



Istanbul; The Planning of Residential and Industrial Areas in the Process of Transformation into a Sustainable City

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Abstract

This research puts forward İstanbul's problematics as one of the largest Metropolitan in the world and the process of paradoxically the transformation from a historical city to a sustainable city. The aim of this study presents an updated dialogue about İstanbul's problems today which was changed to the mass agglomeration by the overpopulation and the examination of determination of "residential areas" and "industrial areas" in the context of sustainability. Even though recent public popularity of sustainability that initiated in the last quarter of the twentieth century but awareness of the people of İstanbul would take long years. Industrial zones that developed on the outskirts of the city for many years interwoven with slum areas, (gecekondu) where the worker's factories lived right next to it, and densely formed a wide hinterland that defined the borders of İstanbul today. Furthermore, İstanbul had to deal with inner problems in years such as natural hazards, earthquakes, and migrations which was triggered the housing problem. Even though many research on İstanbul city it was observed that the previous research did not involve the issue of sustainability in the context of "industrial areas" and "housing" was examined as separated matters lacked the integrative link within recent problematics and consequences. Recently in the new and innovative design, the discursive, and practical contexts in the climate change, some old urban planning techniques were came-back in urban planning dialectic as the new research object. These old discursive ideas and old zones (zoning) method based on separating "industrial", "residential", and "green" areas since the beginning of the twentieth century became major criteria again in the research for future planning of the cities. Establishing an updated historical connection between French

architect-planner Henri Prost's Paris and İstanbul Master plans and his previous zoning planning principles which were used in these plans to determine "residential" and "industrial" and "green areas" was examined. İstanbul city re-examined in this study within a new perspective with a method based on multiple morphological and epistemological identifications also included old planning techniques and innovative methods.

Keywords

City planning • Industrial areas • İstanbul • Residential areas • Sustainable design • Zoning

1 Introduction

Recently in the new and innovative design planning, the discursive, and practical contexts in the climate change, some old urban planning tools and techniques were came-back in urban planning dialectic as a new research object. These old discursive ideas and old *zones* (zoning) methods used in this research based on separating "industrial", "residential", and "green" areas since the beginning of the twentieth century became major criteria again in the use of the research for future planning of the cities. Today's İstanbul city's hinterland was formed in long years with industrial areas that developed on the Haliç Heights (Golden Horn) and out of the antique city walls interwoven with slum areas, (gecekondu) the worker's houses built in practical way popped up next to factories they worked in.

This research focussed on sustainability, which has recently become more critical problematic for the cities development, and in this context, the planning of residential, and industrial areas in İstanbul city, in particular. In the twenty-first century, "sustainability" became a significant matter in the world, so the subject was updated and examined in order to create new awareness, focussed in the last

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twenty years with the problems of Istanbul in particular which was transformed into the mass agglomeration of people.

Sustainability has been identified with different labels since the 1990s, allowed us to think that environmental issues referred to such as green design and ecological design were determined as sustainable architecture today. Although, in 1996, Istanbul Conference had not created awareness so far about climate change for both the public and local governmental institutions as expected in Türkiye that echoed much more awareness in the world started with the Conference, in Rio, Brazil, 1992. After these series of conferences, the world encountered new, urban planning dynamics with the problematics based on human well-being, sustainability, and resilience. The problems of developing cities were still awaiting solutions in the world like Istanbul that now transformed into a mega-city with a 15 million population with increasing multiple problems. Changes in the urban and climatic effects which have been reflected in the present day were also intense and dramatic. Furthermore, some design paradigms needed change in the world at that time Istanbul were struggling with its problems such as massive inner migration due to industrialization. Finally, the process of producing more innovative solutions for cities found the opportunity to develop after the 1980s with the increasing of climate change concerns. The industrial-based cities became more problematic due to today's rapidly changing urban dynamics, especially the climate issues. The business, commercial, and industrial functions that were once seen in the central city have been dispersed in much more broad areas with entangled highway networks (Garreau, 1991; United Nations, 2007). In Istanbul, urban sprawl with "industrial areas" associated with inner and transnational migration, expansion of "residential areas" and highways continued to threaten green spaces and forests in the cities inducing the problematics.

1970s, was the milestone of the urbanization for İstanbul and the city continued to rapid development with newly developed factories and new housing areas for workers in the outer axis led to the extinction of green areas, creating a vicious living and working circle. Although the decentralization of industrial areas in Istanbul was foreseen at the beginning of the twentieth century, did not realize in practice and the city continued to develop uncontrollably, destroying green areas, forests for decades, especially after the 1970s, with the rapidly increasing factories and unplanned slum areas that emerged right next to them. Whilst Istanbul focussed on problems like in the other cities agenda with the recent climate change concerns such as planning sustainable, livable environment, and housing, the city had to involved inner problems in years such as natural hazards, earthquakes, and problems which depended on its location such as massive migration that was also triggered housing problem.

After the literature review regarding the previous studies on Istanbul, it was found that these researches were mostly based on a single discipline; the architecture, urbanism, planning residential areas, housing models, industrial areas, industrial buildings, sustainability, material choice, transportation, etc. However, they were not adopted multidisciplinary approaches as well as not updated the main problematic sustainability and climate change. It was observed that the previous research was not examined the issue of sustainability in the context of industrialization and residential areas considering as separated matters lacked the integrative link with the other disciplines within recent problematics and consequences. Due to significant deficiency observed in the research area, the "residential areas" and especially "industrial areas" were specified in the context of sustainability that was nearly no research was achieved on Istanbul. Thus, the subject of this research established on "industrial areas" and "residential areas" in the context of sustainability adopted a multidisciplinary method as well as the a research dialogue needed to reconcile mixed disciplines that brought them together.

The goal of this research determined to eliminate the deficiency in this research area and the idea of the subject was presented with a new and multidisciplinary discursive approach as well as the recent problems of Istanbul were examined and updated. Although it was an old planning method based on traditional *l'Ecole*, (School) French School of Urbanism, to find solutions to the problems of the today's cities both in theoretical and in practical, Prost zoning plans might be use as the research object again also the other old planning tools to provide innovative solutions for today's cities. The zoning plannings used to establish the main axis of this research maintained a planning dialectic, on sustainability. This study aimed to centre the research subject the planning of "residential" and "industrial areas" and "green areas" in the context of the sustainability and future planning of the city. H. Prost's Paris, PARP, (*Le Plan d'Aménagement de la Region Parisienne*), (Development Plan of Paris Region) *zones* (zoning) plan based on the principles of separation of "residential" and "industrial" areas major criteria for specify zoning plans in Istanbul were examined. The previous zoning principles used to specify "residential areas" and "industrial areas" as well as "green areas" would contribute to the future development of Istanbul and other cities in the context of the sustainability.

Although climate change problems in Istanbul ignored for many years, today, the impact of densely urbanization in the city has started to emerge with uncontrolled developments and the residential areas and industrial facilities developed towards green areas, forest areas, and even water basins. The residential areas and industrial facilities previously located in the city centres in the historical past have started to decentralize towards the city's peripheries and outskirts creating a

new problematic of threaten the green areas and deforestation.

The major concerns of climate change in the agenda of the recent Glasgow Summit, 2021: coal use, deforestation, and lower emission were highlighted issues once again (CNN, 2021). The need for the separation of new residential and industrial areas according to specifically prepared zoning plans by governments or local municipalities emerged once again. The major characteristics of the Mediterranean climatic zone were changed due to threats of intense urbanization, increasing housing, industrial areas, and the highways that induced carbon emission and some problems emerged as future life-threatening climatic issues of next years. Additionally, the recent Istanbul Mayor drew attention to the also drought and water scarcity after the Glasgow Summit as newly emerged issues.

Some suggestions and the measures were already taken, and the new laws and regulations were determined regarding agreements in the context of agenda 21 with the recent studies and increasing interests, more recently even though some steps of the state and Municipalities or private sector but these measurements did not address properly the problems far from producing real solutions in practice. Another trajectory of the issue was how these suggestions would be implemented, which was identified as another problem considered as an indicator of increasing interest.

2 Problem Statements

The research presented the following themes redefining the problematic: the city's current problems emerged from migration, and housing problem which was also related and accelerated by migration. Ironically, the increase in industrial areas intertwined to each other, also increasing population growth and housing shortage. Arranging new residential areas specifying the potential development axes of the city can be determined, and these can be brought under control. In this context, the following sub-headings have been determined as the main problems.

3 The Methodology

The research was focussed on a detailed analysis of the main problematic the planning of "industrial areas" and "residential areas" from the beginning of the twentieth century and the transformation of the city in years in the context of the climate change and sustainability. The need for a multidisciplinary research approach ranging from city planning to architecture the research axis was prepared as well as the recently updated studies on sustainability.

In order to examine the subject analyzes started to the concentration of H. Prost's Paris, PARP, *zones* (zoning) plans and the principles of separation of "residential", "industrial", and "green" areas as major planning criteria of zoning plans in used in Istanbul Master plans were examined. First Istanbul zoning plans prepared by H. Prost also played a significant role in the development of the city for many years, and the other plans would be built on his principles.

The subject was examined since the beginning of the twentieth century, some old urban planning methods of the early twentieth century, like zoning plans, laws, and regulations recently came-back in the context of sustainability. Some of the laws and regulations made at that time for Turkey, Istanbul were still valid. The planning of Istanbul can be divided into certain periodical phases on these issues, including the main problematic of housing, industrial development and the city's transformations into a sustainable city in the future. Figure 1 Istanbul Master plans first prepared by H. Prost at the beginning of the twentieth century were examined and compared with the recent plans. The planning process of the city was also analyzed by dividing it into 3–4 development phases below.

