

Istanbul; Climate-Change, Sustainability, Decentralization, Industrial, and Residential Areas

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Abstract

This research focuses on the industrial development of Istanbul and the planning of housing and industrial areas. It examines the city's urban agenda, which is dominated by internal and transnational migrations, population growth, housing problems, and the process of opening new housing areas over many years. Another significant issue is the planning of industrial areas and their impact on the city. Climate-related issues and agreements like the Paris Agreement in 2015 emphasized the detrimental effects of industrialization, uncontrolled urban sprawl, decreasing green areas, industrial pollution, and high carbon emissions in cities, making them more problematic. The problem of uncontrolled development of residential and industrial areas has persisted for many years. The idea of permanently moving industrial areas outside the city, to nearby towns, has been long known idea proposed at the beginning of the 20th century. However, various political challenges and other factors have hindered the effective implementation of this approach. The main concern is that this problem poses a potential threat to the future sustainability of the city. The research examines the reflection of industrialization and urban planning over nearly a century, up to the present day, by analyzing the planning reports of the Istanbul municipality and government policies on the subject. The findings indicate the importance of zoning applications in the planning of industrial and residential areas, as applied in world cities like London and Paris. However, the idea of decentralizing industrial areas in the city, though theoretically supported in development plans and reports, faces challenges in practice, affecting the city's future sustainability. The research highlights the complexities involved in addressing industrialization and planning issues in Istanbul, emphasizing the need for effective policies and strategies aligned with sustainability principles and long-term urban development.

Keywords: City Planning; Climate Change Industrial Areas; Istanbul; Residential Areas

Introduction

This research focuses on the problematic issue of industrialization and decentralization of the industrial facilities in Istanbul and residential areas which developed along the industrial has become increasingly critical in the context of sustainable planning. In the 21st century, as sustainability has gained significant importance worldwide, it is necessary to reexamine the subject and raise awareness of the challenges faced by Istanbul. Although the planning of the industrial areas of the city is one of the most important problems in urban planning, it has not received the necessary attention so far.

Despite its significance in urban planning, the problem of industrial area planning has not received sufficient attention to date, leading to a gap in research. Through this study, aim to address the challenges posed by industrialization, emphasizing the importance of sustainable industrial development and appropriate planning of industrial and residential areas to ensure the long-term well-being and sustainability of Istanbul.

Throughout history, Istanbul has held a significant position as an old capital and prominent harbor city, driving major industrialization and contributing significantly to industrial development, particularly up until the 20th century. The city's industrial areas were primarily concentrated in the old Historical Area, Golden Horn, Marmara shores out of the antiqu city walls, and along the Bosphorus, Beykoz, Paşabahçe. The residential areas Historical Peninsula, European Side including Pera and Şişli, and the Asian Side. The residential areas expanded and new suburbs emerged along the coast of the Marmara Sea and in the east-west axis. Recently, the focus of development has shifted towards the north, posing a threat to the forests and green areas, and endangering the local ecosystem.

As Istanbul's urban expansion reaches its limits within the current boundaries and extends towards neighboring towns, the recent northward development poses a threat to the city's forest and green areas. Additionally, the planning of industrial areas becomes crucial in light of climate issues and agreements like the Paris Agreement in 2015, which highlight the negative impacts of industrialization, uncontrolled urban sprawl, decreasing green spaces, industrial pollution, and high carbon emissions in cities. The persistent problem of uncontrolled development in both residential and industrial areas underscores the urgent need for thoughtful and sustainable planning in these sectors.

The process of industrialization and migrations has led to the development of a unique urban form in Istanbul, shaped by the housing problem. Inter-regional migrations since the late 20th century have contributed to the emergence of new residential areas near industrial zones, often developing in an unplanned and intertwined manner. These specific neighborhoods were characterized by illegal slum settlements, which presented challenges for urban and climate issues. However, the centralization of industrial areas had a contrasting effect, exacerbating the climate problem. Today, the success of industrial decentralization is a subject of debate, but it has played a crucial role in preserving green areas and mitigating uncontrolled urban sprawl in the city (Figure 1).

During the early Republican era, the relocation of the capital from Istanbul had significant implications for the city's heavy industrialization. Although the political decision aimed to distribute industrial activities to other cities in the country, the existing industrial areas in Istanbul, which were concentrated around the Haliç area (Golden Horn) and later expanded along the shores of the Bosphorus and the Marmara Sea in the European region, continued to dominate and expand. Despite the plans for decentralization, the industrial development in Istanbul persisted, leading to its continued growth as on the way as a global major industrial center.

The decentralization of industrial areas outside Istanbul and neighboring towns in the Marmara Region, including the development of industrial towns, as well as the shift of industrial functions to the Asian side of the city, have become essential policies to tackle the challenges posed by industrialization and urban development. This approach aims to reduce the concentration of industrial activities in the city center and instead create newly planned polycentric regions. By doing so, the aim is to promote more balanced and sustainable urban development.

