Ruşen Keleş
ve
Kentbilim

Cilt 13 • Sayı 37 • Yıl 2022

ADAMOR
TOPLUM ARAŞTIRMALARI MERKEZİ
KENT ARAŞTIRMALARI ENSTİTÜSÜ
INSTITUTE OF URBAN STUDIES

Journal of Urban Studies
Cilt *Volume* **13 ● Sayı** *Issue* **37 ● Yıl** *Year* **2022 (3)**
ISSN: 1307-9905 E-ISSN: 2602-2133
ADAMOR Araştırma Danışmanlık Medya Ltd. Şti. adına
Sahibi *Owner*
Yusuf Sunar

Yazı İşleri Müdürü *General Director*
Pınar Çobanyılmaz Öztürk

Editörler ***Editors****
Zafer Çelik ● Pınar Çobanyılmaz Öztürk ● Duygu Hazal Bezazoğlu ● Şerife Geniş
Emir Osmanoğlu

Sayı Editörleri: Ayşegül Mengi, Can Giray Özgül

Yardımcı Editörler: Onur Özkan - Batuhan Özmen – Uğur Kılınç – Şafak Bilen
Dil Editörleri: N. Hicret Battaoğlu - Elif Helvacı

Kurucu Editörler ***Founder Editors****
Mustafa Altunoğlu ● Zafer Çelik ● Orçun İmga ● Emir Osmanoğlu

Hakem ve Danışma Kurulu ***Advisory Board****
Leyla Alkan (Gazi Üniversitesi), Alim Arlı (Yıldız Teknik Üniversitesi), Hatice Ayataç (İstanbul Teknik Üniversitesi), Ahmet Kemal Bayram (Marmara Üniversitesi), , Zeynep Yılmaz Bayram (KTÜ), Hasan Bozgeyikli (Selçuk Üniversitesi), L. Funda Şenol Cantek, Tayfun Çınar (Ankara Üniversitesi), Didem Danış (Galatasaray Üniversitesi), Neslihan Demirtaş-Milz (İzmir Ekonomi Üniversitesi), Şebnem Gökçen (DEÜ), Şebnem Önal Hoşkara (Doğu Akdeniz Üniversitesi), H. İbrahim Düzenli (Samsun Üniversitesi), Tahire Erman (Bilkent İD Üniversitesi), Michael Goldman (Minnesota Üniversitesi), Kemal Görmez (Ankara HBVÜ), Fuat Güllüpınar (Anadolu Üniversitesi), Berin Gür (TED Üniversitesi), Murat Güvenç (Kadir Has Üniversitesi), Nilgül Karadeniz (Ankara Üniversitesi), Şükrü Karatepe (TCCB), Filiz Kartal (Ankara Üniversitesi), Ayşe Çolpan Kavuncu, (AYBÜ), Serap Kayasü (ODTÜ), Ruşen Keleş (Ankara Üniversitesi), Emine Köseoğlu (FSMVÜ), Tuna Kuyucu (Boğaziçi Üniversitesi), Faranak Miraftap (İllinois Üniversitesi), Göktuğ Morçöl (Pennsylvania State University), Hakan Olgun (Bilecik ŞEÜ), Ebru V. Öcalır (Gazi Üniversitesi), Tuncay Önder (Ankara HBVÜ), Burcu Özdemir Sarı (Ortadoğu Teknik Üniversitesi), Metin Sözen (Çekül Vakfı), Yusuf Şahin (Aksaray Üniversitesi), Tarık Şengül (ODTÜ), Yıldırım Şentürk (MSGSÜ), Uğur Tanyeli (İstinye Üniversitesi), Coşkun Taştan (PA), İlhan Tekeli (ODTÜ), Korkut Tuna (İstanbul Ticaret Üniversitesi), Mehmet Tunçer (Çankaya Üniversitesi), Aysu Uğurlar (YYÜ), Sutay Yavuz (ASBÜ), H. Sevgi Zengin (Niğde Üniversitesi)
*Soyadına göre alfabetik sırada *In alphabetical order*

Yayın Türü: Üç Aylık, Yaygın Süreli Yayın **Yayın Dili:** Türkçe-İngilizce

Kapak Tasarım: Büşra Özkan
Kapak Görseli: Büşra Özkan tarafından hazırlanmıştır.

Baskı/Yayın Tarihi: Eylül/*September* 2022,

Yönetim Adresi (İletişim ***Correspondence)***
Nasuh Akar Mahallesi, Prof. Dr. Osman Turan Sokak, No: 4/2, Çankaya/ANKARA
Tel: 0312 285 53 59 / Faks: 0312 285 53 99 Gsm: 0543 285 53 59
Web: www.idealkentdergisi.com **E-posta:** idealkent@gmail.com / bilgi@idealkentdergisi.com

ideal**kent** (Kent Araştırmaları Dergisi) TUBİTAK **ULAKBİM TR Dizin** ve **EBSCO** tarafından indekslenmektedir. ideal**kent**, yılda üç sayı yayımlanan ulusal hakemli bir dergidir. Yayımlanan yazıların sorumluluğu yazarına aittir. © Yayımlanan yazıların telif hakları ideal**kent'e** aittir, yayımcının izni alınmadan yazıların tümü, bir kısmı ya da bölümleri çoğaltılamaz, basılamaz, yayımlanamaz.

idealkent
kent araştırmaları dergisi • Journal of Urban Studies

Ruşen Keleş ve Kentbilim
Rusen Keles and Urbanology
Sayı *Issue* 37, **Cilt** *Volume* 13, **Yıl** *Year* **2022**

RUŞEN KELEŞ VE KENTBİLİM

İçindekiler/*Contents*

931-932 ***Takdim*** / *Editorial*
Ayşegül Mengi, Can Giray Özgül

Bibliyografya / *Bibliography*
933-979 Prof. Dr. Ruşen Keleş Bibliyografyası

Söyleşiler/ *Interviews*
980-991 **Prof. Dr. Ruşen Keleş İle Kent Üzerine**
Emir Osmanoğlu – Prof. Dr. Ayşegül Mengi

992-1024 **Dostları ile Ruşen Keleş Üzerine Söyleşiler**
Yılmaz Büyükerşen
Can Hamamcı
Haluk İmga
Kaoru Murakami
Tayfun Çınar
Nesrin Algan
Orçun İmga
Nazmi Alacadağlı
Hüseyin Aksoy
Erol Köktürk
Mehmet Tunçer
Öner Demirel
A. Menaf Turan

Yorum / *Commentaries*
1026-1039 **Saygı Odaklı Bir Bilim İnsanına Armağan - Prof. Dr. Ruşen Keleş'in Yaşamı, Bilimsel Portresi üzerine Bir İnceleme**
Mehmet Keskin