- 1980s, it was known as a period when climate change issues first became problematic, in the world. Also, the analytical researches are carried out, new innovative design methodologies in order to achieve the environmental design. This period was when the subject was not well known for the city of Istanbul, and its effects were not clear.
- 1990s, it was a period in which sustainability was first recognized with the Earth Summits, held in Rio de Janeiro, in Brazil, 1992. It later began to known with the conference first time was held in Istanbul, 1996. Although, 1996, Istanbul Conference was expected to create more awareness, but did not echoed much.
- 2000s, although sustainability was gained importance in the world as a conceptually more specific issue, however, it still not arouse enough interest in Istanbul.

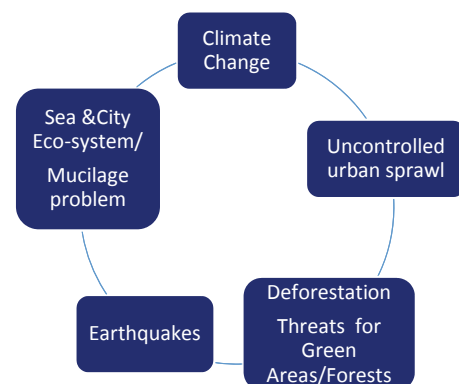


Fig. 1 Main problematics and threats for Istanbul city eco-system

Because just after the 2000s, the city's agenda was almost entirely focussed on the earthquake issue, and regeneration projects were started and carried out rapidly in nearly all regions in the city.

- 2010s, in this period, the chaotic situation still continued in the city experienced the late 1999, earthquake in Istanbul, and the city had to concentrate on urban regeneration projects rather than climate change and sustainability issues. Also focussed on macro projects such as planning an eco-city in Küçükçekmece district, in the west axis or large-scale regeneration projects in Kartal district, in east axis, however, these projects have never been implemented. No action plan was implemented in the context of sustainability yet, and it was a period in which uncontrolled planning in the city continues towards northern forest areas and water basins.
- 2020s: from the Habitat-II, City Summit held in Istanbul, UN Conferences have ensured the acceptance, and spread of Local Agenda 21, the local projections of the principle of global partnership in the world and the strong international foundations of the aforementioned process formed. All activities expected to be carried out by local municipalities were determined as Agenda 21 in Türkiye, Istanbul.

4 French Planner Henri Prost's, Berlin, Paris, Zoning Plans; Dividing Industrial and Residential Areas

The idea of separating "industrial" and "residential areas" in Istanbul, first emerged in the early twentieth century with Paris zoning regulations by French architect-planner Henri Prost. H. Prost and his colleagues prepared some *zones* (zoning) and development plans, PARP, (*Le Plan d'Aménagement de Région Parisienne*) (Development Plans for Paris Region) (Prost, 1949), (Merlin, 1991, p. 60). Figure 2 H. Prost predicted the problems of developing an industrial city at the beginning of the twentieth century which until not any knowledge about the city's limits (Frey, 2011, p. 373).

Due to problems of the heavily industrialisation in Paris city, in 1910, E. Hénard proposed "Project Arrangement for Paris" planning the city with systematically organized regions. In the Paris Regions plan, all activities were transferred to urban matrices through *zones* (zoning) regulations. In 1910, this method first time introduced by E. Hénard, in a German journal of *La Revue Der Stadtebau* (Urban Vision) as *La System General du Reseau de voirie de Circulation pour le Centre de Paris* (The General System of the Road Circulation Network for the Paris Centre), (Bruant, 2011, p. 247). Indeed, E. Hénard's suggestions played an

important role in solving the problems that occurred with the industrialization of Paris. on that time.

According to H. Prost's lecture notes in *ÉSA, l'École Spéciale d'Architecture, Paris*, (Special Architecture School) the subject of "Zoning and "*zones non-œdificandi*" (Specially Protected Areas) specified such as: new cities should planned within neighbourhoods, and the "green areas", "working - factory areas", etc., should be divided according to their characteristics" (Prost, 1934). The term "zoning" was a planning tool used at that time by two *l'école* (school); Le Corbusier, CIAM, and some French architects and urban planners (a Group of Architects did not adopted CIAM's ideals) (Table 1) .

Each "settlement unit" was determined according to the regional plan in the whole of the city "a factory building in cities, residential areas and high rise buildings should not be planned side by side. This would create chaos in the cities, and it might be eliminated by dividing the building areas into regions specialized in their own fields". (Prost, 1934). The areas were defined as *zones* (zoning) in the Paris plans, which also included green areas, playgrounds, and sports areas (together with areas such as housing, industry, etc.).

4.1 Istanbul, the Early Twentieth Century, H. Prost's Zoning Plans, Dividing Industrial, Residential and Green Areas

According to the Prost plans, the main planning principles were not concentrated on housing aimed to decentralization of the new industrial areas towards the out of the city walls, also close towns. Although the reasons attributed to H. Prost, the mainly linked to Türkiye's social-political and economic problems in that period. At the beginning of the twentieth century, the Republic of Türkiye was a newly established state which had come out of the First World War with debts, so the Turkish economy was far from providing the capital accumulation that required modernization (Tekeli, 2002, p. 158). Between the two world wars, with the statist politics of the 1930s, the country's limited resources were preferred to devote to industrialization instead of the allocating of housing by the state (Çoban, 2012, p. 78).

Istanbul developed and transformed almost half a century with the newly specified industrial and residential axes in accordance with Prost Master plans. In this period, the industrialization process of the city was not very effective in urban planning and industrial facilities. Some of the old, existing facilities from Ottoman period which were first appeared in the Historical Peninsula along the Haliç banks: *Haliç Tersanesi*, (Marine shipyard in the Golden Horn), *Santral* (Powerhouse), *Feshane* (Cloth factory), Cibali Tobacco factory, or towards to Bosphorus shores: Beykoz shoe factory, and Paşabahçe Glass factory continued to be used.

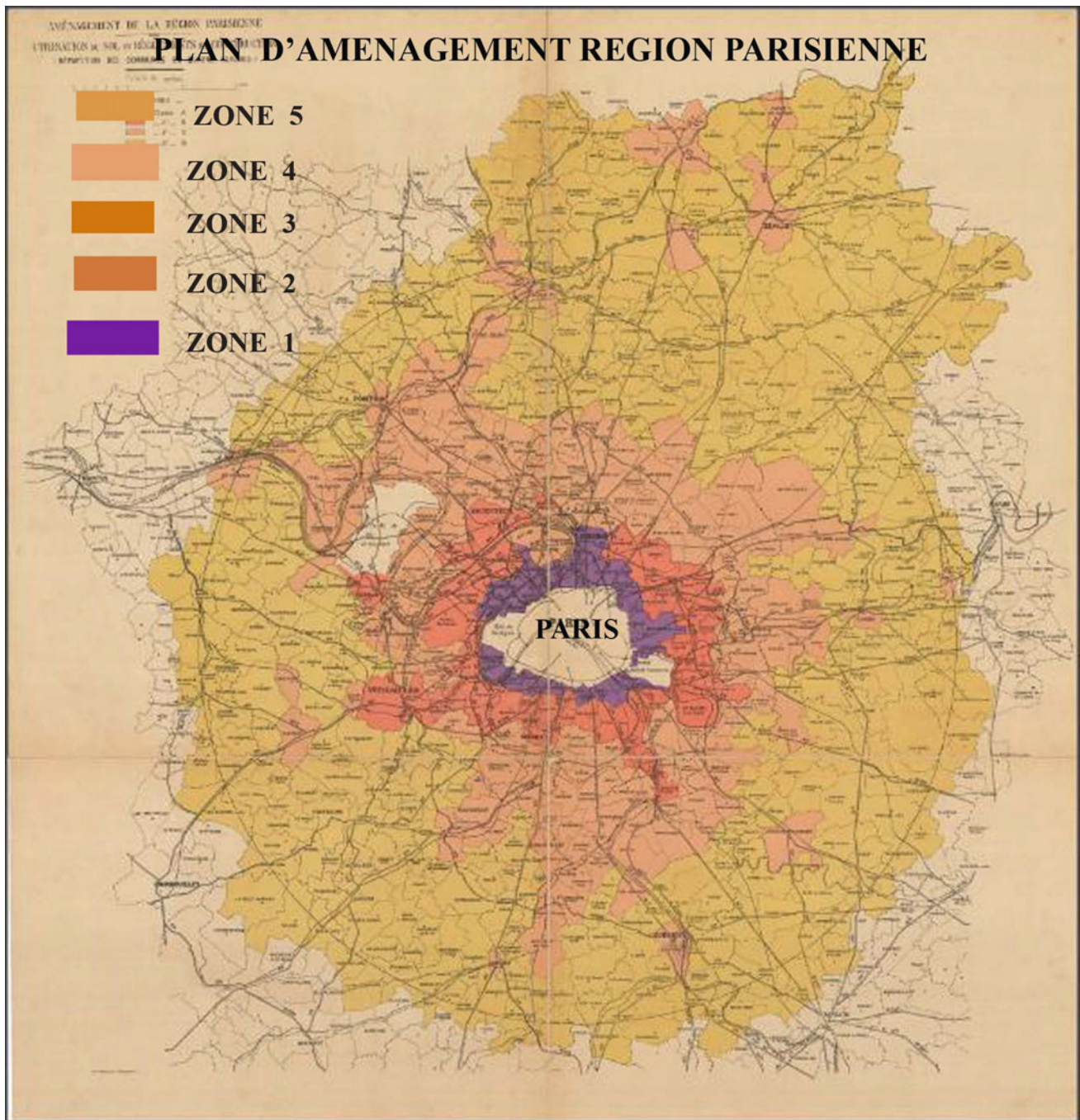


Fig. 2 Paris, Zoning Plan, 1934, French Architect-planner Henri Prost, PARP, (*Le Plan d'Aménagement De Region Parisienne*) (Development Plan of Paris Region) first applied in Paris later in Istanbul; divided

industrial and residential areas. Paris centre (light-pink), *peripherie* (purple), out of city walls, *cité-jardins* (orange), industrial areas, beyond *villes-satellites* (pink). IFA Archives, Paris

- Istanbul, the Early twentieth Century, Location Choices For Industrial and Residential Areas

From the beginning of the twentieth century, Türkiye was a country where the policies of the state rather than the private sector predominantly applied amongst the factors that would determine the location choices in

industrialization. Although the Prost Istanbul Master plans were defined as a modernization plan, which was based on a balanced arrangement between “residential areas” and new “industrial areas”. Figure 3 In the beginning, no sufficient data was available on the city’s demographic and social structure, ownership, commercial, and industrial activities.

