

**CATS** Centre for Applied  
Turkey Studies  
**NETWORK**

**OVERCOMING GLOBAL PROBLEMS  
THROUGH LOCAL COOPERATION:  
THE CASE OF THE ISTANBUL METROPOLITAN  
MUNICIPALITY**

THE EFFECTS OF CLIMATE CHANGE ON VULNERABLE  
GROUPS: THE CASE OF THE ISTANBUL METROPOLITAN  
MUNICIPALITY (İBB)



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İSTANBUL POLİTİKALAR MERKEZİ  
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## I. INTRODUCTION<sup>1</sup>

This report is the first report to emerge from the project “Overcoming Global Problems through Local Cooperation: The Case of the Istanbul Metropolitan Municipality,” a joint project of the Istanbul Policy Center (IPC), Economic Development Foundation (IKV), and the Economic Policy Research Foundation of Turkey (TEPAV). This report is the first stage of a three-step project that involves an in-depth stock-taking of the existing policies and measures adopted by the Istanbul Metropolitan Municipality (İstanbul Büyükşehir Belediyesi (IBB)) to adapt to climate change. It addresses governance-related challenges in implementing climate change policies and the protection of vulnerable groups in the city—namely, refugees, women, and those who live below the poverty line. In this framework, the research team focused on the effects of climate change on these vulnerable groups as outlined in Istanbul’s local climate action plans. A qualitative research model was adopted. The research team carried out an extensive literature review on international, national, and local research papers related to climate change and vulnerability. The research team also examined several news articles to follow the current developments in climate change, urbanization, and the clash of authority between the local and central governments. In terms of field research, in-depth interviews were made with several people representing the IBB and its stakeholders. The interviews mainly focused on the IBB’s current work in the fields of climate change and the protection of vulnerable groups (refugees, women, and the urban poor), and their opinions on the next steps to be taken to protect vulnerable groups against the effects of climate change. The assessment of the research team on this issue is elaborated below.

While occupying only two percent of the world’s surface area,<sup>2</sup> cities are home to more than 55 percent of the world’s population as of 2018. This figure is estimated

to reach nearly 68 percent by 2050.<sup>3</sup> Ostensibly, cities are not just geographical places and infrastructure as such; their inhabitants need to be considered. Rapid urbanization has changed the demography of cities and created various socioeconomic statuses. The migration crisis, ignited by the Syrian civil war and amplified by the Russian invasion of Ukraine, has exacerbated preexisting vulnerabilities in cities around the globe, specifically in Turkey as well as Europe.

The global climate crisis coupled with urbanization reveals that human-environment interactions cannot be set apart from city governance. In the sixth assessment report, the Intergovernmental Panel on Climate Change<sup>4</sup> states that human-induced climate change has already caused a wide variety of extreme weather events on the global scale, and changes have been observed in all climate systems on the planet. The report also emphasizes that the 2050 net-zero emissions target is critical to keep the average temperature increase below 1.5°C above pre-industrial levels as targeted in the Paris Agreement.

With high population densities and various socioeconomic statuses, cities turn into centers of consumption. Around 78 percent of energy<sup>5</sup> and 75 percent of natural resources<sup>6</sup> are consumed in urban areas, while cities contribute to more than 70 percent of greenhouse gas emissions.<sup>7</sup> Therefore, sustainable urbanization is critical not only for combating and adapting to the climate crisis but also achieving the UN’s Sustainable Development Goals (SDGs).

The relationship between cities and climate change is reciprocal due to the increasing interactions between

1 The Centre for Applied Turkey Studies (CATS) at Stiftung Wissenschaft und Politik (SWP) in Berlin is funded by Stiftung Mercator and the Federal Foreign Office. CATS is the curator of CATS Network, an international network of think tanks and research institutions working on Turkey. “Overcoming Global Problems through Local Cooperation: The Case of the Istanbul Metropolitan Municipality” is a project of CATS Network.

2 “Advancing Climate Action and Resilience through an Urban Lens.” World Bank, accessed April 22, 2021, <https://www.worldbank.org/en/topic/urbandevlopment/brief/climate-action-through-an-urban-lens>.

3 “World Urbanization Prospects The 2018 Revision, Online Edition,” United Nations, Department of Economic and Social Affairs, Population Division UN Population Dynamics, <https://population.un.org/wup/Download/>.

4 IPCC, Climate Change 2021, “The Physical Science Basis: Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change” [Masson-Delmotte, V., P. Zhai, A. Pirani, S.L. Connors, C. Péan, S. Berger, N. Caud, Y. Chen, L. Goldfarb, M.I. Gomis, M. Huang, K. Leitzell, E. Lonnoy, J.B.R. Matthews, T.K. Maycock, T. Waterfield, O. Yelekçi, R. Yu, and B. Zhou (eds.)]. Cambridge University Press, 2021.

5 UN-Habitat, “Human Health Implications of Climate Change”. International Conference on Climate Change and Cities (p. 57), United Nations Human Settlements Programme (UN-Habitat), 2018.

6 United Nations Environment Programme, “Resilience and Resource Efficiency in Cities”, 2017.

7 Richard Tomlinson, “Smart Cities and Climate Change: The Evolution and Curation of Knowledge”, Washington D.C, Wilson Center, 2021.

urban areas and the climate system. For instance, issues such as the urban heat island effect,<sup>8</sup> a phenomenon unique to cities, increase human-induced warming locally. Additionally, the frequency and the severity of extreme climate events like heatwaves will affect cities and urban areas more.<sup>9</sup> The scale of the impacts of climate change on urban areas related to human health, livelihoods, and basic infrastructure is relatively more catastrophic<sup>10</sup> and not equally distributed within a city—or among cities—due to the specific local characteristics of cities such as their climatic conditions, socio-spatial distribution of people, and urban expansion.<sup>11</sup> Therefore, it is no surprise that cities have become prominent on the climate agenda and that local governments and “city diplomacy” have gained more importance in tackling climate-related vulnerabilities and employing adaptive responses.

Although the global climate crisis will severely affect Turkey, located in the Mediterranean region, greenhouse gas emissions in Turkey have continued to rise,<sup>12,13</sup> demonstrating Turkey’s inaction on this pressing issue so far. Conversely, the European Union, as a leading actor in climate action, launched The European Green Deal in 2019, outlining the new strategic framework for how to make Europe the first climate-neutral continent by 2050. The motto of the European Green Deal is “leaving no one behind” while creating a sustainable economy in the EU that is responsible for the environment and improves citizens’ quality of life and health.<sup>14</sup> As a response to the European Green Deal, Turkey adopted The Green Deal Action Plan<sup>15</sup> to alleviate the concerns of the business community over

the Carbon Border Adjustment Mechanism<sup>16</sup> proposed in the EU’s “Fit for 55” package,<sup>17</sup> which places a de facto carbon tariff in specified sectors, such as cement, aluminum, and iron and steel.<sup>18</sup> Subsequently, after a long, drawn-out process, Turkey ratified the Paris Agreement in October 2021<sup>19</sup> and set the year 2053 as its net-zero target. Simultaneously, 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 began to revise Turkey’s Intended Nationally Determined Contributions (INDC).<sup>20</sup> The ministry 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 various stakeholders from academia, the public and private sectors, and non-profit organizations.<sup>21</sup>

On the one hand, these efforts indicate that climate policy governance in Turkey has started to bring about institutional changes, one requirement for climate policy units to reach international climate finance opportunities. On the other, the necessary changes in city diplomacy are still lacking in Turkey as populist authoritarian governments have pushed for further centralization, especially in city governance. Apart from the climate crisis, cities in Turkey face many challenges from rising populist authoritarianism at the national level. In such cases, cities such as Istanbul that are governed by opposition parties struggle to access the required resources for an effective governance structure. To overcome this limitation, they must seek new channels of cooperation other than the nation-state. Therefore, scrutinizing the current situation in

8 “Heat islands are urbanized areas that experience higher temperatures than outlying areas. Structures such as buildings, roads, and other infrastructure absorb and re-emit the sun’s heat more than natural landscapes such as forests and water bodies. Urban areas, where these structures are highly concentrated and greenery is limited, become “islands” of higher temperatures relative to outlying areas”. (United States Environmental Protection Agency, 2022, para. 1).

9 IPCC, 2021.

10 IPCC, Summary for Policymakers [H.-O. Pörtner, D.C. Roberts, E.S. Poloczanska, K. Mintenbeck, M. Tignor, A. Alegria, M. Craig, S. Langsdorf, S. Löschke, V. Möller, A. Okem (eds.)]. Cambridge University Press, 2022.

11 Kerstin Krellenberg & Ethemcan Turhan, “How to Respond to Climate Change at the Local Level: A Guideline for Turkish Cities”, Leipzig: UFZ-Bericht, No. 03/2017, Helmholtz-Zentrum für Umweltforschung (UFZ), 2017.

12 “Sera Gazı Emisyon İstatistikleri, 1990-2020”, Turkstat Veri Portalı, accessed March 30, 2022, <https://data.tuik.gov.tr/Bulten/Index?p=Sera-Gazi-Emisyon-Istatistikleri-1990-2020-45862>.

13 Greenhouse gas emissions in Turkey has risen from 2019 to 2020 after a small decline in 2018 and 2019.

14 The European Commission, 2019.

15 “The Green Deal Action Plan”, Official Gazette of the Republic of Turkey, accessed July 16, 2021, <https://www.resmigazete.gov.tr/eskiler/2021/07/20210716-8.pdf>.

16 “Council agrees on the Carbon Border Adjustment Mechanism (CBAM)”, European Council, accessed March 15, 2022, <https://www.consilium.europa.eu/en/press/press-releases/2022/03/15/carbon-border-adjustment-mechanism-cbam-council-agrees-its-negotiating-mandate/>.

17 “Fit for 55”, European Council, accessed July 2021, <https://www.consilium.europa.eu/en/policies/greendeal/fit-for-55-the-eu-plan-for-a-greentransition/#:~:text=Fit%20for%2055%20refers%20to,line%20with%20the%202030%20goal.>

18 Karim Elgendy & Kadri Tastan, “Turkey’s climate opportunities and challenges”, March 9, 2022.

19 “Regulation Approving the Ratification of the Paris Agreement”, Official Gazette, accessed October 7, 2021, <https://www.resmigazete.gov.tr/eskiler/2021/10/20211007-7.pdf>.

20 “UNDP, Türkiye’nin 2053 Yılına Kadar Net Sıfır Rotası Çizmesine Destek Veriyor”, UNDP, accessed December 16, 2021, <https://www.undp.org/tr/turkey/press-releases/undp-t%C3%BCrkiye%E2%80%99nin-2053-y%C4%B1na-kadar-net-s%C4%B1f%C4%B1r-rotas%C4%B1-C3%A7izmesine-destek-veriyor.>

21 “The Reason and Aim of the Climate Council”, Ministry of Environment, Urbanization, and Climate Change, <https://iklimsurasi.gov.tr/en/sayfa/the-aim-and-goals-of-the-council>.