1040-1044 **Başka Bir Aşk İstemez**
Adnan Binyazar

1504-1534 **Ukrayna Krizi ve Ekokırım: Çevresel Bozulmaların Güvenlikleştirilmesinde Son Adım**
Ukraine Crisis and Ecocide: Latest Step in Securitization of Environmental Degradation
Ceren Gürseler

1535-1565 **İklim Krizini Hak Temelli Yaklaşım Özelinde Değerlendirme**
Evaluation of the Human Rights Based Approach to Climate Crisis
Ezgi Kovancı

1566-1588 **Çevre Söylemi Açısından Uygunsuz Gerçek ve Darwin'in Kâbusu Filmleri: Karşılaştırmalı Bir Analiz**
Inconvenient Truth and Darwin's Nightmare Movies for Environmental Discourse: A Comparative Analysis
Murat Kayıkcı

1589-1613 **Türkiye'de Çevre Yönetiminin Merkeziyetçi ve Kalkınmacı Sürekliliği**
The Centralist And Developmentalist Continuity of Turkish Environmental Management
Hikmet Kuran

1614-1639 **İklim Değişikliği Önlemleri Bağlamında Dünya Ticaret Örgütü Kural ve Uygulamalarına Genel Bir Bakış**
An Overview of the World Trade Organisation Rules and Practices in the Context of Climate Change Measures
Ferhunde Hayırsever Topçu

1640-1666 **İklim Dirençli Kalkınma Bağlamında Kentleşme Politikaları**
Urbanization Policies in the Context of Climate Resilient Development
Çiğdem Tuğaç

1667-1690 **Taşkın Risk Alanlarının Analitik Hiyerarşi Süreci Kullanılarak Mikro-Havza Ölçeğinde Değerlendirilmesi**
Evaluation of Flood Risk Areas at Micro-Catchment Scale Using Analytical Hierarchy Process
Huriye Simten Sütünç, Veysel Süleyman Yavuz

1691-1711 **İstanbul Büyükşehir Belediyesi Örneği Üzerinde Kırılgan Grupların İklim Değişikliği ile Mücadelesi**
The Struggle of Vulnerable Groups with Climate Change on the Example of Istanbul Metropolitan Municipality
Asmin Kavas Bilgiç

Planlama ve Mekân Tartışmaları

1712-1734 **Kent İmarı ve Planlaması Üzerine Etik Düşünceler**
Ethical Considerations on Urban Development and Planning
Selim Kılıç

1735-1752 **Atatürk, Stratejik Planlama ve Kentbilim**
Atatürk, Strategic Planning and Urban Science
Seçil Gül Meydan Yıldız

idealkent ©
ISSN: 1307-9905 E-ISSN: 2602-2133
Sayı *Issue* 37, Cilt *Volume* 13, Yıl *Year* 2022-3, 1691-1711, **DOI:**10.31198/idealkent.1120046

The Struggle of Vulnerable Groups with Climate Change on the Example of Istanbul Metropolitan Municipality

*

Asmin Kavas Bilgiç[1]
ORCID: 0000-0001-8319-7950

Abstract

Whilst occupying only 2 percent of the world's surface area. Cities are home to more than 55 percent of the world's population as of 2018, which is estimated to reach about 68 percent by 2050 Ostensibly, cities are not just geographical places and infrastructures as such; they need to be taken into account with their inhabitants. Rapid urbanization has changed the demography of the cities and deepened their vulnerability by creating various socio-economic status groups. It is accepted that it is more vulnerable to climate change. Urban and socially vulnerable groups are most affected by this vulnerability. In the literature, these groups are defined as children, women, youth, elderly, disabled and immigrants. Especially when evaluated in terms of developing countries like our country; vulnerable groups such as women, the disabled, immigrants, minorities, children, the elderly and young people are more vulnerable and vulnerable to climate change. The main question of this study is to what extent vulnerable groups are included in the policy documents prepared at the local level within the scope of combating climate change. The main answer to this question will be tried to be given through the policy documents produced by the Istanbul Metropolitan Municipality in the field of climate change.

Keywords: *Climate change, vulnerable groups, policy paper, local governments.*

[1] Assoc. Prof., Eskişehir Osmangazi University, E-mail: asminkavas@gmail.com

Geliş Tarihi *Received Date:* 23.05.2022 Kabul Tarihi *Accepted Date*: 27.10.2022

idealkent ©
ISSN: 1307-9905 E-ISSN: 2602-2133
Sayı *Issue* 37, Cilt *Volume* 13, Yıl *Year* 2022-3, 1691-1711, **DOI:** 10.31198/idealkent.1120046

İstanbul Büyükşehir Belediyesi Örneği Üzerinde Kırılgan Grupların İklim Değişikliği ile Mücadelesi

*

Asmin Kavas Bilgiç[2]
ORCID: 0000-0001-8319-7950

Öz

Şehirler, dünya yüzölçümünün yalnızca yüzde 2'sini oluştururken; 2018 itibariyle dünya nüfusunun yüzde 55'inden fazlasına ev sahipliği yapmakta ve bu oranın 2050 yılına kadar yaklaşık yüzde 68'e ulaşacağı tahmin edilmektedir. Hızlı kentleşme, kentlerin demografisini değiştirmiş ve çeşitli sosyo-ekonomik statü grupları yaratarak kentlerin kırılganlıklarını derinleştirmiştir. İklim değişikliği karşısında kırılganlığının daha fazla olduğu kabul edilmektedir. Bu kırılganlıktan en çok kentlerde yaşayan ve sosyal olarak savunmasız gruplar etkilenmektedir. Literatürde bu gruplar çocuklar, kadınlar, gençler, yaşlılar, engeliler ve göçmenler olarak belirlenmiştir. Özellikle ülkemiz gibi gelişmekte olan ülkelerde kadınlar, engelliler, göçmenler, azınlıklar, çocuklar, yaşlılar ve gençler gibi kırılgan gruplar iklim değişikliğine karşı daha hassas olmaktadırlar Yerel düzeyde hazırlanan politika belgelerinde iklim değişikliği ile mücadele kapsamında kırılgan gruplara ne ölçüde yer verildiği, bu çalışmanın temel sorusudur. Bu soruya temel yanıt İstanbul Büyükşehir Belediyesi'nin iklim değişikliği alanında ürettiği politika belgeleri üzerinden verilmeye çalışılacaktır.

Anahtar Kelimeler: *İklim değişikliği, kırılgan gruplar, politika belgesi, yerel yönetimler.*

[2] Doç. Dr., Eskişehir Osmangazi Üniversitesi, E-mail: asminkavas@gmail.com

Geliş Tarihi *Received Date:* 23.05.2022 Kabul Tarihi *Accepted Date*: 27.10.2022

Introduction

Whilst occupying only 2 percent of the world's surface area (World Bank, 2021), cities are home to more than 55 percent of the world's population as of 2018, which is estimated to reach about 68 percent by 2050 (United Nations, Department of Economic and Social Affairs, Population Division, 2019). Ostensibly, cities are not just geographical places and infrastructures as such; they need to be taken into account with their inhabitants. Rapid urbanization has changed the demography of the cities and deepened their vulnerability by creating various socio-economic status groups. The migration crisis, ignited by the Syrian civil war and deteriorated by the Ukraine-Russia War, has exacerbated already available vulnerabilities in the cities around the globe, specifically in Turkey (and Europe).

