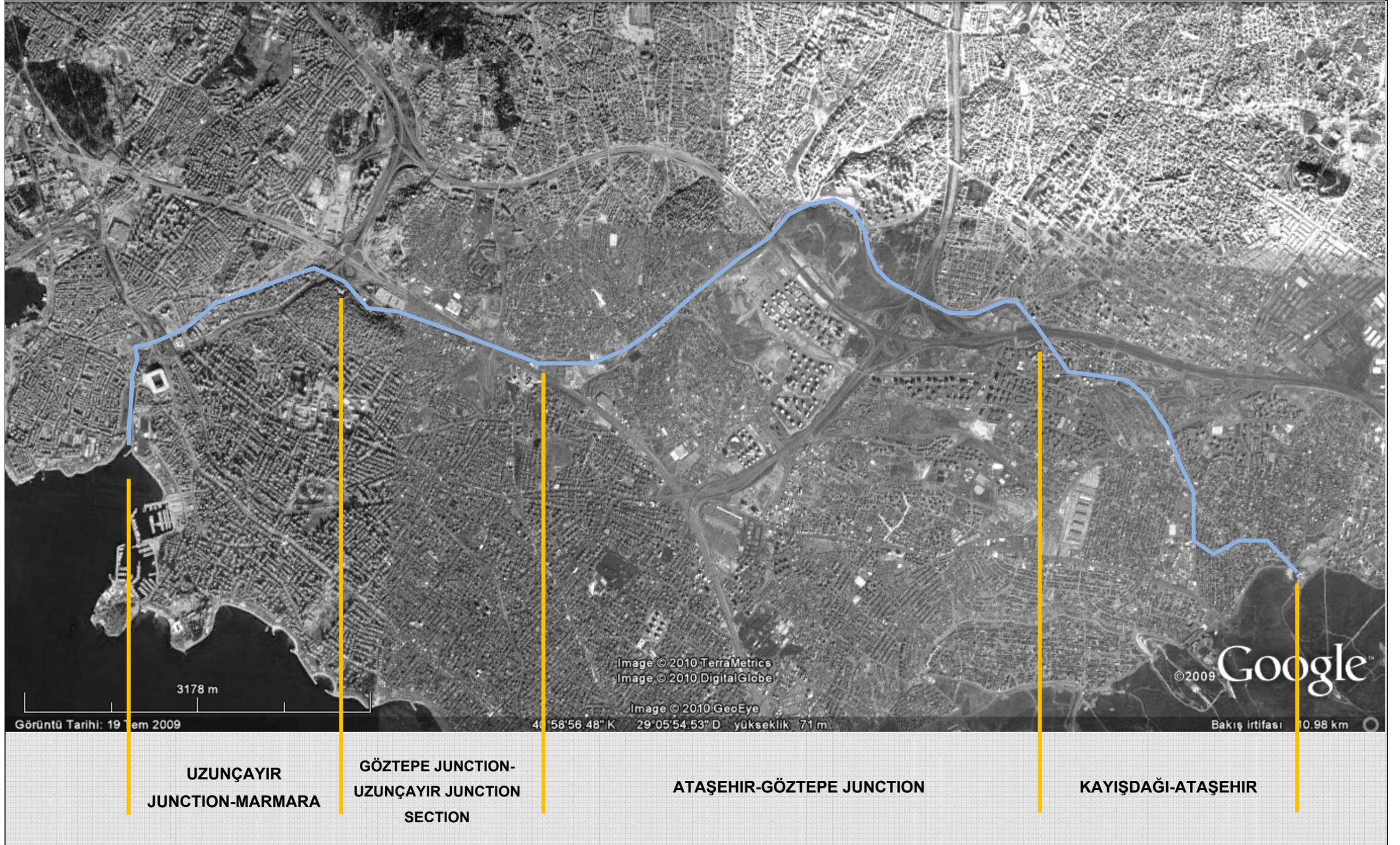


Figure 4.10 Map of Sections of Kuşdili Stream.

Below, these four sections of Kuşdili Stream are described according to their spatial characteristics and their interaction with different urban functions in the following pages.

#### **4.3.1.1. Kayışdağı-Ataşehir Section**

The first section starts with Kayışdağı where the stream rises. After its source the stream heads to the north-west through Ataşehir direction after passing Kayışdağı and Atatürk neighbourhoods. In this section, along its path the stream flows mainly underground through canals and comes to the surface close to TEM highway.

Kayışdağı hill is the third highest point in Istanbul with its 438m. height. Kuşdili Stream rises from the western part of Kayışdağı hill and passes through Kayışdağı neighbourhood. Kayışdağı neighbourhood spreads along the lower skirts of Kayışdağı hill. The neighbourhood is characterized by mostly residential uses. Apart from residential functions, educational functions have developed in the area recently with the opening of Yeditepe University. The other important uses in the close proximity to the stream are Darülaceze Kayışdağı Campus, Erenköy Customs Clearance Area, Istanbul Public Transportation Company (İETT) Bus Park. The neighbourhood is inhabited by middle and lower-middle class income families. While passing through Kayışdağı neighbourhood the stream has weak spatial interaction with residential, educational, social, and commercial functions. Along Can Parkı which is a small park located on the Bostancı Dudullu Avenue and İmar İskan Blokları Avenue junction in, the stream comes to the surface and has some vistas from the park.

After flowing from the surface parallel to İmar İskan Blokları Avenue to the north, the stream approaches to Atatürk neighbourhood. Atatürk neighbourhood has been one of the new development areas of Istanbul for the last 15 years. The area is characterized mainly by high rise residential

blocks and commercial uses including shopping centers, shops, cafes, and restaurants serving to the residential uses. The neighbourhood is inhabited by middle and upper-middle class income families. Kuşdili stream flows mainly from the surface along the district, however, as in Kayışdağı, the spatial interaction with the other urban functions is limited. Only, along Asya Sitesi, Kardelen Sitesi, and Mimoza Sitesi the landscaping of the residential units have some attributes to the stream. However, those do not go beyond the foresting along the stream. When the stream arrives to Yeditepe Hearing-Impaired Primary School on the north of the neighbourhood, it flows underground since it is covered with earth and canalized in order to establish a recreation area for the housing estates around.

As the stream approaches to TEM highway from Atatürk neighbourhood direction, it goes again underground in order to pass the 8 lane highway. After passing under the highway, the stream enters into the boundaries of Ümraniye district.

The first section where Kuşdili stream flows through could be summarized as giving less opportunity for the development of the public spaces, activities and functions along the stream due to weak spatial integration with the other urban functions.

#### **4.3.1.2. Ataşehir-Göztepe Section**

The second section of Kuşdili stream starts from the point where it passes under TEM highway from Ataşehir district to Ümraniye district to the north. Along its path, the stream passes through Tatlısu and Çamlık neighbourhoods to the north and then turns to the west along Barbaros neighbourhood and heads towards southwest to Mustafa Kemal, Örnek and Yeni Sahra neighbourhoods and reaches to Göztepe main junction on E-5 highway.

There is Kadıköy Municipality animal house just at the point where Kuşdili stream passes to the northern part of TEM highway. After that point the stream flows along Tatlısu and Çamlık neighbourhoods through northern direction. Both are residential urban areas with mostly middle and lower-middle income population living. Along this route the stream flows from the Kozyatağı-Çamlıca junction side of the neighbourhoods, resulting in very limited interaction with the urban functions of the area. Tatlısu and Çamlık neighbourhoods are settled on the southern slopes of Ümraniye district so, the residential, commercial, and social functions are developed on the upper parts of both neighbourhoods. Thus, we may conclude that there is not any interaction of the residents in the neighbourhoods with the stream along this route (see fig.4.11).



Figure 4.11 Photo showing Kuşdili Stream along Ataşehir-Çamlık destination. The stream flows through in between the valleys seen in the front-side.<sup>51</sup>

---

<sup>51</sup> [http://wowturkey.com/t.php?p=/tr18/memocan\\_atasehir01.jpg](http://wowturkey.com/t.php?p=/tr18/memocan_atasehir01.jpg) accessed on 2010, January 5

After passing by Tatlısu and Çamlık, the stream slightly turns to the western side and flows under TEM highway again and passes to another side of the highway approaching Barbaros neighbourhood. On this route from Çamlık to Barbaros, there are few residential quarters which the stream passes nearby. There are Soyak Yenişehir quarter and some smaller residential units in the close proximity. However, the area remaining on the south-west of the stream in Barbaros neighbourhood is proposed by the government to become the new financial centre of Istanbul. Therefore, although there are some vacant plains in the close proximity to the stream, the nearby areas are subject to important spatial changes in terms of function. If the proposed area where Kuşdili Stream flows nearby in Barbaros neighbourhood will be developed as a financial centre, it is probable that the stream will be affected either positively or negatively from this spatial change. After Barbaros, the stream reaches to the southern border of Mustafa Kemal neighbourhood. Since the neighbourhood is settled on the slope and the stream passes from another part of the 3004<sup>th</sup> Avenue which is parallel to Kuşdili Stream, similar to the other neighbourhoods there is weak spatial interaction of the settlement with the stream.

After Mustafa Kemal neighbourhood, the stream flows through Örnek neighbourhood on the north-west and Yeni Sahra neighbourhood on the south-east constituting the border between the two neighbourhoods. Both neighbourhoods have mainly residential functions and commercial services which serve to the residents of those areas. There is also a small football pitch in the area used by the residents which is located on the south of the stream along Ali Fuat Cebesoy Avenue. Furthermore, this part has importance since the other two streams, Şerif Ali and Çamlıca, join to Kuşdili stream and flows as Kuşdili Stream from that point. Although, the residential units are squatter-like residential developments at the junction points of the other streams, there are some vacant spaces which are formed for the risk of

possible flooding. These spaces have a potential to be developed as public spaces in the area.