Istanbul regarding climate change and vulnerability within the context of the local governance structure is a useful framework in which to explore new possible forms of cooperation with European counterparts who have effectively implemented climate policies within their city governance structures.

In this study, we will first lay out Turkey's perspective on urban management within the centralization-decentralization debate. Then, we will assess the climate vision of the Istanbul Metropolitan Municipality specifically for vulnerable groups. Finally, the conclusion will summarize the findings and limitations of the IBB's climate action plans by examining the relationship between climate change and vulnerable groups.

## 2. TURKEY'S PERSPECTIVE ON URBAN MANAGEMENT CONSIDERING THE CENTRALIZATION-DECENTRALIZATION DEBATE

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 (national and provincial institutions) and local governments. In central administrations, decisions, activities, and services are carried out by the central government and its institutions in order to ensure unity and integrity in public services. In Turkey, the central administration is divided into national and provincial organizations. While national organizations include 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. The public elects the decision-making bodies of local governments.

Turkish local government units were established to function within a centralized framework, with the central government exercising its power and authority over the functions of local administrations. The central government has exercised tutelage over local government units from the very beginning of the Republic. Recently, however, under conditions of political and socio-economic crises, control over these units has been further tightened as local governments have frequently been alleged to have a significant role in the emergence, spread, and consolidation of crises. Such a framework of centralization could perhaps be justified in earlier periods, e.g., during the foundation of the Republic, to secure national unity, but no sufficient grounds exist to justify the same policies today. According to the Turkish Constitution of 1982, local governments are "public corporate entities established to meet the common local needs of the inhabitants of provinces, municipal districts and villages, whose decision-making organs are elected by the electorate described in law, and whose principles of structure are also determined by law." Therefore, the formation, duties, and powers of local administrations shall be regulated by law in accordance with the principle of decentralization. In Turkey, there are three main local government units: special provincial administration, municipalities, and villages, which are administratively and financially autonomous<sup>22</sup>:

- 1 | **Special Provincial Administration:** A "special provincial administration" is a public entity having administrative and financial autonomy that is established to meet the common local needs of the people in the province and whose decision-making body is elected by voters. The main organs of the special provincial administration are the general provincial council, the provincial executive committee, and the governor.<sup>23</sup>
- 2 | **Municipalities:** Municipalities are local government units providing local services in communities of more than 5,000 inhabitants. Every municipality, regardless of its population size, is also considered eligible for the establishment of a municipality. A Municipal Council, a Municipal Standing Committee, and a mayor are the governing organs of a municipality.
  - **Metropolitan Municipalities:** The Metropolitan Municipality is organized like any other municipality but presides over a larger region covering municipalities in a metropolitan area—i.e., urban centers with populations of more than 750,000. Among Turkey's 81 provinces, 30 provinces have cities with designated metropolitan municipalities. The 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.
- 3 | **Village Administration:** The village administration is the smallest and the most traditional local government unit among the above-mentioned types. It was established under the Village Administration Law, and its duties and sources of revenues are explicitly outlined in this law. The organs of the village administration are the Village Assembly, the Council of Village Elders, and the village head (*mukhtar*).

22 Aykut Polatoğlu, "Turkish Local Government: The Need for Reform", *Middle Eastern Studies*, 36(4), 156-171, 2000.

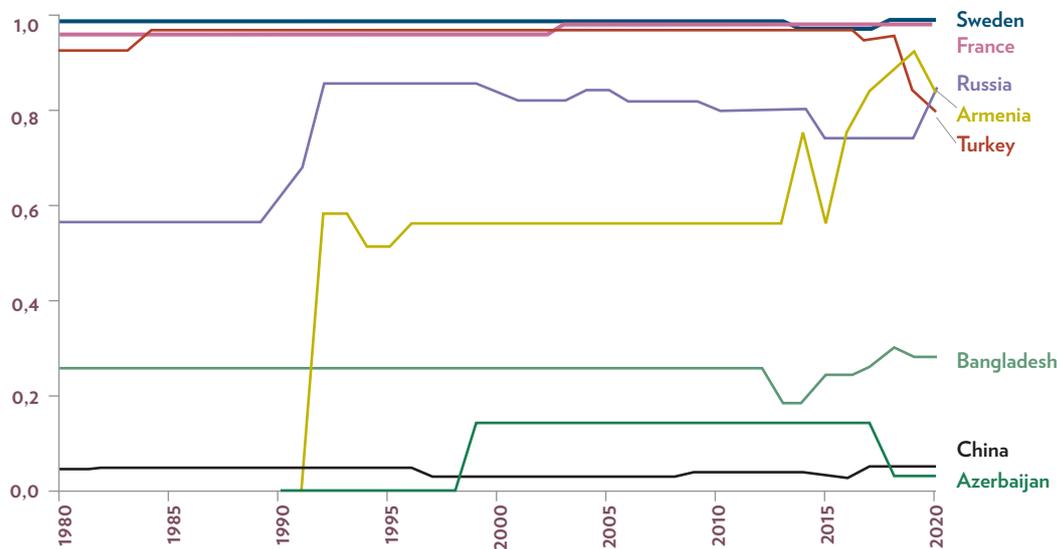
23 Law no 5302, 2005.

As mentioned above, local governments in Turkey have always been highly centralized. However, important legal regulations for the localization of services were enacted with Turkey's EU-inspired reforms in the 2000s. Local government reforms prepared in 2004 and 2005 paved the way for decentralization. Yet, these localization efforts started to dissipate in 2008.

Looking further into this topic, the World Bank prepares a Local Government Index<sup>24</sup> that includes 163 countries, allowing for localization comparisons between countries. This study shows that centralization has increased in Turkey, especially in the last 20 years. This index reveals how autonomous each country's local governments 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 98<sup>th</sup> among 163 countries (with 1 being the most localized and 163 being the most centralized). Data for selected countries from this study is displayed in Figure 1 below, with an index of 1 being localized and 0 being centralized.

The World Bank Local Government Index indicates whether a local government is elected, the power it holds vis-à-vis the central government, and the freedom and fairness of subnational elections. This index also measures the central government's influence on the decision-making processes of local governments. According to the index, a decline in the level of localization is observed in Turkey in 2008. One of the most important reasons for this turn in the government's approach to centralization—which emphasized the political dimension of centralization rather than its administrative features—was Turkey's economic development, particularly during crises. After economic crises political powers generally take important and inclusive measures in many fields, especially in the economy. The 2008 global financial crisis, for example, caused a slowdown in growth, a decline in the balance of foreign trade and payments, and a decrease in the savings volume in Turkey.<sup>25</sup> Even in 2011, three years after the crisis, the government of Turkey continued to implement highly intensive intervention measures and interfere in the decision-making processes of local governments.

Figure 1: Local Government Index by Countries, 2020



Source: The World Bank, "The Local Government Index," 2020 (TEPAV Visualization)

24 The lowest score would be reserved for a country that has no elected local governments. A medium score would be accorded a country that has elected local governments but where those governments are subordinate to unelected officials at the local level perhaps appointed by a higher-level body. A high score would be accorded to a country in which local governments are elected and able to operate without restrictions from unelected actors at the local level except for judicial bodies. Naturally, local governments remain subordinate to the regional and national governments.

25 Bryan Evans, "Devlet Aygıtları, İktidar Partisinin Gündemine Daha Da Bağımlı Hale Gelecek", 2011, Retrieved from <http://www.sendika.org/2011/07/bryan-evans-devlet-aygitalari-iktidar-partisinininsiyasal-gundemine-daha-da-bagimli-hale-gelecek/>

In 2011, several steps were taken away from reform and toward centralization. One practice implemented during this period was the acceleration of urban transformation projects to eliminate the economic downturn<sup>26</sup>: authorities accelerated capital inflow and prioritized economic development in this area. Urban transformation practices, which are an important economic tool, are among the main duties of local governments. However, under the Statutory Decrees (KHK) issued in 2011, this authority was given to central management in Turkey. Previously, Law 3194 on Land Development Planning and Control—implemented in 1985 to ensure that settlements and development comply with legal plans, science, hygiene, and environmental standards—decentralized zoning laws, 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 maintained this understanding, the process has been seriously interrupted by the authority given to the Housing Development Administration of the Republic of Turkey (TOKİ) and the Ministry of Environment and Urbanization. With the Statutory Decrees (KHK) issued in 2011, the centralization of Turkey’s urban transformation policies reached its peak, and the Ministry of Environment and Urbanization was granted more authority over urban planning. With this regulation, all upper-scale plans, special project areas, and structures requiring special construction, even if their ownership belonged to private individuals, were reconfigured, or the planning authority for these areas was transferred to the ministry, thus further limiting the authority of local governments. In other words, the ministry became the sole power governing urban transformation and major projects.

Another example of the steps taken toward centralization is Law No. 6360 referred as the “Unicity Law,” which was 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 in the legislation, economic reasoning was more visible in the justification of the enactment of this law.<sup>27</sup> Implemented after the 2014 local elections, this regulation expanded the authority of metropolitan municipalities to special provincial administrations

and locally centralized structures were put under the mayor of the metropolitan municipality. Many duties in district municipalities were transferred to metropolitan municipalities. Within the scope of this 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.<sup>28</sup>

Law No. 6360 abolished special provincial administrations in cities with metropolitan municipalities. With this regulation, other local government units, town municipalities, and villages were closed and turned into neighborhoods. With this regulation, 36 percent of special provincial administrations, 53 percent of municipalities, and 47 percent of village administrations throughout Turkey were abolished. An important part of the duties and powers of special provincial administrations were shared between the provincial units of the central government. Hence, the power given to the special provincial administrations was centralized. Moreover, removing villages as legal entities and connecting them to metropolitan municipalities as neighborhoods is likely not only to cause people living in these areas to settle in cities and district centers in the coming years but also to lead to provincial lands being evaluated as urban areas.<sup>29</sup>

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 are some of the most prominent political aspects of recent moves toward centralization in Turkey. The Departments of Investment Monitoring and Coordination, in relation to the works carried out by the central administration in the provinces, were established by the office of the governor in 30 provinces to increase the effectiveness and efficiency of services, to ensure the proper use of resources, to prevent disruptions in services, to fill the gap in the field of supervision, and to guide and to carry out disaster and emergency services. These units, under the supervision of the office of the presidency, reappropriated several duties of the special provincial administrations and provincial councils to the central government, which manages personnel

26 Erdal Tanas Karagöl, *AK Parti Dönemi Türkiye Ekonomisi*, (Ankara: SETA, 2013), p. 19.

27 Feyzi Çelik, “Küresel Bağlılığın Yeni Biçimi: Belediyelerin Yerel-Merkezileşmesi ve Merkezi İdareye Pazar Olarak Bağlanması”, 2013. Retrieved from <http://blog.radikal.com.tr/kent-kulturu/kuresel-bagimlilikin-yeni-bicimi-belediyelerin-yerel-merkezilesmesi-ve-merkeziidar-eye-pazar-olarak-baglanmasi-37743>

28 Ferit İzci & Menaf Turan, “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, 2013.

29 İzci & Turan, “Türkiye’de Büyükşehir Belediyesi Sistemi,” 117-152.

within these offices. Law No. 6360 also established the Infrastructure Coordination Center and Transportation Coordination Center under the chairmanship of the metropolitan mayors and representatives of the central administration in the provincial organization and district mayors. This restructuring, in which the representatives of the central administration are also included in local government bodies, shows the extent to which 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 Law No. 6360, the share of municipalities, excluding metropolitan municipalities, from the general budget was reduced from 2.85 percent to 1.5 percent. The share given to special provincial administrations was reduced from 1.15 percent to 0.5 percent.<sup>30</sup>

Law No. 6360 has led to the political centralization of representation. In an environment where thousands of local government units have been abolished, Turkey is faced with a metropolitan municipality structure in which the only elected person is the mayor of the metropolitan municipality, 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 this law, some ministers left their ministry seats in order to become mayors of metropolitan municipalities in the 2014 local elections.