The global climate crisis coupled with urbanization exerts human-environment interactions which cannot be set apart from city governance. In the sixth assessment report, the Intergovernmental Panel on Climate Change (IPCC, 2021) states that human-induced climate change has already caused a wide variety of extreme weather events on a global scale, and changes have been observed in all climate systems of the planet. The report also emphasizes that the 2050 net-zero emission target became critical to keep the average temperature increase at the level of 1.50C as targeted in the Paris Agreement. In other words, countries only have three years to reach the highest level of greenhouse gas emissions, and then they have no other option but to reach net-zero by 2050 (IPCC, 2022).

With this level of population density and diverse population, cities turn out to be the consumption centers. Around 78 percent of energy (UN HABITAT, 2018) and 75 percent of natural resources (United Nations Environment Programme, 2017) are consumed in the urban areas while contributing to more than 70 percent of greenhouse gas emissions (Tomlinson, 2021). Amidst population density, consumption of energy and natural resources, and generation of greenhouse gas emissions in urban areas, sustainable urbanization became critical in not only combating and adapting to climate crisis but also delivering Sustainable Development Goals (SGDs).

The relationship between cities and climate change is clearly reciprocal due to the more special interactions between urban areas and the climate system. For instance, the issues, such as the heat island effect , which is fairly unique to cities, clearly increase human-induced warming locally and more frequency of hot extremes as well as the severity of heatwaves (IPCC, 2021, TS. 99). Yet, the

scale of the impacts of climate change on urban areas related to human health, livelihoods, and basic infrastructure is relatively more catastrophic (IPCC, 2022, p. 11) and not equally distributed within a city as well as among cities due to specific local characteristics of cities such as climatic conditions, socio-spatial distributions of people, and urban expansion (Krellenberg & Turhan, 2017). Therefore, it is no surprise cities have become prominent on the climate agenda; as well as, local governments and "city diplomacy" gained more importance in tackling climate crisis-related vulnerabilities and employing adaptive responses.

Although the global climate crisis will severely affect Turkey, located in the Mediterranean region, the greenhouse gas emissions in Turkey have still been rising (Turkstat, 2022), demonstrating Turkey's inaction on this pressing issue. On the other hand, the European Union (2019), as a leading country in climate action, launched The European Green Deal, outlining the new strategic framework on how to make Europe the first climate-neutral continent by 2050 with the motto of "leaving no one behind," while creating a sustainable economy in the EU alongside caring for the environment and improving citizens' quality of life and health (the European Commission, 2019). As a response to the European Green Deal, Turkey adopted The Green Deal Action Plan (Official Gazette, 2021a) to alleviate the concerns of the business community over the Carbon Border Adjustment Mechanism (European Council, 2022) proposed in the "Fit for 55" package of the EU (European Council, 2021), basically putting a carbon tariff in specified sectors, such as cement, aluminum, and iron and steel (Elgendy & Tastan, 2022). Subsequently, after a long dragging, Turkey ratified the Paris Agreement in October 2021 (Official Gazette, 2021b) and set 2053 as a net-zero year. Simultaneously, the name of the Ministry of Environment and Urbanization was renamed as the Ministry of Environment, Urbanization and Climate Change. Following these recent developments, this newly named Ministry took charge and started preparing to revise the Intended Nationally Determined Contributions (INDC) (UNDP, 2021). At the same time, they organized the first Climate Council of Turkey in February 2022 to determine medium and long-term strategic targets and draft relevant recommendations by gathering the opinions and suggestions of the various stakeholders from academia, public and private sector, and not for profit organizations (The Ministry of Environment, Urbanization, and Climate Change, 2022). All these efforts may indicate that climate policy governance in Turkey has drastically started to bring institutional-level changes, the requirement for climate policy units to reach international climate finance opportunities.

However, similar and necessary changes in city diplomacy are still lacking in Turkey as populist authoritarian governments have pushed for further centralization in city governance so far. Apart from the climate crisis, cities in Turkey are up to face new challenges, rising populist authoritarianism, which is also another recent global trend. Cities, such as Istanbul, especially governed by opposition parties, struggle to access the required resources for an effective governance structure. To overcome this limitation, they have to seek new channels of cooperation other than the nation-state. Therefore, scrutinizing the current situation in Istanbul in the intertwined area of climate change and vulnerability within the context of local governance structure is very timely for exploring new possible cooperation with European counterparts, who effectively run climate policy in cities.

The main question of this study, which was developed with the content analysis method, is to what extent vulnerable groups are included in the policy documents prepared at the local level within the scope of combating climate change. The main answer to this question will be tried to be given through the policy documents produced by the Istanbul Metropolitan Municipality in the field of climate change. In this context, the main purpose of the study is to examine whether local governments have developed policies for vulnerable groups in the fight against climate change through the example of Istanbul Metropolitan Municipality.

In the present study, following this brief introduction, the second part will lay out Turkey's perspective on urban management regarding the centralization discussion. The following part, the third part of the study, will explicate the climate vision of Istanbul Metropolitan Municipality (IMM) specifically for vulnerable groups. Finally, the conclusion part will summarize the findings and limitations by delineating the entanglement of climate change and vulnerable groups.

Turkey's Perspective on Urban Management and the Process of Combating Climate Change in Light of Centralization and Decentralization Discussions

The Republic of Turkey "is a unitary state, which means that" Turkey does not have administrative zones where different laws apply. Turkey's organizational structure is divided into central (capital and provincial organization) and local governments. In central administration, the decisions and activities regarding the main services are carried out "by the central government and the organizations within its hierarchical structure in order to ensure unity and integrity in

public services" (İzci & Turan, 2012) In Turkey, the central administration has capital and provincial organizations. While the capital organization comprises the presidency and ministries, provincial organizations cover the governorate and provincial directorates, such as the provincial directorate of national education and the provincial directorate of health. Apart from the central administration, local governments are formed to meet the demands of the local population so that the public elects the decision-making bodies of local governments.

Three main local government units are municipalities, special provincial administrations, and villages, which are administratively and financially autonomous.