As the stream approaches to Göztepe Junction of E-5 highway, along its path there are few remaining parts of old agricultural production areas of Kuşdili Meadow. Surprisingly, the owners still grow vegetables on their lands, despite the fact that the area is highly urbanized and lost its natural character. Just one plot behind those areas, the construction of a new big residential project has been started recently on one of the remaining big empty plots in the area. Kuşdili stream flows from the southern part of the residential project area and from the north of the agricultural lands, connecting to the Göztepe Junction.

As a result, the second section of the Kuşdili Stream is the longest part and it gives more spatial development opportunities on the parts where it flows through the residential quarters.

#### **4.3.1.3. Göztepe Junction-Uzunçayır Junction Section**

Göztepe Junction – Uzunçayır Junction is the third and the shortest section of Kuşdili Stream which covers the area where the stream flows parallel for 1.9 km. from the south of E-5 motorway which is one of the main arterials of Istanbul (see *fig.4.12*).



Figure 4.12 Photo showing Kuşdili Stream along Göztepe-Uzunçayır destination.<sup>52</sup>

Kuşdili Stream enters underground and flows underneath by coming to the surface in some parts of Göztepe Junction on E-5 motorway. After coming to the surface after the junction, the stream continues from the south of E-5 road flowing parallel to it.

Until the stream reaches to Uzunçayır junction, it flows from the south of Haydarpaşa Port Container Storage area and State Supply Office Regional Directorate (DMO) facility approximately for along 1.3 km. Fikirtepe neighbourhood which is known as the first settlement in Istanbul from Roman times is located on the south of the stream. The neighbourhood is characterized by the mix of urban functions, residential being the main use. There are also commercial uses developed in the neighbourhood.

With the effect of E-5 highway, there is limited spatial interaction with the residential quarters. The storage area and DMO facility which are located between the highway and the northern part of the stream, limit the

---

<sup>52</sup> [http://wowturkey.com/t.php?p=/tr120/kemalsoylemez\\_goztepekoprusu.jpg](http://wowturkey.com/t.php?p=/tr120/kemalsoylemez_goztepekoprusu.jpg) accessed on 2010, January 5

accessibility of the stream from the main arterial. Furthermore, on the southern parts of the stream along Yumurtacı Abdi Bey Avenue some service uses such as small warehouses, vehicle parks, car repair and car-wash facilities create unfriendly atmosphere which is limiting the public enthusiasm to be access to the stream.

As the stream approaches to Uzunçayır Junction, it goes underground again in order to pass to the other side of Istanbul ring road. After that part, it reaches to Uzunçayır Meadow located on the western part of the Uzunçayır Junction.

The third section is the weakest part of Kuşdili Stream in terms of spatial integration to the other urban functions due to the existence of E-5 motorway which limits the use of the stream for recreational purposes.

#### **4.3.1.4. Uzunçayır Junction-Marmara Sea Section**

The forth section of Kuşdili Stream starts from Uzunçayır Meadow and ends at Kalamış Bay where it meets Marmara Sea. Along its path the stream flows by constituting also the border between Hasanpaşa and Fikirtepe, Osmanağa and Zühtüpaşa neighbourhoods respectively.

As the stream reaches to Uzunçayır Meadow on the northern part it slightly heads through southwest to the centre of Hasanpaşa neighbourhood. After passing Uzunçayır Meadow to the south, the stream reaches to Dereboyu Street. Along the street the stream flows through educational and commercial uses on the northern side and residential uses on the south. Okan University Vocational College, Doğuş University Language Preparatory School, Kaptan Hasanpaşa Primary School, Private Kadıköy Gökşen Primary and Elementary Schools, and Private Küçük Prens Primary School are located on the northern edge of Kuşdili Stream. Furthermore, there are several other commercial and public uses located along the waterside such as office

buildings, Kadıköy Justice Hall C Block, Universal Hospital Kadıköy, and car parking spaces. The back gardens of those above mentioned uses face the stream; however, the parts facing the stream are used as car-park of the facilities and there are exterior walls of the plots which block the spatial interaction of the facilities with Kuşdili Stream.

Kuşdili Stream reaches to Hızırbey Avenue after passing through Dereboyu Street. At the junction point there is İETT Hasanpaşa Directorate and the parking and service facility of public buses of İETT which spreads along the both sides of the stream. The facility is circled with an exterior wall which blocks the public access along the waterside (see *fig. 4.13*).



Figure 4.13 Photo of İETT Hasanpaşa Facility along Uzunçayır -Marmara Sea destination.<sup>53</sup>

Kuşdili Stream flows through the southern end of Hasanpaşa neighbourhood after İETT facility. Along this route it passes from residential quarters on the

---

<sup>53</sup> [http://wowturkey.com/t.php?p=/tr284/deniz1764\\_Fotograf1188\\_Large.jpg](http://wowturkey.com/t.php?p=/tr284/deniz1764_Fotograf1188_Large.jpg) accessed on 2010, January 1

north and commercial uses on the south. There is a walking path aside the stream on the part where there are residential uses. The southern side is occupied by another car parking area and commercial offices. After that point, the stream flows through south-west reaching Fahrettin Kerim Gökay Avenue.

The stream passes under Fahrettin Kerim Gökay Avenue at this point and reaches at Kadıköy Wedding Hall on the south-west end corner of the avenue. There is the car-parking space of Kadıköy Wedding Hall to the north of the stream. There is a pedestrian bridge over the stream which provides connection between the wedding hall and car parking space. At the wedding hall part of the stream the bridge arrives at a gathering space which is landscaped from the riverside. Between the uses up to that part of the stream, this square is the unique one which has spatial attributes to the waterside. After that point, the stream reaches at the Söğütlüçeşme Train station which also includes the last stop of recently constructed Istanbul Metrobus route on the Asian side of the city (*see fig. 4.14*).



Figure 4.14 Aerial photo along Uzunçayır -Marmara Sea section. Kadıköy Wedding Hall and Söğütlüçeşme Station in the front, and Şükrü Saraçoğlu Stadium, Kuşdili Meadow, and Kuşdili Stream in the further back.<sup>54</sup>

Kuşdili stream flows from underground starting from the point it meets Söğütlüçeşme train station. Furthermore, the stream passes Söğütlüçeşme junction (Taşköprü Avenue) after the train station and comes to the surface at Kuşdili Meadow (former Tuesday Bazaar area on the north and small green area of the former meadow on the south). The stream flows towards west from the surface point around 100m., and then heads to the south by making a slight curve. The stream flows through Kuşdili Meadow for about 300 m. and arrives at Şefik Bey Street. Along that route the stream provides a lot of vistas to/from Kuşdili Meadow on the west and north-west, Söğütlüçeşme on the north-east, and Şükrü Saraçoğlu Stadium on the east part. The

<sup>54</sup> [http://wowturkey.com/t.php?p=/tr163/mustafakumbar\\_kadikoy4.jpg](http://wowturkey.com/t.php?p=/tr163/mustafakumbar_kadikoy4.jpg) accessed on 2010, January 1

accessibility of the stream is high at this point due to Söğütlüçeşme Train and Metrobus Station and other public and private transport options available (see fig. 4.15).



Figure 4.15 Aerial photo along Uzunçayır -Marmara Sea section. Kuşdili Meadow, Kuşdili Stream, and Yoğurtçu Parkı.<sup>55</sup>

After Şefik Bey Street the stream flows through the backyards of the residential buildings which are being used as restaurants and bars at present. These buildings are the gathering places for the fans of Fenerbahçe Football Club before the competitions in Şükrü Saraçoğlu Stadium. There is a weak pedestrian connection road along backyards of those buildings on both parts of the stream which connects Kuşdili Meadow to Yoğurtçu Parkı.

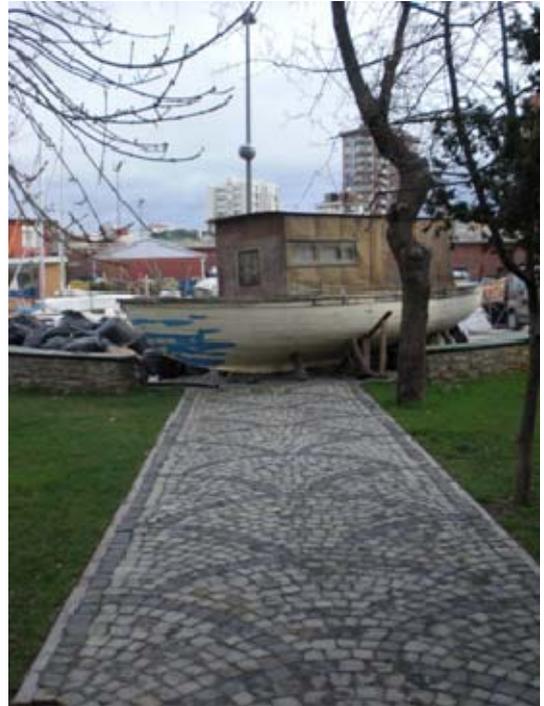
Before flowing into the Marmara Sea, Kuşdili Stream reaches Yoğurtçu Parkı on the west side and few old mansions and sports facilities of Fenerbahçe club including football pitches and rowing team equipment jetties on the east

<sup>55</sup> [http://wowturkey.com/t.php?p=tr259/mehmetduran\\_1.jpg](http://wowturkey.com/t.php?p=tr259/mehmetduran_1.jpg) accessed on 2010, January 1

side along its course. A vehicle and pedestrian bridge on Recep Peker Avenue passes over Kuşdili Stream at its meeting point with Yoğurtçu Parkı. Yoğurtçu Parkı is one of the parks which were planned in the beginning of 20<sup>th</sup> century in Istanbul during city Governor Cemil Topuzlu's jurisdiction. The park area was used to be known as Yoğurtçu Meadow in Ottoman Era. There were no trees grown on the area. It was thin, long rectangular grassland spread along the western side of Kuşdili stream. It was developed as a district park in 1923 with the help of Süreyya İlmen who was a former Ottoman Military general, and parliament member in the newly founded Turkish Republic. In 1930s, new trees were grown on the park which resulted in the actual status of the park. The park has been used as a recreation area starting from its establishment. The park was neglected and dilapidated during 1970s and 1980s. Later on several renovation works has been done latest being in 2009 (see fig. 4.16 and 4.17).