Table 1 The classification and general rules of dividing into as zones (zoning)

| | The areas were defined as zones (zoning) in the Paris plans |
|---|---|
| 1 | Industrial areas |
| 2 | Business districts |
| 3 | Residential areas and quarters for all classes of people (workers, or the wealthy)” |
| 4 | Green areas |
| 5 | Playgrounds, etc. |

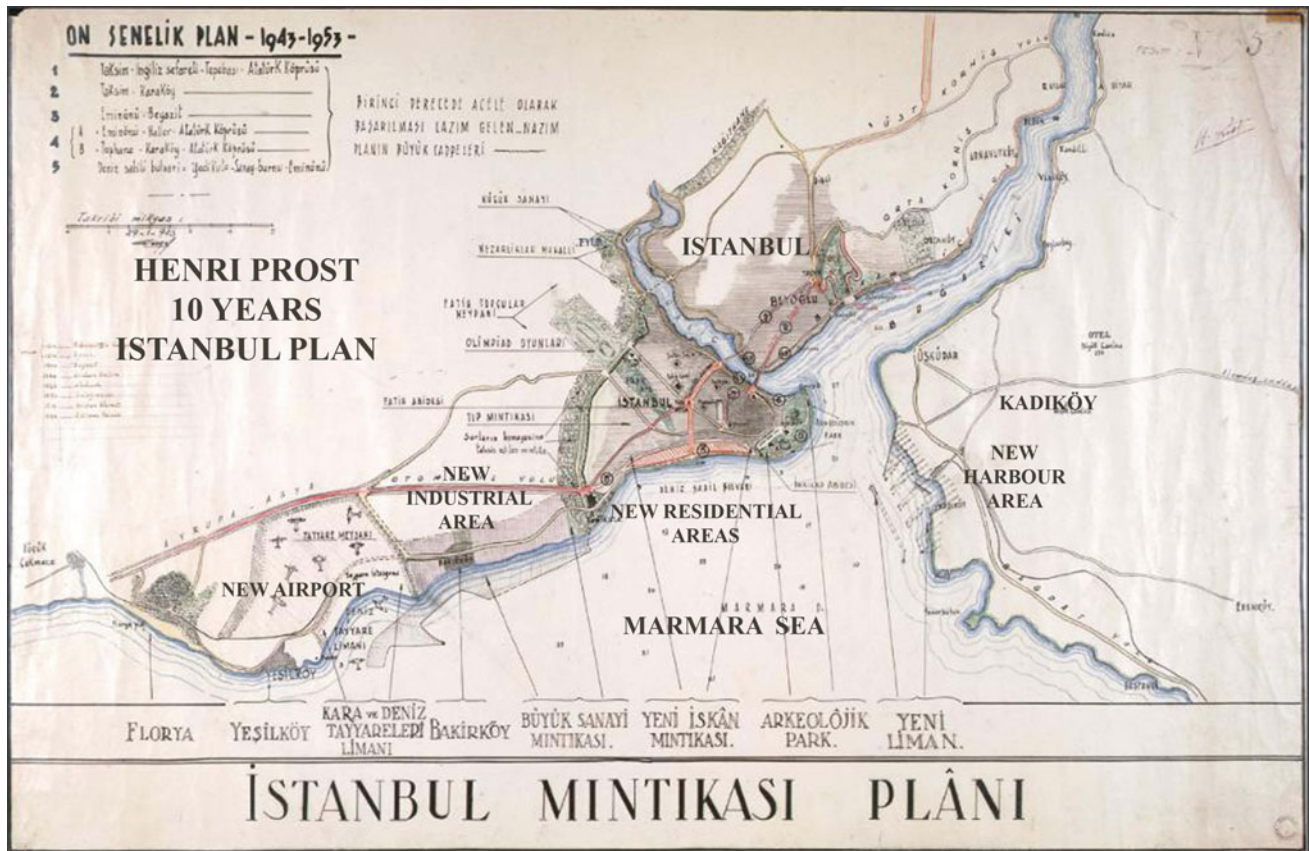


Fig. 3 Istanbul Zoning Plan, 1937, (10 years plan), French Architect-planner Henri Prost, first applied in Paris, Later in Istanbul; divided industrial areas, left, (grey), residential areas centre (red), Villes- satellites, far left, (blue), next to airport. IFA Archives, Paris

All preliminary researches included the information that would be necessary for the newly planned Prost Istanbul Master plans, and he would establish the Prost plan according to these data especially arranging of new settlements and industrial areas. Finally, Henri Prost centred the main idea rather than an “Expansion plan” (*Le Plan d’Extension*), as in this case of Paris city, and his Istanbul Master Plan had to established a “concentration plan” (*Plan de Concentration*). So, Istanbul Master Plan was organized around a spinal axis that would connect the newly developed residential areas in the north and central commercial districts (Bilsel, 2010a, p. 117).

Hence, the residential areas and production industrial zones were to be re-determined, and a transportation network

was needed that would unite the regions to be located in these planned areas. Along with the main railway connection, three main ports of the city: Karaköy, Sirkeci, and Haydarpaşa Ports arranged to supply industrial materials to the Istanbul proposed as new industrial areas. Furthermore, the Yedikule and Bakırköy specified as new industrial districts that connected directly with the European Railway and *Türkiye Devlet Demiryolları* (Turkish Railways) that would be facilitated to development of the new industrial zones. Here-with, H. Prost accepted to relocate the existing old, industrial plants and industrial zone which was located along the Haliç (Golden Horn) from the nineteenth century due to pollution. Figure 4 The Prost Master plans for 10 years (10 years plan) determined that the “industrial areas” and “residential areas”

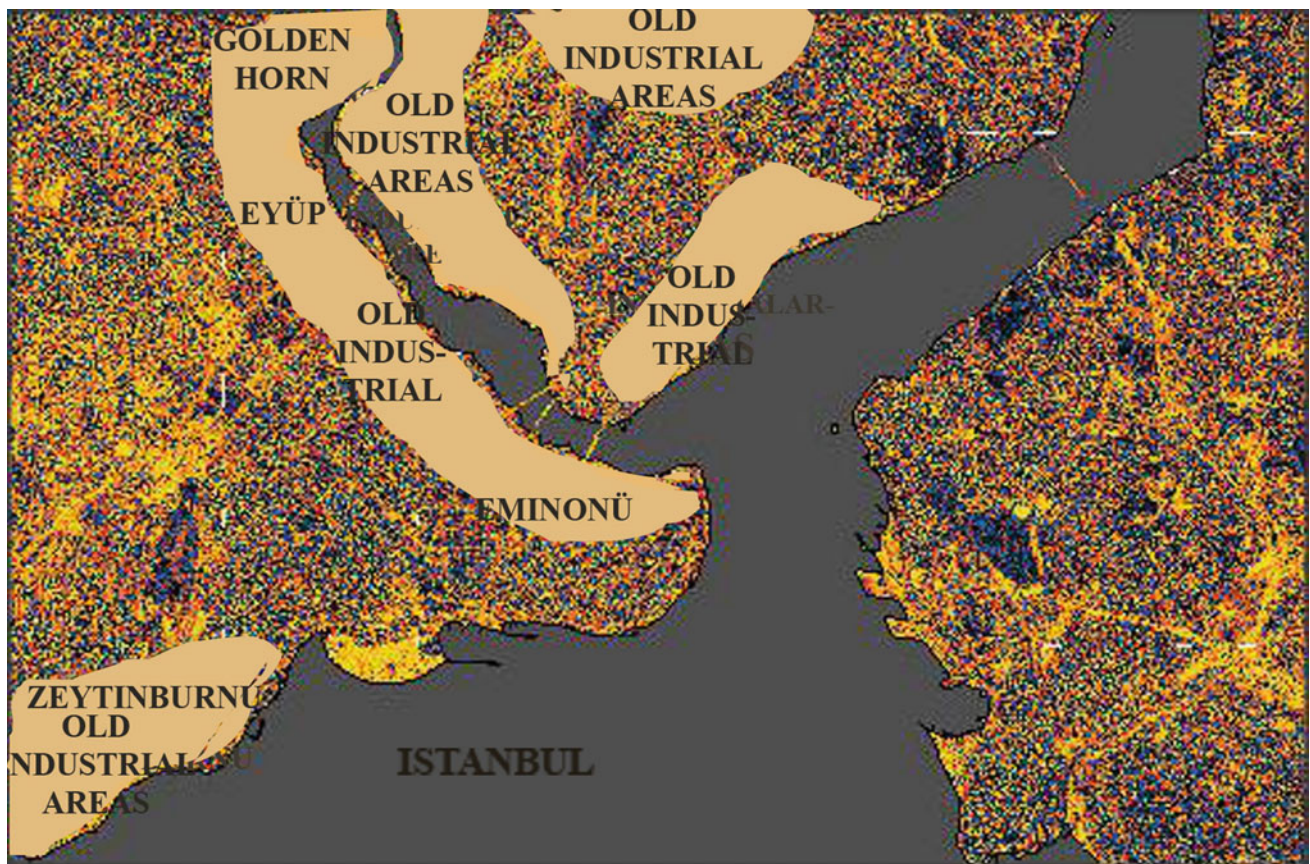


Fig. 4 Istanbul Plan, nineteenth century, old industrial areas developed along the Haliç Shores, (Golden Horn). (marked orange). Map, Anonym and redesigned by H. Coskun

first time would be moved out of the antique city walls. Figure 3 In this period, industrialization was accelerated and the new Turkish Government preferred to spread industrial facilities whole country, also its effects on Istanbul were less due to this new political specification. Indeed, his decisions would play an important role in the fate of the city for many years centred on modernization, and industrialization problems and housing shortage in the city would not be seen as a problem until the 1960s.