"The general characteristic of the framework within which Turkish local government units were established and expected to function has been centralization, with the central government exercising its power and authority over their functioning". "The formation, duties, and powers of the local administrations shall be regulated by law in accordance with the principle of decentralization". Three main local government units are municipalities, special provincial local government and villages, which are administratively and financially autonomous. provincial local government" (Polatoğlu, 2000):

"Provincial Local Government: The Turkish province has a dual status; on the one hand, it is a field unit of the central government and central agencies have their field organizations established on the basis of provincial division; on the other, it serves as a local government unit. The organs of the provincial local government are the Provincial General Assembly, the Provincial Standing Committee, and the Governor.

- **Municipalities:** Municipalities are local government units providing local services in communities of more than 5,000 inhabitants. Every sub-province, regardless of its population, is also considered eligible for the establishment of a municipality. A Municipal Council, a Municipal Standing Committee, and a Mayor are the organs of a municipality.
- **Metropolitan Municipalities:** The Metropolitan Municipality is organized just like any other municipality, but presides over a larger region covering municipalities in a metropolitan area and Metropolitan Mayor, Metropolitan Municipal Council and Metropolitan Standing Committee are the decision making and controlling bodies of this administration. The metropolitan mayor is directly elected by the inhabitants of the metropolis. The constituent municipalities within the boundaries of the metropolitan municipality are represented in the metropolitan municipal council by their respective mayors and proportional representatives from the constituent municipal councils.

- **Village Administration:** Village administration is the smallest and the most traditional local government unit among the above mentioned types. It is established according to the Village Administration Law, and its duties and revenues are explicitly cited in this law. The Organs of village administration are the Village Assembly, the Council of Village Elders, and Mukhtar (or Headman)".

As mentioned above, the local government in Turkey is also highly centralist. However, important legal regulations for the localization of services were enacted with post-2002 reforms. Many segments of the society accepted the fact that the local government laws of 2004 and 2005 paved the way for increased localization. Yet, these localization efforts started to decrease in 2008. The studies also show that centralization has increased in Turkey, especially in the last 20 years. Recently, World Bank prepared a localization index which includes 163 countries allowing for localization level comparisons between countries. This index reveals how autonomous the local governments of the countries are with due consideration of their administrative and financial situations and aims to tackle the question of whether the central government influences the decisions of local governments in unitary and/or federal states. According to this index, Turkey ranks 98th among 163 countries, as displayed in Figure-1 below.

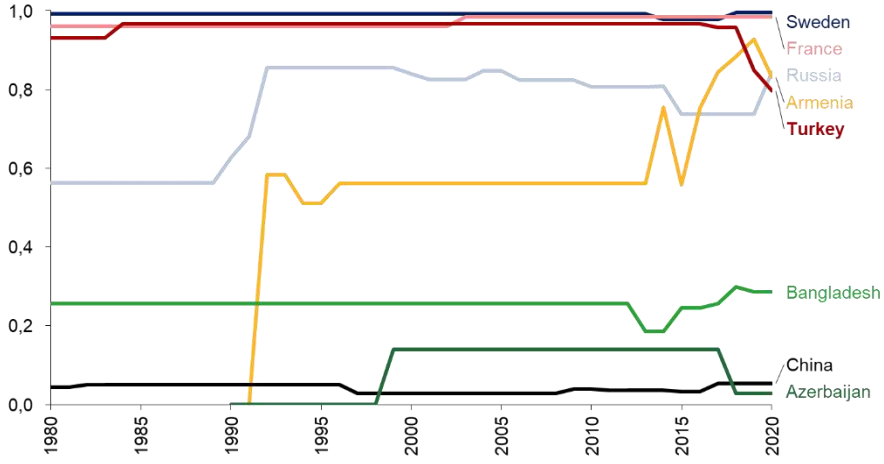


Figure-1. Local Government Index by Countries-2020 (The World Bank, "The Local Government Index ", 2020)

The World Bank Local Government Index indicates whether the local government is elected and empowered in relation to the central government, while another indicator assesses the freedom and fairness of subnational elections. This index also measures the effect of central government on the decision-making processes of local governments. According to the index, a decline in the level of localization is observed in Turkey as of 2008. One of the most important reasons for this new approach to centralization, which emphasizes the political dimension of centralization rather than its administrative features, is economic developments, particularly during crises. Especially after the economic crises, political powers take important and inclusive measures in many fields, especially in the economy. For example, the 2008 Crisis, regarded as a global crisis, caused a slowdown in growth, a decline in the balance of foreign trade and payments, and a decrease in the savings volume in Turkey (Evans, 2011). Even in 2011, three years after the crisis, the government of Turkey was still implementing highly intensive intervention measures to overcome these problems by interfering in the decision-making processes of local governments.

In 2011, quite different steps were taken from the reform moves toward centralization. Another practice implemented during this period was the acceleration of urban transformation projects in order to eliminate the economic downturn (Karagöl, 2013, p. 19). Through these steps taken to accelerate capital inflow, authorities aimed at giving impetus to the economy. For example, urban transformation practices, which are one of the important tools of the economy, were among the main duties of local governments. However, with regulation, this authority was given to the Housing Development Administration of the Republic of Turkey (TOKİ) and the Ministry of Environment and Urbanization. This arrangement shows that the central government is getting stronger and centralization tendencies are increasing. Previously, with Law no. 3194 of 1985, an important step was taken towards decentralization in the field of zoning and the city-scale planning powers of the central government were transferred to local governments. However, although the local government laws enacted in the early 2000s maintain this understanding, the process has been seriously interrupted by the authority given to TOKİ over time. With the Statutory Decrees (KHK) issued in 2011, centralization reached its peak and the Ministry of Environment and Urbanization (The Ministry) was granted more authority on planning. With this regulation, all upper-scale plans, special project areas, and structures requiring special construction, even if their ownership belongs to private individuals, were re-functioned or the planning authority for these areas to be invested were transferred to the Ministry; thus, further limiting the authority of local governments.

In other words, the Ministry became the sole power center for urban transformation and major projects that represented the centralization of planning and zoning.

Another example of steps taken toward centralization is the Bütünşehir Law No. 6360, enacted in 2012. While objectives such as making use of economies of scale, preventing resource waste by ensuring more efficient use of resources and creating strong local government structures were cited, economic reasoning was more visible in the justification of the enactment of this law (Çelik, 2013). However, as can be seen in the implementation of this regulation, economic reasons were followed by political reasons. Put into practice after the 2014 local elections, this regulation expanded the boundaries of metropolitan municipalities to provincial administrative boundaries, and locally centralized structures were revealed under the chairmanship of an elected person. Within the scope of the law, the number of metropolitan municipalities in Turkey increased from 16 to 30. In addition, almost 78 percent of the population in Turkey was considered to be living within the boundaries of metropolitan municipalities (İzci & Turan, 2012).