(a)



(b)

Figure 4.16 Yoğurtçu Parkı (a) and the Boats (b) on Kuşdili Stream.



Figure 4.17 Yoğurtçu Parkı (a), (b) after renovations done in 2009.

Yoğurtçu Parkı section is the most favourable part of Kuşdili Stream between the residents of the area. It gives opportunity to the visitors to get close to the waterside and make walks nearby. The walking path which goes along the Kuşdili Stream is also used by the fishermen and the boat owners for their water related activities.

On the opposite side of the stream, there are several old wooden Istanbul mansions most of which is in ruins (see *fig. 4.18*). Couple of them are renovated and being used as residential. The other uses are Fenerbahçe Club's rowing facilities, football pitches, few citizenship associations, and car parking spaces (see *fig. 4.19*). The waterside is paved and some landscaping and lightning components are established. The part where Kuşdili Stream flows into the Marmara Sea on this side is reachable by a walking path coming from Kalamış Marina side.



Figure 4.18 Old Mansion aside Kuşdili Stream



Figure 4.19 Yoğurtçu Parkı and Fenerbahçe Club's facilities<sup>56</sup>

<sup>56</sup> [http://wowturkey.com/t.php?p=/tr95/mustafakumbar\\_IMG\\_0060.jpg](http://wowturkey.com/t.php?p=/tr95/mustafakumbar_IMG_0060.jpg) accessed on 2010, January 1

The fourth and the last section of Kuşdili Stream offers more opportunity for the spatial integration possibilities of the stream with urban functions with the existence of open spaces, mix of diverse urban functions, and design.

The spatial characteristics of the four sections of Kuşdili Stream are summarized in the table below;

Table 4.1 The spatial characteristics of the sections of Kuşdili Stream

<b>Section</b>	<b>Characteristics</b>
<b>1. Kayışdağı - Ataşehir Section</b>	It gives less opportunity for the development of the public spaces, activities and functions along the stream due to weak spatial integration with the other urban functions.
<b>2. Ataşehir - Göztepe Section</b>	It is the longest part and it gives more spatial development opportunities on the parts where it flows through the residential quarters.
<b>3. Göztepe Junction - Uzunçayır Junction Section</b>	It is the weakest part of Kuşdili Stream in terms of spatial integration to the other urban functions due to the existence of E-5 motorway.
<b>4. Uzunçayır Junction - Marmara Sea Section</b>	It provides more opportunity for the spatial integration possibilities with the existence of open spaces, mix of diverse urban functions, and design

#### **4.3.2. Spatial Components of Kuşdili Meadow**

As stated in the previous pages of the study, Kuşdili Meadow was used to be an important area with its natural and recreational features on the Anatolian

side of Istanbul. The meadow is also one of the few remaining open spaces in the central part of Istanbul on Asian side where there used to be social and commercial interactions.

The spatial function of the meadow was primarily recreation throughout its history. However, beginning with the 1970s the area has started to be used for commercial purposes i.e. Tuesday Bazaar. It lost its natural character after the relocation of the bazaar on this site.

In the following pages, the spatial characteristics of Kuşdili Meadow are presented according to the three important functions which the meadow represents. Those are;

- Open Space and Recreation Area
- Public Space (Bazaar)
- Archaeological Site

#### **4.3.2.1. Kuşdili Meadow as an Open Space and Recreation Area**

*“Param olsa satar mıydım  
Kahve rengi elbisemi  
Damalı gömleği giyerdim  
Alaca mendili takardım  
Kuş dilinden geçerdim  
Param olsa satar mıydım  
Kahve rengi elbisemi”<sup>57</sup>*

As mentioned in the previous sections, the primary use of Kuşdili Meadow was recreation. The existence of Kuşdili stream which passes through the

---

<sup>57</sup> Oktay Rifat Horozcu (1956), Perçemli Sokak, Poem of Kuşdili

meadow and the fertile soil which gave the opportunity for the evolution of a charming and pleasant landscape attracted people throughout centuries.

In the Ottoman Era, the meadow was a favourable location for the people. Starting with spring, people were used to go to the meadow to make walks along Kuşdili stream, ride their small boats and swim in the clean waters of the stream. There were different species of trees grown on the meadow. These trees provided shelter in the summer to the people who were used to do also picnic under the trees of the meadow. The children were also enjoying the area since it was a wide plain where the children played football, run between the trees, and played games and swim on the shores of Kuşdili Stream (see fig. 4.20).



(a)



(b)

Figure 4.20 Kuşdili Meadow was an important location for recreation (a), (b) during Ottoman Era.<sup>58</sup>

There used to be a wooden bridge on Kuşdili Stream at the southern end of Kuşdili Meadow which was constructed in 19<sup>th</sup> century. There was once a small coffee house (kırkahvesi) which was open only during the summer. In

<sup>58</sup> <http://wowturkey.com/forum/viewtopic.php?t=37900> accessed on 2009, November 17

the garden of the coffee house, wrestling competitions were used to be held. There were couple of benches located along Kuşdili Stream. The women who were returning from Kadıköy were used to rest on these benches and rest before returning back to their homes located in Feneryolu and Kızıltoprak neighbourhoods.

The most active part of Kuşdili meadow was the point where it ended and Yoğurtçu Meadow started. At this point there were small sellers which were selling ice-cream&helva, şerbet, leblebi, water, and etc. under the trees located around the wooden bridge.

Furthermore, the meadow was not only a place where people just enjoyed the nature, but also a place of entertainment and culture. It hosted many taverns (gazino) where the people were used to go to eat and listen to classical Turkish music. People were wearing their nicest clothes and going to famous waterside taverns such as Amasyalı Hamdi. In their article, "Turkey's Musical Life During the Past Century: History, Genres, Voice Recordings, Sectoral Structure", Duygulu and Ünlü mentions about Kuşdili meadow as;

"In the entertainment areas such as Direklerarası, Üsküdar and Kadıköy, which had many theatres, the most important musical activity was in the area of the Turkish music genres known by names such as İncesaz, Ahenk and Çalgı. Preferring the name "İncesaz," Kemanî Tahsin Efendi played with his ensemble in Galata, in the Abdürrezzak Theatre in Şehzadebaşı, and in the Kuşdili meadows."<sup>59</sup>

---

<sup>59</sup> <http://www.turkishmusicportal.org/article.php?id=13&lang2=en> accessed on 2010, January

Moreover, there was a theatre named after the meadow and the stream as Kuşdili Theatre. It was one of the important buildings in the area. Apart from Alla turca performances and the plays of a traditional folk art named Tuluat (improvisation), movies were also shown in the theatre. Naşid Bey, who was the master in Tuluat was used to perform his plays in Kuşdili Theatre. After the meadow lost its character, the theatre was shut down and used as a vehicle museum for some time. The old tramways of Istanbul were exhibited in the museum. However, the museum did not attract attention and closed down. At present, there is Kadıköy Fire Fighting Department's facility on the theatre area.

Until late '50s, the meadow maintained its character as a recreation area. The residents of Kadıköy as well as the others from different parts of Istanbul were used to enjoy the pleasant environment of the meadow and perceived this area as an open space in which they were able to breath and feel themselves part of the nature as well as a place where they get socialized.

However, after the relocation of Tuesday Bazaar to the meadow, the area started to lose its recreational character due to the extensive and abusive use by the bazaar functions. The sellers started to park their vehicles on the grasslands of the area, the trees of the meadow were used as the posts to tie the tents of the selling units, and the waste generated during commercial activities was left dispersed on the meadow. Moreover, apart from the days when the bazaar is laid the meadow started to be used as a car parking space. In the middle of '80s, the trees of the meadow were started to be cut down, the area was first covered with crushed stone in order to dry the surface, and later on all the meadow area was covered with asphalt, and Pazar Yolu Street was constructed which divided the meadow into two pieces resulting in the total decline of the natural character of the area (see *fig. 4.21*).

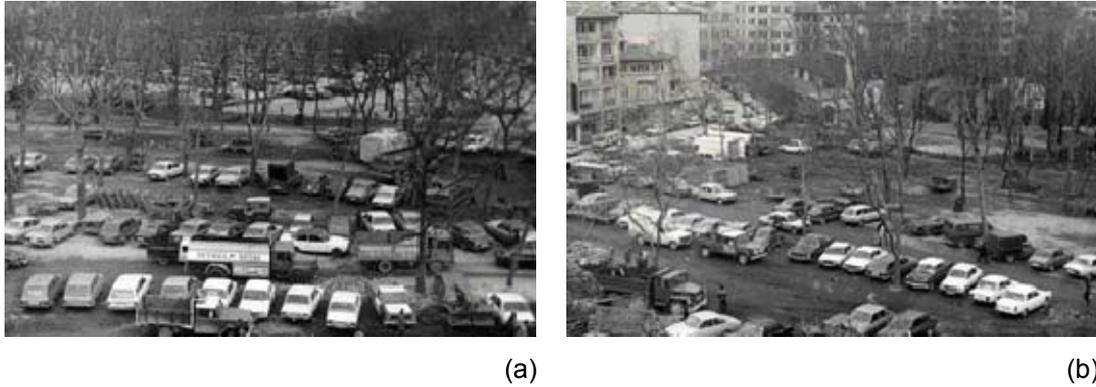


Figure 4.21 Kuşdili Meadow was started to be used as a car park beginning with 80's which was one of the causes of the loss of the natural character of the area. In the photos above taken in 1982 (a) and 1983 (b), there are still trees on the meadow.<sup>60</sup>

At present the meadow is used as a car-parking area. The recreational function of the area has been lost throughout time. Many of the old residents of the area state that the meadow, together with Yoğurtçu Parkı, was the place where they had a chance to enjoy the nature and feel themselves away from the city. At the moment, only Yoğurtçu Parkı remained as a place of relaxation which is far smaller than Kuşdili Meadow. Furthermore, in the night time the area is considered as one of the zones where there is lack of urban security.