First polycentric industrial axis of European Side extended the nearby towns Çorlu, and Tekirdağ, on the Asian axis, towns such as Gebze, Kocaeli and on the South, mainly Yalova, Bursa, etc. (Figures 2-3) In this context, the policy that the functions of industrial zones should be reduced gradually and considered to planning out of the city, which has been realized since the Republican period, became dominant. Today, considered the decentralization policies in the City Reports for 2023 prepared by Istanbul Metropolitan Municipality. In these reports, it is clearly stated that this decentralization will primarily be shifted to the Asian side at least in the first place by reducing the number of industrialization, which was predominant in the European side today, and then possibly allocated to the outskirts of the city, and nearby towns in the Marmara region.

By relocating industrial zones outside the city and distributing them across different areas, the aim is to reduce the burden on the urban infrastructure, minimize environmental impacts, and create a more balanced and sustainable development pattern. This approach aligns with the principles of sustainable urban planning, which emphasize the importance of preserving natural environments, reducing pollution, and improving the quality of life for residents. Furthermore, this decentralization strategy can contribute to regional development by promoting economic growth in other areas outside the city center and creating employment opportunities in different regions. It allows for better utilization of resources and encourages a more equitable distribution of industrial activities.

Indeed, the issue of industrialization in Istanbul highlights the presence of conflicting policies between the Istanbul Municipality, which has adopted a more sustainable urban planning approach, and the State, which still promotes industrialization in certain areas. The recent announcement by the State declaring that allocating green areas on the European side for industrial purposes and establishing new industrial zones may hinder the future sustainability of the city. This indicates a potential conflict in the decision-making process and raises questions about sharing the authority of urban planning between the Istanbul Municipality and the State. The approach taken by the State may lead to tensions and challenges in achieving a cohesive and balanced urban development strategy for Istanbul.

The main axis of this research delves into the subject of planning housing and industrial areas, exploring how the new planning dynamics are taking into account the challenges posed by climate change and aiming for more sustainable and resilient urban development. The goal is to find solutions that ensure the well-being of inhabitants, promote sustainability, and address the pressing issues faced by modern mega-cities like Istanbul.

However, it is observed that in Turkey, especially after the 1996, Istanbul conference, the expected level of awareness and action on sustainability issues has not been fully achieved among the public and local governments.

The major concerns of Climate-change in the agenda of the recent Glaskow summit, 2021: coal use, deforestation, and lower emission especially related to industrialization and industrial facilities will be highlighted once again (CNN, 2021). Expected to make new regulations including these issues discussed at the recent earth summit, in Glaskow, in 2021. Also these issues were problematic which were specifically induced by the migration issues, uncontrolled urban sprawl, along the industrialization which is seen as principal for Istanbul where the urban development have now reached the forest borders, led to deforestation. within the scope of the virtual activity titled 'Global Cities Climate Action Exhibition, prepared in collaboration with Arup and C40, will be held in 11 global cities (London, Istanbul, Nairobi, Lima, Bogota, Los Angeles, Washington DC, Mumbai, Beijing, Jakarta, and Auckland) good examples and projects on climate action will be presented (Istiklal, 2021).

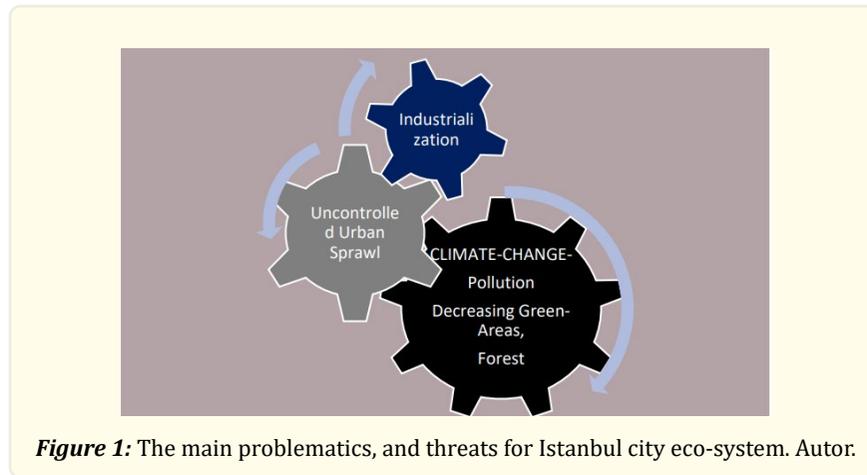
While there have been some suggestions on measures, laws, and regulations based on the Agenda 21 framework in recent studies, these research efforts often remain superficial and do not provide in-depth or specific solutions. Therefore, there is a clear need for more interdisciplinary studies that can offer comprehensive and practical solutions. Although there is an increasing awareness of sustainability and resilience both globally and in Turkey, it is evident that the attention given to these issues in the studies conducted so far may not be sufficient.

The issue of climate change is acknowledged as a crucial aspect in the future planning of the city, highlighting the significance of sustainable practices. However, the opening of new industrial areas within the city remains a concern. The real problem lies in the extent to which climate change considerations will be prioritized in these new industrial zones, despite the general understanding that decentralizing industrial facilities outside the city is the preferred approach. Ensuring that climate-conscious practices are integrated into the planning and operation of these new industrial areas is essential for long-term sustainability and resilience.

The Methodology

The research methodology used in this study primarily involves an analysis of historical records, past research studies, planning documents, and governmental and Istanbul Municipality development reports related to the city of Istanbul. The aim is to gain insights into the city's past, present, and future plans in order to evaluate the industrial development and planning issues.