In short, with Law No. 6360, special provincial administrations, which are local government units, were abolished in cities with metropolitan municipalities. The other local government units, town municipalities and villages were closed down and turned into neighborhoods. An important part of the duties and powers of special provincial administrations were shared between the provincial units of the central government. Hence, the powers given to special provincial administration, a local government unit, were centralized (İzci & Turan, 2012). Moreover, it has been expected that removing the legal entities of the villages and connecting them to the metropolitan municipalities as neighborhoods would not only cause people living in these areas to settle in cities and district centers in the coming years, but also would lead to provincial lands be evaluated as urban areas. With this regulation, 36 percent of special provincial administrations, 53 percent of municipalities and 47 percent of villages throughout Turkey were abolished. At this point, the closure of town municipalities and their connection to metropolitan district municipalities, the termination of local government unions previously formed under local government units, and the establishment of the Departments of Investment Monitoring and Coordination under the governor in provinces where metropolitan municipalities are established has been the political aspect of centralization. This unit (Departments of Investment Monitoring and Coordination), in relation to the works carried out by the central administration in the provinces; was established within the body of governorships in 30 provinces to increase the effectiveness and efficiency of services, to ensure the

proper use of resources, to prevent disruptions in service, to fill the gap in the field of supervision, to guide, and to carry out disaster and emergency services. The main reason this unit is considered as an important step toward centralization is that the presidency had some duties of the special provincial administration (a local government unit), and that a significant part of these duties was taken from the provincial council (an elected body), and it has a personnel structure appointed by the central government. Another regulation, which increased centralization within the scope of Law No. 6360, was the establishment of the Infrastructure Coordination Center and Transportation Coordination Center under the chairmanship of metropolitan mayors with the participation of the representatives of the central administration in the provincial organization and the district mayors. This structuring, in which the representatives of the central administration are also included in local governments, shows that the central authority exerts influence on the provision of local services such as infrastructure and transportation. The Ministry of Environment, Urbanization and Climate Change and the Ministry of Interior determine these units' working principles and procedures and the board representatives from public institutions and organizations. In addition, with the law, the share of municipalities excluding metropolitan municipalities from the general budget was reduced from 2.85 percent to 1.5 percent, and the share of 1.15 percent given to special provincial administrations was reduced to 0.5 percent. Law No. 6360 also poses an important problem regarding representation (Görmez, 2012).

In an environment where thousands of local government units have been abolished, we are faced with a metropolitan municipality structure in which the only elected person is the president who is equipped with numerous duties, both regarding services and coordination. This environment has created a situation where large political parties are in a more advantageous position. Moreover, relatively small political parties have suffered significant losses at the local level. Following the issuance of the law, some ministers left their ministry seats in order to become mayors of metropolitan municipalities in the 2014 local elections, and it is seen that Law No. 6360 created a political centralization on representation (Turan & Duru, 2014).

Another step towards centralization was realized with another important regulation issued in 2016. According to this regulation, if the mayorship, the elected decision-making body, becomes vacant for any reason and the election of a new mayor or deputy mayor cannot be carried out, the mayor is appointed by the Minister of Interior in metropolitan and provincial municipalities and by the governor in other municipalities until the election cycle comes about. This situation

is known as the appointment of a trustee to the mayorship by the central administration.

The Presidential Government System, which entered into force in 2018 with all its provisions, is another step toward the increasing tendency of centralization. While the Presidential Government System includes executive-oriented changes due to its structure; local governments have entered the system induced process of change and area of influence. The Presidential Government System has brought about changes in the structure of public administration. Within the framework of the aforementioned changes, 9 policy boards affiliated with the Presidency were established in order to increase the function of the executive body and to produce policies (Övgün, 2016). For instance, the Local Government Policies Board is one of these policy boards. The main task of this board is to conduct studies on local government, urbanization, migration, resettlement, smart urban planning, public investments, and environmental management and to develop policies and strategies. In other words, the primary responsibilities of a local unit are handed over to a centralized board.

As a result, the aforementioned regulation changes resulted in an increased centralization while disguising themselves under the coverage of economic reasons. It would not be wrong to say that the tendency of centralization has increased due to economic and political reasons, especially in the public administration reforms that started in 2008 and concretized in 2011.

In recent years combating climate change has also been on the agenda of centralization and localization discussions. Mitigating and adapting to climate change need to be addressed on a global, national and local scale. Global climate policies have been formed via negotiation between current policies and the international climate regime as well as the emerging policies. In countries such as Germany, Sweden and Norway, the process of combating climate change is carried out by local governments. In developing countries like Turkey, where the local government tradition is centrally organized, the impact of local governments on combating climate change is limited as it is predominantly under the control of the central government. In this regard, the Ministry of Environment, Urbanization is renamed as the Ministry of Environment, Urbanization and Climate Change in 2021, and became the main institution in the fight against climate change in Turkey. Policy documents issued in this field within the Ministry are accepted as the primary documents at the national, regional, and local levels. However, mitigating and adapting to climate change requires harmonization, coordination, and cooperation on a local, regional, national, and international scale. While the area of responsibility of country policies is the country border, the areas

of responsibility of local governments are municipal borders. The responsibilities of local governments within the framework of governments' climate change policies are seen indirectly in local government laws. Again, according to the regulation, local governments have various powers and duties to set targets in the relevant sectors (waste, building, energy, etc.) to combat climate change, to take necessary legal arrangements in local bodies, to create various implementation tools and to carry out applications themselves. In other words, municipalities can fight against climate change with their duties and powers within the framework of the current local government legislation and can obtain various opportunities in this area.

İstanbul Climate Vision and Revised Climate Action Plan, Goals and Fields of Activity for Vulnerable Groups in Tackling Climate Change

This part of the work is composed of 2 phases. The first phase of the study includes international partnerships and commitments made by the Istanbul Metropolitan Municipality (IMM) in combating climate change. The second phase of the study includes the examination of the analyses conducted and plans designed by the IMM within the scope of climate change mitigation and adaptation on a local level. All relevant research was conducted with due consideration of vulnerable groups who are and will be most affected by climate change.

International Partnerships and Commitments of Istanbul Metropolitan Municipality in the Fight Against Climate Change

IMM is a member of numerous global institutions and organizations related to climate change and sustainable cities. One of these memberships is to C40 Cities Climate Leadership Group, which was formed in 2005 with the proposal of the Office of the Mayor Greater London Authority. IMM became a member of this group in 2006. C40 defines its core mission is to "halve the emissions of its member cities within a decade, while improving equity, building resilience, and creating the conditions for everyone, everywhere to thrive. Mayors of C40 cities are on the leading edge of climate action, and are deploying a science-based and collaborative approach to help the world limit global heating to 1.5°C and build healthy, equitable and resilient communities." (C40 Cities, 2022).

Case studies provided to the C40 network reveal the concrete actions undertaken by the local government. For instance, the case study named "Cities100: Istanbul - Circular Design Approach for Processing Waste" explicates Istanbul producing electricity and compost from various waste streams, then diverting

the by-product of the facility, excess heat, to greenhouses for boosting productivity (C40 Cities, 2017). Four more case studies implemented in 2016 and 2017 are available on the website of the C40 that may ascertain other actions on the local level concerning climate change.

