LOCAL GOVERNMENT GREEN SPACE POLICY
THE CASES OF KARTAL AND SARIYER IN İSTANBUL

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_____

Prof. Dr. Sencer Ayata
Director

I certify that this thesis satisfies all the requirements as a thesis for the degree of Master of Science

_____

Assoc. Prof. Dr. H. Tarık Şengül
Head of Department

This is to certify that we have read this thesis and that in our opinion it is fully adequate, in scope and quality, as a thesis for the degree of Master of Science

_____

Assoc. Prof. Dr. H. Melih Ersoy
Supervisor

Examining Committee Members

Assoc. Prof. Dr. Baykan Günay _____

Assoc. Prof. Dr. Melih Ersoy _____

Assoc. Prof Dr. H. Çağatay Keskinok _____

ABSTRACT

GREEN SPACE LOCAL GOVERNMENT POLICY
THE CASES OF KARTAL AND SARIYER IN İSTANBUL

Coşkun, Özlem

M.S., Department of Urban Policy Planning and Local Governments
Supervisor: Assoc .Prof. Dr. Melih Ersoy

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Askew and unsystematic urbanization that occurred after rapid increase and migration in 1950's in Türkiye, caused destruction of green spaces. In this way, green spaces in urban pattern that are insufficient now are going to decrease day by day. As a result, human beings that are living in cities have to survive their life in a condition of less green and much building. Urban populace has physical and psychological problems caused by noise, pollution, stress together with not meeting their strolling, resting and being comfortable. For this reason, importance of green spaces is increasing day by day. Being under a disaster of earthquake doubles this importance in İstanbul.

In this research, in which green spaces in Kartal and Sarıyer are taken into consideration, one-by-one fixing and photographing technique is used. Results are evaluated in terms of ownership, opening year, classification, size, activity and distribution of green spaces.

Research is consisting of eight chapters. Aim and extension of research is taken into consideration in first chapter. In second chapter, urban open and green spaces are examined in terms of definition, classifications, hierarchy and design criteria. Third chapter include urbanization and green pace relation. In this chapter, historical development of urban open spaces, importance of urban open and green spaces and need of green space issues are mentioned. Green space concept in development plans are taken into consideration in fourth chapter. Firstly, green space concept in development plans; then, procuring methods of green spaces and at last, problems of application decisions of green spaces are examined. Fifth chapter includes green space norms in Türkiye and in other countries and comparison of these norms. In sixth chapter, green space situation of İstanbul, Kartal and Sarıyer are given. In this chapter, firstly, urbanization and green space problem; then, existing situation of Kartal and Sarıyer are researched. In case study, which is observed in seventh chapter, green space situation of Kartal and Sarıyer is investigated. At last chapter, results of these researches are attained by comparison of green space situations of these two districts in a heading of conclusion.

Keywords: Green Space, Green Space Policy, Local Government, Green Space Norms, İstanbul.

ÖZ

YEREL YÖNETİMLERİN YEŞİL ALAN POLİTİKALARI
İSTANBUL'DA KARTAL VE SARIYER ÖRNEKLERİ

Coşkun, Özlem

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Ülkemizde 1950'lerde hızlı nüfus artışı ve göç sonucunda oluşan çarpık ve düzensiz kentleşme sonucu yeşil alanlar tahrip edilmiştir. Böylelikle zaten yeterli miktarda olmayan kent içi yeşil alan miktarı daha da azalmıştır. Sonuç olarak, kentlerde yaşayan insanlar yeşilden yoksun, bloklar arasına sıkışarak yaşamlarını devam ettirmek zorunda kalmaktadırlar. Gürültü, kirlilik, stres gibi olumsuz etkilerin yanı sıra gezme, dinlenme, rahatlama ihtiyaçlarını da gideremeyen kent halkı fiziksel ve ruhsal açıdan problemler yaşamaktadırlar. Bu nedenle, yeşil alanların önemi her geçen gün artmaktadır. Bunların yanısıra, ülkemizi ve İstanbul'u tehdit eden deprem

konusu göz önünde bulundurulduğunda rezerv alanları olarak kullanılabilecek yeşil alanların öneminin büyüklüğü ortadadır.

Kartal ve Sarıyer ilçelerinin tespit edildiği bu araştırmada, Kartal ve Sarıyer ilçelerindeki yeşil alanlar birebir olarak tespit edilmiş ve fotoğraflanmıştır. Elde edilen veriler, mülkiyet, hizmete açılış tarihi, hiyerarşi, büyüklük, aktivite ve dağılım konuları ele alınarak değerlendirilecektir.

Araştırma yedi bölümden oluşmaktadır. Birinci bölümde, araştırmanın amacı ve kapsamı ele alınmıştır. İkinci bölümde, kentsel açık ve yeşil alan tanımları, sınıflandırmaları, hiyerarşileri ve tasarım kriterleri incelenmiştir. Üçüncü bölümde, kentleşme ve yeşil alan ilişkisi üzerinde durulmuştur. Bu bölümde, kentsel açık alanların tarihsel gelişimi, açık ve yeşil alanların kentsel alandaki önemi ve yeşil alan ihtiyacı konularına değinilmiştir. Dördüncü bölümde, imar planlarında yeşil alan düzenlemeleri incelenmiştir. Bu bölümde öncelikle, imar planlarında yeşil alan kavramı, daha sonra yeşil alanların elde ediliş yöntemleri ve son olarak da imar planları uygulamasında karşılaşılan sorunlar ele alınmıştır. Beşinci bölüm, Türkiye'deki ve çeşitli ülkelerdeki yeşil alan normlarını ve bunların karşılaştırılmasını içermektedir. Altıncı bölümde ise, İstanbul, Kartal ve Sarıyer'in mevcut yapılarına yer verilmiştir. Bu bölümde, öncelikle İstanbul'da kentleşme ve yeşil alan sorunu irdelenmiş, daha sonra Kartal ve Sarıyer ilçelerinin mevcut durumları ele alınmıştır. Yedinci blümde ele alınan alan çalışmasında Kartal ve Sarıyer'in yeşil alan durumları irdelenmiştir. Son olarak, sonuç ve öneriler başlığı altında bu iki ilçenin yeşil alan durumları karşılaştırılarak bir sonuca ulaşılmıştır.

Anahtar Kelimeler: Yeşil Alan, Yeşil Alan Politikaları, Yerel Yönetimler, Yeşil Alan Normları, İstanbul.

To My Grandmother

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This study has been performed under supervision of Prof. Dr. Melih Ersoy. I would like to thank to him for his supervision.

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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.

30.04.2004 Özlem Coşkun

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INTRODUCTION

Due to its historical, geographical, economical, social and strategical position, Istanbul has a country-wide and world wide importance which prepared the adequate conditions to become the focus of migration and urbanization in 1950s.

Migration and industrialization have rapidly turned former settlement pattern -as houses with gardens in groves- into an irregularly developed city with an unbalanced urban and rural population. This rapid augmentation of city population and urban sprawl have not only resulted in unhealthy physical conditions but also socio-economic, cultural and psychological disorders. Under these circumstances green belts and open spaces became an important issue to consider.

Built-up environment with high density, traffic, noise and crowd alienate individuals from nature which causes depression and solitude. In today's city life, every day more citizen feel need for recreational areas and aesthetic in their life to

benefit from the nature, to get rid of harmful effects of rapid city life and increase their productivity.

In addition all these contents, green spaces is the most urgent thing in concept of earthquake. In recent years, Türkiye is face to face with danger of earthquake. Reserve areas must be formed for temporary sheltering after disaster in land use decisions. Green spaces are used as these reserve areas. Neighborhood parks can be used as temporary shelter, temporary health and other technical equipments after disaster. Green spaces form a tampon zone to fires and explosions and obstruct spreading out of fires and explosions. Also, green spaces have a site of being evacuation areas. (1:2003:281-293)

As the relation in between population and green spaces is subject to this thesis; Istanbul, the largest metropolitan area with the problems such as rapidly increasing population, dense built-up environment and rapidly decreasing amount of green space per person, is set as a research example.

Although the positive effects of green spaces on people are prooved, there is not enough study on how to solve the problems concerning green and open spaces in cities. In 1999, the related law has been modified and the amount of green spaces per citizen has been increased from $7m^2$ to $10m^2$; but unfortunately the requirements of the law were not realized in practice. Although the city planners followed the law during the preparation of 1/5.000 scaled master plans, necessary actions were and are not taken in implementation of these plans. In this study, the

concept and implementation of green and open spaces and implementation problems and possibilities are reconsidered in accordance with Istanbul case studies.

In Türkiye, the authority of developing 1/5.000 scaled master plans and implementing green and open spaces designated in these plans are in local governments. Thereupon it can be considered as it is the responsibility of local governments to acquire adequate resources for research, to develop implementation models and handle the problems occurred during the execution phase.

As a case study, examining two different local governments will be guiding to understand the similarities and differences in between the structure of the local government and the implementation structure of green and open spaces. For being the two of the densest coastal residential areas Sarıyer and Kartal have been chosen for case study. Also some similarities such as population increase rate and some diversity such as the amount of green spaces per citizen and as the green space distribution texture of the two districts were subject to selection.

The population increase of two districts in between 1990 and 2000 were close to each other which was 29,09% in Kartal and 31,35% in Sarıyer. According to a research done by the Istanbul Metropolitan Municipality, Directorate of Parks and Gardening, the amount of green spaces per citizen was 0,8m^2 in Kartal which is in the lower fourth group in whole Istanbul districts, while it was 13,7m^2 in Sarıyer

which is in the upper fourth group in 1992. Also the green space distribution in Kartal is dispersed where there are large integrated green spaces in Sarıyer.

Depending on above data the changes in green and open spaces within time in these two districts will be heuristic to determine the relation in between local governments and green spaces. Urban green spaces are examined in concepts of definition, classification and hierarchy. Considering space as a source to provide remedies for future necessities, it is required that social and economic activities, which take place in urban space, should be organized with optimum efficiency. In the frame of urban planning, improvising open spaces becomes a requirement. Definitions, classifications and hierarchy of open and green spaces that have countless importance for urban and human are the concepts to compare features of green spaces in Kartal and Sarıyer.

Urbanization and green space relation, which is taken into consideration in third chapter, enables us to observe development, significance and need of green spaces. Importance of green space is increasing day by day in urban life. With high migration from rural to urban areas, population growth causes the decrease in quantity of green space per person. Significance of green space is emphasized in this chapter.

Green space arrangements in Master Plans are investigated after urbanization and green space relation to notice green space concept in Turkish legal structure. In this frame, firstly green space concept in 1/5.000 Master Plan and 1/1.000

Implementation Plan are studied. Secondly, procuring methods of green spaces in Turkish law system are determined. With this concept, implementation tools of Municipalities of Kartal and Sarıyer can be compared. Lastly, problems of application decision of green space are taken into consideration to reach the obstacles that can effect local governments while procuring green space.

Green space situation of other countries are important to understand Turkish green space system. In this context, U.S.A., Germany, France, England, Italy, Netherlands and Sweden are explored to learn green space experiences of U.S.A. and Europe countries. In this chapter, which also includes green space norms of Turkey, comparison of Turkish and Foreigner green space norms takes place.

Existing character of İstanbul situates in fifth chapter. Urbanization and green space problems are discussed in this chapter. After general concept of İstanbul, residences of Kartal and Sarıyer are examined in concepts of location, historical development and natural structure. This chapter widens our views about Kartal and Sarıyer and İstanbul.

After all these researches, green spaces in Kartal and Sarıyer are going to be observed in details as case study. In the frame of previous chapters, green spaces in Kartal and Sarıyer are taken into consideration in concepts of ownership, opening year, classification, size, activity and distribution. . In case study, to evaluate green spaces in these two residences, the methods used in comparison will be one-by-one fixing and photographing.

In conclusion, sufficiency of green spaces of two residences is brought up by comparison method. Also, achievement degree of local governments to procure green space in samples of these two residences is going to be examined. As a result, adequacy and procuring method of green spaces will be mentioned.

CHAPTER 2

URBAN OPEN AND GREEN SPACES

Urban open and green spaces are going to be examined in terms of definition, classification, hierarchy and design criteria to observe features of green spaces.

2.1. Definition of Open and Green Spaces

As a result of rapid population, residential areas become areas that people have to accommodate rather than being livable areas. Urban subjects keep on living in condensed and disorganized urban residences.

Urban space is an area in which people act and which surrounds people; arouses the feelings of becoming a united whole and owning. Also, urban space has a three dimensional volume that is limited by horizontal and vertical elements. The logic and content created by the form of public space have to contain a synthesis of human wishes and necessities. Buildings, streets, squares and green spaces that form urban space can be considered as a whole consist of “constructed and

unconstructed" areas. This type of urban open space has a cultural dimension that can be determined by fashions, styles and manners. The definition element of cultural dimension is continuity. Therefore, we can see a sort of cultural continuity in all urban open spaces that we describe as "beautiful". Open, empty and free spaces in our cities are valuable sources and evidences that should be transferred to next centuries. One of the most important responsibility of administrators, planners and society as a whole should be the preservation of existing open and free spaces and creating new possibilities. (2:1998:20-25)

In other words; considering space as a source to provide remedies for future necessities, it is required that social and economic activities, which take place in urban space, should be organized with optimum efficency. (3:1992:14-21)

In addition to this, since space gains meaning with human beings, it has to provide physiological, psychological and social necessities of people living in it. According to this comprehension, spatial design should not merely aim to create aesthetic spaces providing specific functions but it should also aim to create spaces that have emotional effect. A space that has emotional effects brings the other dimensions other than depth, width and height. (2:1998:20-25)

American landscape architect Garrett Eekbo designates that the physical concept of "open space", means freedom of any action. According to him, natural characterized environment is an open space without deduction. At first human beings lived in this space freely then agriculture transformed this life style and at

the end urbanization began to consume these open spaces. But also in time, the concept of open space got importance as a result of urbanization. Because the need for open spaces has been increased day by day with the increasing population and density of buildings, (2:1998:20-25)

In the frame of urban planning, improvising open spaces becomes a necessity. Because open spaces neutralize pollution and discomforting elements, prevent disordered urban development and also they are places to spend leisure time. Then here, we have to explain the concepts of “open space” and “green space” (4:1982:42-57)

Open space which is one of the fundamental elements of urban pattern, is defined as emptiness that remains out of buildings. (5:1998:23-27) As a wide definition, open spaces are the unstructured free areas in or out of a city, which has a land use feature and is reserved and planned for a specific function. (4:1982:42-57)

According to Kayhan and Konuk, cities we live in do not merely consist of buildings that provide our sheltering need. Blocks and open areas form the physical structure of a city. Buildings form blocks; transportation network and open spaces form emptiness. Urban open space is differentiated from the other urban spaces with the use of the space by urban citizens. Urban open space gets another dimension other than width, length and height. As an example, emptiness in a city is an urban area but a city square is an urban space. (6:1985:33-38)

While studying urban space, different spaces consist of fullness and emptiness have to be examined. Streets, squares, parks and gardens are taken into consideration as elements of urban space as emptiness. Trancik categorizes these spaces in to two groups as “hard space” and “soft space”. Hard spaces are considered as spaces that are limited by architectural walls and usually social activities take place in it whereas the concept of soft space is used for natural environment. According to this grouping we can make two groups of urban open space (7:1986:17-25):

- Urban spaces formed by carrying nature to cities; parks, gardens etc.
- Urban spaces between buildings; streets, squares etc.

Usually, the concepts of open space and green space are used together. It has to be mentioned here that all green spaces can be defined as open space but on the contrary all open spaces are not green spaces. (5:1998:23-27)

As the term “green space” self evidently demonstrates, these areas are the spaces covered by plants. Consequently, urban open and green spaces can be defined in two groups (8:1997:8-17):

1. Places for the facilities that are part of residential areas; for example playgrounds, recreation areas and auto parks.
2. Places forbidden to construction:

- Traffic, areas for transportation; for example pedestrian ways, auto parks and connection points.
- Areas for waste water and garbage.
- Public or private green areas; for example gardens, parks, little hobby gardens, water surfaces, sport and swimming facilities, botanic gardens, zoos, playgrounds, tents and camping areas, squares, walking and outing roads, cemeteries.
- Agricultural and forest areas.
- Places for public usage like playgrounds for children or waste time facilities.
- Places that are projected for protection, attention and development of landscape.
- Places that are forbidden to construction, forest areas, afforesting and planting areas.

2.2. Classification of Urban Open and Green Spaces

According to Ministry of Construction and Settlement, the definitions in applied development laws on open and green spaces classify open and green areas in two groups in our country. These are determined in 1985 dated and 3194 numbered last development law as active green spaces (park, resting area, children's playgrounds, Luna park, sport and playground areas) and other green spaces (forests, afforested areas, maquis, land covered with heath, thicket areas, exposition, exhibition and festival areas, cemeteries). (8:1997:8-17)

Classification of open spaces in a city is considered in different ways depending on different features of these spaces such as largeness, functions, and utilization varieties.

According to a classification that examines open spaces as cultural and natural open spaces Open spaces are: (5:1998:28-33)

1. Cultural Open Spaces

a) Functional Open Spaces in urban pattern

Roads, squares, auto parks, cemeteries etc.

b) Besides being functional in urban pattern, Aesthetical and Recreational Open Spaces

- Public places; passive recreational spaces (parks, squares, boulevards, decorative and functional green spaces, watching terraces...), active recreational spaces (sport facilities, playing areas, children's playgrounds, picnic areas, camping areas in cities, hippodromes, recreative water surfaces)
- Partial public places; (open and green spaces of administrative areas, surroundings of business district, school gardens, surroundings of hospitals and health facilities, private sport clubs, surroundings of monuments and temples)
- Private open spaces; (gardens of houses, agricultural areas)

2. Natural Open Spaces

Mountains, forests, steppes, pastures, nature-protection areas, lakes, ponds, rivers etc.

If we classify Green spaces as “Urban Green Spaces” and “Natural Green Spaces”, Green spaces are: (4:1982:42-57)

1. Urban Green Spaces

Beginning from the smallest unit:

a) Green in building level

b) Green in primary school unit level

Children’s playground

Gardens of mass housing

c) Green in neighborhood level

Neighborhood parks

Sport areas

Squares

d) Green in urban level

Urban parks

Zoos

Botanic Gardens

Roads in the city, refuges and pedestrian roads

Cemeteries

2. Natural Green Spaces;

Regional parks

National Parks

2.3. Hierarchy of Urban Green Spaces

When countries that have different features and sizes are compared, areas (that are separated for green space in or near city) and activities of green space infrastructure change. But some common features occur in international research. Types and quality of different green spaces are summarized by following a hierarchy. (9:1994:135-144)

- **Playloyt:** Playloyts locate generally in mass housing and serve to 1-3 aged children. Also, this type of park serves to area of maximum 200 m., 50-200 of houses and population of 200-1.000 person. Playloyts that are in housing unit enable close control of families and have activities like basic games.

Norms about playloyts are not determined in lots of countries. Solutions are taken into consideration in mass house planning. Quantity of playloyt per person changes between 0,2-0,5.

- **Playground:** Playgrounds, which serve to 3-6 aged children, have a buffer zone between 100m and 800m according to different countries. In lots of

countries, playgrounds are planned to serve population of 3.000-7.000. Generally, they are suggested neighboring to schools or in neighborhood park.

Playloyts take place in playgrounds in many countries. In these samples, playgrounds serve to 1-6 aged children and quantity of playground per child changes between 5-10 m^2.

- **Playfield:** There are different types of playfields according to different age groups. But generally, playfields serve to 5-16 aged groups and include organized games. It is possible to categorize playfields in two groups:

  1. Playfields fro primary school group (6-12); generally they take place in or near the primary school and they also include small fields that enable sport facilities. Buffer zone of these places is 400-800 m.
  2. Playfields for high school group (12-16); sport fields are planned in these playfields according to sizes.

- **Neighborhood Unit Park:** When green spaces are observed as a whole in 3.000-10.000 populated (Average 5.000 person) residences, they constitute of 1/4 of total urban green spaces.

  Neighborhood parks include the facilities below:

1. Playloyts
2. Playgrounds
3. Playfields
4. Park
5. Sport Fields
6. Passive Green Spaces

Distance of green space facilities in urban pattern is 800 m.

- **Quarter, District and Urban Parks**

Generally, when neighborhood scale is exceeded and urban scale and density are increased, quantity of green space per person increases. Quarter and district parks generally take place near a river, lake or sea. Quarter and urban parks are large green spaces that meet recreational activities as amusement, resting and sport facilities of city.

Table 1.1 Quantity of Green Spaces per Person According to Park Types in Different Countries

Park Type	U.S.A.	France	Netherlands	England	Italy	Turkey
Neighborhood Park	10	5	3,5	*	3	4
District Park	10	*	*	*	3,5	7
Urban Park	20	13	7-9	20	5,5	10
Nearby Park	60	12	20	40	*	17
Region Park	260	75	25-30	*	*	*
Playloyt	1	*	*	*	1	2
Playground	5-6	5	4	10	4	1
Sport Facility	*	8	6,5	*	6	*

Source: Kentsel Alan Kullanım Normları

2.4. Green Space Design Criteria

Green space is an extremely important function beyond the sheltering and working areas of a country. These areas shall be arranged for people to evaluate their waste times in best way. This is such an arrangement that must depend on not only the nature, topographical, climatologic and geopolitical conditions of the city but also requirements of populace, living style, tendency, wishes and traditions. In different countries, some assumptions are defined about the different green space types of inside and outside of residential areas. But it is important that acceptance of these criteria for all cities falls the planner in errors. Also, applications of these criteria in arrangement plan exactly cause the same result.

In Turkey, empty areas except agricultural areas are seem to be not utilized sufficiently. Especially, forests in Turkey are not at requested amount. Also they are still being damaged. They are potential areas for national and regional parks. But fixing of protection and usage areas, preparations of regulations about this concept and introduction of these areas to Türkiye and foreign countries are delaying. Stressing on these areas, providing transportation opportunities, reserving auto parks and establishing recreational facilities must be vital concepts in regional arrangements. It is a must for development of Turkey's tourism policy.

There is no certain policy about sport areas in Turkey. Sport facilities are not adequate in residences in Turkey. But in most of residences football occurs as a

local sport type. Encouragement of physical education, development of different sport branches and reservation of required areas must be realized. In small residences in terms of population, play and sport fields of schools can be used to meet the need.