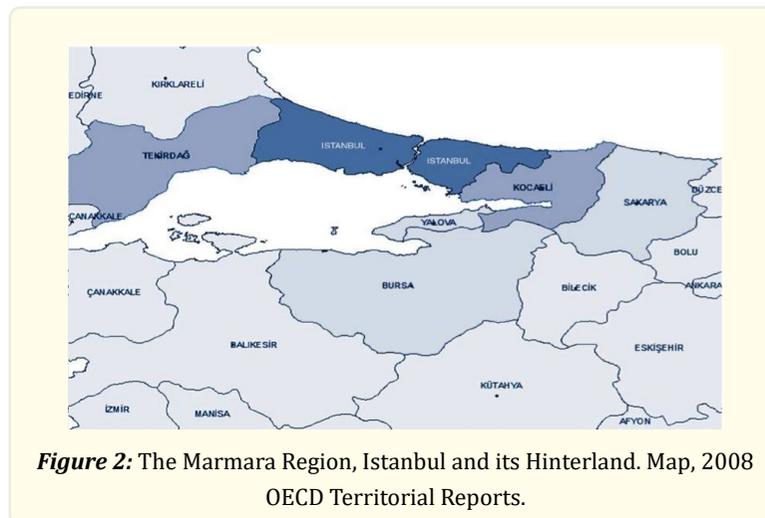
The research employs a comparative approach, mainly concentrated on previous data and future planning proposals. In this context, examining the changes and developments in the city's industrial areas and urban planning practices over time. This includes an analysis of historical data, and research and reports and proposals, such as Henri Prost's Istanbul Master Plans and zoning regulations, as well as contemporary reports and policies related to industrial decentralization and sustainable urban development.

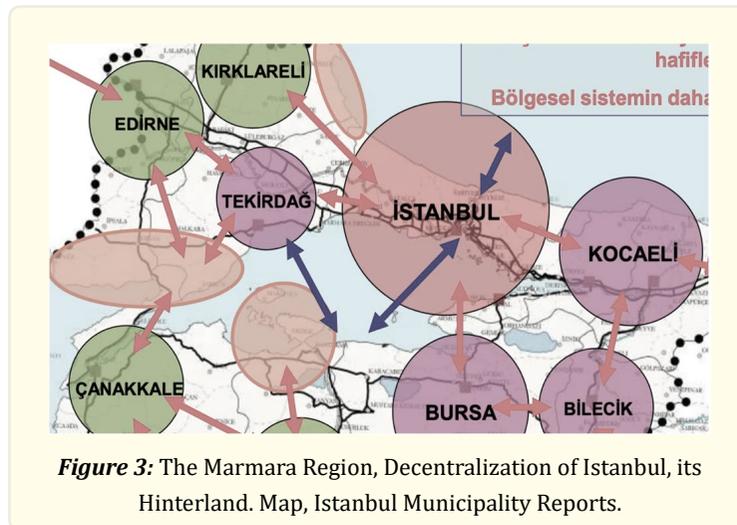


The evaluation is based on a critical assessment of the information gathered from various sources. It involves identifying key patterns, trends, and challenges related to industrialization, urban development, and planning in Istanbul. By comparing the city's past plans and policies with its current situation, the research aims to highlight the successes, shortcomings, and potential future implications of industrial development and planning decisions.

It is important to note that the research methodology relies on existing data, historical records, and reports, which may have limitations in terms of accuracy, availability, and comprehensiveness. However, by utilizing a comparative approach and critically evaluating the information, the study aims to provide valuable insights into the industrialization and planning issues in Istanbul.

The findings of this research can contribute to a better understanding of the historical context, challenges, and future prospects of industrial development and planning in Istanbul. It can inform policymakers, urban planners, and other stakeholders in making informed decisions and formulating effective strategies to address the industrialization and urban planning challenges facing the city.





The Idea of Industrial Decentralization of Istanbul City and its Industrial Hinterland

For over a century, the idea of transforming Istanbul from a capital and industrial city to promoting decentralization and dispersing industrial facilities and development throughout the country has been on the city's agenda, beginning in the early 20th century. This policy has been a cornerstone of both political and economic determinations, particularly since the establishment of the Turkish Republic.

Economic growth in Istanbul has led to an influx of immigrants from various parts of Turkey and neighboring countries, creating an irregular and uncontrollable flow that strains the city's limited physical infrastructure and exacerbates the housing problem, resulting in a shortage of affordable housing and escalating issues of ownership. This irregular and uncontrolled development has also given rise to illegal slum development, encroaching upon and depleting the city's green areas, forests, and water basins.

On a climatic basis, the impacts of the unplanned and uncontrolled development of the city have intensified. Despite increased awareness of climate issues since the 1990s and the 1996 Istanbul Earth-Summit Conferences, which were held in Istanbul, there has not been enough awareness and action taken. In theoretical discourse, although Istanbul Municipality is known to have a visionary plan for 2040, with a particular focus on climate issues for the city's future planning, it may include statements made by the municipality after the 2021 Glasgow climate summit, drawing attention to the urgency of addressing the climate problem.