#### **4.3.2.2. Kuşdili Meadow as a Public Space (Bazaar)**

The use of Kuşdili Meadow as a bazaar dates back to late '70s. As the population of Kadıköy district increased, previously used bazaar areas started to be insufficient in terms of scale and the congestion increased in the

---

<sup>60</sup> [http://www.kusdilicayiri.com/default.asp?sayfa=fotogaleri\\_1](http://www.kusdilicayiri.com/default.asp?sayfa=fotogaleri_1) accessed on 2010, January 1

narrow inner streets where they were located. As being located close to the centre of Kadıköy and residential areas, and the wide area it covered, Kuşdili Meadow was selected as the new bazaar area.

The bazaar was laid out on Saturdays in the beginning. However, due to the congestion caused because of football competitions held in Şükrü Saraçoğlu Stadium, it started to be laid on Fridays. Later on the vegetable bazaar was laid on Tuesdays (Salı Pazarı) and textile bazaar on Fridays. The new location of the bazaar was appreciated and favoured by the sellers. Until its relocation to Uzunçayır Meadow recently, Tuesday Bazaar has served as a major periodic bazaar in Istanbul together with Wednesday Bazaar in Fatih district.



(a)



(b)

Figure 4.22 After the relocation of Tuesday Bazaar to the meadow, the area started to lose its recreational character due to the extensive and abusive use by the bazaar functions.

(photos were taken in 1982 (a) and 1986 (b) )<sup>61</sup>

As the bazaar settled down, it started to attract more people, therefore, more sellers and retailers showed interest in having a place in the bazaar. Dökmeci, Yazgı, and Ozus (2005) point out that between 1980-2002, the number and size of the periodic markets increased due to the availability of

<sup>61</sup> [http://www.kusdilicayiri.com/default.asp?sayfa=fotogaleri\\_2](http://www.kusdilicayiri.com/default.asp?sayfa=fotogaleri_2) accessed on 2010, January 1

fresh produce and inexpensive goods combined with the locational convenience and enjoyable atmosphere. According to Dökmeci, Yazgı, and Ozus (2005), the number of traders and number of stalls was the highest in Tuesday Bazaar during the period 1980-2002. As a result of the increasing interest of traders, the whole area of Kuşdili Meadow and even the streets aside Kuşdili Stream were started to be utilized (see *fig. 4.23*).



Figure 4.23 Expansion of the bazaar functions along Kuşdili Stream.

The bazaar function led to the decline of Kuşdili Meadow in time. The trees of the meadow were cut down in order to ease the circulation in the bazaar and open more space for the increasing number of sellers. Furthermore, the traffic congestion, noise, and pollution increased in the area. The sellers started to park their vehicles along the inner streets adjoining to the meadow. The residents of the area started to complain about the bazaar. The survey done by Dökmeci, Yazgı, and Ozus (2005) showed that many shopkeepers in the area did not want the bazaar due to decrease in their trade and profits caused by closing of their entrance by the stalls of traders and of environmental pollution. Moreover, the same survey pointed out that many of

the residents living in the area also did not want the bazaar in their neighbourhood complaining about the traffic, pollution, and noise.



Figure 4.24 Tuesday Bazaar and the traffic congestion viewed from above.<sup>62</sup>

Tuesday Bazaar was moved from Kuşdili Meadow to Uzunçayır Meadow in December 2008, in order to realize an urban regeneration project which proposed a modern closed bazaar area with recreational functions.

#### **4.3.2.3. Archaeological Component**

The area where Kuşdili Meadow and Kuşdili Stream are located is the first settlement zone of Istanbul from the 7<sup>th</sup> century BC. As mentioned in the previous sections, the Roman settlement Harhadon was believed to be established along Kuşdili Stream in the area that also covers where Kuşdili

---

<sup>62</sup> <http://www.flickr.com/photos/24852832@N05/2572080935/sizes//> accessed on 2009, October 28.

Meadow exists today. Therefore, the meadow has an archaeological importance and many archaeologists have curiosity and interest for the historical and archaeological potential lying underground.

The meadow attracts attention with its close proximity to Fikirtepe Höyüğü which is dated for 6,500 BC and known as providing first data about the history of Kadıköy. The old settlement of Kalkedon is known as having two ports one being located in Haydarpaşa and the other at the entrance of Kuşdili Stream from the Marmara Sea. The archaeologists state that Kalkedon was laid out between Yoğurtçu Parkı and Osmanağa Mosque (located on top of the old port in Haydarpaşa) and surrounded by defence walls. The road which was lying along the port at the entrance part of Kuşdili Stream was providing the connection of Kalkedon to Izmit.

The Monuments Board took a decision which gave permission to the archaeological excavations in the area which is located in the Uzunçayır-Marmara Sea section of the study area. However, until now no works are started. Before the start of possible new bazaar construction in the area, the archaeologists are willing to start excavations in the area before it is too late for the discovery of new historical assets. Because, it is a good opportunity for them since there are still not any buildings on Kuşdili Meadow. If the results of the archaeological excavations are successful, then the archaeological richness which the area possesses could provide an opportunity for further development proposals in terms of cultural and recreational activities.

## CHAPTER 5

### LAND-CUT FOR THE CREATION OF A SHORE IN KUŞDİLİ MEADOW

The 5<sup>th</sup> chapter will aim to develop a discussion on the land-cut method as an alternative tool in order to improve urban quality, increase the shoreline length, decrease the risks of natural disasters, and promote the economy of land development by the creation of a new shore on Kuşdili Meadow. Particular attention will be paid to the urban design features of the land-cut method as well as planning principles.

As emphasized in the previous chapters, apart from the advantages it provides in terms of gaining land for development in stressed urban areas where it is hard to find land to develop, flexibility in design, and development on the new land acquired without any ownership problems, landfill method has several disadvantages in terms of ecological and environmental aspects, creating urban settlements alienated to the life nearby water, redetermination of coastline causing conflicts with the local administrations, and limiting public access to the water.

The advantages of using land-cut are perceived as being less compared to landfill since the urban land is lost via excavations, difficulties in the ownership pattern, and costs of implementation. However, the redefinition of the shore provides different type of advantages. Since the water reaches inside the settlement, the surrounding areas have the benefit of being next to water. This means that urban rent and urban life is redefined with the existence of water and water related uses.

How can land-cut be used as a tool in order to create a shore in Kuşdili Meadow by using Kuşdili Stream's waters? What should the planning and urban design strategies be in order to create a shore in the area? In order to have a clear understanding about how to achieve such kind of a development, there are several important issues to be discussed by providing a framework which evaluates the problems and the potentials of the area.

The following pages are dedicated to the definition of the problems of the area and the evaluation of the planning strategies and urban design guidelines to be developed in order to achieve a transformation of Kuşdili Meadow and Kuşdili Stream via using land-cut method.

### **5.1 Area Problematic**

As mentioned in the introduction part of the study, Kuşdili Meadow and Kuşdili Stream are selected as a case study with their distinctive characteristics which have been lost in the last three decades with wrong policies. The area is interesting in terms of hosting several problematic as well as the potential to be developed by using land-cut method.

The main focus of the study area is Kuşdili Meadow which is known as former Tuesday Bazaar (Salı Pazarı) through which Kuşdili Stream flows constituting the eastern boundary of the meadow. The study area's boundary extends further along Kuşdili Stream to the south until where the stream meets Marmara Sea and Yoğurtçu Parkı (see *fig. 5.1*).