Green spaces like parks, resting areas and playgrounds per person are not sufficient in cities in Turkey. Giving importance to arrangement of green spaces is a vital need in case of guiding urbanization policies, controlling density and structure of buildings. Arrangements of green spaces in areas that are in public possession provide convenience during procuring period. According to researches of green spaces, 40-60 m^2 green spaces per person must be reserved in whole urban pattern. This amount must be minimum 6 m^2/person inside the city. Distribution of these green spaces to residence and transportation opportunities must be provided in perspective of physical planning. Arranging playgrounds in primary school unit; playfields and local parks in district unit; sport centers, urban parks and recreational areas in urban unit will be suitable. In this way, a balanced distribution policy of green spaces can be provided. (10:1972:211-212)

In addition to concepts above, green spaces have a vital importance after an earthquake. Therefore, these areas must be planned to be a storage area of food distribution and aid materials. They have to include minimum infrastructure according to these concepts. Moreover, they must have a relation with main transportation network. It must be forbidden to make walls or balustrades that

block reaching these areas. It is preferred that these areas surround quarter units. In this manner; large development areas can be separated to small parts, also fires and explosions can be taken under control. (1:2003:281-290)

CHAPTER 3

URBANIZATION AND GREEN SPACE RELATION

History, significance and need of green space will be taken into consideration in concept of urbanization and green space relation.

3.1. History of Urban Open Spaces

After making description of today's urban open areas, it should be useful to observe of how the concept of open space has been developed through history and dimensions it has been reached.

Throughout the history, urban open spaces had been used where religious, military or commercial events take place. Not only one function but also other functions had taken part in these areas.

In accordance with Greek culture it could be possible coming across too many people and different activities in open areas of Greek cities. At the same time,

there were certain types of city plans that entail a richer public life. (11:1984:41-43) In city plan which Hippodamus put out; Agora, a business and political center, was a very important open square where people were getting together, meeting and arguing their problems. Public need of recreation was obtained by gymnasium, theatre and stadium in or around nature.

The Romans put forth three new approaches about open areas. First one is open but completely introvert place order. Second approach is reorganizing roads like creating arcedely pedestrian roads between coulombs and expanding roads. By constructing these roads; areas that have different functions and are enchanting like squares emerged. Romans' third approach was their developing recreational open areas with the idea of art. Since Romans had 180-day holiday in a year, they built facilities like theaters, stadiums that have urban open space function. (and they were also built as tribute to emperors and the rich). The form of Roman Age was at human scale and people felt their own existence in those activities and actions.

In the cities of the Middle Age, which were surrounded with city wall for defense, land was limited. For this reason; the price of land increased and squares became small and thus they fitted to human scale.

In the Middle-Age cities, three types of square were appeared:

1. Official squares that are generally in front of a palace or governmental building and surrounded by other important buildings or buildings belong to aristocrats.
2. Bazaar squares that are surrounded by shops and that have open sale spaces in the middle of them; they also include fountains, weighting place and management buildings.
3. Church squares (11:1984:47-51)

The most important open spaces in Middle-Age cities were worship places and squares that formed axis of the city. Generally, the settlements were in gardens and city was surrounded by nature and agricultural lands. General characteristic of the settlement was the houses being blocked inside, against streets and cities being blocked inside, against countryside.

In Renaissance cities, palace and gardens of the palaces were the axial places. Open areas of the city were adjacent to these palaces. Apart from palace gardens, rich and noble people's wide-gardened villas and pavilions moved from inside to outside of the city These places left inside of the city were opened to public. People had continued their relations with nature and green by these gardens, agricultural and rural areas.

The need of open space hadn't indicated itself till the beginning of 19th century. Beginning from 19th century, with the population and block density, shortage of open space came into view. In spite of continuity of industrial revolution in

1830's, expanding urban park areas prevented the effects of agglomeration. Industrial revolution in America and Europe also caused the reform of urban open space. So, large open spaces were constituted in city centers like Central Park in New York. (7:1986:32-34)

In the next step, there is the occurrence of vehicle traffic in urban life. The power and form of open spaces had changed dynamically and dramatically with the development of cities. Previously, due to the influence of industrial revolution, urban open spaces were undervalued. However later on, as a reaction to industrialization the idea of "garden city" came out.

When Turkish cities are examined, it is observed that mosques and complex of buildings adjacent to mosques are the one of the most important example of open spaces as meeting and conversation places. Turkish cities have kept on relations with nature and met their need of open space with their business districts surrounding mosques, bazaar squares, quay squares in coastal residences, and little mosques, bazaars and cafés (12:1984:29-34)

3.2. The Significance of Open and Green Spaces in Urban Centre

Urban open and green space is one of the elements which construct the urban structure and they cannot be considered separately from the city. In this context, open and green spaces become more important in terms of functionality in the

city, climate and aesthetic of the city, mental health, ecological and usage functions. (8:1997-15-24)

a) **Significance of open and green spaces in terms of city planning**:

In terms of city planning urban open and green spaces have some functions which create usage areas for users such as fragmented cities, circulation, bioclimatic and hygienic, rehabilitation and protection, forming and giving aesthetical features to city, increasing quality of life, space reservation and recreation.

- Fragmented city function: In any place open spaces, which were protected and came to today, (for example forest spaces, slope of hills, ridges, coasts and valleys) can be the elements that form and classify the city -just by their existence.
- Circulation function: Open spaces have a fundamental organizational role in the risky context of continuously changing city centers. In relation to this, another significance of open space is its circulation function. This function connects high-density urban centre functions and also creates space for a high-density transportation system. When we consider special character of city centers, we can see that these roads provide circulation very slowly like pedestrian traffic. (13:1995:71-79) Also, roads (they are thought with city axis that classify city) and urban open spaces provide connection between residential areas and industry regions and city transportation.

- Bioclimatic and hygienic function: Green bends covering very large area to special home gardens, all sorts of vegetation of residential areas can destroy negative effects of climate. They can contribute to climate to get better.
- Protection function: All green structures of urban pattern (from wide green spaces to narrow green axis) block noise, dust, gas and harmful matters in air. Planted areas prevent strong winds and contribute to air circulation.
- Function of giving shape and aesthetic form to city: The green spaces of the city, for instance historical gardens or any other green spaces formed by different ways, can affect urban visual panorama. Especially in open spaces, ostentatious open places can raise the aesthetic value of the city. Various and different open spaces can prevent nucleus formations that are not desired in high-dense residential regions. And also, by classifying city, they can create space structures and be effective on the form of the city..
- Increasing life standards function: Green spaces of the city have great life style value for people who use these open spaces. Active dealings in nature and seasons also increase the life style value.
- Recreation function: Open spaces, which are near a residence, in neighborhood or in city centre, meet the need of recreation in different ways out of working hours and at weekends.
- Space reservation function: In the process of urban development, when future functions of some areas and necessary space for these are taken into consideration, some of these areas enable to serve for other usages temporarily.

- Creating user-oriented usage spaces function: This function determines user-oriented functional areas in terms of increasing life standards and resting functions

b) **Significance of open and green spaces in terms city climate**: Open and green spaces produce a lot of different microclimates in urban system and also they affect city climate, especially the heat. A circulation system is formed between warm air in densely constructed zones and cool air in wide green spaces. For this reason, cool air goes around urban area at night. This air circulation can be also got by relief. This cool air exists on big forest areas that are around city. If these buildings and plantings do not settle vertical to draught, this cool air flows into city. Otherwise, this cool air accumulates somewhere and can cause frost. This should be taken into consideration while planting takes place inside of the city.

c) **Significance of open and green spaces in terms landscape and city aesthetic**: Landscape is the factor, which determines and forms the development and basis of the city. The charm of a city depends on the relation between landscape and construction elements.

d) **Significance of open and green spaces in terms of usage functions**: Open and green spaces offer various usages and recreation opportunities to city populace. For example; parks, resting areas, sport areas and walking areas.

e) **The economic significance of green spaces**: Some of neighborhoods in urban pattern contain a lot of green spaces, so prices of vacant lots are directly related to green spaces in these neighborhoods. In a well-organized park, which has traffic security, there is no need to observe the children who are playing in the park. Thus, owing to this time and work economy, productivity increases. By forming urban green space system, transformation system between residence and work regions are decorated with green places. So, decrease of noise and air pollution is procured.

Due to all these functions, open and green spaces have gained importance in city centers, which have different structure from other parts of the cities. As we all know, city centre addresses to most of the people in a city. We can define it as a place where specialized and differentiated offices and facilities which should be around each other located densely in a limited area which is most accessible (14:1996:41-47)

Features of the city centers are as following:

- Geographically city center is on the centre of residences.
- Pedestrian and vehicle traffic are solved very well.
- Sufficient auto parks.
- Sufficient infrastructure spaces (health, trade, education etc.) and well-organized relations between them.
- Completeness. (14:1996:41-47)

3.3. The Need of Green Space

In residential areas the need of green space changes according to climate, geographic situation and demand to these areas. (15:1991:11-18) Planning contains open and green space setting in a view of physical planning in different scales. Largeness and transportation are two criteria of evaluating these spaces.

Design includes arrangements of space and place according to their aim. In these arrangements:

- Ergonometry and safety
- Suitability to aesthetic principles
- To achieve multiplicity (multi-purpose) determines usage density.

Planning and design study scales:

- From one house scale to district scale: (to 1/500)
- Quarter scale: 1/500 1/2000
- Urban scale: 1/5000 1/10000
- Regional planning scale: 1/25000 1/50000 1/100000 (16:1993:88-91)

3.3.1. Green Space Need in District and Quarter Scale

City block scale contains house and its nearby environment. Organized or not organized playing areas, playgrounds, neighborhood parks and sport facilities are

all included to open and green area facilities in this unit. These areas have two important elements. One of them is largeness (square meter or decare) and the other is transportability of walking and seeing distance. (16:1993:88-91)

In quarter scale; there are park, playgrounds for 8-15 age, open and close sport areas in high schools or technical high schools, green spaces around administrative, social and cultural facilities. Picnic and entertainment areas for spare times or weekend holidays are considered under the concept of green and open area in a quarter scales. Usually there are football fields near school playgrounds. Parks are determined according to demand in these units. Plant types should be chosen according to climate and type of soil. There are some facilities like natural or artificial lake, outdoor cafe, buffet, and cafe in a park. (15:1991:11-18) These facilities can be in walking distance. They can be accessed by bicycle or motor vehicle as well. (16:1993:88-91)

3.3.2. Green Space Need in Urban and Regional Scale

The need of green space begins to grow in relation to the increase of resident's population and block density. (15:1991:11-18) Urban park, urban forest, botanic gardens, zoos, exposition and exhibition areas, coast arrangements of static or non static water surfaces, playgrounds, Luna parks, stadiums, open and close sport facilities in olympic norms are green and open areas which should be in this scale. The sizes of these areas are determined by hectares and people can access these spaces by motor vehicles or mass transportation. (16:1993:88-91)

Regional green spaces are: copses, proves, forests, recreation areas for weekend trips (15:1991:11-18), camping areas, scout camping areas, designs of water shares etc. which are within the boundaries of urban unit administration. As in the urban scale, the sizes of these areas are determined by hectares and people can access these spaces by motor vehicles or mass transportation. (16:1993:88-91)

CHAPTER 4

GREEN SPACE ARRANGEMENTS IN DEVELOPMENT PLANS

Development plan's concept is residential areas which were developed and are still in the process of developing. Residential and developing areas have got various uses. Development plans establish suitable urban development among these diverse uses and have information of training. This plan is ordered with principle decisions of further like region and 1/25.000 scaled environmental plans. Development plan aims to look after public health and guarantee social and cultural necessity, good quality of life standards and working circumstances, and safety. Furthermore, its aim is to find out the most possible explanation for some urban functions similar to residing, working, resting and traveling. Development plans are 1/5.000 scaled master plan and 1/1.000 scaled implementation plans that are drawn on approved existing maps. All sides of planning process must obey to decisions of development plan about urban settlement, land use, protection, restriction and practice principles.

Development plan has two steps; 1/5.000 scaled master plan and 1/1.000 scaled implementation plan.

1) Master Plan (1/5000):

1/5.000 scaled master plan is drawn on approved existing map and includes land pieces' general usage forms like house, trade, industry spaces and green spaces. Master plan (1/5.000) also includes main region types, regions' future population, population density and (if necessary) building density, residential areas' development path, development mass, development principles and transport systems. It is prepared to be base for a 1/1.000 scaled implementation plan.

A joint master plan can be prepared according to bases of Development Law that consists one or more municipality boundaries (if exists neighbor areas). Its scales are generally; 1/50.000, 1/25.000, 1/10.000, 1/5.000, and 1/2.000; but the most preferred scale is 1/5.000.

2) Implementation Plan (1/1000):

1/1.000 scaled implementation plan is arranged on approved existing maps that shows last situation of land and have cadastral on it in the frame of 1/5.000 scaled development plan principles. 1/1.000 scaled implementation plan is a plan that indicates detailed characteristics as city blocks, density and block system of these city blocks, percolations, roads, application stages and other information.

1/1.000 scaled implementation plans are not copies of exactly enlarged 1/5.000 scaled master plans. They bring up decisions and preventive measures of land protection and land use.

4.1. Greeen Space Concept in Development Plans

Green spaces in development plans indicate parks, children's playgrounds, playing areas, groves in or surrounding of city, resting and walking areas. Private gardens in parcels, agricultural areas, fruit gardens, groves and nurseries that have commercial aim and are not open public spaces, country forests, cemeteries, military areas, school gardens, sport facility areas, refuges of road and squares are not green spaces according to development plans.

Urban green spaces, when plans are done, are considered as existing land use and urban infrastructure. Spatial distribution, existing area, obtainable norm and potentials of parks, children playgrounds, playing areas, resting and walking areas, urban groves and active urban green spaces are determined in planning analysis.

In development plans, spatial distribution, buffer zone, capacity, competence and developing potentials of urban social infrastructure, education, health, social, religious, cultural, urban sport areas and administrative areas are examined. Besides agricultural areas, forests and cemeteries are in urban land use and infrastructure. (17:1986:20-50)

4.2. Procuring Methods of Green Spaces

Expropriation and land readjustment methods are the methods of procuring green space.

4.2.1. Expropriation

Expropriation is to transfer exclusive possession to public possession by using sanction force of public law on circumstance that its value is given in cash to carry out public service.

Expropriation is an administrative disposal. In other words, it is a decision and an operation made for public purpose based on administrative authority. It must be performed according to methods shaped by laws because it brings restrictions to possession right or removes possession right.

Expropriation's main legal base is article 46 of 1982 Constitution in our country. In first part of this article, it is explained that state and public legal personality have an authority to expropriate all of or some parts of private possessions depend on laws for public purpose on condition that its value is given in cash. At the second part of this article, "methods and styles of calculation of expropriation compensation are determined by law" is explained and also while determining amount of expropriation compensation, law takes into consideration tax declaration, expropriation values determined by authorities at date of expropriation, unit prices of immovable possessions, building-cost accounts and

other objective measurements. Also it is determined that how to tax difference between this value and value at the tax declaration.

According to Constitution that was established in 1982, the compensation value will be given in cash. However, the method of expense of the expropriated lands' values which are expropriated for achievement of agricultural reform; implementation of full-size energy and irrigation projects and inhabiting projects; increasing new woodland areas, safety of coast and tourism shall be determined by the act. Moreover, it has been explained that at the states the act allows expense by installments, the time of installment shall not be more than five years. Another legal instrument that directs expropriation process is The Expropriation Act numbered 2942, approved in 1983 and "Regulations about Expropriating of Adjoint Real Estates done in Confiscations for Dam Construction" that came into force in accordance with article 12 of Expropriation Act at the date of 06.08.1985.

The Expropriation Act numbered 2942 arranges "operations of expropriation made by public and private legal personality, computation of expropriation value, registration of immovable possession, taking back immovable possession that is not used, transfer operations of immovable possession between authorities, rights and obligations reciprocally and solution methods of the conflicts based on these rights and obligations" of immovable possessions that are real and private law legal personality in case of public interest.

4.2.1.1. Features of Expropriation

Features of expropriation are determined in 1982 Constitution. These are defined below.

a) Expropriation is done on immovable in private possession.
b) There must be public interest in expropriation.
c) State and public legal personality are competent in expropriation.
d) Price of immovable possession must be paid in cash.
e) Expropriation must be done suited to principles and methods that are determined by laws.

4.2.1.2. Method of Expropriation

Way of expropriation was designated in the Expropriation Law of Number 2942. Expropriation has two stages; administrative and judicial stages.

4.2.1.2.1. Administrative Stage of Expropriation

1) Taking and approving of public interest decision.
2) Determining immovable possession and its owner that will be expropriated.
3) Putting first explanation in deed registration.
4) Selection of "Value Determining Committee" and determining worth of expropriation.

5) Putting price of expropriation to bank.
6) Informing owner of immovable possession about expropriation.
7) Giving second explanation to deed office.

4.2.1.2.2. Judicial Stage of Expropriation

There are two trials in expropriation:

a) Administrative Trial: Trials that are sued by administrative sides (owner of immovable possession and administration) are administrative trials. Administrative Court deals with these trials. Appeal court of these trials is Council of State.
b) Judicial Trial: Court of First Instance Law sues judicial trials. Appeal court of these trials is Court of Cassation.

4.2.2. Land and Vacant Lot Readjustment (Article 18 of Development Law)

Being systematic of a city in point of development is belonging to rapid reflection of development plans to space. Land and vacant lot arrangement is an important tool for municipalities and governorships to apply development plans.

Generally, arrangement of rural lands that are for agriculture is taken in land arrangement concept. Arrangement of urban lands that are for residence is taken in vacant lot arrangement concept.

Land arrangement's aim is to increase fertile of rural lands that are for agriculture by bringing these lands together, binding these lands to road and watering network through planning (18:1977:51-72).

Vacant lot arrangement's most important aim is to reflect planning decisions that are brought by development plans to space in perspective of planning principles and techniques. Vacant lot arrangement has an importance by being an effective tool of vacant lot politics. Generally, main factor of illegal construction is scarcity of urban vacant lots, which are formed by vacant lot arrangement. As a result of this, illegal construction can be obstructed. Furthermore; road, square, park, green space and auto park that are for public service in development plans are easily transferred to public usage by vacant lot arrangement. If there is not a vacant lot arrangement in Development Law, municipalities and governorships have to expropriate all these areas to transfer them to public usage.

Vacant lot arrangement can be done in two ways. First one is vacant lot arrangement that is done after possessor's want, and the second one is the arrangement that is for public disposal.

In figure 3.1, land and vacant lot arrangement in our country is shown.

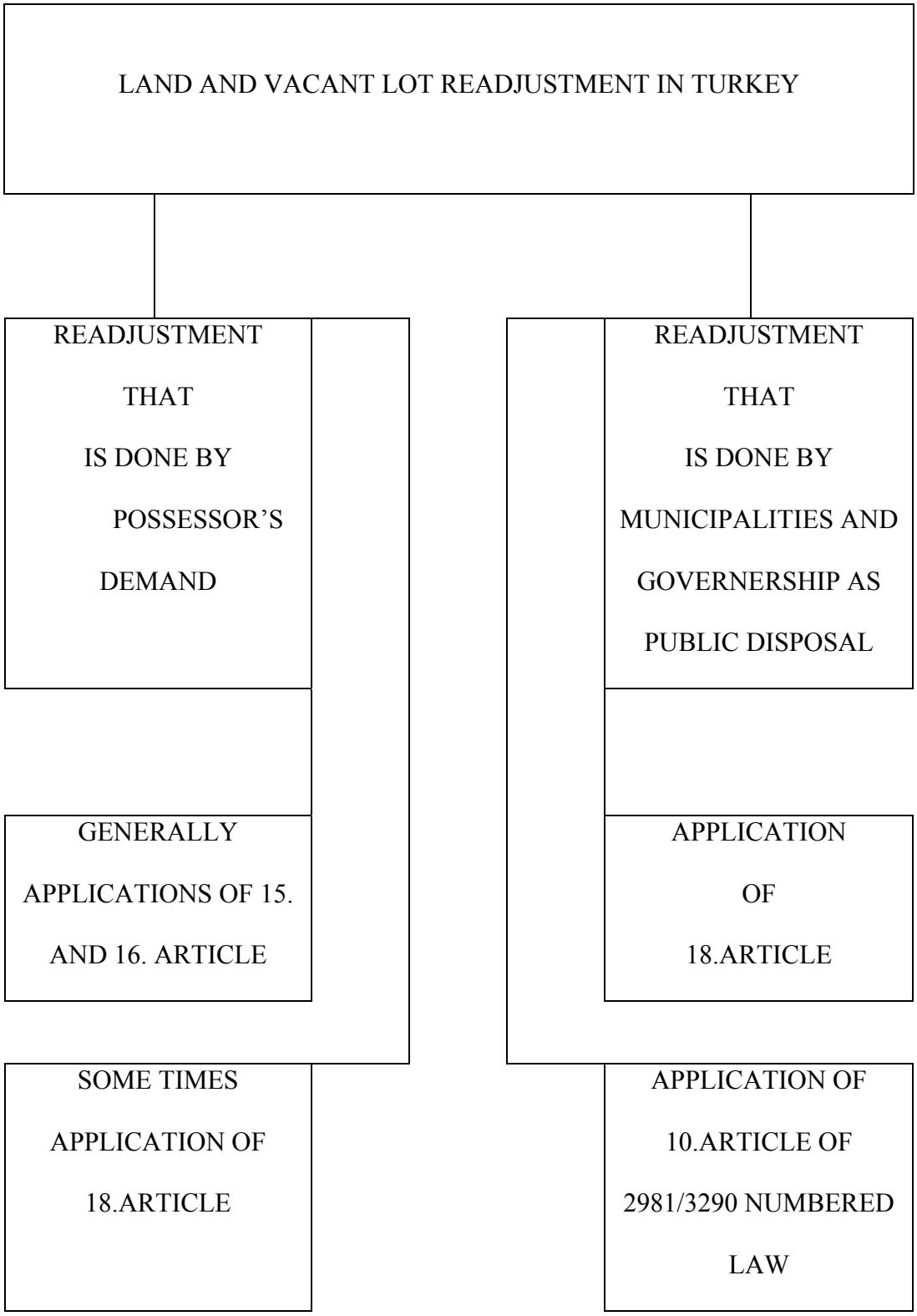

Figure 4.1. Land and Vacant lot Readjustment in Turkey

4.3. Problems of Application Decision of Green Space

General problems concerning the green spaces in Turkish cities can be summarized as follows:

1. Green spaces in Turkish cities do not have hierarchical distribution in urban pattern. So, buffer zones of green spaces can reach exact regions.
2. Green spaces are insufficient in case of area.
3. Green spaces aren't adequate to provide a socio-cultural development in case of urban infrastructure diversity.
4. Generally green spaces don't have harmony inside or with its environment in a perspective of urban infrastructure quality.
5. Vegetal composition and selection of plant species of green spaces is generally made unconsciously.
6. Green space generally do not have infrastructure.

Reasons of these green space problems in our cities can be collected in two main groups: green space problems brought up by planning and application.