However, despite specially prepared zoning laws for green areas, housing areas and the specifically industrial areas the uncontrolled and unplanned growth of the city continues towards green areas, forest resulting in the destruction of green areas, forests, and water basins. The heavy reliance on car-dependent traffic still contributes to carbon pollution problems. Additionally, migration has led to the growth of the informal sector of the economy, as rapid economic growth has not been able to generate enough jobs for the large influx of new labor market entrants.

Since the early Republican era, according to economic and political determination Istanbul fostered decentralization idea it still could not discharge the effects of industrialization since the city continues to receive immigration which led rapid industrial development and housing problematic. (Figure 5-6) The immigration profile of Istanbul first started in the 1970s with inter regional migrations from small towns in Anatolia to the western industrial cities such as Istanbul, Kocaeli, Bursa, Izmir, etc. were today replaced by transnational migration profile with the diversified multi-national migration. This situation would further induce the industrialization of the city, instead of de-industrialization and de-centralization of industrial areas, the city with the mass migration later turned into a massive industrial center in the expanding economic hinterland with its immediate surroundings.

The changing migration patterns have played a significant role in shaping the industrialization of Istanbul. The influx of people from various backgrounds and nationalities has led to a higher demand for employment and economic opportunities. As a result, new residential neighborhoods have emerged around the industrial centers in Istanbul to accommodate the growing population. This dynamic has further accelerated the city's industrial development and has had a profound impact on its urban landscape and housing patterns.

The decentralized economic hinterland of the city, combined with the availability of a diverse labor force of near industrial towns, has attracted industries, and contributed to the growth of industrialization in these areas as well as the İstanbul. (Table 1) The rapid development and transformation of Istanbul have led to the emergence of new industrial sectors and the expansion of existing ones, further solidifying the city's position as major industrial center.

<i>Istanbul, Decentralization of Industrial Areas</i>	<i>Nearby Towns</i>
European Side Axis	Çorlu, Tekirdağ, Çerkezköy. Energy, Oil Refineries, Automotive, Electrical Devices, Textile, etc.
Asian Side Axis	Gebze, Kocaeli, Düzce, Sakarya. (Petroleum, Chemistry, Cement Factories, Automotive, Small Car Making Industry, Iron, Steel, Train Manufacturing, etc.
South Axis	Bursa, Yalova, Bilecik. (Automotive, Small Car Making Industry, Ship Electronic Devices, etc.

Table 1: Istanbul Decentralization, by Regions to Nearby Towns. Table, Autor.

Indeed, the idea of decentralization of industrial areas in Turkey was initiated during the early Republican era, as the government aimed to spread industrial facilities and regions throughout the country rather than concentrating them in Istanbul. This decision was influenced by Istanbul's historical role as a major port city that played a primary role in world trade. However, with the establishment of the new Turkish Republic, Istanbul's status as the capital city changed, and the economic and trading conditions also evolved, leading to the need for decentralization and industrial development in other regions of the country.

Since the early Republican era, the Turkish government implemented statist policies, focusing on industrialization by opening hundreds of new factories throughout the country, including Istanbul, in a short period. This approach was driven by the government's decision to prioritize industrialization and allocate limited resources to support the country's economic development (Çoban, 2012). After World War I and the establishment of the Turkish Republic, which was burdened with debts and lacked sufficient capital accumulation for city planning in Istanbul (Tekeli, 2002).

Since then, the main political determination has been to limit the establishment of new industrial facilities in Istanbul, with the focus on moving industrial areas out of the city. This decision was particularly relevant to the high number of industrial facilities that had gathered around the Haliç region, known as the Golden Horn, next to the Historical Peninsula in the 19th century. (Figure 5) While this decision was deemed accurate at that time, the urban development of the city would eventually extend far beyond its initially determined borders. Subsequently, with the rapid increase in internal mass migration after the 1970s, the city experienced uncontrolled urban sprawl. Only a few new factories were opened in Istanbul, and most of the facilities from the Ottoman period continued to operate.

Until the 1970s, there was no excessive urban development and urban sprawl in the city. As a result, the plans to move industrial areas out of the city remained theoretical and were not implemented for several decades. Industrial areas continued to develop primarily along the Golden Horn, which had been the old industrial region for many years, and shanty towns (*gece kondu*) emerged and grew adjacent to these industrial areas. This uncontrolled development was not considered a significant problem until the 1960s-70s.

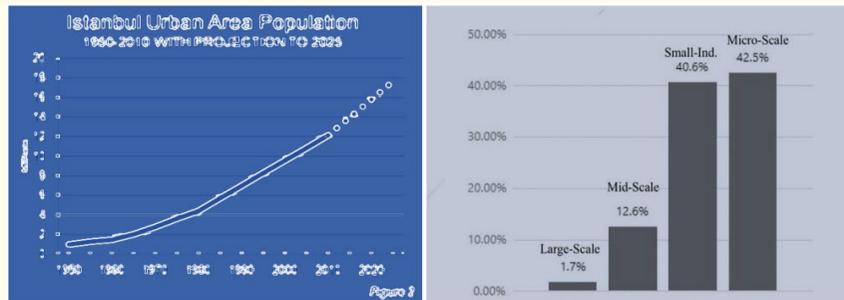


Table 2-3: Istanbul, Population of 15 Million As a Mega-city. Left, Graphic, cox.design. Decentralization and Decreasing Large-Scale Industrial Facilities 1.76 to the Small-Scale 40.6, Graphic, Istanbul Industrial Report.