Besides, Global Green New Deal (The Deal) was prepared in 2019 (C40 Cities, 2022) by C40 member municipalities and updated in 2019. The Deal is a plan based on climate justice for all. The core missions of this plan for member municipalities are:

- Preparing their local climate action plan until 2030,
- Determining the critical areas of activity to halve the total emission rate in the city until 2030,
- Adopting a carbon-neutral policy in their cities until 2050,
- Using the necessary financial, regulatory, and other tools to solve the climate crisis for all segments of society, especially vulnerable groups,
- Establishing incentive mechanisms to support the Paris Agreement.

IMM signed 'Deadline 2020 Undertaking' in 2019 within the framework of these objectives. Through these undertakings, IMM agreed on making Istanbul significantly resilient to climate change for vulnerable groups and all parts of the society (C40 Cities, 2020).

United Cities and Local Governments, Middle East and West Asia Section (UCLG-MEWA) is another international organization that the IMM is a member of. This organization is an important network that works to establish cooperation among local governments and localize the global agenda. Besides being a member, IMM also plays an essential role in the Environment Committee of the UCLG-MEWA at the same time. IMM served as the chairman of the UCLG-MEWA Environment Committee between November 2015 and June 2019 (İstanbul Metropolitan Municipality. Department of Environmental Protection & Development, 2022).

UCLG-MEWA Environment Committee took important steps in combatting climate change. Within this scope second meeting of the Environment Committee convened in Istanbul under the chairmanship and hosting of IMM in 2016. Following this meeting, the Istanbul Declaration of the Malatya Consensus (UCLG-MEWA, 2016) which is of great importance in strengthening the fight against climate change by local governments, was published. The following objectives were accepted in the Declaration:

- Securing climate justice for whole society and notably vulnerable groups within the scope of combatting climate change

- Enhancing urban agriculture activities
- Protecting biodiversity
- Ensuring waste-management
- Pollution prevention
- Utilizing renewable energy resources
- Creation of transportation facilities that do not pollute the environment
- Increasing green spaces in cities
- Enhancing R&D in combatting climate change

In line with these agreed objectives, commitments were also made voluntarily by member municipalities, including the IMM, on behalf of what needs to be done at the local level (İstanbul Büyükşehir Belediyesi Çevre Koruma Müdürlüğü, 2022).

In line with these agreed objectives, commitments were also made voluntarily by member municipalities, including the IMM, on behalf of what needs to be done at the local level (İstanbul Metropolitan Municipality, Department of Environmental Protection & Development, 2022).

Another international organization that Istanbul Metropolitan Municipality became a member of is the Full name is "Global Covenant of Mayors for Climate & Energy" (GCoM). Certain vital objectives have been set within the scope of this agreement (Global Covenant of Mayors for Climate and Energy, 2022):

- Decreasing greenhouse gas emissions at the local level
- Creating climate change resilient cities for the whole society and notably for vulnerable groups.
- Developing a greenhouse gas emission inventory
- Preparing climate change action plan

This organization comprises a global coalition of mayors and city officials who have voluntarily committed to following relevant developments transparently. This organization is also the most significant global alliance for city climate leadership built on the undertakings of more than 11,500 cities and local governments. By signing the Global Covenant of Mayors for Climate and Energy voluntarily in 2015, IMM undertook steps to diminish its own greenhouse emissions, building a climate change resilient city for all parts of society, and preparing a greenhouse emission inventory and a climate change action plan (Global Covenant of Mayors for Climate and Energy, 2022).

These are global collaborations and organizations that İstanbul Metropolitan Municipality is a member of. The main goal of these organizations and undertakings of the municipalities is securing climate justice for all parts of the society, most notably for vulnerable groups. The following part of the study focuses on the degree to which the IMM achieved the goals specified in its plan, programme, and action areas at the local level.

Local plans and programs implemented by Istanbul Metropolitan Municipality within the scope of combating climate change

As part of the global collaborations and undertakings within the scope of combatting climate change, IMM is also carrying out studies/researches. This part of the study has been carried out using desk research. Accordingly, core findings of 4 main fields of activity are given. IMM has carried out these fields of activities as part of its pursuit of tackling climate change on a local scale. These fields of activities are; (1) Istanbul Climate Change Action Plan (2018), (2) Istanbul Climate Change Action Plan (2021), (3) Istanbul Metropolitan Municipality Strategic Plan (2015-2019), (4) Istanbul Metropolitan Municipality Strategic Plan (2020-2024). In this context, all research has been carried out by considering the vulnerable groups that are and will be most affected by climate change.

Istanbul Climate Change Action Plan (2018)

Istanbul is located in a risky region where the effects of climate change are felt intensively. The city has the most greenhouse gas emissions in Turkey and is among the cities that will be most affected by climate change in Europe (Kaya, 2018, p. 227). All of the projections for Istanbul were prepared using several models and scenarios that draw attention to significant effects of climate change, such as average surface temperature increase, change in precipitation patterns, drought, sea level rise, and heavy rainfall (Toros et al., 2017, p. 13). The Climate Change Action Plan, prepared in 2018, is the first study carried out on a local scale by the IMM. The plan was prepared following the IMM's voluntary signing of the plan of the covenant of mayors for climate and energy (Global Covenant of Mayors for Climate and Energy, 2022) in 2015 and its commitment to the agreement.

The plan's main aim is to create city ecosystems, social structures, and an economy that is resilient to climate change and to reduce greenhouse gas emissions accordingly. With this purpose, the action plan addressed the "reduction" and foreseeing the decrease of greenhouse gas emissions by taking social, eco-

nomic, and technological measures, and the "Adaptation" foreseeing the reduction of disaster risks and recovery times to adapt to changing climate conditions. There are 70 basic actions and 208 activity areas (41 priority) in the Plan to achieve these goals. Moreover, the Plan targets the revision of the action plan in every 4 years, the monitoring and evaluation as well as the conclusion of actions every 2 years. However, it has been noted that the activities to be carried out by the IMM do not directly include the relationship between vulnerable groups and climate change and that no action area for vulnerable groups is specifically defined in the Plan (Istanbul Climate Change Action Plan, 2018).