4.3.1. Green Space Problems Brought Up By Planning

Green spaces failed in perspectives of quantity and hierarchical distribution in urban pattern. Reasons of this failure are:

-Inadequate evaluation of urbanization problems

-Negativity of current green space standardization

-Insufficient policy and administration

-Wrong planning decisions

In Turkish cities, scarcity of green spaces in residential areas causes big problems to city planners. City planners have to apply regional politics to find respond to questions like how to calculate green space necessity for current and target year population and find counter measure to current and future green space necessity. Consequently, green spaces have to be taken in a wide scope of planning. With this perspective, green spaces have to be developed in a system and this green space system has to be formed that can adapt to speed of urbanization.

In most of Turkish cities, development plans adapt unsystematic urbanization and be a tool for legalization of unsystematic and negativism. Planning problems against green spaces in development plan stages can be summarized as below. In development planning, as a requirement of planning stage, residents' macro form possibilities are being examined and determination of land uses are being done in a 1/25.000 scaled environmental plan. Main aim of this stage includes these items;

a) Obtaining systematic and balanced development around residents.
b) Beginning to use tourism and recreation sources systematically.
c) Preventing limited agricultural and special crop areas, balancing usage of agriculture, industry and tourism sectors.
d) Preventing existing forest sources.

After these important researches, especially 1st and 2nd degree agricultural plants within the plan boundaries are not defined as agricultural area in 1/5.000 developing plan. This kind of areas are forced to be out of settlement areas according to some municipality councils and some consultative inspection committees, or according to others they are forced to put out of planning boundaries otherwise other usages are given to these places.

It is not a solution to take valuable agricultural areas to out of 1/5.000 master plan boundaries. These areas, in future by a localized development plan with a perspective of land use decisions, may be turned to residential or industrial areas. Nowadays, in many countries, valuable agricultural areas are being registered and division of these areas even by inheritance is prevented by rules.

The first development law called "Development and Transportation Law" in our country, "6785/1605 numbered "Development Law" which went into effect in 1957 and current "Development Law", all referred to green space problems. However, rules dealed with green spaces in these laws are not enough to solve these problems. For instance, 28th article of 6755 numbered law mentions as "it is forbidden to reduce the amount of green spaces per individual lower than 7 m^2". With a change in regulation of Development Law (Number 3194) in 1999, 7m² was taken up to 10m² per individual. It has shown a little difference since 1957 and this raise is insufficient.

It is reasonable to provide this kind of a minimum norm to green spaces. Nevertheless, it is evidence that green space require of increasing population will increase proportionally and residences of this increasing population will estrange rural areas. Consequently, norm of 10 m^2 for each city in different populations brings negative effects to cities that have high populations. While suggested norms of new city developments are being realized, green space ratios in existing urban patterns have to be taken into consideration. If green spaces in existing pattern are not enough, the amount has to be increased by new green space norms in new residential areas.

One of the reasons of the failure in quantity of green spaces is legitimate problems. For example, the 33rd article of Development Law mentions in development and transportation plans; road, square, auto park, green space, park that reserved for public benefit in settlement boundaries which included by development program, that will keep on 4 years, are given permission to make constructions according to instruction rules. If they are not included in this program, after their owners have written the application and if they are not expropriated in 5 years, they will also be given permission.

In our cities existing green spaces are,

- 2.1 m^2 per person in İstanbul
- 2.3 m^2 per person in Ankara
- 2.8 m^2 per person in İzmir
- 3.9 m^2 per person in Antalya

Amounts of green spaces are defined as m^2 per person. This kind of calculation accepts homogeneous distribution of green spaces in urban pattern. In Turkish cities, distribution of green spaces and their buffer zones are formed indiscriminately. In development plan process, this problem is taken into consideration within existing residential patterns and empty vacant lots in ownership of treasury, municipality and foundation are chosen firstly. However, it is not possible to deal out this kind of empty vacant lots in urban pattern. Consequently, children's playgrounds, sport areas and parks, which have equal distribution according to their buffer zones, are all in need of full-size expropriation programs. These green spaces that cannot be realized with municipalities' limited budgets are later transformed into residential areas.

In planning, reverse conditions may occur. Municipalities that have enough budgets may not find empty areas within municipal pattern. For planning, especially in the second condition, solutions have to be searched to utilize back gardens in city blocks as courts open to public.

Spaces that are green in development plans are not open to public as green spaces. The major reason of this problem is not-realized expropriation programs. Procuring green spaces and creating green system is related to solution of vacant lot problems. Green space planning that is not based on active city applications will surely be unsuccessful. These active city applications must include procuring vacant lots.

In development plans, it must have been tried to concentrate on common usages of treasury and municipality lands. However, in most of our cities, inadequacies of lands that are in possession of municipalities are obstacles for solution. In recent years, difficulties of procuring vacant lot for green space and expropriation programs, which cannot be carried out, brought up some new legal solutions. For instance, 3194 numbered Development Law's 18th article talks about spaces that have to be taken for public service. In this article, %40 of an available lot can be taken as arrangement common portion from vacant lots that acquire a value increase by new arrangements in development plans. This issue increases probability of green space procuring in last development plans.

4.3.2. Green Space Problems Brought Up By Application

Determination of application spaces and their priority in programs must be considered in integrity of planning and park-garden services. Nowadays, there is not a planning view to bring up green space programs in most of cities. Service is brought to where there is a need, a political pressure or an advertisement tool.

In workings of program determination for green space application, there must be two perspectives:

1. Expansion of green spaces
2. Infrastructural rehabilitation of green spaces

Transformation of spaces, which will be lost by political pressure or any other reason in programs, to green space, has a priority to rehabilitation of infrastructure. New infrastructure workings in existing green spaces that are insufficient increase usage density. This inculcates green space consciousness and love to public.

When usage density of green space is examined, new infrastructures and arrangements bring a great usage density. From this view, low usage density in spaces open to public that are insufficient both in infrastructural and qualitative sides can only be increased by new infrastructures and quality rehabilitation.

Municipalities cannot provide sufficient green space to their citizens because of limited technical staff, tool, equipment and financial sources. Municipalities must realize expropriation programs for green spaces by selling their vacant lots that are in central business district or can not be used dense as green space because of being too little but valuable. (19:1991:7-14)

CHAPTER 5

GREEN SPACE NORMS

Norms are defined as square meter (area) per person. Criteria that determine green space norms in urban pattern are needs (necessities), population, dimension of city, geographic situation, climate and usage density. Needs can change according to age, income, education, ideas born from profession (city planning), organizational system, living areas and activity possibilities. (4:1982:61-69)

In green space need, to find area criteria, population has an enormous importance. Here, the problem is using or not using a norm system that decreases towards increasing population. Green space norms are open to urban environment and future development. It is impossible to reach proposition norms by urban renewal in city centers and high-density residential areas. Increasing norm is in the structure of residents. Reducing these spaces to design environment must be avoided. (20:1995:32-36)

While determining these norms, dimension of city, geographic situation, climate etc. characteristics play important roles. For instance, the difference of green space need between rainless-climate resident and rainy-climate resident influences green space norms.

Also, usage density of green space has an important role while determining norms. Densities in trip, resting, sport and recreation areas are different. In big cities, the scarcity of green spaces both from quantity and area perspective limits necessities. (4:1982:61-69)

Infrastructure norms contain green spaces in urban center. Infrastructure norms are useful for programming medium-termed budget with determining working organization about municipalities, Ministry of Construction and Settlement and Ministry of Youth and Sport. Area reserve norms have a different aim and it prevents special speculations against open area system. Also, area reserve is a guarantee for destruction of special open spaces that are under risk every time. In addition to this, area reserve guides a unity politic to protect indivisibility of geographic area. Area reserve norms are long-termed planning norms. It is difficult to predict urban axle's direction and urban form. To determine area reserve norms there are some issues that must be known. Firstly, areas that can have a green usage in empty public areas must be determined. Then, first-degree protection areas must be determined from the reserved areas. Lastly, land capability of these areas situation must be known. (4:1982:77-81)

After determining area reserve norms; expropriation programs of preparation of net areas suits to norm under the frame of a plan, development according to an economic plan and rapid infrastructuration must be required. (4:1982:77-81)

Norm system must have elasticity. Every norm must be checked out specific periods. Going from regional level to housing level is a must in determination of norms and reserved areas.

5.1. Green Space Norms in Different Countries

It would be possible by comparison method to examine developed countries' experiments according to their balance sheet. But comparison method has some risks about open space norms for recreation and sport spaces. These norms have different properties according to life style of population, density of land occupation, housing style and urban formation. On the other hand, comparison method is a historical method that examines present time data comes from past views. (4:1982:80-88)

5.1.1. Hierarchy of Green Spaces in U.S.A.

Green space norm system of America is the best model of norms that are overhauled periodically. Green space norm method of America comes from an urban view and culture of life style different from Europe. (4:1982:80-88)

In today's America norm system, whole of urban pattern is considered in idea integrity. There is a complex system that goes from regional level to primary school unit level in America.

- Primary School Unit (Neighborhood) Level Norms: According to past norm system, a park size for approximately 5.000 person (1375 family) is between 42-44 ha. Nowadays, this norm is determined as 6,7 ha (67.000 m^2). (21:1988:62-71)

Some requirements are denoted for park unit. These are:

- Park space must be designed with a primary school or the distance between park and primary school must not be more than 800 meters.
- Park space must contain a playground for 4-7 aged children, a playground for 8-15 aged children, resting areas, and volleyball, basketball and tennis fields. (22:1992:3-11)

- District Unit Level Norms: In district unit, 7,7 ha (77.000 m^2) park area is suggested per 20.000 person.
- Urban Unit Level Norms: In the perspective of urban density is 250 person/ha; green space norm is accepted 40 m^2 per person. This norm is only for inhabitant in the city or surrounding of the city. (4:1982:80-88)

National Recreation and Park Association (NRPA) of America arranges urban green space norms. National Recreation and Park Association determines five goals to carry out these norms (23:1987:193-206). These are:

1) Rearranging open spaces
2) Rehabilitating urban environment
3) Protecting natural sources
4) Protecting historical and geographical values
5) Preventing private possession

According to National Recreation and Park Association, a neighborhood park has to include playground for children under 6, playfields for schools, playfields, playing centers, pool, amusing spaces, concrete space, volleyball-tennis-basketball, mini golf-croquet, sport facility space, garden for elderly people, picnic, swimming pool, afforest area, pedestrian ways, auto park. A district park has to include playground for children both under or over 6, playfield, swimming pool, space for different locations, team playfield, resting garden, playing center, garden for elderly people, tennis-volleyball field, concrete space, croquet, playfields for both women and men, race band, meeting space, areas for archers, open theatre, ice skate, picnic, natural zone (zoo, aquarium, museum, botanic garden), landscape park, afforest area, paths and auto parks. Right beside these parks, there are grand urban park and urban nearby environment park. There are paths, bicycle roads, picnic zones, camping areas, zoos, zones of investigating nature, swimming pool, activities of fishing and rowing in grand urban park.

Urban nearby environment park contains natural environment, activities of walking, racing, swimming, picnic, camping, investigating nature, fishing, hunting and sailing. Besides National Recreation and Park Association builds up some special zones. These zones are (23:1987:193-206):

1) Addition playgrounds in dense residents
2) Decorative parks in centers and commercial regions
3) Golf course outside of city
4) Sport center, stadium, football, volleyball, basketball fields, covered swimming pool, gymnastics and ski centers on boundary of city.
5) Culture center, meeting, art and handicraft workshops
6) Nature center, zoo, arboretum, botanic garden, aquarium, museum.

5.1.2. Green Space Norms of U.S.A.

Nowadays, green space norm system that changes according to population growth in America is being applied. Green space norm is 20 m^2 per person in cities that have a population more than 500.000 and it is 13 m^2 per person in cities that have a population more than 1.000.000. (4:1982:80-88)

When America's green space norm values are considered, "green space quantity per person decreases while population increase" is seen.

Some of the cities of America's existing green space situation and current green space quantity per person are denoted below.

Montreal's area is 177 km^2 and it has a population of 1017665. Green space per person is 21,6 m^2 in Montreal where urban density is 58 person/ha. This value is equal to %13.1 of urban area. (Table 4.1)

New York has an area of 833 km^2. It has a population of 7322564. Urban density in New York is 88 person/ha. Green space per person is 23.1 m^2. It means there are 2.3 having green space for 1000 person in New York. (24:1997:3-6) (Table 4.1)

As it seen in two examples, 13 m^2 green space norms per person are practiced in the cities that have a population more than 1.000.000.

5.1.3. Hierarchy of Green Spaces in Europe

When Europe green space norms are formed; in urban pattern: playgrounds, sport areas and green spaces that have park function, out of urban pattern: green band zones are considered. In the perspective of transportation, some infrastructures are projected to green spaces. In today's Europe green space norm system, an integral method is suggested which is different from America's green space norm system. When residents grow green space necessity increases. As a result of this, "city becomes stranger to nature and life style changes" idea become. (4:1982:80-88)

Green space norms in some Europe cities are determined below.

- 5 m^2 urban green spaces per person are suggested in Hanover in Germany. 1 m^2 of this urban green space is playgrounds, 1 m^2 of it is sport areas and 3 m^2 of it is free playing areas.
- In Amsterdam, Netherlands, urban green space per person is suggested 15.5 m^2 and 30 m^2 green zones close to city is suggested. Urban Park constitutes 9 m^2, sport areas constitutes 6.5 m^2 of this urban green space value.
- For Stockholm, a Swedish city, 39.4 m^2 urban green spaces per person and 48.1 m^2 green zones close to city are suggested. Neighborhood and Quarter Park is 5.6 m^2, sport area is 10 m^2 and urban park is 23.8 m^2 of the urban green space. (4:1982:80-88)
- In Rome, Italy, 27.8 m^2 urban green spaces per person and 18 m^2 green zone close to city are suggested. 3.2 m^2 of urban green space is playgrounds. 5.5 m^2 of it is neighborhood and quarter park. Rest 11.6 m^2 is urban park. (4:1982:80-88)

  In Rome's green space planning; an integrated system goes from neighborhood level to regional level is aimed. Green space planning includes protection of existing green space infrastructure and a better infrastructuration.
- In England, 70 m^2 urban green spaces per person and 8 m^2 green zone close to city are suggested. 20 m^2 of this urban green space is

neighborhood and quarter park, 10 m^2 of it is sport area and 40 m^2 of it is urban park. (4:1982:80-88)

In Germany, infrastructure norms are taken into consideration in three groups. First one is playground for children both who are between 3-6 and 7-12. Second one is sport area for children of 13-17 aged and general usages. Last one is green space for free plays. Distribution of green space consists of playfields-playgrounds, sport areas for youthful, neighborhood parks, general parks and district stadium (23:1987:208-210).

Distribution of green space is composed of urban park, sport area, family gardens and grand zone. City planners in Netherlands accept distance limits: (23:1987:228-230)

1) Under 400 m pedestrian
2) Under 800 m pedestrian + bicycle
3) Over 800 m bicycle + automobile + mass transportation

There are private gardens, playgrounds for children, public gardens, playground and sport fields and populace gardens in first distance. The second distance includes playground and sport fields, populace gardens, urban park and green zones. Lastly; sport fields, family gardens, parks and groves constitutes third distance. Also, in Netherlands there are grand green zones in the further side of the city (23:1987:228-230).

When Sweden is taken into consideration, it is seen that Stockholm has various environmental values from the point of view of nature. There are thousands of islands, coves and forests in the city. Usage types of green spaces in Stockholm are parks, natural areas (includes lakes) and sport fields. Usages of green spaces in new residents in Stockholm are playground for children, playground, playfield, ball games and sport fields. (23:1987:241)

Roman planners developed lots of different space types. Characteristics of these space types are specified according to weighted subjects that have complex structures (23:1987:242-247).

- Multi-purpose recreation parks that modified by sport infrastructure
- Historical and Archeological Conservation Areas that organized for cultural and tour activities
- Less or more important historical-concepted, protection-aimed landscape zones
- Green spaces with public buildings and monuments

In France, norms are changed related to largeness of resident. There is a complex green space system. This complex system is consisting of playground for children, sport fields, parks/populace gardens and grand gardens. Youth centers that include culture and sport activities are taken into consideration in green space concept in France. Grand parks are planned as much as they can protect large and natural areas (23:1987:217-227).

Green space activities in England are central sport areas, recreation areas in neighborhood unit (playground for children), municipality parks, playfields for schools and golf fields. Playgrounds for children are consisting of playlots, which serve 1-3 aged and 3-6 aged groups and playgrounds, which serve 6-14 aged group. Second type of playground prefers to be near schools while choosing location (23:1987:232-237).

5.1.4. Green Space Norms of Europe

Existing green space situation and current green space quantity per person in some Europe cities are given below.

- Berlin has 891 k m^2 area and a population of 3.471.418. Urban density is 39 person/ha and 27 m^2 green space per person is seen. This value is % 11 of urban area. (25:1995:12-21) (Table 5.1)
- Stockholm has an area of 216 km^2. In 1985, there is 73.8 m^2 Region Park per person, 20.7 m^2 urban parks, 1.5 m^2 playground and 2.6 m^2 sport area. (26:1996:81-87)

  In 1996, there is totally 60 km^2 green spaces in Stockholm. According to the acceptation of 711.119 people use this green space; there are 84.3 m^2 green spaces per person. (27:1996:8-11) (Table 5.1) Paris has an area of 105 m^2 and a population of 2.154.678. Urban density is 205 person/ha in Paris. Consequently, there are 10.1 m^2 green spaces per person. (28:1995:2-3) (Table 5.1)

- At last, Rome has an area of 5.352 k m^2 and a population of 2.791.000 inhabitants. In Rome, urban density is 5 person/ha and green space per person is 11.9 m^2. (29:1997:3-5) (Table 5.1)

As it seen in these four examples in Europe, existing green space values reach to suggested norms and also they are over the suggested norms.

Table 5.1. Recent Green Space Quantities per Inhabitants in America and Europe Cities

CITY	POPULATION	m²/inhabitant
Montreal	*1.017.665	21,6
New York	*7.322.564	23,1
Berlin	**3.471.418	27
Stockholm	**711.119	84,3
Rome	*2.791.000	11,9
Paris	*2.154.678	10,1

* Population belongs to 1990.
** Population belongs to 1995.

5.2. Green Space Norms of Turkey

In our country, first acceptations of infrastructure in planning are begun by the 2290 numbered Development and Transportation Law. Between 1933 and 195665 m^2 urban area per person is suggested in development plans according to 4^{th} article of this law. (15:1991:77-83)

In 2290 numbered Development Transportation Law, "green spaces include grove, pasture, lake and playgrounds" is accepted and 4 m^2 norms per person is suggested.

In 28th article of 6785/1605 numbered Development Law, there are some issues about infrastructure norms. Ministry of Construction and Settlement is authorized by fixing city planning foundations, establishing place and quantity of infrastructures, showing suggested number and ratios in construction regulations in a condition of determining different quantities according to local features. This law also clarifies that green space norm per inhabitant in plans can not be under 7 m^2.

Ministry of Construction and Settlement, General Directorate of Construction Works Supreme Council published a circular in 22.12.1975. In areas that are expropriated by application plans in Metropolitan Area Master Plan and decided resident demands, these standards about green spaces are placed: (4:1982:91-97)

- Primary School Unit Level: Playgrounds; 1.5 m^2/person (3-6 and 7-11 aged)
- Quarter Unit Level: Sport Areas; 2.00 m^2/person (11-18 aged)

  Neighborhood Park; 1.00 m^2/person
- Urban Unit Level: District Stadium; 1.00 m^2/person

  Parks; 3.75 m^2/person

As it is understood from the values above, green space norm per person is 9.25 m^2. As it was seen before, Development Law's 28th article suggests 7 m^2 green space norms per person. The increase 2.25 m^2/person in green space (the

difference between 7 m^2/person and 9.25 m^2/person) comes from the importance given to parks in urban scale. (4:1982:96-99)

In regulation about changes in 1985 dated and 3194 numbered Development Law, green space norm is projected as 7 m^2 per person in urban pattern and its currency continued from 1957 to 1999. With changes that are made in 1985 dated regulation at 2nd September 1999 dated and 23864 numbered Official Gazette, 10 m^2 active green space norms is accepted. This norm's distribution of residential units is below: (Table 5.2)

- Primary School Unit Level which has a population of 5.000: 1.5 m^2/person green space (playgrounds + children's playgrounds)
- Quarter Unit Level which has a population of 15.000: 4 m^2/person green space (2 m^2 person of this is neighborhood park and rest 2 m^2 person of this is sport area.)
- Urban Unit Level which has a population of 45.000: 4.5 m^2/person green space (3.5 m^2/person of this is park and rest 1 m^2/person of this is stadium.)

5.3. Comparison of Turkish And Foreigner Green Space Norms

When green space norms are formed in America and Europe, whole of urban pattern is considered in a view of idea integrity. There is a complex system goes from primary school unit level to region level. In urban pattern, child playground,

sport area and park function as green space; out of urban pattern, green band zones are considered. Green space norm system, which changes according to population growth, is applied. According to Turkish green space norms; 10 m^2 active green space per person in urban pattern and 14 m^2 active green space per person in plans out of boundaries of Municipality and Neighbor Area are determined. There is no green zone nearby the city. Green space norm system that changes according to population growth is not applied. It has seen that Ministry of Construction and Settlement norms are considered in a wide perspective according to foreign norms when comparing green space norms of America or Europe cities and Türkiye. (Table 5.3)

Table 5.2. Norms in Metropolitan Master Plan of Ministry of Construction and Settlemet

INFRASTRUCTURE	PRIMARY UNIT		QUARTER UNIT		URBAN UNIT	
	Donatım Çeşidi	m²/inh	Donatım Çeşidi	m²/inh	Donatım Çeşidi	m²/inh
EDUCATION	Nursery School Primary Scholl	1.0 4.0	High School	3.0	Hıgh-Technical High School	0.50
CULTURE	Social Building (meeting room, library, Youth center)	0.50	Social Building (meeting room, library)	0.50	Theatre Cinema Mosque	0.35 0.35 0.35
COMMERCE	Grops of shops	0.50	Subordinate Commerce+Bazaar	0.40	Second degree center	
HEALTH	Sağlık evi	2.0	Sağlık ocağı	2.0	100-bed hospital Health Center	1.0 1.0
ADMINISTRATIVE	-	3.0	Administrative Building and Services	3.5	Administrative Buildings	3.5
GREEN SPACE	Palyfields and Playgrounds	1.5	Playfield and sport field Neighborhood park	2.0 2.0	District Stadium Parks	1.00 3.50
TECHNICAL INF.	-	1.0 0.50	-	2.0 0.30	-	3.0 0.40
ROADS Density 250 inh./ha ise Density 300 inh./ha ise Density 350 inh./ha ise		10.60 9.00 7.90	-	9.90 8.50 7.40	-	8.80 7.70 6.70

Source: Yıldızcı A.C. Urban Green Space Planning and Case of İstanbul

Table 5.3. Comparison of Green Space Norms of Ministry of Settlement and Construction-Foreigner Countries

FUNCTION	USA	Amsterdam	Stockholm	Roma	Varşova	İngiltere	Fransa	Türkiye Ministry of Settlemet and Construction
Palyground	*	*	5,6	3,2	-	*	3,5	1,5
Neighborhood and District Park	3,9	-		5,5	15	20	4,2	2
Urban Park	13-20	9	23,8	11,6	5,3	40	10	3,5
Green zone nearby urban	60	30	48,1	18	17,5	8	10	-
Sport Fields	*	6,5	10	7,5	7,5	10	8	3
TOTAL	77-84	45,5	87,5	45,8	45,3	78	35,7	10

*Areas are thought in park areas.