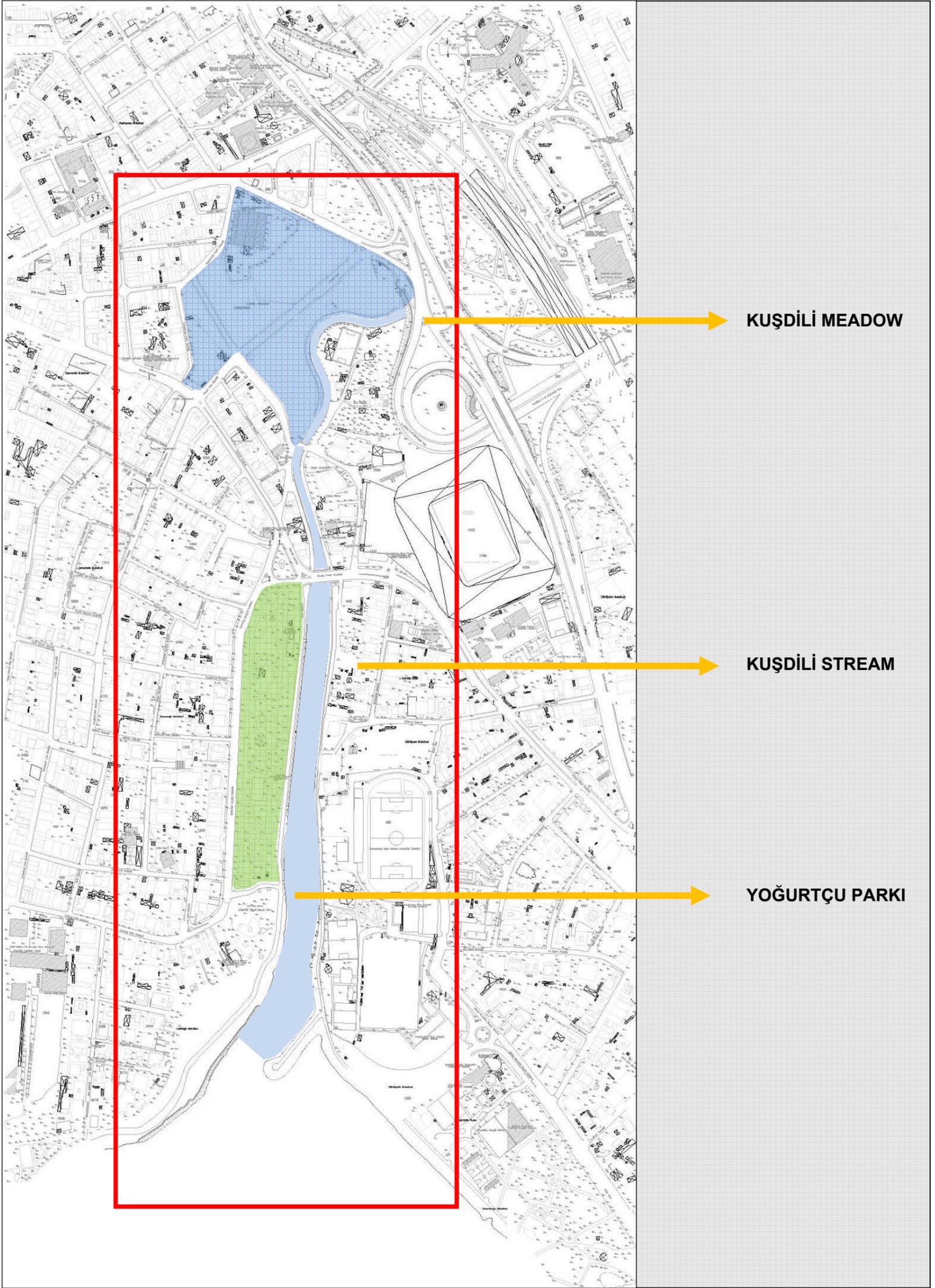


Figure 5.1 Study Area

Kuşdili Meadow is allocated by the Undersecretariat of Treasury of Turkey to Istanbul Metropolitan Municipality. Therefore, the authority which is responsible for the development of the area is the Municipality. The plot where Kuşdili Meadow is located on was registered as 'a natural monument' with the decisions no. 9721 dated 12.3.1977 and no. 12853 dated 19.06.1981 by the High Council of Immovable Antiquities and Monuments. Furthermore, the area was registered as 3<sup>rd</sup> Degree Natural Protection Area (Doğal Sit) by Istanbul Cultural and Natural Heritage Conservation 2<sup>nd</sup> Board decision no. 6462 dated 10.10.2002.

According to the typologies of use shown on the matrix (see *Table 2.3, p. 30*), the area is classified as a degraded urban zone because of the actual use as a car parking space, after the relocation of Tuesday bazaar activities to Uzunçayır. The area first lost its natural character as a result of the pollution of the meadow and the stream which lead to the decline (see *fig. 5.2*).



(a)



(b)



(c)



(d)

Figure 5.2 Pollution along Kuşdili Stream (a), (b), (c), and (d)

Furthermore, the improper location of functions (car-park) has contributed to the further decline of the zone (see *fig. 5.3*).

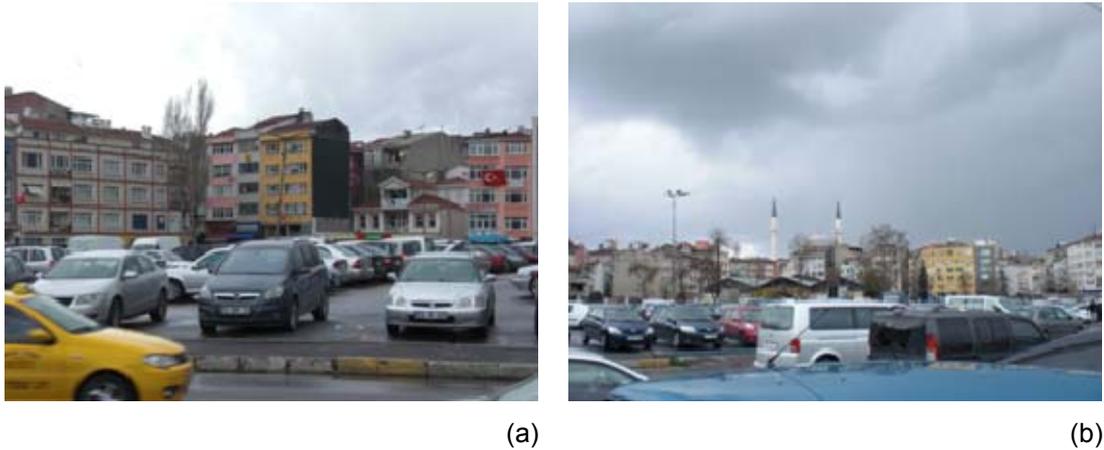


Figure 5.3 Improper Use of the Meadow (a), (b) as car-parking space

### **5.1.1 Loss of Natural Character and the Decline of the Area: Pollution of the Meadow and the Stream**

The use of the meadow as Tuesday Bazaar had resulted in the loss of the natural character of it and lead to the declining of the area especially after cutting down of the trees during late '80s. The current use of the meadow as a car parking space does not fit to the natural character of the area.

Apart from the meadow, Kuşdili Stream has been subject to severe pollution starting from late 60's. The first facility which started to pollute the waters of the stream was the coal warehouse constructed in Hasanpaşa in the 1960's. Later on the sewage of the surroundings started to be discharged to the stream which resulted in the severe pollution of the meadow. The use of Kuşdili Meadow as Tuesday Bazaar fastened the pollution process since at the end of the bazaar days the wastes were thrown away to the stream. Although several water purification and cleaning studies were carried out, the stream causes bad smelt especially in the summer days (see *fig. 5.4*).



(a)



(b)



(c)



(d)

Figure 5.4 Pollution along the Stream (a), b), (c), and (d)

### 5.1.2 Planning Problems

The close surroundings of Kuşdili Meadow and Kuşdili Stream were affected from the rapid urbanization process of Istanbul starting from the beginning of the 1960s. Hasanpaşa and Fikirtepe neighbourhoods started to be settled by the rural population coming from other cities. As the expansion of the city continued, the fertile lands of the meadow was started to be occupied by housing units which finally resulted in the loss of the main parts of the meadow. When the Protection Boards took decisions to protect the meadow, most of the lands were already urbanized. The figures show how fast was the urban expansion and how the lands of the meadow got lost through time.



Figure 5.5 Spatial Change in Kuşdili Meadow (1946)<sup>63</sup>



Figure 5.6 Spatial Change in Kuşdili Meadow (1966)<sup>64</sup>

<sup>63</sup> <http://sehirrehberi.ibb.gov.tr/map.aspx> accessed on 2010, January 15

<sup>64</sup> *ibid.*



Figure 5.7 Spatial Change in Kuşdili Meadow (1982)<sup>65</sup>



Figure 5.8 Kuşdili Meadow as of Today (06/2008)<sup>66</sup>

<sup>65</sup> <http://sehirrehberi.ibb.gov.tr/map.aspx> accessed on 2010, January 15

<sup>66</sup> *ibid.*

Later on, Istanbul Metropolitan Municipality presented a project for the area to the Cultural and Natural Heritage Conservation Board, which suggested the use of the area for recreation. However, according to the decision taken by İBB Town Planning Directorate no.4016 dated 28.11.2006, some commercial uses including open/closed bazaar, shopping centre, restaurant, cafe, entertainment centre, cinema, theatre, cultural centre, and watch-tower were also added (see fig. 5.9 and 5.10).



Figure 5.9 Kuşdili Meadow Bazaar, Cultural and Recreational Centre Project Proposal by İBB.<sup>67</sup>

---

<sup>67</sup> <http://www.arkitera.com/s64-hakan-kiran.html> accessed on 2009, October 28



Figure 5.10 Kuşdili Meadow Bazaar, Cultural and Recreational Centre Project Proposal by İBB.<sup>68</sup>

The new project is named as *Kuşdili Meadow Bazaar, Cultural and Recreational Centre* which includes a modern dome shaped bazaar complex project and recreation area. The area has become a point of conflict and interest right after the project of Istanbul Metropolitan Municipality. Because, the municipality prepared a tender for the area and then the area is given to a company for 30 years for the construction and the management of the new commercial centre. Many small business retailers, Kadıköy Municipality, NGOs (Kuşdili Çayırı Gönüllüleri, Chambers of Small Business Enterprises, Architects, and City planners, etc.) and also the archaeologists opposed to the new plan of İBB which would result in public unrest and the issue was taken to the court. By the time the court case was continuing, İBB decided to relocate the bazaar to Hasanpaşa. The site has started to be used as a car parking area.

---

<sup>68</sup> <http://www.arkitera.com/s64-hakan-kiran.html> accessed on 2009, October 28

Finally, the court decided that the proposed plan is not compatible with the planning policies and rejected the application of it. At present the area has no master plan for development.