Istanbul Climate Change Action Plan (2021)

2019 local elections resulted in the win of the main opposition party in İstanbul Metropolitan Municipality. Right after, IMM signed Deadline 2020 commitment, an outcome of the Global New Green Deal in October 2019 Copenhagen at the C40 World Mayors Summit (C40 Cities, 2022). With this commitment, Istanbul Metropolitan Municipality accepted the target of making Istanbul resilient to climate change for every segment of the society, especially vulnerable groups (C40 Cities, 2022). In line with this goal and the principles of the Global Green New Deal, the Istanbul Climate Change Action Plan was re-prepared in 2021 by the IMM. The basic vision of the plan, which is prepared with a participatory method, is determined to increase Istanbul's capacity to adapt to the negative effects of climate change and encourage its resilience against climate risks. The plan also emphasizes that "climate justice will be taken into account in social policies for the vulnerable groups that will be most affected by climate change" (Istanbul Metropolitan Municipality, 2021). The plan's main goal is to achieve the target of a "carbon neutral" and "resilient" Istanbul by 2050. In the long term, this plan targets becoming carbon neutral by 2050, while in the medium term, it aims to reduce greenhouse gas emissions by 52.2 percent by 2030 compared to 2019 levels (Istanbul Metropolitan Municipality, 2021). Along with this, increasing resistance against the worst effects of climate change, and inducing green and just economic development are the other targets of the plan. Under the plan, 27 primary activity areas are identified for relevant sectors. The aim is to update the action plans every five years (Istanbul Metropolitan Municipality, 2021).

The plan emphasizes that climate justice will be taken into account in social policies for the vulnerable groups. On the other hand, it has been noted that the direct relationship between vulnerable groups and climate change is not included in the mentioned activity areas, and no action area has been defined for

vulnerable groups in this area. In addition, it was determined that an analysis study was carried out under the title of "Vulnerable Groups in the Population" in the plan. Within the scope of this study, the vulnerable groups most affected and at risk from climate change are defined as; particularly low-income groups, the elderly, children, women, disabled individuals, immigrants, and refugees. The plan emphasized that "special actions to be taken to strengthen the adaptation capacity of vulnerable groups to be more resistant to climate change will be one of the issues to be studied within the scope of the climate action plan." Despite this emphasis, no specific goals, targets, and fields of activity that will include vulnerable groups in the action areas were specified in the plan.

Istanbul Metropolitan Municipality Strategic Plan (2015-2019)

Strategic plans are the plans prepared for a five-year period, including the medium and long-term goals, basic principles and policies, targets and priorities, performance indicators, methods to be followed to achieve these, and resource allocations of public administrations. These plans are prepared after the local elections and determine the roadmap until the next municipal elections.

When the 5-year Strategic Plan of the Istanbul Metropolitan Municipality for 2015-2019 is examined, it is striking to see the fight against climate change is discussed under "Disseminating Environmental Protection Practices." Under this heading, the emphasis is on the Climate Change Action Plan, which was prepared in 2018, as the most basic target and field of activity defined for combating climate change. Apart from this, the plan does not address the relationship between climate change and vulnerable groups; It has been determined that the municipality does not include any target and field of activity for the vulnerable groups related to climate change (Istanbul Metropolitan Municipality, 2015).

Istanbul Metropolitan Municipality Strategic Plan (2020-2024)

When the 5-year Strategic Plan of Istanbul Metropolitan Municipality for 2020-2024 is examined, it is remarkable that the fight against climate change is mentioned under "Strengthening Sustainable Environment and Energy Management". Under this title, protecting the environment has been determined as the main target within the scope of combating climate change and 14 different fields of activity have been determined to achieve this target. These identified areas of activity are as follows:

- Improving Environmental Awareness,
- Main Artery and Square Cleaning,
- Environmental Laboratory and Capacity Building Activities,

- Prevention of Excavation and Construction Debris Waste Pollution,
- Protection of Air Quality,
- Prevention of Noise Pollution,
- Waste Oil Inspections,
- Climate Change Adaptation and Combating Activities,
- Waste Collection Activities from Marine Vessels,
- Cleaning of Coasts and Seas and Improvement of Streams,
- Diversifying and Increasing the Studies on Creating Social Awareness on Environmental Protection,
- Improving Environmental Service Quality in Line with the Climate Change Action Plan, Considering the Climate Change Threat,
- Establishment of Charging Infrastructure for Electric Vehicles,
- Increasing the Number of Air Quality Monitoring Stations,
- Investments to Prevent Coastal and Marine Pollution,
- Increasing the Technological Capacity.

The Istanbul Metropolitan Municipality allocates a total of ₺2.282.753.992 budget to the areas of activity determined within the scope of combating climate change in the plan (Istanbul Metropolitan Municipality, 2020). It is also noted that within the scope of this plan, the most fundamental action defined is to prepare the Climate Change Action Plan in 2021. Apart from this, the plan does not address the relationship between climate change and vulnerable groups (Istanbul Metropolitan Municipality, 2020).

Therefore, IMM has strong partnerships by becoming a member of well-known international networks on sustainability and climate change while partially complying with the related commitments as expressed in its local plans and programs. On top of that, neither coupling was established between climate change and vulnerable groups, nor action or activity areas were included as such in its action plans and strategic plans.

Conclusion

The global climate crisis is the most pressing issue in our times. As the cities host the majority of the world population and become the center of consumption and depletion of natural resources, climate policy inarguably necessitates a local level of action, in addition to global, national, and regional ones. While city governance gains more importance in implementing viable policies locally, specifically in urban areas, it becomes problematic in unitary, centralized countries like Turkey.

As a unitary state, Turkey has always been a centralized country; yet, centralization in local governance has accelerated in Turkey since regulation changes in 2011 and exacerbated with a transition to a presidential system in 2018. In the case of IMM, the centralization of the local governance can be more observable as the Mayor of IMM is from the opposition party even after the rerun of elections, which itself self-explanatory of how important to win the elections for the metropolitan municipality, specifically in Istanbul. As the center of the economy and hosting around one-fifth of the country's population, Istanbul harbors the untapped potential to transform into a sustainable city by reducing greenhouse gas emissions and alleviating the situation of vulnerable groups. However, IMM has to confront difficulties at various levels to implement climate policy actions due to a centralized governance structure. In other words, prepared climate action plans and strategic plans could not go beyond raising public awareness instead of real actions to combat climate change and related vulnerabilities. Therefore, examining other countries that successfully create and implement climate action plans is worthwhile to develop viable recommendations for restructuring local governance in Turkey.

Kaynakça/References

C40 Cities. (2017). *Cities100: Istanbul - circular design approach for processing waste*. Retrieved from: https://www.c40.org/case-studies/cities100-istanbul-circular-design-approach-for-processing-waste/

C40 Cities. (2022). *About C40*. (06.06.2022) Retrieved from: https://www.c40.org/about-c40/

Çelik, F. (2013). *Küresel bağımlılığın yeni biçimi: belediyelerin yerel-merkezileşmesi ve merkezi idareye pazar olarak bağlanması*. Retrieved from: http://blog.radikal.com.tr/kent-kulturu/kuresel-bagimliligin-yeni-bicimi-belediyelerin-yerel-merkezilesmesi-ve-merkeziidareye-pazar-olarak-baglanmasi-37743.