CHAPTER 6

EXISTING CHARACTER OF ISTANBUL

Examining urbanization and green space problem in İstanbul gives clues about green space concept of Kartal and Sarıyer. Before investigating status of green spaces in Kartal and Sarıyer in next chapter, situation of Kartal and Sarıyer is going to be taken into consideration.

6.1. Urbanization and Green Space Problem in Istanbul

More strong, rapid and unsystematic commercial and industrial development was occurred after establishment of modern Turkey and economic-social progress. Old cities gained a new form and new cities occurred parallel to this commercial and industrial development. Unsystematic, unequal, unbalanced and extroverted economic power brought unsystematic and askew urbanization. İstanbul is the most important example that has basic features of this unsystematic and askew urbanization. (30:1990-1991:47-53)

İstanbul has pulling and solving effects on rural regions by its commercial, economic, social and cultural possibilities. So, İstanbul has the biggest migration from rural areas in comparison with other cities. This process was formed as undisputed and uncontrolled urban migration after 1950. This migration became a dimension that can not be inspected and has a big amount especially last 15-20 years. (30:1990-1991:47-53)

In 1950, İstanbul has a population of 1.166.477; it's 10.072.427 according to 2000 census. (Table 6.1)

Table 6.1 Population of İstanbul

Years	Population	Increase %
1927	794.444	_
1935	883.599	_
1940	991.237	12.1
1945	1.078.399	8.7
1950	1.166.477	8.1
1955	1.533.822	31.4
1960	1.882.092	22.7
1965	2.293.823	21.8
1970	3.019.032	31.6
1975	3.903.650	29.3
1980	4.503.590	15.4
1985	5.842.985	29.7
1990	7.309.190	25.1
1997	9.198.809	25.9
2000	7.309.190	9.5

Source: D.İ.E. Genel Nüfus Sayımları

In 1990 there are 1.650.000 buildings in İstanbul and 950 of this amount is unlicensed construction. In this frame, İstanbul can be named as "unlicensed city" or "illegal city". In a 500 year period -between "1453-1953", there were 100,000 building and in a 5 year period -between 1986-1990-, 700,000 building were

constructed. These ratios are showing Istanbul's rapid expansion of population, commerce, economical and industry potential together with places of employment, houses and residential areas.

It's clear that this rapid, askew and unsystematic expansion causes a lot of problems. Squatter house problem is one of these problems.

İstanbul is in a disaster in case of open and green spaces. At past, İstanbul had wide green spaces that enable natural beauty and natural and aesthetical harmony of human environment. Nowadays, it is a city that become cancerous by squatter houses, complex traffic, polluted air and damaged soil. (30:1990-1991:47-53)

Today, İstanbul is face to face with danger of losing not only green space in the city but also green spaces near and far away from the city. Existing green spaces and coast bands from Tekirdağ to İstanbul were settled as summer resorts and they were open to residence that is not infrastructured, not transported and not planned. These askew, unsystematic and unplanned areas caused sea pollution, destruction of green spaces, closure of coasts and pollution of air, water and soil. Same process was seen in coast and green spaces between İzmit and İstanbul. (31:1978:51-61)

Extreme migration comes from rural areas and increase of urban population has two negative effects on urban pattern. First one is the transformation of houses with their own gardens to new residential areas that don't include children playgrounds, playing areas, parks and have narrow streets. Also green spaces as

gardens in urban pattern were damaged. Second one is unsystematic, rapid and askew construction in near and far away of city caused by pressure of excessive population increase (in other words necessity of new residential areas, houses and places of employment). In this manner, out of the city, as it is in the city, existing green spaces like forests, gardens, vineyards, plains and mountain pastures were destroyed parallel to widespread squatter houses. (32:1978:69-74)

In table 6.2, green space structure of İstanbul for a 15-year perspective is shown. As it is indicated in the table, in 1975, there is 17.034.605m^2 total green space quantity and it increases to 32.514.373m^2 in 1990. For same years, population in boundaries İstanbul Metropolitan Municipality increases from 2.534.193 to 6.866.238. Green space quantity per person is 6,8 in 1975 and 4,6 in 1990. These values designate decrease of green space quantity per person in 15 year period.

Homogeneous distribution of green spaces in urban pattern is very important. Table 5.3 shows green spaces in İstanbul according to its districts. In this perspective, it has seen that green space ratios of some districts like Beykoz (14,4m^2/person), Sarıyer (13,7m^2/person), Eminönü (8 m^2/person) and Beşiktaş (7,6 m^2/person) are high, on the other hand green space ratios of some districts like Gaziosmanpaşa (0,2 m^2/person), Pendik (0,2m^2/person), Kağıthane (0,4 m^2 /person) and Kartal (0,8 m^2 /person) are low. (33:1991:74-81) It is pointed out that green space quantity per person is less than 1m^2 /person in Gaziosmanpaşa, Pendik, Kağıthane and Kartal in 1992.

Table 6.2. Green Space Situation of İstanbul

İstanbul 20.204 ha		Sitıation in 1979			Situation in 1980			Situation in 1985			Situation in 1990		
Population		2.334.193			2.754.476			5.461.196			6.866.238		
Density		95 person/ ha			104 person/ha			193 person/ ha			242 person/ ha		
Green Spaces		Used	Unused	Total	Used	Unused	Total	Used	Unused	Total	Used	Unused	Total
Playground	**Total m²**	206.330	----------	206.330	339.390	----------	339.390	390.717	----------	390.717	720.524	----------	720.524
	m²/kişi	0.1	----------	0.1	0.1	----------	0.1	0.07	----------	0.07	0.1	----------	0.1
Neighborhood Park	**Total m²**	417.750	----------	417.750	507.880	----------	507.880	1.542.605	----------	1.542.605	9.189.841	----------	9.189.841
	m²/kişi	0.2	----------	0.2	0.2	----------	0.2	0.3	----------	0.3	1.3	----------	1.3
Urban Park	**Total m²**	1.253.000	810.000	2.063.000	1.253.000	810.000	2.063.000	1.253.000	810.000	2.063.000	1.426.500	810.000	2.236.500
	m²/kişi	0.5	0.3	0.8	0.4	0.3	0.7	0.3	0.1	0.4	0.2	0.1	0.3
Sport Places	**Total m²**	664.050	----------	664.050	740.425	----------	740.425	859.272	----------	859.272	1.521.564	----------	1.521.564
	m²/kişi	0.3	----------	0.3	0.3	----------	0.3	0.2	----------	0.2	0.2	----------	0.2
Refuges	**Total m²**	----------	480.650	480.650	----------	868.850	868.850	----------	900.100	900.100	----------	1.379.027	1.379.027
	m²/kişi	----------	0.2	0.2	----------	0.3	0.3	----------	0.2	0.2	----------	0.2	0.2
Grove,Pasture and Forests	**Total m²**	3.006.500	6.900.000	9.906.500	3.206.500	6.861.800	10.068.300	3.131.500	7.040.300	10.171.800	4.191.900	8.224.390	12.416.290
	m²/kişi	1.2	2.7	3.9	1.2	2.5	3.7	0.6	1.3	1.9	0.6	1.2	1.8
Cemetery	**Total m²**	----------	3.250.225	3.250.225	----------	3.230.225	3.230.225	----------	5.299.031	5.299.031	----------	5.049.825	5.049.825
	m²/kişi	----------	1.3	1.3	----------	1.2	1.2	----------	0.1	0.1	----------	0.7	0.7
General Total		5.547.630	11.440.875	16.988.505	6.047.195	11.770.875	17.818.070	7.177.094	14.049.431	21.226.525	17.050.329	15.463.242	32.513.571
M²/kişi		2.3	4.5	6.8	2.2	4.3.	6.5	1.3	1.7	3	2.4	2.2	4.6

Source: Past and Today of Workings of İstanbul Metropolitan Municipality/ Directorship of Park and Garden

Table 6.3. Green Spaces in İstanbul According to Districts

1992 Districts	Child Play Ground		Sport Space		Neighborhood park		Urban Park	Grove and Pasture	Total	Person/m²
	Number	m²	Number	m²	Number	M²				
Bakırköy	116	80,088	55	185,277	87	445,212	-	628.000	1.338.577	1,4
Bayrampaşa	33	18,843	8	4.600	28	233.664	-	-	257.107	1,5
Beşiktaş	50	41,237	17	25,743	49	237.823	500.000	-	1.320.403	7,6
Beykoz	23	18,244	7	6.512	26	437.181	-	1.864.000	2.325.937	14,4
Beyoğlu	21	23,966	8	8.700	46	498.160	173.500	100.000	804.326	4.0
Eminönü	17	17.200	2	1.000	22	288.934	162.000	-	469.134	8.0
Eyüp	19	45.441	18	23.180	55	660.614	-	-	729.235	4.2
Fatih	65	70.702	30	135.452	73	1.007.794	-	-	1.213.948	3.0
G.Osmanpaşa	34	29.079	12	6.164	23	45.359	-	-	80.602	0.2
Kadıköy	38	49.668	20	78.382	59	407.367	-	40.800	576.217	1.0
Kağıthane	20	14.020	7	3.900	19	90.817	-	-	108.737	0.4
Kartal	54	37.247	23	58.062	63	237.451	-	149.500	482.260	0.8
K.Çekmece	48	28.859	32	146.448	38	375.384	-	79.500	630.191	1.3
Pendik	24	12.935	6	2.950	15	38.885	-	-	54.770	0.2
Sarıyer	34	15.030	11	3.936	10	480.794	473.000	90.500	1.063.260	13.7
Şişli	50	38.346	14	17.850	61	638.654	118.000	100.000	912.850	4.4
Ümraniye	19	11.942	10	6.110	21	102.553	-	-	120.605	0.4
Üsküdar	60	50.593	23	13.420	49	128.953	-	624.000	816.966	2.7
Zeytinburnu	28	20.152	8	91.450	22	169.920	-	-	281.522	1.9

Source: İstanbul Metropolitan Municipality/Directorship of Park and Garden

6.2. Situation of Kartal and Sarıyer Municipalities

Situation of Kartal and Sarıyer are going to be examined to understand characteristics of these municipalities. (Figure 6.1)

6.2.1. Situation of Kartal

Location, historical development and natural structure of Kartal is going to be observed in this section.

6.2.1.1. Location of Kartal

Kartal is in the east of İstanbul. It is adjacent to Ümraniye and Pendik in northern location, Sultanbeyli and Pendik in eastern location, Phosphorus in southern location and Maltepe in western location. It has an area of 147 km^2. In 1992, its region was roughly 234 km^2, after Maltepe (52 km^2) and Sultanbeyli (35 km^2) was separated form Kartal, area of 147 km^2 remained in Kartal.

Kartal that has urban and rural parts is consisting of 25 quarters. 20 of these quarters are in center and 5 of them are in rural area in Samandıra location. These quarters are Cevizli, Orhantepe, Atalar, Esentepe, Petroliş, Karlıktepe, Topselvi, Yalı, Kartal Yeni, Kordonboyu, Yukarı, Soğanlı Yeni, Orta, Cumhuriyet, Hürriyet, Gümüşpınar, Yakacık Yeni, Yakacık Çarşı, Uğur Mumcu, Fatih, Veysel Karani, Osman Gazi, Eyüpsultan, Abdurrahman Gazi.

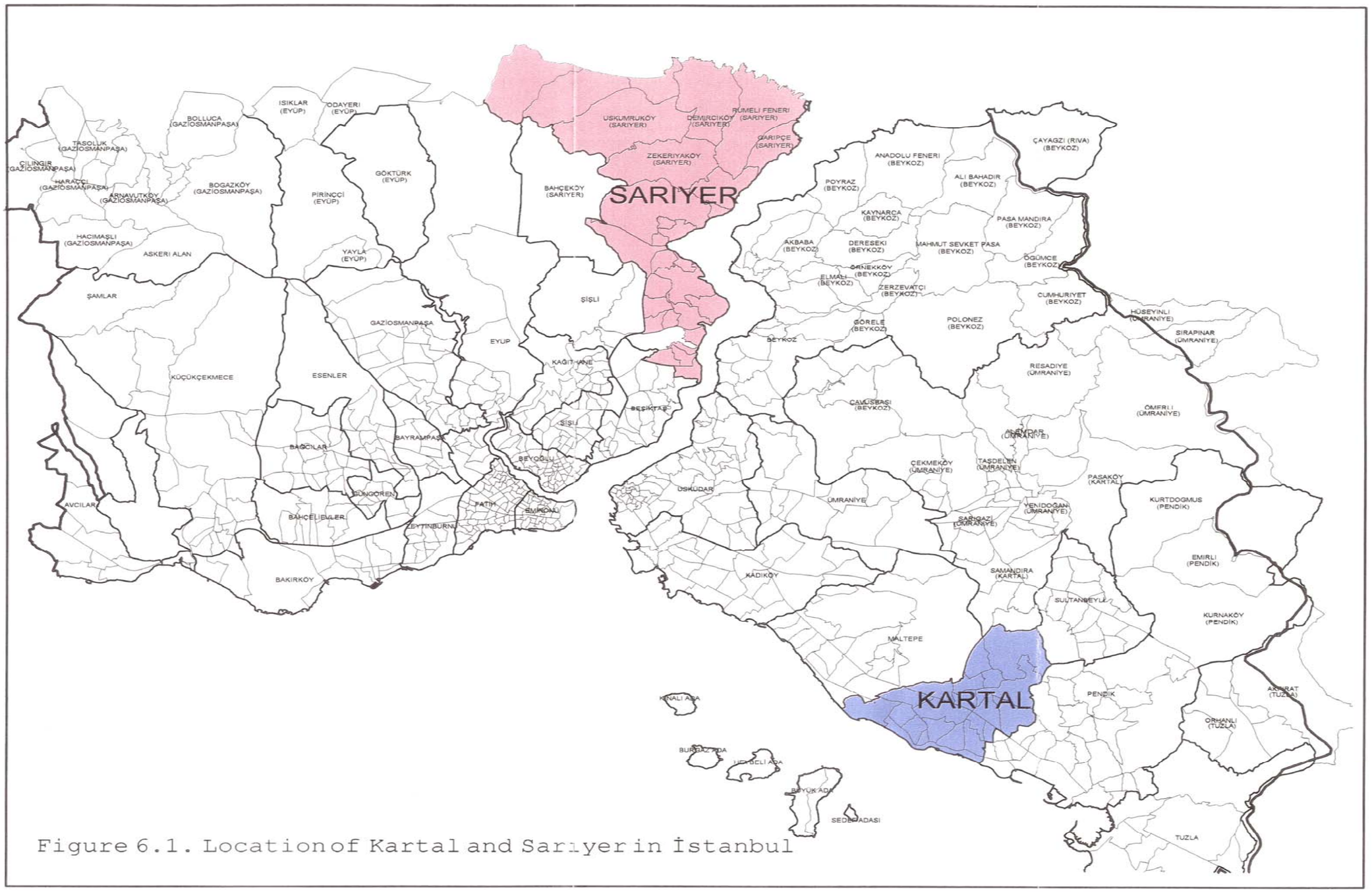

Figure 6.1. Location of Kartal and Sarıyer in İstanbul

E-5 TEM connection road separates Kartal in two parts; North and South of Kartal. There is a light-railway system project on the route of E-5, which is in application stage. Also, Kartal locates 10 km apart from Sabiha Gökçen Airport.

6.2.1.2. Historical Development of Kartal

There is not enough information about when Kartal and its surrounding become a residence but in Maltepe and Pendik, which are separated from Kartal to be district, residence remnants were seen that belonged to 5.000 years before. Information about Kartal district center was started with Byzantium period. Fishmonger village in this location was called Cartalimin because of its little harbor. This little village's populace was engaged in vegetable rising together with fishing. Turks came here first in beginning of 1080's. Kutalmışoğlu Süleymanşah took east of Dragos stream to his sovereignty after an agreement with Byzantium. Afterwards, Byzantium did not agree the agreement and took this area back. After Pelekanon War (1329), in which Byzantium was crushingly defeated, Kartal region was taken to Ottoman sovereignty.

After 1330, Turks were started to settle to Kartal and its surrounding. Kartal kept its feature as being a fishmonger and landscape gardening village in Ottoman period. Kartal, which was covered by vineyards, gardens and vegetable gardens, met the need of fruit and vegetable of İstanbul for long years. Wheat's that were brought by ships were grinded here and then they were sent to İstanbul. In Kartal,

big part of populace was Greeks as also Turks were living there. Kartal village around a quay in shore formed historical seed of today's Kartal district.

In 1873, after Haydarpaşa-Pendik suburb line was built, a development begun in Kartal. Kartal region was a district that bounded to Üsküdar Sanjak in last terms of 19th century. Forests, which begun after sewed and planted areas, were reaching to Aydos Mountain. Forest in Samandıra was one of the most important hunting areas of İstanbul.

After Lozano agreement, Greeks in Kartal migrated to Greece and some Muslim populace that live in Kavala region migrated to Kartal. Immigrants knew only tobacco raising, so as time passed vineyards, gardens and vegetable gardens became decadent. Kartal, which h bounded to Üsküdar sanjak, was became a district of İstanbul in 1928.

Kartal developed as suburb residence previously but it begun to become a summer resort before 1950. Houses in vineyards and gardens in Kartal were used as summer houses by their owners to run away from warmth of city. İstanbul populace got cool with brilliant water at beach.

Kartal was a district that gained importance with being transportation center together with being summer resort. Vehicles that did not want to pass through İzmit Gulf while going to Bursa and İzmir were passing to Yalova by car ferry. Kartal-Yalova car ferries were a link with suburb train of passenger traffic.

Especially after 1970, rapid development caused by industrialization started apartment housing from the coast of district. The district, which was around Kartal quay, had a population of 3.622 in 1940. This value became 5.312 in 1950 and 14.815 in 1960. it overcame 20.000 in 1965 and 35.000 in 1975. Quarters of Çavuşoğlu, Karlıktepe, Kordonboyu, Petroliş and Yukarı, which were considered that they formed Kartal, had a population of 62.017 in 1990.

Nowadays, sea of Kartal is not used for swimming because of pollution. It just became an important commerce and service center in İstanbul. Vehicle transportation by waterway was moved from Kartal to Eskihisar.

In 1947, Kartal region was defined as industrial region and this was a turning point for Kartal. In a short time, two sides of Ankara Asphalt were fulled with factories because of transportation possibilities and cheapness of land prices. Areas near these factories became squatter's house region with time. Houses that have one or two stairs and gardens along railway at coast turned to apartments with time. In 1970's, dense apartment housing between Ankara Asphalt and railway begun.

In 1980, Kartal became more crowded and its population overcame 500.000. Only Dragos and Tuzla protect summer resort feature. With this extreme development, some administrative problems occurred and in 1987, Pendik was separated from Kartal to be a district. Maltepe and Sultanbeyli followed Pendik and they became district in 1992.

Table 6.4 Population of Kartal

Years	Urban	Rural	Total
1940	3.622	14.329	17.951
1945	14.842	6.553	21.395
1950	5.301	20.489	26.150
1955	7.442	33.909	41.351
1960	14.815	53.647	68.462
1965	20.139	77.664	97.803
1970	35.381	133.441	168.822
1975	53.073	234.032	287.105
1980	68.291	345.548	413.839
1985	557.664	14.882	572.546
1990	252 221	21 351	273 572
1997	311.076	51.099	362.175
2000	337.390	70.475	407.865

Source: Devlet İstatistik Enstitüsü

When population growth in this table is examined, it is seen that district population is increasing continuously. There was an important leaping between speed 1955-1960 and 1970-1975 in population growth speed and also population growth speed is %15 per year between 1965 and 1970. Küçükyalı, Maltepe, Pendik and Soğanlık were shown as they are bounded to Centre Subdistrict, rural population was swollen until 1985. After this, to residential areas except Samandıra were taken to municipality boundaries, rural population was decreased. In spite of a big amount of Kartal's land was given to Pendik in 1987, there was an important increase in rural and total population.

6.2.1.3. Natural Structure of Kartal

Geomorphology, climate and vegetation will be taken into consideration to mention the concept of natural structure of Kartal.

6.2.1.3.1. Geomorphology of Kartal

Istanbul Metropolitan Area locates in Kocaeli and Çatalca Peninsula. They are eroded plateaus. İstanbul and its surrounding was a gulf of Sarmat Island Sea after

Miosen turn is third period in geological periods. In Pliosen turn, sea went back and lands became apart. Then there was an erosion turn by river and wind. As a result of this erosion, elevations were lost, quartzite hills were left and a wide pen plain occurred. Also valley in Boğaziçi was enlarged. Afterwards, northern of east of pen plain and southern of west of pen plain swelled up and water lines changed. Because of increasing of slope of river beds, water erosion increased. At last, rivers in eastern pen plain were poured out to Black Sea and rivers in western pen plain were poured out to Bosphorus Sea. There a plateau with indistinct world shapes.

Valleys, plains, elevations, and high areas as geomorphologic units do not have a sharp and striking scene. Here quartzite hills that is durable to erosion (Aydos, Kayış Dağı, Alem Dağ) and 350m high areas that locate from eastern of Gebze,

Ömerli Barrage to east. There are plains in coasts and some elevations in northern side. In middle and back of these elevations, there occurs wide plainness.

Important elevations of Kartal are Yakacık Üstü Hill (420 m high in north and north east of district), Yakacık Orta Bayır Hill (400m), Yakacık Arka Bayır (370m), Aydos Mountain (570m) and Dragos Hill (170m).

There is not any big river or stream that flows in all season. There are Savaklar, Depğirmen, Soğanlık Ağıl, Balıklı Ayazma, Suya Batmaz and Delikkaya streams in this region. Their water shows increase and decrease according to rainy seasons.