Another step toward centralization was realized with another important regulation, the additional regulations made to Municipality Law No. 5393, issued in 2016. According to this regulation, if the office of the mayor, an elected position, 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 the Interior in metropolitan and provincial municipalities and by the governor in other municipalities until the next election cycle. In other words, the central administration has the authority to appoint a trustee to the mayorship.

The Presidential Government System, which entered into force in 2018, is another step toward centralization. While the change to the Presidential Govern-

ment System involves primarily executive-oriented changes, local governments have also entered this system-induced process of change. The Presidential Government System has brought about changes in the structure of the public administration. Within the framework of the aforementioned changes, nine policy boards affiliated with the presidency were established in order to increase the function of the executive body and to produce policies.<sup>31</sup> The Local Government Policies Board is one example 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 related policies and strategies. In other words, the primary responsibilities of local units were handed over to a centralized board.

Amid Turkey's economic and political centralization processes since 2008, combating climate change has emerged within global discussions on centralization and localization in recent years. Mitigating and adapting to climate change need to be addressed on a global, national, and local scale. 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 climate change policies are predominantly under the control of the central government. Policy documents issued by the Ministry of Environment, Urbanization and Climate Change are accepted as the primary documents at the national, regional, and local levels in Turkey. In this context, local governments have limited powers and duties to set targets in relevant sectors (e.g., waste, building, energy, etc.), to take necessary legal arrangements in local bodies, to create various implementation tools, and to carry out applications themselves. Therefore, metropolitan municipalities, as one of the few remaining local government structures in Turkey, must fight against climate change within the framework of the current local government legislation and create various opportunities for local governments in this area.

30 Kemal Görmez, "Yerelleşme-Merkezleşme Geriliminde Büyükşehir Yarasası", *Zaman*, 18 Kasım 2012.

31 Barış Övgün, "Kamu Yönetimi Reformunda Bir Açmaz: Yerelleşme mi, Merkezleşme mi", *Mülkiye Dergisi*, 40(3), 159-179, 2016.

### 3. TURKEY'S VULNERABILITY TO CLIMATE CHANGE

Cities have become more vulnerable to climate change due to rising population concentrations and increased migration from rural areas to cities. The effects of climate change are expected to set off a chain reaction within civil society, beginning with individuals and affecting the employment, welfare levels, and resource availability of the city's population. To mitigate the negative effects caused by climate change, it is essential to address the subjects affecting vulnerable social groups.<sup>32</sup> The consequences of climate change that need to be addressed, especially in Turkey, are temperature rise, surface water losses, drought, soil deterioration, and floods. Rising temperatures, erratic precipitation, and the urban heat island effect have become chronic concerns in many Turkish cities.<sup>33</sup>

Climate change vulnerability is a multidimensional concept that is dependent on the geopolitical status of a specific location. Climate challenges faced by cities and the way they respond to these problems might vary.<sup>34</sup> For example, while vulnerabilities in one region or city may affect its social, economic, and demographic characteristics, geographical and geological changes may be prominent in another.<sup>35</sup>

Turkey has been classified as the most vulnerable country to extreme weather incidents in Europe according to the *Climate Change 2022: Impacts, Adaptation, and Vulnerability* report from the IPCC.<sup>36</sup> Natural disasters such as floods, droughts, and soil deterioration are projected to become more common in Turkey if greenhouse gas emissions remain high. The physical and environmental, economic, social, demographic, and institutional vulnerabilities produced by climate change in Turkey will be addressed independently in the following section.

#### 3.1. PHYSICAL AND ENVIRONMENTAL VULNERABILITY

Extreme weather events, marine ecosystems, soil deterioration, coastal flooding, and the decrease in

usable water resources are the main issues that need to be examined within the category of physical and environmental vulnerability.

According to the IPCC, even with a significant reduction in global emissions, the number of deaths caused by extreme heat is predicted to be nearly ten times greater than the current number.<sup>37</sup> High temperatures lead to respiratory, cardiovascular, and vascular problems. Increases in heat levels will also have a detrimental effect on laborers and individuals. This will result in increased costs for industries.

Rising surface water temperatures should be assessed as the main climate-related vulnerability related to Turkey's marine ecology. The Turkish fishing industry has been severely impacted by rising sea temperatures, which has resulted in the disappearance of several fish species.<sup>38</sup>

Turkey's agricultural capacity has also been affected by climate change as erratic rainfall has had a negative impact on soil quality. Approximately 30% of Turkey's fertile agricultural lands, especially in the Mediterranean, are in danger.

Another consequence of climate change is flooding in coastal areas due to rising sea levels. Coastal communities are more vulnerable to climate change than other settlements, according to IPCC assessments.<sup>39</sup> In Turkey, around 460,000 people live in locations that might be impacted by coastal flooding.<sup>40</sup> Rising sea levels pose a threat not just to people and property but also to historical landmarks in many coastal communities.

Drought poses a particular threat to the Mediterranean Region in Turkey. If the rise in temperatures continues at the same rate, underground water reserves will be depleted, especially in the Mediterranean Region.

Unplanned urbanization in Turkey increases the risk for individuals in regions with heavy rainfall, especially in the Black Sea and Marmara regions as many rivers and streams pass through the cities in these regions.

32 Yasemin Kaya, "İklim Değişikliğine Karşı Kentsel Kırılganlık: İstanbul İçin Bir Değerlendirme", *International Journal of Social Inquiry*, Vol: 11(2), 2018, pp. 219-257.

33 Kemal Öztürk, "Küresel İklim Değişikliği ve Türkiye'ye Olası Etkileri", *G.Ü. Gazi Eğitim Fakültesi Dergisi*, Cilt 22, Sayı 1, 2002, pp. 47-65.

34 European Commission, "Adaptation Strategies for European Cities Final Report", Directorate General for Climate Action, 2013.

35 UN, Fight Racism, Vulnerable Groups, <https://www.un.org/en/fight-racism/vulnerable-groups>

36 IPCC, Summary for Policymakers [H.-O. Pörtner, D.C. Roberts, E.S. Poloczanska, K. Mintenbeck, M. Tignor, A. Alegría, M. Craig, S. Langsdorf, S. Lösche, V. Möller, A. Okem (eds.)]. Cambridge University Press, 2022.

37 IPCC, 2022.

38 T.C. Çevre ve Şehircilik Bakanlığı & Mikdat Kadioğlu, "Türkiye'de İklim Değişikliği Risk Yönetimi", 2012, p. 70.

39 IPCC, "Climate Change 2007: Impacts, Adaptation and Vulnerability", Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change, 2007.

40 IPCC Sixth Assessment Report, 2022.

### 3.2. ECONOMIC VULNERABILITY

When assessing the economic vulnerability of a region, its natural and human resources should be considered. Factors such as income per capita, employment rates, and living conditions in a city can provide insight into potential economic vulnerabilities. Garschagen and Lankao's studies<sup>41</sup> have revealed that if the rate of urbanization is high in underdeveloped or developing countries, the potential for heightened economic vulnerability is higher. The tourism, agriculture, construction, industry, and service sectors in Turkey are highly vulnerable to climate change.<sup>42</sup> The negative impact on these sectors, which will directly affect Turkey's economy, might upset the welfare of the whole country.

The fact that urban population growth in Turkey is not supported through sufficient resources increases vulnerability in crowded cities. This situation brings about uncontrolled urban sprawl<sup>43</sup> in relatively risky areas of cities with insufficient infrastructure and sharpens the wealth-poverty gap in society. In addition, irregular urban sprawl will make the vulnerabilities caused by climate change more resilient and difficult to repair.

A country's economic difficulties often lead to insufficient infrastructure maintenance. Turkish citizens living in poorer areas of cities may experience difficulties accessing water, energy, transportation, education, and health services due to a lack of infrastructure.<sup>44</sup> Furthermore, cities with larger wealth disparity, such as Istanbul, appear to be more vulnerable.

### 3.3. SOCIAL VULNERABILITY

Although the impact of climate change on Turkey's social vulnerability is limited, the impact is expected to increase over time. There are several indicators of the current social vulnerabilities in Turkey,<sup>45</sup> including social solidarity and commitment, literacy rate, education level, and access to information. Strong social solidarity and social commitment, for example, enable a faster and easier transition to the recovery process in societies, especially after disasters. Conversely, social ties weaken in societies in which tolerance to people with different backgrounds is low. Turkey's population structure has recently become more heterogeneous

with immigration from countries such as Syria, Iraq, Pakistan, and Afghanistan, which has the potential to weaken social ties. Factors such as income inequality, negative economic outlook, and low education levels appear to have reduced the level of tolerance in society.

### 3.4. DEMOGRAPHIC VULNERABILITY

Demographic vulnerability is determined using data such as the elderly and adolescent populations of cities, the number of households, and the rate of urbanization.<sup>46</sup> Excessive population growth and irregular urbanization have been observed after the recent migration wave to Turkey precipitated by the Syrian civil war. One negative effect of irregular urbanization has been the exacerbation of vulnerability, including increased demand for housing, infrastructure, and services that outpace the supply.

According to the study "Climate Change Perception in Turkey," prepared with the support of Konda Research and Consultancy,<sup>47</sup> two out of three people in Turkey are vulnerable to the climate crisis. Approximately 72% of society is concerned about food supply security, especially related to the climate crisis. Health problems and water scarcity are seen as the other leading problems related to the impacts of climate change: while health problems are seen as a source of concern by 54% of society, 38% state that they are worried about water scarcity. In gender-based studies on climate change vulnerability in Turkey, females are perceived as more vulnerable than males. While 38% of males believe that they can adapt to the impacts of climate change, only 23% of females believe they can.