Ontologically, the overall process which caused the decline of the study area was a result of the termination of the being of the meadow and the stream for the creation of other beings (bazaar, residential and commercial uses) by the city administrations. When the 'tear down - build' <sup>69</sup> process started to dominate the expansion of the city because of the rapid urbanization process, the termination of the natural beings was inevitable.

As Günay (2009) claims that place making is a highly debated paradigm of the urban environment which requires the existence of there-beings. However, Turkish urbanization policies failed to achieve this condition. Similarly, the existence of there-being of Kuşdili Meadow as a natural being was ignored and the termination process of its being started with the cutting down of the trees which was followed by pavement and use of the area as a bazaar. Furthermore, the existence of Kuşdili Stream was terminated by the pollution of its waters by the ashes of coal warehouse followed by the sewage discharge from the residential areas and disposal of the waste generated from bazaar activities.

Another interesting point which comes out from the processes mentioned above is that the area was registered as 'a natural monument' with the in 1977 and 1981, and as as 3<sup>rd</sup> Degree Natural Protection Area (Doğal Sit). The decisions of the institutions responsible for the natural protection were mere written declarations which were not able to prevent the termination of the beings which have already been there.

---

<sup>69</sup> Günay, B., 2009, p.132

As criticized from ontological point of view, the new project proposal of IBB disregards again the existence of the natural beings which have been there. Although, the master plan for the area foresees the development of recreational features, the dome shaped closed bazaar and shopping center complex is far away from transforming the area for the reproduction of the natural character and cultural identity which have existed before. The city administration and the investors are aware of the being of the place as a being which has an economic potential. However, if the development of the area is limited to the creation of beings which serve only for economical means ignoring the cultural environment which had once been blended with the elements of the natural environment, the result will not be different than those have been before.

## **5.2. Planning Strategies**

Many planning policies have their bases on the development of the land and when the matter is the development of the coast the policies are also set according to land-based perceptions. Pinch & Munt (2002) discuss the planning policies in UK that they are land-based policies applied and stretched over the waterspace, rather than one that sets out a water-specific planning policy framework.

Pinch & Munt (2002) claim that another problem is the absence in the vocabulary of development control and development plan preparation of any conceptualization of the unique qualities of water as an object of planning. In the UK, for the purposes of the Planning Acts, development is defined as "... the carrying out of building, engineering, mining or other operations in, on, over or under land". *Water over land is not specifically mentioned.* Pinch & Munt (2002) argues that there is an insufficient regulatory framework for maximizing the multifunctional potential of urban rivers and waterspaces as nature reserves, transport arteries and leisure and recreational resources,

and as key components of the public realm (DETR, 2000; London Rivers Association (LRA), 2002 cited in Pinch & Munt 2002).

The similar problematic exists in the planning policies in Turkey. The waterside is not perceived as a significant component of urban landscape with the potentialities it incorporates. The land-based policies give the priority to the development of the urban land and ignore the multifunctional and multidimensional characteristics of waterspaces such as promoting commerce, providing recreational possibilities, enabling transportation, enriching ecological diversity, and creating culture.

In the development of the above mentioned uses, the method of land-cut can be integrated into the development framework as an alternative. As mentioned in the previous chapters, degraded urban zones, areas which have a risk of natural disasters or environmentally sensitive zones, and vacant urban areas with a development potential by the waterside could be considered as the potential zones in the urban areas for the potential land-cut developments. The planning policies should be developed in those zones giving priority to water-based development schemes through the designing of diverse canals and waterways which are integrated into the urban network. As stated in Pinch & Munt (2002), such sites, for instance, could be reclassified as 'bluefield' sites. With the efficient use of the above mentioned urban zones urban bluefield sites could be promoted.

Kuşdili Meadow has significant assets and a considerable potential to be developed as an urban bluefield site having quality design. The existence of Kuşdili Stream which passes through the meadow is the vital element for the creation of a shore by using land-cut method.

The main goal is to excavate the area where Kuşdili Meadow stands starting from Kuşdili Stream and bring the waters of the stream inside the excavated

area which will result in the creation of a new shore inside the city. In order to achieve this, a new master plan should be developed for the area which should consider the main planning strategies summarized below:

1. Excavation of the Meadow for the Discovery of Archaeological Assets
2. Creation of a New Shore by the Integration of the Waters of Kuşdili Stream into Kuşdili Meadow by Land-cut
3. Integration of diverse uses supporting the multifunctional and multidimensional characteristics of the area
4. Integration of urban life to the inland water uses

### **5.2.1 Land-cut for the Discovery of Archaeological Richness**

The excavation of Kuşdili Meadow is the main strategy in order to achieve the creation of the shore. However, the excavation is difficult and costly activity. Furthermore, the local administrations could possibly consider that excavating the meadow means losing the land i.e. losing also the meadow itself. Therefore, creation of a new shore could not be considered as a convenient idea by the administrative bodies i.e. Istanbul Metropolitan Municipality.

As mentioned in the previous chapter, Kuşdili Meadow stands on top of the antique Kalkedon settlement and its port and is an important area in terms of archaeology. According to the permission of Protection Board, archaeological excavations could be done in the area by archaeologists in order to discover the historical richness lying underground. This is a very important opportunity in terms of developing the area with land-cut method. The archaeological excavation and creation of a shore should be considered as tools which serve for the discovery of the history and for the needs of the public. This way, the vision of using land-cut method and creating new shore could be

justified also to local administrations from both economical and planning aspects.

The archaeological excavations should be done in two phases. The first phase should consider the parts between Kuşdili Stream and Pazar Yolu Street and the second phase should start from Pazar Yolu Street and continue until Tulumbacı Asım Street on the west and southwest and Mahmut Baba Street on the north (*see fig. 5.11*).

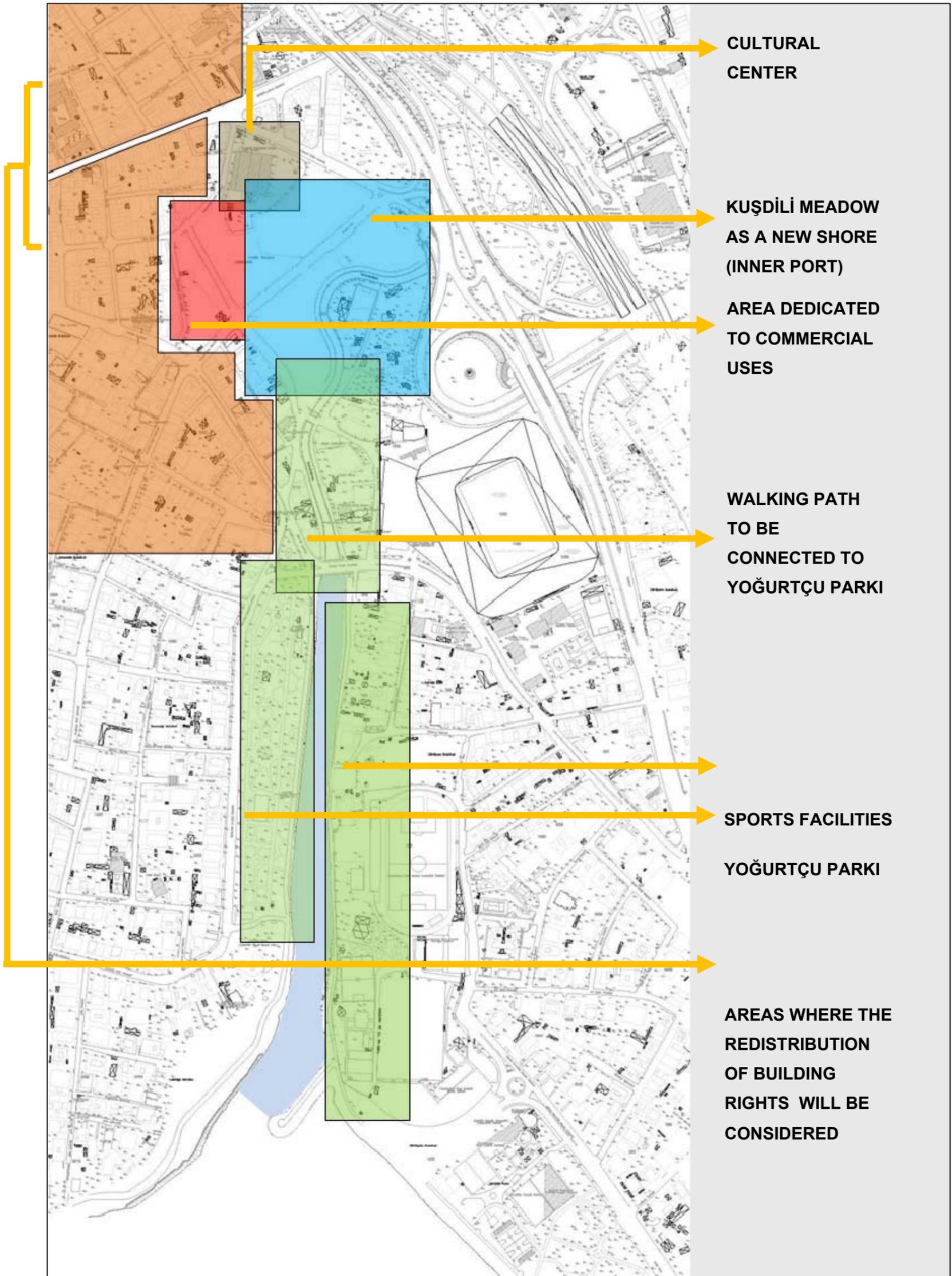


Figure 5.11 Conceptual Development Scheme

Therefore, in the first phase, the possible excavations in the area could start with a purpose of finding archaeological ruins of Kalkedon settlement and the new shore could be designed in connection with the findings of the excavations (see fig. 5.12).