Figure 4: The Industrial Regions. Photo, Turkish Ministry of Industrial and Development web.page.

1980s, Istanbul Transforming World Metropolis with Residential Areas Next to Industrial Areas

Since the 1980s, a neoliberal phase emerged, and a new dominant urban model called structural adjustment gained prominence, advocating for economic and societal arrangements aligned with global markets (Massiah, 2012). During this period, Istanbul faced challenges such as mass internal migration resulting from the consequences of rapid industrialization. The rise of liberal politics and the development of a consumption society played a significant role in shaping the city's landscape as well as its economy.

The transformation of Istanbul into a metropolis was first initiated by the Master plans of Italian architect-planner Luigi Piccinato, which surpassed the ancient city walls and expanded from a micro-city scale to a macro-city with new *ville-satellites* (satellite-cities) on the east-west axis of the European side, including Ataköy and Bakırköy (Malussardi, 1993). After the 1970s, the industrial areas were decentralized and relocated to nearby towns in the immediate vicinity of Istanbul, such as Izmit, Bursa, and Tekirdağ, thus extending the city's industrial hinterland to these regions. (Table 3) The industrial axis further developed towards Gebze, Çayırova (automotive, iron, steel, etc.), Yarımca (oil refineries), and Hereke (cement factories) towns, and then expanded to Kocaeli and Adapazarı Provinces (automotive, train factories) in the east, facilitated by an efficient transportation network via train and highway road (Coskun, 2021a).



Figure 5-6: Istanbul, the Industrial Developments. Map, Prost Plan, IFA Archives, Paris, and Map, Below Decentralization of Istanbul Industrial, (purple), small industrial (pink) Istanbul Municipality Reports.

In the 1970s, Istanbul experienced a significant turning point with the emergence of industrialization, similar to the industrial age witnessed in European countries. This industrialization process marked the beginning of internal migration, which eventually transformed into a permanent and unavoidable transnational migration, becoming a major driver of the city's housing problem.

In the aftermath 1970s, Istanbul continued to experience urban sprawl due to internal and external dynamics, primarily driven by internal migration. This urban sprawl resulted in a significant housing shortage in the city. The country faced challenges arising from rapid industrialization and interregional migration, with people migrating from rural areas and small towns to well-developed and industrialized cities in the west, such as Istanbul, Kocaeli, Bursa, Izmir to work in newly established factories (Figures 1-2). This influx of migration and uncontrolled urban sprawl eventually led to an anti-metropolitan density, making it inherently unsustainable for a rapidly industrializing country (Bozdogan, Akcan, 2012).

Since the 1970-1980s, when internal migration issues first emerged as one of the main problems, it marked the most dramatic period of uncontrolled transformation in Istanbul, with the rise of unplanned illegal housing. During this period, factories and industrial areas developed uncontrollably alongside residential areas, sometimes even becoming intertwined. The first housing groups appeared in the vicinity of the industrial areas in old Golden Horn, next to old Naval, textile, and tobacco manufacturing areas, and then spread the along the Bosphorus shores, Paşabahçe, Beykoz, etc (Figure 5).

The uncontrolled urban sprawl started from the Historical Peninsula and subsequently spreaded the other regions, the industrial areas in the shores of the Golden Horn and Bosphorus the slum settlements at their heights, resulted in rapid urbanization, where parks and gardens were replaced by newly constructed apartment blocks, ultimately transforming the city into a mass of concrete. (Coskun, 2020). The gradual transformation of settlements into areas with apartment buildings saw the original houses being replaced by taller apartment complexes through isolated interventions (Bozdogan, Akcan, 2012). In the 1980s-1990s, the liberal policies of Prime-Minister Turgut Özal, which supported a free trade economy, led to a chaotic situation in the city with an increase in illegal housing constructions known as “*gece-kondu*” (slum buildings). The free market economy and liberalization broke the ties between producers, organizers, and users, resulting in the production of legal or illegal “*gece-kondu*” housing throughout big cities (Erder, 2007).

The opening of the new Bosphorus Bridge in 1973 was specified industrial, business, and residential areas. The Bridge altered the city’s time-distance matrix, promoting metropolization and encouraging the construction of high-rise buildings through new laws (Tekeli, 2013). On the Asian side, areas like Kadıköy, Koşuyolu, and Acıbadem were planned with garden houses and low-rise residential neighborhoods (Bilsel, 2010). H. Prost designated the European side as the main business core, connected by motorway networks and the Bosphorus Bridge (Coskun, 2017). The northward development axis saw the emergence of newly developed areas for the upper-class, including Şişli, Levent, and Etiler around the European side. The development of the city after the 1980s realized an unavoidable way, which led to much more dramatic developments industrial areas, residential areas where the Istanbul turned into a chaotic industrial city with slum areas (*gecekondu*), no green areas to live in (Ünlü et. al, 2010,

The European side of the city expanded along the east-west axis, with new residential areas like Avcılar and Küçükçekmece emerging alongside old and newly developed industrial areas such as Zeytinburnu and Kazlıçeşme, which housed textile and leather manufacturing industries. These industrial areas attracted low-income industrial workers who migrated from various parts of the country (Coskun, 2021). In the city’s periphery, neighborhoods with modest, low-rise 4-5 floor apartments coexisted with high-rise buildings or skyscrapers, such as in Bakırköy next to the high-end settlement of Ataköy on the European Side, or in Ümraniye, Sultangazi on the Asian Side, adjacent to high-end mass housing complexes in Ataşehir. Some modest neighborhoods developed next to small industrial areas.