Elgendy, K., & Tastan, K. (2022). *Turkey's climate opportunities and challenges*. Retrieved from: https://www.chathamhouse.org/2022/05/turkeys-climate-opportunities-and-challenges

European Commission. (2019). *The european green deal*. Retrieved from: https://ec.europa.eu/commission/presscorner/detail/en/ip_19_6691

European Council. (2021). *Fit for 55*. Retrieved from: https://www.consilium.europa.eu/en/policies/green-deal/fit-for-55-the-eu-plan-for-a-green-transition/#:~:text=Fit%20for%2055%20refers%20to,line%20with%20the%202030%20goal.

European Council. (2022). *Council agrees on the carbon border adjustment mechanism* Retrieved from:: https://www.consilium.europa.eu/en/press/press-releases/2022/03/15/carbon-border-adjustment-mechanism-cbam-council-agrees-its-negotiating-mandate/

Evans, B. (2011). *Devlet aygıtları, iktidar partisinin gündemine daha da bağımlı hale gelecek*. Retrieved from: http://www.sendika.org/2011/07/bryan-evans-devlet-aygitlari-iktidar-partisininsiyasal-gundemine-daha-da-bagimli-hale-gelecek/.

Global Covenant of Mayors for Climate and Energy. (2022). Retrieved from: https://www.globalcovenantofmayors.org/

Görmez. K. (2012, 30 December). Yerelleşme-merkezileşme geriliminde büyükşehir yasası. *Zaman*, 18 Kasım. Retrieved from: http://www.zaman.com.tr/yorum_yerellesme-merkezilesme-geriliminde-buyuksehir-yasasi_2017227.html

Intergovernmental Panel on Climate Change. (2021). *Summary for policymakers.* Cambridge: New York: Cambridge University Press. (doi:10.1017/9781009157896.001)

Intergovernmental Panel on Climate Change. (2022). *Summary for policymakers.* Cambridge: Cambridge University Press.

İstanbul Büyükşehir Belediyesi. (2015). *İstanbul Büyükşehir Belediyesi stratejik planı (2015-2019)*. Retrieved from: https://www.ibb.istanbul/Uploads/2020/1/stratejikplan15-19.pdf

İstanbul Büyükşehir Belediyesi. (2020). *İstanbul Büyükşehir Belediyesi stratejik planı (2020-2024)*. Retrieved from: https://www.ibb.istanbul/Uploads/2020/2/iBB-STRATEJIK-PLAN-2020-2024.pdf

İstanbul Büyükşehir Belediyesi Çevre Koruma Müdürlüğü. (2022). Retrieved from: https://cevrekoruma.ibb.istanbul/uluslararasi-aglar/

Istanbul Metropolitan Municipality. (2021). *İstanbul iklim değişikliği eylem planı.* Retrieved from: https://cevrekoruma.ibb.istanbul/wp-content/uploads/2022/01/ist_iklim_degisikligi_eylem_plani.pdf

İzci, F., & Turan, M. (2013). Türkiye'de büyükşehir belediyesi sistemi ve 6360 sayılı yasa ile büyükşehir belediyesi sisteminde meydana gelen değişimler: Van örneği. *Suleyman Demirel University Journal of Faculty of Economics & Administrative Sciences*, *18*(1), 117-152.

Karagöl, E. T. (2013). *AK Parti dönemi Türkiye ekonomisi*. Ankara: SETA.

Kaya, Y. (2018). İklim değişikliğine karşı kentsel kırılganlık: İstanbul için bir değerlendirme. *International Journal of Social Inquiry, 11*(2), 219-257.

Krellenberg, K., & Turhan, E. (2017). *How to respond to climate change at the local level: A Guideline for turkish cities.* Leipzig: UFZ-Bericht: Helmholtz-Zentrum für Umweltforschung.

Official Gazette. (2021a, July 16). *The green deal action plan.* Retrieved from: https://www.resmigazete.gov.tr/eskiler/2021/07/20210716-8.pdf

Official Gazette. (2021b, October 07). *Regulation approving the ratification of the Paris Agreement.* Retrieved from: Official Gazette of the Republic of Turkey https://www.resmigazete.gov.tr/eskiler/2021/10/20211007-7.pdf

Övgün, B. (2016). Kamu yönetimi reformunda bir açmaz: Yerelleşme mi, merkezileşme mi?. *Mülkiye Dergisi, 40*(3), 159-179.

Polatoğlu, A. (2000). Turkish local government: The need for reform. *Middle Eastern Studies, 36*(4), 156-171.

The Ministry of Environment, Urbanization, and Climate Change. (2022). *The reason and aim of the climate council*. Retrieved from: https://iklimsurasi.gov.tr/en/sayfa/the-aim-and-goals-of-the-council

Tomlinson, R. (2021). *Smart cities and climate change: The evolution and curation of knowledge.* Washington D.C.: Wilson Center.

Toros, H., Abbasnia, M., Sağdıç, M., & Tayanç, M. (2017). Long-term variations of temperature and precipitation in the megacity of Istanbul for the development of adaptation strategies to climate change. *Advances in Meteorology*, 1-14.

Turan, M., & Duru, B. (2014). Anakentin zayıf halkaları: İlçe belediyeleri. D İşçioğlu, (Yay.haz), *Uluslararası Türk Dünyası Yerel Yönetimler Sempozyumu*, *25-26 November 2014, KKTC,* 283-291.

Turkstat. (2022). *Sera gazı emisyon istatistikleri, 1990-2020*. Retrieved from: https://data.tuik.gov.tr/Bulten/Index?p=Sera-Gazi-Emisyon-Istatistikleri-1990-2020-45862

United Cities and Local Governments Middle East and West Asia Section. (2016). *Malatya Consensus*. Retrieved from: https://cevre.ibb.istanbul/wp-content/uploads/2021/12/istanbul-Deklarasyonu.pdf

The United Nations Development Programme. (2021). *UNDP, Türkiye'nin 2053 yılına kadar net sıfır rotası çizmesine destek veriyor*. Retrieved from: UNDP https://www.undp.org/tr/turkey/press-releases/undp-t%C3%BCrkiye%E2%80%99nin-2053-y%C4%B1l%C4%B1na-kadar-net-s%C4%B1f%C4%B1r-rotas%C4%B1-%C3%A7izmesine-destek-veriyor

United Nations, Department of Economic and Social Affairs, Population Division. (2019). *UN population dynamics*. Retrieved from: (23.06.2022) https://population.un.org/wup/Download/.

United Nations Environment Programme. (2017). *Resilience and resource efficiency in cities.* Retrieved from: https://wedocs.unep.org/20.500.11822/20629 .

World Bank. (2021). Advancing climate action and resilience through an urban lens Retrieved from: https://www.worldbank.org/en/topic/urbandevelopment/brief/climate-action-through-an-urban-lens.