Figure 5.12 The Phase 1 Development should consider the parts between Kuşdili Stream and Pazar Yolu Street.

At present, the plot where the meadow is located covers approximately 45,000 sqm area including the plot on which there is Kadıköy Fire Fighting Department facilities. Therefore, on the second phase since the main aim is to let the water come inside the urban life, the borders of the new shore should be extended as much as possible towards the natural boundaries of Kuşdili Meadow . The excavations could be limited only in the area on which there are the buildings of Kadıköy Fire Fighting Department. At present, those buildings are used as the facilities to park the firefighting trucks and firefighting equipment. Therefore, they have wide closed spaces. These buildings should be designed for further potential uses as a museum in which the findings of the archaeological excavations would be exhibited, or a cultural center in which there is a theater and a cinema. Since the buildings were used as a vehicle museum hosting old trams of IETT, the use of them

as a museum which conveys the history of the site could also be consistent with the idea of creating an identity for the area.

### **5.2.2 Creation of the Shore**

The most important part of a potential land-cut development in Kuşdili Meadow is the creation of the shore. In the known literature, there is no example of a creation of shore which penetrates inside the urban setting and being defined as a public space<sup>70</sup>. Therefore, the creation of the shore is an issue which should be considered and analyzed in detail taking into consideration the issues summarized below:

- Definition of the boundaries of the new shore line,
- Definition of the new functions and uses,

As mentioned above, the new shore should extend as much as possible until the boundaries of the meadow. After finishing of the excavations, the borders of the new shore would appear more clearly. The dimensions of new shore line should be adjusted so as to provide enough space for the new developments while sustaining the provision of necessary urban infrastructure needed for the area.

The crucial point to be discussed here is also that the consideration of the economic transformation of the area after the creation of the shore. Because, the implementation of the land-cut method by increasing the space covered by water will result in the loss of urban land in the area which is necessary for the development other urban functions such as infrastructure and parking.

Therefore, in order to achieve the transformation of the economic activity, the building rights should also be transformed in the area. If the building rights

---

<sup>70</sup> There are several examples of housing projects in Turkey such as Port Alaçatı and Port Göcek. However, these are private developments which are limited to the public use.

could be redistributed in such a way which covers the loss of the value of the land excavated and helps the creation of an increased economical value to the existing lands on which there is already a building stock, then the economic transformation would possibly be achieved in the area. The current status of the existing building stock is proper for such kind of redistribution of building rights. The surrounding areas are characterized by a mix of residential and commercial uses and the building stock has been produced mainly after the 1960s. Therefore, it can be concluded that it has been aged and eroded. The redistribution of building rights could activate and promote to the transformation of the exhausted building stock. Therefore, the distribution of the building rights should require several criteria which will ensure the balanced development in the area including;

- the clear definition of the development zones in the already existing building stock according to their current building rights in terms of their functions such as,
  - completely residential uses
  - residential uses with commercial activities in the entrance floors,
  - completely commercial uses
- the calculation of need for infrastructure which will increase the quality of space including,
  - parking,
  - the roads, bridges, and other infrastructure for pedestrian and vehicle circulation,
  - urban service areas.

If the new planning schemes can balance the loss of the excavated land economically by redistribution of building rights supported by the existence of water as a being which increases the value of the area, the economic transformation could be achieved.

Therefore, the selection of the new uses which should be located along the new shoreline also gains importance. So, the master plan should consider the diverse water related uses on the newly created shore which will attract public attention and foster the economic transformation by the creation of a life next to water. The matrix in the next page shows the relationships between the water related uses and activities with functions which should be taken into consideration in the design of the area.

Table 5.1 Relationships between Uses and Activities and the Functions

		FUNCTIONS				
		Public	Recreation	Commercial	Transportation	Cultural
<b>USES &amp; ACTIVITIES</b>	Inner Port	X	X		X	
	Water Canal	X	X		X	
	Museum	X				X
	Water Sports Facilities	X	X			
	Water Park	X	X			
	Aquarium	X		X		
	Walking Paths	X	X			
	Parks	X	X			
	Restaurants		X	X		
	Cafe & Pubs		X	X		
	Marine Festivals	X				X
	Boat Trips	X	X		X	
	Theater & Cinema			X		X

### Inner Port

The port use will host the small cruising boats coming to the new shore. Small wooden piers could be built in order to be used as boarding places.

### Water Canal

The water canal is actually Kuşdili Stream itself. After the related waste water treatments, it will be rehabilitated and will start to be used as the main waterway connecting Kuşdili Meadow to Marmara Sea for recreation and transportation purposes.

### Museum

The findings of archaeological excavations will be important in the design of the shore. According to the importance of the findings of the excavations, some parts containing the findings could remain on the ground. In those kind of parts, the water should not enter inside but circle the area by creating small islands on water which could be considered as open air museum. Furthermore, from the findings of the archaeological excavations, a new museum could be established in the place of Kadıköy Municipality Firefighting Department.

### Water Sports Facilities – Water Park – Aquarium – Boat Trips

Those uses could be considered as together. The establishment of water park in which there are diverse water related play fields and a small aquarium facility could increase the attraction of the area especially by the children. Water sports facilities could include the spaces necessary for the beginner sailing activities.

### Walking Paths and Parks

The new shore created should be supported from the landside by the construction of new walking paths and the renovation of the existing paths. A new park could be considered on the new shoreline. The integration of the

new walking paths and parks to the existing park network i.e. Yoğurtçu Parkı is also an important issue in terms of sustaining the continuity.

#### Restaurants, Cafes & Pubs

Those uses could exist on the shoreline as socializing places for the people. However, the number of those kind of uses should be kept in a certain limit in order to keep the balance between the public and private use.

#### Marine Festivals, Theater & Cinema

These uses and activities are important features in terms of revitalizing the cultural life around Kuşdili Meadow which was once used to be quite colorful. In the inner port area, where there is the facility of Kadıköy Firefighting Department, some of the buildings of the facility could be transformed to a theater and a cinema. The new complex could even be given the name as Kuşdili Theater which revitalizes the historical use of the complex.

### **5.2.3 Integration of Urban Life with Water**

Spatial planning frameworks for waterspaces need to be able to respond to their distinctive complexity and recognize their strategic and multifunctional character (Pinch & Munt, 2002). Therefore, the important emphasis should be given to the integration of urban life to the inland water uses developed by the land-cut method. The development of water related leisure, tourism and recreational uses and activities should be considered such as maritime festivals & competitions, aquariums, and museums. These uses should enrich urban life by creating a sense of place.

#### Creation of Identity

“The positive features of a place and its people contribute to its special character and sense of identity. They include landscape, building traditions and materials, patterns of local life, and other factors that make one place

different from another. The best places are memorable, with a character which people can appreciate easily”<sup>71</sup>. The identity of Kuşdili Meadow had grown naturally in response to the distinctive natural and recreational characteristics it had. The new shore created should respond sensitively to the site and its setting. That kind of setting would possibly be perceived by the people in a more positive way. Therefore, any type of design intervention which would create a sense of place in Kuşdili Meadow should be supported.

- The natural elements which contribute to the identity of the area should be approached carefully in design.
- The historical elements of the area should be referred during the creation of new uses and functions.

### **5.3. Urban Design Guidelines**

Waterspaces should be considered as significant components of urban landscapes and regional systems as discussed in Pinch & Munt (2002). Therefore, the development of different innovative design strategies/schemes/themes is essential for a potential land-cut scenario covering Kuşdili Meadow, Kuşdili Stream, and the surroundings. Since a potential land-cut scenario includes the creation of a new shore in the city, this new structure should be in compliance with existing rules and regulations for the development. For instance, the new municipal law no. 5393 could be helpful in terms of integration of innovative urban design methods and techniques in the creation of the new shore developed by land-cut method.

The guiding principles will give direction to the development of the new shore by land-cut method. The directions which are applied by urban design principles should be adopted and customized according to the planning strategies proposed for the area. The following parts of the study are

---

<sup>71</sup> By Design, 2000, p.19

dedicated to the definition of these principles which should be the guidelines for the creation of the new shoreline.

### **Continuity**

Successful urban space (including street space) is defined and enclosed by buildings, structures and landscape<sup>72</sup>. The design schemes for the meadow and the stream should take into consideration linking different components to establish functional and visual continuity. Therefore, the interaction of other functions nearby water should be considered starting from Yoğurtçu Parkı where the stream meets the sea.

- Creation of continuous pedestrian network along the new shore.
- The development of small cafes, restaurants, etc. which allow continuous pedestrian movements.
- Improving the pedestrian connection between Yoğurtçu Parkı and Kuşdili Meadow along the waterside.
- The design elements such as landscaping, street furniture, civic art, signs, and the other amenities should be arranged consistently.

### **Genius Loci**

Genius Loci (spirit of place) refers to a location's distinctive atmosphere, that makes a place unique or special<sup>73</sup>. Kuşdili Meadow was once used to be genius loci with its relaxing atmosphere as a result of its cultural diversity as well as natural characteristics. Therefore, the design schemes should give opportunity to the people to experience, know, and see the richness of the area. Below, the design elements are summarized which could result in the re-building of the genius loci of the area.

- The development of cultural functions which existed in Kuşdili Meadow in the past such as the theatre, waterside music halls, museums, etc. For instance, Kadıköy Firefighting Department facilities are proper for

---

<sup>72</sup> By Design, 2000, p.21

<sup>73</sup> [http://en.wikipedia.org/wiki/Genius\\_loci](http://en.wikipedia.org/wiki/Genius_loci)

a potential development of a cultural centre and museum which could revitalize the old spirit of the meadow by exhibiting its past.