There was a systematic hierarchy observed in Istanbul since the old, Ottoman period, whilst residential areas were planned within the ancient city walls, the industrial areas were always planned beyond it. Figure 4 With the Prost Master plans, this traditional arrangement was not interfered with and partially complied with. An exception to this would be the Haliç, (Golden Horn), the area recommended to be completely free of industrial facilities according to Prost Plans and newly opening housing areas in Historical Peninsula would be reserved for new *Bourgeoise* people. Of Istanbul Figs. 5, 6 and 7.

In this era, new facilities were not planned in Istanbul, and also the existing factories were recommended to move out of the city. Türkiye's economy in the 1923–1950s was

based on agriculture and since the majority of its population lived in the countryside, not in the cities, urbanization and the housing shortage could not be mentioned until the 1960s. Therefore, in this period, migration and the demand for labour that would come from the rural areas of the industry was not yet seen.

- The Early twentieth Century, Industrial Zoning Laws and Regulations in Türkiye Still Valid

In 1935, when Prost arrived in Istanbul he was equipped with unlimited authorities, by the *Türkiye Cumhuriyeti* (Turkish Republican State) (The State founded by Atatürk), and he was even given the responsibility to make the necessary urban planning laws and regulations, as well as requested of preparing new Istanbul Master plans. H. Prost arranged the new laws and regulations for the planning of Istanbul by transferring from the originally French laws (Coskun, 2020). Similar to French Sanitation Laws, SHUR, (*Société l'Hygiène Urban et Rurale*) (Public Health Advisory Commission) in France where significant institution making laws and as a legislative and controlling mechanism



Fig. 5 Istanbul Zoning Plan, 1937, (10 years plan). French Architect-planner Henri Prost. The relocation of old industrial areas out of the City walls old, Haliç Shores (purple). New industrial Areas,

(down, striped purple), in Bakırköy Coast, New Housing areas (red) in the Marmara Coast in the west axis. Plan, IFA Archives, Paris

(Rabinow, 1991, p. 251) a Turkish Sanitation law (*Hıfzıssıhha Yasası*) were put into effect very short period.

Since the 1930s, Turkish Sanitation laws (*Hıfzıssıhha Yasası*) similar to the French laws were significant determination of industrial zones in Türkiye still valid. These laws also included the arrangement of distance between newly developed industrial facilities and residential areas by permission by *Hıfzıssıhha Yasası* (Turkish Sanitation Law).

5 Post-prost Period, After the 1960s, Transformation of Istanbul to a Metropolis

Development of the Istanbul city accelerated after the 1960s, with industrial zones and housing areas that were seen on the outskirts of the city out of the antique city walls. In the post-Prost period, in the 1950-the 60s, İstanbul city continued to chaotic urban sprawl with internal and external dynamics triggered by internal mass migration that would be a main problematic in the following years of the city with the housing shortage. Indeed, in this period, the most important problem of the city would be immigration which was not foreseen during the Prost period. Ironically, as factories and

industrial areas developed in the city, housing shortages would also emerge with immigration. In the late 1960s, the city's hinterland was defined as nearly 50 km area in a broader context, it was already extended towards close towns; Bursa, Adapazarı, Tekirdağ (Kuban, 2004, p. 414) due to execution of H. Prost's planning principles of decentralization of the industrial areas.

- Istanbul, After the 1960s, Historical Peninsula and Old Industrial Area Haliç (Golden Horn)

The development of the city was through the slum settlements with urban sprawl around the newly established factories for many years. As a pragmatic solution of people for the housing problem, the slum houses started to increase on the outskirts of the Historical Peninsula, on the Haliç (Golden Horn), Pera and also in Kasımpaşa districts next to the industrial areas and factories (Coskun, 2017a, p. 199).

The Haliç region (Golden Horn) as a early industrial areas interwoven with various factories in the Haliç banks and the slum areas, (*gecekondu*) the worker's houses built in a practical way popped up in next to them. The next to factories were on the Haliç (Golden Horn) banks of the



Fig. 6 Istanbul, Master Plan, 1937, French Architect-planner Henri Prost first applied in Paris, later Istanbul; Historical Peninsula (left) Pera District (top), and Anatolian side (right), Residential areas. Plan, IFA Archives, Paris

Historical Peninsula and Pera regions, mostly unplanned areas which were built by people own without control of the authority with single or two-storeys poor quality housing patterns were taking place on the heights of these regions. After the 1960s, with the modernization projects, nearly, all Historical Peninsula constructed block by block using Prost plans by private constructors by used illegally to open city axis, roads, streets.

The low-income slum dwellings (gecekondu) where workers lived and the new factories densely developed around in these regions due to the lack of transportation network in the city at that time also its proximity to the port, which was vital necessary for the factories, mostly gathered around the Historical Peninsula, Pera, and the Golden Horn. At that time, the minibuses (cheap public transportation vehicles) were the only mechanism that served the whole city, such as the metro, train, and bus that minimized

the transportation between the workplace and the workers' residences since the advanced transportation vehicles were not sufficiently existed in Istanbul.

The development borders of the city would go far beyond the limits which determined that with the rapidly increasing internal massive migration after the 1960s. Thanks to heavy industrialization and the slum buildings that the state tolerated especially after the 1980s, a population explosion occurred in Istanbul (Özbay, 2009). Henri Prost envisaged the industrial areas were moved out of the city borders towards to west axis of the city: Bakırköy, Zeytinburnu regions which were previously gathered around the Haliç region, the old antique harbour was known as Golden Horn, next to Historical Peninsula in the nineteenth century Figs. 4 and 8.

As foreseen in the Prost plan, industrial areas were decentralized and moved further away from the city or to nearby towns. The marine pollution, caused by industrial

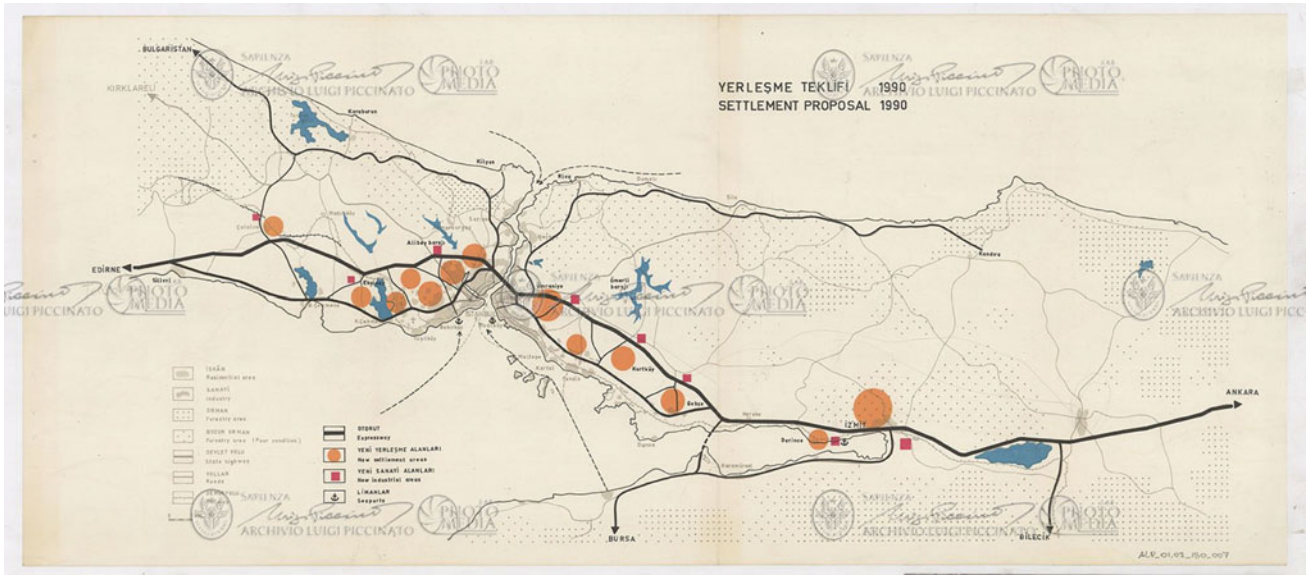


Fig. 7 Istanbul, Zoning Plan, 1955, (Prepared post-Prost, period) by Italian Architect-planner, Luigi Piccinato, Macro-city Plan, settlement areas development of the city with the new Satellite-cities. Plan, Archivio L. Piccinato. L' Università Roma La Sapienza



Fig. 8 Istanbul, nineteenth century, Haliç (Golden Horn), old, industrial areas along the Haliç Shores and workers houses and slum buildings (gecekondu). Photo, *Le Musée Albert Kahn*, Paris, H. Coskun
 Private Archive. Photo, (right), 1937, Istanbul Prost photographs. IFA Archives, Paris

wastes for years, was cleaned by the Mayor of the time, B. Dalan in the 1980s, and gained its relatively cleaner appearance today. The old factories on the shores of the Haliç (Golden Horn) are given a new function, and most of them were converted to museums, universities, etc.

- Istanbul, After the 1960s, European Side; New Industrial Areas and *Ville-satellites* (Satellite-cities)

Due to the decentralization decisions of the industrial areas previously envisaged in the Prost plan, new industrial facilities on a large scale were not opened in Istanbul during this period, but in the city nevertheless some facilities emerged belonging to small industries: leather factories in Kazlıçeşme, readymade factories in Bakırköy, Merter and automotive, etc. In the 1960s, on the European side, the city extended towards to west axis, in Marmara coastal-line, Avcılar, K. Çekmece districts with new residential areas were emerged next to new small industrial areas, attracting low-income workers (Coskun, 2021). After the 1980s, many of these industrial areas moved to Anatolian side: Tuzla, Pendik, etc.