### 3.5. INSTITUTIONAL VULNERABILITY

Institutional factors show the level of sensitivity to climate factors, climate crisis action plans, and disaster and emergency action plans. How local governments manage the vulnerabilities created by climate change and what solutions they find to these problems are very important. As a result, local government operations are the most essential determinant in defining vulnerabilities. The goal of local governments and every stakeholder involved in a city's management process should strive to reduce vulnerability. Particularly, the progress of urban studies is extremely effective in reducing vulnerability to climate change.<sup>48</sup>

41 Matthias Garschagena and Paty Romero-Lankao, "Exploring the Relationship Between Urbanization Trends and Climate Change Vulnerability", *Climate Change* 133(1), 2013.

42 Kaya, 2018, p. 239.

43 See also the meaning of "urban sprawl": <https://dictionary.cambridge.org/dictionary/english/urban-sprawl>

44 UN *Global Report on Human Settlements*, 2011

45 Kaya, 2018, p. 242.

46 European Commission, 2013.

47 İklim Haber, "Yeni Araştırma: Her 3 Kişiden 2'si Kendini İklim Krizi Karşısında Kırılgan Hissediyor", access May 25, 2022, <https://www.iklimhaber.org/yeni-arastirma-her-3-kisiden-2si-kendini-iklim-krizi-karsisinda-kirilgan-hissediyor/>

48 UN-Habitat, "Cities & Climate Change: An Introduction", 2015 <https://unhabitat.org/cities-and-climate-change-an-introduction>.

## 4. ISTANBUL'S VULNERABILITY IN THE FACE OF CLIMATE CHANGE

When researching the impact of the climate crisis on vulnerable groups, the city of Istanbul's official papers such as its climate action plans and five-year strategic plans draw a portrait of the city's response. Climate action plans are generally local, tailor-made plans prepared according to the characteristics of the locality of the city. Climate action plans are also strategic road maps that set adaptation and mitigation as an institutional aim. In the case of Istanbul, these plans also portray the city's weak position against climate change. However, the correlation between climate change and vulnerable groups, which typically falls under the field of climate justice, is a new area for scholars and institutions. To investigate and conclude, scholars need well-prepared data on this issue.

According to Istanbul's 2021 Climate Action Plan, the IBB's main priority, as already underscored in its global strategies, is mitigation and adoption, with a particular emphasis on vulnerable groups. This plan follows the same path as the IPCC special report on global warming<sup>49</sup> and is compatible with the general framework of other climate action plans,<sup>50</sup> giving particular importance to the relationship between vulnerable groups and climate change. It was prepared as a result of lengthy meetings with stakeholders such as NGOs, activists, and scholars. However, these reports do not elaborate on the importance of the relationship between climate change and vulnerable groups. Rather, they identify the specific risks and groups who will be affected by climate change. This section mainly refers to the 2021 Climate Action Plan and how it focuses on this issue.

As mentioned in the interviews, further data-based research needs to be conducted to support the city's climate action plan. According to the interviews, the IBB has started data-based projects on this topic.

However, the initial results are not expected to be shared with the public until later in 2022. Stakeholders also underline the importance of these new projects based on data and mapping according to different scenarios. In addition to the Climate Action Plan, the IBB's Strategic Plan (2020–2024) and Local Equality Plan (2021) address some of the problems of vulnerable groups such as refugees, women, and urban poverty. Collectively, these three documents are the IBB's primary references outlining the city's plans for sustainable development in these areas. These three plans have the same conceptual framework: founded on the right to the city, inclusiveness, participation, and equality of opportunity.

In order to gain a better understanding of the situation of vulnerable groups in the city vis-à-vis climate change as outlined in these reports, first, the vulnerability of Istanbul against climate change will be discussed below, followed by a discussion of these vulnerabilities in the face of climate change.

### 4.1. ISTANBUL'S PHYSICAL AND ENVIRONMENTAL VULNERABILITY

According to the Istanbul Climate Action Plan, the city faces three climate risks. These are rising temperatures, rising sea level, and changes in precipitation.<sup>51</sup> Rising temperatures disproportionately affect vulnerable groups such as the elderly and children while causing new diseases for all groups. The rising number of floods are expected to damage critical infrastructure and transportation systems in the city, while the sea level of Istanbul's Bosphorus Strait is expected to rise between 45 and 75 cm. These kinds of floods will affect the housing areas of the urban poor. In addition to these three challenges, the increasing duration and intensity of drought in the city is an increasing risk.

Istanbul is located on two continents and must consider the physical and environmental vulnerability of several waterways. The city has a variety of microclimates and rich biodiversity. In addition to the strait running through the middle of the city, Istanbul is also surrounded by forests, water resources, and agricultural lands. However, the biodiversity of the city has been significantly harmed by the impacts of climate change. Today, the endemic flora of the city is threat-

49 IPCC, "Summary for Policymakers", in: *Global Warming of 1.5°C. An IPCC Special Report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty* [Masson-Delmotte, V., P. Zhai, H.-O. Pörtner, D. Roberts, J. Skea, P.R. Shukla, A. Pirani, W. Moufouma-Okia, C. Péan, R. Pidcock, S. Connors, J.B.R. Matthews, Y. Chen, X. Zhou, M.I. Gomis, E. Lonnoy, T. Maycock, M. Tignor, and T. Waterfield (eds.)]. World Meteorological Organization, Geneva, Switzerland, p. 4. [https://www.ipcc.ch/site/assets/uploads/sites/2/2019/05/SR15\\_SPM\\_version\\_report\\_LR.pdf](https://www.ipcc.ch/site/assets/uploads/sites/2/2019/05/SR15_SPM_version_report_LR.pdf)

50 "İstanbul İklim Değişikliği Eylem Planı", İstanbul Büyükşehir Belediyesi, [https://cevrekorumaa.ibb.istanbul/wp-content/uploads/2022/01/ist-iklim\\_degisikligi\\_eylem\\_plani.pdf](https://cevrekorumaa.ibb.istanbul/wp-content/uploads/2022/01/ist-iklim_degisikligi_eylem_plani.pdf)

51 «İstanbul İklim Değişikliği Eylem Planı», İstanbul Büyükşehir Belediyesi, p. 44-47, [https://cevrekorumaa.ibb.istanbul/wp-content/uploads/2022/01/ist-iklim\\_degisikligi\\_eylem\\_plani.pdf](https://cevrekorumaa.ibb.istanbul/wp-content/uploads/2022/01/ist-iklim_degisikligi_eylem_plani.pdf)

ened with extinction. The forests, which cover half of the city's surface, are also at risk of forest fires.

Climate change is not the only risk factor damaging the city's biodiversity. The violation of the protection of the city's habitat—in other words, anthropogenic impacts—also challenge the city's natural environment. The unsustainable urban growth of the city has rapidly damaged Istanbul's natural resources such as potable waters and clean air. In Istanbul, the primary sources of greenhouse gases are mainly buildings (housing, commercial/institutional, and industrial) and transportation. Housing accounts for 63% all greenhouse gas emissions in Istanbul: transportation accounts for 28% and waste 9%.

In addition to the risks of climate change, it should be added that Istanbul must cope with two additional major risks. The first is the risk of a major earthquake. Since the 1999 Marmara Earthquake, scientists have been constantly warning that Istanbul faces a huge risk of another major earthquake. Aside from the large-scale urban transformation taking place as a result of economic priorities for the construction business, there has been no adequate work to prepare the city for disaster since 1999. Moreover, urban dwellers have lost many green areas in Istanbul's neighborhoods due to the government's economic priorities.<sup>52</sup> The second risk is the Kanal Istanbul project. This megaproject, launched in 2011,<sup>53</sup> aims to open an alternative waterway to the west of Istanbul's Bosphorus that will connect the Marmara and Black Sea. The project is projected to cause the destruction of water resources, creating urban heat waves by constructing a new city, and the annihilation of agricultural fields of Istanbul. As mentioned in many reports, it will not have the same qualifications for tankers to pass through the channel as the Bosphorus. As will be mentioned below in the context of the clash between the IBB and the central government, the project has serious potential to cause an environmental calamity for Istanbul and the Thracian region of Turkey. It has received constant opposition from climate activists, non-governmental organizations, and the chamber of architects.<sup>54</sup> In addition to these three main challenges, the Kanal Istanbul project would make Istanbul a weak, vulnerable city rather than a resilient city.

52 TMMOB, "İnşaat Mühendisleri Odası Uyardı: İstanbul'un Durumu İyi Değil", accessed May 25, 2022 <https://www.imo.org.tr/TR,56249/insaat-muhendisleri-odasi-uyardi-istanbulun-durumu-iyi-degil.html>

53 Kanal İstanbul, "Kanal İstanbul Çalışma Takvimi", accessed May 25, 2022 <https://www.kanalistanbul.gov.tr/tr/hazirlik-sureci/calisma-takvimi>

54 TMMOB, *Tekrar Uyarıyoruz! İstanbul Kanalı Çılgınlığına Derhal Son Verilmelidir*, accessed May 25, 2022 <http://www.tmmob.org.tr/icerik/tekrar-uyariyoruz-istanbul-kanali-cilginligina-derhal-son-verilmelidir>

## 4.2. ISTANBUL'S ECONOMIC VULNERABILITY

Istanbul is the epicenter of the Turkish economy, with the Bosphorus Strait is its export hub. In the 1980s, the city's industrial production was moved to its outskirts, neighboring cities, or to Anatolian cities. Though, today, Istanbul is still a strong industrial hub—primarily producing textiles, ship building, medicine, equipment, and logistics—more importantly it is a center of the service sector such as finance, IT, tourism, and leisure.

The service sector will also have a significant impact on climate change. While industry accounts for 36% of the economic output of Istanbul, services account for 60% of the city's economic output. Istanbul itself also accounts for 40.5% of all human resources in the service sector in Turkey. Each year 12.6 million tourists visit Istanbul.<sup>55</sup>

Moreover, as mentioned in the report, housing is a primary source of greenhouse gas. Nevertheless, the government has prioritized development through the construction and housing policies pursued as one of Turkey's central economic policies since the 2000s. The real estate sector also became a lucrative sector in Istanbul's economy through the continuous construction of new areas to boost urban transformation. This kind of economic policy creates an additional dilemma: more construction causes more climate change, and more climate change causes more destruction, especially for vulnerable groups.