6.2.1.3.2. Climate of Kartal

It is impossible to evaluate the climate of Istanbul in an evident climate type. Because of this Kartal's general climate is examined in Istanbul's general climate structure. Istanbul's climate has a different climate features from residences in same latitude because of its geographic situation and physical geography. İstanbul is in the border of subtropical high pressure zone and low pressure of cold-warm region. There occur different climate conditions in winter and summer by earth movements.

Three weather types are dominant in Istanbul. These are weathers that come from north and east and calm water type. Weather types that are related to east and west winds are unimportant. Weather type that shows the highest frequency is the weather type during north winds.

Generally, Mediterranean Climate is seen in this region. Summers are hot and rainless, winters are cool and rainy. Average heat per year is 15°C in this region.

The highest heat is 40°C in August and the lowest heat is -9°C in February. As a result of thirty year period measurements, there are 68 open, 204 cloudy and 93 close days in Kartal. It rains in winter and autumn in a big amount. Average raining per year is 680 milliliters. Northeast wind is dominant in summer and south or south west wind is dominant in winter.

6.2.1.3.3. Vegetation of Kartal

There is Aydos in the northeast of Kartal. A part of this forest is transformed to residential and agricultural areas. Enlarging forest areas is continuing. There are oak and chestnut trees together with wild nuts. Areas that are not forest are covered bye marquis. Groves as short oak, broom bush, heat and bay are seen in these areas.

6.2.2. Situation of Sarıyer

In this section, location, historical development and natural structure of Sarıyer will be brought up.

6.2.2.1. Location of Sarıyer

Sarıyer is in connection point of 41° north latitude and 29° east longitude. It has a total area of 14.600 ha. Sarıyer is surrounded by Thracian Bosphorus in eastern, Black Sea in northern, Eyüp in western and Şişli and Beşiktaş in northern sides. Villages in neighbor are Kilyos (Kumköy), Kısırkaya, Gümüşdere, Uskumruköy, Zekeriyaköy and Bahçeköy. In entrance of Thracian Bosphorus, there is Rumelifeneri and in front side of Sarıyer, there is Garipçe villages. There are Rumelikavağı, Maden, PTT Evleri, Tarabya, Kazım Karabekir, Pınar, Kireçburnu, Reşitpaşa, Fatih Sultan Mehmet (Armutlu), and Poligon, Merkez, Yeniköy, Emirgan, Rumelihisarı, Kocataş, Yenimahalle, İstinye, Ferahevler, Cumhuriyet, Büyükdere, Çamlıtepe, (Derbent) and Çayırbaşı quarters.

6.2.2.2. Historical Development of Sarıyer

There are some rumors about the name of Sarıyer district. First one comes from mining expert. Beginning of 19th century, there was copper manager ship. Before copper manager ship, it is told that there was mine of gold in these areas. Consequently, this area was named as “Altınyer”. Afterwards, it was named as “Sarıyer” because of its color.

The other rumor is about its soil’s color; because of its color is yellow, this region was named as “Sarıyer”.

Another rumor is about this region was an amusement area. People who are addicted to amusement and pleasure were coming here and spent gold according to their richness. Because of too much gold spending, it was named as “Sarı Lira Yer”. In time, ‘Lira’ has gone and “Sarıyer” was left.

Last rumor is belonging to Ottoman period. When Fatih Sultan Mehmet came here in weekend, two huge and blond soldiers were guarding him. Populace called them “Fatih’in Sarı Evleri”. These two soldiers were buried here after they died. Some of populace called as “Sarı Babalar”, the others called as “Sarı Erler”. In time, these expressions became “Sarıyer”.

Sarıyer is one of the end districts of İstanbul. It was an observation and protection district at past. It must be in protection condition because it was open to dangers that could come from Russian and Kazakh. Also it must be in protection condition that could come from Black Sea. Lighthouse in enter of Thracian Bosphorus once upon a time was in Sarıyer. It was taken to enter of Thracian Bosphorus nowadays.

There were two types of residence areas in Thracian Bosphorus in Ottoman period. First one is peculiar to summer months only. There were summer houses that belonged to high officials of palace, state staff and riches. In summer, transportation with city was done by ships called “Şirketi Hayriye” and special sea vehicle.

The other residence type was belonged to Sarıyer populace. They did not have any relation with İstanbul so they were living in Sarıyer for both winter and summer months. Generally, they made a living out of fishing.

Thracian Bosphorus is always a summer resort because of its climate. Middle-income group didn't settle in Thracian Bosphorus. Upper –income group settled in coast and lower-income group settled in villages.

After republic was established, upper-income group was greatly weakened. High officials of Ottoman became poor and lost their possibilities. Demand to summer houses was decreased and collapse of this type of residence started.

In this period, a new and in harmonious usage occurred in Thracian Bosphorus. Industrial areas were begun to open. Public sector, shoe, glass, alcoholic beverage factories, liquid-solid fuel depots and docks settled in this region gave big harms to Thracian Bosphorus. Following to these, factories settled to base of valleys and stream beds. After 1950's, people that want to find job came around this region and squatter houses started to settle. Consequently, illegal and understandard developments began in Thracian Bosphorus. Subsequently, transportation possibilities were developed and a new group that dealed with Thracian Bosphorus occurred. Demand of apartments that see sea started to increase. This pressure is in a high-dense in Western sides because of being close to city. In this manner, a big damage started in Thracian Bosphorus of which's feed back is impossible.

Table 6.5 Population of Sarıyer

Years	Population	Increase	Increase Value
1935	24.266	-	-
1940	32.512	8.246	25.36
1945	29.984	-2.528	-8.43
1950	32.114	2.130	6.63
1955	40.012	7.898	19.74
1960	48.224	8.212	17.03
1965	52.445	4.221	8.05
1970	67.902	15.457	22.76
1975	85.262	17.360	20.36
1980	117.959	32.697	27.72
1985	147.503	29.544	20.03
1990	160.073	12.570	7.85
1997	214.377	54.304	33.9
2000	220.171	5794	2.7

Source: Devlet İstatistik Enstitüsü

Population of Sarıyer has decreased continuously for years. After 1970, ratio of population increase started to increase. Between 1990 and 1997, the highest ratio of population increase occurred.

6.2.2.3. Natural Structure of Sarıyer

Geomorphology, climate, vegetation, lakes, rivers and water resources of Sarıyer are going to be examined.

6.2.2.3.1. Geomorphology of Sarıyer

Istanbul Metropolitan Area locates in Kocaeli and Çatalca Peninsula. They are eroded plateaus. İstanbul and its surrounding was a gulf of Sarmat Island Sea after

Miosen turn of third period in geological periods. In Pliosen turn, sea went back and lands became apart. Then there was an erosion turn by river and wind. As a result of this erosion, elevations were lost, quartzite hills were left and a wide pen plain occurred. Also valley in Boğaziçi was enlarged. Afterwards, northern of east of pen plain and southern of west of pen plain swelled up and water lines changed. Because of increasing of slope of river beds, water erosion increased. At last, rivers in eastern pen plain were poured out to Black Sea and rivers in western pen plain were poured out to Bosphorus Sea. There a plateau with indistinct world shapes.

Basic geology of Thracian Bosphorus is volcanic rocks in northern side, devonuan sists and sand stones. There are little humus and sea hydrates in an important amount in this soil. There are deep alluvium beds in valleys. In moot of valleys, there are streams that flow to Bosphorus. Characteristic of Thracian Bosphorus are hills and ridges that go down to sea road in Thracian Bosphorus, Black Sea, Haliç and Bosphorus.

There are elevations between 0-200 in Sarıyer. Important view points are upper side of Maden, Hünkar Hill, Fundalık Hill, İşaret Hill, Kürkçülük Hill, Nafibaba Hill and Ayazma Hill.

6.2.2.3.2. Climate of Sarıyer

Sarıyer is takesn into consideration in Boğaziçi climate type. Boğaziçi climate is a transportation area between Mediterranean and Middle Europe climates. North sides of district are in Black Sea climate characteristic. Coastal sides are in effecting of air flow between “Anticyclone” and “Cyclone” regions and depressions that change according to seasons. Anticyclones and Cyclones bring to region dry and stable air conditions, depressions bring abundant rain. Rains are too much in winter; winds are stable and rains are few in summer. The highest heat in Sarıyer is 40° and average heat is 20°C. Average raining per year is 727 kg. There is snow in 10 or 12 days.

Thracian Bosphorus breezes are too few that we can say there is no breeze. Generally, winds blow from northeast and southwest direction. Air is serene at night. Surface flows are in harmony with north and northeast winds. According to these winds, they decrease or increase. Storms are too much in winter but not too much in summer. They come from north in summer and they are stable. In other seasons, their direction is changeable and both south or southwest and northeast winds are seen.

6.2.2.3.3. Vegetation of Sarıyer

In old times, whole of Thracian Bosphorus was covered by forests. Nowadays, north, northwest and back sides of Yenimahalle are covered by forests. Tree types

are too much because of high moisture ratio. There are tree type of Mediterranean from south region to middle of district and tree type of Middle Europe in northern sides. Chestnut, oak, elm, hornbeam, linden tree, locust and ash tree are seen in forests in these region.

As a result of urban development and usage of these forests as fuel and construction, there are limited pieces of forests. There are state forests in north and west region of Sarıyer. Private forests are formed artificially. These private forests are generally covered by needled trees. A big part of district is meadowland. Forest areas that were destroyed are now covered bye thicket formation. Forest areas that were not destroyed are covered by bush oak, heath and broom bushes. Agriculture is too few that it can be said there is no agriculture.

6.2.2.3.4. Lakes, Rivers and Water Resources of Sarıyer

There are a lot of streams in all sizes. Arms of Kağıthane stream, which are poured out into Haliç are Göksu stream, Şeytandere stream and Ayazağa stream. Streams, which are poured out into Black Sea and Bosphorus are Mandıra Stream, Sarıyer Stream, Büyükdere Stream, İstinye Stream, Çelebi Stream, Tarabya Stream, Bakla Stream, Maltız Stream, Tuz Stream, Kömdere Stream, Kurşunsuyu Stream, Çimendere Stream, Sipahi Stream, Uzundere Stream, Mamracık Stream, Keten Stream, Garipçe Stream, İskenderdere Stream, Kavak Stream, Çırçır Steam, Kestane Stream and Baltalimanı Stream.

There are fountains that have various water sources. Some of water sources are health-giving. These sources are transferred by bottles and demijohns are used for drinking in summer days in their own places. Some of water source areas become as recreation areas. These water sources are Kanlıkavak Water, Kefeliköy Water, Sultansuyu, Büyükdere Water, Kocataş Water, Çırçır Water, Kestane Water, Hünkar Water, Fındık Water, Tifa Water, İmam Water and Kum Water.

CHAPTER 7

STATUS OF GREEN SPACES IN KARTAL AND SARIYER

In this section, green space situation in Kartal and Sarıyer is going to be examined. Firstly, green space situation in Kartal will be taken into consideration in terms of ownership, opening year, classification, size, activities and distribution concepts and then Sarıyer' s green space situation will be investigated in terms of classification, size, activities and distribution concepts. Ownership and opening year of green spaces in Sarıyer could not be acquired.

7.1. Status of Green Spaces in Kartal

There are 78 parks in Kartal. The criterias chosen to indicate the general status of the parks in Kartal such as quarter, opening year, possession and park type are given in Table 7.1.

Table 7. 1 General Features of Parks in Kartal

NAME OF THE PARK	QUARTER	OPENING YEAR	POSSESION	TYPE
Akgün Park	Petrol-iş	1996-2000	Treasury	Neighborhood
Akşemsettin Park	Uğur Mumcu	*	Public	District
30 Ağustos Park	Orhan Tepe	1991-95	Treasury	Neighborhood
Bulgar Park	Karlıktepe	2000+	Public	Neighborhood
Eyüp İzmirli Park	Esentepe	1996-2000	Treasury	Neighborhood
Hamit Yıldırım Park	Atalar	1991-95	Treasury	Neighborhood
Çifteler Park	Cevizli	1996-2000	Treasury	Neighborhood
Emrullah Turanlı Yurdu Park	Esentepe	2000+	Leaving	Neighborhood
Kaper Park	Hürriyet	2000+	Leaving	Neighborhood
Yakacık Tepe Park	Yakacık Çarşı	1991-95	Treasury	Neighborhood
Soğanlık Tepe Park	Soğanlık yeni	1991-95	Treasury	Neighborhood
Gülistan Park	Yukarı	1981-90	Public	Neighborhood
Anafartalar Park	Cevizli	1991-95	Treasury	Neighborhood
Yalı Park	Yalı	1991-95	Leaving	Neighborhood
Atalar Park	Atalar	1991-95	Public	Neighborhood
Atatürk Park	Kartal yeni	1991-95	Treasury	Neighborhood
75. Yıl Park	Esentepe	1996-2000	Treasury	Neighborhood
Çamlık Park	Esentepe	1991-95	Treasury	Neighborhood
Ali Ekber Karagöz Park	Cevizli	1981-90	Public	Neighborhood
Mercan Park	Esentepe	1996-2000	Treasury	Neighborhood
Çavuşoğlu Zeytinlik Park	Çavuşoğlu	1996-2000	Public	Neighborhood
Spor Caddesi Park	Çavuşoğlu	1996-2000	Leaving	Neighborhood
Gül Park	Çavuşoğlu	*	Leaving	Neighborhood
Fatih Park	Cumhuriyet	1991-95	Treasury	Neighborhood
Özkan Sokak Park	Hürriyet	1991-95	Treasury	Neighborhood
Ziyabey Park	Cumhuriyet	*	Private	Neighborhood
Yıldız Park	Cumhuriyet	1991-95	Public	Neighborhood
Çam Park	Yakacık Çarşı	1996-2000	Treasury	Neighborhood
Ceylan Park	Yakacık Çarşı	1996-2000	Treasury	Neighborhood
Yürek Kayalar Park	Yakacık Yeni	1991-95	Treasury	Neighborhood
Soğanlık Orta Mahalle Park	Orta	1996-2000	Treasury	Neighborhood
Şehir Polis Muhammed Baki Avcı Park	Orta	1996-2000	Treasury	Neighborhood
Belediye Hastanesi yanı Park	Soğanlık yeni	1981-90	Public	Neighborhood
Paşa Bahçe Bloklar Park	Gümüşpınar	1996-2000	Leaving	Neighborhood
Arıcılar Park	Soğanlık yeni	1996-2000	Treasury	Neighborhood
Çitlembik Park	Gümüşpınar	*	*	Neighborhood
Soğanlık Ahmet Yesevi Park	Gümüşpınar	1996-2000	Treasury	Neighborhood
Genç Osman Park	Soğanlık yeni	*	Treasury	Neighborhood
Halk Park	Kordonboyu	1980 öncesi	Treasury	Neighborhood

Source: Case Study

Table 7.1 General Features of Parks in Kartal (continuation)

NAME OF THE PARK	QUARTER	OPENING YEAR	POSSESION	TYPE
Hacılar-1 Park	Cevizli	1996-2000	Treasury	Neighborhood
Hacılar-2 Park	Cevizli	1996-2000	Treasury	Neighborhood
Eas Park	Atalar	1991-95	Private	Neighborhood
Ayhan Songar Park	Cevizli	1996-2000	Public	Neighborhood
Zeytinlik Park	Atalar	1996-2000	Treasury	Neighborhood
Petrol İş Dinlenme Park	Petrol-iş	1991-95	Treasury	Neighborhood
Sinan Sokak Park	Petrol-iş	1996-2000	Leaving	Neighborhood
Batman Park	Petrol-iş	1996-2000	Treasury	Neighborhood
Kumru Sokak Park	Petrol-iş	*	Treasury	Neighborhood
Kültür Park	Kordonboyu	1991-95	Treasury	Neighborhood
Mehmet Turan Tansu Park	Yukarı	1991-95	Treasury	Neighborhood
Yakamoz Park	Orhan Tepe	1991-95	Treasury	Neighborhood
Dragos Park	Orhan Tepe	1996-2000	Treasury	Neighborhood
Şeyh Şamil Park	Kordonboyu	1996-2000	Treasury	Neighborhood
Barbaros Park	Kordonboyu	1991-95	*	Neighborhood
Fuat Gün Park	Kordonboyu	1996-2000	Leaving	Neighborhood
Kumluk Park	Kordonboyu	1991-95	Treasury	Neighborhood
Bulvar Park	Karlıktepe	1981-90	Treasury	Neighborhood
Selanik Park	Karlıktepe	1991-95	remaining from road	Neighborhood
Dursun Kaya Park	Karlıktepe	1991-95	Treasury	Neighborhood
Ş. Aşkın Adra Park	Karlıktepe	1996-2000	Treasury	Neighborhood
Çöplük Üstü Park	Yakacık Yeni	*	Public	District
Uğur Mumcu Çamlık Park	Uğur Mumcu	*	18.item	Neighborhood
Şeyh Şamil Park	Uğur Mumcu	*	18.item	District
Şehit Gaffar Okkan Park	Uğur Mumcu	*	18.item	District
Uğurmumcu Yeni Park-1	Uğur Mumcu	*	18.item	Neighborhood
Şehit Yavuz Bahar Park	Uğur Mumcu	*	18.item	Neighborhood
Uğurmumcu Yeni Park-2	Uğur Mumcu	*	18.item	Neighborhood
Yunus Emre Park-2	Uğur Mumcu	*	18.item	Neighborhood
Yunus Emre Park	Uğur Mumcu	*	18.item	District
Uğurmumcu yeni Park	Uğur Mumcu	*	18.item	Neighborhood
Adnan kahveci Park	Uğur Mumcu	*	18.item	District
Fatih Sultan Mehmet parkı	Uğur Mumcu	*	18.item	District
Kartal-Pendik Coast Park	Orhan Tepe	*	Filled up	Coast
Kartal-Pendik Coast Park	Orhan Tepe	*	Filled up	Coast
Kartal-Pendik Coast Park	Kordonboyu	*	Filled up	Coast
Kartal-Pendik Coast Park	Kordonboyu	*	Filled up	Coast
Kartal-Pendik Coast Park	Kordonboyu	*	Filled up	Coast
Kartal-Pendik Coast Park	Kordonboyu	*	Filled up	Coast

Source: Case Study

Table 7.2 Qualitative and Quantitative Features of Parks in Kartal

NAME OF THE PARK	AREA (m^2)	PLAYGROUND	SPORT FACILITY	CAFE-BUFFET	STATUE-MONUMENT
Akgün Park	1342	1	0	0	0
Akşemsettin Park	3401	1	1	0	0
30 Ağustos Park	2193	1	0	1*	0
Bulgar Park	2541	1	0	0	0
Eyüp İzmirli Park	2403	1	1	0	0
Hamit Yıldırım Park	969	1	0	0	0
Çifteler Park	4656	1	1	0	0
Emrullah Turanlı Yurdu Park	1641	1	1	0	0
Özkan Sokak Park	2035	1	1	0	0
Yakacık Tepe Park	2406	1	0	0	0
Soğanlık Tepe Park	392	1	0	0	0
Gülistan Park	1216	1	0	0	0
Anafartalar Park	2665	1	1	0	0
Yalı Park	514	1	0	0	0
Atalar Park	1289	1	0	0	0
Atatürk Park	2960	1	0	0	0
75. Yıl Park	3408	1	1	0	0
Çamlık Park	4349	1	0	0	0
Ali Ekber Karagöz Park	2954	1	1	0	0
Mercan Park	3899	1	0	0	0
Çavuşoğlu Zeytinlik Park	1920	1	0	0	0
Spor Caddesi Park	1316	0	0	0	0
Gül Park	741	1	0	0	0
Fatih Park	3308	1	1	1*	0
Kaper Park	1016	1	1	0	0
Ziyabey Park	1121	1	0	0	0
Yıldız Park	449	0	0	0	0
Çam Park	568	1	0	0	0
Ceylan Park	1329	1	0	0	0
Yürek Kayalar Park	705	1	0	0	0
Soğanlık Orta Mahalle Park	1511	1	0	0	0
Şehir Polis Muhammed Baki Avcı Park	653	1	0	0	0
Belediye Hastanesi yanı Park	838	0	0	0	0
Paşa Bahçe Bloklar Park	3223	1	1	1*	0
Arıcılar Park	1271	1	0	0	0
Çitlembik Park	1601	1	0	0	0
Soğanlık Ahmet Yesevi Park	1464	1	0	0	0
Genç Osman Park	1222	1	1	1*	0
Halk Park	8406	1	1	1	1

Source: Case Study

*Buffet in Parks.

Table 7.2 Qualitative and Quantitative Features of Parks in Kartal (continuation)

NAME OF THE PARK	AREA (m^2)	PLAYGROUND	SPORT FACİLİTY	CAFE-BUFFET	STATUE-MONUMENT
Hacılar-1 Park	1314	1	0	0	0
Hacılar-2 Park	658	1	0	0	0
Eas Park	570	1	0	0	0
Ayhan Songar Park	3416	1	0	0	1
Zeytinlik Park	5340	1	0	1	0
Petrol İş Dinlenme Park	1854	1	1	0	0
Sinan Sokak Park	574	1	0	0	0
Batman Park	1922	1	1	0	0
Kumru Sokak Park	978	1	0	0	0
Kültür Park	2543	1	0	0	1
Mehmet Turan Tansu Park	864	1	0	0	0
Yakamoz Park	1961	1	1	0	0
Dragos Park	969	1	0	0	0
Şeyh Şamil Park	4028	0	0	0	0
Barbaros Park	1388	1	1	0	0
Fuat Gün Park	610	1	0	0	0
Kumluk Park	595	1	0	0	0
Bulvar Park	3923	1	1	0	0
Selanik Park	535	1	0	0	0
Dursun Kaya Park	2634	1	0	0	0
Ş. Aşkın Adra Park	1319	1	0	0	0
Çöplük Üstü Park	10956	1	1	0	0
Uğur Mumcu Çamlık Park	7643	1	1	1*	0
Şeyh Şamil Park	9622	1	1	1*	0
Şehit Gaffar Okkan Park	7079	1	1	0	0
Uğurmumcu Yeni Park-1	2023	0	1	0	0
Şehit Yavuz Bahar Park	1860	1	1	0	0
Uğurmumcu Yeni Park-2	8851	0	1	0	0
Yunus Emre Park-2	5115	1	1	0	0
Yunus Emre Park	9112	1	1	1*	0
Uğurmumcu yeni Park	3386	1	0	0	0
Adnan kahveci Park	13613	0	1	0	0
Fatih Sultan Mehmet parkı	23346	1	1	1	0
Kartal-Pendik Coast Park	90554	1	0	1	0
Kartal-Pendik Coast Park	28951	0	0	0	0
Kartal-Pendik Coast Park	103709	0	0	0	0
Kartal-Pendik Coast Park	5757	0	0	0	0
Kartal-Pendik Coast Park	59903	0	0	0	0
Kartal-Pendik Coast Park	102696	0	0	0	0
Total	612062	66	29	11	3

Source: Case Study

The criterias chosen to indicate the quality and quantity of parks such as areas and activities served –having a playground, a sport facility, a café/buffet and statue/monument- are given in Table 7.2.