On the Asian side, the eastern axis saw the extension of small industrial facilities, leading to the emergence of slum areas next to industrial zones and small manufacturing or car supply industries such as Bostancı and Pendik car supply small industries such as Bostancı (oto sanayi), Pendik (oto sanayi) car supply small industry, furniture making Modoko in in OIZ, (Organized Industrial Zone), Dudullu, Asian Side or in European side in Ikitelli OIZ, Textile in Merter, Yenibosna also Asian side fruit distribution center such as Ataşehir Hal. The unplanned development of the city persisted from the 1970s until the 2000s, resulting in Istanbul becoming an uncontrolled developed macro city and a metropolitan city. These districts developed; Sultangazi, Maltepe, Başibüyük next to Kadıköy, Suadiye, Bostancı regions. The unplanned development of the city persisted from the 1970s until the 2000s, resulting in Istanbul becoming an uncontrolled developed macro city and a metropolitan city.

After the 1970s, the old and well-established quarters in the central settlements of Istanbul, Historical Peninsula, Pera, Şişli, and Nişantaşı, witnessed the emergence of residential areas resulting from industrial-originated inter-regional migrations. These settlements sometimes turned into slum neighborhoods and illegal squatters, supported by small industrial neighborhoods in their immediate vicinity as an urban form widely in Istanbul since its establishment.

In the 1980s, these settlements transformed into pattern like French-style suburbs, *banlieues* known as similar term “banliyö” in Turkish, which developed along the east-west axis, specifically connecting nearby industrial towns such as Tuzla and Gebze on the Asian side and Küçükçekmece and Büyükçekmece on the European side, accessible by train or the E5 highway. (Coskun, 2021b) In contrast to the French *banlieues* located outside the city periphery, this Turkish model of urban suburbs, “banliyöler” to connect and provide human resources for industrial centers surrounding. Today, Istanbul’s industrial areas decentralized, and residential areas has evolved into the construction of large-scale and mass housing projects developed by both private construction companies and state institutions.

Although the industrial areas in the city are decentralized to the nearby towns, the transportation network continues to develop. The cities, including business, commerce, and industry, have now spread to much broader regions, facilitated by sprawling highway networks (Pickett et al., 2013). This regionalized structure, which focuses on Istanbul and its decentralization, was supported by a well-developed transportation infrastructure including roads, railways, and sea transportation. However, the decentralization of industrial areas, along with associated residential areas and highways, continues to pose a threat to green areas, and forests remaining a problem.

Is the Decentralized Istanbul on the Way Becoming a Global Industrial Center Expanded the Industrial Hinterland

In the 21st century, new planning ideas are emphasizing climate-based concerns and advocating for innovative residential areas that integrate with green spaces and existing ecosystems. This approach has led to the abandonment of traditional housing planning systems and models. Many world cities, such as Tokyo, Sao Paulo, Mexico City, Mumbai, Calcutta, Shanghai, and Beijing, have experienced extensive urban growth and have become mega-cities that pose challenges in terms of orderly planning and strategic regulation (Lehmann, 2011).

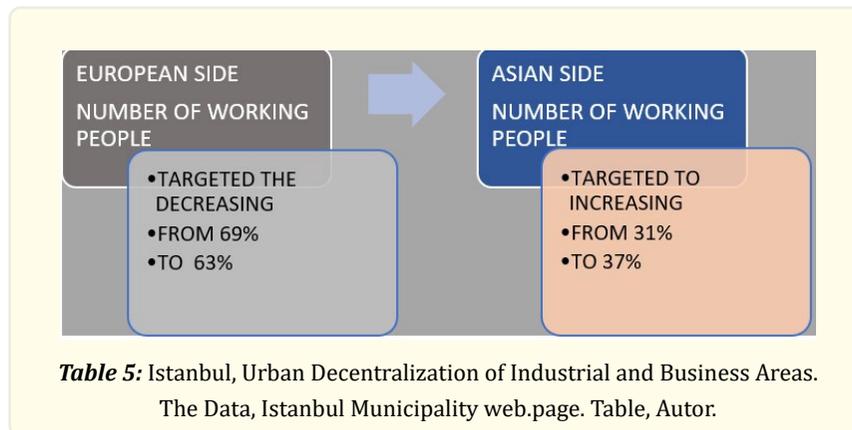
Indeed, like other global cities, Istanbul also aspires to be a leading worldwide industrial and economic center. Since the 1970s, the city of Istanbul experienced rapid industrialization and transformed into a workshop, characterized by a significant working-class population. Hence, over half of Turkey's manufacturing sector was concentrated in Istanbul as a manufacturing center (Keyder, 2008).