## 4.3. ISTANBUL'S SOCIAL VULNERABILITY

Home to almost 16 million people,<sup>56</sup> Istanbul has a diverse population in terms of culture and economics. The ambiguous legal position and vulnerable situation of legal refugees and thousands of immigrants are also critical problems for the city. Besides the refugee issue, gender inequality and rising urban poverty are the city's most important problems. According to our interviews, the well-being of women also affects children and the elderly. However, the deep level of poverty within both the host and refugee societies profoundly impacts women the most. These issues are all intertwined and deepen the city's vulnerabilities. Refugees, women, and low-skilled laborers have a very limited capacity to sustain and improve their lives. They also face isolation, inequality, and limited accessibility, weakening

55 «İstanbul İklim Değişikliği Eylem Planı», İstanbul Büyükşehir Belediyesi, [https://cevrekorumaa.ibb.istanbul/wp-content/uploads/2022/01/ist\\_iklim\\_degisikligi\\_eylem\\_plani.pdf](https://cevrekorumaa.ibb.istanbul/wp-content/uploads/2022/01/ist_iklim_degisikligi_eylem_plani.pdf).

56 "İstanbul Demografik Analiz", Harita Servis İBB, accessed May 25, 2022, <https://haritaservis.ibb.gov.tr/vekportal/apps/MapSeries/index.html?appid=94244de513c3e4505b10a80e719ec55b5>.

their adaptation capacity. They are also among the groups that will face the most profound impacts of climate change, such as floods and heatwaves. Istanbul's climate action plan also reveals the city's social vulnerability, which is expected to increase due to the consequences of climate change. The 2021 Istanbul Climate Action Plan provides general information about vulnerable groups and their position vis-à-vis climate change. However, it needs to be expanded with further works such as mapping at the district and neighborhood level.<sup>57</sup>

#### 4.3.1. Refugees

Istanbul hosts 542,045 Syrian refugees,<sup>58</sup> the largest concentration of Syrians in Turkey. As emphasized in the interviews, the real number of Syrian refugees in Istanbul is likely much higher, as those who are unregistered or registered in another city in Turkey are not counted in the above number. In addition to Syrian refugees, the city hosts thousands of other immigrants from different countries in Asia and Africa. These migrants and Syrian refugees are in a vulnerable position in the city. In terms of their economic situation, they have inadequate income and primarily work as informal workers. Syrian women, for example, typically work long hours in the textile sector and without adequate social security.<sup>59</sup>

Conversely, refugees are also among the groups influenced by the exclusionary discourse present in Turkish society today, especially during times of economic turmoil characterized by high inflation and economic fluctuations. Most importantly, refugees are at the center of Turkey's highly polarized political discourse. Syrian refugees are a part of the country's political polemics, and this situation accelerates social tension and raises anxiety in terms of refugees' security. Moreover, although most refugees live within the city's borders, the IBB cannot allocate any part of its budget to refugee protection, because their budget is allotted according to the number of Turkish citizens residing in the city. Refugees are under the authority of the central government and its institutions. This is one of the most significant challenges between refugees and local governments, in this case, the IBB. Secondly, according to the law, Syrians are accepted under "temporary protection" in Turkey and are not given formal refugee

status. This kind of temporary approach is an obstacle to increasing Syrian refugees' quality of life. This problem is exacerbated by the fact that local people are expecting these guests to return to their home. However, several interviewees from different institutions, including the IBB and NGOs, underline that these refugees are mostly willing to stay in Turkey rather than returning to Syria. After almost a decade of living in Turkey, most of these refugees have created their own lives here.

According to the interviews, the IBB and its departments carry out many projects on the various aspects of the refugee issue. The main recommendations that emerge from the works carried out by the city's social services are coordination, social adaptation, data collection, and capacity building.

In terms of capacity building, the IBB gives special importance to the coordination between district municipalities and training its own employees. The coordination workshops enable all the sub-municipalities to carry out the same projects and pursue the same approach to reach the goals determined in the Strategic Report 2020–2024. The IBB also invites scholars, NGOs, and UN-related offices such as UNHCR to the coordination meetings. The mapping of vulnerable groups across districts of Istanbul is one of the key headlines of these meetings. The IBB prioritizes training its own personnel to tackle the capacity-building issue. There are 85,000 employees of the IBB. Our interviewees with employees from the city's social services emphasized that there is a need for corporate training for employees on gender and refugees including in the district municipalities. However, the question of language is one of the main problems related to the IBB's provision of services for Syrians. The IBB aims to open a social service hotline for refugees; however, it cannot find enough Arabic speakers to work in this department. To facilitate more interactions with refugees, the IBB has opened three "neighborhood houses" (*mahalle evi*) in the Sulukule, Örnektepe, and Bahçelievler neighborhoods of Istanbul. These houses are supported by ISMEK, the educational and cultural institutional of the IBB, and are dually set up as spaces where both groups can gain new knowledge and skills. Refugees can take lessons on different subjects such as digital literacy or hairdressing to develop their individual capacities. According to our interviews, there are always two specialists at these places during each program. Most importantly, these neighborhood houses are designed for both local people and refugees to use these spaces together. The IBB plans to open four additional neighborhood houses this year. Thus, through establishing these houses, the IBB aims both

57 İstanbul Büyükşehir Belediyesi, "İstanbul İklim Değişikliği Eylem Planı", 2021, p. 44

58 "Türkiye'deki Suriyeli Sayısı Nisan 2022", Mülteciler Derneği, accessed May 25, 2022, <https://mülteciler.org.tr/turkiyedeki-suriyeli-sayisi/>.

59 "ILO Türkiye Mülteciler ve Ev Sahibi Topluluklara Destek Programı", International Labour Organization, accessed May 27, 2022, [https://www.ilo.org/ankara/projects/WCMS\\_702144/lang--tr/index.htm](https://www.ilo.org/ankara/projects/WCMS_702144/lang--tr/index.htm).

to decrease the polarization between the groups and increase the capacity of vulnerable groups.

The participation of refugees in decision-making processes is another target of the IBB. According to our interviewees with the social services department, refugees started to participate as representatives in the Group of Migration of Istanbul City Council.

Data collecting for new projects related to refugees is another priority of the IBB. To understand the impact of climate change on vulnerable groups, the IBB also needs detailed data from the field. The IBB carries out projects on these issues with international partners. The IBB also conducts projects with the United Nations High Commissioner for Refugees, the International Labour Organization, and Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) from Germany.

#### 4.3.2. Gender

The IBB's policy on gender issues, implemented in 2019, is based on the principle of equal opportunity. In terms of gender, the Istanbul Climate Action Plan, the Strategic Plan, and the Local Equality Plan indicate that the IBB has adopted a gender-based approach rather than a social philanthropic approach as in the previous period. The Local Equality Action Plan 2021–2024 covers a road map for gender equality for women with various needs in different neighborhoods of Istanbul. The plan was prepared in cooperation with NGOs and scholars working in this field and representatives of different district municipalities. The employment rate of women in Istanbul is 30.5%, with 74.2% of these women working in the service sector. The female unemployment rate is 18.9%.<sup>60</sup>

Our interviewees mentioned that the IBB prioritizes the employment of women. To increase the rate of women's employment, the IBB tries to open kindergartens in different neighborhoods across the city.

The same problems with gender inequality are palpable for Syrian women. According to the Local Equality Action Plan, the results of a field study carried out by Turkey's General Directorate of Migration Management and the International Organization for Migration (IOM) between May 24 and July 19, 2019, indicate that the total migrant and refugee population in Istanbul is 1,624,676. These migrants are mostly living in the Esenyurt, Fatih, Başakşehir, and Bağcılar districts of Istanbul. These migrant women are primarily

employed cleaning houses; caring for the sick, elderly, and children; pet care; textile manufacturing; and service sectors such as dishwashers, cooks, and waitresses. Refugee women have problems in many areas, from accessing urban services to participation, from social and spatial mobility to economic empowerment. Refugee women often face the painful repercussions of gender-based violence and sexual crimes, as well as war and forced migration. As they battle poverty, they suffer from a lack of language skills, marginalization, and a lack of opportunity to express their needs.<sup>61</sup>

The IBB has also developed new projects based on the right to the city and participation in cooperation with UNHCR (on capacity building) and the ILO (on occupational education).

Additionally, various district municipalities, along with the ILO and the private sector, support women's cooperatives in agriculture. According to our interviews, the IBB is planning to open an Office of Women's Work.

#### 4.3.3. Urban Poverty

In terms of urban poverty, Istanbul faces a dual crisis. On the one side, the COVID-19 pandemic increased poverty by 2.1%, with 1.6 million people in Istanbul now below the poverty line.<sup>62</sup> On the other, the government halted the IBB's aid campaign during the pandemic. The IBB has thus needed to work on urban poverty through different channels. The most significant achievement of the IBB in this field was the *askıda fatura* (pending bills) campaign. It allowed users to upload outstanding bills and wait for benefactors to pay these bills directly through the municipality. The website does not reveal the identities of those seeking assistance or those providing donations. The platform's anonymity is a critical component protecting recipients' dignity and preventing them from becoming enslaved to an organization or political party.<sup>63</sup> Until today, the total amount of the bills paid is 57,293,024 Turkish lira (TL).<sup>64</sup>

60 İstanbul Büyükşehir Belediyesi, *Yerel Eşitlik Eylem Planı 2021-2024*, 2021, p. 22, [https://www.ibb.istanbul/Uploads/2021/3/Yerel Eşitlik-Eylem-Plani.pdf](https://www.ibb.istanbul/Uploads/2021/3/Yerel%20Esitlik-Eylem-Plani.pdf)

61 İstanbul Büyükşehir Belediyesi, *Yerel Eşitlik Eylem Planı 2021-2024*, 2021, p. 25, [https://www.ibb.istanbul/Uploads/2021/3/Yerel Eşitlik-Eylem-Plani.pdf](https://www.ibb.istanbul/Uploads/2021/3/Yerel%20Esitlik-Eylem-Plani.pdf)

62 İstanbul Büyükşehir Belediyesi, «İstanbul İklim Değişikliği Eylem Planı», 2021, [https://cevrekoruma.ibb.istanbul/wp-content/uploads/2022/01/ist-iklim\\_degisikligi\\_eylem\\_plani.pdf](https://cevrekoruma.ibb.istanbul/wp-content/uploads/2022/01/ist-iklim_degisikligi_eylem_plani.pdf)

63 Jennifer Hattam, "The Fight Against Poverty in Istanbul, One Soaring Bill at a Time", *Bloomberg*, accessed May 25, 2022, <https://www.bloomberg.com/news/articles/2022-04-09/istanbul-s-online-donation-platform-pays-energy-bills>

64 İstanbul Büyükşehir Belediyesi, "Askıda Fatura", accessed May 25, 2022, <https://askidafatura.ibb.gov.tr/>

In 2020, IBB founded its first Regional Employment Office (*Bölgesel İstihdam Ofisi*). Today, there are 13 regional employment offices in Istanbul. These offices aim to find jobs according to the skills of the prospective employees and match the right employee with the right employer. The Regional Employment Office has so far succeeded in matching 46,511 employees to employers. Another major program of the IBB in this field is the Social and Economic Support Program. This program supports 250,000 families in need. People can register for this program by phone or online.<sup>65</sup>

Urban poverty has recently become a more pressing problem in Turkey due to rising inflation. According to scholars, the current economic situation reduces the purchasing power of the middle classes, and new urban poverty has emerged in the center of the city. These new patterns might change the character of poverty across the city.<sup>66</sup>

#### 4.3.4. Istanbul's Demographic Vulnerability

The risks of climate change are higher for vulnerable groups such as refugees and migrants, women, children, elderly, and the urban poor. Rising temperatures would threaten the elderly and children the most. This situation would also affect the daily lives of the women who are obliged to take care of these two groups.