Both residential and industrial areas in this period were previously foreseen by H. Prost's Master plans, and most of them were implemented during the Luigi Piccinato period. In the context of L. Piccinato's *Le Piano Regionale*, a (regional plan) "macro-plan" aimed to the development of the city with the new *ville-satellites* (satellite-cities) in the east-west axis, out of the city walls in the European side, Ataköy, Bakırköy district (Malussardi, 1993, p. 49). (Fig. 9, bottom) However, the development of the city was realized rapidly after that, and with the momentum created by the migrations, the city began to develop uncontrollably.

Since the transportation was insufficient, only by Bosphorus Sea Transportation Ships (*Şehir Hatları*) the, new industrial areas in Prost Master plans were still limited in the Bakırköy and Zeytinburnu Districts (Fig. 9, top and middle) and old factories along with the small Bosphorus villages; İstinye, (old Naval Shipyard), Paşabahçe, (old Glass Factory) and Beykoz Districts (old Shoe Factory) continued to their producing since Ottoman period.

- Istanbul After the 1960s, Anatolian Side; New Industrial Areas, and Residential Areas

As a new industrial area, the new *Haydarpaşa Limanı* (Haydarpaşa Harbour) of the city allocated from the Haliç region (old industrial area and Main Naval Shipyard) to the Kadıköy district as a new industrial enterprise complex with *Haydarpaşa Garı* (Haydarpaşa Central Train Station) and also custom area. Thus, firstly, the transfer of industrial zones on the Anatolian side took place, and the city would develop hastily with newly established factories in the

industrial axis. After the 1960s, with the decentralization of the industrial areas developed far from the Haydarpaşa Port and region, towards to nearby cities on the east; Gebze, Kocaeli, etc., and on west axis; Çorlu, Tekirdağ, etc.

With the implementation of the industrial zones new residential, industrial areas and a Haydarpaşa port proposed by Henri Prost "*Le Plan de Côte d'Asie*" *Anadolu Ciheti Nazım Planı* (Anatolian Side Development plan), the juxtaposition of the port in this specific area would be suitable respect to the city in the Anatolian side (Bilsel, 2010b, p. 135). Also, he proposed new garden-city planning especially, in accordance to the Kadıköy region's main historical characteristic which was consisted with old, Ottoman Köşks (two storeys houses with gardens).

From the 1960s, in the Anatolian side shores, in the eastern axis developed with new French style, new *banlieues* along the newly constructed railway called *Banliyö treni* (Banlieue train) in Istanbul were connected to districts in the Marmara Sea Shores. In the Anatolian side, developments for middle-class people in the districts such as Kadıköy, Suadiye, Bostancı, Küçükyalı, İdealtepe, Maltepe, and Pendik districts were planned with "building-blocks" known as Le Corbusien concrete "point-blocks" along the railway like Parisien style *banlieues* (Fig. 10, bottom).

Also, the new slum suburbans mixed with industrial areas developed around the newly opened E5 Highway such as Ümraniye, Sultangazi, Başbüyük, Kurtköy, etc. The unplanned development of the city was continued from the 1960s until the 1980s, which made Istanbul an uncontrolled metropolitan city. In the following years, the metro lines would also join this transportation network closely paralleled along the E5 Highway and up to Marmara Shores.

After the 1960s, the industrial areas were decentralized and transferred to the various close towns in the immediate vicinity of the Istanbul city: İzmit, Bursa, Tekirdağ, etc. (İller Bank, 1972) extended the city's industrial hinterland to the close towns. The industrial axis developed along to first Gebze, Çayırova (Automotive, iron, steel, etc.), Yarımca (Oil refineries), Hereke (Cement factories) towns and then towards to Kocaeli, Adapazarı Provinces (Automotive, Train factories) next to Istanbul in the east as well as the developed with the transportation network to be realized within the very short period by train and highway road (Fig. 10).

5.1 The 1980s, the Sustainability, a New Planning Agenda; 1992, Rio, 1996, Istanbul Summits, to Solve Cities Problems

The cities as well as the Istanbul developed rapidly and uncontrollably and turned into mega-city according to United Nations (United Nations, 2007). This changed, both

Fig. 9 Istanbul, after the 1960s, European Side, new industrial areas along the Marmara Sea (top), *Ville- satellites* (Satellite-cities), Ataköy Blocks (right). Photos, Anonym. Prost Master plan, (down). IFA Archives, Paris



Fig. 10 Istanbul, 1935–1960, Prost Anatolian Side Master Plan (top), new industrial areas and Haydarpaşa Harbour Marmara Coast (down) *Cité-jardins* (Garden-cities), building-blocks, Parisien style *banlieues* (Right). Photo (left), Anonym. Photo (right), Meriç Sümer. Prost Master plan, IFA Archives, Paris



urban and climatic effects, which have been reflected the present day, were also intense and dramatic (Fig. 11). Even though, also some design paradigms needed change in the world at that time Istanbul was struggling its problems such

as massive inner migration due to industrialization. Finally, the process of producing more innovative solutions for cities found the opportunity to emerge only after the 1980s with the increasing of climate change concerns. Indeed, the world



Fig. 11 Istanbul, Historical Peninsula, existing houses and building-blocks built in the post-Prost period according the Prost Master plans (block plan by Private Constructors) for new *Bourgeoise* people. Photo, C. Delgado

focussed on new and different urban planning paradigms freeing the old explanatory models beyond the well-known limits (Paquot, 2013, p. 122).

Furthermore, the excessive urbanization triggered by industrialization and the increase in the density of residential areas also threatened the green areas in the cities, and it was inevitable to take measures in the context of sustainable cities. The problems of developing cities were still awaiting solutions in the world like Istanbul that now transformed into a mega-city with a 15 million population. The cities developed under their urban landscapes as new model mega-cities, with strategic regulations orderly city planning (Lehmann, 2011, p. 245). Especially, the industrial cities had become more problematic due to today's rapidly changing urban dynamics considering the climate issues. The cities' functions: business, commercial, and industrial once seen the central have been spread much more broad areas and are now served by sprawling highway networks in peri-urban areas (Pickett et al., 2013, p. 11). Today, the urban sprawl of "industrial areas" and associated with the "residential areas" as well as the highways continued to threaten green spaces and forests in the cities still problematic.

In 1992, the first Earth Summit was held in Rio de Janeiro city, Brazil, by the United Nation debates focussed on "sustainable planning" would later be formulated as Agenda 21. 1992, Rio Conference extended to Habitat-II "City Summit" held in Istanbul, UN Conferences have ensured the acceptance and spread of Local Agenda 21. The 2030 Agenda for Sustainable Developments explicitly mentioned the goal 11, referred to the cities and making human settlements "inclusive, safe, resilient, and sustainable" environment and development operationalized sustainable plannings (Nocca, 2017, p. 3). Although the Earth Summit was held in Istanbul, had not echoed in city and city's planning in this regard a Local Agenda 21, and accepted the local projections of the principle of global partnership. The overpopulated mega-cities where sprawling by uncontrolled industrial and housing areas becoming a threat to existing green areas, forests, and urban ecosystems today new planning agenda of climate change put into effect.

- After the 1980s, Istanbul's Newly Changed City Dynamism: Industrialization, Migrations, and Housing Developments

With the industrialization and the slum buildings that the state tolerated especially after the 1980s, a population explosion occurred in Istanbul so that the number of people living in the city exceeded 10 million by the 2000s (Özbay, 2009). Although the city grew at a controllable rate until the 1970s, the development of the city after the 1980s was realized in nearly an unavoidable way, which led to much more dramatic developments industrial areas, residential areas. Istanbul turned into a chaotic industrial city with slum areas (*gecekondu*), minibuses seen almost whole the city left no green areas to live in (Ünlü et al, 2010, p. 13). The decisions of the decentralization industrial areas were moved towards factories and nearby towns, with the problematic dynamism the industrial areas, small industries, continued to develop, as well as the migrations increased with the trigger of the industry.

After the 1970s, the inner migration problem developed in parallelized with intense industrialization, the parks, and gardens was planned in Prost Master plans which were replaced by newly constructed building-blocks very short

period (Coskun, 2020). During the gradual transformation of the city, the existing urban settlements to the isolated interventions that destroyed the originally old, houses replaced them high-rise buildings not matched the existing urban fabric. In the 1973s, the opening of the new Bosphorus Bridge was a new milestone of the city altered to a real Metropolis (Tekeli, 2013, p. 358). (Fig. 12).

H. Prost previously specified the European side as the business centre of the city, whilst the Anatolian side transformed into a residential centre with the new motorway network and the newly opened Bosphorus Bridge. Thus, Bosphorus Bridge was completely re-organized the city's newly developed dynamism with new housing areas spreading the Anatolian side from the European side. Likewise, the envisioning previously H. Prost Master Plans, the Anatolian side of the city would consist of garden houses and low-rise residential neighbourhoods.

By the 1980–1990s, the liberal policies by Minister Turgut Özal and his free-trade economy were created a chaotic situation that accelerated the illegal house slum



Fig. 12 Istanbul, after the 1970s, the opening of the Bosphorus Bridge led to Metropolization of the city. Photo, C. Delgado

buildings (gecekondu) and the city's housing problems deepened. The government also encouraged the construction of high-rise buildings and slum areas with newly arranged laws. The free market economy and the liberalization led to the production of legal or illegal housing (gecekondu) in big cities (Erder, 2007, p. 274). Although Istanbul developed under the influence of liberal economies after the 1980s, the significant problem was overpopulation, housing rapid industrialization. With the newly changed agenda of the world with climate change, Istanbul city needed to focus on uncontrolled slum housing, led by liberal policies, and regeneration of houses with poor quality rather than sustainable planning.