The following paragraphs will discuss the development of parks in Kartal by using the above given data.

7.2. Ownership of Green Spaces in Kartal

By the means of possession, 48,7% of the total parks are in Treasury possession, 14,1% are procured by the 18th item of Development Law (Urban land readjustment method), 12,8% are in public possession and 10,3% are in abandoned vacant lots (see Table 7.3.). Approximetly %50 of green spaces' are in possesion of Treasury. This indicates that vacant lots in Treasury possession in development plans can be transformed into green space more easily. Together with this, implementation of item in development plans permits procuring green spaces. Uğur Mumcu Quarter where the 18th item of Development Law was implemented is a good example (see Photograph 1, 2, 3 and 4). Number of parks in Uğur Mumcu Quarter is 15,38% of the total parks and also the area of parks in this quarter is 15,53% of the total area of parks in Kartal (7.8 and 7.11).

Photograph 1: Şehit Yavuz Bahar Park (Neighborhood Park)

Photograph 2: Uğur Mumcu Yeni Park (Neighborhood Park)

Photograph 3: Uğur Mumcu Çamlık Park(Neighborhood Park)

Photograph 4: Şehit Gaffar Okkan Park (District Park)

In Table 7.4 the type of possessions of the parks constructed after 1990 are given. It is seen that the share of parks in treasury possessions has rised to 69,4% and the share of abandoned vacant lot and public possessions are eventuated as 14,3% and 10,2%. Although the general distribution is similar to the one in overall, the augmentation in the share of treasury possessions are observed after 1990. As a result it can be said that green areas in vacant lots and lots in treasury possession in development plans can be easily transformed into green spaces.

Table 7.3 Possession of Parks in Kartal

Type of Possession	Number of Park	%
Treasury	38	48,7
Abandoned	8	10,3
Public	10	12,8
Private	2	2,6
Remaining from Road	1	1,3
18th İtem	11	14,1
Filled up	6	7,7
Unknown	2	2,6
Total	78	100,0

Source: Case Study

Table 7.4 Possession of Parks After 1990 in Kartal

Type of Possession	after 1990	%
Treasury	34	69,4
Abandoned	7	14,3
Public	5	10,2
Private	1	2,0
Remaining from Road	1	2,0
Unknown	1	2,0
Total	49	100,0

Source: Case Study

7.3. Opening Years of Green Spaces in Kartal

In Table 7.5 the distribution of green areas in accordance with their opening year and their possessions are given. According to given data the 40,7% of the parks were opened in between 1991 and 1995 and the 44,4% of them were opened in between 1996 and 2000 which makes the 85,1% of the total parks in Kartal. This data proves that the importance given to green areas by the Municipality of Kartal was increased in a ten year period of 1991 and 2000.

Table 7.5 Possession of Parks in Kartal According to Opening Years in Kartal

OPENING YEAR	POSSESSION													
	Treasury				Public		Private		Remaining from Road		Unknown		Total	
	No	%	No	%	No	%	No	%	No	%	No	%	No	%
Before 1980	1	2,8	0	0,0	0	0,0	0	0,0	0	0,0	0	0,0	1	1,9
81-90	1	2,8	0	0,0	3	37,5	0	0,0	0	0,0	0	0,0	4	7,4
91-95	15	41,7	2	28,6	2	25,0	1	100,0	1	100,0	1	100,0	22	40,7
96-2000	18	50,0	4	57,1	2	25,0	0	0,0	0	0,0	0	0,0	24	44,4
2000+	1	2,8	1	14,3	1	12,5	0	0,0	0	0,0	0	0,0	3	5,6
Total	36	100,0	7	100,0	8	100,0	1	100,0	1	100,0	1	100,0	54	100,0

Source: Case Study

* Parks, whose opening year are unknown, are not taken into consideration

7.4. Classification of Green Spaces in Kartal

There are neighborhood, district and coast parks in Kartal (Photograph 5, 6, 7, 8). 83,3% of the total parks are neighborhood parks where 9,0% are district and 7,7% are coastal parks (see Table 7.6). Coastal parks which were constructed by filling up the coast serve more as an urban recreational area.

Table 7.6 Classification of Parks in Kartal

Classification	Number of Park	%
Neighborhood Park	65	83,3
District Park	7	9,0
Coast Park	6	7,7
Total	**78**	**100,0**

Source: Case Study

Photograph 5: Mrecan Park (Neighborhood Park)

Photograph 6: Ş. Aşkın Adra Park (Neighborhood Park)

Fotograph 7: Akşemsettin Park (District Park)

Fotograph 8: Yunus Emre Park (District Park)

7.5. Sizes of Green Spaces in Kartal

When the adequacy of the green areas are considered, size of the parks gain importance rather than the number of the parks (see Photograph 9, 10, 11, 12, 13, 14, 15, 16). 26,9% of the green spaces have an area of 1001-2000 m^2 and %23,1% of them have an area of 0-1000 m^2(Table 7.7). Most important point is that the 78,2% of the parks is small-sized with an area of 0-5000 m^2.

When number of green areas in quarters are examined in accordance with their size Kordonboyu and Uğur Mumcu Quarters take attention. The 15,38% of the total parks are found in Uğur Mumcu and 12,82% are in Kordonboyu Quarter.

When the green areas are taken into consideration Kordonboyu Quarter has an advantage of being in the coast. Most of it's green aspaces are constructed by filling up the coast. As in Kordonboyu Quarter, Uğur Mumcu Quarter has an advantage too. In this quarter, urban land readjustment method is applied and this application increased the number and area of green spaces. In Kordonboyu Quarter, distribution of number of parks according to their areas is in equilibrium. In Uğur Mumcu Quarter, parks that have an area of 5001-10.000m^2 constitutes half of parks in this quarter. As it shown in figure 2, green spaces in Kartal have a disperse distribution. There is only coast parks that serve to urban scale. Having under 2.000 m^2 area of half of the green spaces indicates that there is need to large green space in terms of both distribution and necessitate.

Photograph 9: Sinan Sokak Park (0-1000 m^2)

Photograph 10: Atalar Park (1000-2000 m^2)

Photograph 11: Anafartalar Park (2000-3000 m^2)

Photograph 12: 75. Yıl Park (3000-4000 m^2)

Photograph 13: Çamlık Park (4000-5000 m^2)

Photograph 14: Zeytinlik Park (5000-10000 m^2)

Photgraph 15: Adnan Kahveci Park (10000-20000 m^2)

Photograph 16: Fatih Sultan Mehmet Park (20000-30000 m^2)

Table 7.7 Distribution Parks in Accordance with Their Area

Areas	Number of Parks	% in Total
0-1000	18	23,1
1001-2000	21	26,9
2001-3000	11	14,1
3001-4000	8	10,3
4001-5000	3	3,8
5001-10000	7	9,0
10001-20000	4	5,1
20001-30000	2	2,6
30000+	4	5,1
Total	**78**	**100,0**

Source: Case Study

Table 7.8 Distribution of Parks in Quarters in Accordance with their Areas

Areas (m^2)	0-1000	1001-2000	2001-3000	3001-4000	4001-5000	5001-10000	10001-20000	20001-30000	30000+	Total	%
Atalar	2	1	0	0	0	1	0	0	0	**4**	5,13
Cevizli	1	1	2	1	1	0	0	0	0	**6**	7,69
Cumhuriyet	1	1	0	1	0	0	0	0	0	**3**	3,85
Çavuşoğlu	1	2	0	0	0	0	0	0	0	**3**	3,85
Esentepe	0	1	1	2	1	0	0	0	0	**5**	6,41
Gümüşpınar	0	2	0	1	0	0	0	0	0	**3**	3,85
Hürriyet	0	1	1	0	0	0	0	0	0	**2**	2,56
Karlıktepe	1	1	2	1	0	0	0	0	0	**5**	6,41
Kartal Yeni	0	0	1	0	0	0	0	0	0	**1**	1,28
Kordonboyu	2	1	1	0	1	0	2	0	3	**10**	12,82
Orhantepe	1	1	1	0	0	0	0	1	1	**5**	6,41
Orta	1	1	0	0	0	0	0	0	0	**2**	2,56
Petrol-iş	2	3	0	0	0	0	0	0	0	**5**	6,41
Soğanlık Yeni	2	2	0	0	0	0	0	0	0	**4**	5,13
Uğur Mumcu	0	1	1	2	0	6	1	1	0	**12**	15,38
Yakacık Çarşı	1	1	1	0	0	0	0	0	0	**3**	3,85
Yakacık Yeni	1	0	0	0	0	0	1	0	0	**2**	2,56
Yalı	1	0	0	0	0	0	0	0	0	**1**	1,28
Yukarı	1	1	0	0	0	0	0	0	0	**2**	2,56
Total	**18**	**21**	**11**	**8**	**3**	**7**	**4**	**2**	**4**	**78**	100,00

Source: Case Study

7.6. Activities of Green Spaces in Kartal

Activities in green spaces are also important while evaluating suffeciency of green spaces (Photograph 17, 18, 19, 20, 21, 22, 23, 24). In Kartal, 85% of green areas have playgrounds, 37% of them have sport facilities (football, basketball or volleyball facility), 14% of them have buffet or cafe and 4% of them have a statue or monument (Table 7.9). It can be said that green spaces in Kartal are oriented towards children. 12% of the total parks do not have any activities rather than sitting groups or pedestrian roads as seen in Photograph 25.

Photograph 17: Bulgar Park (An Example of Playground)

Photograph 18: Kumru Sokak Park (An Example of Playground)

Photograph 19: Yunus Emre-2 Park (An Example of Playground)

Photograph 20: Uğur Mumcu Yeni Park (An example of Sport Facility)

Photograph 21: Çifteler Park (An example of Sport Facility)

Photograph 22: Petrol-iş Dinlenme Park (An example of Sport Facility)

Photograph 23: Zeytinlik Park (An Example of Cafe)

Photograph 24: Yunus Emre Park (An Example of Buffet)

Photograph 25: Spor Caddesi Park (Only have sitting group and pedestrian road)

Table 7.9 Activities in Parks in Kartal

Activity	Number of Park	% in Total
Playground	66	85
Sport Facility	29	37
Café-Buffet	11	14
Statue-Monument	3	4
Nothing	9	12

Source: Case Study

Approximately, half of green spaces in Kartal have only one activity in it. Only one park has all four activities (Table 7.10). When importance of having activity is taken into consideration, these amounts designate green spaces are in sufficient in terms of having activity. Also activities that are seen in green spaces in Kartal are inadequate according to parks in foreign countries.

Table 7.10 Number of Activities in Parks in Kartal

Number of Activity	Number of Park	%
Nothing	9	11,54
1	35	44,87
2	26	33,33
3	7	8,97
4	1	1,28
Total	**78**	**100,00**

Source: Case Study

7.7. Distribution of Green Spaces in Kartal

When the size of green spaces according to quarters are examined, similar results are observed. Besides Kordonboyu and Uğur Mumcu Quarters, Orhantepe Quarter takes a large portion. Kordonboyu Quarter has the 47,32% of the total park areas, Uğur Mumcu Quarter has 15,53% and Orhantepe Quarter has 20,36% (Table 7.11). Kordonboyu and Orhantepe Quarters are coastal quarters and they have coast parks which are constructed by filling up coastal areas. So, these coast parks that have large areas increase the amount of green spaces in these quarters because coast parks already have 63,9% of total green spaces. But being under an earthquake risk is an important point for these coastal parks. They can be destroyed with the tsunami effect of earthquake as it was seen in Değirmendere coastal belt. When it comes to Uğur Mumcu Quarter since this quarter was constructed by the 18th item of Development Law, arrangements were done more easily. When coast parks are left out, green areas of Uğur Mumcu Quarter constitutes 43,11% of total green areas (Table 7.12). When the rest of the quarters are taken into consideration Cevizli, Esentepe and Kordonboyu quarters have more green spaces than the other quarters and Yakacık Yeni Quarter follows

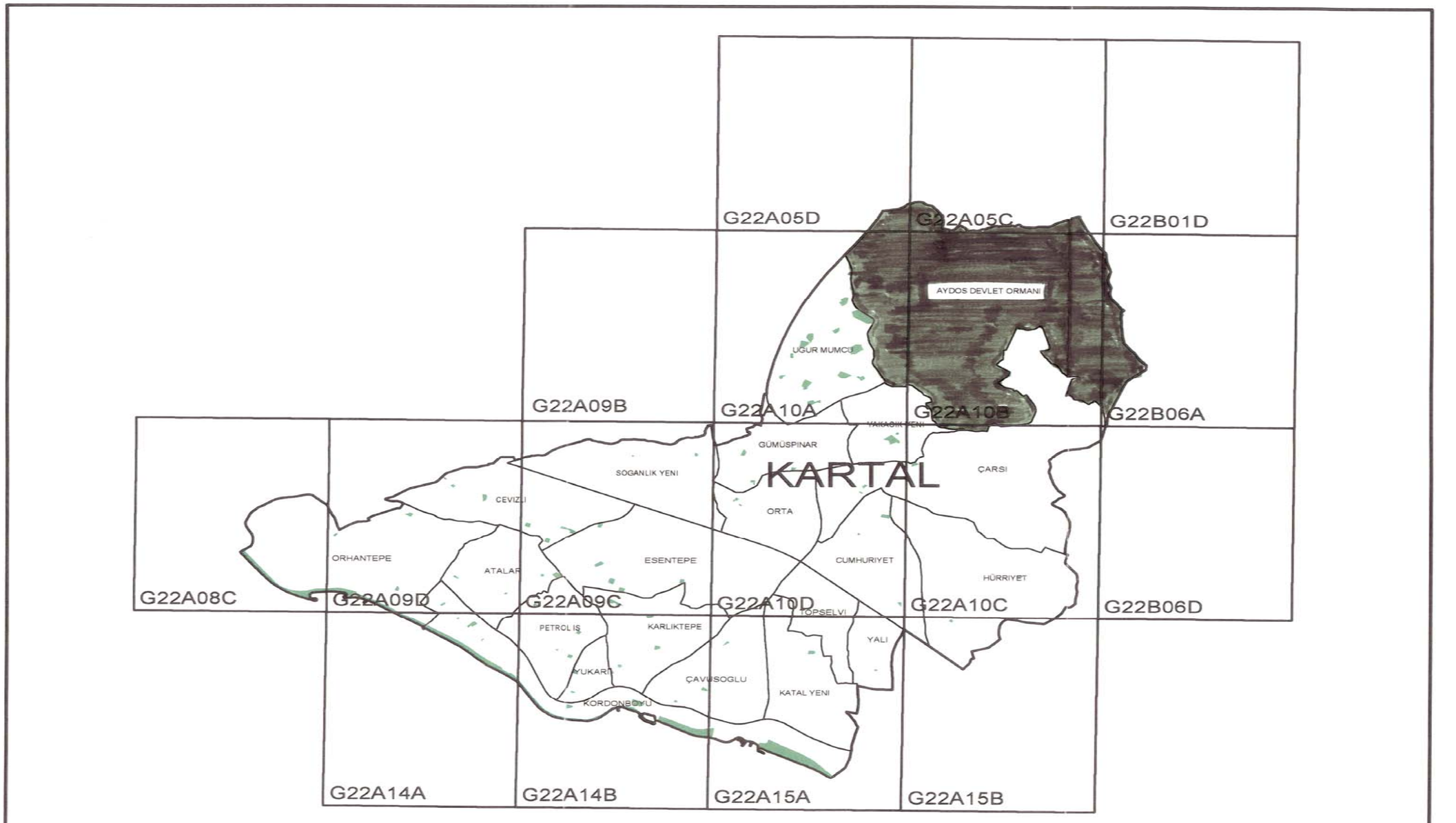

Figure 7.1. Status of Green Spaces in Kartal

them. From this point of view, it can be declared that there is a balanced distirbution of parks in Kartal. (Figure 7.1)

Table 7.11 Areas of Parks According to Quarters in Kartal

QUARTER	AREA OF PARK	%
Atalar	8.167	1,33
Cevizli	17.663	2,56
Cumhuriyet	4.878	0,80
Çavuşoğlu	3.977	0,65
Esentepe	15.700	2,57
Gümüşpınar	6.288	1,03
Hürriyet	3.051	0,50
Karlıktepe	10.952	1,79
Kartal Yeni	2.960	0,48
Kordonboyu	289.636	47,32
Orhantepe	124.627	20,36
Orta	2.164	0,35
Petrol-iş	6.670	1,09
Soğanlık Yeni	3.723	0,61
Topselvi	0	0,00
Uğur Mumcu	95.051	15,53
Yakacık Çarşı	4.303	0,70
Yakacık Yeni	11.661	1,91
Yalı	514	0,08
Yukarı	2.080	0,34
Total	**612.062**	**100,00**

Source: Case Study

Table 7.12 Areas of Parks According to Quarters in Kartal Accept Coastal Parks

QUARTER	AREA OF PARK	%
Atalar	8.167	3,70
Cevizli	15.663	7,10
Cumhuriyet	4.878	2,21
Çavuşoğlu	3.977	1,80
Esentepe	15.700	7,12
Gümüşpınar	6.288	2,85
Hürriyet	3.051	1,38
Karlıktepe	10.952	4,97
Kartal Yeni	2.960	1,34
Kordonboyu	17.570	7,97
Orhantepe	5.123	2,32
Orta	2.164	0,98
Petrol-iş	6.670	3,03
Soğanlık Yeni	3.723	1,69
Topselvi	0	0,00
Uğur Mumcu	95.051	43,11
Yakacık Çarşı	4.303	1,95
Yakacık Yeni	11.661	5,29
Yalı	514	0,23
Yukarı	2.080	0,94
Total	**220.495**	100,00

Source: Case Study

Besides of the comparison of number and size of green spaces in quarters, studying on the ratio of green spaces to total areas for each quarter will be a clear indicator of the adequacy of green spaces. In total only 1,95% of the total district area of Kartal is reserved for green areas as seen in Table 7.12. In Kordonboyu, Orhantepe and Uğur Mumcu Quarters, percentage of green spaces are more than the district average. The rest seventeen quarters are under this average. If these three quarters are undervalued, table 7.13 shows that there is a balanced distribution in areas of green areas in Kartal. Also, it is deduced that amounts are under required amounts.

Table 7.13 Distribution of Quarter Areas and Park Areas in Kartal

QUARTER	AREA OF QUARTER	AREA OF PARK	%
Atalar	1.121.155	8.167	0,73
Cevizli	1.450.610	15.663	1,08
Cumhuriyet	1.475.235	4.878	0,33
Çavuşoğlu	1.371.216	3.977	0,29
Esentepe	2.791.169	15.700	0,56
Gümüşpınar	1.266.502	6.288	0,50
Hürriyet	2.486.397	3.051	0,12
Karlıktepe	1.319.072	10.952	0,83
Kartal Yeni	1.375.493	2.960	0,22
Kordonboyu	1.633.067	289.636	17,74
Orhantepe	2.843.559	124.627	4,38
Orta	1.050.605	2.164	0,21
Petrol-iş	1.090.692	6.670	0,61
Soğanlık Yeni	1.795.928	3.723	0,21
Topselvi	774.502	0	0,00
Uğur Mumcu	1.654.825	95.051	5,74
Yakacık Çarşı	4.074.661	4.303	0,11
Yakacık Yeni	923.126	11.661	1,26
Yalı	524.390	514	0,10
Yukarı	327.790	2.080	0,63
Total	**31.349.994**	**612.062**	**1,95**

Source: Case Study

Green spaces per person shows similar structure as the percentage of green spaces to quarter areas. Amount of green space per person in Kordonboyu, Orhantepe and Uğur Mumcu quarters are above the district average. In Kartal green space per person is 1,84. There are 31,18m^2/person green space in Kordonboyu Quarter, 4,90 m^2/person in Orhantepe Quarter and 4,0m^2/person in Uğur Mumcu Quarter. Green spaces are consist of 6 neighborhood parks and 4 coast parks in Kordonboyu, 2 quarer parks and 2 coast parks in Orhantepe and 6 neighborhood parks and 6 district parks in Uğur Mumcu. From the Table 7.14, it is clearly seen that, except Kordonboyu Quarter, the amount of green area per citizen is far under than both the Turkish and foreign standarts. Coastal parks of Kordonboyu causes this situation but it must be taken into consideration that coastal parks are urban-

scale green spaces. There is not any park that serves to urban pattern in Uğur Mumcu. Achievement of procuring green spaces in Uğur Mumcu can be understood here again.

Table 7.14 Population Ara Relation in Kartal

QUARTER	POPULATION	AREA OF PARK	POPULATION DENSITY	person/m2
Atalar	23.859	8.167	212,81	0,34
Cevizli	24.263	15.663	167,26	0,65
Cumhuriyet	14.104	4.878	95,61	0,35
Çavuşoğlu	10.792	3.977	78,70	0,37
Esentepe	20.599	15.700	73,80	0,76
Gümüşpınar	17.938	6.288	141,63	0,35
Hürriyet	31.380	3.051	126,21	0,10
Karlıktepe	22.660	10.952	171,79	0,48
Kartal Yeni	11.954	2.960	86,91	0,25
Kordonboyu	9.288	289.636	56,87	31,18
Orhantepe	25.433	124.627	89,44	4,90
Orta	10.993	2.164	104,63	0,20
Petrol-iş	22.981	6.670	210,70	0,29
Soğanlık Yeni	16.487	3.723	91,80	0,23
Topselvi	9.765	0	126,08	0,00
Uğur Mumcu	23.761	95.051	143,59	4,00
Yakacık Çarşı	8.895	4.303	21,83	0,48
Yakacık Yeni	10.646	11.661	115,33	1,10
Yalı	9.045	514	172,49	0,06
Yukarı	7.247	2.080	221,09	0,29
Total	**332.090**	**612.062**	**105,93**	**1,84**

Source: Case Study

When distribution of green spaces is taken into consideration according to population density, it is seen that in Kordonboyu and Orhantepe population density is under population density of Kartal. Despite the fact that quantity of green space per person in these two quarters are above quantity of Kartal, they have an amount of population density under Kartal. Having large areas of green spaces causes this situation. Contrary to this scenery, Uğur Mumcu has a population density of 143,63 person/ha which is more than population density of

Kartal. Population density of 11 of 20 quarters are above Kartal, but only quantity of green space per person of one quarter (Uğur Mumcu) is above Kartal. These results also show that in spite of having disperse distribution, green spaces in Kartal are insufficient.