Unplanned urbanization also stimulates the effects of rising temperatures. The people who suffer from respiratory tract diseases will be most affected by these kinds of risks. Climate change will influence agricultural production, which will affect the subsistence of the city. Flood risks will also affect small businesses that have inadequate capacity to cope with the costs of preventive measures. Ultimately, refugees, women, children, the elderly, and the urban poor will be most affected by the climate crisis.<sup>67</sup>

#### 4.4. ISTANBUL'S INSTITUTIONAL VULNERABILITY

As mentioned above, according to the legal framework in Turkey, the authority of the IBB in the city is limited. Although the IBB must serve all of the population living within the city's borders, the IBB only has the

authority to plan 40% of urban areas.<sup>68</sup> This situation creates an unstable situation in terms of governing the city. As previously mentioned, the Kanal Istanbul project is just one example of the conflict between local and central authorities.<sup>69</sup> Although the IBB has rejected this project, the central government insists on its implementation. Moreover, there is no legal boundary or ability to challenge the central government's power in issues related to climate change. The clash of authority between the IBB and the government as well as the local government's resistance to implementing its decisions without cooperation from local authorities is one of the IBB's biggest obstacles in this field.

<sup>65</sup> İstanbul Büyükşehir Belediyesi, "Sosyal ve Ekonomik Destek Programı", accessed May 25, 2022. <https://sosyalyardim.ibb.gov.tr/>

<sup>66</sup> BirGün, "Birçok Kentte 472 Kamu Arazisi Satışa Çıkarıldı: Kanal'a Komşu Ranta Uygun Satışlar", accessed May 25, 2022. <https://www.birgun.net/haber/bircok-kentte-472-kamu-arazisi-satisa-cikarildi-kanal-a-komsuranta-uygun-satislar-381820>

<sup>67</sup> İstanbul Büyükşehir Belediyesi, «İstanbul İklim Değişikliği Eylem Planı», 2021, p. 55-56. Retrieved from [https://cevrekorumam.ibb.istanbul/wp-content/uploads/2022/01/ist\\_iklim\\_degisikligi\\_eylem\\_plani.pdf](https://cevrekorumam.ibb.istanbul/wp-content/uploads/2022/01/ist_iklim_degisikligi_eylem_plani.pdf)

<sup>68</sup> İstanbul Büyükşehir Belediyesi, "Belediye Yetki Alanı", accessed May 25, 2022 <https://www.ibb.istanbul/icerik/yetki-alani>

<sup>69</sup> Jennifer Hattam, "Turkey's Biggest City Falls Victim to Cold War with Erdogan". *Bloomberg*, accessed May 25, 2022. <https://www.bloomberg.com/news/features/2022-05-06/istanbul-falls-victim-to-turkish-political-cold-war-with-erdogan>

## 5. ISTANBUL'S CLIMATE VISION AND REVISED CLIMATE ACTION PLAN: GOALS AND FIELDS OF ACTIVITY FOR VULNERABLE GROUPS IN TACKLING CLIMATE CHANGE

This section of the study is composed of two subsections. The first discusses the IBB's international partnerships and commitments to combating climate change. The second examines the analyses and plans designed by the IBB within the scope of climate change mitigation and adaptation on the local level. All relevant research was conducted with due consideration of vulnerable groups who are and will be most affected by climate change.

### 5.1. INTERNATIONAL PARTNERSHIPS AND THE IBB'S COMMITMENT TO THE FIGHT AGAINST CLIMATE CHANGE

The IBB is a member of numerous global institutions and organizations focusing on climate change and sustainable cities. It is a member of the C40 Cities Climate Leadership Group, which was formed in 2005 following the proposal of the Office of the Mayor of the Greater London Authority. The IBB became a member of this group in 2006. The core mission of the C40 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.”<sup>70</sup>

Case studies provided to the C40 network reveal the concrete actions undertaken by local governments to fight climate change. For instance, the case study “Cities100: Istanbul - Circular Design Approach for Processing Waste” outlines Istanbul's production of electricity and compost from various waste streams, in which the by-product of the waste facility—i.e., excess heat—is diverted to greenhouses to boost productivity.<sup>71</sup> Four more case studies implemented in 2016 and 2017 are available on the C40 website that outline other actions on the local level concerning climate change.

<sup>70</sup> C40 Cities, “About C40”, 2022 Retrieved from <https://www.c40.org/about-c40/>.

<sup>71</sup> C40 Cities, “Cities100: Istanbul - Circular Design Approach for Processing Waste”, Retrieved from Case Studies, 2017 <https://www.c40.org/case-studies/cities100-istanbul-circular-design-approach-for-processing-waste/>

In 2019, the C40 member municipalities prepared the Global Green New Deal.<sup>72</sup> The Deal focuses on climate justice for all. The core missions of this plan for member municipalities are:

- Preparing local climate action plans until 2030,
- Determining the critical areas of activity to halve the total emissions rate in the city until 2030,
- Adopting a carbon-neutral policy in 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.

Within the framework of these objectives, the IBB signed the “Deadline 2020 Undertaking” in 2019. Through these undertakings, the IBB agreed to make Istanbul significantly resilient to climate change for vulnerable groups and all parts of the society.<sup>73</sup>

The United Cities and Local Governments, Middle East, and West Asia Section (UCLG-MEWA) is another international organization of which the IBB is a member. This organization is an important network that works to establish cooperation among local governments and localize the global agenda. The IBB plays an essential role in the Environment Committee of the UCLG-MEWA. IBB served as the chairman of the UCLG-MEWA Environment Committee between November 2015 and June 2019.<sup>74</sup>

The UCLG-MEWA Environment Committee took important steps in combatting climate change within the scope of the second meeting of the Environment Committee convened in Istanbul under the chairmanship of the IBB, which hosted the meeting in 2016. Following this meeting, the Istanbul Declaration of the Malatya Consensus, which outlines ways in which local

<sup>72</sup> C40 Cities, 2022.

<sup>73</sup> C40 Cities, 2020.

<sup>74</sup> 2022. İstanbul Büyükşehir Belediyesi Çevre Koruma Müdürlüğü. Retrieved from *Uluslararası Çevre Gündemlerinin Takip Edilmesi*, 2022.

governments can strengthen the fight against climate change, was published.<sup>75</sup> The following objectives were accepted in the Declaration:

- Securing climate justice for the whole of society and notably vulnerable groups within the scope of combatting climate change
- Enhancing urban agricultural activities
- Protecting biodiversity
- Ensuring waste management
- Pollution prevention
- Utilizing renewable energy resources
- Creating transportation facilities that do not pollute the environment
- Increasing green spaces in cities
- Enhancing R&D in combatting climate change

In line with these objectives, member municipalities, including the IBB, made voluntary commitments at the local level.<sup>76</sup>

Another international organization of which the IBB is a member of is the Global Covenant of Mayors for Climate & Energy (GCoM). This organization is comprised of a global coalition of mayors and city officials who have voluntarily committed to following relevant developments in a transparent manner. This organization is also the most significant global alliance for city climate leadership built on the actions of more than 11,500 cities and local governments. The GCoM has established the following objectives within the scope of the Covenant:<sup>77</sup>

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

<sup>75</sup> UCLG-MEWA, “Malatya Consensus”, 2016 Retrieved from <https://cevre.ibb.istanbul/wp-content/uploads/2021/12/istanbul-Deklarasyonu.pdf>

<sup>76</sup> İstanbul Büyükşehir Belediyesi Çevre Koruma Müdürlüğü, 2022.

<sup>77</sup> Global Covenant of Mayors for Climate and Energy, 2022 Retrieved from <https://www.globalcovenantofmayors.org/>

By signing the Global Covenant of Mayors for Climate and Energy voluntarily in 2015, the IBB undertook steps to diminish its own greenhouse emissions, build a climate change resilient city for all parts of society, and prepare a greenhouse emissions inventory and a climate change action plan.<sup>78</sup>

The following part of this section focuses on the degree to which the IBB has achieved the goals specified in its plan, program, and action areas at the local level.

## 5.2. LOCAL PLANS AND PROGRAMS IMPLEMENTED BY THE IBB WITHIN THE SCOPE OF COMBATING CLIMATE CHANGE

As part of its global collaborations and undertakings, the IBB has carried out various research studies on combatting climate change. Accordingly, the core findings of the IBB’s four most relevant reports are outlined below. The IBB has carried out these activities as part of its pursuit to tackle climate change on the local scale. These action plans are (1) the Istanbul Climate Change Action Plan (2018), (2) the Istanbul Climate Change Action Plan (2021), (3) the Istanbul Metropolitan Municipality Strategic Plan (2015–2019), and (4) the Istanbul Metropolitan Municipality Strategic Plan (2020–2024). In this context, all research in these reports has been carried out considering the vulnerable groups that are and will be most affected by climate change.

### 5.2.1. Istanbul Climate Change Action Plan (2018)

Istanbul is in a risky geographical region where the effects of climate change are felt intensively. The city produces the most greenhouse gas emissions in Turkey and is among the cities that will be most affected by climate change in Europe.<sup>79</sup> The climate projections for Istanbul were prepared using several models and scenarios that draw attention to the significant effects of climate change, such as average surface temperature increase, changes in precipitation patterns, drought, sea level rise, and heavy rainfall.<sup>80</sup> The Climate Change Action Plan, prepared in 2018, is the first study carried out on a local scale by the IBB. The plan was prepared following the IBB’s voluntary signing of the plan of the covenant of mayors for climate and energy<sup>81</sup> in 2015 and its commitment to the agreement.

<sup>78</sup> Global Covenant of Mayors for Climate and Energy, 2022

<sup>79</sup> Kaya, 2018, p. 227.

<sup>80</sup> Hüseyin Toros, Mohsen Abbasnia, Mustafa Sağdıç & Mete Tayanç, “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, 2017, p. 13.

<sup>81</sup> Global Covenant of Mayors for Climate and Energy, 2022.