- Integration of other urban functions and forms into the new shore.
- Implementation of a design approach which is not imposed on but is resulted from the natural characteristics of the area.
- Conformity to the existing uses in terms of scale, detail, and built form should be granted in the new shore. The uses and activities which will create inconsistency should be avoided.

### **Human Scale**

All the design schemes and themes should be developed according to the standards emerging from human needs. Therefore, the design interventions in the area should be modest, minimal, and sensitive.

- The creation of forms, spaces, and structures which surpass the human scale should be avoided.
- The development of the uses and activities in the meadow and along the stream should relate well in size to human scale which makes people feel comfortable.
- The new uses should not compete with the uses around in terms of scale and dimensions.

### **Connectivity & Accessibility**

- The new shore and the functions should be accessible from other parts of the city via diverse means of public transport.
- The access of people from different abilities should be provided.
- Direct pedestrian linkages should be provided to all of the new functions.
- The focus areas mainly the new shore should be interconnected, therefore, the pedestrian circulation should be provided at the points where it discontinued.

- Clear entries to the shore and other destinations should be constructed.
- The new environment should be enhanced by the integration of signs and lightning.
- The physical obstacles which prevent public access to the area should be minimized.

### **Safety and Security**

- The traffic density in the area should be decreased and necessary improvements should be done in order to decrease the traffic flow including lighting, signs, signals, etc.
- Safe designs for street-crossings should be provided such as crosswalks, corner sidewalk widening, etc.
- The design of the new shore and the functions should take into consideration the potential disaster risks such as earthquake and flood.
- Direct and clear lines of sight should be provided in order to increase the feeling of security especially in the night time. The use of landscaping elements such as walls, dense bushes and shrubs should be avoided.
- The lighting and illumination at night time should be improved.
- Different design elements such as terraces overlooking pedestrian environment should be developed which accommodate human activity.

## **CHAPTER 6**

### **CONCLUSION**

Throughout this study, the creation of a new shore in Kuşdili Meadow by using land-cut method was examined. For a further understanding on the importance of water and its relationships with human and the settlements specific cities have been presented. It has been observed that those cities which have been able to perceive the existence of their waterfronts as the basis of their own being have existed as important locations. Within this context, the use of land-cut and landfill in several cities and their waterfronts were analyzed. It has been concluded that both methods have several advantages and disadvantages in the shaping of waterfronts.

After the industrial revolution, the rapid urbanization and changing patterns of trade caused many spatial transformations in the urban areas such as the development of port areas and related activities in the urban centers. The waterside cities were between those which have been affected by those transformations. As the densification of urban land has started the land for the new developments became scarce. The use of landfill method has come into the scenario for a solution for the scarcity of land. The port facilities as well as residential, commercial, and public uses have been started to be developed on the landfill areas. However, this brought several problems. The interaction of people and urban life with water has been isolated and public access has been limited as a result of landfills standing as frontiers to water. Throughout the study, these problematic have been studied and it has been observed that the development of land-cut areas in the urban waterfronts is worth considering as an alternative development method. It has been

concluded that land-cut areas could be able to provide several advantages to urban life by;

- Increasing interaction between the coastal zone and the urban core and the use of sea shore in a more efficient way.
- Prevention of natural disaster risks by the creation of a disaster protection zones while increasing the marine ecosystem and habitat.
- Increase the use of waterside for the beneficiary of the urban residents by the creation of water related uses and activities.
- Production of the quality of waterside spaces by transforming / regenerating / renovating the derelict / degraded / abandoned zones with effective design methods/strategies.
- Increase in the quality of space, which in turn brings the increase in the value of the area since it creates an attraction for more people.
- Realizing the potential for the protection and creation of habitats of marine life interest and amenity value.
- Supporting a marine culture by the creation of sea related social and cultural activities and festivals in the area.

Furthermore, a deeper analysis has been done regarding the laws and regulations which are in charge for the waterfront development in Turkey. It has been observed that the land-cut method is not defined in the legal context whereas there is the definition and the principles of creation of landfill areas in the waterfronts. Furthermore, it has been seen that the coastal legislation is limited in terms of making clear definitions on the concepts of shore, shoreline, and the settlement on these areas which are crucial in terms of creation of landfill and land-cut spaces. It has been concluded that the legal framework should be improved in order to pave the way for the development of land-cut areas in the urban waterfronts. For this reason, definition of land-cut, the areas of use, permitted activities on the land-cut areas, development schemes, ownership structure, and potential incentives

which favour the land-cut development should be introduced in the legal context in Turkey.

A century ago, together with Kuşdili Stream, the meadow was Istanbul's one of the most preferred recreational areas with the beautiful and tranquil nature. However, as happened in many similar areas located in Istanbul, the rapid growth of the city after the 1960s has nearly erased the fertile lands of the meadow leaving a small portion for the people from its heritage as a natural being. After the 1970s, this small heritage was subject to another unfortunate transformation. Tuesday Bazaar which was decided to be laid on the meadow's lands erased the only remaining part. Although, the area was registered by the Protection Boards as a 'natural monument' and '3<sup>rd</sup> Degree Natural Protection Area' in late 70s and early 80s successively, the meadow had already started to lose its natural character due to the improper use, pollution, and congestion created by bazaar functions.

Today, after the relocation of Tuesday Bazaar to Uzunçayır, the meadow is being used as a car parking area which could be considered as another punishment which it does not deserve so far. It could be thought that the 'natural monument' and 'natural protection area' features of the meadow are important for the further protection of the meadow. However, the provisions and the projects of İBB regarding the meadow and the stream have already foreseen the construction of a denser commercial activity in the area.

The transformation of the area could be successful only if the existence of there-beings is respected while achieving the spatial, social, economic, and administrative restructuring of the entire urban activity existing there. Therefore, creation of a new shore by land-cut method which brings back the natural beings is not just enough for the transformation. Being aware of the place is important, but if the people are not there, then the new shore lives just as an image without transforming its surrounding.

The improvement of the specific features of the meadow and the stream requires a planning approach which should be distinctive. Clearly defined planning strategies supported by an efficient, effective, and innovative urban design schemes could possibly transform Kuşdili Meadow and Kuşdili Stream from a declined place to a space which lives with its waterfront. Therefore, the successful application of land-cut method in the area can prove itself as a new model for the creation of new urban space, actually a new shore as a being, in the declined zones especially in waterfront cities.

## REFERENCES

Balsas, C.J.L., 2007, City Centre Revitalization in Portugal: A Study of Lisbon and Porto, *Journal of Urban Design*, Vol. 12. No. 2, 231–259.

Boomgaard, P., 2007, *A World of Water, Rain, Rivers And Seas In Southeast Asian Histories*, KITLV Press.

By Design, *Urban Design in the Planning System: towards better practice*, Department of the Environment, Transport and the Regions, London 2000

Ceylan E.Ç., 2006, *The Effectiveness of Turkish Coastal Legislation in Ensuring The Protection Utilization Balance*, A Thesis Submitted to the Graduate School of Engineering and Sciences of Izmir Institute of Technology.

Duygulu, M. and Ünlü, C., *Turkey's Musical Life During the Past Century: History, Genres, Voice Recordings, Sectoral Structure*", <http://www.turkishmusicportal.org/article.php?id=13&lang2=en> accessed on 2010, January 11

Günay B., 2009, *Conservation of Urban Space as an Ontological Problem* (1), *METU JFA* 2009/1, (26:1) 123-156.

Günay B., 2003, *Book Review*, *Journal of Housing and the Built Environment*: 18, 201-204.

Hoyle, B., 2002, Urban Waterfront Revitalization in Developing Countries: the Example of Zanzibar's Stone Town, *The Geographical Journal*.

Jones, A., 1998, Issues in Waterfront Regeneration: More Sobering Thoughts- A UK Perspective, *Planning Practice and Research*, Vol. 13, No. 4, 433-442.

Jones, D.A., Ealey, T., Baca, B., Livesey, S. & Al-Jamali, F., 2007, Gulf Desert Developments Encompassing a Marine Environment, A Compensatory Solution To The Loss Of Coastal Habitats By Infill And Reclamation: The Case of the Pearl City Al-Khiran, Kuwait, *Aquatic Ecosystem Health & Management*, 10(3):268-276.

Kıyı Kanunu, 04/04/1990 No. 3621

Kıyı Kanununun Uygulanmasına Dair Yönetmelik, 03/08/1990, 20594

Mcloughlin, L.C., 2000, Shaping Sydney Harbour: Sedimentation, Dredging and Reclamation 1788-1990s, *Australian Geographer*, Vol. 31, No. 2, pp. 183-208.

Moughtin, C., 2003, *Urban Design: Street and Square*, Architectural Press.

Pinch, P. & Munt, I., 2002, Blue Belts: An Agenda for "Waterspace" Planning in the UK, *Planning Practice & Research*, Vol. 17, No. 2, pp.159- 174.

Topçu E. Ü., 2006, Alternative Shopping Places: Periodic Markets in İstanbul, 46th.Congress of the European Regional Science Association, Volos / Greece.

Waterman, R. E., Misdorp, R. & Mol, A., 1998, Interactions Between Water And Land in The Netherlands, *Journal of Coastal Conservation* 4: 115-126.

Wood, R. & Handley, J., 1999, Urban Waterfront Regeneration in the Mersey Basin, North West England, *Journal of Environmental Planning and Management*, 42(4), 565-580.

Wood, R., Handley, J. & Kidd, S., 1999, Sustainable Development and Institutional Design: The Example of the Mersey Basin Campaign, *Journal of Environmental Planning and Management*, 42(3), 341-354.

Wrenn, D.M., 1983, *Urban Waterfront Development*, Urban Land Institute, Washington.