However, it faces challenges in the form of increasing international competition from low-cost and labor-intensive emerging economies in countries like China and India. This has put pressure on Istanbul's economy. Unlike typical large metropolitan areas, the city has a more diversified economic basis, with a higher share of services in its sectoral mix, accounting for about two-thirds of its economy, additionally, there is an expansion of advanced services in the central city, contributing to its economic growth and development (Perouse, 2008). However, in the reports of the Istanbul municipality, there are suggestions to reduce these services, or at least to have a more balanced distribution between Asia and Europe between the two sides.

<i>Istanbul City</i>	<i>Today</i>	<i>Expected in Future & Proposal</i>
The City Population	15.000.000	20.000.000
Rate of Total Activity	%35	% 40
Total Number of Working People	6.000.000	10.000.000
industrial	35%	25% (DEC.)
General Service Industry	60%	70%
Agriculture	10%	5%

Table 4: The Decentralization of Industrial Areas the Data from the Municipality and Determined as Estimataly. Table, Autor.

Indeed, despite political efforts to promote decentralization, Istanbul has been impacted by industrialization due to ongoing immigration and rapid development. Over time, the city's immigration profile has shifted from internal migrations from small towns in Anatolia to transnational and diversified multi-national migration. This influx of people has contributed to increased industrialization and unbalancing industrial centers in Istanbul, transforming it into a massive industrial center within its expanding economic hinterland and immediate surroundings.



While large industrial facilities and factories are decentralized towards the outskirts of the city, the industrial needs are met by opening smaller industrial areas, such as OIZ Organized Industrial Zones. The OIZs are scattered in various parts of the city such as; Ikitell, Dudullu, Tuzla, etc. The idea decentralizing industrial zones to nearby towns, new laws were made called “organized industrial zones” proposed to move them out of the city. These ideas articulated plannings created a regionalization around the Marmara Sea (even regionalization-based industry) (Genç, et. al, 2021).

The decentralization of industrial facilities and activities to two in nearby towns and one in Istanbul. (Perouse, 2008). The Istanbul has taken steps establishing industrial and technological developments like logistics and textile through the national agency KOSGEB, (small and medium-sized enterprises) with technological strategies (Perouse, 2008). (Figure 6) According to the Istanbul Municipality Reports the Municipality envisioned the decreasing of number of working people in the Industrial areas. In a way, this is aimed at decentralization and reorganization of industrial areas in the city, as well as a more balanced use in terms of settlement and population (Tables 3-4-5)

The industrialization of Istanbul continued rapidly until the 1990s (Özbay, 2014). Today, the industrial companies with capacity reports in Istanbul, many of them are primarily located in European Side; Başakşehir, Küçükçekmece, and Bayrampaşa, and in the Asian Side; Tuzla. 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 (Table 6).

Despite the long-standing consideration of decentralization idea of industrial areas in Istanbul, there have been contradictory decisions made by the governmental side. While many industrial factories and facilities have been relocated out of the city, the government has also been opening new industrial areas in the Istanbul’s vacant and possibly green-areas. Recently, there have been announcements of new industrial areas in Arnavutköy, and Esentepe districts according to Governmental Reports (Habertürk, 2021), indicating that the issue of industrialization and decentralization in Istanbul remains a complex and ongoing challenge. (Habertürk, 2021) (Table 6).

The 2020s, Sustainability as a Solution to the Mega-cities Problems and Decentralization of the Industrial Areas

In the beginning of the 21st century, urban planning has shifted towards new paradigms, breaking away from the limitations of old explanatory models (Paquot, 2012). The challenges posed by overpopulated mega-cities with uncontrolled housing areas threatening green spaces, forests, and urban ecosystems have necessitated radical changes in planning dynamics and the development of new design parameters in urban planning. The concept of sustainability emerged to achieve the harmony between economic development and environmental protection, while emphasizing the importance of development that meets the needs of both the present and future generations. (Nocca, 2017).

<i>Development Industrial Areas</i>	<i>European Side</i>	<i>Bosphorus Side</i>	<i>Asian (Anatolian) Side</i>
Old Industrial Areas	Haliç Shores old Factories, (Old Naval, Dockland, Textile, Tobacco, Zeytinburnu, Energy, Şişli, Bomonti, (Drink) etc.	Bosphorus, Beykoz (Shoe Mai-king Textile), Paşabahçe, (Glass and Porcelaine) etc.	Anatolian Side, Haydarpaşa Harbour Areas, etc.
From 1950s To Until 2019	Ikitelli OIZ, Merter, YeniBosna, (Textile) Başakşehir, Küçükçekmece, Bayrampaşa, etc.		Tuzla OIZ (Org. Industrial Zones) Dudullu, OIZ, (Ship Making, Iron, Steel, Energy, Leather Manufacturing)
From The 2019- Today	Esentepe, Arnavutköy, (Recently Declared Industrial Areas)		

Table 6: Istanbul, Distribution of Industrial areas by Region; European and Asian Side. The Data, from Istanbul Sanayi Bölgesi, web. Page, Table, Autor.