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 in mind, the action plan addresses "reduction," i.e., foreseeing the decrease of greenhouse gas emissions by taking social, economic, and technological measures, and "adaptation," i.e., foreseeing the reduction of disaster risks and recovery times to adapt to changing climatic conditions. There are 70 basic actions and 208 activity areas (41 priority areas) outlined in the plan to achieve these goals. Moreover, the IBB aims to revise the action plan every four years and conduct monitoring and evaluation every two years. The main targets and strategies developed for the sectors that affect climate change most are shown in Table 1 in the Appendices.

According to Table 1, the IBB plans to implement the following actions:

- Improving the energy management system of Istanbul Metropolitan Municipality buildings,
- Establishing a net-zero waste management system,
- Increasing the number of green areas in the city,
- Making current roads suitable for bicycles,
- Managing transmission lines and drinking water networks with smart systems,
- Supporting wastewater recovery and reuse, as well as providing additional incentives to subscribers who store rainwater and use their own wells.

As shown in Table 1, sector-specific distinctions are made in the plan when considering areas of activities to help mitigate climate change. However, it has been noted that the activities to be carried out by the IBB 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.<sup>82</sup>

### 5.2.2. Istanbul Climate Change Action Plan (2021)

The 2019 local elections resulted in the main opposition party winning the office of the mayor of the Istanbul Metropolitan Municipality. Following the election, the IBB signed the Deadline 2020 commitment, an outcome of the Global New Green Deal in October 2019 in Copenhagen, at the C40 World Mayors Summit.<sup>83</sup> With this commitment, the Istanbul

Metropolitan Municipality accepted the target to make Istanbul a more resilient city to climate change across every segment of society, especially for vulnerable groups.<sup>84</sup> In line with this goal and the principles of the Global Green New Deal, the IBB revised the Istanbul Climate Change Action Plan in 2021. The basic vision of the plan, which was prepared through participatory methods, aims 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 the social policies related to the vulnerable groups that will be most affected by climate change."<sup>85</sup> 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 aims to make Istanbul a carbon neutral city by 2050, while in the medium term, it aims to reduce greenhouse gas emissions in Istanbul by 52.2 percent by 2030 compared to 2019 levels.<sup>86</sup> The aim is to update the city's action plans every five years.<sup>87</sup> Additionally, the plan aims to increase resistance against the worst effects of climate change and induce green and just economic development. Under the plan, 27 primary activity areas are identified for the relevant sectors. Table 2, seen in the Appendices, shows the main targets, strategies, and areas developed for specific sectors as outlined in the plan.

According to Table 2, the following areas of activity are planned to be fulfilled by the Istanbul Metropolitan Municipality:

- Incentivizing measures to increase energy efficiency in all buildings,
- Taking additional steps for renewable energy production, energy- and water-saving,
- Purchasing new electric buses so that all buses can be electrified,
- Making existing roads suitable for cyclists and creating new separate bicycle paths,
- Increasing park-and-go areas,
- Developing programs to reduce or completely prevent the waste of any foodstuffs during the processing, use, storage, sale, preparation, cooking, and serving of food,

<sup>82</sup> Istanbul Climate Change Action Plan, 2018.

<sup>83</sup> C40 Cities, 2022.

<sup>84</sup> C40 Cities, 2022.

<sup>85</sup> Istanbul Metropolitan Municipality, 2021.

<sup>86</sup> Istanbul Metropolitan Municipality, 2021.

<sup>87</sup> Istanbul Metropolitan Municipality, 2021.

- Optimizing waste collection operations (routes of waste collection vehicles, waste collection hours) to reduce environmental impacts and total greenhouse gas emissions,
- Supporting wastewater recovery and reuse,
- Managing supply lines and drinking water networks with smart systems,
- Planting trees in public areas.

The plan emphasizes that climate justice will be taken into account when implementing social policies for vulnerable groups. However, the direct relationship between vulnerable groups and climate change is not included in any of the mentioned activity areas, and no action area has been defined specifically for vulnerable groups. Instead, an analysis study titled “Vulnerable Groups in the Population” was carried out within the plan. Within the scope of this study, the vulnerable groups most affected and at risk from climate change are identified as low-income groups, the elderly, children, women, disabled individuals, immigrants, and refugees. The plan emphasizes 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 on vulnerable groups, no specific goals, targets, or fields of activity that will include vulnerable groups were specified in the plan.

### 5.2.3. 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 allocation of public administrations. These plans are prepared after the local elections and determine the roadmap until the next municipal elections.

Examining the five-year Strategic Plan of the Istanbul Metropolitan Municipality for 2015–2019, it is striking to see that 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.<sup>88</sup>

### 5.2.4. Istanbul Metropolitan Municipality Strategic Plan (2020–2024)

Within the five-year Strategic Plan of the Istanbul Metropolitan Municipality for 2020–2024, 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,
- 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 Technological Capacity.

As outlined in the plan, the Istanbul Metropolitan Municipality allocates a total of 2,282,753,992 TL to areas of activity determined within the scope of combating climate change. It is also noted that within the scope of this plan, the most fundamental action toward fighting climate change 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.

<sup>88</sup> Istanbul Metropolitan Municipality, 2015.

## 6 EVALUATION OF THE IMPACT OF THE ISTANBUL METROPOLITAN MUNICIPALITY'S VISION FOR COMBATING CLIMATE CHANGE ON VULNERABLE GROUPS

### 6.1. METHODOLOGY AND INITIAL RESULTS

In terms of methodology, a qualitative method was adopted. The research team conducted an expansive literature review. The research team examined the official papers of the IBB, the research reports of national and international organizations, and recent news coverage to understand the issue. In terms of field research, the research team conducted seven in-depth interviews with IBB representatives and stakeholders to understand the IBB's activities related to climate change and vulnerable groups. These interviews were carried out between March and May 2002. Interviews were held with the office of the Deputy General Secretary of the IBB, the office of Environmental Protection and Control Department of the IBB, the office of the Director of the Migration and Adaptation Unit of the IBB, the office of External Relations of the Istanbul Planning Agency, and the Climate Adaptation and Climate Justice Group from the Istanbul Planning Agency. Two interviews were conducted with the (Human Resources Development Foundation (İnsan Kaynağını Geliştirme Vakfı - IKGV), and another off-the-record interview was conducted with UN officials. The Climate Adaptation and Climate Justice Group from the Istanbul Planning Agency included academicians and representatives of NGOs who contribute to the IBB's work on the climate change issue. These interviews allowed the research group to evaluate the current situation and work in the field, especially according to national and local plans. Five of these interviews, except those with IKGV and the UN, were held face to face in different offices of the IBB.

The research team prepared the interview questions before conducting field research. The questions mainly focused on the IBB's current works within the framework of its three main reports (i.e., The Istanbul Climate Action Plan, The Strategic Plan 2020–2024, and the Local Equality Action Plan) and its current work in the field. Representatives of the IBB were also questioned about the clash of authority between the local and central governments and the consequences of this. The IBB's experience with stakeholders regarding participation and inclusion was also discussed in the interviews. Lastly, the impact of climate change on vulnerable groups was a critical question raised during the interviews. The impact of climate action on vulner-

able groups is a new subject. It is worth underscoring that this is a rising target area for the future work of the IBB and its stakeholders working in this field.

The in-depth interviews gave the research team a chance to understand the developments in the field from the perspectives of both the IBB and stakeholders. The initial results were also mentioned in the previous sections regarding the current work of the IBB within the scope of the project. As mentioned in the interviews, it is critical to develop the Istanbul Climate Action Plan and prepare a detailed data-based mapping of vulnerable groups in every district of Istanbul. However, the answers to our questions related to the impact of vulnerable groups generally remained ambiguous. Although this issue is mentioned in the 2021 Climate Action Plan, related works on this issue began only recently, and the interviewees could not provide further details. As the interviewees mentioned, there is still a need to make a more comprehensive map of different climate change scenarios in Istanbul, paying attention to different districts and vulnerable groups. The interviewees from the IBB mentioned that some mapping works have already started, but there are no further details on this issue. Data collecting and mapping on this issue is not yet a full-fledged project. However, as some stakeholders underlined, it is important to detect which districts will be affected by which kind of climate risk and who is living in these districts. The interviewees pointed out that there is a need to legally define the list of vulnerable groups under the IBB. Especially during a moment of disaster, this is essential to saving and protecting lives. As pointed out above, new vulnerable groups might be added to the identified list of vulnerable groups. Today, the worsening of the economic situation reveals that new groups, especially those who were once identified as middle class, are continuing to lose their quality of life. Specific to climate change, the needs of vulnerable groups must be detected by paying attention to their spatial location. Potential groups should be identified and added to the city's plans. In sum, it would be beneficial for the IBB to reidentify vulnerable groups in the face of climate change over a given period of time. Additionally, as the interviewees mentioned, the mitigation process will continue to transform industry and business. While there will be new challenges that might lead to job losses for some

employees, new green markets might emerge in their place. The interviewees revealed that there should be a place for vulnerable groups in the new green job market such as agricultural jobs. The IBB can also facilitate the transition between the old job market and new green jobs to prevent future unemployment and deepening vulnerability. Stakeholders deliberately elaborated on this issue. For instance, research institutions such as the Human Development Foundation (*İnsani Gelişme Vakfı- INGEV*) already published reports<sup>89</sup> on the impending economic vulnerability that will be caused by the mitigation and adaptation processes related to climate change, especially the EU's Green Deal. Both our interviews and third-party reports underline that policy makers should design new measures to address these kinds of future problems. For example, members of vulnerable groups should have access to education and training according to their prospective position in the new green job market.

Stakeholders also pointed out that the IBB's authority regarding vulnerable groups should be clearly outlined and not clash or overlap with the local and central governments, especially during a period of crisis as witnessed in the COVID-19 period. They pointed out that the ongoing clash of authority in this field between the IBB and the central government would create complexity and anxiety for vulnerable groups in or before the crisis.

According to the field research, the IBB should accelerate its work specifically in the field of climate justice. Although the IBB associates the climate crisis with the needs of vulnerable groups, this relationship might also be addressed within the climate justice framework. As mentioned in the interviews, first, 'climate justice' must be defined more concretely; works and projects on climate justice would advance the city's climate action plan.

The interviews revealed that small projects focusing on vulnerable groups in specific districts might be beneficial. Rather than working on the scale of the whole city, small projects might be more manageable for both the IBB and stakeholders. These kinds of adaptation projects can be carried out in districts with higher shares of people from vulnerable groups. This kind of a road map may also open the way to further cooperation between Istanbul and other cities.

The interviewees mentioned that the IBB, as well as NGOs, is open to cooperation. Examining best practices from different cities all over the world, especially those with a similar population size as Istanbul, might be beneficial. On the same note, Istanbul might be a good example for other cities. This kind of interaction between Istanbul and, for example, Berlin can open new avenues for launching projects regarding climate change.

Finally, the monitoring of the developments and works implemented according to the Climate Action Plan is vital for both the IBB, stakeholders, and public opinion. Thus, stakeholders and scholars both expect periodical reports on the city's projects.