5.2 The 2020s, Transforming Istanbul to the Sustainable City; Housing, Industrial Areas

- Foundation of Ministry of Environment and Climate, The Institutions Made Laws and Legislations

Since the scale of the city was at an interventional size, and then planning issue left the authority of specialized institutions *Çevre ve Şehircilik Bakanlığı* (Ministry of Environment and Urbanism). 2010–2013, the Istanbul Regional Plan purposed to preserve natural, cultural, historical values in Istanbul, the Marmara Region, protecting forests and water basins aimed to prevent the development axis of the city towards the Northern Forests, contradicted the Channel Istanbul (Keles, 2015, p. 89). With the declaration of the United Nations Organization, the leadership of the WHO, World Health Organization, a city must have livable characteristics regardless of the value it carries for people, and the importance of the urban eco-system for future generations would be very valuable. In the 2021, an important step taken by the state side on climate change, the name of the *Çevre ve Şehircilik Bakanlığı* (Ministry of Environment and Urbanism) changed to *Çevre Şehircilik ve İklim Bakanlığı* (Ministry of Environment Urbanism and Climate) (Son dakika Haber, 2021). Today, state institutions have great authority determination of “industrial areas”, also the “residential areas” were carried out some times by State institutions TOKI, and sometime, the Istanbul Municipality caused some complex management problems.

- Istanbul Today, Industrial Development of the City, The Policies of Specifying New Industrial Areas

Istanbul has reached a population of nearly 15 million today, due to the inevitable industrialization and the migration that triggered and the rapid increase in the number of slum dwellings. Although the dynamic structures of the city

changed drastically, the measures taken were insufficient of increasing immigration, so transnational migrations were also seen in addition to internal migrations. The reason of the industrialization and housing increase for the city and the problems became unsolvable was the liberal policies of the 1980s applied with extremely tolerated.

Despite H. Prost and L. Piccinato's plans for decentralization of industrial areas, industrialization especially small industrial enterprises in the city still continued to increase. In the years following the World War II, especially after the 1970s, the city rapidly industrialized and closed to become a workshop, factory-working class city and during this period, more than half of Turkey's manufacturing sector was located in Istanbul (Keyder, 2008, p. 511).

Although due some laws have been enacted, these laws have not been very effective in regulating industrial areas so far. Some laws used in the arranging of “industrial” zones in Türkiye was the *Hıfzısıhha Yasası* (Sanitation Law) still in valid. According to this law dating from the 1930s, industrial areas were divided into three groups: 1st group, industrial facilities must be arranged far away from the existing residential areas. 2nd group industrial facilities that arranged by special permission by *Hıfzısıhha*, (Sanitation Laws) necessary to far away from the residences. The 3rd group was those no objection to their presence amongst the residences (Tekeli, 2009, p. 53). It was the environmental health effects of the selected production process, which was gained a lot of attention in public opinion all over the world in recent years, but it is a fact that the campaigns on the environment in Türkiye did not affect the location selection of the private sector in the city, in practice.

The Prost Master plans and Luigi Piccinato's Regional plans prepared accordance to zoning rules aimed arranging of industrial areas directed to the outskirts of the city and nearby towns. According to the idea of moving industrial zones to nearby towns, new laws were need to made which were called “organized industrial zones” proposed to move industrial areas to the specifically planned areas out of the city. However, these articulated plannings created a specific regionalization around the Marmara Sea (even a regionalization based on industry) (Genç et al., 2021, p. 71).

Since the industrial revolution, the city centres had been realized as the most suitable place for the industrial area, close to the consumer, labour market, and infrastructure. In the Istanbul city centres, there were still small-scale industry or sub-industry like automotive, small textile workshops, and facilities were available. However, especially after the 1980s, the areas of small industries in the city has decreased significantly.

Although the decision to moving industrial areas out of the city was made at the beginning of the twentieth century, by H. Prost and L. Piccinato, the city continued to develop due to the dynamics of development, and some of these decisions could

Table 2 Istanbul, Industrial Areas, and Projects in Years

| Years | Industrial areas | Industrial facilities |
|--|---|---|
| Nineteenth century | The inner city; around Golden Horn and Bosphorus, Bakırköy, Beykoz, Paşabahçe, İstinye, etc | Ship building, (Haliç-Istinye), textil, (Feshane), energy (Santral), mills, glass-ceramic (Beykoz), metal working (Bakırköy), food (Bomonti), tobacco (Cibali), etc |
| Twentieth century early Republican Era | Out of city walls; Bakırköy, Haydarpaşa, Bosphorus, etc. Other Cities, Kocaeli- Bursa | Haydarpaşa Harbour port services, auto industry, glass-ceramic (Beykoz), metal working (Bakırköy), leather manu. (Bakırköy), food (Bomonti), etc |
| 1980s–2000s | Regions; Bakırköy, K. Çekmece, Tuzla, Bayrampaşa, Başakşehir, Levent, etc. | Ready made wearing, metal, machine equipments, textil, food production, electrical, leather manu., auto industry, etc. (Gov. Reports, 2018) |
| From 2019s | Recently declared 2 new districts; Esentepe and Arnavutköy districts | Miscellaneous |

only be taken after the 1980s. In the 1980s, the old Mayor of Istanbul, B. Dalan's radical step the old, leather factories in Haliç and Zeytinburnu closed (Bezmez, 2008), and they were moved to green areas of the Tuzla region (Fig. 13). However, the industrialization of Istanbul continued rapidly until the 1990s (Özbay, 2014, p. 177). Today, mostly state institutions have authority determination of "industrial areas" on a regional basis in the cities. The industrial companies with capacity reports in Istanbul, it was seen that the majority of them are primarily located in Başakşehir, Küçükçekmece, Tuzla, and Bayrampaşa. (Fig. 14) These enterprises were generally located in various OIZs or in the form of small clusters formed by themselves and operating in similar sectors in certain regions also, recently Arnavutköy and Esentepe districts were declared as new "industrial areas" by State Institution according to Governmental Reports (Habertürk, 2021). (Fig. 14) (Table 2).

- Specifying New Housing Areas in Istanbul, Towards to New Planning Ideas with the Sustainability

Whilst the city of Istanbul continued to grow towards the forests and green areas in the north, this growth was not seen as a danger for many years. The partly uncontrolled development of the city continued until today with inner mass migrations, and after the 2000s with transnational migrations, the city transformed into a mega-city with its 15 million population. Figures 15, 16 and 17 Recently, even though projection, the allocations of the industrial areas were realized to the close towns but with the unstoppable urban sprawl the housing areas became more critical.

Today, the most important problem of Istanbul is housing shortage due to increasing migrations as well as the earthquake issue, rather than sustainability. After 1999, the earthquake forcibly determined an urgent agenda for the city, and the most significant issue of the city became the

regeneration projects. State institutions and the private sector great part of the execution of regeneration projects, mass housing planned out of the city some large-scale "satellite-cities" necessary to accommodate this large population was still under the authority of TOKI, (TOKI, 2021).

In this context, the decisions of the site selections and location choice of the residential areas were mainly under the responsibility of TOKI and the Government. This institution was collaborated by the other private constructors as a joint venture sometimes. TOKI, banks, municipalities, and other private constructors likewise the French housing construction system (Dogrusöz, 1981). A very little part of housing construction, the small-scale projects, individual housing blocks, and apartment constructions were carried out by small contractor groups.

In the 2010s, after the chaotic effects of the earthquake, experienced in 1999, the city's agenda finally found an opportunity to concentrate on climate change issue new and innovative projects. The Küçükçekmece region was allocated to these projects by Küçükçekmece Municipality collaboration with Istanbul Municipality. Focussed on macro projects such as planning an eco-city in Küçükçekmece district, in the west axis or large-scale regeneration projects in Kartal district, in east axis, however, these projects have never been implemented. The organization of these innovative projects such as the specification of areas was realized by the collaboration of state and Istanbul and Küçükçekmece district Municipality and Kartal Municipality. Due to some problems between landowners, the Stateside, and Kartal Municipality, the project was halted (Bozdoğan, Akcan, 2012, p. 293). (Table 3).

In the 2020s: from the Habitat-II, City Summit held in Istanbul, Türkiye UN Conferences have ensured the acceptance, and spread of Local Agenda 21, the local projections of the principle of global partnership, all over the world and the strong international foundations of the aforementioned



Fig. 13 Istanbul, Transformation of the Green Areas to the Industrial Areas Tuzla District Transformation to the Industrial Area. Image, designed by H. Coskun