7.8. Status of Green Areas in Sarıyer

Sarıyer is a coastal district. So, there are large and small green spaces in coastal area. These coast parks have some differences from coast parks in Kartal. Coast parks in Sarıyer are not constructed by filling up the coastal areas and they do not have large areas as in Kartal. Beside these coastal parks, there are groves and neighborhood parks in Sarıyer. Quarters in Sarıyer and types of green spaces are taken into consideration in Table 7.15.

Table 7.15 Types of Parks in Sarıyer

NAME OF THE PARK	QUARTER	TYPE
Ferahevler Necip Fazıl Kısakürek Park	Ferahevler	Neighborhood
Ferahevler Çelik Çıkmazı Park	Ferahevler	Neighborhood
Yeniköy Albay Osman Park	Yeniköy	Neighborhood
Topçam Sevgi Park	Ferahevler	Neighborhood
Topçam Hoşgörü Park	Ferahevler	Neighborhood
Cumhuriyet Mahallesi Muhtarlık Park	Cumhuriyet	Neighborhood
Okulaltı sokak Park	Cumhuriyet	Neighborhood
Ömürtepe Park	Ferahevler	Neighborhood
İstinye Cahar Dudayev Park	İstinye	Neighborhood
Poligon Girne Sokak Park	Poligon	Neighborhood
Cezayirli Hasan Paşa Park	Çayırbaşı	Neighborhood
Büyükdere Park	Büyükdere	Neighborhood
Belediye Yanı Barış Manço Park	Büyükdere	Neighborhood
Muammer Aksoy Park	Büyükdere	Neighborhood
Kazım Karabekir Park	Merkez	Neighborhood
Kireçburnu Direkli Sokak Park	Kireçburnu	Neighborhood
Derbent Mazlum sokak Park	Derbent / Çamlıbahçe	Neighborhood
Yenimahalle Havuzlu Park	Merkez	Coast
Yenimahalle Dalyan Park	Yenimahalle	Coast
Kocayemiş Park	Merkez	Neighborhood
Mehmet Akif Ersoy Park	Merkez	Coast
Çelik Gülersoy Park	Büyükdere	Neighborhood
Havantepe Park	Rumeli Kavağı	Neighborhood
Liseliler Park	Büyükdere	Coast
Kuyulu Park	Merkez	Coast
Hidayet'in Bağı Park	Yenimahalle	Neighborhood
Nadir Nadi Park	Kireçburnu	Coast
Nadir Nadi Park	Cumhuriyet	Coast
Nadir Nadi Park	PTT Evleri	Coast
Doktor Sadık Ahmet Park	Ferahevler	Neighborhood
Yeniköy Çamlık Park	Yeniköy	Neighborhood
Yeniköy Plaj Park	Yeniköy	Neighborhood
Poligon Park	Poligon	Neighborhood
Mevhibe İnönü Park	Poligon	Neighborhood
Emirgan Park	Emirgan	Neighborhood
Emirgan Grove	Emirgan	Grove
Oba Park	Rumeli Hisarı	Coast Park
Fatih Sultan Mehmet Park	Rumeli Hisarı	Neighborhood
Hisarüstü Fatih Park	Rumeli Hisarı	Neighborhood
Duatepe Park	Rumeli Hisarı	Neighborhood
Rumeli Hisarı Front-side Green Space	Rumeli Hisarı	Coast
Rumeli Hisarı Front-side Green Space	Rumeli Hisarı	Coast
Hacı Osman Korusu	Derbent / Çamlıbahçe	Grove

Source: Case Study

Table 7.16 Qualitative and Quantitative Features of Parks in Sarıyer

NAME OF THE PARK	AREA (m^2)	PLAYGROUND	SPORT FACILITY	CAFE-BUFFET	STATUE-MONUMENT
Ferahevler Necip Fazıl Kısakürek Park	987	1	0	0	0
Ferahevler Çelik Çıkmazı Park	2154	1	0	0	0
Yeniköy Albay Osman Park	1252	1	0	0	0
Topçam Sevgi Park	687	0	0	0	0
Topçam Hoşgörü Park	375	1	0	0	0
Cumhuriyet Mahallesi Muhtarlık Park	533	1	0	0	0
Okulaltı sokak Park	562	1	0	0	0
Ömürtepe Park	1369	1	1	0	0
İstinye Cahar Dudayev Park	996	1	0	0	0
Poligon Girne sokak Park	1667	0	0	0	0
Cezayirli Hasan Paşa Park	1130	0	0	0	1
Büyükdere Park	717	0	0	0	0
Belediye Yanı Barış Manço Park	832	1	0	0	0
Muammer Aksoy Park	1169	0	0	1	0
Kazım Karabekir Park	1251	1	1	0	0
Kireçburnu Direkli Sokak Park	1135	1	0	0	0
Derbent Mazlum Sokak Park	1254	1	0	0	0
Yenimahalle Havuzlu Park	2869	0	0	0	0
Yenimahalle Dalyan Park	2051	0	0	0	0
Kocayemiş Park	1273	0	0	0	0
Mehmet Akif Ersoy Park	2541	1	0	0	0
Çelik Gülersoy Park	2288	0	0	1	0
Havantepe Park	1727	0	0	0	0
Liseliler Park	1305	1	0	1	0
Kuyulu Park	1063	0	0	0	0
Hidayet'in Bağı Park	4045	1	0	0	0
Nadir Nadi Park	12910	0	0	0	0
Nadir Nadi Park	2855	0	0	0	0
Nadir Nadi Park	3395	0	0	0	0
Doktor Sadık Ahmet Park	2492	1	0	1	1
Yeniköy Çamlık Park	3123	1	1	0	0
Yeniköy Plaj Park	4607	0	0	0	1
Poligon Park	6791	1	1	0	0
Mevhibe İnönü Park	2147	0	1	0	0
Emirgan Park	4453	0	0	0	0
Emirgan Grove	427704	1	0	0	0
Oba Park	1962	0	0	1	0
Fatih Sultan Mehmet Park	1395	1	0	0	0
Hisarüstü Fatih Park	12061	0	0	0	0
Duatepe Park	24040	0	0	0	0
Rumeli Hisarı Front-side Green Space	974	0	0	0	1
Rumeli Hisarı Front-side Green Space	3021	0	0	0	0
Hacı Osman Grove	1119198	0	0	0	0
Total	1.670.357	20	5	5	4

Source: Case Study

As it was in Kartal, some qualitative and quantitative criterias are determined for comparison of green spaces. Size of green spaces and existence of activities such as playground, sport facility, cafe-buffet and statue-monument are studied in Table 7.16.

7.9. Classification of Green Spaces in Sarıyer

The following paragraphs discuss above given criterias in more detail (Photograph 26,27,28,29,30,31). When classification of green spaces are taken into consideration, 69,8% of the total parks are peighborhood parks which constitutes most of green spaces in Sarıyer (Table 7.17). Coast parks follows neighborhood parks with a share of 25,6% and the rest 4,7% are groves.

Table 7.17 Classification of Parks in Sarıyer

Classification	Number of Park	%
Neighborhood park	30	69,8
Coast Park	11	25,6
Grove	2	4,7
Total	**43**	**100,0**

Source: Case Study

Photograph 26: Poligon Park (Neighborhood Park)

Photograph 27: Yeniköy Plaj Park (Neighborhood Park)

Photograph 28: Çamlık Park (Neighborhood Park)

Photograph 29: Nadir Nadi Park (Coast Park)

Photograph 30: Havuzlu Park (Coast Park)

Photograph 31: Rumeli Hisarı Front-side Park (Coast Park)

7.10. Sizes of Green Spaces in Sarıyer

In Sarıyer, green spaces that are the size of of 0-5000 m^2 constitutes most of green spaces with a share of 86,0% (Table 7.18). It is seen that green spaces having an area in between 1001-2000 m^2, 0-1000 m^2 and 2001-3000 m^2 takes the shares of 32,6%, 20,9% and 18,6% sequentily. Except the two groves, there are no green spaces with an area more than 30.000 m^2. These groves give service to urban pattern and but one of the groves is formed of only afforest area. Green spaces are generally small-sized in Sarıyer (Photograph 32, 33, 34, 35, 36, 37, 38, 39). Distribution of green spaces according to areas is insufficient (Figure 3).

Photograph 32: Barış Manço Park (0-1000 m^2)

Photograph 33: Liseliler Park (1000-2000 m^2)

Photograph 34: Çelik Gülersoy (2000-3000 m^2)

Photograph 35: Çamlık Park (3000-4000 m^2)

Photograph 36: Hidayet'in Bağı Park (4000-5000 m^2)

Photograph 37: Poligon Park (5000-10000 m^2)

Photograph 38: Nadir Nadi Park (10000-20000 m^2)

Photograph 39: Duatepe Park (20000-30000 m^2)

Table 7.18 Areas of Parks in Sarıyer

Areas (m^2)	Number of Park	% in Total
0-1000	9	20,9
1001-2000	14	32,6
2001-3000	8	18,6
3001-4000	3	7,0
4001-5000	3	7,0
5001-10000	1	2,3
10001-20000	2	4,7
20001-30000	1	2,3
30000+	2	4,7
Total	43	100,0

Source: Case Study

Table 7.19 Distribution of Parks in Quarters in Accordance with their Areas

Areas (m^2)	0-1000	1001-2000	2001-3000	3001-4000	4001-5000	5001-10000	10001-20000	20001-30000	30000+	Total	%
Büyükdere	2	2	1	0	0	0	0	0	0	5	11,6
Cumhuriyet	2	0	1	0	0	0	0	0	0	3	7,0
Çayırbaşı	0	1	0	0	0	0	0	0	0	1	2,3
Derbent	0	1	0	0	0	0	0	0	1	2	4,7
Emirgan	0	0	0	0	1	0	0	0	1	2	4,7
Ferahevler	3	1	2	0	0	0	0	0	0	6	14,0
İstinye	1	0	0	0	0	0	0	0	0	1	2,3
Kireçburnu	0	1	0	0	0	0	1	0	0	2	4,7
Merkez	0	3	2	0	0	0	0	0	0	5	11,6
Poligon	0	1	1	0	0	1	0	0	0	3	7,0
PTT Evleri	0	0	0	1	0	0	0	0	0	1	2,3
Rumelihisarı	1	2	0	1	0	0	1	1	0	6	14,0
Rumelikavağı	0	1	0	0	0	0	0	0	0	1	2,3
Yeniköy	0	1	0	1	1	0	0	0	0	3	7,0
Yenimahalle	0	0	1	0	1	0	0	0	0	2	4,7
Toplam	9	14	8	3	3	1	2	1	2	43	100,0

Source: Case Study

Number of green spaces according to quarters and areas are important to see the distribution of green spaces in a district. Except quarters that do not have any green space, Büyükdere (11,6%), Ferahevler (14,0%), Merkez (11,6%) and Rumelihisarı (14,0%) quarters have much more green space than the others (Table 7.19). Yet there is not a remarkable difference in green areas in between quarters.

7.11. Activities of Green Spaces in Sarıyer

47% of green spaces have playground, 12% of them have sport facility, 12% of them have cafe and 9% of them have statue or monument in it (Table 7.20) (Photograph 40, 41, 42, 43, 44, 45, 46, 47, 48, 49). 16 of 43 green space do not have any activity and these 16 green spaces take portion of 37% of all. In addition to this, some parks do not have any landscape design in it (Photograph 50, 51, 52,

53). If having an activity in a park is considered as a qualitative feature, it can be said that parks in Sarıyer are insufficent.

Table 7.20 Activities in Parks in Sarıyer

Activity	Number of Park	% in Total
Playground	20	47
Sport Facility	5	12
Cafe-Buffet	5	12
Statue-Monument	4	9
Nothing	16	37

Source: Case Study

Photograph 40: Dr. Sadık Ahmet Park (An Example of Playground)

Photograph 41: Fatih Sultan Mehmet Park (An Example of Playground)

Photograph 42: Poligon Park (An Example of Playground)

Photograph 43: Liseliler Park (An Example of Cafe)

Photograph 44: Muammer Aksoy Park (An Example of Cafe)

Photograph 45: Oba Park (An Example of Cafe)

Photograph 46: Mevhibe İnönü Park (An Example of Sport Facility)

Photograph 47: Poligon Park (An Example of Sport Facility)

Photograph 48: Cezayirli Hasan Paşa Park (An Example of Monument)

Photograph 49: Rumeli Hisarı Front-side Park (An Example of Monument)

Photograph 49: Rumeli Hisarı Front-side Park (Only have sitting group and pedestrian road)

Photograph 50: Emirgan Park (Only have sitting group and pedestrian road)

Photograph 51: Hisarüstü Fatih Park (Only Afforest Area)

Photograph 52: Poligon Girne Park (Only Afforest Area)

There is not any park that have four activities. Approximately, half of parks have only one activity in it(Table 7.21). Parks do not have any activity in it constitute 37,21% of green spaces in Sarıyer. These outcomes signify that green spaces are inadequate in terms of having an activity and distribution of these activities along Sarıyer. In addition to this, when activities of parks in foreign countries are examined, it is seen that activities that take place in parks in Sarıyer are insufficient.

Table 7.21 Number of Activities in Parks in Sarıyer

Number of Activity	Number of Park	%
Nothing	16	37,21
1	21	48,84
2	5	11,63
3	1	2,33
4	0	0,00
Total	**43**	**100,00**

Source: Case Study

7.12. Distribution of Green Spaces in Sarıyer

It must be stated here that 8 quarters out of 23 do not have any green space and this number makes 18,6% of all quarters in Sarıyer (Table 7.22). Besides, only two quarters have large green spaces. These quarters are Derbent where there is Hacı Osman Grove and Emirgan where there is Emirgan Grove. These two groves constitutes 92,6% of the total green spaces in Sarıyer. It is clearly seen that except these two quarters, green spaces are insufficient. (Figure 7.2)

Table 7.22 Areas of Parks According to Quarters in Sarıyer

QUARTER	AREA OF PARK (m^2)	%
Baltalimanı	0	0,00
Büyükdere	6.310	0,38
Cumhuriyet	3.951	0,24
Çayırbaşı	1.130	0,07
Derbent	1.120.450	67,08
Emirgan	432.157	25,87
Fatih Sultan Mehmet	0	0,00
Ferahevler	8.063	0,48
İstinye	996	0,06
Kazım Karabekir	0	0,00
Kireçburnu	14.045	0,84
Kocataş	0	0,00
Maden	0	0,00
Merkez	8.997	0,54
Pınar	0	0,00
Poligon	10.605	0,63
PTT Evleri	3.395	0,20
Reşitpaşa	0	0,00
Rumelihisarı	43.454	2,60
Rumelikavağı	1.727	0,10
Tarabya	0	0,00
Yeniköy	8.981	0,54
Yenimahalle	6.096	0,36
Total	**1.670.357**	100,00

Source: Case Study

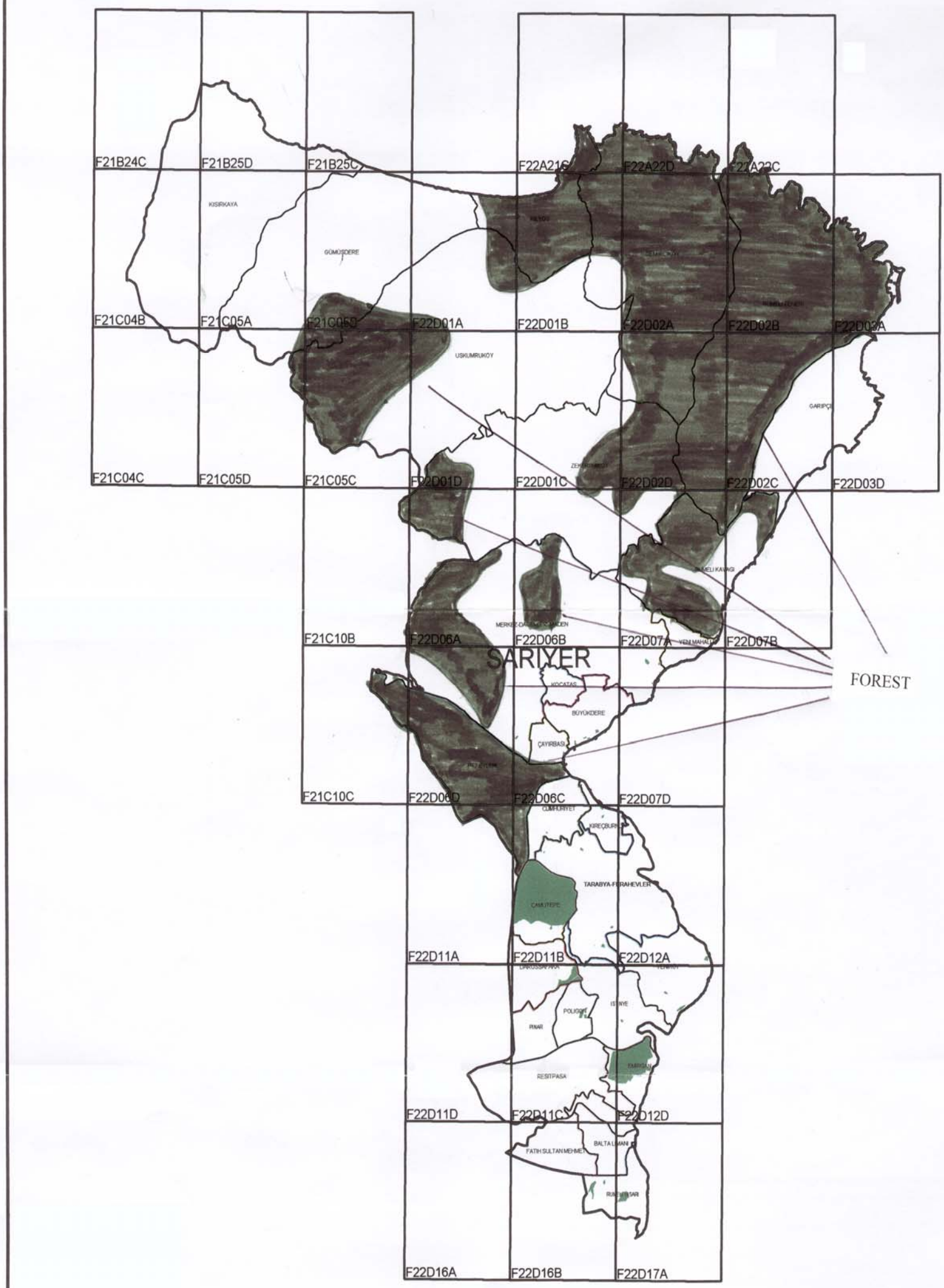

Figure 7.2. Status of Gren Space in Sarıyer

When areas of groves are left out, Rumelihisarı, Kireçburnu, Merkez and Yeniköy quarters come to the fore. Share of Rumelihisarı increases to 35,20%, Kireçburnu to 11,38%, Merkez to 7,29% and Yeniköy to 7,27% (Table 7.23). Even form this point of view the distribution of green spaces are unbalanced.

Table 7.23 Areas of Parks According to Quarters in Sarıyer

QUARTER	AREA OF PARK (m^2)	%
Baltalimanı	0	0,00
Büyükdere	6.310	5,11
Cumhuriyet	3.951	3,20
Çayırbaşı	1.130	0,92
Derbent	1.252	1,01
Emirgan	4.453	3,61
Fatih Sultan Mehmet	0	0,00
Ferahevler	8.063	6,53
İstinye	996	0,81
Kazım Karabekir	0	0,00
Kireçburnu	14.045	11,38
Kocataş	0	0,00
Maden	0	0,00
Merkez	8.997	7,29
Pınar	0	0,00
Poligon	10.605	8,59
PTT Evleri	3.395	2,75
Reşitpaşa	0	0,00
Rumelihisarı	43.454	35,20
Rumelikavağı	1.727	1,40
Tarabya	0	0,00
Yeniköy	8.981	7,27
Yenimahalle	6.096	4,94
Total	**123.455**	100,00

Source: Case Study
*Groves are undervalued.

When the size of green spaces are compared to the size of quarters, the average green space to quarter area appears to be 6,02% where only Derbent and Emirgan are above this average (Table 7.24). The whole scene changes when the groves are left out. Total area of green spaces to total area of districts decreases from 6,02% to 0,45% (Table 7.25). In this case Rumelihisarı, Kireçburnu, PTT Evleri, Poligon, Yenimahalle, Ferahevler and Büyükdere Quarters are above the average of district. However, this finding does not mean that the green spaces in these quarters are sufficient.

Table 7.24 Areas of Quarters and Parks in Sarıyer

QUARTER	AREA OF QUARTER (m^2)	AREA OF PARK (m^2)	%
Baltalimanı	680.000	0	0,00
Büyükdere	1.060.000	6.310	0,60
Cumhuriyet	1.320.000	3.951	0,30
Çayırbaşı	750.000	1.130	0,15
Derbent	2.140.000	1.120.450	52,36
Emirgan	1.360.000	432.157	31,78
Fatih Sultan Mehmet	1.090.000	0	0,00
Ferahevler	1.210.000	8.063	0,67
İstinye	1.280.000	996	0,08
Kazım Karabekir	660.000	0	0,00
Kireçburnu	620.000	14.045	2,27
Kocataş	490.000	0	0,00
Maden	520.000	0	0,00
Merkez	2.290.000	8.997	0,39
Pınar	1.510.000	0	0,00
Poligon	690.000	10.605	1,54
PTT Evleri	190.000	3.395	1,79
Reşitpaşa	2.830.000	0	0,00
Rumelihisarı	1.060.000	43.454	4,10
Rumelikavağı	790.000	1.727	0,22
Tarabya	2.460.000	0	0,00
Yeniköy	2.320.000	8.981	0,39
Yenimahalle	420.000	6.096	1,45
Total	**27.740.000**	**1.670.357**	**6,02**

Source: Case Study

Table 7.25 Areas of Quarters and Parks in Sarıyer

QUARTER	AREA OF QUARTER (m^2)	AREA OF PARK (m^2)	%
Baltalimanı	680.000	0	0,00
Büyükdere	1.060.000	6.310	0,60
Cumhuriyet	1.320.000	3.951	0,30
Çayırbaşı	750.000	1.130	0,15
Derbent	2.140.000	1.252	0,06
Emirgan	1.360.000	4.453	0,33
Fatih Sultan Mehmet	1.090.000	0	0,00
Ferahevler	1.210.000	8.063	0,67
İstinye	1.280.000	996	0,08
Kazım Karabekir	660.000	0	0,00
Kireçburnu	620.000	14.045	2,27
Kocataş	490.000	0	0,00
Maden	520.000	0	0,00
Merkez	2.290.000	8.997	0,39
Pınar	1.510.000	0	0,00
Poligon	690.000	10.605	1,54
PTT Evleri	190.000	3.395	1,79
Reşitpaşa	2.830.000	0	0,00
Rumelihisarı	1.060.000	43.454	4,10
Rumelikavağı	790.000	1.727	0,22
Tarabya	2.460.000	0	0,00
Yeniköy	2.320.000	8.981	0,39
Yenimahalle	420.000	6.096	1,45
Total	**27.740.000**	**123.455**	0,45

Source: Case Study
*Groves are undervalued.