<sup>89</sup> İnsani Geliştirme Vakfı (INGEV), İstanbul Politikalar Merkezi (İPM) "İstihdamdan Üretime İklim Politikalarına Entegrasyon.", 2022, 17-20. <https://ingev.org/raporlar/istihdamdan-uretime-iklim-politikalarina-entegrasyon.pdf>

## 7. CONCLUSION

This report aimed to scrutinize the relationship between climate change and vulnerable groups in Istanbul. The report was prepared by a collaborative research team from IPC, TEPAV, and IKV. The research team carried out both a literature review and field research using in-depth interviews. While focusing on the relationship between climate change and vulnerable groups, this report also examined the legal and institutional procedures related to climate change in both Turkey and Istanbul. Special attention was paid to the clash of authorities in the local and central governments.

As cities host most of the world population and become the center of consumption and depletion of natural resources, climate policy necessitates local actions, in addition to global, national, and regional ones. Internal or external climate migration from neighboring countries will heighten economic, social, and demographic vulnerabilities, specifically in cities, like Istanbul. In order to find constructive solutions to these vulnerabilities, local governments need to address the reasons behind these problems and find effective solutions. It is necessary to establish stable and long-term policies by learning from other countries' experiences in fighting climate change as well as to identify the vulnerabilities of Turkey's cities and seek urgent solutions. 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 the center of Turkey's 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, first, the IBB must confront difficulties at various levels due to Turkey's centralized governance structure.

As a unitary state, Turkey has always been a centralized country; yet centralization in local governance has accelerated in Turkey since regulatory changes in 2011 and has been exacerbated since the transition to the presidential system in 2018. In the case of the IBB, the centralization of local governance has become more observable as the mayor of the IBB has encountered many obstacles in implementing effective governance mechanisms because he is from the opposition party. From the 2019 local elections on, the clash of authority between the IBB and the central government has grown. The attempt to narrow the authority of the IBB has expanded to various areas, from transportation to social

services, as discussed above. The interviewees from the IBB claimed that in the field of climate change, they are concerned about new obstacles that might be put into action while implementing climate change measures. Additionally, they pointed out that vulnerable groups, especially refugees, are also at the center of this clash.

The IBB's work toward social inclusion is a best-practice example in Turkey. Istanbul is one of the few major cities in Turkey that has adopted a comprehensive climate action plan that addresses the issues of vulnerable groups. This plan points out that vulnerable groups are adversely affected by different climate change scenarios such as rises in temperature, sea level, and the number of forest fires. Nevertheless, this plan should be further developed in future to cover the measures to be taken for each scenario according to different neighborhoods in Istanbul. The specific risks of the most vulnerable groups—refugees, women, children, and the elderly—should be taken into consideration. In sum, the city's prepared climate action plans and strategic plans have yet to go beyond raising public awareness in combating climate change and related vulnerabilities.

The risks associated with climate change will not only harm the ecosystem but also the health of people and their quality of life as well as lead to social and economic losses. For this reason, the interviewed stakeholders underscored that the IBB should lead mapping projects based on different scenarios for each vulnerable district of Istanbul. However, one of the obstacles of this kind of project is obtaining data. Mapping the impacts of climate change on vulnerable groups on a local scale is one of the IBB's priorities, though collecting data on this scale will take time. IBB representatives claimed that the IBB is currently carrying out similar projects and will launch monitoring reports in 2022.

In the meantime, the identification of vulnerable groups is changing due to rapid global risks today, such as pandemics, wars, and the rising price of essential goods. Because of new potential risks, new groups can be added to the list of vulnerable groups in Turkey and around the world. Climate justice is a dynamic area open to new subsequent research and projects. These new projects might explore how to increase the adaptation capacities of vulnerable groups to make them more resilient to climate change within the framework of the climate action plan. Climate justice should be considered within the city's social policies to identify the most vulnerable to climate change.

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## 9. APPENDICES

Table 1: Istanbul Climate Change Action Plan (2018a)

Sector	Strategy	Action	Responsible Unit	Duration	Financial Resources
Buildings	Net-zero buildings	Incentives to increase energy efficiency in all buildings	Energy Management and Lighting Directorate Zoning and Urbanism Head of Department İstanbul Energy AŞ	0-10+ years	İBB Municipal revenue resources Istanbul Development Agency
		New clean energy development at the regional scale (heating/cooling/power) – microgrid (BD, hydrogen fuel cell, other)	Energy Management and Lighting Directorate Zoning and Urbanism Head of Department İstanbul Energy AŞ	5-10+ years	İBB Municipal revenue resources Istanbul Development Agency
Energy	Increasing the use of renewable energy resources	Taking additional measures for renewable energy generation, energy, and water-saving in projects planned by KIPTAŞ and BİMTAŞ	Energy Management and Lighting Directorate Zoning and Urbanism Head of Department İstanbul Energy AŞ	5-10+ years	Istanbul Development Agency
		Purchase of new electric buses so that all buses can be electrified	İETT	5-10+ years	Awaiting confirmation
Transportation	Increasing bicycle usage	Making available routes suitable for cyclists and creating new separate bicycle routes	Transportation Planning	< 5 years	National Government, Private Sector
	Reducing vehicle use	Increasing the number of paid parking lots in areas with heavy traffic	İSBAK Transportation Planning	< 5 years	Public Sector
	More usage of public transportation	Increasing park-and-ride areas	Transportation Planning	< 5 years	Public Sector
	Recycling of food and garden waste	Development of programs to reduce or completely prevent food waste during food processing, use, storage, sale, preparation, cooking, and service	İSTAÇ	< 5 years	Public Sector Private sector
Waste	Capturing more landfill gas	To prevent direct methane release into the atmosphere by capturing landfill gas from solid waste landfills and using it as electricity, heating, or transportation fuel.	İSTAÇ	< 5 years	Public Sector
	Usage of more efficient vehicles	Optimization of waste collection operations (routes of waste vehicles, hours of waste collection) to reduce environmental impacts and total greenhouse gas emissions	İSTAÇ	< 5 years	Public Sector
	Removal of waste from sanitary landfill areas.	Removal of discarded materials from landfills by recycling and conversion into new products.	İSTAÇ	< 5 years	

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Sector	Strategy	Action	Responsible Unit	Duration	Financial Resources
Waste Water	Re-usage of wastewater	Recycling of wastewater and supporting its reuse	İSKİ	< 5 years	Private Sector, Public Sector
Water	Reduce water loss	Management of supply lines and waterworks with smart systems	İSKİ	< 5 years	Public Sector
	Reduction of water usage	Review of building and municipal code to promote the reduction of water use, on-site water reuse, and recycling	İSKİ	< 5 years	Public Sector
		Usage of rainwater sustainable solutions (rain gardens, permeable material, storage, etc.)	İSKİ	< 5 years	Public Sector

Source: Istanbul Climate Change Action Plan (2018)

Table 2: Istanbul Climate Change Action Plan, 2021–Prioritized Mitigation Action Summaries

Sector	Vision	Target/action
Public Health (High risk)	Activities that increase public consciousness	Informing pre-school and school-age children on the relationship between climate change and health through environmental education modules and publications.
Land use, Forestry, Biodiversity and Agriculture	Increasing climate resistance of agriculture applications	Expanding systems that will reduce water consumption in agricultural areas, making windscreens, irrigation ponds, and canals on the edge of fields
	Increasing the climate resistance of urban green areas	Reducing water consumption of urban green spaces Irrigation of urban green spaces with treated wastewater and rainwater
	Increasing urban green areas	Reducing the risk of flash floods by switching to natural soil in parks and gardens or making surfaces in accordance with the “Pervious Concrete Technical Specifications”; Supporting the planting of university campuses through İBB; Transfer of vacant urban lands to forest status and afforestation
		Using trees that are resilient to drought and have shade features instead of landscaping on roof squares and parking lots
		Conversion of at least 1.4 million m <sup>2</sup> of land into green areas every year
Planting and maintaining at least 100,000 new trees every year		
Waste Management (Moderate Risk)	Proper disposal and management of sewage sludge, industrial and marine waste	Researching the beneficial use of approximately 5,000 tons of waste seaweed that are collected from the shores of Istanbul and sent to landfills annually and evaluating it for use in plant cultivation such as liquid fertilizer and compost.
		Proper disposal of wastewater sludge: Continuing to dry the sludge and send it to cement factories. Commissioning of an incineration plant by 2024 as the last solution
Management of Water Sources	Reducing evaporation from dam ponds and dam rehabilitation	Taking measures to reduce the increase in evaporation in dam ponds
	Modeling of raw water	Network modeling and scientific raw water modeling according to the structure of water sources
	Improvement of demand management in water use and risk-reducing measures.	Taking necessary measures to reduce the amount of free water and the loss rate in transmission lines
	Conservation and development of forests and wetlands in water basins	Protection of water yield and quality by preventing logging, industrialization, and construction in dam basins
	Taking precautions against floods	Stream remediation
Strengthening the Flood Early Warning System by expanding the number of flow observation stations installed in streams to 25 points by 2020		

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Sector	Vision	Target/action
Public Infrastructure	Rehabilitation of rain drainage system	Separation of the rain drainage system from the sewer network
	Increasing capacities of wastewater treatment facilities	Establishing spare capacity in wastewater treatment plants in cases such as the inability to completely separate the rainwater system and sudden population growth
	Reduce water consumption and loss	Reducing the water loss rate to 18% in 2020 with various improvements and improvement measures to reduce water loss in transmission lines
		Management of transmission lines and drinking water network with smart systems
	Increasing the climate resilience of electricity, gas and telecommunications networks	Protecting the natural gas network and boxes so that they are not damaged by climatic threats that are expected to become more frequent, such as floods.
Buildings	Increasing climate resistance of buildings	Conducting a risk-focused study to prevent rainwater intrusion into buildings at 52 critical points in Istanbul.
Energy Production and Distribution	Strengthening the resilience of electricity transmission and distribution infrastructure	Increasing the capacity of İkitelli transformer center, 380 and 154 kV energy transmission lines, in parallel with the cooling need that will increase in the summer months
Transportation and Logistics	Increasing the climatic resilience of the transportation system	Achieving 50% water savings in at least 150 points by defining the measures to save water in auto washing
	Increasing the resilience of traffic signaling systems in extreme weather conditions	Establishing a system that can detect power cuts at 2,200 signalized intersections in advance and increasing the number of signalized intersection points from 338 to 440 by the end of 2019 to keep the traffic lights functional in cases such as heavy rain, flood, and storm.
		Dissemination of censored road and salt solution anti-icing type R&D/pilot projects that are tested on the 1.7 km BRT line in Haramidere
Tourism, Trade and Sociocultural Structure	Adapting tourism, trade and socio-cultural arrangements to the changing climate	Providing carbon footprint information on gas and water bills; making museum tickets out of seed paper