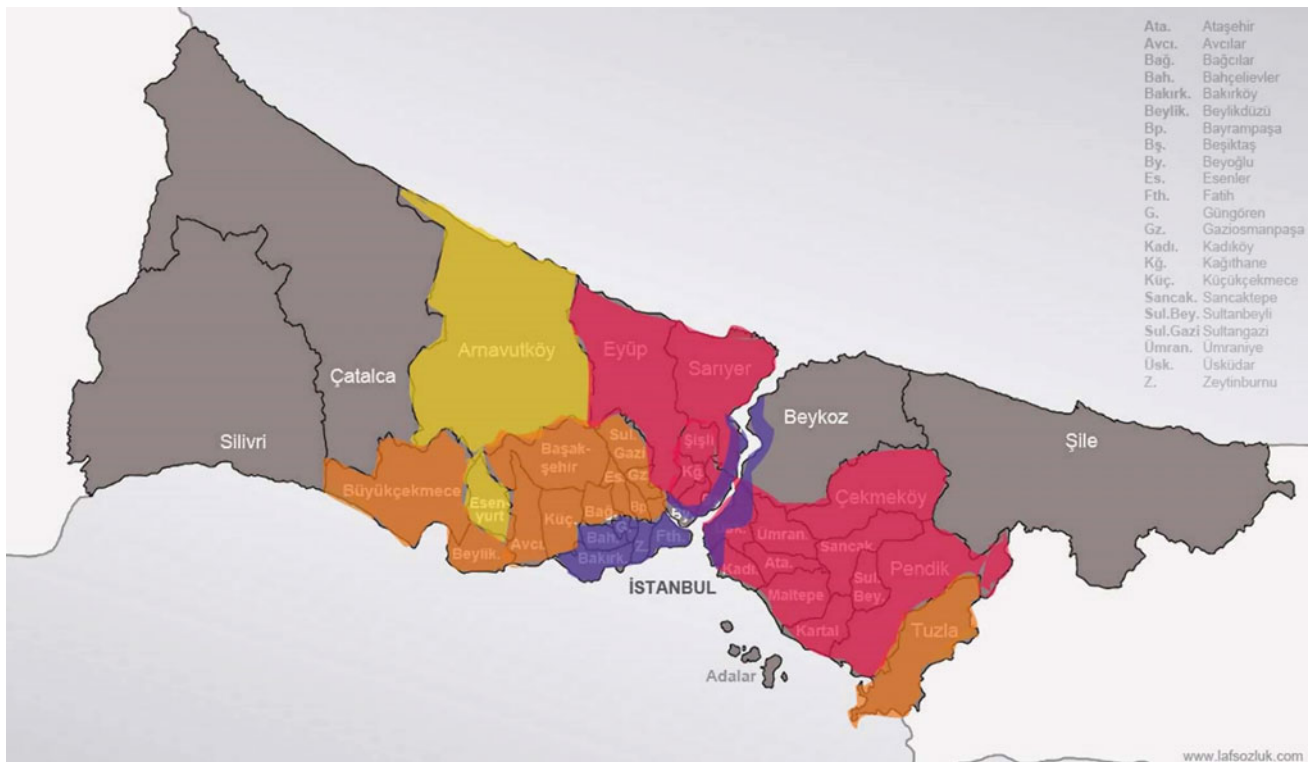


Fig. 14 Istanbul, industrial areas. The old industrial areas (purple). Industrial areas after the 1950s, (first red and after orange); Başakşehir, Küçükçekmece, Bayrampaşa, Tuzla (right). The recent “industrial areas”, declared by state, 2018; Esentepe, (yellow-down), Arnavutköy, (yellow-top), (acc. to Habertürk, 2019). Map, designed by H. Coskun

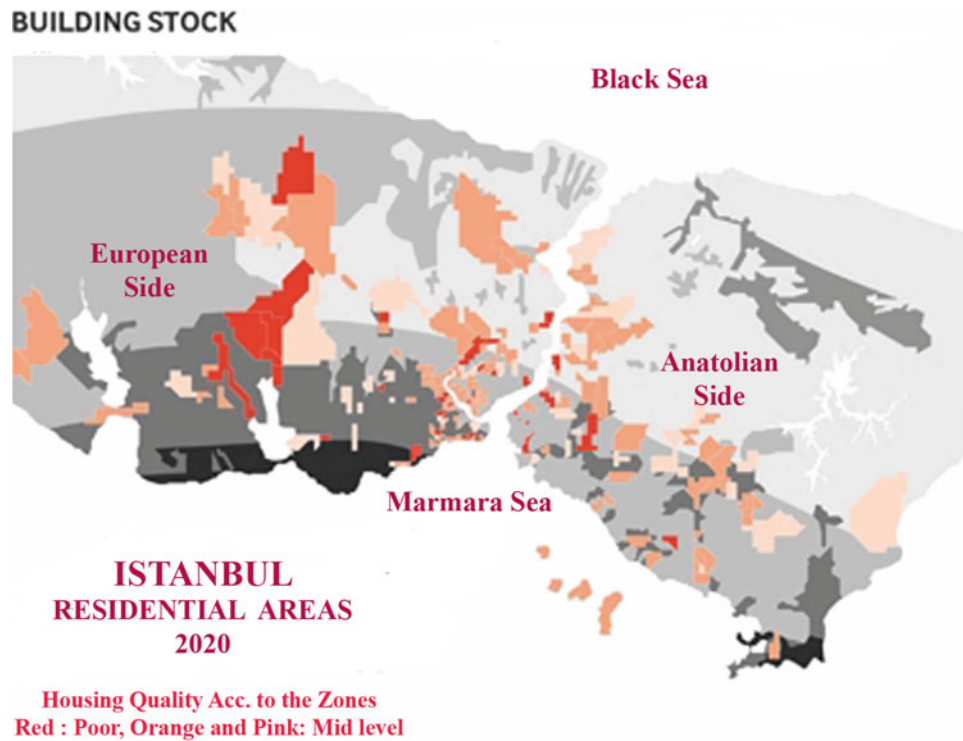


Fig. 15 Istanbul, building stock, also specifying city's urban sprawl to the Northern Forest from dark grey to the light grey. Densely populated areas (dark shaded) less densely populated areas (grey) and less population (light grey). Map, building stock



Fig. 16 Istanbul, recent Silhouette, high-rise buildings behind the low-rise apartments along the Bosphorus. Photo, Destinazione Istanbul

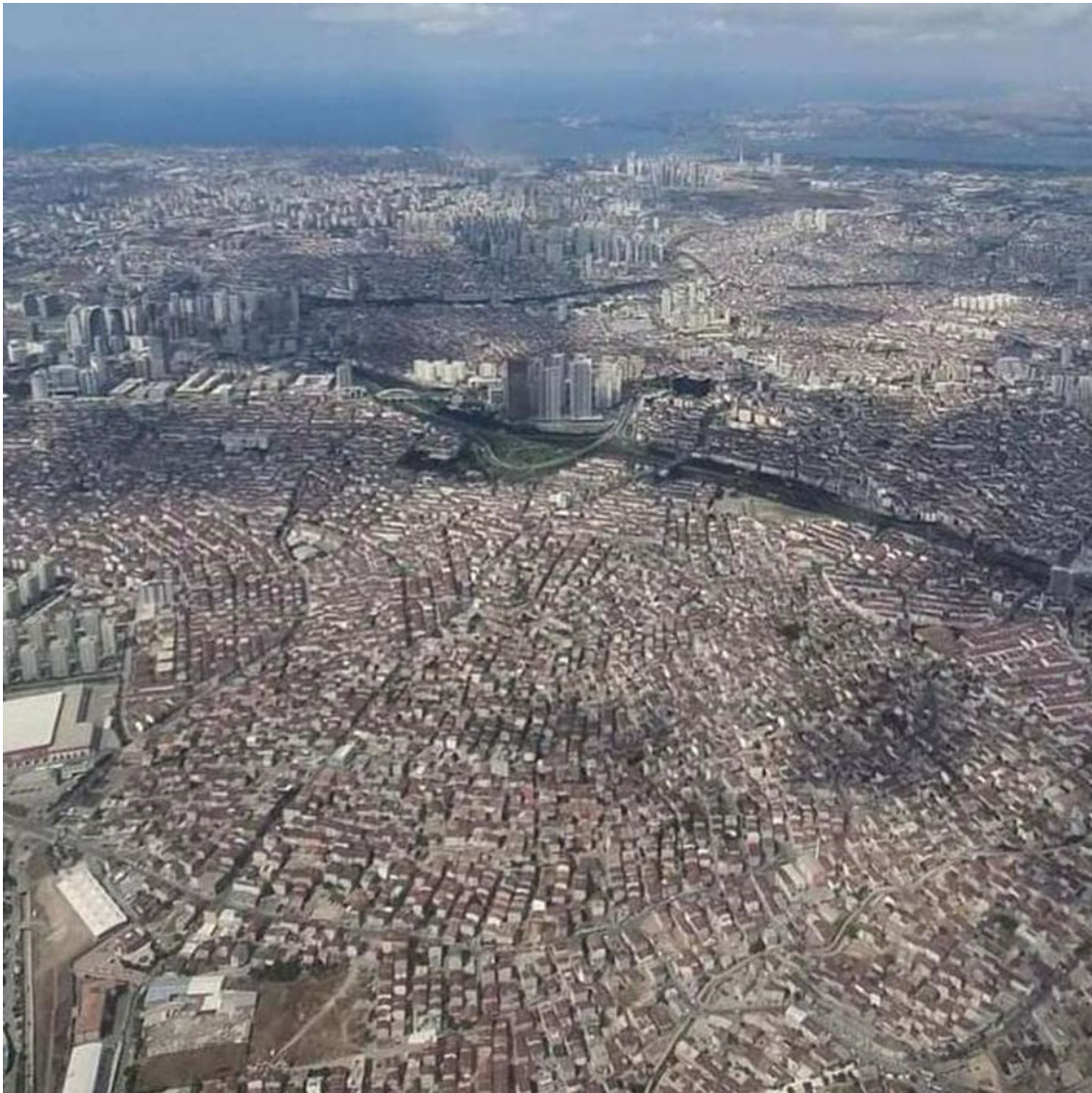


Fig. 17 Istanbul, recent housing density, mixed residential areas, apartments and commercial areas. Photo, Hürriyet newspaper

process formed (Arar, 2021). All activities expected to be carried out by local municipalities were determined as Agenda21 in Türkiye, Istanbul. Recently, some issues were addressed in the studies carried out by the state. In the context of the Agenda21, although 5 regions have been determined as model districts in Istanbul city, (Pérouse, 2014, p. 236), have not any concrete plans yet in this regard.