Last criteria for determining the status of green spaces in Sarıyer is the size of green spaces per person. The average green space quantity per person is 7,84 in Sarıyer (Table 7.26). When the green space norm of Türkiye (10m^2/person) is taken into consideration, it is seen that green space quantity per person in Sarıyer is much more than Kartal but is still not sufficient. Green space quantity per person is above the green space norm of Türkiye only in Derbent and Emirgan quarters where there are Hacı Osman and Emirgan groves are found. Both in two quarters, there is only one neighborhood park except groves. This denotes that

small-sized green spaces are insufficient in these quarters. Rumelihisarı follows Derbent and Emirgan with an amount of 4,68m^2/person.

Outcomes of amounts of population density according to quarters indicate Derbent and Emirgan which have large amounts of green spaces do not have high population density. Especially, Maden and Ptt Evleri have highest population densities but they do not have enough green spaces. Population density of other quarters are not high but these quarters also do not have sufficient green areas.

Table 7.26 Population-Area Relation of Quarters in Sarıyer

QUARTER	POPULATION	AREA OF PARK (m^2)	POPULATION DENSITY	m^2/person
Baltalimanı	6.247	0	92	0,00
Büyükdere	9.385	6.310	88	0,67
Cumhuriyet	10.124	3.951	77	0,39
Çayırbaşı	4.606	1.130	62	0,25
Derbent	12.661	1.120.450	59	88,50
Emirgan	8.152	432.157	60	53,01
Fatih Sultan Mehmet	13.130	0	121	0,00
Ferahevler	12.972	8.063	107	0,62
İstinye	16.082	996	126	0,06
Kazım Karabekir	6.923	0	105	0,00
Kireçburnu	6.380	14.045	102	2,20
Kocataş	3.874	0	80	0,00
Maden	12.197	0	234	0,00
Merkez	11.613	8.997	51	0,77
Pınar	9.336	0	62	0,00
Poligon	5.228	10.605	75	2,03
PTT Evleri	4.427	3.395	236	0,77
Reşitpaşa	13.071	0	46	0,00
Rumelihisarı	9.287	43.454	88	4,68
Rumelikavağı	3.710	1.727	47	0,47
Tarabya	16.111		65	0,00
Yeniköy	14.069	8.981	61	0,64
Yenimahalle	3.411	6.096	82	1,79
Total	**212.996**	**1.670.357**	**77**	**7,84**

Source: Case Study

7.13. Evaluation

In previous titles, features of green spaces are taken into consideration for Kartal and Sarıyer. Evaluation of these features is going to be given by comparing method.

Neighborhood parks are the dominant park type in both Kartal and Sarıyer. When percentages of neighborhood parks are examined, percentage of neighborhood parks in Kartal is more than Sarıyer. Second park type that is seen both in Kartal and Sarıyer is coast parks. But coast parks in Kartal and Sarıyer are differentiated from each other. Coast parks in Kartal have large areas and they are procured by filling up coastal area. In Sarıyer, coast parks are small-sized and are not procured by filling up coast. It can be said that coast parks in Sarıyer come from cultural structure of this residence. Other green space types are district parks and groves. But they do not exist in both two residences. District parks take place in Kartal and groves take place in Sarıyer. 9% of green spaces are district parks in Kartal and 4,7% of green spaces are groves in Sarıyer. These outcomes indicate that there is not a hierarchical distribution in both two residences.

Parks in both Kartal and Sarıyer are small-sized. Green spaces that have an area under 5.000m^2 are 78,2% of total in Kartal and 86,0 of total in Sarıyer. Especially, parks that have an area of 0-1.000m^2 and 1.000-2.000m^2 come to the fore both in residences. Green spaces that have an area above 30.000m^2 are coast parks in

Kartal and groves in Sarıyer. It is noticed that green spaces in Kartal and Sarıyer are inadequate in terms of area distribution.

Green spaces gain character with having an activity. In Kartal 12% of parks, in Sarıyer 37% of parks do not have any activity in it. On the other hand, 85% of parks have playground and 37% of them have sport facility in Kartal. These amounts decrease to 47% and 12%, in sequence, in Sarıyer. This outcome designates that parks in Kartal oriented towards children more than parks in Sarıyer. Also, green spaces that have café or statue in Sarıyer are much more than in Kartal. This indicates green spaces in Sarıyer have cultural and recreational dimension according to Kartal. When green spaces that have activity more than 1 are studied, 43,3% of green spaces in Kartal and 13,9% of green spaces in Sarıyer have more than one activity in it. This outline supports that green spaces in Kartal have much more activity than in Sarıyer. When outcomes above are compared with foreign countries, it can be stated that green spaces in both two residence are insufficient.

Not only classification, size or activity but also distribution of green spaces is important when studying sufficiency. First of all, it must be pointed out that 1 quarter in Kartal and 8 quarter in Sarıyer does not have any green space. From this perspective, Kartal has much disperse distribution of green space than Sarıyer. Three quarters in Kartal and two quarters in Sarıyer come to the fore. They have biggest portions of green spaces. Coast parks in Kartal and groves in Sarıyer causes this scenery. One of three quarters in Kartal differentiates from others. This

quarter is Uğur Mumcu quarter, which was developed by urban land readjustment method. So, procuring green space in this quarter was not a problem. This case shows that 18th item of Development Law is an important tool to procure green space.

Green spaces per person show similar progresses like ratio of area of parks to total green space area. Quantity of green spaces per person is upper than average amount of residences in three quarters (Kordonboyu, Orhanteoe and Uğur Mumcu) in Kartal and two quarters (Derbent and Emirgan) in Sarıyer. Kordonboyu, Orhantepe, Derbent and Emirgan have green space that give service to urban pattern. Uğur Mumcu shows its difference here again. Reason of this is also procuring method of this quarter. When these quarters are undervalued, it ca be interpreted that distribution of green spaces in Kartal is much disperse than in Sarıyer. When quantity of green spaces per person in foreign countries is taken into consideration, it can be declared that both Kartal and Sarıyer do not contain sufficient green spaces.

In addition to these concepts, it must be denoted that after 1990, Municipality of Kartal has given more importance to procure green space. Green spaces that have been opened after 1990 are 90,7% of total green spaces. (This interpretation is the outcome of green spaces which opening years are known) When ownership of green spaces in Kartal is studied, it is noticed that half of parks in Kartal are in treasury possession. This amount increases to approximately 70% in green spaces

that are procured after 1990. It can be deduced that vacant lots in treasury possession enables Municipality of Kartal to procure green space.

CHAPTER 8

CONCLUSION

Nowadays, significance of green spaces is increasing day by day. Urban green space is one of the elements, which construct the urban structure and they can not be considered separately from the city. In this context, open and green spaces become more important in terms of functionality in the city, climate and aesthetic of the city, mental health, ecological and usage functions. Migration and industrialization changed the balance of urban and rural population and this negative expansion brought physical, social, economic and phychological problems along with itself. Extreme migration to cities, increase of population and askew urbanization as the outcome of migration put pressure on city populace. Green spaces can be an answer to these problems. Also, green spaces have vital situation in urban pattern in terms of earthquake. Today, İstanbul is face to face with not only danger of losing green spaces in or near the city but also disaster of earthquake. Consequently, green spaces have importance twice as much in İstanbul than other cities. In this perspective, examining development of green

spaces in İstanbul becomes expressive. In this context, case study on Kartal and Sarıyer has resulted in below mentioned clues on development of green spaces.

The total 78 parks in Kartal is approximately two times as of the total 43 parks in Sarıyer where the total area of these parks are 612.062m^2 in Kartal and 1.670.357m^2 in Sarıyer. These results point that the green spaces in Sarıyer are larger then those in Kartal. The main reason for this is the two groves which constitude 92,6% of the total green spaces in Sarıyer. These results indicate that Kartal may have a balanced green space distribution. In fact, when the green space distribution to quarters are examined, it is noticed that only 5% of the total quarters -1 out of 20- in Kartal is lack of green space where 35% -8 out of 23- in Sarıyer. It can be said that Kartal has a dispersed distribution of green spaces in accordance with Sarıyer.

When the size ratios of green spaces in quarters in Kartal are taken into consideration, 3 quarters arouse interest; Kordonboyu with 47,32%, Orhantepe with 20,36% and Uğur Mumcu with 15,53% where Kordonboyu and Orhantepe are coastal quarters where there are large parks established by filling up the sea. These coast parks constitute 63,9% of the total park area. But being under an earthquake risk is an important point for these coastal parks. They can be destroyed with the tsunami effect of earthquake as it was seen in Değirmendere coastal belt. The third quarter Uğur Mumcu was established by 18th article of the Development Law, which is why the lots predescribed, as green spaces in

development plan were easily implemented. Rest of the quarters has similar portions in green space distribution.

When Sarıyer is examined in the same manner two quarters which have groves within their boundaries come to the fore. The 67,08% of the total green spaces in Sarıyer is found in Derbent and 25,87% is in Emirgan. Other quarters in Sarıyer have little portions in total area of green spaces.

Groves in Derbent and Emirgan are green spaces in urban scale as coast parks in Kartal. When coast parks in Kartal and groves in Sarıyer are undervalued, Uğur Mumcu, Kordonboyu, Esentepe, Cevizli and Yakacık Yeni quarters in Kartal; Rumelihisarı, Kireçburnu, Merkez and Yeniköy quarters come to the fore. In Kartal, two quarters (Kordonboyu and Uğur Mumcu) continued their position but in Sarıyer different quarters occurred. Because of having a different feature of being a quarter acquired according to article 18th of Development Law, Uğur Mumcu can be an exception. Except this quarter, distribution of green spaces according to quarters is dispersed in Kartal in support of percentage of quarters that do not have green spaces. Sarıyer has not still a disperse distribution according to this research. Sarıyer district has not got a disperse distribution; this is not changeable according to areas of groves. Outcome does not change according to areas of groves because %35 of quarters does not have any green space.

In Kartal, area of green spaces is %1,95 of district area. The same figure is %6,02 in Sarıyer. As parallel to the preceding researches, amounts of green space ratio to quarter area of three quarters (Kordonboyu, Uğur Mumcu and Orhantepe) in Kartal and two quarters in Sarıyer (Derbent and Emirgan) are high in their districts. This scenery designates that most of quarters in both Sarıyer and Kartal have inadequate green spaces as far as quarters are concerned. Having a dispersed distribution does not mean that amount of green spaces are sufficient. Kordonboyu, Orhantepe, Derbent and Emirgan have urban-scale green spaces. Especially, Derbent and Emirgan have only one neighborhood park except groves. This denotes that in spite of having large area of green space, parks are insufficient in those quarters in terms of hierarchical distribution.

When number of green spaces in quarters is observed, with portions of % 15,38 and %12,82, quarters of Kordonboyu and Uğur Mumcu are foremost. Having coast parks for Kordonboyu and being an 18th article quarter for Uğur Mumcu are advantages of these quarters. Except these, there is not a big difference between quarters. It can not be told for Sarıyer. Because having groves does not effect number of green spaces according to quarters. Four quarters, Büyükdere (%11,6), Ferahevler (%14,0), Merkez (11,6) and Rumelihisarı (%14,0), have much more green spaces than the others but there is not significant differentiation between quarters when 8 quarters that do not have any green spaces are undervalued.

The typical park type for both districts is “neighborhood parks”. The 83,3% of total parks in Kartal and 69,8% in Sarıyer are neighborhood parks which makes it

possible to say that there are small-sized green spaces in both districts. Also in Sarıyer coastal parks have an important share (25,6%). The characteristics of coastal parks in two districts are distinct. In Kartal the coastal parks are constituted as large areas after the construction of the district with the method of filling up the sea where in Sarıyer coastal parks are small-sized and established as the district got developed, in other words as a part of the district culture. Outcomes above designate that there is not a hierarchical distribution in both Kartal and Sarıyer.

Another similarity of the two districts is the size of the parks. In Kartal 78,2% of the total parks have the area of 0-5.000m^2 as in Sarıyer where this ratio is 86,0% which should be the expected result of the fact mentioned in above paragraph. Green spaces that have an area above 30.000 m^2 are four coast parks in Kartal and two groves in Sarıyer. No matter if it is made by the hand of human or the nature, these ratios indicate that building up large green spaces are far more difficult than the small ones. Need of larger green spaces in both two residences can be declared.

When the functions of the parks are considered, it is observed that most of the parks in Kartal are children oriented. 85% of the parks have playgrounds and 37% have sport facilities such as basketball, football or volleyball field. This is not the fact in Sarıyer. In Sarıyer 47% of the parks have playgrounds and 12% have sport facilities. As a result of above given numbers, it can be said that parks in Sarıyer have more different functions as cultural or recreative. In Sarıyer 9% of the total

parks have a monument or statue and 12% have cafes in it where in Kartal the rations are 4% and 5% sequentially. For both Kartal and Sarıyer, there are no parks characterized as this study have mentioned in previous sections. Another fact is that only 12% of green spaces in Kartal and 37% in Sarıyer do not have any activity in it. Also in Sarıyer some afforest areas which do not have any sitting groups or pedestrian roads are also called as parks. In this manner the parks in Sarıyer can be classified into two categories as superior and inferior. When activities that green spaces must have in different scales in foreign countries are taken into consideration, it can be stated that green spaces in both two residence are insufficient.

When adequacy of green spaces is taken into consideration in terms of population density, it is observed that quarters that have large green spaces have low population density. Outcomes do not differentiate from general situation; quarters have insufficient green spaces according to their population density.

After the above definition of current situation in two districts the following paragraphs will be focused on the evolution of green spaces in between 1992-2004. The amount of green space per citizen was 0,8m^2 in Kartal including some forest areas and sports areas that are irrelevant to this study in 1992. The amount of green space per citizen decreases to 0,45m^2 when the irrelevant areas are omitted. The same number for Sarıyer was 13,7m^2 in sarıyer in 1992. When we reach 2004, we observe that the amount of green space per citizen has increased to 1,84m^2 for Kartal and it decreased to 7,84m^2 for Sarıyer. When the population

growth of both two districts is taken into consideration it is obvious that a contrast evolution has eventuated in a 10-year period. In Kartal the population has increased 1,3 times and green spaces per citizen has increased 4,1 times while in Sarıyer population has increased as much as Kartal but green spaces per citizen has decreased 1,7 times. Today while Sarıyer keeps its place in the upper fourth, Kartal has improved itself from lower fourth to 12th quarter out of 26. In 1992 the average value for green spaces per citizen was 4,60m^2 in Istanbul, which is now 1,68m^2. With the realized improvements Kartal has risen above the average. These indicators and previous paragraphs show us that Kartal is improving in establishing green spaces while inspite of having large groves Sarıyer is putting insufficiant effort in establishing neighborhood or region parks. It also shows that the performance of the Municipality of Kartal is better than that of Sarıyer when the green spaces are taken into consideration.

Another research reveals that there are 96 green spaces (parks and playground) in Kartal master plan and 159 green spaces in Sarıyer master plan. It must be declared here that area of Sarıyer is larger than Kartal. 66 of 96 green spaces are realized and this amount is %66 of total number of green spaces in master plan. When Sarıyer is taken into consideration, it is seen that 66 of 159 green spaces are realized. This means that %41 of green spaces can be realized. Results of this study supports that Municipality of Kartal is much successful in procuring and applicating green spaces than Municipality of Sarıyer.

As we focus on the opening years of the green spaces in Kartal it is observed that 40,7% of the total parks were opened in between 1991-1995 and 44,4% were opened in between 1996-2000. These make total of 85,1% which also indicates that the number of green spaces opened in between 1991-2000 have the majority of parks when the opening years are taken into consideration. This increase shows that Municipality of Kartal has given more importance to establishing green spaces.

For reasoning this augmentation, it might be useful to focus on ownership of parks. It is observed that 69,4% of the green spaces constructed after 1990 were on the treasury possession. The ratio of the ones on vacant land was 14,3% and on the public possession was 10,2%. When overall green space possessions are taken into consideration, the ones on treasury possesions are 48,7% of the total. It can be observed that there is an increase after 1990. This augmentation points out that if the vacant lands are in the treasury possession they can be easily transformed into green spaces.

Interviews were made with the employees of the Directorate of Planning in both municipalities in order to understand the reasons of the difference on constructing green spaces.

During these interviews it is perceived that Municipality of Sarıyer have had serious possession problems. There were vacant lots that belonged to various people but the possession problem had not been solved. In addition to this

possession problem, there is an illegal construction on public or treasury possessions and these buildings can not be demolished. Consequently, the only way to construct a green space is the petition of citizen's where the citizens apply to municipality with the petition of transforming a vacant lot that is preallocated as green space in the master plan. Only then the municipality illegally constructs a green space on the land at issue without the authorization of the landowner, which of course entitles the landowner to object to the implementation. Another problem is as all other municipalities, Municipality of Sarıyer do not have sufficient budget to construct green spaces by expropriation.

Municipality of Kartal uses three methods for providing green spaces. First one is transforming empty lands, which are the treasury possession in development plans into green spaces in accordance with the 11th article of the Development Law. This article enables municipalities to use treasury possessions for public services. The second one is the implementation of 18th article of the Development Law as in the case of Uğur Mumcu quarter. This article enables to merge all vacant lands into a whole. As in the development plan of Uğur Mumcu quarter, sufficient social and technical infrastructure can be provided by this method. The third method is citizen's demand, which is far different from the one in Municipality of Sarıyer. In development plans, some part of the vacant lands is taken for green spaces but because of budget constraints they can not be transformed. When the citizen wants to use or evaluate his/her vacant land, he/she leaves the amount of land that is predetermined in the development plan for green space and takes his/her deed to use his/her land.

In addition to these three methods, filling up the sea at the disposal of the government provided coastal parks. These coastal parks are possession of the Ministry of Settlement and Construction. It can be clearly mentioned here that, neither the Municipality of Kartal nor the Municipality of Sarıyer has sufficient budget for such kind of an expropriation.

Municipality of Kartal develops some new methods to procure green space but Sarıyer could not. Because Municipality of Sarıyer consists of much more built up areas than Municipality of Kartal. One of the methods of Kartal is 11th article of Development Law. By this article, Municipality of Kartal transforms vacant lots that are in possession of treasury to green space for public service. The other is the abandoned method. Municipality of Kartal that do not has any budget for expropriation makes agreement with citizens that have vacant lot consist of green space. Citizens give some part of his/her vacant lot to Municipality to take the deed of his/her rest vacant lot. Also, an advantage of Kartal is filling up areas. Coastal parks of Kartal are formed by filling up method. Although, Municipality of Kartal tries to bring up some solutions, both Kartal and Sarıyer have problems to procure green space. In spite of both Municipality of Kartal and Sarıyer are local governments at district level and both have same political view, they do not have nay political or administrative green space policy. Green space arrangements of these local governments are not under an ideological concept. They do not improve a green space policy for their local government unit. Also, Directorship of Planning of these municipalities could not develop a green space policy under recent political frame. Directorship of Planning gives importance to procure green

space as they can. Municipality of Kartal tries to increase the amount of green spaces because of being under risk of an earthquake but it is not a significant green space policy. Municipality of Sarıyer uses its advantage of having extensive natural structure and do not develop any green space policy.

All these researches indicate that there is a need of new arrangement in new development law to create tools of procuring method. It is clear that existing tools of Development Law are in sufficient. First of all, local governments do not have sufficient budget for expropriation. Secondly, article 18 of Development Law can not be applied in built up areas. The other procuring method that is article 11 of Development Law enables transforming vacant lots of Ministry of Finance to public space. In recent years, Ministry of Finance do not permit this application because it wants to be taken as a legal personality. Another method that can be named as abandoned areas are not valid for every residence and this method can not be sufficient for enough green space for a residence. Last method is filled up areas and they are under disposal of central government. So this method can not be a tool of local government and also this application method is not possible for every residence. While developing procuring method, residences can be classified in two categories: free and built up areas. It can be said that application of article 18 is an effective tool for free spaces. Here, an important problem occurs in built up areas. In built up areas, the only way for procuring green space is urban transformation method. This application transforms unhealthy and insufficient infrastructured residences to residences that have adequate and healthy social and technical infrastructure. (Figure 8.1) In addition to these, new arrangement in

Development Law brings new planning tools (34:1999:7-8). For instance, this arrangement enables taking arrangement common portion more than once by application article 18 of Development Law. Also, for high dense areas, in areas that are under a disaster risk, conservation areas and development right usage areas; ratio of arrangement common portion can be increased to 50%. The most important tool is development right transfer. Specific areas that are determined by law (green spaces, historical and natural conservation areas, specific nature protection areas, national parks, coastal areas and areas that are under risk of disaster etc.) are determined as conservation area and development right of these areas are transferred to designated Usage Areas by this draft. In addition to these, new law gives arrangement authority or planning tool to local governments. These authorities are determining specific construction and usage areas, forcing to construction, priority receiving, inspection of rent, taking contribution to public investment costs, applying exception to real estate taxes, forming public project areas, participating immovable partnership. Also, immovable of Treasury can be transferred to municipalities with this draft (34:1999:7-8)

PRESENT TOOLS	1- EXPROPRIATION 2- ARTICLE 18 OF DEVELOPMENT LAW 3- ARTICLE 11 OF DEVELOPMENT LAW 4- ABANDONED AREAS 5- FILLED UP AREAS
PROBLEMS	1- INADEQUATE BUDGET 2- CAN NOT BE APPLIED IN BUILT UP AREAS 3- MINISTRY OF FINANCE DO NOT PERMIT ANY LONGER 4- NOT VALID FOR ALL RESIDENCES AND LIMITED APLLICATION ARENA 5- UNDER DISPOSAL OF CENTRAL GOVERNMENT
IDEAL TOOLS	ADEQUATE BUDGET

VACANT AREAS	-ARTICLE 18 OF DEVELOPMENT LAW
BUILT UP AREAS	-URBAN TRANSFORMATION -DEVELOPMENT RIGHT TRANSFER -DETERMINING SPECIFIC CONSTRUCTION AND USAGE AREAS -FORCING TO CONSTRUCTION -PRIORITY RECEIVING -INSPECTION OF RENT -TAKING CONTRIBUTION TO PUBLIC INVESTMENT COSTS -APPLYING EXCEPTION TO REAL ESTATE TAXES -FORMING PUBLIC PROJECT AREAS -PARTICIPATING IMMOVABLE PARTNERSHIP

Figure 8.1. A Framework for Green Area Networks in Turkish Cities

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