In the 1980s, the establishment of Metropolitan and Internal Municipalities in 1984 and the Ministry of Environment in 1991 were significant steps in forming the environmental agenda (Pérouse, 2014) in architecture and urbanism, as seen in the 4th International Conference of Contemporary Affairs. These developments have brought attention to the importance of protecting historical and natural regions in the context of urban planning.

The 1996 Istanbul UN Conferences played a crucial role in promoting and spreading the concept of Local Agenda 21, which represents local projections of the principle of global partnership worldwide (Arar, 2021). However, despite the international foundations laid during the Earth Summit in Istanbul, the expected awareness and significant changes in the urban planning agenda of Istanbul did not materialize at that time. Until the 2000s, the city's urban planning agenda primarily focused on addressing issues related to urban sprawl and uncontrolled housing, rather than Climate-change.

Istanbul continues to grow as a mega-city with a population of approximately 15,000,000, according to the World Bank, and migration has been a significant factor contributing to housing problems over the years (Table 2). Although the main development axis of the city was initially determined as the east-west axis along the Marmara Sea coasts at the beginning of the 20th century, the city's growth towards the northern forests was already foreseen, as there was no perceived threat to green and forested areas during that period.

In this context; As a result of the irrepressible urban sprawl of the city, the projects made so far have been insufficient and it has now become necessary to make new housing projects for the city, bordered to; green areas, woods, forests, lakes, water basins, to protect the ecological system or integrate in the future. -In İstanbul some regions should be determined and new housing projects specifically prepared for these regions should be made by protecting them where sustainability and green-design can be applied.

Discussion

In the research, the issue of decentralization of industrial areas, which has been on the agenda for many years, was reconsidered in the context of sustainability.

While the focus of the research is specifically on the city of Istanbul in Turkey as well as the industrialization and industrialization problems, the scope of the subject has been expanded to include the situation in the Marmara Region. Indeed, the research was limited to Istanbul city, concentrated on examining the city of Istanbul on the central axis and revealing a main outcomes specific to Istanbul. In this context, examples from other cities would be also significant in terms of improving the scope of the subject, but they could not be studied sufficiently in order not to over-distribute the scope. In addition, it is thought that the topics revealed in this research contain important suggestions about the precautions to be taken in industrialization in cities around the world and will be useful.

In this context, it has been revealed that this method, as an old and well-known urban planning theory and management, can be used and beneficial within the scope of the sustainability of cities for the future.

Conclusion

However, with the Republican era, the main political determination of the industrialization is that the Istanbul city will no longer being a capital city also no longer bear consequences of this heavy industrialisation. In the Republican era, although the planning of new industrial areas emphasized the distribution of the all state cities, especially according to the characteristics of the raw materials to be supplied from the regions where they are located, on the other hand development of the these areas continued their dominance during the Republican period.

In this study, the issue of how the climate crisis affects policies on industrialization is discussed. In general, the research revealed that urban planning methods such as decentralization are significant applications. Although they do not have a sustainable goal in today's awareness, which is based on a very old method.

The urban planning policies adopted in Istanbul, the idea of moving large industrial facilities out of the city or into nearby towns and replacing them with smaller industrial establishments should be evaluated in the context of supporting sustainability in the long run. In the city, the areas planned by large facilities, the pollution caused by the soil, underground waters, river and sea, etc. In addition to such effects, it causes carbon pollution and a decrease in its quality. It is now a known fact that the effects of all these mean the extinction of nature and people living in nature in the long term.

In Istanbul the issue of climate-change is acknowledged as a crucial aspect in the future planning of the city, highlighting the significance of sustainable practices. However, the recent declaration opening of new industrial areas within the city remains a concern. The real problematic extent to consent of the current climate change efforts and considerations will be prioritized in these newly declared industrial zones, despite the general understanding that decentralizing industrial facilities outside the city is the preferred approach. Ensuring that climate-conscious practices are integrated into the planning and operation of these new industrial areas is essential for long-term sustainability and resilience.

With the decentralization idea Industrial areas outside the city and nearby towns, in the European axis, Çorlu and Tekirdağ, Çerkezköy, in the Asian axis, towns such as Gebze, Kocaeli, and Sakarya in the south, Yalova, Bursa, etc. The requirement of the decentralisation of industrial areas outside the Marmara Region was raised. According to main policy specified the functions of industrial zones should be reduced gradually and completely planned out of the city, which has been realized since the Republican period, became dominant.

While OIZs and small industrial establishments retain their status, those decentralized to nearby cities outside the city have been mostly large facilities. The large industrial facilities and factories are decentralized towards the nearby town, the industrial needs of the city are met by opening smaller industrial areas, such as OIZ Organized Industrial Zones. These OIZs are also scattered in various parts of the city. Ikitell, Dudullu, Tuzla, etc.

According to the recent City Reports prepared by Istanbul Metropolitan Municipality for the City's vision on 2040, decentralization will primarily be shifted to the Asian side at least in the first place by reducing the number of industrialization, which was predominant in the European side today, and then possibly allocated to the outskirts of the city, and nearby towns in the Marmara region.

The state has recently announced its political approach in this context by declaring the city to be allocated to empty and green areas on the European side of the city in the future, and by stating two new industrial zones. In this research, also for industrialization, some conflicts arise between the policies of Istanbul Municipality and the State, which have adopted a more sustainable urban planning approach.

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