In recent years, the destruction of forest areas with large-scale projects has continued, and the new law enacted in 2021 was declared that “the forest areas might be opened to new housing settlements if deemed necessary” (Iklim Haber, 2021). This was not beneficial regulation for the protection of forest areas that are already under the threat of

industrial areas and housing settlements. Even though the uncontrolled “housing areas” still continued to threaten main forest areas, water basins, woods, and green areas, some projects were introduced as environmentally friendly. On the Anatolian side; some large-scale investment projects by the private sector were projected under the title of Wood and Forest; Acıbadem Wood, S. Forest, etc. (Table 3) Although adequate steps have not been taken yet, recently, according to State Reports threat of the uncontrolled urban sprawl underlined once again; “the land areas were reduced due to uncontrolled urban sprawl, global warming, and increasing intensity with climate change.” (Turkish Housing Policy Commission Reports, 2018).

Table 3 Istanbul, planning residential areas and housing projects in years

| Dates | Planner | Project origin | City and regions | Project models and typologies |
|-------------|--|-------------------------------|---|--|
| 1935–1949 | Henri Prost | French <i>Cité-jardins</i> | Bank-Houses; Anatolian side; Kadıköy, Acıbadem, Koşuyolu, etc. Bosphorus heights | <i>Cité-jardins</i> (garden-cities) and <i>Cité-parc</i> (park-cities) |
| 1950–60s | Luigi Piccinato | French <i>Cité-satellites</i> | In the West Axis, Ataköy region | <i>Cité-Satellites</i> (Satellite-cities) |
| 1980s–1990s | Various | European housing models | Historical Peninsula; Fatih, Kocamustafapaşa, Fındıkzade, etc. European Side; Beyoğlu, Şişli, Levent, etc | Building-Blocks, Apartments |
| | | | Anatolian side; Kadıköy, Suadiye, Koşuyolu, Acıbadem | Mixed; <i>Cité-jardins</i> (garden-cities) and building-blocks |
| 2000s | Various | Old, English Garden-cities | Northern Regions of both, European-Anatolian sides Country style houses | 2000s, new version of old, Garden-cities |
| 2000s | Various, Government TOKI and Private Contractors, etc. | | City centres, Anatolian side- European Side | Regeneration Projects After the 1999 Earthquake |
| 2010s | Ken Yeang, MRVD, Kengo Kuma, etc. | | Developed in European side Küçükçekmece Region | Eco-cities, other innovative projects, forest houses, kale-house, etc. |

6 Conclusion

Studies on “industrial planning” and especially “housing planning” in Türkiye and Istanbul have evolved in a completely different path with the changing mainly the political dynamics since the 2000s. Until that period, the urbanization of Istanbul, immigration, continued uncontrollably with slum buildings (gecekondu) towards to north of the city; Arnavutköy, Büyükçekmece, Küçükçekmece, Esenkent in the European Side, and the Sultangazi, Kurtköy in the Anatolian Side towards to green areas, forest areas.

However, after the 2000s, with the new Government change, the policies altered by TOKI, emerged as the main company to carry out all state-owned projects new housing projects. In the 2000s, another breaking point was 1999, earthquake and urgent measurements to renew the ageing old, housing stock. After 1999, earthquake, this planning started pioneered by TOKI, which was a state institution, and other private construction institutions, in almost every district of the city, as large-scale mass housing renewing activities at the same time.

Today, the city of Istanbul has some planning and controlling problems derived from the administration and responsibility. This administration problem arose from the responsibility of the city’s planning sharing authority between the state institutions and the Istanbul Municipality. This situation causes some complex management problems

in the determination of new “residential areas” and “industrial areas” in the planning of the city. Today, the State and TOKI were highly authorized state institutions in the determination of “housing areas” as well as the mass housing construction. In Istanbul, the state has quite a lot of authority in areas where the *Istanbul Büyükşehir Belediyesi* (Istanbul Municipality of Metropolitan) does not have the authority and areas in the city.

In terms of “industrial areas” primarily, state institutions have authority determination on a regional basis and Istanbul Municipality of Metropolitan have rights to decisions on a city basis mostly on the small-scale industrial areas (Küçük Sanayi). The industrial areas, since the beginning of the twentieth century, with the foresight of moving industrial areas out of the city, large industrial areas had been distributed to nearby towns with the arrangement of organized industrial zones. Although small industrial facilities are still allowed in the city, the recent declaration of Arnavutköy and Esenkent, which were located in the northern forest area, as industrial areas were also contradicted the decisions taken.

In the research, one of the main findings the issue of sustainability was not considered a significant fact for long years in the city. Indeed, neither the climate change summits ongoing by the 1990s, nor the public activities on the climate issues made awareness of sustainability to become important. Recently in State Reports theoretically considered sustainability as one of the main issues of the Government, according to implementations, however, there was no state agenda

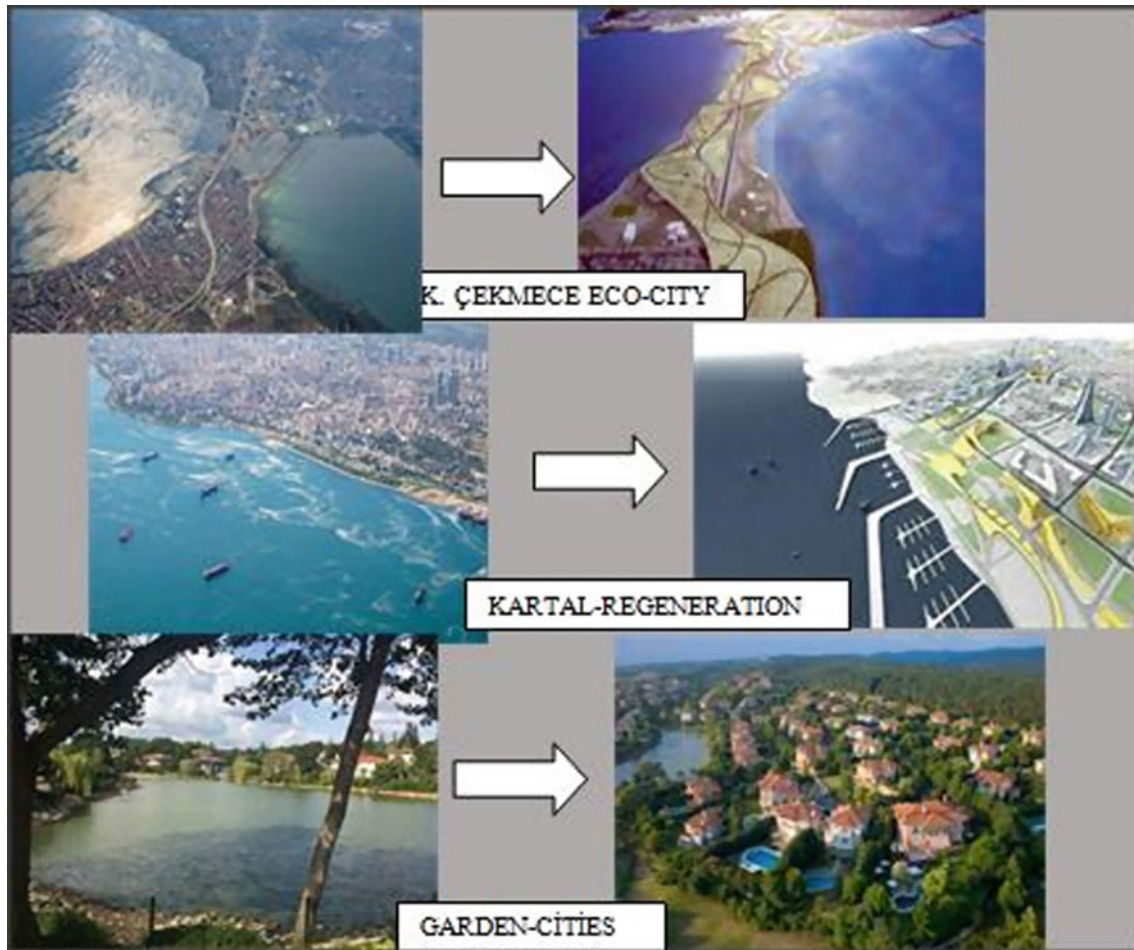


Fig. 18 Istanbul, new and innovative residential projects in the context of the sustainability designed in green areas, forests, and lakes, in the last twenty years. Image designed by H. Coskun

declared as an action plan in practice yet, the uncontrolled planning in the city still continued towards northern forest areas and water basins as a threat. According to State Reports, the issue of sustainability was emphasized as one of the main problematic as well as the disasters: “three main compromises were addressed in this study: to access to enough and equal and social housing, financing, and sustainability in the whole world” (Turkish Housing Policy Commission Reports, 2018).

It was possible to see the state’s interest in sustainability issues in the state reports, on the other hand, with some newly made laws, endangering the green areas, forests by uncontrolled future planning of “residential areas” or “industrial areas” were drawn attention as some decisions that were in great conflict with sustainability. (Fig. 13) However, the environmental disasters such as the mucilage in the Marmara Sea that occurred in the last few years, and COVID-19, caused a definite paradigm shift that led to the growing demand for housing areas towards outside the city, excluded city centres. This situation led to the residential

areas and industrial areas overlapping in the green areas. In the context of sustainability, this might be only arranged by preparing specific zoning plans; creating specific zoning areas as examined in this research presented as a suggestion, in the determination of “housing areas” and “industrial areas”.

The new and innovative projects came to the fore planned with the participation of green areas also protecting them. Also, old, urban planning models come-back to old “garden-city” models might be good models previously well-known alternatives. However, also some good example projects designed and planned in the city would be model of the future planning such as “green-cities”, “sustainable cities”, and “eco-cities” (Fig. 18).

To prepare specific zoning plans in newly opening “housing areas” as prepared before, and to separated them with a specially prepared zoning plan for new residential areas and industrial areas. In this context, it is necessary to determine the borders of the existing green areas, forest

areas, and residential areas to preserve them. Istanbul has to develop city plans in accordance with sustainable planning as well as emergency plans for environmental disasters urgently: climate change, sea disaster, mucilage, water supply, drought, earthquakes, etc.

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